

CONTRACT DOCUMENTS
FOR THE CONSTRUCTION OF THE
HASTINGS DR, VINE ST, BELMONT CANYON RD
WATER MAIN IMPROVEMENTS
09-1621-CP



SAN MATEO COUNTY, CALIFORNIA

SEPTEMBER 2021

Revised per Addendum No. 3 - 10/18/21




Pakpour Consulting Group, Inc.

Acknowledgment

**Mid-Peninsula Water District
Hastings Dr, Vine St, Belmont Canyon Rd Water Main Improvements**

These specifications and plans have been prepared by or under the direction of the following design professionals, licensed by the State of California, for each of the various disciplines involved:



Joubin Pakpour, P.E. Civil Engineer
Reg. No. 59155



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**MID-PENINSULA WATER DISTRICT
HASTINGS DR, VINE ST, BELMONT CANYON RD WATER MAIN IMPROVEMENTS
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ADVERTISEMENT FOR PROPOSALS

**Mid-Peninsula Water District
3 Dairy Lane
Belmont, CA 94002**

Sealed PROPOSALS for the **Hasting Dr, Vine St, Belmont Canyon Rd Water Main Improvements** whether mailed or personally delivered, must be received by the Mid-Peninsula Water District (MPWD) staff by **2:00 P.M., Wednesday, November 3, 2021**, at the District's administrative offices located at 3 Dairy Lane, Belmont, CA 94002. PROPOSALS will then be publicly opened and read aloud at the administrative offices.

PROPOSALS received after 2:00 P.M. will not be accepted. PROPOSALS will not be accepted if they are delivered by fax, telephone or other electronic means. Bidders dropping a PROPOSAL in the District's mail slot are advised to confirm receipt by District staff via e-mail. BIDDER can contact Brandon Laurie, P.E., at (925) 224-7717 with any questions.

The project consists of installing approximately 2,400 LF of 8" zinc coated ductile iron pipe (DIP) (inclusive of 15 LF of 4" DIP) and 55 LF 6" zinc coated DIP tie-in connections to replace existing 8" and 4" cast iron water mains. Work also includes installation of blow offs, air release valves, fire hydrants, service connections; abandoning of existing water main, vault, and appurtenances; surface restoration including slurry seal and striping among other appurtenances work as identified in the bid schedule.

The project is located in the City of Belmont, County of San Mateo, California. The work will be done for the **Mid-Peninsula Water District** (i.e., referred to herein as the "Owner" or as the "District").

The CONTRACT DOCUMENTS may be examined at the following location:

Pakpour Consulting Group
5776 Stoneridge Mall Road, Suite 320
Pleasanton, CA 94588
(925) 224-7717

San Francisco Builders Exchange
850 South Van Ness Avenue
San Francisco, CA 94110
(415) 282-8220

Builders Exchange of Santa Clara
400 Reed Street
Santa Clara, CA 95050
(408) 727-4000

Bay Area Builders Exchange
3055 Alvarado Street
San Leandro, CA 94577
(510) 483-8880

If a BIDDER wishes to review a set of CONTRACT DOCUMENTS at Pakpour Consulting Group, the bidder must contact Brandon Laurie, P.E. at (925) 224-7717 to schedule a date and a time.

To bid the project, potential BIDDER must purchase the CONTRACT DOCUMENTS from the District. Plan houses and Bidders who purchased the CONTRACT DOCUMENTS will receive copies of the addendums and updates.

Copies of the CONTRACT DOCUMENTS may be obtained from Pakpour Consulting Group, Inc. at the above address upon payment of \$50.00 for each set. **Make checks payable to “Mid-Peninsula Water District.”** The payment is nonrefundable.

A mandatory pre-bid meeting and tour is tentatively scheduled to be held on Wednesday, September 22, 2021 at 10:00 A.M. at MPWD’s office (see Figure 1), located at 3 Dairy Lane, Belmont, CA 94002. Please contact Brandon Laurie, P.E. at (925) 224-7717 to verify the date, time, and location and to receive further updates on this project. BIDDER must have purchased a copy of the CONTRACT DOCUMENTS and complete the mandatory pre-bid meeting to be considered eligible to bid the project. PROPOSALS submitted by parties not attending the pre-bid meeting will be rejected.

The BIDDER must possess a valid Class A Contractor’s license in the State of California at the time of CONTRACT award and throughout the CONTRACT term. The Contractor must have performed work on five (5) DIP water main installation projects over the last ten (10) years. In addition, the project foreman must verify that he/she was in charge and completed exclusively five (5) or more DIP water main installation projects in the public right-of-way.

This project includes public works as defined by California Labor Code section 1720. The successful BIDDER shall be responsible for the payment of prevailing wage rates, the training of apprentices and compliance with other related requirements. The prevailing wage rates for the Contract include the California Department of Industrial Relations’ General Prevailing Wage Determinations: 2021-2. Copies of applicable prevailing wage rates may be viewed online at <http://www.dir.ca.gov/OPRL/DPreWageDetermination.htm>.

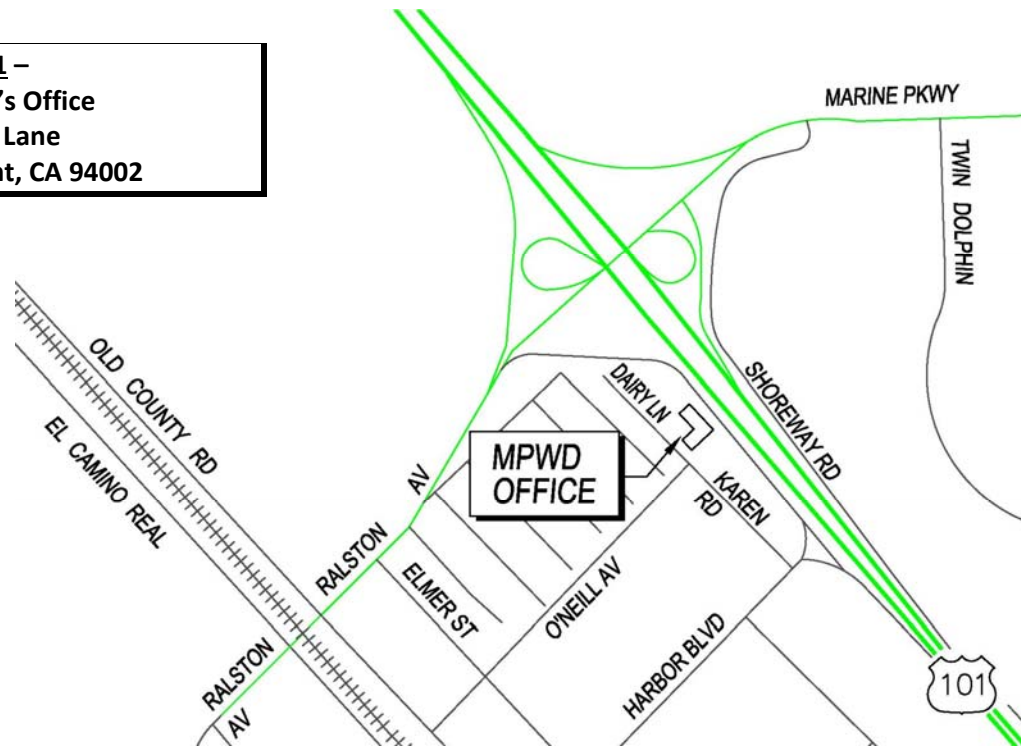
Contractors and subcontractors must be registered with the Department of Industrial Relations (DIR) at the time of bid, or else the bid may be rejected as non-responsive. (See Labor Code sections 1725.5 and 1771.1.) Each BIDDER must submit proof of Contractor registration with DIR (e.g., a hard copy of the relevant page of the DIR’s database found at: <https://efiling.dir.ca.gov/PWCR/Search>). This Contract is subject to monitoring and enforcement by the DIR pursuant to Labor Code Section 1771.4.

Pursuant to Public Contract Code Section 22300, the successful BIDDER may submit certain securities in lieu of the Owner retaining a portion of progress payments during the Project. The successful BIDDER will be required to furnish a Performance Bond and a Payment Bond, both in the amounts not less than one hundred percent (100%) of the contract price.

Date

District Representative Signature

**Figure 1 –
MPWD's Office
3 Dairy Lane
Belmont, CA 94002**



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INFORMATION FOR BIDDERS

Sealed PROPOSALS for the **Hastings Dr, Vine St, Belmont Canyon Rd Water Main Improvements** whether mailed or personally delivered, must be received by the **Mid-Peninsula Water District** staff by **2:00 P.M., Wednesday, November 3, 2021**, at the District's administrative offices located at 3 Dairy Lane, Belmont, CA 94002. PROPOSALS will then be publicly opened and read aloud at the administrative offices.

PROPOSALS received after 2:00 P.M. will not be accepted. No telephonic, facsimile or other electronically transmitted PROPOSALS will be accepted. Bidders dropping a PROPOSAL in the District's mail slot are advised to confirm receipt by District staff via e-mail. BIDDER can contact Brandon Laurie, P.E. at 925-224-7717 with any questions.

Each PROPOSAL must be submitted in a sealed envelope, addressed to the **Mid-Peninsula Water District**. Each sealed envelope containing a PROPOSAL must be plainly marked on the outside as PROPOSAL for **Hastings Dr, Vine St, Belmont Canyon Rd Water Main Improvements**. The envelope should bear on the outside the BIDDER'S name, address, and license number.

All PROPOSALS must be made on the required PROPOSAL form. All blank spaces for PROPOSAL prices must be filled in (in ink or typewritten), and the PROPOSAL form must be fully completed and executed when submitted. Only one copy of the PROPOSAL form is required.

At its discretion, the DISTRICT may waive minor irregularities in the proposal, or reject any and all PROPOSALS. Any PROPOSAL may be withdrawn prior to the above scheduled time for the opening of PROPOSALS or authorized postponement thereof. Any PROPOSAL received after the time and date specified shall not be considered. No BIDDER may withdraw a PROPOSAL within One Hundred Twenty (120) calendar days after the actual date of the opening thereof. Should there be reasons why the CONTRACT cannot be awarded within the specified period, the time may be extended by mutual agreement between the DISTRICT and the BIDDER.

The CONTRACT DOCUMENTS contain the provisions required for completing the project. Information obtained from an officer, agent, or employee of the DISTRICT or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve the CONTRACTOR from fulfilling any of the conditions of the CONTRACT.

Each PROPOSAL must be accompanied by a Bidder's Bond, or a certified or cashier's check, payable to the DISTRICT for ten (10) percent of the total amount of the PROPOSAL. The DISTRICT will return the bonds of the remaining unsuccessful BIDDERS after the CONTRACT is executed. The Bidder's Bond of the successful BIDDER will be retained until the Performance Bond and Payment Bond have been executed and approved, after which it will be returned.

The party, or parties, to whom the CONTRACT is awarded will be required to execute the CONTRACT and obtain the Performance/Payment Bonds (both in the amounts not less than one hundred percent (100%) of the contract price), and insurance within fifteen (15) calendar days from the date when NOTICE OF AWARD is delivered to the BIDDER. The NOTICE OF AWARD shall be accompanied by the necessary CONTRACT and bond forms. In case of failure of the BIDDER to execute the CONTRACT, the DISTRICT may consider the BIDDER in default, in which case the Bid Bond accompanying the proposal shall be forfeited by the BIDDER.

After receiving the signed CONTRACT with acceptable bonds and insurance certificates from the successful BIDDER, the DISTRICT will sign the CONTRACT.

As soon as practicable, after execution of the CONTRACT by the DISTRICT, approval by the DISTRICT of Contract Bonds and all other documents listed in the CONTRACT, and after receipt of acceptable insurance certificates by the DISTRICT, a written NOTICE TO PROCEED will be mailed to the BIDDER. The effective date of the NOTICE TO PROCEED will be the date stated as such in the NOTICE TO PROCEED, provided that the effective date will not be earlier than the day following the issuance of the NOTICE TO PROCEED.

The DISTRICT may make such investigations as deemed necessary to determine the ability of the BIDDER to perform the work, and the BIDDER shall furnish to the DISTRICT all such information and data for this purpose as the DISTRICT may request.

The DISTRICT reserves the right to reject any PROPOSAL if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the DISTRICT that such BIDDER is a "responsible bidder" as defined in Public Contract Code Section 1103.

A conditional or qualified PROPOSAL will not be accepted.

Award will be made to the lowest responsive, responsible BIDDER. The lowest responsive, responsible BIDDER will be determined by: (1) lowest overall cost to the DISTRICT, (2) evaluation of BIDDER's experience to determine that it meets the minimum qualifications, (3) a BIDDER's proposal that complies with all the requirements prescribed in this document. The BIDDER must possess a valid Class A Contractor's license in the State of California at the time of CONTRACT award and throughout the CONTRACT term. The Contractor will also be required to ensure that all subcontractors working on the project are holding valid licenses suitable for their trades. The proposals will be compared on the basis of the "Total Bid Price".

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the CONTRACT throughout.

Each BIDDER shall certify that he, or his representative, has inspected the site and has attended the pre-bid meeting and tour and has read and is thoroughly familiar with the CONTRACT DOCUMENTS. Failure to attend and complete the pre-bid meeting and tour disqualifies the BIDDER. A sign-in sheet will be used to confirm completion of the pre-bid meeting. Late arrivals will also be disqualified. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to its PROPOSAL. After PROPOSALS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the nature of the work to be done.

Pursuant to Public Contract Code Section 22300, the successful BIDDER may submit certain securities in lieu of the Owner withholding retention of payments during the project.

Further, the BIDDER agrees to abide by the requirements under Executive Order No. 11246, as amended, including specifically the provisions of the Equal Opportunity Clause.

Each BIDDER shall supply, using the forms provided in this document, the names and addresses of all SUBCONTRACTORS and shall complete and submit the STATEMENT OF QUALIFICATIONS, EXPERIENCE, AND BUSINESS REFERENCES when submitting his PROPOSAL.

The services of the Contractor required under this Contract constitute a "public works" project as defined by the California Labor Code. Therefore, the Contractor agrees to comply with all applicable prevailing wage requirements set forth in California Labor Code Sections 1770 to 1781 inclusive. All workers employed on or in the execution of the project shall be paid not less than the applicable current general prevailing wage as determined by the Director of Industrial Relations. The current General Prevailing Wage Determinations located on the Department of Industrial Relations' website (<https://www.dir.ca.gov/opri/PWD/index.htm>), shall be incorporated into this Contract. The Contractor shall be responsible for the compliance of its subcontractors. The Contractor's attention is directed to the payroll records requirement of Labor Code Section 1776, and Contractor and its subcontractors will keep an accurate payroll record, showing the name, address, social security number, work classification, straight time, and overtime hours worked each day and week, and the actual per diem wages paid to each worker in connection with services performed under this Contract, and will make payroll records available upon request.

Pursuant to Labor Code Section 1725.5, no Contractor may submit a Bid Proposal for this project, and no subcontractor may be listed in the Bid Proposal for this project, unless the Contractor/Subcontractor is registered with the California Department of Industrial Relations ("DIR") at the time of the Bid Proposal submission. Failure of the Contractor or any Subcontractor to be registered with the DIR may result in rejection of the Bid Proposal. This project is subject to monitoring and enforcement by the DIR pursuant to Labor Code Section 1771.4. The Contractor must post site notices, as described by Title 8, CCR Section 16541(d).

Also, prior to the beginning of work, a pre-construction meeting will be held at the DISTRICT for the purpose of discussing with the Contractor the scope of work, contract drawings, Specifications, existing conditions, materials to be ordered, equipment used, and all essential matters pertaining to the prosecution of and the satisfactory completion of the project as required. The Contractor's Project Manager and Project Foreman shall attend the pre-construction meeting.

Pakpour Consulting Group, Inc., the ENGINEER, is the project engineer representing the **Mid-Peninsula Water District**, the DISTRICT. Questions should be directed to the ENGINEER's Pleasanton office as follows:

Pakpour Consulting Group, Inc.
5776 Stoneridge Mall Road, Suite 320
Pleasanton, CA 94588
(925) 224-7717
(925) 224-7726 fax
Attention: Brandon Laurie, P.E.

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PROPOSAL

**TO: Mid-Peninsula Water District
3 Dairy Lane
Belmont, CA 94002**

PROJECT TITLE: Hastings Dr, Vine St, Belmont Canyon Rd Water Main Improvements

BIDDER'S DECLARATIONS AND AGREEMENTS

The undersigned, _____ hereinafter called the Bidder,
(Contractor's Name)
hereby proposes to perform all work and to furnish all labor, services, materials, tools, equipment, supplies, transportation and all other items and facilities necessary to complete all work for the above-named Project as specified or indicated in the Contract Documents for the price set forth below in this Proposal.

The Bidder has carefully examined all of the Contract Documents for the Project, including the Notice to Contractors, this Proposal and documents submitted together with it, the Contract, the General Provisions, the Special Provisions, the Specifications, the Contract Drawings and all Addenda. All provisions of the Contract Documents are hereby accepted and all representations and warranties required thereby are hereby affirmed.

The Bidder has by investigation of the site of the work and otherwise satisfied himself as to the nature, scope and location of the work and has fully informed himself as to all conditions and matters which can in any way affect the work or the cost thereof, including quantities of materials and equipment required. The Bidder has exercised his own judgment regarding the interpretation of subsurface information and has utilized all data, which he believes pertinent from the District and other sources in arriving at his conclusions.

The Bidder has carefully checked all the words and figures inserted in this Proposal and understands that it may not be revoked or withdrawn for One Hundred Twenty (120) calendar days after the date on which Proposals are opened and all bids shall be subject to acceptance by the District.

QUALIFICATIONS OF THE BIDDER

The Bidder certifies that he or she is familiar with all applicable federal, state, and local laws applicable to the work, and hereby agrees to comply with all such laws.

Furthermore, the Bidder hereby declares that he or she can perform all work as described in the advertisement of proposal.

The Bidder (and subcontractors) has (have) fully described his or her qualifications and experience of the most current projects within the last ten (10) years in which have successfully completed five (5) DIP water main installation projects on the respective forms entitled, "Bidder's Statement of Qualifications, Experience, and Business References," included with the Proposal documents. Failure to comply with this section will be grounds for rejecting the bid as non-responsive. Note that this form includes mandatory minimum experience requirements which the Bidder must

meet in order to have its bid accepted. In addition, the project foreman must verify that he/she in charge and completed exclusively five (5) or more DIP water main installation projects in the public right-of-way.

CONTRACT EXECUTION AND BONDS

The Bidder agrees that if this Proposal is accepted, they will, within fifteen (15) calendar days after having received notice of award, sign and deliver the Contract in the form included in the Contract Documents and will at that time deliver to the District the Performance Bond and Payment Bond required herein.

CERTIFICATES OF INSURANCE

The Bidder agrees that if this Proposal is accepted, he will, within fifteen (15) calendar days after receiving notice of award, furnish the District with certificates and policies of insurance as specified in the Contract Documents.

START OF CONSTRUCTION AND CONTRACT COMPLETION TIME

If awarded the Contract, the Bidder agrees to begin work within five (5) working days after the effective date of the Notice to Proceed and to complete the work, in all respects, within **Ninety-Five (95) working days** from the effective date of the Notice to Proceed.

LIQUIDATED DAMAGES

If the Bidder is awarded the Contract but fails to complete the work within the Contract time of completion limit set forth above, or as it may be extended as provided in the Contract Documents, the Bidder agrees to pay liquidated damages to the District at the rate of **One Thousand Eight Hundred Fifty Dollars (\$1,850.00)** per day until the work is completed.

ADDENDA

The Bidder hereby acknowledges that they have received the following attached Addenda Nos.: _____ (Bidder: insert number of each Addendum received **and attach a copy of the first page to this Proposal**) and agrees that all Addenda issued are a part of the Contract Documents. The Bidder agrees that this Proposal includes all impacts resulting from these Addenda.

SALES AND USE TAXES

The Bidder agrees that all federal, state and local sales and use taxes are included in the price for the work set forth below.

BID SECURITY

Bidder has accompanied this proposal with a Bid Security in the amount and in the form required by these Contract Documents. The Bid Security and the proceeds there from shall become the property of the District in the event that Bidder's proposal is accepted by the District and Bidder fails to sign and deliver the Contract and to furnish the required bonds and certificates of insurance within the time period set forth in this Proposal and in the Contract Documents.

AWARD OR REJECTION OF BIDS

Award will be made or proposals rejected by the District within the time specified in the Special Provisions or proposal documents, or if not specified, within a reasonable time after bids have been opened. The District may reject any or all bids, and shall reject a bid of any party who has been delinquent or non-responsible in any former Contract with the District. The District also reserves the right to waive any minor irregularities in any bid or in the bidding procedures.

Contractor shall submit for review a Bidder’s Statement of Qualifications, Experience, and Business References for this type of work.

All bids will be compared on the basis of the **“Total Bid Price.”**

All Bidders shall be notified of the award.

PROPOSAL DOCUMENTS

Accompanying this Proposal are the following documents, which have been properly completed and executed, and the same hereby are made a part of this Contract by reference: List of Subcontractors, Non-Collusion Declaration, Bidder's Bond or Bid Security Form, Bidder's Statement of Qualifications, Experience, and Business References

BID SCHEDULE

The Bidder agrees to accept as full payment for the construction of the Project, in accordance with the Contract Documents, the amount computed in accordance with the following prices, which includes all costs for labor, materials, tools, equipment, services, taxes, insurance, overhead, profit, warranty performance and all other costs necessary to perform the work in accordance with the Contract Documents. It is expressly agreed that unit prices are not dependent on the exact quantity furnished. Bid prices shall be shown in both words and figures. In case of a discrepancy, the amount in words has precedence.

SURETY

If the Bidder is awarded the Contract, the surety who will provide the Performance Bond

and Payment Bond will be _____

Whose address is _____

(City)

(State)

(Zip Code)

BIDDER

The name of the Bidder submitting this Proposal is _____

The address to which all communications concerned with this Proposal and the contract shall be sent is _____

(City) (State) (Zip Code)

The Bidder declares under penalty of perjury that the Bidder's Contractor's License No. is _____ and that this license expires on _____, _____
Date

and Bidder is registered with the Department of Industrial Relations (DIR) No. is _____ and that this license expires on _____.
Date

The Bidder's Telephone Number () _____

SIGNATURE

1. If Sole Owner

I sign as sole owner of the business named above as Bidder.

Signature of Bidder
Name: _____ Date: _____, 20 ____

2. If Partnership

The undersigned certifies that he is a general partner in the Partnership named above as Bidder and that he has full authority to sign this Proposal on behalf of the Partnership.

Signature of Partner
Name: _____ Date: _____, 20 ____

3. If Corporation

The undersigned certify that they are officers of the Corporation named above as Bidder and have full authority to sign this Proposal on behalf of the Corporation.

Name of Corporation *

*If Bidder is a Corporation, two corporate officers must execute the proposal (or agreement) consisting of the following: 1.) the President, Vice President or Chair of the Board and 2.) the Secretary, Assistant Secretary, Chief Financial Officer or Assistant Treasurer. If only one officer signs or an officer other than those specified above, the Corporation shall provide satisfactory evidence that the individual signing is authorized to sign on behalf of the corporation (e.g. copy of a certified resolution delegating authority, copy of the corporation bylaws addressing execution of contracts.)

By: _____
Signature

By: _____
Signature

Name: _____
Print

Name: _____
Print

Title: _____

Title: _____

Date: _____, 20 _____

Date: _____, 20 _____

4. If Joint Venture

The undersigned certify that they have full authority to sign this Proposal on behalf of the Joint Venture named above as Bidder.

Name of Joint Venture

By: _____
Signature

By: _____
Signature

Name: _____
Print

Name: _____
Print

Title: _____

Title: _____

Date: _____, 20 _____

Date: _____, 20 _____

(Submit statement explaining the nature of the individual entities which comprise the Joint Venture and evidence of authority of individuals who sign this Proposal to do so on behalf of the Joint Venture.)

5. If Limited Liability Company (LLC)

The undersigned certifies that he/she is an officer or member of the LLC named above as Bidder and full authority to sign this Proposal on behalf of the LLC.

Name of LLC

By: _____
Signature

BID SCHEDULE
HASTINGS DR, VINE ST, BELMONT CANYON RD WATER MAIN IMPROVEMENTS

ITEM NO.	ITEM DESCRIPTION	UNITS	QTY	UNIT COST	TOTAL COST
1	8" DIP	LF	2,390		
2	6" DIP	LF	55		
3	8" Gate Valve	EA	21		
4	1" Service Connections (In Situ)	EA	29		
5	1" Service Connection (Relocate)	EA	3		
6	6" Fire Hydrant Assembly	EA	3		
7	1" Combination Air Valve Assembly	EA	5		
8	2" Blow-Off Assembly	EA	2		
9	Cathodic Protection (CP) Test Stations	EA	17		
10	Retaining Wall	EA	4		
11	Service Pad	EA	1		
12	Remove and Replace Gate Valve Boxes	EA	3		
13	Abandon Water Main	LS	1		
14	Abandon Pressure Regulating Vault	LS	1		
15	Concrete Curb and Gutter	LF	10		
16	Concrete Sidewalk	SF	40		
17	Concrete Driveway Approach	SF	110		
18	Concrete Valley Gutter	SF	160		
19	Asphalt Concrete Pavement Repairs	SF	1,500		
20	Type II Slurry Seal	SF	66,000		

BID SCHEDULE					
HASTINGS DR, VINE ST, BELMONT CANYON RD WATER MAIN IMPROVEMENTS					

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UNITS</u>	<u>QTY</u>	<u>UNIT COST</u>	<u>TOTAL COST</u>
21	CA MUTCD – Detail 22	LF	20	_____	_____
22	12" White Traffic Stripe	LF	65	_____	_____
23	Pavement Markings	SF	110	_____	_____
24	Potholing (District Requested)	EA	20	_____	_____
25	Street Sweeping	EA	35	_____	_____
26	Storm Water Pollution Control Plan	LS	1	_____	_____
27	Traffic Control Plan	LS	1	_____	_____
				Total Bid Price:	_____

LIST OF SUBCONTRACTORS

The Bidder is required to furnish the following information in accordance with the provisions of Sections 4100 to 4114, inclusive, of the Public Contract Code of the State of California. This list and information shall include all subcontractors that will perform work, provide labor or render services to the Bidder in connection with the project in an amount in excess of one-half of one percent of the total amount of Bidder's proposal. Each subcontractor shall be registered with the Department of Industrial Relations (DIR) and shall provide and list their Registration Number.

1. Name of Subcontractor: _____

Licensed Number: _____

DIR Registration No: _____

Address: _____

Description of Work to be Done Under Subcontractor: _____

Total Value of Work: _____

2. Name of Subcontractor: _____

Licensed Number: _____

DIR Registration No: _____

Address: _____

Description of Work to be Done Under Subcontractor: _____

Total Value of Work: _____

3. Name of Subcontractor: _____

Licensed Number: _____

DIR Registration No: _____

Address: _____

Description of Work to be Done Under Subcontractor: _____

Total Value of Work: _____

Do not list alternative subcontractors for the same work.

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**NON-COLLUSION DECLARATION
TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID**

The undersigned declares:

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

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

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

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

Signature of Bidder

Title

Date

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BIDDER'S BOND

BOND NO. _____

AMOUNT: \$ _____

KNOW ALL PERSONS BY THESE PRESENTS, that
_____ hereinafter called
the PRINCIPAL, and _____,
a corporation duly organized under the laws of the State of _____ having its
principal place of business at _____, in
the State of _____, and authorized to do business in the State of California,
hereinafter called the SURETY, are held and firmly bound unto the **Mid-Peninsula Water District**,
hereinafter called the OBLIGEE, or order in the sum of _____
Dollars (\$ _____) (being at least ten percent (10%) of the total amount of Principal's
proposal) lawful money of the United States, for the payment of which we bind ourselves, our
heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these
presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

WHEREAS, the PRINCIPAL has submitted its Proposal for the project entitled **Hastings Dr, Vine St, Belmont Canyon Rd Water Main Improvements** to the OBLIGEE, said Proposal, by reference thereto, being hereby made a part hereof.

NOW, THEREFORE, if said Proposal is rejected, or in the alternate, if said Proposal is accepted and the PRINCIPAL signs and delivers a Contract and furnishes a Performance Bond, Payment Bond, and a Certificate of Insurance evidencing the required insurance in the form and within the time required by the Proposal and the Contract Documents, then this obligation shall become null and void, otherwise the same shall remain in full force and effect, it being expressly understood and agreed that the liability of the SURETY for any and all default of the PRINCIPAL shall be the amount of this obligation as herein stated.

The SURETY, for value received, hereby agrees that the obligations of said SURETY and its bond shall not be impaired or affected by any extension of the time within which the OBLIGEE may accept such Proposal, and the SURETY hereby waives notice of any such extension.

In the event suit is brought upon this bond by the OBLIGEE and judgment is recovered, the SURETY shall pay, in addition to the sum set forth above, all costs incurred by the OBLIGEE in such suit, including a reasonable attorney's fees, to be fixed by the Court.

BIDDER'S BOND No. _____

Signed this _____ day of _____ 20 _____

(SEAL)

Principal: _____

By: _____

(SEAL AND NOTARIAL
ACKNOWLEDGEMENT
OF SURETY

Surety: _____

By _____
Attorney-in-Fact

* * *

Note: To be considered complete, both the principal and the surety must sign this bidder's bond. In addition, the surety's signature must be notarized and a copy of the surety's power of attorney must be attached.

BID SECURITY FORM

(TO BE USED IF A CHECK, RATHER THAN A
BIDDER'S BOND, ACCOMPANIES PROPOSAL)

Accompanying this Proposal is a cashier's check or certified check payable to the **Mid-Peninsula Water District** (hereinafter referred to as "Owner")

for _____ Dollars (\$ _____) this amount being at least 10 percent of the total amount of the Proposal. This check shall become the property of the Owner, and it shall be entitled to its proceeds, if the Bidder's Proposal is accepted by the Owner and the Bidder fails to sign and deliver the Contract and to furnish the required bonds and a Certificate of Insurance evidencing the required insurance within the time set forth in the Proposal and other Contract Documents. Otherwise the check shall be returned to the Bidder at the time set forth in the Contract Documents.

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**BIDDER'S STATEMENT OF QUALIFICATIONS
EXPERIENCE AND BUSINESS REFERENCES**

**MID-PENINSULA WATER DISTRICT
HASTINGS DR, VINE ST, BELMONT CANYON RD WATER MAIN IMPROVEMENTS**

The Bidder shall provide all of the following information requested, and shall ensure that all items are filled out completely. The Bidder hereby agrees that the submission of incomplete or false information may be considered as just cause for rendering the Bidder's Proposal as "non-responsive."

Name of Bidder _____

Address of Principal Office _____

1. Are you an individual _____, a partnership _____, a corporation _____, or a joint venture _____, or LLC _____? (Check as applicable)

If a partnership, list names and addresses of partners; if a corporation or LLC, list names of officers and directors and State of incorporation; if a joint venture, list names and addresses of venturers and if any venturer is a corporation, partnership or joint venture, list the same information for each such corporation, partnership and joint venture.

For the following questions, if a joint venture, give information for each of the venturers, by name. Attach additional sheets if necessary.

2. How many years has your organization been in business as a Contractor under your present business name? _____

3. How many years of experience has your organization had in construction work similar to the work you are interested in bidding?

(a) As a general contractor? _____

(b) As a subcontractor? _____

MANDATORY MINIMUM EXPERIENCE AND QUALIFICATION REQUIREMENTS

Bidders must satisfy each of the following mandatory minimum experience and qualification requirements. The requirements are "Pass/Fail" in that, if a bidder does not satisfy any of the mandatory requirements, the bid may be rejected as non-responsive.

Name of Contractor _____

4. Are you licensed as a Contractor to do business in California? _____
License No. _____ Classification _____
Department of Industrial Relations (DIR) Registration No. _____

5. It is mandatory that the bidder has successfully completed, or is currently working on at least five (5) DIP water main installation projects over the last ten (10) years. Accordingly, the following information must be provided for each project:

(a) Project: _____ Year: _____
Value of Work: \$ _____ Location: _____
Owner Reference: _____
Phone Number: _____

(b) Project: _____ Year: _____
Value of Work: \$ _____ Location: _____
Owner Reference: _____
Phone Number: _____

(c) Project: _____ Year: _____
Value of Work: \$ _____ Location: _____
Owner Reference: _____
Phone Number: _____

6. It is mandatory that the foreman designated for this project must have been the person in charge for at least (5) previous completed DIP water main installation projects. Accordingly, the following information must be provided for each project for which the foreman was in charge.

Name of Individual _____

Detail of Water Main Projects

(a) Project: _____ Year: _____
Value of Work: \$ _____ Location: _____
Owner Reference Name: _____
Phone Number: _____

(b) Project: _____ Year: _____
Value of Work: \$ _____ Location: _____
Owner Reference Name: _____
Phone Number: _____

(c) Project: _____ Year: _____
Value of Work: \$ _____ Location: _____
Owner Reference Name: _____
Phone Number: _____

(d) Project: _____ Year: _____
Value of Work: \$ _____ Location: _____
Owner Reference Name: _____
Phone Number: _____

(e) Project: _____ Year: _____
Value of Work: \$ _____ Location: _____
Owner Reference Name: _____
Phone Number: _____

BIDDER'S GENERAL QUALIFICATION INFORMATION

7. Please provide the following information all projects performed over the last five (5) years:

(a) Project: _____ Year: _____
Value of Work: \$ _____ Location: _____
Owner Reference: _____
Phone Number: _____

(b) Project: _____ Year: _____
Value of Work: \$ _____ Location: _____
Owner Reference: _____
Phone Number: _____

(c) Project: _____ Year: _____
Value of Work: \$ _____ Location: _____
Owner Reference: _____
Phone Number: _____

(d) Project: _____ Year: _____
Value of Work: \$ _____ Location: _____
Owner Reference: _____
Phone Number: _____

(e) Project: _____ Year: _____
Value of Work: \$ _____ Location: _____
Owner Reference: _____
Phone Number: _____

8. Please provide the following information regarding the individual designated as the project foreman:

Name of Foreman: _____

All Construction Training and Education: _____

All Construction –Related Certifications: _____

9. Have you or your organization, or any officer or partner thereof, failed to complete a contract? _____ If so, give details.

10. In what other lines of business are you financially interested?

11. Name the persons with whom you have been associated in business as partners or business associates in each of the last four years.

12. Provide information below about the experience of the principal individuals of your present organization including those individuals to be in charge of this project.

Name: _____

Present Position: _____ No. Years of Construction Experience _____

Type of Work: _____

Name: _____

Present Position: _____ No. Years of Construction Experience _____

Type of Work: _____

Name: _____

Present Position: _____ No. Years of Construction Experience _____

Type of Work: _____

13. Provide information below about your five (5) most current contracts underway, or for which you are committed.

(a) Type of Work _____ Location _____

Value \$ _____ Percent Complete % Completion Date _____

Performed for Whom? _____

(b) Type of Work _____ Location _____

Value \$ _____ Percent Complete % Completion Date _____

Performed for Whom? _____

(c) Type of Work _____ Location _____

Value \$ _____ Percent Complete % Completion Date _____

Performed for Whom? _____

(d) Type of Work _____ Location _____

Value \$ _____ Percent Complete % Completion Date _____

Performed for Whom? _____

(e) Type of Work _____ Location _____

Value \$ _____ Percent Complete % Completion Date _____

Performed for Whom? _____

14. References: Provide the names of at least five (5) engineers, architects, or owners, including public bodies, for whom you have done work recently:

(a) Name _____ Title _____
Company _____
Address/City/State _____
Phone Number _____

(b) Name _____ Title _____
Company _____
Address/City/State _____
Phone Number _____

(c) Name _____ Title _____
Company _____
Address/City/State _____
Phone Number _____

(d) Name _____ Title _____
Company _____
Address/City/State _____
Phone Number _____

(e) Name _____ Title _____
Company _____
Address/City/State _____
Phone Number _____

15. References: The following bank or banks can provide references as to the financial responsibility of the Bidder:

- (a) Name of Bank: _____
Street Address: _____
City, State and Zip Code: _____
Officer Familiar with Bidder's Account: _____
Telephone: _____
- (b) Name of Bank: _____
Street Address: _____
City, State and Zip Code: _____
Officer Familiar with Bidder's Account: _____
Telephone: _____
- (c) Name of Bank: _____
Street Address: _____
City, State and Zip Code: _____
Officer Familiar with Bidder's Account: _____
Telephone: _____

16. References: The following surety company or companies can provide references as to the financial responsibility and general reliability of the Bidder:

- (a) Name of Surety Company: _____
Name of Local Agent (if different) _____
Street Address: _____
City, State and Zip Code: _____
Person Familiar with Bidder's Account: _____
Telephone: _____
- (b) Name of Surety Company: _____
Name of Local Agent (if different) _____
Street Address: _____
City, State and Zip Code: _____
Person Familiar with Bidder's Account: _____
Telephone: _____

17. Is any litigation pending against your organization in the past 2 years? _____ If so, provide details below and on attached pages, if needed.

The undersigned bidder represents and warrants that the foregoing information is true and accurate to the best of his knowledge and the undersigned intends that the **Mid-Peninsula Water District** rely thereof in awarding the attached contract.

Signature of Bidder: _____

Title: _____

Dated: _____

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CONTRACT

THIS CONTRACT is made and entered into as of this ____ day of _____, 20__, by and between the **MID-PENINSULA WATER DISTRICT**, hereinafter called the "Owner" or "District" and _____, hereinafter collectively called the "Contractor."

THE PARTIES AGREE AS FOLLOWS:

1. **SCOPE OF WORK.** The Contractor shall perform all the work and furnish all the labor, materials, tools, equipment, machinery, services, transportation, incidentals and appurtenances required to complete the construction and installation of the work in accordance with the plans and specifications approved by the District entitled: **HASTINGS DR, VINE ST, BELMONT CANYON RD WATER MAIN IMPROVEMENTS, dated September 2021**, and which are appended hereto and made part of this agreement.

2. **BEGINNING OF WORK AND CONTRACT TIME OF COMPLETION.** After the Contract has been executed by the Owner, the Contractor shall begin work within five (5) working days from the effective date of the Notice to Proceed, issued by Owner, and shall complete all items required under this Contract within **Ninety-Five (95) working days from the effective date of the Notice to Proceed.**

3. **CONTRACT PRICE.** In consideration of the performance of the work as set forth in the Contract Documents, the Owner agrees to pay to the Contractor the amounts set forth in the Contractor's Proposal dated _____ 2021, as it may be hereafter adjusted in accordance with the Contract Documents, and to make such payments in the manner and at the times provided in the Contract Documents. The Contractor agrees to complete the work within the time specified herein and to accept as full payment the amounts provided for herein.

4. **COMPONENTS OF CONTRACT.** This Contract shall consist of the following documents each of which is on file in the Owner's office and all of which are hereby referred to and by this reference made a part hereof as fully and completely as if they were fully set forth herein:

- a) This Contract
- b) Notice Inviting Sealed Bids
- c) The Contractor's signed Proposal
- d) General Provisions
- e) Special Provisions (including permits)
- f) Technical Specifications
- g) Contract Drawings
- h) Addenda (if any)
- i) Contract Bonds
- j) Standard Specifications

The Contract will also include Contract Change Orders, if any, issued by the Owner as provided in the Contract Documents. The Contract represents the entire integrated agreement between the

parties hereto and supersedes prior negotiations, agreements or representations, whether written or oral, except representations contained in the Contractor's Qualifications Statement submitted prior to the award of Contract, if one was required. In the event of a conflict or inconsistency between Contractor's Proposal and this Contract, this Contract shall prevail.

5. **WORKERS' COMPENSATION CERTIFICATION.** By its signature hereunder, the Contractor certifies that it is aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that Code, and agrees to comply with such provisions before commencing the performance of the work of this Contract.

6. **NOTICES.** Any notices required or permitted under this Contract may be given by personal delivery to an authorized representative of the recipient or by certified or registered United States mail. In the case of the Contractor, notices shall be addressed to the business address specified in its Proposal. In the case of the Owner, notices shall be addressed to:

**Mid-Peninsula Water District
3 Dairy Lane
Belmont, CA 94002
Attn: Tammy Rudock**

A copy of any notices to the Owner shall also be concurrently mailed or delivered personally to the District Engineer.

Notice shall be presumed to be received three (3) business days after deposit in the mail, postage prepaid, or upon the date of delivery, if personally given.

7. **GOVERNING LAW.** This Contract is executed and shall be performed in Santa Clara County, California. It shall be governed by and construed in accordance with the laws of the State of California.

8. **RECORDS.** Owner representatives shall have the right to review and inspect any records of the Contractor related to this Contract during normal business hours at the location where such records are maintained.

9. **LEGAL ACTIONS; AGENT FOR SERVICE OF PROCESS.** Any action relating to this Contract, including all disputes between the parties, shall be instituted and prosecuted in a court of competent jurisdiction in Santa Clara County in the State of California.

Each party hereby appoints the individual listed opposite its name to act as its initial agent for service of process relating to any such action.

Mid-Peninsula Water District

3 Dairy Lane
Belmont, CA 94002
(650) 591-1435

Name of Individual Agent for
Service of Process

CONTRACTOR:

Name of Individual Agent for
Service of Process

Street Address

Telephone

IN WITNESS WHEREOF, the parties hereto have signed this Contract as of the day and year first above written.

MID-PENINSULA WATER DISTRICT:

CONTRACTOR:

BY: _____
General Manager

Name Under Which Business is Conducted

ATTEST: _____
District Secretary

BY: Name: _____

Title: _____
(President or Vice President)

APPROVED AS TO FORM:

California Contractor License No.:

Attorney for the District

Expiration Date: _____

Business Address:

Note: Format for Contract execution by Contractor will be adapted for a sole owner, partnership, corporation, LLC or joint venture, as appropriate.

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PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS, that

WHEREAS **MID-PENINSULA WATER DISTRICT** (hereinafter referred to as "District") has entered into a contract with _____ (hereinafter referred to as "Principal") for construction of the **Hastings Dr, Vine St, Belmont Canyon Rd Water Main Improvements** (the "Contract"); and

WHEREAS said Principal is required under the terms of said Contract to furnish a bond of faithful performance of said Contract,

NOW, THEREFORE, we, the undersigned Principal, and _____, as Surety, are held and firmly bound unto the District, in the sum of _____ Dollars (\$ _____) lawful money of the United States, to be paid to the District or its successors and assigns; for which payment, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the above-bound Principal, or its heirs, executors, administrators, successors, or assigns approved by the District, shall promptly and faithfully perform the covenants, conditions and agreements in the Contract during the original term and any extensions thereof as may be granted by the District, with or without notice to Surety, and during the period of any guarantees or warranties required under the Contract, and shall also promptly and faithfully perform all the covenants, conditions, and agreements of any alteration of the Contract made as therein provided, notice of which alterations to Surety being hereby waived, on Principal's part to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify, defend, protect, and hold harmless the District as stipulated in the Contract, then this obligation shall become and be null and void; otherwise it shall be and remain in full force and effect.

No extension of time, change, alteration, modification, or addition to the Contract, or of the work required thereunder, shall release or exonerate Surety on this bond or in any way affect the obligation of this bond; and Surety does hereby waive notice of any such extension of time, change, alteration, modification, or addition.

Whenever Principal shall be and declared by the District to be in default under the Contract, Surety shall promptly remedy the default, or shall promptly do one of the following at District's election:

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

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

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

In the event suit is brought upon this bond by the District, Surety shall pay reasonable attorney's fees and costs incurred by the District in such suit.

IN WITNESS WHEREOF, the above-bound parties have executed this instrument under their seals this _____ day of _____, 20____, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Principal:

By

Surety:

By

Attorney-In-Fact

Note: To be considered complete, both the principal and surety must sign this payment bond. In addition, the surety's signature must be notarized and a copy of the surety's power of attorney must be attached.

PAYMENT BOND

BOND NO. _____
AMOUNT: \$ _____

KNOW ALL PERSONS BY THESE PRESENTS, that _____ hereinafter called the PRINCIPAL, and _____ a corporation duly organized under the laws of the State of _____ having its principal place of business at _____, in the State of _____, and authorized to do business in the State of California, hereinafter called the SURETY, are held and firmly bound unto the **MID-PENINSULA WATER DISTRICT** hereinafter called the OBLIGEE, or order in the sum of _____ Dollars (\$_____) lawful money of the United States, being a sum equal to the total Contract price, for the payment of which, 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 has entered into a Contract with the OBLIGEE for the construction of **Hastings Dr, Vine St, Belmont Canyon Rd Water Main Improvements** and said PRINCIPAL is required under the terms of said Contract to furnish a bond securing payment of claims to which reference is made in Section 9554 of the Civil Code.

NOW, THEREFORE, if said PRINCIPAL or any of its subcontractors fails to pay any of the persons named in Section 9100 of the Civil Code, or amounts due under the Unemployment Insurance Code with respect to work or labor performed under the Contract, or any amounts required to be deducted, withheld and paid over to the Employment Development Department from the wages of employees of the Contractor and his subcontractors pursuant to Section 13020 of the Unemployment Insurance Code with respect to such work and labor, the SURETY will pay for the same, in an amount not exceeding the sum specified in this bond, and also will pay, in case suit is brought upon this bond, a reasonable attorney's fee, to be fixed by the court.

This bond will insure to the benefit of any of the persons named in Section 9100 of the Civil Code so as to give a right of action to such persons or their assigns in any suit brought upon this bond.

This bond is given to comply with Sections 9550 and 9554 of the Civil Code. The liability of the PRINCIPAL and SURETY hereunder is governed by the provisions of said Code, all acts amendatory thereof, and all other statutes referred to therein.

PAYMENT BOND No. _____

The SURETY, for value received, hereby agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or to the specifications incorporated therein shall impair or affect its obligations and its bond and it hereby waives notice of any such change, extension of time, alteration or addition.

IN WITNESS WHEREOF the above-bounded parties have executed this instrument this ____ day of _____, 20__, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representatives, pursuant to authority of its governing body.

PRINCIPAL:

By: _____

SURETY:

By: _____

Attorney-In-Fact

Note: To be considered complete, both the principal and surety must sign this payment bond. In addition, the surety's signature must be notarized and a copy of the surety's power of attorney must be attached.

GENERAL PROVISIONS
HASTINGS DR, VINE ST, BELMONT CANYON RD
WATER MAIN IMPROVEMENTS

**MID-PENINSULA WATER DISTRICT
HASTINGS DR, VINE ST, BELMONT CANYON RD WATER MAIN IMPROVEMENTS
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**MID-PENINSULA WATER DISTRICT
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SECTION 1 DEFINITIONS AND TERMS

G1.01 GENERAL

Whenever the following abbreviations and terms, or pronouns in place of them, appear in the Contract Documents, the intent and meaning shall be interpreted as provided in this Section 1. Working titles having a masculine gender, such as “workman” and “flagman” and the pronoun “he,” are used for the sake of brevity, and are intended to refer to persons of either sex.

G1.02 DEFINITIONS

As used herein, unless the context otherwise requires, the following terms have the following meaning:

Acceptance: The formal written acceptance by the Owner of an entire contract which has been completed in all respects in accordance with the Contract Documents.

Addenda: Written interpretations or revisions to any of the Contract Documents issued by the Owner before the bid opening.

Agents: The term “agents” means, in the case of the Owner, its Consulting Engineer/Architect, (if not the Engineer of the work and defined as the Engineer in the Contract Documents) and the Owner’s Legal Counsel.

As Approved: The words “as approved,” unless otherwise qualified, shall be understood to be followed by the words “by the Engineer/Architect for conformance with the Contract Documents.”

As Built Drawings: Hand drawings which depict field dimensions on the Project site.

As Shown; and As Indicated: The words “as shown” and “as indicated” shall be understood to be followed by the words “on the Contract Plans,” “in the Specifications” or “by the Contract Documents” as appropriate.

Bidder: Any individual, firm, partnership, corporation or combination thereof, submitting a proposal for the work contemplated, acting directly or through a duly authorized representative.

Board, Board of Directors or Directors: The Board of Directors of the **Mid-Peninsula Water District**, the Owner

CalTrans: The Department of Transportation, Business & Transportation Agency, State of California.

Contract Change Order: An order authorized by the Owner and issued to the contractor amending the Contract Documents. An “approved Contract Change Order” is an order signed by the Engineer or the General Manager. An “executed Contract Change Order” is an order signed by the Engineer or the General Manager and the Contractor.

Contract: The written agreement covering the performance of the work and the furnishing of labor, materials, tools and equipment in the construction of the work. The Contract shall include the Contract Documents, and any and all supplemental agreements. Supplemental agreements are written agreements covering alterations, amendments or extensions to the Contract and include contract change orders.

Contract Completion: The date the Owner accepts the entire work as being in compliance with the Contract Documents, or formally waives nonconforming work to the extent of nonconformity, and issues the final payment in accordance with Section 9 of these General Provisions.

Contract Documents: The Contract Documents consist of the Advertisement for Proposals, Information for Bidders, Notice to Contractors, General Provisions, Specifications, Technical Specifications, Proposal and Proposal Documents, Contract, Contract Drawings, Addenda, Change Orders, Clarifications, Responses to RFIs, and Field Changes.

Contractor: The person or persons, firm, partnership, corporation or combination thereof, private or municipal, who enters into the Contract with the Owner.

Contract Drawings: The official plans, profiles, cross sections, elevations, details, and supplemental drawings furnished by the Engineer, which show the locations, character, dimensions and details of the work to be performed. Contract Plans may either be bound in the same book as the balance of the Contract Documents or bound in separate sets and are a part of the Contract Documents regardless of the method of binding, also referred to as "Contract Plans," "Plans" and "Drawings."

County: The County of San Mateo.

Days: Unless otherwise designated, "days" will be understood to mean calendar days.

DIR: Department of Industrial Relations, State of California

District: The Mid-Peninsula Water District.

Engineer: Pakpour Consulting Group, Inc., the Owner's Engineer, unless otherwise defined in the Special Provision.

Engineer Estimate: The list of estimated quantities of work to be performed as contained in the Proposal Form.

Federal Agencies: Whenever, in the Specifications, reference is made to any Federal agency or officer, such reference shall be deemed made to any agency or officer succeeding, in accordance with law, to the powers, duties, jurisdiction and authority of the agency or officer mentioned.

Field Changes: A document that records minor variations or changes in the plans and/or specifications, which minor variations do not affect the basic design, schedule, compensation or other material terms of the contract.

Fixed Costs: Any necessary labor, material and equipment costs directly expended on the item or items under consideration which remain constant regardless of the quantity of the work done.

General Manager: General Manager of the Mid-Peninsula Water District.

General Notes: The written instructions, provisions, conditions or other requirements appearing on the Contract Drawings, and so identified thereon, which pertain to the performance of the work.

Legal Holidays: Those days designated as State holidays by the Government Code or declared by the Board.

Liquidated Damages: The amount prescribed in the Contract Documents to be paid to the Owner or to be deducted from any payments due or to become due the Contractor for each calendar day's delay in completing the whole, or any specified portion, of the work beyond the time allowed in the Contract Documents.

Notice to Proceed: A written notice given by the Owner to the Contractor fixing the date on which the Contract time will commence to run and on which the Contractor shall start to perform his obligation under the Contract Documents.

Office of the Owner: Whenever reference is made to the Office of the Owner or the Owner's office, such reference shall be deemed made to the Owner's office at 3 Dairy Lane, Belmont, CA 94002.

Or Equal: The term "or equal" shall mean that the "equal" product is the same or better than the product named in function, performance, reliability, quality and general configuration. Determination of equality in reference to the project design requirements will be made by the Engineer. Such equal products shall not be purchased or installed by the Contractor without written acknowledgement of the Engineer.

Owner: The Mid-Peninsula Water District.

Plans: Refer to Contract Drawings.

Professional Engineer: An engineer licensed by the Board of Registration for Professional Engineers, State of California.

Project: A term sometimes used to reference the work of improvement called for under the Contract.

Proposal: The offer of the bidder for the work, when made out and submitted on the prescribed proposal form, properly executed and guaranteed, and all related documents submitted with the proposal.

Proposal Form: The approved form upon which the Owner requires formal bids be prepared and submitted for the work.

Proposal Guaranty: The cashier's check or Bidder's Bond accompanying the proposal submitted by the bidder, as a guaranty that the bidder will enter into a contract with the Owner for the performance of the work, if the Contract is awarded to him. Also referred to as "Bidder's Security."

Provide: The term "provide" shall be understood to mean "furnish and install, complete and in place."

Record Drawings: Contract plans which depict the Project as finally constructed, including any modifications during the construction phase.

Responsive: A "responsive" Proposal is one which complies with the requirements prescribed in the Contract Documents for Proposals.

Standards Specifications: The current revision of the Standard Specifications of the State of California, Department of Transportation, unless noted otherwise on the plans and Technical Specifications. Any

reference there in to the State of California or state agency, office of officer shall be interpreted to refer to the County or its corresponding agency, office or officer acting under this contract.

Special Provisions: The Special Provisions are specific clauses setting forth conditions or requirements of the work and supplementary to these General Provisions, and also may be referred to as Division 1 Specifications.

Standards Specifications: The current revision of the Standard Specifications of the State of California, Department of Transportation, unless noted otherwise on the plans and Technical Specifications. Any reference therein to the State of California or a state agency, office or officer shall be interpreted to refer to the County or its corresponding agency, office or officer acting under this contract.

Specifications: The term “Specifications” refers to those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards, and workmanship as applied to the work and certain administrative details applicable thereto. Where standard specifications, such as those of ASTM, AASHTO, etc., have been referred to, the applicable portions of such standard specifications shall become a part of these Contract Documents. If referenced specifications conflict with Specifications contained herein, the requirements contained herein shall prevail. Also referred to as “Technical Specifications.”

State: The State of California.

Work: The word “work” includes all material, labor, tools, and all appliances, machinery, transportation, and appurtenances necessary to perform and complete the Contract, and such additional items not specifically indicated or described which can be reasonably inferred as belonging to the item described or indicated and as required by good practice to provide a complete and satisfactory system or structure.

Work Site: The area or areas of actual construction and the areas immediately adjacent thereto.

G1.03 ABBREVIATIONS

As used herein, unless the context otherwise requires, the following abbreviations have the following meanings:

AAMA	Architectural Aluminum Manufacturers’ Association
AAN	American Association of Nurserymen
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AGA	American Gas Association
AIA	American Institute of Architects
AIEE	American Institute of Electrical Engineers
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Movement and Control Association
ANSI	American National Standards Institute
APA	American Plywood Association
APWA	American Public Works Association
API	American Petroleum Institute

AREA	American Railway Engineering Association
ARI	American Refrigeration Institute
ASA	American Standards Association
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AT&T	American Telephone and Telegraph
AWG	American Wire Gage
AWPA	American Wood Preservers' Association
AWS	American Welding Society
AWWA	American Water Works Association
CS	Commercial Standards (US Department of Commerce)
CSI	Construction Specifications Institute
DIR	Department of Industrial Relations
DOT	United States Department of Transportation
EIA	Electronic Industries Association
EPA	Environmental Protection Agency
FGMA	Flat Glass Marketing Association
FHWA	Federal Highway Administration
FM	Factory Mutual
FS	Federal Specification
IAMPO	International Association of Mechanical and Plumbing Officials
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronics Engineers
NAAMM	National Association of Architectural Metal Manufacturers
NBFU	National Owner Council Fire Underwriters
NEC	National Electrical Code
NEMA	National Electrical Manufacturers' Association
NFC	National Fire Code
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration
PEI	Porcelain Enamel Institute
PG&E	Pacific Gas and Electric Company
PS	Product Standard (US Department of Commerce)
SAE	Society of Automotive Engineers
SCPO	Structural Clay Products Institute
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SSPC	Steel Structures Painting Council
TCA	Tile Council of America
TPI	Truss Plate Institute
UBC	Uniform Building Code
UL	Underwriters' Laboratory
UMC	Uniform Mechanical Code
UPC	Uniform Plumbing Code
WCLIB	West Coast Lumber Inspection Bureau
WIC	Woodwork Institute of California
WWPA	Western Wood Products' Association

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SECTION 2 PROPOSAL REQUIREMENTS, INSTRUCTIONS TO BIDDERS

G2.01 OBTAINING PROPOSAL FORMS

Proposal forms and other bid documents shall be obtained from the **Mid-Peninsula Water District, 3 Dairy Ln, Belmont, CA 94002.**

G2.02 ENGINEER'S ESTIMATE

If an Engineer's Estimate of quantities is given in the Proposal, the quantities are approximate only, being given as a basis for the comparison of bids. The Owner does not, expressly or by implication, agree that the actual amount of work will correspond to the estimate. The Owner reserves the right to increase or decrease the amount of any class or portion of the work or to omit portions of the work.

G2.03 EXAMINATION OF CONTRACT DOCUMENTS AND SITE OF WORK

The bidder shall examine carefully the Contract Documents and the site of work and shall inform himself of the conditions relating to the execution of the work. Failure to do so will not relieve the successful bidder of his obligation to enter into a Contract and complete the work in strict accordance with the Contract Documents. If the bidder does not investigate the site, the bidder is responsible for all site conditions had the bidder performed a reasonable site inspection. "Conditions relating to the execution of the work" include the requirements of federal, state and local laws, statutes and ordinances relative to the execution of the work, including, but not limited to, applicable regulations concerning minimum wage rates, non-discrimination in the employment of labor, protection of public and employee health and safety, and environmental protection. The submission of a Proposal shall be conclusive evidence that the bidder has investigated and is satisfied as to the conditions to be encountered, the character, quality and scope of work to be performed, the quantities of materials to be furnished and the requirements of the Contract Documents.

G2.04 SURFACE TOPOGRAPHY; SUBSURFACE CONDITIONS DATA

Where an investigation of surface topography and/or subsurface conditions has been conducted in areas where work is to be performed, prospective bidders may inspect the records of such investigations at the Owner's office subject to and upon the conditions set forth in these Contract Documents.

Investigations of surface topography and/or subsurface conditions were made for the purpose of study and design only and neither the Owner nor the Engineer(s) which conducted such investigations assumes any responsibility whatsoever in respect to the sufficiency or accuracy of the investigations thus made, the records thereof, or of the interpretations set forth therein or made by the Owner in its use thereof. There is no warranty or guaranty, either express or implied, that the conditions indicated by such investigations are representative of those existing throughout such areas, or any part thereof, or hat unforeseen developments may not occur, or that materials other than or in proportions different from those indicated may not be encountered.

Logs of test borings, geotechnical reports, or topographic maps showing a record of the data obtained by the Owner's investigations of surface and subsurface conditions that are made available shall be considered a part of the Contract Documents. While such logs, reports and maps represent the opinion

of the consultant retained by the Owner as to the character of the materials encountered by him in his investigations, the Owner provides no assurances as to their accuracy and they are made available only for the convenience of the bidder and Contractor. In the event that Contractor encounters differing site conditions, please refer to General Provision G4.03.

The availability or use of information described in this Section G2.04 is not intended to be and shall not be construed to be a waiver of the provisions of Section G2.03, and will not relieve the bidder or 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.

G2.05 EXPLANATIONS

Any explanation of the Contract Documents desired by a prospective bidder shall be requested in writing from the Engineer, and delivered to Owner no less than fourteen (14) calendar days prior to the date for opening of proposals. Any explanation, instruction, or change to Contract Documents will be made by written addendum which will be mailed or delivered to each firm receiving a set of the Contract Documents. Upon mailing or delivery, such addendum will become a part of Contract Documents and binding on all bidders. The receipt of the addendum by the bidder shall be acknowledged and so noted in the space provided on the Proposal Form. All addenda shall be attached to the Proposal. Only written explanations, instructions or changes so given by the Owner will be effective. Oral explanations or instructions will not be binding on the Owner.

G2.06 PREPARATION OF PROPOSALS

The form of Proposal in this book, when filled out and executed by the bidder, shall be submitted as his bid. Bids not presented on such forms will be disregarded.

All blank spaces in the Proposal form must be filled in, as required, preferably in black ink. All price information shall be shown, clearly legible, in both words and figures, where required. No changes shall be made in the phraseology of the forms. Written amounts shall govern in the case of discrepancy between the amounts stated in writing and the amounts stated in figures. In case of discrepancy between unit prices and extended totals, unit prices shall prevail.

The bidder shall sign his Proposal in the blank space provided for that purpose. If bidder is the sole owner, the Proposal shall be signed by the owner. If bidder is a corporation, it must be signed by two officers of the corporation consisting of (1) the chair of the board, president or vice president; and (2) the secretary, assistant secretary, chief finance officer or assistant treasurer, or by a person authorized by the corporation to execute written contracts on its behalf, and the corporate seal affixed thereto. If the corporate seal is not affixed to the contract, or if it is executed by a person other than an officer, or by only one officer, there must be attached to the contract a certified copy of a resolution of the corporation authorizing such officer or person to execute written contracts for and on behalf of the corporation. If bidder is a partnership, the true name of the firm shall be set forth above, the names and addresses of all partners shall be given and the Proposal shall be signed by a partner in the firm authorized to sign contracts on behalf of the partnership. If the bidder is a joint venture, the Proposal shall be signed by each participating company by officers or other individuals who have the full and proper authorization to do so. If the Proposal is signed by an agent of the bidder other than an officer of a corporation or a member of a partnership, a notarized power of attorney must be on file with the Owner prior to opening

of Proposals or must be submitted with the Proposal. If requested by the Owner, the bidder shall promptly submit evidence satisfactory to the Owner of the authority of the person signing the Proposal.

G2.07 SUBMISSION OF PROPOSALS

All Proposals must be submitted not later than the time prescribed, at the place, and in the manner set forth in the Notice to Contractors. Proposals must be made on the Proposal forms provided. Proposals and other required forms may be copied and submitted as a separate package or may be left attached to this book. Any Proposal received after the prescribed time shall be rejected, regardless of whether or not Proposals are opened exactly at the prescribed time.

Each Proposal must be submitted in a sealed envelope. The envelope must be clearly marked to show the bidder's name and the Contract name, without being opened, and be addressed in conformance with the instructions in the Information for Bidders.

G2.08 LIST OF SUBCONTRACTORS

The bidder shall submit with his Proposal, on the List of Subcontractors provided, the names and business addresses of each subcontractor who will perform work under this Contract in excess of one-half (1/2) of one percent (1%) of the amount of the total Proposal, and shall list the portion of the work which will be done by each such subcontractor as required by Public Contract Code Sections 4100 et. seq. If the bidder fails to specify a subcontractor for any portion of the work, the bidder agrees to perform that portion of the work himself, and represents that he is qualified to perform that portion of the work himself.

Pursuant to Labor Code Section 1725.5, no subcontractor may be listed on a Bid Proposal for a public work project unless they are registered with the DIR.

G2.09 PROPOSAL GUARANTY

All Proposals shall be accompanied by a cashier's check or certified check, payable to the Owner or a Bid Bond so payable executed by a corporation admitted and authorized to transact business as a surety in the State of California in an amount not less than ten percent (10%) of the total amount of the Proposal submitted.

This bid security shall be given as a guaranty that the bidder will not withdraw his Proposal for one hundred twenty (120) days after bid opening, and that if awarded the Contract, the successful bidder will execute the attached Contract and furnish a properly executed Performance Bond and Payment Bond each in the full amount of the Contract price within the time specified.

If the bidder elects to furnish a Bid Bond, he shall use the Bid Bond form bound herewith; additional forms may be obtained from the Owner. The Attorney-in-Fact who executes this bond on behalf of the surety must attach a notarized copy of his power of attorney as evidence of his authority to bind the surety on the date of execution of the bond. Any conditions or limitation placed upon the check or any alteration of the form of said bond, or imperfection in the execution thereof, will render it informal and may, at the option of the Owner, result in the rejection of the Proposal.

If the Bidder elects to furnish a certified or cashier's check, he shall also submit therewith the Bid Security Form included herewith.

G2.10 NON-COLLUSION DECLARATION

All Proposals shall be accompanied by an executed non-collusion declaration in the form required by Public Contract Code Section 7106.

G2.11 WITHDRAWAL OF PROPOSALS

A bidder may withdraw his Proposal at any time prior to the time fixed in the Information for Bidders for the opening of bids only by filing a written notice with the Owner. The notice shall be executed by the bidder in conformance with Section G2.06. A telegraphic notice of withdrawal is not effective. Withdrawal of a Proposal does not prejudice the right of a bidder to submit a new Proposal. No Proposal may be withdrawn after the time scheduled for opening of Proposals, unless and until the time specified in Section G3.02, Time of Award, has elapsed.

G2.12 PUBLIC OPENING OF PROPOSALS

Proposals will be opened and read aloud publicly at the date, time and place designated in the Information for Bidders. Bidders and their authorized representatives are invited to be present.

G2.13 REJECTION OF PROPOSALS

Proposals may be rejected if they show such items as: any alteration of form; additions not called for; conditional bids; incomplete bids; erasures; irregularities which make the Proposals incomplete, indefinite or ambiguous; obviously unbalanced prices; no acceptable Bid Security; or if the Proposal is not properly executed.

Proposal may be rejected if contractor or subcontractor(s) is not registered with the Department of Industrial Relations (DIR).

G2.14 DISQUALIFICATION OF BIDDERS

More than one Proposal from an individual, firm, partnership, corporation or combination of such under the same or different names will not be considered. Reasonable grounds for believing that any individual, firm, partnership, corporation or combination of such is interested in more than one Proposal for the work contemplated may cause the rejection of all Proposals in which such individual, firm, partnership, corporation or combination thereof is interested. If there is reason for believing that collusion exists among the bidders, any or all Proposals may be rejected. A party who has quoted prices on materials or work to a bidder is not thereby disqualified from quoting prices to other bidders, or from submitting a bid directly for the materials or work. A Proposal may be rejected on the basis of a bidder, any officer of such bidder, or any employee of such bidder who has a proprietary interest in such bidder, having been disqualified, removed, or otherwise prevented from bidding on or completing, a federal, state or local project because of a violation of law or a safety regulation.

G2.15 LICENSING AND REGISTRATION OF BIDDERS

Bidders and their proposed subcontractors shall hold such licenses as may be specified in the Information for Bidders and as may be required by Division 3, Chapter 9 of the California Business and Professions Code concerning the licensing of contractors. As a matter of bidder responsibility, each bidder shall be

properly licensed in accordance with the laws of the State of California at the time of bid award. This Contract is subject to monitoring and enforcement by the DIR pursuant to Labor Code Section 1771.4. Contractor must post notices, as prescribed by Title 8 California Code of Regulations Section 16451(d). Contractor and all of its subcontractors must be registered with the DIR.

G2.16 RESPONSIBILITY OF BIDDERS

Bidders shall, if requested by the Owner, submit a statement of qualifications which shall include experience in the type of work to be performed, financial condition, available construction equipment, and listing of all agencies for which work has been performed during the past two years. The Owner may reject the Proposal of any bidder on the basis of insufficient work experience, insufficient financial capability, inadequate equipment, poor performance on work previously completed for the Owner or other agencies or previous violation of safety or other legal requirements resulting in disqualification or otherwise being prevented from bidding on federal, state or local agency projects.

G2.17 RELIEF OF BIDDERS

Unless the Owner in its sole discretion elects otherwise, a bidder shall not be relieved of his bid nor shall any change be made in his bid because of mistake, but he may bring an action against the Owner in a court of competent jurisdiction in the county in which the bids were opened for the recovery of the amount forfeited, without interest or costs. In the event the bidder who brings an action against the District fails to recover a judgment, the bidder shall pay all costs incurred by the District in the suit, including reasonable attorneys' fees to be fixed by the court.

If the bidder brings such action it shall be his responsibility to establish that:

- A. A mistake was made;
- B. He gave the Owner written notice within five (5) days after the opening of the Proposals of the mistake, specifying in the notice in detail how the mistake occurred;
- C. The mistake made the Proposal materially different than he intended it to be; and
- D. The mistake was made in filling out the Proposal and was not due to error in judgment nor to carelessness in inspecting the site of the work, nor in reading the Contract Documents.

G2.18 INELIGIBLE CONTRACTORS

Pursuant to Public Contract Code Section 6109, by submitting its bid, a bidder certifies that it has not been deemed ineligible to bid, work on or be awarded a public works project pursuant to California Labor Code Sections 1777.1 or 1777.7 and that it will not use any subcontractors to perform work on the public works project that have been deemed ineligible to perform work on a public works project pursuant to California Labor Code Sections 1777.1 and 1777.7. Any contract on a public works project between a contractor and a debarred subcontractor by the Contractor is void as a matter of law. Any public money paid to a debarred subcontractor by the Contractor shall be returned to the City. The Contractor shall be responsible for the payment of wages to any workers of the debarred subcontractor who worked on the project.

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SECTION 3 AWARD AND EXECUTION OF CONTRACT

G3.01 AWARD OF CONTRACT

The Owner reserves, in its sole discretion, the right to reject any and all Proposals and to waive any informalities and irregularities in Proposals received, other provisions in the Contract Documents notwithstanding.

The Proposals will be compared on the basis of the Total Bid Price which is the sum of the lump sum bid items and, for unit price items, the sum of the products of the Engineer's Estimate of quantities shown in the Proposal multiplied by the unit bid price. In the event of a discrepancy between the unit bid price and the extension price, the unit price shall govern and the mathematical error corrected accordingly. Any mathematical errors that appear on the face of the bid will be corrected by the Owner and the Owner will use the mathematically correct Total Bid Price to determine the lowest monetary bidder.

The award of the Contract, if it be awarded, will be made to the lowest responsible, responsive bidder.

In addition, the Owner reserves, in its sole discretion, the right to award the Contract for all or some of the bid items included in the Bid Schedule. The Owner may eliminate some of the bid items prior to or after award of the Contract due to budgetary constraints.

G3.02 TIME OF AWARD

Within sixty (60) days after the opening of Proposals, the Owner will either reject all Proposals or award the Contract to the lowest responsible, responsive bidder. If the lowest responsible, responsive bidder refuses or fails to execute the Contract and provide an acceptable Performance Bond, Payment Bond and insurance certificate(s), the Owner may award the Contract to the second lowest responsible, responsive bidder. Such award, if made, will be made within seventy-five (75) days after the opening of Proposals. If the second lowest responsible, responsive bidder refuses or fails to execute the Contract and provide an acceptable Performance Bond, Payment Bond and insurance certificate(s), the Owner may award the Contract to the third lowest responsible, responsive bidder. Such award, if made, will be made within ninety (90) days after the opening of Proposals. The periods of time specified above within which an award of Contract may be made shall be subject to extension for such further period as may be agreed upon in writing by the Owner and the bidder or bidders concerned.

G3.03 EXECUTION OF CONTRACT

The successful bidder shall, within fifteen (15) calendar days after having received notice that the Contract has been awarded, sign and deliver to the Owner a Contract in the attached form together with the Contract Bonds and insurance certificates executed as required in the Contract Documents. After receiving the signed Contract with acceptable bonds and insurance certificates from the successful bidder, the Owner will promptly sign the Contract.

G3.04 MANNER OF EXECUTION OF CONTRACT

If the Contractor is an individual, the contract shall be executed personally by the Contractor. If the Contractor is a co-partnership, it is desirable that the contract be executed by all of the partners, but it may be executed by one of them. If the Contractor is a corporation, it must be executed by two officers

of the corporation consisting of (1) the chairman of the board, president or vice president; and (2) the secretary, assistant secretary, chief finance officer or assistant treasurer, or by a person authorized by the corporation to execute written contracts on its behalf, and with the corporate seal affixed. If the corporate seal is not affixed to the contract, or if it is executed by a person other than an officer, or by only one officer, there must be attached to the contract a certified copy of a resolution of the corporation authorizing such officer or person to execute written contracts for and on behalf of the corporation. If the Contractor is a joint venture, the contract must be executed on behalf of each participating firm by officers or other individuals who have the full and proper authorization to do so. If the Contractor is a limited Liability Company (LLC), the contractor must be executed by an officer or member who has full and proper authorization to do so.

G3.05 CONTRACT BONDS

The bidder to whom the Contract is awarded shall furnish the following bonds ("Contract Bonds"):

- A. Performance Bond, in an amount not less than one hundred percent (100%) of the Contract price, to secure faithful performance of the Contract and guarantee the correction of work during the warranty period of two (2) years from the date of final acceptance by the Owner.
- B. Payment Bond, in an amount not less than one hundred percent (100%) of the Contract price, to secure payment of all persons supplying labor or materials for the construction of the work.

Contract Bonds shall be on the attached forms and shall be executed as surety by a corporation admitted and authorized to issue surety bonds in the State of California, with a financial condition and record of service satisfactory to Owner.

All alterations, extensions of time, extra and additional work and other changes authorized by the Contract Documents may be made without securing the consent of the surety or sureties on the Contract Bonds.

G3.06 FAILURE TO EXECUTE CONTRACT

Failure of a bidder to whom the Contract is awarded to promptly and properly execute the Contract or furnish acceptable Contract bonds, or certificates of insurance, shall be just cause for the annulment of the award and the forfeiture of such bidder's Proposal Guaranty. The Proposal Guaranty shall be retained by the Owner as liquidated damages and it is agreed that this sum is a fair estimate of the amount of damages the Owner will sustain in case the successful bidder fails to enter into a Contract.

G3.07 RETURN OF PROPOSAL GUARANTY

Within fifteen (15) days after the award of the Contract, the Owner will return the Bidder's Bond, or the certified or cashier's check to all the BIDDERS except for the three lowest responsible BIDDERS. When the CONTRACT is executed, the bonds of the two remaining unsuccessful BIDDERS will be returned. Retained Proposal guaranties will be held until one hundred twenty (120) days after opening of Proposals or until the Contract has been finally executed, whichever occurs first, after which all Proposal guaranties, other than Bidder's Bonds and any guaranties that have been forfeited, will be returned.

G3.08 BID PROTESTS

The Owner will consider written bid protests subject to the following procedures. All protests must clearly specify in writing the grounds and evidence on which the protest is based. Protests based upon restrictive specifications or alleged improprieties in the bidding procedure which are apparent or reasonably should have been discovered prior to the bid opening shall be filed in writing with the Owner, at least five (5) days prior to bid opening. Protests based upon alleged improprieties that are not apparent or which could not reasonably have been discovered prior to bid opening shall be submitted in writing to the Owner, within forty-eight (48) hours from receipt of notice from the Owner advising of the recommendation for award of contract.

Failure to comply with these requirements may result in rejection of the protest.

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SECTION 4 SCOPE OF WORK

G4.01 INTENT OF CONTRACT DOCUMENTS

The Contract Documents are complementary, and what is called for by one shall be as binding as if called for by all. The intent of the Contract Documents is to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. When the Contract Documents describe portions of the work in general terms but not in complete detail, it is understood that the best general practice shall be followed and only materials and workmanship of the best standard quality shall be used. Any work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result shall be supplied, whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe work, materials or equipment, such words shall be interpreted in accordance with that meaning.

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

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

The Owner makes no warranty whatsoever, express or implied, with respect to the Contract Documents other than that the Contract Plans and Specifications were prepared by a professional engineer registered to practice in the State of California.

G4.02 EXAMINATION AND VERIFICATION OF CONTRACT DOCUMENTS

The Contractor shall thoroughly examine and become familiar with all of the various parts of these Contract Documents and determine the nature and location of the work, the general and local conditions, and all other matters which can in any way affect the work under this Contract. Failure to make an examination necessary for this determination shall not release the Contractor from the obligations of this Contract. No oral agreement or conversation with any officer, agent or employee of the Owner, or with the Engineer either before or after the execution of this Contract, shall affect or modify any of the terms or obligations contained in the Contract Documents.

G4.03 DIFFERING SITE CONDITIONS

Pursuant to Public Contract Code Section 7104, the Contractor shall promptly, and before such conditions are disturbed, notify the Engineer in writing of: (1) material that the Contractor believes may be material that is hazardous waste, as defined in California Health and Safety Code Section 25117, that is required to be removed to a Class I, Class II or class III disposal site in accordance with provisions of existing law; (2) subsurface or latent physical conditions at the site differing materially from those indicated in this Contract; or (3) unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this Contract.

The Engineer/Architect shall promptly investigate the conditions. If the Engineer/Architect finds that such conditions do materially differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work under this Contract, whether or not changed as a result of such conditions, then an equitable adjustment shall be made and the Contract modified in accordance with the change order procedures set forth below. In the event of any dispute between the Owner and the Contractor over the significance or existence of the changed conditions, the Contractor shall not be excused from the scheduled completion date, but shall retain such rights it may have as provided in these Contract Documents.

No claim of the Contractor under this clause shall be allowed unless the Contractor has given the notice required by this Section, except that the Owner may extend the prescribed time. No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under this Contract.

G4.04 CHANGES; CONTRACT CHANGE ORDER

The Owner may, without notice to the sureties, and without invalidating the Contract, at any time make alterations, deviations, additions to or deletions from the Contract Documents, and may increase or decrease the quantity of any item or portion of the work, or delete any item or portion of the work, and may require extra work, as determined by the Owner to be necessary or advisable. All such work shall be performed under applicable provisions of the Contract Documents, unless specifically provided otherwise at the time the change is ordered.

Any such changes will be set forth in a written Contract Change Order issued by the Owner. The Contract Change Order will specify: (1) the work to be done in connection with the change to be made; (2) the amount of the adjustment of the Contract price, if any, and the basis for compensation for the work ordered; and (3) the extent of the adjustment in the Contract time, if any. A Contract Change Order shall not become effective until it has been signed by the General Manager. When signed by the General Manager it is an "approved Contract Change Order."

No changes or deviations from the Contract Documents shall be made without the authority of an approved Contract Change Order, except that in cases of emergency the Engineer/Architect may direct a change in writing. Upon receipt of such written directive, the Contractor shall proceed with the ordered work and the Engineer will prepare a written Contract Change Order for approval and issuance to the Contractor as soon as practicable.

Upon receipt of an approved Contract Change Order, the Contractor shall promptly proceed with the ordered work, unless otherwise provided in the approved Contract Change Order. When ordered by the Engineer/Architect, the Contractor shall halt work in the area affected by a proposed change.

Whenever it appears to the Contractor that a change is necessary, the Contractor shall immediately, but no later than five (5) days after becoming aware of the need for a change, notify the Engineer/Architect in writing of the change he believes necessary and the reasons for such change. However, work in the area affected shall not be discontinued unless ordered by the Engineer/Architect.

G4.05 REQUEST FOR QUOTATIONS FOR CHANGE IN WORK

Owner may request Contractor to provide quotations for performing proposed changes to the work. Such requests for quotations shall not be considered authorization to proceed with the change prior to issuance of an approved Contract Change Order, nor shall such request justify any delay in executing existing work. Contractor shall, upon such a request, provide quotations for increases or decreases in the Contract Price and the Contract time associated with performing the proposed change. Quotations shall be in the form specified by the Engineer/Architect and shall include substantiating documentation with an itemized breakdown of Contractor and Subcontractor costs, including labor, materials, rentals, services, overhead and profit. The cost of preparing such quotations is included in the Contract price and Contractor shall not be entitled to any additional compensation for preparing them.

G4.06 PROPOSED CONTRACT CHANGE ORDER

A Contract Change Order may be presented to the Contractor for his consideration prior to its having been approved. If the Contractor accepts the terms and conditions of such proposed Contract Change Order, and if the Contract Change Order is then approved and issued to the Contractor, the Contract Change Order shall be considered to be an executed Contract Change Order for all purposes to the same extent as if the Contract Change Order had been initially issued to the Contractor as an approved Contract Change Order. The Owner need not present a proposed Contract Change Order to the Contractor for his review prior to issuing it as an approved Contract Change Order.

G4.07 EXECUTED CONTRACT CHANGE ORDER

An approved Contract Change Order which has been signed by the Contractor is an “executed Contract Change Order.” Compensation paid pursuant to Contract Change Orders shall comprise the total compensation for the work described in the Contract Change Order. By signing the Contract Change Order, the Contractor agrees that the specified compensation constitutes full compensation for the work or change, including payment for interruption of schedules, extended overhead, delay or any other “impact” claim or “ripple effect” claim, and by signing, the Contractor specifically waives any reservation or claim for additional compensation in respect to the Contract Change Order.

G4.08 CONTRACT PRICE ADJUSTMENT

If a Contract Change Order provides for an adjustment to the Contract price, the increased payment to Contractor, or the deduction to the credit of the Owner, shall be determined by one of the following methods, or a combination of these methods, as determined by the Owner and at its sole option:

- A. **Unit Prices.** The unit prices set forth in the Proposal shall be utilized where they are applicable. If the Contract Change Order increases or decreases the quantity of an item of work by more than twenty-five percent (25%), such that the application of unit prices in the Proposal will cause substantial inequity to the Owner or Contractor, unit prices will be adjusted by mutual agreement or, in the absence of agreement, as determined by the Engineer and subject to protest by the Contractor pursuant to Section G4.09. Unit prices for new items included in the Contract Change Order shall be as mutually agreed upon or, in the absence of agreement, as determined by the Engineer/Architect and subject to protest by the Contractor pursuant to Section G4.09.

Payment for any contract item of work which has a final total value of less than five percent of the total contract bid price will be made at the contract unit price regardless of increased or decreased quantities.

- B. **Lump Sum.** A total lump sum addition or deduction from the Contract Price as mutually agreed upon.

Lump sum quotations for changes to the work shall include substantiating documentation with an itemized breakdown of Contractor and Subcontractor costs, including labor, materials, equipment rental, approved services, overhead and profit, all as negotiated. The costs of a negotiated change order for work performed by Contractor's own forces shall be limited to a maximum markup of fifteen percent (15%) to include up to ten percent (10%) for overhead and up to five percent (5%) for profit. Where the whole or a part of the work under a negotiated change order is performed by a first tier subcontractor, the Owner shall limit the Contractor's markup on the direct costs of the subcontractor to a total of eight percent (8%) to include up to five percent (5%) for overhead and three percent (3%) for profit. No markup will be considered or allowed for costs of a negotiated change order involving subcontractors below the first tier. The overhead markup percentages referenced above shall cover all overhead costs of the Contractor, including administrative, insurance, extended overhead and similar costs and expenses.

- C. **Force Account Payment.** Payment for the work will be made on a time and expense basis, that is, on an accounting of the Contractor's forces, materials, equipment and other items of cost as required to do the work.

If compensation for work done under a Contract Change Order is to be made on a force account basis, the compensation will be calculated as set forth in Section G9.03, "Force Account Payment." Contractor agrees that the markups provided in Section G9.03 are adequate.

In any case in which the method of payment cannot be agreed upon prior to the beginning of the work, the Owner may direct that the work be done on a unit price, lump sum or force account basis depending on the nature of the work and at the sole discretion of the Owner.

G4.09 PROTEST PROCEDURE

If the Contractor disagrees with any terms or conditions set forth in an approved Contract Change Order which he has not executed, he shall submit a written protest to the Engineer/Architect within fifteen (15) days after receipt of such approved Contract Change Order. The protest shall state the points of disagreement, Contract Document references, quantities and costs involved and shall propose a modification of the items with which he does not agree. If a written protest is not submitted within this 15-day period, payment will be made as set forth in the approved Contract Change Order. Approved

Contract Change Orders which are not protested within fifteen (15) days will be considered as executed Contract Change Orders and such payment will constitute full compensation for all work included therein or required thereby. In the event that the Contractor disagrees with the Engineer's response to a protest, the Contractor may submit a claim pursuant to G9.15.

When the protest of an approved Contract Change Order relates to compensation, the Contractor shall keep full and complete records of such work and shall permit the Owner and the Engineer to have access to all records relating to the protested Contract Change Order to determine the compensation payable. The Contractor shall cooperate with the Engineer to reach agreement at the earliest practical date on the terms of compensation for the Contract Change Order. When agreement has been reached, a revised Contract Change Order may be approved by the Owner and issued to the Contractor for signature. Unless and until the Owner and Contractor agree upon other terms of compensation incorporated in a revised executed Contract Change Order, the compensation shall be as specified under the protested approved Contract Change Order.

When the protest of an approved Contract Change Order relates to the adjustment of Contract Time for the completion of the work, the time will be determined in accordance with the provisions of Section G8.11.

G4.10 CONTINUANCE OF CONSTRUCTION

Disagreement by the Contractor with the Owner's determination of the need for, or amount of, an adjustment in Contract price or Contract time associated with an approved Contract Change Order (or disagreement by the Contractor with the Owner's determination that a change has not occurred and no Contract Change Order is needed) shall not, under any circumstances, relieve the Contractor from its obligation to promptly begin and diligently perform the work, including the change, as described in the approved Contract Change Order.

G4.11 FIELD CHANGES

Conditions may arise during the prosecution of the work on construction necessitating minor variations in the contract plans and/or specification. In order to address these conditions, the Owner may without notice to the sureties and without invalidating the contract, make minor alterations, deviations or changes to the Contract, including the plans or specifications, without affecting any of the material or basic terms of the contract, including the contract price, schedule for performance, the basic design, or other terms. Such minor alterations, deviations or changes shall be documented in a Field Change on a form provided by the Owner and executed by the Engineer and the Contractor. By execution of the Field Change, Contractor agrees to make the specified change at no additional cost and without an alteration in the schedule of performance or other terms and conditions of the Contract.

G4.12 DETOURS

When required by the Technical Specifications, or shown on the Contract Plans, or required by responsible public agencies, the Contractor shall construct, maintain and remove detours for the use of public traffic, without additional cost to the Owner, unless separate payment is specified in the Technical Specifications.

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

G4.13 ARCHAEOLOGICAL DISCOVERIES

All articles of archaeological interest which may be uncovered by the Contractor during the progress of the work shall be reported immediately to the Engineer/Architect. The further operations of the Contractor with respect to the find will be decided under the direction of the Engineer.

G4.14 PRESERVATION AND CLEANING

The Contractor shall clean up the work at frequent intervals and at other times when directed by the Engineer/Architect. While finish work is being accomplished, floors shall be kept clean, free of dust, construction debris and trash.

Before final inspection of the work, the Contractor shall clean the project site, material sites, surrounding roadways and all ground occupied by him in connection with the work, of all rubbish, excess materials, false work, temporary structures and equipment. All parts of the work shall be left in a neat and presentable condition. Final cleaning shall include washing, dusting and sweeping, as applicable, of exposed architectural finish surfaces. Full compensation for final cleaning up will be considered as included in the prices paid for the various Contract items of work and no separate payment will be made therefore.

G4.15 GUARANTY OF WORK

Notwithstanding inspections and acceptance by the Owner of work furnished under this Contract, the Contractor warrants to the Owner that all materials and equipment furnished under the Contract, including that provided pursuant to Change Orders, will be of good quality and new, that the work will be free from defects in material or workmanship, and that the work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective.

This warranty by the Contractor is in addition to any warranties or guarantees required by the Technical Specifications for specified items of equipment or materials. This warranty shall be in effect notwithstanding any disclaimers, or limiting or conditional terms contained in such separate warranties furnished by manufacturers or suppliers.

G4.16 CORRECTION OF WORK DURING WARRANTY PERIOD

If, within two (2) years after the date of final acceptance of the work by the Owner, any of the work is found not to be in accordance with the Contract Documents, specifically including Section G4.15 ("Guaranty of Work"), the Contractor shall correct it promptly after written notice from the Owner to do so, and pay for any damage to other property resulting from such non-conforming work. If the Contractor fails to make the repairs or replacements promptly, or in an emergency when delay could cause risk of damage or loss, the Owner may have the non-conforming work removed, replaced or corrected at the expense of the Contractor and his surety. Non-conforming work which is remedied under this Section

shall be subject to an extended warranty obligation, identical in terms to that provided by Section G4.15 and this Section for a period of two (2) years after the non-conforming work has been remedied.

Nothing contained in this Section G4.16 shall be construed to establish a period of limitation with respect to other obligations which the Contractor may have under the Contract Documents. Establishment of the period of two (2) years as described in this Section relates only to the specific obligation of the Contractor to correct the work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the work.

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SECTION 5 CONTROL OF WORK

G5.01 AUTHORITY OF ENGINEER/ARCHITECT

The Engineer/Architect shall decide all questions which may arise as to the quality or acceptability of materials furnished and work performed and as to the manner of performance and rate of progress of the work; all questions which may arise as to the interpretation of the Contract Documents; all questions as to the acceptable fulfillment of the Contract on the part of the Contractor; and all questions as to compensation. The Engineer/Architect will have authority to reject work which does not conform to the Contract Documents. His decision shall be final and he shall have authority to enforce and make effective such decisions and orders which the Contractor fails to carry out promptly.

G5.02 CONTRACT DRAWINGS

The Contract Drawings furnished consist of general drawings and show such details as are necessary to give a comprehensive idea of the construction contemplated. All authorized alterations affecting the requirements and information given on the Contract Drawings shall be in writing.

Upon written request, the Owner will furnish to the Contractor for his use, at no expense to the Contractor, up to twenty (20) copies of all Contract Documents, including the Contract Drawings. Additional copies may be obtained at cost.

G5.03 SHOP DRAWINGS

The Contract Drawings shall be supplemented by shop drawings furnished by the Contractor. Shop drawings shall have been reviewed by the Engineer/Architect before any work involving such drawings is performed. No change shall be made by the Contractor in any shop drawing after it has been approved by the Engineer/Architect.

Shop drawing submittals shall contain adequate information to permit the Engineer to evaluate each submission for conformance with the Contract Documents. Each submittal shall be complete; partial submittals will not be reviewed. All drawings shall include a graphical scale and indicate the amount of reduction used, if any. The quality of lettering and draftsmanship shall be such as to insure easily read reproductions by microfilming process.

Each shop drawing submitted by the Contractor (including any provided by suppliers and/or subcontractors) shall bear the approval stamp of the Contractor, and shall be clearly and conspicuously marked to indicate any deviation in the shop drawing from the requirements of the Contract Documents. By approving and submitting shop drawings, the Contractor thereby represents that he has determined and verified all field measurements, field construction criteria, materials, catalog numbers and similar data, and that he has checked and coordinated each shop drawing with the requirements of the work and the Contract Documents. Where applicable, shop drawings will be certified for construction by the manufacturer. Owner review of any shop drawing shall not constitute a change to the Contract. Contract changes can be effected through Change Orders only.

Each submittal shall be accompanied by a transmittal letter in the form specified by the Engineer from the Contractor stating the name of the material or equipment items as shown on the Contract Documents, a

specification reference consisting of a section number, and any proposed deviations from the Contract Documents requested or shown on the submittal.

Review of shop drawings is only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Review and approval of the Contractor's shop drawings shall not relieve Contractor of any of his responsibility for the successful completion of the work in conformity with the requirements of the Contract Documents. The Contractor is responsible for conformance with all requirements of the Contract Documents, including, but not limited to, dimensions which shall be conformed and correlated at the job site, fabrication processes and techniques of construction, coordination of work with that of all others, and satisfactory performance of all work. Review of shop drawings shall not waive any requirement of the Contract Documents and defective work may be rejected notwithstanding such review.

It is the Contractor's responsibility to submit shop drawings and other submittals so as to allow sufficient time for review and for possible revisions and resubmittal. Minimum review time by the Engineer/Architect shall be thirty (30) calendar days; complex submittals may require up to 45 days. The Contractor shall schedule his shop drawing submittals so that this anticipated shop drawing review time does not delay his work.

Owner will make its best efforts to review submittals within the time period scheduled by the Contractor, provided it is consistent with the minimum time period specified in the preceding paragraph, but the Owner's inability to do so shall not automatically entitle the Contractor to additional time to complete the Contract. If the Engineer/Architect fails to complete his review of shop drawing submittals within a reasonable time (not to be less than the time period specified in this section), and if the Contractor's controlling operation is delayed by reason of the delay in review, an extension of time commensurate with the delay in completion of the work thus caused will be granted pursuant to Section G8.11, but no additional compensation will be allowed for such delay.

Shop drawings reviewed by the Engineer/Architect will be returned to the Contractor. The Engineer/Architect's action on each submittal will consist of one of the following: "No Exceptions Taken," "Exceptions Taken as Noted," "Revise and Resubmit" or "Rejected." When shop drawings are required to be resubmitted, the revisions are to be clearly defined on the revised drawings. Resubmittals will be reviewed in accordance with the provisions applicable to initial submittals and the time period for the Engineer's review shall be equal to that for initial submittals.

Submittal and processing of shop drawings shall conform to the requirements of Section 01 33 00, "Submittals," of the Technical Specifications.

Full compensation for furnishing all shop drawings shall be considered as included in the prices paid for the Contract items of work to which such drawings relate and no additional compensation will be allowed therefor.

When the shop drawings have been completed to the satisfaction of the Engineer, the Contractor shall carry out the construction in strict accordance therewith. Any further changes will require a resubmittal of the drawings.

G5.04 CONFORMITY WITH CONTRACT DOCUMENTS

Work and materials shall conform to the lines, grades, cross sections, dimensions and material requirements, including tolerances, shown on the Contract Drawings or indicated in the Specifications. Although measurement, sampling and testing may be considered evidence as to such conformity, the Engineer/Architect shall be the sole judge as to whether the work or materials deviate from the Contract Drawings and Specifications, and his decision as to any allowable deviations shall be final.

G5.05 COORDINATION AND INTERPRETATION OF CONTRACT DOCUMENTS

The General Provisions, Technical Specifications, Contract Drawings, Contract Change Orders and all supplementary documents are essential parts of the Contract, and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary, and to describe and provide for a complete work.

In the event of inconsistencies between requirements contained in different components of the Contract Documents, the order of precedence to govern interpretation is as follows: (1) Change Orders, (2) Addenda, (3) Contract, (4) Bid Forms (all documents submitted by the bidder), (5) General Provisions, (6) Information for Bidders, (7) Technical Specifications, (8) Contract Drawings, (9) Notice Inviting Sealed Bids. In case of differences between small and large scale drawings, the large scale drawings shall govern. Schedules on drawings shall take precedence over conflicting notations on drawings. In the event of discrepancy between any drawing and the figures written thereon, the figures, unless otherwise directed, will govern over scaled dimensions.

Should it appear that the work to be done or any of the related matters is not sufficiently detailed or explained in the Contract Documents, the Contractor shall request from the Engineer/Architect for such further written explanations as may be necessary and shall conform to them as part of the Contract. In the event of any doubt or question arising respecting the true meaning of the Contract Documents, clarification shall be sought from the Engineer/Architect, whose decision shall be final.

G5.06 ORDER OF WORK

When required by the Technical Specifications or Contract Drawings, the Contractor shall follow the sequence of operations as set forth.

Full compensation for conforming with such requirements will be considered as included in the prices paid for the various Contract items of work and no additional compensation will be allowed.

G5.07 SUPERINTENDENCE

The Contractor shall supervise and direct the work using his best skill and attention and shall keep at the project site competent supervisory personnel at all times while work is in progress. The Contractor shall designate, in writing, before starting work, a project superintendent who shall be an employee of Contractor and shall have complete authority to represent and act for the Contractor. The Contractor shall notify the Engineer in writing prior to any change in superintendent assignment.

The Contractor shall be solely responsible for and have control over construction means, methods, techniques and procedures for providing adequate safety precautions and coordinating all portions of the

work under the Contract, unless the Contract Documents give other specific instructions concerning these matters.

G5.08 LINES AND GRADES

Contractor shall set primary control lines, monuments and bench marks as he determines to be necessary to control establishment of the lines and grades required for the completion of the work. In general, these will consist of the primary horizontal and vertical control points shown on the Contract Drawings. The Contractor shall notify Engineer a minimum of five (5) working days after such stakes are set.

Monuments, stakes and marks set by the Contractor shall be care-fully preserved by the Contractor. If such monuments, stakes or marks are destroyed or damaged, they will be replaced at no cost by the Contractor.

The Contractor shall temporarily suspend work at such points and for such reasonable times as the Engineer may require for transferring or setting monuments, stakes or marks, and the Contractor shall not be entitled to any additional compensation or extension of time therefore.

All other stakes or marks required to establish the lines and grades required for the completion of the work shall also be the responsibility of the Contractor. Payment for all work related to setting stakes or marks shall be considered as included in the prices paid for the various Contract items of work and no additional compensation will be allowed therefore.

Contractor shall take field measurements and verify field conditions consistent with prudent construction industry standards and shall carefully compare such field measurements and conditions and other information known to Contractor with the Contract Documents before commencing construction activities on the work site. Errors, inconsistencies or omissions in the Contract Documents discovered by Contractor shall be reported to the Engineer at once.

G5.09 OBSERVATION OF CONSTRUCTION

The Engineer/Architect, and all authorized representatives of the Owner, shall at all times have safe access to the work during its construction, and shall be furnished with every reasonable facility for ascertaining that the materials and the workmanship are in accordance with the requirements and intentions of the Contract Documents. All work done and all materials furnished shall be subject to the Engineer/Architect's on-site and off-site observation.

The observation of the construction or materials by the Engineer shall not relieve the Contractor of any obligations to fulfill his Contract as prescribed. Work and materials not meeting such requirements shall be corrected, and unsuitable work or material may be rejected, notwithstanding that such work or materials have been previously reviewed by the Engineer, or that payment for such work or materials has been included in a progress estimate.

Re-examination of questioned work may be ordered by the Engineer/Architect at any time before final acceptance. If so ordered, the work shall be uncovered by the Contractor. If such work is found to be in accordance with the Contract Documents, the Owner will pay for the cost of uncovering; removal, recovering and replacing of the parts removed; but if such work so exposed or examined is not in accordance with the Contract Documents, the uncovering, removal, recovering and replacement shall be at the Contractor's expense. Work which has been covered prior to observation by the Engineer/Architect

does not qualify as re-examined work; the Owner may order it uncovered for observation without payment of costs.

The Contractor shall give due notice to the Engineer/Architect before backfilling so that the Owner's Geotechnical Inspector may observe the materials and installation.

Whenever the Contractor intends to perform work on Saturday, Sunday, or a legal holiday, he shall give notice to the Architect and Owner Engineer of such intention twenty-four (24) hours prior to performing such work, or such longer period as may be specified, so that the Owner's material testing lab may make necessary arrangements.

The observations performed by the Engineer shall not relieve the Contractor of his responsibility to conduct comprehensive inspections of the work and to furnish materials and perform work in conformance with the Contract Documents.

G5.10 DOCUMENTS ON JOB SITE

The Contractor shall keep one copy of all Contract Documents (including Change Orders), approved Shop Drawings and approved progress payments on the job site, in good order, available to the Engineer and all authorized representatives of the Owner.

G5.11 CORRECTION, REMOVAL OF REJECTED WORK

The Contractor shall promptly correct work rejected by the Engineer as failing to conform to the requirements of the Contract Documents, whether or not fabricated, installed or completed, so that it does comply with the Contract Documents. The Contractor shall bear the costs of correcting such rejected work, including additional testing, inspections and compensation for the Engineer's services and expenses made necessary thereby.

The Contractor shall remove, at his cost, from the site portions of the work which are not in accordance with the Contract Documents or which are not corrected by the Contractor.

The Contractor shall correct, at his cost, damaged or destroyed construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractors' correction or removal of work which is not in accordance with the requirements of the Contract Documents.

Any work done beyond the lines shown on the Contract Drawings or established by the Engineer, and all extra work done without written authority, will be considered as unauthorized work. Upon order of the Engineer, unauthorized work shall be remedied, removed or replaced at the Contractor's cost.

If the Contractor fails to promptly correct non-conforming or rejected work, or to comply promptly with any order of the Engineer under this Section, the Owner may cause such work to be remedied, removed or replaced and the costs thereof will be deducted from any monies due or to become due the Contractor.

Failure on the part of the Engineer to reject non-conforming work shall not be construed to imply acceptance of such work.

G5.12 [Intentionally left blank]

G5.13 CHARACTER OF WORKERS

The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons nor persons unskilled in tasks assigned to them.

G5.14 FINAL INSPECTION

When the work has been completed, the Engineer will make the final inspection. The Contractor shall notify the Engineer/Architect in writing when it considers the work complete and shall request a final inspection.

G5.15 SUBMITTAL OF RECORD DATA

The Contractor shall maintain up-to-date a separate, neat and legible set of construction drawings showing as-built conditions. The intention is that a separate full-size set of the construction drawings will be neatly and accurately marked in colored ink to show any condition, dimension, installation or location that is different from that originally shown. Deviations from the drawings, utilities and services, mechanical and electrical lines, details, and other work shall be incorporated on this set. The locations of installed underground and hidden utilities will be shown and dimensioned to appropriate reference points. No work shall be permanently concealed until the required information has been recorded. The requirement is that these record construction drawings and the "as-built" material and equipment drawing submittals provided will reflect the complete as-built condition of the project.

Where the contract drawings are not of sufficient size, scale, or detail, the Contractor shall furnish his own drawings for incorporation of details and dimensions. In such cases, the Contractor shall provide a reproducible set of his drawings, suitably cross-referenced to the contract drawings.

The record drawings will be maintained up to date on a "day by day" basis. That is, information will be recorded as it is known. Prior to any progress payments, the Engineer/Architect will review the status of the record construction drawings. The Engineer/Architect may withhold approval of progress payments until such time as the record drawings are brought up to date.

Prior to the completion of the contract, the Contractor shall furnish a satisfactory set of record drawings and certify on each drawing that conditions shown are as-built. Submittal of the record drawings is made a condition for acceptance of the project and final payment under the contract.

G5.16 EMERGENCIES

In an emergency affecting the safety of life, the work, or adjoining property, the Contractor, without special instructions or authorization from the Engineer/Architect, shall act at his discretion to prevent such threatened loss or injury. In such an emergency, the Contractor shall perform such additional work as is required. Any compensation claimed by the Contractor on account of emergency work shall be determined in accordance with the provisions of Section 9.

G5.17 RIGHTS-OF-WAY

The Owner will provide the rights-of-way over private lands or the site for permanent works or installations, and right-of-way for access, unless otherwise indicated. The Contractor will be permitted to use such land for construction purposes, but any additional right-of-way or land desired by the Contractor for construction purposes shall be provided by the Contractor without expense to the Owner.

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SECTION 6 CONTROL OF MATERIALS

G6.01 SOURCE OF SUPPLY AND QUALITY OF MATERIALS

The Contractor shall provide all materials required to complete the work, except materials that are designated in the Specifications to be furnished by the Owner and materials furnished by the Owner in accordance with force account work as described in Section G9.03. As used in this Section, the term "materials" shall mean materials and equipment furnished for incorporation in the work.

Notwithstanding any prior inspection, only materials conforming to the requirements of the Contract Documents shall be incorporated in the work.

The materials furnished and used shall be new, except as may specifically be provided elsewhere in the Contract Documents. The materials shall be manufactured, handled, and used in a workmanlike manner to ensure completed work in accordance with the Contract Documents.

The Contractor shall submit to the Engineer/Architect a list of his sources of materials and the locations at which such materials will be available for inspection. The list shall be submitted in sufficient time to permit proper inspection and testing of materials to be furnished from such listed sources in advance of their use. The Contractor shall assure that the Engineer/Architect or his authorized representative has free access at all times to the material to be inspected, sampled or tested. The Engineer/Architect may inspect, sample or test materials at the source of supply or other locations. It is understood that such inspections and tests in no way shall be considered as a guaranty of continued acceptance of material presumed to be similar to that upon which inspections and tests have been made, and that inspection and testing performed by the Owner shall not relieve the Contractor or his suppliers of responsibility for quality control.

Manufacturers' warranties, guaranties, instruction sheets and parts lists, which are furnished with certain materials incorporated in the work, shall be delivered to the Engineer/Architect before final acceptance of the Contract.

Reports and records of inspections made and tests performed, when available at the site of the work, may be examined by the Contractor and the Engineer.

G6.02 STORAGE OF MATERIALS

Materials shall be stored by the Contractor in such a manner as to ensure the preservation of their quality and fitness for the work and to facilitate inspection.

G6.03 DEFECTIVE MATERIALS

All Contractor-furnished materials not conforming to the requirements of the Contract Documents may be rejected, whether in place or not. They shall be removed immediately from the site of the work unless otherwise permitted by the Engineer/Architect. No rejected material, the defects of which have been subsequently corrected, shall be used in the work unless approval in writing has been given by the Engineer/Architect. Upon failure of the Contractor to comply promptly with any order of the Engineer/Architect made under the provisions of this Section, the Engineer/Architect may cause the

removal and replacement of rejected material and deduct the cost from any monies due or to become due the Contractor.

G6.04 TRADE NAMES AND ALTERNATIVES

For convenience in designation in the Contract Documents, certain articles or materials to be incorporated in the work may be designated under a trade name or the name of a manufacturer and his catalog information. Except in those instances where the product is designated to match others in use in a particular improvement, either completed or in the course of completion, the use of an alternative article or material which is of equal quality and of the required characteristics for the purpose intended will be permitted, subject to the following requirements:

1. The Contractor shall submit his Proposal for an alternative in writing a minimum of two weeks prior to bid opening.
2. No such Proposal will be considered unless accompanied by complete information and descriptive data necessary to determine the equality of the offered materials, articles, or equipment. Samples shall be provided when requested by the Engineer. The Contractor shall satisfy the Engineer as to the comparative quality, suitability and performance of the offered materials, articles or equipment. In the event that the Engineer/Architect rejects the use of such alternative materials, articles or equipment, then one of the particular products designated by brand name will be furnished.
3. The burden of proof as to the quality and suitability of alternatives shall be upon the Contractor and he shall furnish all information necessary as required by the Engineer/Architect. The Engineer/Architect shall be the sole judge as to the quality and suitability of alternative articles or materials and his decisions shall be final. Where use of an alternative material involves redesign of, or changes to, other parts of the work, the cost and the time required to effect such redesign or changes will be considered in evaluating the suitability of the alternative material. Cost of redesign by the Engineer/Architect will be borne by the Contractor.
4. Whenever classification, rating or other certification by a body such as UL or NEMA is a part of the specification for any material, proposal for use of alternative materials shall be accompanied by reports from the listed or equivalent independent testing laboratory indicating compliance with specification requirements. The cost of all testing required to prove equality of the material proposed shall be borne by the Contractor. Approval of an alternative material shall be only for the characteristics or use named in such approval, and shall not be used to change or modify any Contract requirement.

G6.05 PLANT INSPECTION

The Engineer/Architect may inspect the production of material, or the manufacture of products, at the source of supply. Plant inspection, however, will not be undertaken until the Engineer/Architect is assured of the cooperation and assistance of both the Contractor and the material producer. The Engineer/Architect or his authorized representative shall have free entry at all times to such parts of the plant as concern the manufacture or production of the materials. Adequate facilities shall be furnished free of charge to make the necessary inspection. The Engineer/Architect assumes no obligation to inspect

materials at the source of supply. The responsibility of incorporating satisfactory materials in the work rests entirely with the Contractor, notwithstanding any prior inspections or tests.

G6.06 PRODUCT AND REFERENCE STANDARDS

When descriptive catalog designations, including manufacturer's name, product brand name or model number are referred to in the Contract Documents, such designations shall be considered as being those found in industry publications in effect on the day the Notice to Contractors for the work is dated.

G6.07 SAMPLES

After the award of the Contract, the Contractor shall furnish to the Owner samples indicated in the Specifications or requested by the Engineer/Architect. Samples shall be submitted without charge, with shipping charges prepaid. Materials for which samples are required shall not be used in the work until approved in writing by the Engineer/Architect.

Each sample shall be submitted in duplicate unless otherwise directed, and shall be labeled with the following data: name of project; name of Contractor; material represented and location in the project including specification reference; and producer information including brand, model, place of origin, and other pertinent information.

The Contractor shall forward a transmittal letter to the Architect with each shipment of samples containing the information required in the previous paragraph. Approval of a sample shall be only for the characteristics and use named in the submittal and approval shall not be construed to change or modify any Contract requirement. Before submitting samples, the Contractor shall assure himself that the materials or equipment will be available in the quantities required in the project, as no change or substitution will be permitted after a sample has been approved unless approved by the Architect in writing.

Samples of material from local sources shall be taken by or in the presence of the Engineer/Architect if so required by the Engineer/Architect; otherwise the samples will not be considered for testing.

Approved samples not damaged in testing may be incorporated in the finished work if marked for identification and approved by the Engineer/Architect. Materials incorporated in the work shall match the approved samples.

Failure of any material to pass the specified tests will be sufficient cause for refusal to consider under this Contract any further samples of the same brand, make or source of that material. The Engineer/Architect reserves the right to reject the use of any material which has previously proven unsatisfactory in service.

Samples of material delivered to the site or in place may be taken by the Owner for testing. Failure of samples to meet Contract requirements will annul previous approvals of the item tested.

G6.08 TESTING OF MATERIALS OR WORK

Materials to be used in the work will be subject to inspection and tests by the Owner or designated representative. The Contractor shall furnish, without charge, such samples as may be required.

Materials and work shall be tested in accordance with the methods in use by the State of California, Department of Transportation, or by nationally recognized testing organizations or as specified in the Contract Documents. The Engineer/Architect will make or approve all testing. Unless otherwise noted in the Technical Specifications, testing will be made at the expense of the Contractor. In the event that any materials and work fail to pass tests, the cost of subsequent testing of similar materials and work as may be required by the Engineer/Architect shall be borne by the Contractor.

Whenever a reference is made in the Specifications to a test method by Calif. number, it shall mean the test method in effect on the date of the Notice for Proposals for the work. Whenever a reference is made in the Specifications to a specification or test designation of the American Society for Testing and Materials, the American Association of State Highway Officials, Underwriters' Laboratories, Inc., or any other recognized national organization, and the number accompanying the test designation representing the year of adoption of the test has been omitted, the reference shall mean the test method in effect on the date of the Notice for Proposals for the work.

Whenever the Contract Documents provide an option between two or more test methods, the Engineer/Architect will determine the test method to be used.

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

G6.09 CERTIFICATE OF COMPLIANCE

A Certificate of Compliance shall be furnished prior to the use of any materials for which the Specifications require that such Certificate be furnished. In addition, the Engineer/Architect may permit the use of certain materials prior to sampling and testing if accompanied by a Certificate of Compliance stating that the materials involved comply in all respects with the requirements of the Specifications. The Certificate shall be signed by the manufacturer of the material. A Certificate of Compliance shall be furnished with each lot of material delivered to the work and the lots so certified shall be clearly identified in the Certificate.

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

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

The form of the Certificate of Compliance and its disposition shall be as shown in the Special Provisions.

SECTION 7 LEGAL RELATIONS AND RESPONSIBILITIES

G7.01 LAWS TO BE OBSERVED

The Contractor shall keep himself fully informed concerning all requirements of law, including but not limited to all State and Federal laws and county and municipal ordinances and regulations which in any manner affect those engaged or employed in the work, the materials used in the work, or which in any way affect the conduct of the work, and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. The Contractor shall at all times observe, and shall cause all his agents and employees to observe, all such requirements of laws and shall protect, indemnify and hold harmless the Owner and the Engineer/Architect, and all of their respective officers, agents and employees against all claims and liabilities arising from or based on the violation of any such requirement of law whether by the Contractor or his employees. If any discrepancy or inconsistency is discovered in the Contract Documents for the work in relation to any such requirements of laws, the Contractor shall immediately report the same to the Engineer/Architect in writing. The Contract Documents shall be governed by the laws of the State of California.

G7.02 LABOR CODE REQUIREMENTS

Attention is directed to the following requirements of the Labor Code:

- A. **Hours of Labor.** Eight hours labor constitutes a legal day's work. The Contractor shall forfeit, as penalty to the Owner, Twenty-Five Dollars (\$25) for each worker employed in the performance of the Contract by the Contractor or by any subcontractor under him for each calendar day during which such workman is required or permitted to work more than eight (8) hours in any one (1) day and forty (40) hours in any one calendar week in violation of the provisions of the California Labor Code and in particular, Sections 1810 to 1815 thereof, inclusive, except that work performed by employees of the Contractor in excess of eight (8) hours per day and forty (40) hours during any one (1) week shall be permitted upon compensation for all hours worked in excess of eight hours per day at not less than one and one-half (1-1/2) times the basic rate of pay, as provided in said Section 1815.
- B. **Labor Non-Discrimination.** Attention is directed to Section 1735 of the Labor Code which provides the Contractor shall not discriminate against any employee who is employed on the work because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex gender, gender identity, gender expressing age or sexual orientation of such persons, except as provided in Section 12940 of the Government Code.
- C. **Prevailing Wages.** The Contractor shall comply with California Labor Code Sections 1770 to 1780, inclusive. In accordance with said Section 1775, the Contractor shall forfeit as a penalty to an amount determined by the Labor Commissioner, not to exceed Two Hundred Dollars (\$200) for each calendar day or portion thereof for each worker paid less than stipulated prevailing wage rates for such work or craft in which such worker is employed for any work done under the Contract by him or by any subcontractor under him in violation of the provisions of the Labor Code and in particular, Labor Code Sections 1770 to 1780, inclusive. In addition to said penalty and pursuant to said Section 1775, the difference between such stipulated prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the stipulated prevailing wage rate shall be paid to each worker by the Contractor.

Pursuant to the provisions of Section 1773 of the Labor Code, the Owner has obtained the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work applicable to the work to be done from the Director of the Department of Industrial Relations. Copies of the prevailing rates are on file at the Owner's Office and are available to any interested party on request. Such wage rates must be prominently posted at the construction site.

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

- D. **Payroll Records.** The Contractor's attention is directed to the following provisions of Labor Code Section 1776. The Contractor shall be responsible for the compliance with these provisions by his subcontractors.
- (a) Each contractor and subcontractor shall keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the public work.
 - (b) Contractor and subcontractors(s) will be obligated to submit all certified payroll records directly to the Department of Industrial Relations (DIR) in electronic format.
 - (c) The payroll records enumerated under subdivision (a) shall be certified and shall be available for inspection at all reasonable hours at the principal office of the Contractor on the following basis:
 - (1) A certified copy of an employee's payroll record shall be made available for inspection or furnished to such employee or his or her authorized representative on request.
 - (2) A certified copy of all payroll records enumerated in subdivision (a) shall be made available for inspection or furnished upon request to the Owner, the Division of Labor Standards Enforcement and the Division of Apprenticeship Standards of the Department of Industrial Relations.
 - (3) A certified copy of all payroll records enumerated in subdivision (a) shall be made available upon request to the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through either the Owner, the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to paragraph (2), the requesting party shall, prior to being provided the records, reimburse the costs of preparation by the Contractor, subcontractor and the entity through which the request was made. The public shall not be given access to such records at the principal office of the Contractor.
 - (d) The certified payroll records shall be on forms provided by the Division of Labor Standards Enforcement or shall contain the same information as the forms provided by the Division.
 - (e) Each contractor shall file a certified copy of the records enumerated in subdivision (a) with the entity that requested such records within ten (10) days after receipt of a written request.

- (f) Any copy of records made available for inspection as copies and furnished upon request to the public or the Owner, the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address and social security number. The name and address of the Contractor shall not be marked or obliterated.
- (g) The Contractor shall inform the Owner of the location of records enumerated under subdivision (a), including the street address, city and county, and shall, within five (5) working days of the Owner's request, provide a notice of a change of location and address.
- (h) In the event of noncompliance with the requirements of this Section, the Contractor shall have ten (10) days in which to comply subsequent to receipt of written notice specifying in what respects such contractor must comply with this Section. Should noncompliance still be evident after such 10-day period, the Contractor shall, as a penalty to the State or the Owner, forfeit One Hundred Dollars (\$100) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, such penalties shall be withheld from progress payments then due.

The penalties specified in subdivision (g) of Labor Code Section 1776 for noncompliance with the provisions of said Section 1776 may be deducted from any monies due or which may become due to the Contractor.

The Contractor and each subcontractor shall preserve their payroll records for a period of three (3) years from the date of completion of the Contract.

- E. **Apprentices.** The Contractor shall fully comply with the requirements of Sections 1777.5 and 1777.6 of the California Labor Code and the regulations of the California Apprenticeship Council. In accordance with Section 1777.5, the Contractor shall secure the necessary certificates and shall contribute to the apprenticeship fund or funds, as provided for therein. The Contractor shall require each subcontractor who will perform work or labor or render service to the Contractor in or about the construction of the work to comply fully with Sections 1777.5 and 1777.6 of the Labor Code. Information relative to apprenticeship standards, wage schedules and other requirements may be obtained from the State Division of Apprenticeship Standards and its branch offices.
- F. **Workers' Compensation.** Pursuant to the requirements of Section 1860 of the California Labor Code, the Contractor will be required to secure the payment of workers' compensation to his employees in accordance with the provisions of Section 3700 of the Labor code.

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

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

Said certification is included in the Contract, and signature and return of the Contract as provided in Section G3.03, "Execution of Contract," of the General Provisions, shall constitute signing and filing of the said certificate.

G7.03 REMOVAL, RELOCATION OR PROTECTION OF UTILITIES

Pursuant to California Government Code Section 4215, the Owner shall identify and provide for the timely removal, relocation or protection of any existing main or trunkline utility facilities located on the site of the work to be completed with reasonable accuracy in the plans and specifications made part of the invitation for bids. If the Contractor discovers utility facilities not identified by the Owner while performing the work, the Contractor shall immediately notify the Owner and the owner of the utility in writing. For those main or trunk line utility facilities discovered by the Contractor, the Owner will compensate the Contractor for the costs of locating, removing or relocating such utility facilities; repairing damage not due to the failure of the Contractor to exercise reasonable care; and for equipment on the project necessarily idled during such work. The Contractor will not be assessed liquidated damages for delays in completion of the project due to the failure of the Owner or owner of the utility to provide for removal or relocation of such utility facilities.

G7.04 AIR POLLUTION CONTROL

The Contractor shall comply with all air pollution control rules, regulations, ordinances and statutes which apply to any work performed pursuant to the Contract, including any air pollution control rules, regulations, ordinances and statutes specified in Section 11017 of the Government Code.

Material to be disposed of shall not be burned, either inside or outside the work site.

G7.05 WATER POLLUTION CONTROL

The Contractor shall exercise every reasonable precaution to protect streams, lakes, reservoirs, bays and coastal waters from pollution with fuels, oils, bitumens, calcium chloride and other harmful materials and shall conduct and schedule his operations so as to avoid or minimize muddying and silting of said streams, lakes, reservoirs, bays and coastal waters. The Contractor shall comply with all laws, regulations, ordinances and rules regarding water pollution. Care shall be exercised to preserve roadside vegetation beyond the limits of construction.

Water pollution control work is intended to provide prevention, control, and abatement of water pollution to streams, waterways and other bodies of water, and shall consist of constructing those facilities which may be shown on the plans, specified in the General Provisions or in the Technical Specifications Section 01530, or directed by the Engineer/Architect.

G7.06 SOUND CONTROL REQUIREMENTS

The Contractor shall comply with all local sound control and noise level rules, regulations and ordinances which apply to any work performed pursuant to the Contract.

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

G7.07 USE OF PESTICIDES

The Contractor shall comply with all rules and regulations of the Department of Food and Agriculture, the Department of Health, the Department of Industrial Relations and all other agencies which govern the use of pesticides required in the performance of the work on the Contract.

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

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

G7.08 WEIGHT LIMITATIONS

Unless expressly permitted in the Technical Specifications, the Contractor shall not operate construction equipment or vehicles of any kind which, laden or unladen, exceed the maximum weight limits set forth in Division 15 of the Vehicle Code, over completed or existing base, surfacing, pavement or structures.

G7.09 PAYMENT OF TAXES

The Contract prices paid for the work shall include full compensation for all taxes which the Contractor is required to pay, whether imposed by Federal, State or local government, including, without being limited to, Federal excise tax. No tax exemption certificate nor any document designed to exempt the Contractor from payment of any tax will be furnished to the Contractor by the Owner, as to any tax on labor, services, materials, transportation, or any other items furnished pursuant to the Contract.

The Contractor shall withhold and pay any and all sales and use taxes, withholding taxes, whether State or Federal, Social Security taxes, State Unemployment Insurance charges and all other taxes which are now or hereafter may be required to be paid or withheld under any laws.

G7.10 PERMITS AND LICENSES

The Contractor shall procure all permits and licenses (except those procured or to be procured by the Owner which are listed in the Technical Specifications or Specifications), pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the work.

The Environmental Quality Act (Public Resources Code, Section 21000 to 21176) may be applicable to permits, licenses and other authorizations which the Contractor must obtain from State or local agencies in connection with performing the work of the Contract. The Contractor shall comply with the provisions of that Act in obtaining such permits, licenses and other authorizations and they shall be obtained in sufficient time to prevent delays to the work.

The Contractor shall comply with permits obtained by the Owner for the work which are listed in the Technical Specifications or Specifications.

G7.11 SUBSURFACE EXCAVATIONS, NOTIFICATION

Attention is directed to Government Code Sections 4216 to 4216.9, and in particular Section 4216.2 which provides, in part:

Except in an emergency, every person planning to conduct any excavation shall contact the appropriate regional notification center at least two (2) working days, but no more than fourteen (14) calendar days, prior to commencing that excavation, if the excavation will be conducted in an area which is known, or reasonably should be known, to contain subsurface installations other than the underground facilities owned or operated by the excavator, and, if practical, the excavator shall delineate with white paint or other suitable markings the area to be excavated. The regional notification center shall provide an inquiry identification number to the person who contacts the center and shall notify any member, if known, who has a subsurface installation in the area of the proposed excavation.

The Contractor shall contact the regional notification center, "Underground Service Alert," and schedule the work to allow ample time for the center to notify its members and, if necessary, for any member to field locate and mark its facilities.

The following provisions, drawn from Section 7104 of the Public Contracts Code, shall apply to any work which involves digging trenches or other excavations which extend deeper than four feet below the surface:

- (a) The Contractor shall promptly, and before the following conditions are disturbed, notify the District, in writing, of any:
 - (1) Material that the Contractor believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.
 - (2) Subsurface or latent physical conditions at the site differing from those indicated.
 - (3) Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.
- (b) The District shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the work shall issue a change order under the procedures described in the Contract.
- (c) In the event that a dispute arises between the Owner and the Contractor as to whether the conditions materially so differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the work, the Contractor shall not be excused from any scheduled completion date provided for by the Contract, but shall proceed with all work to be performed under the Contract. The Contractor shall retain any and all rights provided either by Contract or by law which pertain to the resolution of disputes and protests.

G7.12 PATENTS

The Contractor shall assume all costs arising from the use of patented materials, equipment, devices or processes, used on or incorporated in the work and shall indemnify, save harmless and defend the Owner, the Engineer/Architect, and their duly authorized representatives from all suits at law, or actions of every nature for, or on account of, the use of patented materials, equipment, devices or processes. In case such materials, equipment, devices or processes are held to constitute an infringement and their use enjoined, the Contractor, at his expense, shall: (a) secure for the Owner the right to continue using said materials, equipment, devices or processes by suspension of the injunction or by procuring a license or licenses, or (b) replace such materials, equipment, devices or processes, or (c) modify them so that they become noninfringing or remove the enjoined materials, equipment, devices or processes and refund the sums paid therefor without prejudice to any other rights of the Owner or the Engineer/Architect.

G7.13 SAFETY REQUIREMENTS

The Contractor shall promptly and fully comply with and carry out, and shall without separate charge to the Owner, enforce compliance with the safety and first aid requirements prescribed by applicable State and Federal laws and regulations, rules and orders and, including but not limited to US Department of Labor (OSHA) and the CA Occupational Safety and Health Act (Cal-OSHA), as may be necessary to the end that work shall be done in a safe manner and that the safety and health of the employees and the people of local communities is safeguarded. In the event of conflicting requirements, the most stringent requirement as it pertains to the Contractor's safety responsibility applies.

Compliance with the provisions of this Section by subcontractors shall be the responsibility of the Contractor. All installed material, equipment and structures, without separate charge to the Owner, shall fully conform with all applicable State and Federal safety laws, rules, regulations and orders and it shall be the Contractor's responsibility to furnish only such material, equipment and structures, notwithstanding any omission in the Contract Documents thereof or that a particular material, equipment or structure was indicated.

Upon the failure of the Contractor to comply with any of the requirements of this Section, the Owner, Engineer or Architect shall have the authority, but not the duty, to stop any operations of the Contractor affected by such failure until such failure is remedied. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for increased costs or damages by the Contractor.

Contractor at all times shall conduct all operations under the Contract in a manner to avoid the risk of bodily harm to persons or risk of damage to any property. The Contractor shall continuously inspect all work, materials and equipment to ensure safe working conditions are maintained and damage to persons and property is avoided. During the performance of the work, the Contractor shall institute controls and procedures for the control and safety of persons visiting the job site.

The Contractor shall maintain an accurate record of, and shall report to the Owner in writing, exposure data and all accidents resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies or equipment incident to work performed under the Contract. If death or serious injuries or serious damages are caused, the accident shall be reported to the Owner immediately by telephone or messenger. In addition, the Contractor shall furnish the Owner with a copy of the Employer's Report of Injury immediately following any incident requiring the filing of said report during the

prosecution of the Work. The Contractor also shall furnish the District with a copy of the Employer's Report of Injury involving any subcontractors on the project. The Contractor shall make all reports as are, or may be, required by any authority having jurisdiction, and permit all safety inspections of the Work being performed under the Contract.

The Contractor may not submit a claim for extension of time or for extra costs or for any damages as a result of any stop work order for items related to this section that is issued by a proper authority, including the Owner.

No provisions of this Contract will act to make the Owner and Engineer/Architect, its consultants, or any other party other than the Contractor responsible for safety. The Contractor will indemnify, defend, and hold harmless the District, its officers, employees, and agents from and against any and all actions, damages, fines, and losses arising from the Contractor's failure to meet all the safety requirements or provide a safe work site.

G7.14 TRENCH EXCAVATION SAFETY PLAN

Attention is directed to California Labor Code Section 6705. At least five (5) days in advance of excavation of any trench five feet or more in depth, the Contractor shall submit to the Engineer a detailed plan showing the design of shoring, bracing, sloping and other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the shoring system standards established by the State Construction Safety Orders, the plan shall be prepared and signed by a registered civil or structural engineer employed or hired by the Contractor. Nothing in this Section shall be deemed to allow the use of a shoring, sloping or protective system less effective than that required by the Construction Safety Orders of the Division of Industrial Safety. Nothing in this Section shall be construed to impose liability on the Owner, the Engineer/Architect or any of their employees.

Acceptance by Owner or Engineer/Architect constitutes acknowledgement of the submission, and does not constitute review or approval of the designs, design assumptions or criteria, completeness of submission, applicability to areas of intended use or implementation of the plan, all of which are solely the responsibility of the Contractor.

G7.15 SANITARY PROVISIONS

The Contractor shall conform to the rules and regulations pertaining to sanitary provisions established by the State, and to County, City and municipal laws and ordinances as may be applicable. Toilets for use of employees on the work shall be furnished where needed and shall be maintained by the Contractor. Their use shall be strictly enforced.

G7.16 PUBLIC SAFETY AND CONVENIENCE

The Contractor shall so conduct his operations as to offer the least possible obstruction and inconvenience to the public and he shall have under construction no greater length or amount of work than he can prosecute properly with due regard to the rights of the public.

The Contractor shall adequately warn and give notice to the general public of the construction and protect the general public from any and all dangerous conditions resulting from the work by means such as signs, lights, fences, barriers, guards and flaggers. Additional means may be specified in the Special Conditions.

The Contractor shall furnish, maintain throughout, and remove at the end of the construction period all construction signs, warning lights, lights for illumination, traffic strapping, delineators, barricades and flaggers which may be required or deemed necessary for public safety, including the safe and orderly movement of vehicular and pedestrian traffic. All traffic devices shall be as specified in the Manual of Traffic Controls for Construction and Maintenance Work Zones, issued by the California Department of Transportation (Caltrans). For work in a public right of way, the Contractor must comply with all the rules and regulations of the State, County, or local agency that owns the right of way.

The adequacy of the Contractor's means is subject to review by the Owner and other public agencies having jurisdiction and the Contractor shall promptly, at no additional cost to the Owner, comply with any order or direction regarding public safety and/or convenience.

All trucks coming to the site or leaving the site with materials or loose debris shall be loaded in a manner which will prevent dropping of material or debris on public streets. Spillage resulting from hauling operations along or across any public traveled way shall be removed immediately at the Contractor's expense.

Construction operations shall be conducted in such a manner as to cause as little inconvenience as possible to owners of abutting property. Convenient access to driveways, houses and buildings along the line of work shall be maintained, and temporary approaches to roads or highways shall be provided and kept in good condition. Roadway excavations shall be conducted in such a manner as to provide a reasonably smooth and even surface satisfactory for use by public traffic at all times.

For work in public right-of-way, the Contractor shall comply with the rules and regulations of the State, County or local agency that owns the right-of-way.

All costs of complying with public convenience requirements of all public agencies shall be included in the Contract price.

The Owner/Engineer/Architect shall have the authority, but not the duty, to stop the Contractor from beginning new work until the provisions of this Section have been met.

Liquidated damages for noncompliance with this section may be assessed at the amount per day, if any, specified in this Contract for failure to comply with this provision

G7.17 SAFETY PROGRAM

The Contractor shall establish, implement, monitor, supervise, and maintain a written injury and illness prevention program (IIPP) as required by Labor Code Section 6401.7. Before beginning the Work, the Contractor shall submit a copy of its IIPP plan to the Owner.

The Contractor's compliance with requirements for safety and the Owner's review of the Contractor's IIPP shall not relieve or decrease the liability of the Contractor for safety. The District's review of the Contractor's IIPP is only to determine if the above listed elements are included in the plan.

G7.18 PRESERVATION OF PROPERTY

Due care shall be exercised to avoid injury to existing improvements or facilities, utility facilities, adjacent property and trees, shrubs and other plants that are not to be removed.

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

The fact that any underground facility is not shown on the Contract Plans shall not relieve the Contractor of his responsibility under Section G8.14, "Non-Owner Facilities," of the General Provisions. It shall be the Contractor's responsibility to ascertain the location of such underground improvements or facilities which may be subject to damage by reason of his operations.

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

G7.19 RESPONSIBILITY FOR DAMAGE

The Mid-Peninsula Water District, its directors, officers, employees and authorized agents thereof connected with the work, and the Engineer/Architect, shall not be answerable or accountable in any manner: for any loss or damage that may happen to the work or any part thereof; for any loss or damage to any of the materials or other things used or employed in performing the work; for injury to or death of any person (including but not limited to workers or the public) from any cause whatsoever; or damage to property from any cause whatsoever.

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

To the maximum extent permitted by law, the Contractor shall indemnify and save harmless the **Mid-Peninsula Water District**, its directors, officers, employees and authorized agents thereof, and the Engineer/Architect, from all claims, suits or actions of every name, kind and description, brought for, or on account of, injuries to or death of any person (including but not limited to employees of Contractor, of subcontractors, or of any other person, firm or entity and the public) or damage to property arising from any cause whatsoever during the progress of the work or at any time before its final completion and

acceptance; or economic harm arising from any cause whatsoever during the progress of the work or at any time before its final completion and acceptance, excluding such injuries etc. caused by the sole negligence, willful misconduct, or active negligence of the Owner or its representatives. The duty of the Contractor to indemnify and save harmless includes the duties to defend (by legal counsel satisfactory to the indemnitees) as set forth in Section 2778 of the Civil Code and to pay attorney's fees and litigation costs required by such defense.

With respect to third party claims against Contractor, the Contractor waives any and all rights to any type of express or implied indemnity against the **Mid-Peninsula Water District**, its directors, officers, employees or authorized agents, or the Engineer/Architect. It is the intent of the parties that the Contractor shall indemnify and hold harmless the **Mid-Peninsula Water District**, its directors, officers, employees and authorized agents, and the Engineer, from any and all claims, suits, or actions arising from any cause whatsoever as set forth above regardless of the existence or degree of fault or negligence on the part of the **Mid-Peninsula Water District**, the Engineer/Architect, the Contractor, a subcontractor or employee of any of these, except that in no event shall Contractor be required to indemnify for the sole negligence, willful misconduct, or active negligence of the **Mid-Peninsula Water District** or its directors, officers, employees or authorized agents, or the Engineer.

Pursuant to Public Contract Code section 9201, District shall have full authority to compromise or otherwise settle any claim relating to the Contract at any time. The District shall provide for timely notification to the Contractor of the receipt of any third-party claim, relating to the contract. Notice shall be in writing and will be provided within thirty (30) days. The District shall be entitled to recover its reasonable costs incurred in providing the notification required herein.

G7.20 RESPONSIBILITY FOR WORK AND MATERIALS

Until the acceptance of the Contract, the Contractor shall have the charge and care of the work and of the materials to be used therein, including materials for which he has received partial payment, and shall bear the risk of injury, loss or damage to any part thereof by the action of the elements or from any other cause, whether arising from the execution or from the nonexecution of the work. Relief from maintenance and responsibility for a portion of the total work will not be granted by the Owner. The Contractor shall rebuild, repair or restore all injuries, losses or damages to any portion of the work and materials occasioned by any cause before its completion and acceptance and shall bear the expense thereof. Where necessary, the Contractor shall, at his expense, provide suitable drainage and erect such temporary structures as are necessary to protect the work and materials from damage. The suspension of the work from any cause whatever shall not relieve the Contractor of his responsibility for the work and materials as herein specified. The Contractor shall properly store materials which have been partially paid for by the Owner. Such storage by the Contractor shall be on behalf of the Owner and the Owner shall at all times be entitled to the possession of such materials, and the Contractor shall promptly return the same to the site of the work when requested. The Contractor shall not dispose of any of the materials so stored except on written authorization from the Engineer.

G7.21 CONTRACTOR'S LIABILITY INSURANCE

- A. Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in California (and acceptable to the Owner) policies of insurance as will protect the Contractor and the Owner from claims set forth below which may arise out of or result from the Contractor's operations under the Contract and for which the Contractor may be legally liable,

whether such operations be by the Contractor or by a subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- (1) claims under workers' compensation, disability benefits and any other similar employee benefit acts, which are applicable to the work;
 - (2) claims for damage because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
 - (3) claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
 - (4) claims for damages insured by comprehensive personal injury liability coverage which are sustained by (1) a person as a result of an offense directly or indirectly related to employment of such person by the Contractor, or (2) by another person;
 - (5) claims for damages, other than to the work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
 - (6) claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle; and
 - (7) claims involving contractual liability insurance applicable to the Contractor's indemnity obligations under Section G7.18.
- B. The general and commercial liability insurance required by paragraph A shall include all major divisions of coverage and be on a comprehensive basis including:
- (1) Premises Operations (including X, C & U coverages)
 - (2) Independent Contractors' Protection
 - (3) Products and Completed Operations
 - (4) Personal Injury Liability with Employment Exclusion deleted
 - (5) Broad Form Blanket Contractual, including specified provision for Contractor's obligation under Section G7.18
 - (6) Owned, Non-Owned and hired motor vehicles
 - (7) Broad Form Property Damage, including Completed Operations.
- C. The general and commercial liability insurance required by and described in paragraph A and paragraph B above shall be written for not less than Three Million Dollars (\$3,000,000) per occurrence. Coverages shall be written on an occurrence basis and shall be maintained without interruption from the date of commencement of work until the date of acceptance and final payment, and thereafter as may be required in the Technical Specifications.

- D. The Contractor shall procure and maintain at all times during this Contract Workers' Compensation Insurance in conformance with the laws of the State of California. Employer's Liability Insurance shall be One Million Dollars (\$1,000,000) per accident or disease. Within fifteen (15) days of Notice of Contract award, the Contractor shall file with the Owner a Certificate of Insurance, which shall stipulate that thirty (30) days advance written notice of cancellation, nonrenewal or reduction in limits shall be given in writing to the Owner.
- E. In the event any work is subcontracted, the Contractor shall require the subcontractors to provide statutory workers' compensation insurance and employer's liability insurance for all of the subcontractors' employees engaged in such work. In addition, the Contractor shall be responsible for any liability directly or indirectly arising out of the work performed by a subcontractor, to the extent such liability is not covered by the subcontractor's insurance. Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.
- F. Within fifteen (15) days from receipt of the Notice of Award, Contractor shall furnish to the District original certificates and amendatory endorsements of each policy of insurance required under this Contract. The endorsements are to be on forms that conform to the requirements stated herein and that are acceptable to the District. All documents are to be received and approved by the District before work commences. The District reserves the right to require complete, certified copies of all required insurance policies and/or endorsements effecting coverage required by these specifications at any time. Upon Owner's requirement, copies of each such policy of insurance and all endorsements shall also be promptly delivered to Owner. The policies of insurance required hereunder shall include the stipulations set forth below which also shall be reflected on the certificates of insurance.
- (1) Each insurance policy required under this Contract shall be endorsed to state that coverage shall not be suspended, voided, cancelled, reduced in coverage or in limits or otherwise materially altered except after thirty (30) days prior written notice by certified mail, return receipt requested has been given to the **Mid-Peninsula Water District**.
 - (2) The **Mid-Peninsula Water District**, its directors, officers, employees, authorized agents and the Engineer/Architect shall be named as additional insureds on the policies.
 - (3) **City of Belmont and the County of San Mateo**, its directors, officers, employees, authorized agents and the Engineer/Architect shall be named as additional insureds on the policies.
 - (4) The policy shall provide primary insurance coverage and the company providing such policy shall be liable thereunder for the full amount of any claim or loss up to and including the total limits of liability, without right of contribution from any other insurance maintained by the District/County/City or the other additional insureds.
 - (5) The policy shall provide that inclusion of the District/County/City, its officers, directors, employees and agents as additional insureds shall not affect the District's/County's/City's rights as respects any claim, demand, suit or judgment brought or recovered against the Contractor. Said policy shall protect Contractor and District/County/City in the same manner as though a separate policy had been issued to each, but nothing in said policy shall operate to increase the company's liability as set forth in this policy beyond the amount shown or to

which the company would have been liable if only one interest had been named as an insured. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

- G. Insurance is to be placed with an insurance carrier with a current A.M. Best and Company rating of no less than A:-VII or with a carrier acceptable to the District. The Contractor shall comply with all requirements of the insurers issuing policies. The carrying of insurance shall not be interpreted as relieving Contractor from any obligation under the Contract Documents. If any claim is made by any third person against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to the insurance carrier and the Owner. Any failure to comply with reporting or other provisions of the policies shall not effect coverage provided to the **Mid-Peninsula Water District**, its officers, directors or employees.
- H. If Contractor fails to procure and maintain any insurance required under this Section, the Owner may take out and maintain, at the Contractor's expense, such insurance as the Owner may deem proper and deduct the cost thereof from any monies due the Contractor.
- I. For projects located within public right of way, additional insurance requirements may be imposed by the owner of the right of way as a condition of issuing an encroachment or street opening permit to the Contractor. The Contractor shall provide such insurance at his sole cost and expense.

G7.22 PROPERTY INSURANCE

Unless otherwise provided in the Technical Specifications, the Contractor will purchase and maintain, in a company or companies lawfully authorized to do business in California, and acceptable to the Owner, property insurance upon the entire work, in the amount of the Contract price on a replacement cost basis. Such property insurance shall be maintained until final payment has been made.

Property insurance shall be on an all-risk policy form (commonly known as "Builder's Risk-All Risk"), excluding coverage for earthquake and tsunami. The insurance shall cover reasonable compensation for Engineer's services and expenses required as a result of such insured loss. This insurance shall insure the interests of the Owner, the Contractor, and subcontractors in the work.

The property insurance may contain deductibles not to exceed the amounts. If no amounts are specified in the Special Provisions, the insurance shall be written without deductibles. The Contractor shall pay costs not covered because of such deductibles.

Complete copies of each policy of insurance and certificates of each policy, in form and substance satisfactory to Owner, shall be filed with Owner within fifteen (15) days after Contractor receives notice of award. The policies and certificates shall provide:

- (1) that **Mid-Peninsula Water District** is included as a named insured;
- (2) that losses shall be payable to Contractor and District as their interests appear; and
- (3) the policy will not be cancelled, nor coverage materially altered, without thirty (30) days prior written notice to District."

G7.23 DISPOSAL OF MATERIAL OUTSIDE THE WORK SITE

Unless otherwise specified in the Specifications, the Contractor shall make his own arrangements for disposing of materials outside the work site and he shall pay all costs involved.

When any material is to be disposed of outside the work site, the Contractor shall first obtain a written permit from the property owner on whose property the disposal is to be made. The Contractor shall file with the Engineer/Architect this permit or a certified copy, together with a written release from the property owner absolving the Owner from any and all responsibility in connection with the disposal of material on the property. Before any material is disposed of on said property, the Contractor shall obtain written permission from the Engineer/Architect to dispose of the material at the location designated in said permit.

When material is disposed of as above provided and the disposal location is visible from a highway, the Contractor shall dispose of the material in a neat and uniform manner to the satisfaction of the Owner's geotechnical consultant.

G7.24 COOPERATION

Should construction be under way by other forces or by other contractors within or adjacent to the limits of the work specified, or should work of any other nature be under way by other forces within or adjacent to these limits, the Contractor shall cooperate with all such other contractors or other forces to the end that any delay or hindrance to their work will be avoided. The right is reserved to perform other or additional work at or near the site at any time, by the use of other forces.

When two or more contractors are employed on related or adjacent Owner work, each shall conduct his operations in such a manner as not to cause any unnecessary delay or hindrance to the other. Each contractor shall be responsible to the other for all damage to work, to persons or property caused to the other by his operations, and for loss caused the other due to his unnecessary delays or failure to finish the work within the time specified for completion.

G7.25 OCCUPANCY PRIOR TO ACCEPTANCE

The Owner reserves the right to occupy all or any part of the project prior to completion of the entire Contract, upon written order therefor. In such event, the Contractor will be relieved of responsibility for any injury or damage to such part as results from such occupancy and use by the Owner.

If the Contractor carries insurance against damage to such premises or against liability to third persons covering the premises so used and occupied by the Owner, and if such occupancy results in increased premiums for such insurance, the Owner will pay to the Contractor the added cost for such insurance during the period of occupancy.

Such occupancy does not constitute acceptance by the Owner either of the complete work or of any portion, nor will it relieve the Contractor of full responsibility for correcting defective work or materials found at any time before the formal written acceptance of the entire Contract by the Owner or during the full guarantee period after such acceptance.

G7.26 ACCEPTANCE OF THE WORK

When the Engineer/Architect has made the final inspection as provided in Section G5.14 and determines that the work has been completed in all respects in accordance with the Contract Documents, he will recommend that the Owner formally accept the work. Immediately upon and after such formal written acceptance by the Owner, the Contractor will be relieved of the duty of maintaining the work as a whole, and he will not be required to perform any further work thereon except as provided in Sections G4.15, "GUARANTY OF WORK" and G4.16, "CORRECTION OF WORK DURING WARRANTY PERIOD."

G7.27 PROPERTY RIGHTS IN MATERIALS

Nothing in the Contract shall be construed as vesting in the Contractor any right of property in the materials used after they have been attached or affixed to the work or soil or after partial payment has been made for material delivered on the ground or stored subject to or under the control of the Owner and unused. All such material shall become the property of the Owner upon being so attached or affixed or upon payment for materials delivered on the ground or stored subject to or under the control of the Owner and unused, as provided in Section 9.

G7.28 RIGHTS IN LAND AND IMPROVEMENTS

The Contractor shall make no arrangements with any person to permit occupancy or use of any land, structure or building within the limits of the work, for any purpose whatsoever, either with or without compensation, in conflict with any agreement between the Owner and any owner, former owner or tenant of such land, structure or buildings. The Contractor shall not occupy Owner-owned property outside the limit of the work as shown on the Contract Drawings unless he obtains prior approval.

G7.29 ANTITRUST CLAIMS

The Contractor's attention is directed to the following provision of Public Contract Code Section 7103.5(b) which shall be applicable to the Contractor and his subcontractors:

In entering into a public works contract or a subcontract to supply goods, services or materials pursuant to a public works contract, the Contractor or subcontractor offers and agrees to assign to the awarding body all right, 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 acknowledgment by the parties.

G7.30 ACCESS TO THE WORK

The Contractor shall satisfy himself that the jurisdictions through which his operations and haul routes pass will permit such operations with respect to type of vehicle, laden weights, frequency and dimensions of loads, hours of operation and required traffic control. All necessary permits, licenses or bonds shall be obtained and paid for by the Contractor.

G7.31 PERSONAL LIABILITY

Owner's Directors, General Manager, Secretary, Officers, Agents, Representatives and Employees and Engineer's Principals and Employees shall not be personally responsible for any liability arising under or by virtue of this Contract.

G7.32 THIRD PARTY RIGHTS

Nothing in the Contract is intended to create the public or any member thereof a third party beneficiary hereunder.

G7.33 INDEPENDENT CONTRACTOR STATUS

The Contractor shall independently perform all work under this Contract and shall not be considered as an agent or employee of the Owner, nor shall the Contractor's subcontractors or employees be considered as subagents of the Owner.

G7.34 HAZARDOUS CHEMICALS AND WASTES

The Contractor shall bear full and exclusive responsibility for any release of hazardous or nonhazardous chemicals or substances during the course of the performance of this Contract. The Contractor shall immediately report any such release to the Engineer/Architect. The Contractor shall be solely responsible for all claims and expenses associated with the response to, removal and remediation of the release, including, without limit, payment of any fines or penalties levied against the Owner by any agency as a result of such release and shall hold harmless, indemnify and defend the Owner from any claims arising from such release. For purposes of this section only, the term "claims" shall include (i) all notices, orders, directives, administrative or judicial proceedings, fines, penalties, fees or charges imposed by any governmental agency with jurisdiction, and (ii) any claim, cause of action, or administrative or judicial proceeding brought against the Owner, its directors, officers, employees or agents, or for any loss, cost (including reasonably attorney's fees), damage, or liability, sustained or suffered by any person or entity, including the Owner.

If the performance of the work outlined by these contract specifications creates any hazardous wastes, the Contractor shall properly dispose of such wastes in full accordance with federal, state and local laws, at the expense of the Contractor. The Contractor shall dispose of the wastes under the District's EPA Generator number and shall provide the District with written proof of the Contractor's or its subcontractor's registration as a hazardous waste transporter.

The Contractor shall notify the Engineer/Architect of any hazardous wastes generated and disposed of in connection with this Project and the District reserves the right to a copy of any tests concluded on the wastes and, at the District's cost, to perform additional tests or examine those wastes prior to disposition. The Contractor shall hold harmless, indemnify and defend the District from any claims in connection with the disposal of the hazardous wastes which arise from the negligent or willful misconduct of the Contractor or its subcontractor(s) in the disposal of said hazardous wastes.

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SECTION 8 PROSECUTION AND PROGRESS

G8.01 SUBCONTRACTING

The Contractor shall give his personal attention to the fulfillment of the Contract and shall keep the work under his control.

No subcontractor will be recognized as such and nothing in the Contract Documents shall create any contractual relationship between the Owner and any subcontractor. The Contractor is 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.

Attention is directed to the requirements of the Subletting and Subcontracting Fair Practices Act (commencing with Section 4100 of the California Public Contract Code), which are applicable to this Contract. Each bidder shall list in his Bid the name and business address of each subcontractor to whom the bidder proposes to subcontract a portion of the work, and shall list each subcontractor, licensed by the State of California, proposed by the bidder to specially fabricate and install a portion of the work. The list shall include a description of the portion of the work which shall be done by each subcontractor. The bidder shall execute and submit with his Bid the "List of Subcontractors" on the form included in this book. Additional forms may be obtained from the Engineer/Architect. The Contractor shall not, without the consent of the Owner, either substitute any person as subcontractor in place of the subcontractor designated in the original List of Subcontractors, or sublet or subcontract any portion of the work in excess of one-half of one percent of the total amount of his Bid for which he did not originally designate a subcontractor. All subcontractors shall be registered with the Department of Industrial Relations.

When a portion of the work which has been subcontracted by the Contractor is not being prosecuted in a manner satisfactory to the Owner, the subcontractor shall be removed immediately on the request of the Owner, and shall not again be employed on the work.

The Contractor shall require, by written agreement, each subcontractor to be bound to the Contractor by terms of the Contract Documents and to assume toward the Contractor all the obligations and responsibilities which the Contractor, by the Contract Documents, assumes toward the Owner, to the extent of the work to be performed by the subcontractor. Each subcontract agreement shall preserve and protect the rights of the Owner under the Contract Documents with respect to the work to be performed by the subcontractor, so that subcontracting will not prejudice such rights.

G8.02 ASSIGNMENT

The performance of the Contract may not be assigned except upon the written consent of the Owner. Consent will not be given to any proposed assignment which would relieve the original Contractor or his surety of their responsibilities under the Contract nor will the Owner consent to any assignment of a part of the work under the Contract.

The Contractor may assign monies due or to become due him under the Contract and such assignment will be recognized by the Owner, if given proper notice, to the extent permitted by law. However, any assignment of monies shall be subject to all proper set-offs in favor of the Owner and to all deductions provided for in the Contract, and particularly all money withheld, whether assigned or not, shall be subject

to being used by the Owner for the completion of the work in the event that the Contractor should be in default therein.

G8.03 NOTICE TO PROCEED

As soon as practicable after the Owner receives acceptable insurance certificates, approves the Contract Bonds and other Contract Documents, executes the Contract and reviews all submittals required prior to the start of the Work, the Owner will issue a written Notice to Proceed, which will be mailed to the Contractor. The effective date of the Notice to Proceed will be the date stated as such in the Notice to Proceed, provided that the effective date will not be earlier than the day following the issuance of the Notice to Proceed.

G8.04 BEGINNING OF WORK

The Contractor is not authorized to perform any work until he has received a Notice to Proceed from the Owner. Within five (5) working days after the effective date of such Notice to Proceed, the Contractor shall commence work and shall diligently prosecute the same to completion within the time limit provided in the Technical Specifications.

The Contractor shall notify the Engineer/Architect, in writing, of his intent to begin work at least seventy-two (72) hours before work is begun and shall specify the date the Contractor intends to start. If the project has more than one location of work, a separate notice shall be given for each location.

Should the Contractor begin work in advance of receiving the Notice to Proceed and providing notice to the Engineer/Architect, any work performed by him in advance of such notice shall be considered as having been done by him at his own risk and as a volunteer without compensation.

G8.05 SCHEDULES AND PROGRESS REPORTS

The Contractor shall, within the time specified in the Technical Specifications after the effective date of the Notice to Proceed, submit to the Engineer/Architect the specified number of copies of a construction schedule covering his operations for the work. The construction schedule shall be in the form required by the Technical Specifications or Specifications. The schedule shall show the order in which the Contractor proposes to carry out the work and the dates on which he expects to start and finish each part or division of the work (including procurement of materials, plant and equipment). The construction schedule shall be consistent with the time and order of work requirements of the Contract Documents and shall provide for expeditious and practicable execution of the work; provided that it shall not show a completion date earlier than the date by which the Contract must be completed pursuant to Section G8.07 and the corresponding Special Provision unless this early completion date was submitted with the Contractor's Proposal and the Contractor agrees to sign a Change Order reducing the completion time to that proposed by his schedule. If the Contractor desires to revise his construction schedule, or if it becomes necessary to revise it due to major changes, he shall submit the specified number of copies of the revised schedule for review and comment by the Engineer.

Owner will not issue a Notice to Proceed until the District Engineer reviews and comments on the construction schedule and submittal materials. No construction work will begin until the Contractor submits three (3) copies of corrected final submittal materials.

The Contractor shall submit to the Engineer/Architect as a condition of payment, at the time of submittal of the invoice for work completed (See Section G9.08), a schedule summary report in a form and of sufficient detail and character as specified in the Technical Specifications. The schedule summary report shall include the updated current construction schedule and shall specify whether the project is on schedule and, if not, the reasons. The monthly schedule summary report shall also indicate the delivery status of major and critical items of purchased equipment and material, the status of shop drawings and field fabricated work and such other information as may be required and set out in the Technical Specifications.

G8.06 SITE MEETINGS

The Contractor shall schedule meetings with the Engineer/Architect and each active subcontractor at the work site weekly, or at such other frequency as specified in the Technical Specifications. Each subcontractor shall present a competent representative to report the conditions of his work and to discuss problems.

G8.07 TIME OF COMPLETION

The Contractor shall complete all or any designated portion of the work called for under the Contract in all parts and requirements within the time set forth in the Technical Specifications.

G8.08 ADDITIONAL SHIFT WORK

The time limits specified for the completion of the work contemplated may be insufficient to permit completion of the work by the Contractor working a normal number of hours per day or week on a single shift basis. Where additional shifts or premium time pay are necessary to ensure that the work will be completed within the time limits specified, any resulting additional costs will be considered to be included in the price paid for the various Contract items of work and no additional compensation will be allowed.

G8.09 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct promptly work which is not in accordance with the requirements of the Contract Documents or persistently fails to carry out work in accordance with the Contract Documents, the Owner may, in writing, order the Contractor to stop the work, or any portion thereof, until the cause for such order has been eliminated. The Contractor shall immediately comply with a written order of the Owner to stop the work. The work stopped shall be resumed as and when ordered by the Owner.

G8.10 LIQUIDATED DAMAGES

It is agreed by the parties to the Contract that in case all the work called for under the Contract in all parts and requirements is not completed within the number of days as set forth in the Contract Documents damage will be sustained by the Owner and that it is and will be impracticable and extremely difficult to ascertain and determine the actual damage which the Owner will sustain in the event of and by reason of such delay. It is therefore agreed that the Contractor shall pay to the Owner (as liquidated damages for delay and not as a penalty) the sum set forth in the Contract Documents per day for each and every calendar day's delay in finishing the work in excess of the number of days prescribed. The Contractor agrees to pay these liquidated damages, and further agrees that the Owner may deduct this amount from any monies due or that may become due the Contractor under the Contract if the Contractor has not paid

within seven (7) days any demand from the Owner for liquidated damages. If, based on the current approved progress schedule and rate of progress, it is determined by the Owner that completion will exceed the Contract time, as extended by any change orders, the Owner may prospectively assess and withhold liquidated damages from progress payments. If and at such time as progress improves to indicate timely completion, liquidated damages so withheld may be released at the next regular progress payment.

G8.11 DELAYS AND EXTENSIONS OF TIME

The Contractor will be granted an extension of time and will not be assessed with liquidated damages or the cost of engineering and inspection for any portion of the delay in completion of the work beyond the time set forth in the Technical Specifications caused by unforeseeable causes beyond the control and without the fault or negligence of the Contractor or subcontractor. Examples of such causes include acts of God or of the public enemy, fire, floods, storms, epidemics, quarantine restrictions, strikes and other work stoppages caused by a labor dispute, shortage of materials and freight embargoes, or acts or neglect of the Owner or Engineer/Architect not contemplated by the Contract Documents. In all cases, any extension of time is conditioned on the following: (1) that the cause is not due to the fault of the Contractor or subcontractor and the Contractor has taken reasonable precautions to prevent delays due to such cause; and (2) that the Contractor notifies the Engineer/Architect in writing within (ten) 10 days from the beginning of such delay specifying the nature of the delay, the number of days actually delayed and the measures taken to prevent or minimize the delay. Failure to submit written notice within this time shall constitute an absolute waiver of any claim for a time extension; failure to submit the required information will be sufficient cause for denial of the request for a time extension.

No extension of time will be granted for a delay caused by a shortage of materials, unless the Contractor furnishes to the Engineer/Architect documentary proof that he has diligently made every effort to obtain such materials from all known sources within reasonable reach of the work and further proof, in the form of schedule data as required in Section G8.05, that the inability to obtain such materials when originally planned did in fact cause a delay in final completion of the entire work which could not be compensated for by revising the sequence of the Contractor's operations. Only the physical shortage of material will be considered as a cause for extension of time, and no consideration will be given to any claim that material could not be obtained at a reasonable, practical or economical cost or price, unless it is shown to the satisfaction of the Engineer/Architect that such material could have been obtained only at exorbitant prices entirely out of line with current rates, taking into account the quantities involved and the usual practices in obtaining such quantities.

The term "shortage of materials," as used in this Section, shall apply only to materials, articles, parts or equipment which are standard items and shall not apply to materials, parts, articles or equipment which are processed, made, constructed, fabricated or manufactured to meet the specific requirements of the contract.

No extension of time will be granted for storms or adverse weather conditions which may reasonably be anticipated for the area in which the work is being performed, based on official records of monthly precipitation and other historical data.

No extensions of time will be granted for delays which have no measurable impact on the completion of the total work under the Contract. When extensions of time are granted, they will be limited to the period equivalent to the actual number of days lost on the critical path or controlling operation of construction,

taking into account the extent to which that delay could be decreased by reasonable mitigation measures by the Contractor or its subcontractor. All requests for extensions of time must be supported with a critical path analysis showing the critical path and impacts to it.

Within a reasonable period of time after the Contractor submits the notice and information required by this Section, the Engineer will determine whether an extension of time is justified and, if so, the number of days for the extension. In the event that the Contractor disagrees with the Engineer's decision, the Contractor may submit a protest in compliance with G4.09.

G8.12 TERMINATION OF RIGHT TO PROCEED

If the Contractor should appear to the Engineer/Architect to be in default and the Contractor fails to remedy his default within five (5) working days after receipt from the Engineer/Architect of notice of such default, the Owner may terminate the Contractor's right to proceed with the work or that portion which the Engineer/Architect determines is most directly affected by the default.

The term "default" for purposes of this Section includes, but is not limited to, the performance of work in violation of the terms of the Contract; abandonment, assignment or subletting of the Contract without approval of the Owner; bankruptcy or appointment of a receiver for Contractor's property; refusal or failure properly to prosecute the work; use of materials, supplies, plant or equipment of improper quality or quantity; refusal or failure to use an adequate number of properly skilled workers; failure to provide proper workmanship; failure to take effective steps to end a prolonged labor dispute; and the performance of the Contract in bad faith.

Upon the Owner's termination of the Contractor's right to proceed with the work, or a portion of it, the Owner shall have the right to complete the work, or the portion involved, by whatever means and methods it deems expedient, including the hiring of others on such terms as the Owner deems advisable. The Owner shall have the right to take possession of the Contractor's materials, plant, tools, equipment and property of any kind provided by or on behalf of the Contractor for the purpose of the work, or a portion of them, without being responsible to the Contractor for fair wear and tear. The Contractor shall have no rights in such property during its use by the Owner. The Owner shall not be required to obtain the lowest prices for completing the work or a portion of it but shall make such expenditures as, in the Owner's sole judgment, best accomplish such completion.

The expense of completing such work or portion thereof, together with a reasonable charge for engineering, managerial and administrative services, as certified by the Owner, shall be charged to the Contractor, and the expense so charged shall be deducted by the Owner out of such monies as may be due or as may at any time afterwards become due to the Contractor. In case such expense is more than the sum which otherwise would have been payable to the Contractor under the Contract, then the Contractor or his surety or sureties shall promptly pay the amount of such excess so due. The Owner may, in its sole discretion, withhold all or any part of any progress payments otherwise due the Contractor until completion and final settlement of the work covered by such notice of default.

G8.13 TERMINATION OF CONTRACT

A. **Termination for Cause.** The Owner may terminate the Contract if the Contractor:

- (1) persistently or repeatedly fails or refuses to supply enough properly skilled workers or proper materials;
- (2) fails to make payment to subcontractors for materials or labor in accordance with the respective agreements between the Contractor and subcontractor;
- (3) persistently disregards laws, ordinances or rules, regulations or orders of a public authority having jurisdiction; or
- (4) otherwise is guilty of a substantial breach of a provision of the Contract Documents. A "default" as defined in Section G8.12 shall constitute a substantial breach of the Contract Documents.

When any of the above reasons exist, the Owner may, without prejudice to any other rights or remedies of the Owner under this Contract or otherwise, upon ten (10) days written notice, terminate the Contract and may:

- (1) take possession of the site and of all materials, equipment, tools and construction equipment and machinery thereon owned by the Contractor;
- (2) finish the work by whatever means the Owner deems expedient.

When the Owner terminates the Contract under this Section, the Contractor shall not be entitled to receive any further payments until the work is completed and accepted by the Owner.

The provisions of the last two paragraphs of Section G8.12 shall apply if the Owner terminates the Contract.

The Owner will issue the Contractor a written notice specifying that the Contract is to be terminated. Upon receipt of said written notice and, except as otherwise directed in writing by the Engineer, the Contractor shall:

- (1) stop all work under the Contract except that specifically directed to be completed prior to acceptance;
- (2) perform work the Engineer/Architect deems necessary to secure the project for termination;
- (3) remove equipment from the site of work;
- (4) take such action as is necessary to protect materials from damage;
- (5) notify all subcontractors and suppliers that the Contract is being terminated and that their contracts or orders are not to be further performed unless otherwise authorized in writing by the Engineer;

- (6) provide the Engineer/Architect with an inventory list of all materials previously produced, purchased or ordered from suppliers for use in the work and not yet used in the work, including its storage location, and such other information as the Engineer may request;
- (7) dispose of materials not used in the work as directed by the Engineer/Architect. It shall be the Contractor's responsibility to provide the Owner with good title to all materials purchased by the Owner, including materials for which partial payment has been made as provided in Section G9.10, "Partial Payments," of these General Provisions and with bills of sale or other documents of title for such materials;
- (8) subject to the prior written approval of the Engineer/Architect, settle all outstanding liabilities and all claims arising out of terminated subcontracts or orders for materials. To the extent directed by the Engineer, the Contractor shall assign to the Owner all the right, title and interest of the Contractor under subcontracts or orders for materials terminated hereunder;
- (9) furnish the Engineer/Architect with the documentation required to be furnished by the Contractor under the provisions of the Contract including, on projects as to which federal funds are involved, all documentation required under the federal requirements included in the Contract;
- (10) take such other actions as the Engineer/Architect may direct.

B. Termination for Convenience. The Owner may terminate this contract in whole, or from time to time in part, at any time and for any reason, whenever the Owner shall determine that such termination is in the best interests of the Owner. Any termination which is not based on the circumstances set forth in Subsection A above, shall be effected by delivery to the Contractor of a notice of termination specifying the extent to which performance of work under the contract is terminated, and the date upon which such termination becomes effective. In such event, Contractor shall be paid for all actual substantiated direct costs of materials furnished and work performed up to the date of termination and such additional compensation as the Owner deems proper and reasonable to effect termination.

Upon Contractor's receipt of a written notice of termination for convenience, the Contractor shall cease work as to those portions of the project so terminated and shall undertake the steps outlined in Subsection A above.

In the event that the Owner terminates this Contract under Subsection A above and it is determined for any reason that there was not sufficient cause to do so, the Owner's termination automatically will convert to a termination for convenience under this Subsection B and the terms and conditions outlined in this Subsection automatically will be applied to effectuate the Contract termination.

G8.14 NON-OWNER FACILITIES

The Contractor shall protect from damage those utilities and other non-Owner facilities that are to remain in place, be installed, relocated or otherwise arranged.

Attention is directed to the possible existence of facilities not shown, and of facilities in a location different from that which is indicated. The Contractor shall take steps to ascertain the exact location of all facilities prior to doing work which may damage such facilities or interfere with their service. Where the location of a facility is not indicated or is in doubt, the Contractor shall make such excavations and explorations as

are necessary to ascertain the correct location. The cost of such excavations and explorations will be considered as a part of the cost of other items of work and no additional payment will be made. Such excavations and exploratory work shall not entitle the Contractor to an extension of time.

Where it is determined by the Engineer/Architect that the rearrangement of an underground facility, the existence of which is not shown on the drawings, is essential in order to accommodate the work, the Engineer/Architect will provide for the rearrangement of such facility by other forces or, when so ordered by change order, such rearrangement shall be performed by the Contractor and will be paid for as provided under a change order.

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

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

G8.15 TEMPORARY UTILITIES

The Contractor shall make his own arrangements with utility companies for any services he may require in performance of the work of this Contract and shall pay all costs of these services directly to these utility organizations.

SECTION 9 MEASUREMENT AND PAYMENT

G9.01 MEASUREMENT OF QUANTITIES

All work to be paid for at a Contract price per unit of measurement will be measured by the Engineer/Architect in accordance with United States Standard Measures.

G9.02 SCOPE OF PAYMENT

The Contractor shall accept the compensation provided in the Contract as full payment for furnishing all labor, materials, tools, equipment and incidentals necessary to the completed work and for performing all work contemplated and embraced under the Contract; also for loss or damage arising from the nature of the work, or from the action of the elements, or from any unforeseen difficulties which may be encountered during the prosecution of the work until the acceptance by the Owner; and for all risks of every description connected with the prosecution of the work, also for all expense incurred in consequence of the suspension or discontinuance of the work as herein specified; and for completing the work according to the Contract Documents. Neither the payment of any estimate nor of any retained percentage shall relieve the Contractor of any obligation to make good any defective work or materials.

No compensation will be made in any case for loss of anticipated profits; profit in excess of that provided in the Contract Documents; home office overhead; consequential damage (including loss of bonding capacity, loss of bidding opportunities and insolvency); indirect costs or expenses of any nature; or attorneys' fees, claim preparation expenses or costs of litigation.

Except as specifically provided otherwise, no separate payment will be made for work covered in any of these General Provisions nor in the Division 1 Sections (01000 series), if used, of the Technical Specifications, and the cost thereof will be considered as included in the prices paid for the various Contract items included in the Bid.

If the "payment" clause in the Contract Documents relating to any unit price in the bid schedule requires that the said unit price cover and be considered compensation for certain work or material essential to the item, this same work or material will not also be measured nor paid for under any other pay item which may appear elsewhere in the Contract Documents.

G9.03 FORCE ACCOUNT PAYMENT

When extra work or other work done pursuant to a Change Order is to be paid for on a force account basis, materials and equipment used in the performance of such work shall be subject to the approval of the Engineer/Architect and compensation will be determined as set forth below in this Section.

- A. Work Performed by Contractor. The Contractor will be paid the direct costs for labor, materials and equipment used in performing the work determined as hereafter provided.

To the total of the direct costs computed as provided in Sections 9.03.A(1), "Labor," 9.03.A(2), "Materials" and 9.03.A(3), "Equipment Rental," there will be added a markup of twenty-four percent (24%) to the cost of labor, fifteen percent (15%) to the cost of materials and subcontractors, fifteen percent (15%) to the cost of Contractor-owned equipment, and five percent (5%) to rented equipment.

The above markups shall constitute full compensation, covering the cost of general supervision, overhead, profit and any other general expense not specifically designated as cost or equipment rental in Sections 9.03.A(1), (2) and (3). The total payment made as provided above (i.e., direct cost plus applicable markups) shall be deemed to be the actual cost of such work and shall constitute full compensation therefor.

When work paid for on a force account basis is performed by forces other than the Contractor's organization, the Contractor shall reach agreement with such other forces as to the distribution of the payment made by the Owner for such work. No additional payment will be made by the Owner by reason of the performance of the work by a subcontractor or other forces.

1. **Labor.** The Contractor will be paid the cost of labor for the workers (including foremen when authorized by the Engineer/Architect, used in the actual and direct performance of the work. The cost of labor, whether the employer is the Contractor, subcontractor or other forces, will be the sum of the following:
 - (1a) **Actual Wages.** The actual wages paid shall include any employer payments to or on behalf of the workers for health and welfare, pension, vacation and similar purposes.
 - (1b) **Labor Surcharge.** To the actual wages, as defined in Section 9.03A(1a), will be added a labor surcharge set forth in the California Department of Transportation publication entitled Labor Surcharge And Equipment Rental Rates, which is in effect on the date upon which the work is accomplished and which is a part of the Contract. This labor surcharge shall constitute full compensation for all payments imposed by State and Federal laws and for all other payments made to, or on behalf of, the workers, other than actual wages as defined in Section 9.03A(1a).
 - (1c) The Contractor must submit documentary evidence satisfactory to the District Engineer to support any claims for compensation for all labor costs incurred. Such evidence may include certified payroll records or other documentary evidence showing hours worked per individual worker for the relevant time period.
2. **Materials.** The Owner reserves the right to furnish such materials as it deems advisable, and the Contractor shall have no claims for costs and markup on such materials.

Only materials furnished by the Contractor and necessarily used in the performance of the work will be paid for. The cost of such materials will be the cost to the purchaser, whether Contractor, subcontractor or other forces, from the supplier, except as the following are applicable:

- (2a) If a cash or trade discount by the actual supplier is offered or available to the purchaser, it shall be credited to the Owner notwithstanding the fact that such discount may not have been taken.
- (2b) If materials are procured by the purchaser by any method which is not a direct purchase from and a direct billing by the actual supplier to such purchaser, the cost of such materials shall be deemed to be the price paid to the actual supplier as determined by the Engineer/Architect plus the actual costs, if any, incurred in the handling of such materials.

- (2c) If the materials are obtained from a supply or source owned wholly or in part by the purchaser, the cost of such materials shall not exceed the price paid by the purchaser for similar materials furnished from said source on Contract items or the current wholesale price for such materials delivered to the job site, less any discounts as provided in Section 9.03A(2a).
- (2d) If the cost of such materials is, in the opinion of the Engineer/Architect, excessive, then the cost of such material shall be deemed to be the lowest current wholesale price at which such materials were available in the quantities concerned delivered to the job site, less any discounts as provided in Section 9.03A(2a).
- (2e) If the Contractor does not furnish satisfactory evidence of the cost of such materials from the actual supplier thereof within sixty (60) days after the date of delivery of the materials or within fifteen (15) days after acceptance of the Contract, whichever occurs first, the Owner reserves the right to establish the cost of such materials at the lowest current wholesale prices at which such materials were available in the quantities concerned delivered to the location of the work, less any discounts as provided in Section 9.03A(2a).

3. **Equipment Rental.** The Contractor will be paid for the use of equipment at the rental rates listed for such equipment in the California Department of Transportation publication entitled Labor Surcharge And Equipment Rental Rates, which is in effect on the date upon which the work is accomplished and which is a part of the Contract, regardless of ownership and any rental or other agreement, if such may exist, for the use of such equipment entered into by the Contractor. If it is deemed necessary by the Engineer/Architect to use equipment not listed in said publication, a suitable rental rate for such equipment will be established by the Engineer/Architect. The Contractor must furnish cost data to support the Engineer/Architect in the establishment of such rental rate.

The rental rates paid as above provided shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance and all incidentals.

Operators of rented equipment will be paid for as provided in Section 9.03A(l), "Labor."

All equipment shall, in the opinion of the Engineer/Architect, be in good working condition and suitable for the purpose for which the equipment is to be used.

Individual pieces of equipment or tools not listed in said publication and having a replacement value of \$200 or less, whether or not consumed by use, shall be considered to be small tools and no payment will be made therefor.

Rental time will not be allowed while equipment is inoperative due to breakdowns.

4. **Equipment Not on the Job.** For the use of equipment moved in on the Job and used exclusively for extra work paid for on a force account basis, the Contractor will be paid the rental rates in effect or determined to the location of the work and its return to its original location, all in accordance with the following provisions:

- (4a) The original location of the equipment to be hauled to the location of the work will be agreed to by the Engineer/Architect in advance.
- (4b) The Owner will pay the costs of loading and unloading such equipment.
- (4c) The cost of transporting equipment in low bed trailers shall not exceed the hourly rates charged by established haulers.
- (4d) The cost of transporting equipment shall not exceed the applicable minimum established rates of the Public Utilities Commission.
- (4e) The rental period shall begin at the time the equipment is unloaded at the site of the extra work, shall include each day that the equipment is at the site of the extra work, excluding Saturdays, Sundays, and legal holidays unless the equipment is used to perform the extra work on such days, and shall terminate at the end of the day on which the Engineer directs the Contractor to discontinue the use of such equipment. The rental time to be paid per day will be in accordance with the following:

<u>Hours Equipment is in Operation</u>	<u>Hours To be Paid</u>
0	4
0.5	4.25
1	4.5
1.5	4.75
2	5
2.5	5.25
3	5.5
3.5	5.75
4	6
4.5	6.25
5	6.5
.5	6.75
6	7
6.5	7.25
7	7.5
7.5	7.75
8	8
Over 8	actual hours in operation

The hours to be paid for equipment which is operated less than eight (8) hours due to breakdown shall not exceed eight (8) less than the number of hours the equipment is inoperative due to breakdowns.

When hourly rates are listed, less than thirty (30) minutes of operation shall be considered to be one-half (1/2) hour of operation.

The Contractor must submit documentary evidence satisfactory to the District Engineer showing hours of rental equipment usage to support any claims for compensation.

When daily rates are listed, payment for one-half (1/2) day will be made for one (1) day.

The minimum rental time to be paid for the entire rental period on an hourly basis shall not be less than eight (8) hours or if on a daily basis, shall not be less than one (1) day.

(4f) Should the Contractor desire the return of the equipment to a location other than its original location, the Owner will pay the cost of transportation in accordance with the above provisions; provided such payment shall not exceed the cost of moving the equipment to the work.

(4g) Payment for transporting, and loading and unloading equipment, as above provided, will not be made if the equipment is used on the work in any other way than upon extra work paid for on a force account basis.

B. Work Performed by Special Forces or Other Special Services. When the Engineer/Architect and the Contractor, by agreement, determine that a special service or an item of extra work cannot be performed by the forces of the Contractor or those of any of his subcontractors, such service or extra work item may be performed by a specialist. Invoices for such service or item of extra work on the basis of the current market price may be accepted without complete itemization of labor, materials and equipment rental costs when it is impracticable and not in accordance with the established practice of the special service industry to provide such complete itemization.

In those instances when a contractor is required to perform extra work necessitating a fabrication or machining process in a fabrication or machine shop facility away from the job site, the charges for that portion of the extra work performed in such facility may, by agreement, be accepted as a specialist billing.

To the specialist invoice price, less a credit to the Owner for any cash or trade discount offered or available, whether or not such discount may have been taken, will be added fifteen percent (15%) in lieu of the percentages provided in Section 9.03A, "Work Performed by Contractor."

G9.04 RECORDS

The Contractor shall maintain his records in such a manner as to provide a clear distinction between the direct costs of work paid for on a force account basis and the costs of other operations.

From the above records, the Contractor shall furnish the Engineer/Architect completed daily reports, on forms furnished by or acceptable to the Owner, for each day's work to be paid for on a force account basis. The daily reports shall itemize the materials used, and shall cover the direct cost of labor and the charges for equipment rental, whether furnished by the Contractor, subcontractor, or other forces, except for charges described in Section G9.03.B, "Work Performed by Special Forces or Other Special Services," of the General Provisions. The daily reports shall provide names or identifications and classifications of workers, the hourly rate of pay and hours worked, and also the size, type and identification number of equipment, and hours operated. Before presenting the daily reports to the Engineer/Architect for payment, the Contractor shall compile the cost of the work to be paid for on a force account basis. The report number shall be left blank for completion by the Engineer/Architect.

Material charges shall be substantiated by valid copies of vendor's invoices. Such invoices shall be submitted with the daily reports, or if not available, they shall be submitted with subsequent daily reports.

Should vendor's invoices not be submitted within sixty (60) days after the date of delivery of the materials or within fifteen (15) days after the acceptance of the Contract, whichever occurs first, the Owner reserves the right to establish the cost of such materials at the lowest current wholesale prices at which said materials are available in the quantities concerned delivered to the location of the work, less any discounts provided in Section G9.03.A.

The daily reports shall be signed by the Contractor or his authorized representative. The daily reports shall be turned in to the Engineer/Architect by the close of business on the day following the day of the report. Failure to turn in reports on this schedule will be the basis for denying payment or use of the Engineer's records only as the final and indisputable basis for payment. Reports must be complete as noted above.

The Engineer/Architect will compare his records with the completed daily reports furnished by the Contractor and make any necessary adjustments.

When the daily reports are agreed upon and signed by both parties, except for delinquent reports as noted above, the reports shall become the basis of payment for the work performed, but shall not preclude subsequent adjustment based on the later audit by the Owner.

Pursuant to Government Code section 8546.7, Contractor shall retain all project-related records for a period of 3 years after final payment on this contract, which shall be subject to audit or inspection by the District or the State Auditor during this period.

Separate and apart from the obligations under Section 8546.7, the District shall have the right to audit project records at District discretion under the following circumstances: (a) submission of a Public Records Act request regarding the project; (b) inability to resolve a disputed contract change order; or (c) submission of a construction claim.

G9.05 STOP NOTICES

The Owner may, at its option and at any time, retain out of any amounts due the Contractor sums sufficient to cover claims filed pursuant to Section 9350 et seq. of the California Civil Code.

G9.06 PAYMENT SCHEDULES

The Contractor shall submit a Schedule of Anticipated Contract Payments and a Schedule of Pay Items for review and approval by the Engineer/Architect prior to the initial partial payment to the Contractor. The Schedule of Pay Items shall be prepared by the Contractor in a format approved by the Engineer/Architect and shall include such detail as directed by the Engineer/Architect. The Schedule shall be sufficiently clear and detailed so as to facilitate an accurate and realistic appraisal of monthly progress for the purpose of making partial payments. The value for each bid item shall total the bid amount. The cost breakdown shall include only actual work items. No amounts will be allowed for mobilization and other overhead costs such as bonds and insurance. Costs of these items shall be spread uniformly over the actual items of work. The values in the Schedule will be used only for determining partial payments.

The Schedule of Anticipated Contract Payments shall be coordinated with the Contractor's construction schedule submitted pursuant to Section G8.05 and shall show the anticipated monthly Contract payments for each of the pay items covered in the Schedule for Pay Items, the total of monthly payments and cumulative total of payments for each month. If the construction schedule is revised, the Schedule of

Anticipated Contract Payments shall also be revised and resubmitted for the Engineer/Architect's review and approval. No partial payment will be made until the Engineer/Architect has approved the Schedules required by this Section.

G9.07 PROGRESS ESTIMATES AND INVOICES FOR WORK COMPLETED

Once each month, at a time, place and location mutually agreeable, the Contractor and Engineer/Architect shall meet to discuss the amount of work completed satisfactorily during the work period since the last invoice for partial payment was prepared. The first such estimate will be of the value of the work done after the Contractor commenced the performance of the contract, and every subsequent estimate, except the final estimate, will be of the value of the work done after that included in the last preceding estimate. Such estimates need not be based on strict measurements, but may be approximate only, and will be in due proportion to the whole amount of money, including payments previously made, that will have become due according to the contract when all work required under the contract shall have been completed. A draft invoice for work completed shall be prepared; the Engineer/Architect's judgment will be final if disputes occur regarding the amount of work completed or its value. Following the meeting, the Contractor shall formally submit the invoice for work completed in a form acceptable to the Engineer/Architect. The invoice will certify, and be supported by evidence if required by the Engineer/Architect, that the work invoiced has been done and that the materials listed have been incorporated into the work. The invoice may include the amount and value of such acceptable material as has been furnished and incorporated into the work.

G9.08 RETENTION

In addition to amounts, if any, withheld pursuant to any other provision of these General Provisions, including the Owner's right to withhold for the estimated or actual costs of correcting defective work and amounts claimed by the Owner as liquidated damages or other offsets, the Owner will retain an amount equal to 5 percent of the estimated value of the work done as part security for the fulfillment of the Contract by the Contractor.

In addition, when the Engineer/Architect determines that the contract is ninety-five percent (95%) complete, the Owner may reduce the amount withheld from payment to such lesser amount as the Owner determines is adequate security for the fulfillment of the balance of the work and other requirements of the contract, but in no event will said amount be reduced to less than one hundred twenty-five percent (125%) of the estimated value of the work yet to be completed as determined by the Engineer/Architect. In agreeing to any of the above referenced revised method(s) of progress payments, the Owner reserves the right to return to the original method of progress payments in the amount of ninety five percent (95%) of work completed, if at any time, the Engineer/Architect finds that either the Contractor is not making satisfactory progress or there is a specific cause for greater withholding.

G9.09 PARTIAL PAYMENTS

Pursuant to Public Contract Code Section 20104.50, if the Owner fails to make a progress payment in a timely manner, it shall pay interest to the Contractor at the legal rate set forth in the Code of Civil Procedure Section 685.010(a). No such progress payment will be made when, in the judgment of the Engineer/Architect, (a) the work is not proceeding in accordance with the provisions of the Contract; (b) the Contractor is not complying with the requirements of the Contract; or (c) when the total value of the work done as shown on the invoice does not exceed Three Hundred Dollars (\$300.00).

No such invoice or payment will be construed to be an acceptance of any work or materials. Before any progress payment or the final payment is made, the Contractor may be required to submit satisfactory evidence that he is not delinquent in payments to his employees, subcontractors, suppliers or other creditors for labor and materials incorporated into the work.

G9.10 PAYMENT OF WITHHELD FUNDS

Pursuant to Public Contract Code Section 22300, the Contractor may request to deposit securities in escrow equivalent to the amount of funds withheld from progress payments by the Owner as described in Section G9.09, with the Owner or a bank acceptable to the Owner as a substitution for funds withheld by the Owner. Alternatively, the Contractor may request to have the District make payment of the funds withheld from progress payments as described in Section G9.09 directly to an escrow agent and direct the investment of such funds into securities. The Contractor shall be the beneficial owner of any securities and shall receive interest thereon. Upon satisfactory completion of the contract, the Contractor shall receive all securities, interest and payments. The Contractor may make this request only upon the following conditions:

- (a) the request to substitute securities or to have payments made directly to an escrow agent shall be at the sole expense of the Contractor;
- (b) securities eligible for investment shall include securities pursuant to California Government Code Section 16430, bank or savings and loan certificates of deposit, interest bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed upon by the Owner and Contractor;
- (c) the Contractor shall enter into an escrow agreement which shall be substantially similar to the agreement form provided in Public Contract Code Section 22300;
- (d) the Contractor shall obtain the written consent of the surety to such agreement; and
- (e) the Contractor who elects to receive interest on funds withheld by the Owner shall, at the request of any subcontractor performing more than five percent (5%) of the Contractor's total bid, make the option available to the subcontractor to receive interest on any funds withheld in retention by the Contractor from the subcontractor. The subcontractor shall receive interest in accordance with Public Contract Code Section 22300(d)(1). Alternatively, the Contractor who elects to substitute securities in lieu of retention by the Owner, shall by mutual consent between the Contractor and subcontractor, allow any subcontractor performing more than five percent (5%) of the Contractor's total bid to substitute securities in lieu of funds withheld by the Contractor.

G9.11 PROMPT PAYMENT TO CONTRACTOR

The District will make progress payments within 30 days after receipt of an undisputed and properly submitted progress payment invoice pursuant to Section 20104.50 of the Public Contract Code. No such payment will be made when, in the judgment of the Engineer, (a) the work is not proceeding in accordance with the provisions of the Contract; (b) the Contractor is not complying with the requirements of the Contract; or (c) when the total value of the work done as shown on the invoice does not exceed Three Hundred Dollars (\$300.00). No such invoice or payment will be construed to be an acceptance of any work or materials. Before any progress payment or the final payment is made, the Contractor may be required

to submit satisfactory evidence that he is not delinquent in payments to his employees, subcontractors, suppliers or other creditors for labor and materials incorporated into the work. Pursuant to Public Contract Code Section 20104.50, if the District fails to make a progress payment in a timely manner, it shall pay interest to the Contractor at the legal rate set forth in Section 685.010(a) of the California Code of Civil Procedure.

G9.12 PROMPT PAYMENT TO SUBCONTRACTORS

Pursuant to Public Contract Code Section 7107, the Contractor shall pay any subcontractors for work that has been satisfactorily performed no later than seven (7) days from the date of Contractor's receipt of payments by the District. The District may require Contractor to provide documentation satisfactory to the District of Contractor's compliance with this requirement as a condition of final payment and release of contract retention.

Within seven (7) days of receipt of retention by the original Contractor, Contractor shall release any applicable retention payments withheld to the subcontractor.

In the event Contractor does not make progress payments or release retention to the subcontractors in accordance with the time periods in this section, Contractor may be subject to a charge of two percent (2%) per month on the untimely or improperly withheld payment.

G9.13 FINAL PAYMENT AND CLAIMS

After the work has been accepted by the Owner, as provided in Section G7.26, "Acceptance of Work," payment will be made to the Contractor in accordance with the provisions of this Section. Upon acceptance, the Owner will record a Notice of Completion covering the project.

Within thirty-five (35) days after acceptance by the Owner, the Contractor shall prepare and submit a proposed final invoice in writing, prepared in a form acceptable to the Engineer/Architect. The proposed final invoice will show the proposed total amount of compensation payable to the Contractor, including an itemization of that amount segregated as to Contract item quantities, extra work and other bases for payment. The proposed final invoice will also show all deductions made or to be made for prior payments and amounts to be kept or retained under the Contract.

The Contractor shall also submit, at the same time as the proposed final invoice is submitted, a statement of all claims he has submitted in accordance with G9.15. No claim for which the requirements of 9.15 have been satisfied will be considered unless the Contractor has fully complied with the notice or protest requirements in said section.

Claims filed by the Contractor shall be in sufficient detail to enable the Engineer/Architect to ascertain the basis and amount of the claims. The Engineer/Architect will consider and determine the Contractor's claims and it will be the responsibility of the Contractor to furnish within a reasonable time such further information and details as may be required by the Engineer/Architect to determine the facts or contentions involved in the claims. Failure to submit such information and details will be sufficient cause for denying the claims.

The Engineer/Architect will review the proposed final invoice and claims and will submit his recommendation to the Owner as to the final estimate of the amount due the Contractor and the

disposition of all claims. All prior invoices and payments are subject to correction in connection with review of the proposed final invoice.

The Owner will submit any changes or corrections to the proposed final invoice to the Contractor for his consideration. Within ten (10) days thereafter, the Contractor shall submit a final invoice, in a form acceptable to the Engineer/Architect, incorporating any changes or corrections made by the Owner, together with any additional claims resulting therefrom. Upon approval by the Owner, this will become the approved final invoice. The Contractor shall submit with the final invoice, certificates of any insurance required to be maintained after acceptance of the work.

If the Contractor files no claims within thirty (30) days after acceptance of the work by the Owner, and agreement is reached on all questions regarding the final invoice, the Owner will pay the entire sum found due upon the final invoice, except that the Owner will withhold sums sufficient to pay all unsettled claims for which stop notices have been filed pursuant to Section 3179 et seq. of the California Civil Code, together with the costs of administering such claims.

If the Contractor does file claims within thirty (30) days after acceptance of the work by the Owner, then upon final determination of all the Contractor's claims, the Owner will pay the entire sum found due upon the final invoice, including the amount, if any, allowed on claims, except that the Owner will withhold sums sufficient to pay all unsettled claims for which stop notices have been filed pursuant to Section 3179 et seq. of the California Civil Code, together with the costs of administering such claims.

Before final payment can be made, the Contractor shall furnish the Engineer/Architect with the following:

- (f) All drawings, catalogues, instruction sheets and information as required by the Contract;
- (g) One signed copy of the Release as discussed below in this Section and on a form furnished by the Owner; and
- (h) Guarantee Bond, if not already incorporated in the Performance Bond.

Final payment will be made within thirty (30) days after receipt of an approved final invoice and other required submittals referenced above and determination of all Contractor's claims, or sixty (60) days after acceptance of the work by the Owner, whichever is later. However, if an approved final invoice has not been submitted within sixty (60) days after acceptance of the work by the Owner, the Owner may elect to make payment of sums not in dispute without prejudice to the right of either the Owner or the Contractor in connection with such disputed sums.

The acceptance by the Contractor of final payment shall constitute a waiver and release of all claims by the Contractor against the Owner related to the work, except for claims previously made in writing and identified as unsettled by the Contractor at the time of submission of the final invoice. The making of final payment, however, shall not operate to release the Contractor or his sureties from obligations arising under this Contract, the Contract bonds and warranties as provided. Specifically, the making of final payment shall not constitute a waiver and release of claims by the Owner arising from (a) unsettled or future liens, (b) failure of the work to comply with the requirements of the Contract Documents, (c) the terms of any warranties required by or contained in the Contract Documents, (d) the right to any insurance proceeds or the right to make any insurance or bond claims, (e) any claims with respect to Contractor's obligation of indemnity provided for in the Contract Documents, or (f) any latent defects or fraud.

G9.14 CLAIMS PROCEDURES

The Contractor shall not be entitled to the payment of any additional compensation for any cause, including any act, or failure to act, by the Engineer/Architect (including the failure or refusal to issue a Change Order), or the happening of any event, thing or occurrence, unless he shall have given the Engineer/Architect due written notice of the claim as specified below. However, compliance with this Section shall not be a prerequisite as to matters within the scope of the Contract Change Order protest provisions in Section G4.08, "Protest Procedure," or the notice provisions in Section G8.11, "Delays and Extension of Time."

The written claim shall set forth the reasons for which the Contractor believes additional compensation will or may be due, the nature of the costs involved and, insofar as possible, the amount of the claim.

It is the intention of this Section that differences between the parties arising under and by virtue of the Contract shall be brought to the attention of the Engineer/Architect at the earliest possible time in order that such matters may be settled if possible, or other appropriate action promptly taken. The Contractor hereby agrees that he shall have no right to additional compensation for any claim that may be based on any such act, failure to act, event, thing or occurrence for which a written claim as required was not timely filed.

Compliance with all change order procedures is a prerequisite to filing a Public Contract Code Claim pursuant to this Section. Claims must be submitted no later than (a) 30 days after the submission of a written protest under Section 4.09 or (b) 30 days after the occurrence of the event giving rise to the claim.

In accordance with the procedures set forth in Public Contract Code Sections 9204 and 20104-20104.6, a Contractor may submit a claim by registered or certified mail with return receipt requested, for one or more of the following: (a) a time extension, including, without limitation, for relief from damages or penalties for delay assessed by the District; (b) payment by the District of money or damages arising from work done by, or on behalf of, the Contractor pursuant to this contract and payment for which is not otherwise expressly provided or to which the Contractor is not otherwise entitled; or (c) payment of an amount that is disputed by the District.

The Contractor shall furnish reasonable documentation to support the claim, including but not limited to: 1) a clear, concise recital of the basis upon which the claim is asserted, including a designation of the provisions of the Contract upon which the claim is based, 2) a statement as to the amount of time and/or compensation sought pursuant to the claim; 3) whether the Contractor's claim arises from an ongoing occurrence, and if so a description of the specific Work activities affected by the claim, 4) a time impact analysis in the event that Contractor requests a time extension, 5) full and complete cost records supporting the amount of any claim for additional compensation, and 6) a notarized certification by the Contractor as follows: "Under the penalty of law for perjury or falsification and with specific reference to the California False Claims Act, Government Code Section 12650 et seq., the undersigned hereby certifies that the information contained herein is a true, accurate and complete statement of all features relating to the claim asserted." Failure by the Contractor to provide sufficient documentation will result in denial of the claim. The District reserves the right to request additional documentation, or clarification of the documentation provided.

Upon receipt of a claim, the District will conduct a reasonable review and provide a written statement to the Contractor identifying what portion of the claim is disputed and what portion is undisputed within 45

days of receipt of the claim. The District and Contractor may, by mutual agreement, extend the 45 day time period. For any undisputed portion of a claim, the District must make payment within 60 days of its issuance of the written statement.

If the Contractor disputes the District's written statement, or if the District fails to respond, the Contractor may demand an informal conference to meet and confer for settlement of the issues in dispute. The District will then schedule the meet and confer conference within 30 days of the demand. Within 10 business days following the meet and confer conference, the District will provide a written statement identifying the portion of the claim that remain in dispute. Any payment due on an undisputed portion of the claim will be made within 60 days of the meet and confer conference.

After the meet and confer conference, any disputed portion of the claim shall be submitted to non-binding mediation. Alternatively, upon receipt of a claim, the parties may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as applicable. If mediation is unsuccessful, the parts of the claim that remain in dispute shall be subject to applicable procedures set forth below.

Failure of a public entity to respond to a claim within the time periods described above shall result in the claim being deemed rejected in its entirety. Additionally, amounts not paid in a timely manner shall bear interest at 7 percent per year.

In the event that the mediation is unsuccessful, Contractor must file a government claim pursuant to Government Code Sections 910 et seq. in order to initiate a civil action.

In any civil action filed to resolve claims, the court shall submit the matter to nonbinding mediation within 60 days following the filing or responsive pleading, provided that the parties have not already participated in mediation of the claim as outlined above. If the matter remains in dispute after nonbinding mediation, the court shall submit the matter to judicial arbitration pursuant to Code of Civil Procedure Section 1141.10 et seq. If the matter remains in dispute after judicial arbitration, the District or the Contractor may request a trial de novo.

TECHNICAL SPECIFICATIONS
HASTINGS DR, VINE ST, BELMONT CANYON RD
WATER MAIN IMPROVEMENTS

**MID-PENINSULA WATER DISTRICT
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SECTION 01 11 00 - SUMMARY OF WORK

PART 1 GENERAL

1.01 DESCRIPTION OF THE WORK

- A. The project consists of furnishing all labor, materials and equipment for the **Mid-Peninsula Water District's "Hastings Dr, Vine St, Belmont Canyon Rd Water Main Improvements."**
- B. The project consists of installing approximately 2,400 LF of 8" zinc coated ductile iron pipe (DIP) (inclusive of 15 LF of 4" DIP) and 55 LF 6" zinc coated DIP tie-in connections to replace existing 8" and 4" cast iron water mains. Work also includes installation of blow offs, air release valves, fire hydrants, service connections; abandoning of existing water main, vault, and appurtenances; surface restoration including slurry seal and striping among other appurtenances work as identified in the bid schedule.

1.02 LOCATION AND OWNER

- A. The project is located in City of Belmont, San Mateo County, California.
- B. The work will be done for the Mid-Peninsula Water District (i.e., the "District").

1.03 CONTRACT

- A. The work will be bid under one (1) contract.
- B. The District reserves the right to delete items from the Bid Schedule included in the Proposal, and to change quantities shown on the Bid Schedule, in order to meet project funding limitations, once the contract is awarded.

1.04 REFERENCES TO STANDARD SPECIFICATIONS

- A. Wherever reference is made to "Standard Specifications" it shall be interpreted to mean the current version of Standard Specifications, State of California Business and Transportation Agency, Department of Transportation, obtainable from Caltrans, 6002 Folsom Blvd., Sacramento, CA 95819, and the following shall apply:
 - 1. In case of conflict between the Standard Specifications and these specifications, these specifications shall govern.
 - 2. Where the term "Engineer" is used in the Standard Specifications it shall be understood to mean "the person or persons designated by the District to act as its duly authorized agent or agents."
 - 3. Where the term "Special Provisions" is used in the Standard Specifications it shall be understood to mean these specifications.

4. Where the term "State" is used in the Standard Specifications it shall be understood to mean "District".
5. Any provisions for measurement and payment specified in the Standard Specifications shall be disregarded and the provisions of these specifications shall govern.

1.05 DRAWINGS

- A. The following drawings shall be part of the Contract Documents:

PLAN	SHEET	TITLE
G1.1	1	Title Sheet, Survey Notes, Sheet Index, Vicinity and Location Maps
G1.2	2	Sheet Index Map
C1.1	3	Notes, Abbreviations, Legends
C1.2	4	Construction Details
C1.3	5	Construction Details
C1.4	6	Construction Details
C1.5	7	Construction Details
C2.1	8	Hastings Dr – Water Main Abandonments
C3.1	9	Vine St – Plan and Profile – Sta 1+00 to Sta 2+80
C3.2	10	Vine St – Plan and Profile – Sta 2+80 to Sta 6+75
C3.3	11	Vine St – Plan and Profile – Sta 6+75 to Sta 11+75
C3.4	12	Vine St – Plan and Profile – Sta 11+75 to Sta 15+28
C4.1	13	Belmont Canyon Rd (East) – Plan and Profile – Sta 0+70 to Sta 4+63
C4.2	14	Belmont Canyon Rd – Plan and Profile – Sta 0+75 to Sta 2+55
C4.3	15	Upper Lock Av – Plan and Profile – Sta 1+00 to Sta 4+29
C5.1	16	Vine St Water Service Schedule
C5.2	17	Belmont Canyon Rd Water Service Schedule
C6.1	18	Hastings Dr and Vine St Striping and Slurry Seal Plan
C6.2	19	Belmont Canyon Rd Striping and Slurry Seal Plan

1.06 INQUIRIES DURING BID PERIOD

- A. Questions pertaining to the contract documents, which may arise during the bidding period shall be directed to the District:

Pakpour Consulting Group, Inc.
 5776 Stoneridge Mall Road, Suite 320
 Pleasanton, CA 94588
 Attn: Brandon Laurie, P.E.
 (925) 224-7717, Fax (925) 224-7726

1.07 TIME OF COMPLETION AND LIQUIDATED DAMAGES

- A. Time of Completion: **Ninety-Five (95) working days** from Notice to Proceed.

B. The Contractor(s) shall pay to the District the sum of **\$1,850.00** per day, for each and every calendar day delay in finishing the work in excess of the number of working days prescribed above.

C. Designated legal holidays are:

1. January 1st – New Year’s Day
2. Third Monday in January - Martin Luther King Day
3. Third Monday in February - President’s Day
4. Last Monday in May - Memorial Day
5. July 4th - Independence Day
6. First Monday in September - Labor Day
7. Second Monday in October - Columbus Day
8. November 11th - Veteran’s Day
9. Fourth Thursday in November - Thanksgiving Day
10. Friday Following Thanksgiving
11. December 24th - Christmas Eve
12. December 25th – Christmas Day

When a designated legal holiday falls on a Sunday, the following Monday shall be the designated legal holiday. When a holiday falls on a Saturday, the preceding Friday shall be a designated legal holiday.

D. Attention is also directed to the provisions of Section 8 of the General Conditions.

1.08 WORK SCHEDULE AND REQUIREMENTS

A. Construction activities are only allowed between 8:00 a.m. and 5:00 p.m. Monday through Friday, unless stated otherwise. No work shall be performed on weekends or holidays.

B. Should temporary road closures be necessary during the construction, it shall follow the process required by City as the road’s owner. Road closures and detour plans shall be submitted and approved by the District and/or City. Residents and businesses affected by the closure shall be given a 2-week advance notice of any temporary closures.

C. All scheduling conditions included in permits issued by affected agencies shall be followed.

- D. The Contractor shall coordinate all work with the Mid-Peninsula Water District at (650) 589-8941.
- E. The water system is to remain in service throughout the project. Interruptions to service shall be minimized and shall be coordinated with the District.

1.09 CONDITIONS OF USE

A. City of Belmont (City)

1. Prior to start of the work the Contractor will obtain an encroachment permit from the City of Belmont for all the work within the City's right of the way. The Contractor shall add the City and District as additionally insured per Section G7.21 of the General Provisions and forward a copy of the insurance certificate along with the traffic control plan to the District and appropriate City. A copy of the encroachment permit will be forwarded to the Contractor.
2. Contractor shall notify the City of Belmont Police Department at (650) 595-7400 and the City of San Carlos Police Department at (650) 802-4277, 48 hours prior to start of the construction.
3. The Contractor shall notify the City of Belmont Fire Department at (650) 595-7492; City of San Carlos Fire Department at (650) 802-4300, in advance of any road closures, water main shutdowns and fire hydrant removal/replacement work during the course of the work.
4. The Contractor shall provide written notification to property owners, adjacent to the project area, in accordance with the City's encroachment permit.

B. Mid-Peninsula Water District

1. The contractor shall hand carry written notification to property owners, adjacent to the project area per Section 01 52 00 – Traffic Control Plan of these Technical Specifications.
2. The District will require the following of the Contractor in addition to the requirements shown and described elsewhere in these technical specifications:
 - a. The Contractor shall not operate District valves at any time.
 - b. The District shall be notified the District at least three (3) working days in advance of any scheduled tie-ins and shutdowns.
 - c. No tie-ins, or shutdowns, will be allowed on Fridays or the day preceding a holiday.
 - d. No shutdown shall exceed 6 hours in duration.

- e. No more than two shut downs per week will be allowed.
- f. The Contractor shall designate a person to contact should trench maintenance or other problems arise during non-working hours or days. The District shall be given that person's name, phone number and/or pager number.

C. Other Utilities

- 1. The Contractor shall call USA at least 48 hours before excavating to have PG&E, Comcast, AT&T, the City of Belmont (sewer and storm drain), and any other utility's facilities located.

D. California Department of Transportation

The contractor shall obtain an encroachment permit from the California Department of Transportation prior to the commencement of work. The contractor shall also notify Caltrans in advance of any work within the Caltrans Right-of-Way as applicable.

E. County of San Mateo

- 1. The contractor shall obtain an encroachment permit from the County of San Mateo prior to the commencement and also notify the County in advance of any work within the County's Right-of Way as applicable.

F. General

- 1. The Contractor shall assume full responsibility for the protection and safekeeping of products stored on premises. Any stored products that interfere with District operations shall be moved by the Contractor at their expense. The Contractor shall obtain and pay for use of any additional storage or work area for operations.

1.10 CONTRACTOR'S RESPONSIBILITIES

- A. The Contractor shall be responsible for supplying and maintaining all construction safety signs, lighted barricades, cones, trench plates and other related safety measure to assure site is safe for workers not limited to Covid measures to the workers.
- B. The Contractor shall notify the City, local fire department at least 72 hours in advance whenever lane closures are planned. Such notification shall include the details and location of such closure, its anticipated duration and traffic control and signing to be used during such closure.
- C. Unless noted otherwise the Contractor shall provide and pay for:
 - 1. Labor, materials and equipment.
 - 2. Tools, construction equipment and machinery.

3. Jobsite safety per Section G-7.13 of the General Provisions.
4. Utilities required for construction (i.e., water may be obtained from the system at no charge to the Contractor to the extent that is available and does not result in a shortage to customers). The District shall furnish water to the Contractor (1) for compaction of backfill, as required, (2) for flushing, filling and disinfecting mains and (3) for cleanup and road maintenance activities during construction, subject to availability. Please refer to Section 01 50 00 – Temporary Facilities and Controls.
5. All other facilities and services necessary for proper execution and completion of work.
6. Pay all required sales, consumer and use taxes.
7. Conform to the requirements of all permits.
8. Secure and pay for, as necessary for proper execution and completion of the work, applicable permits and licenses.
 - a. Give required notices.
 - b. Comply with codes, ordinances, rules, regulations, orders and other legal requirements of public authorities, which bear on performance of the work.
 - c. Promptly submit written notice to District’s Representative of observed variance of Contract Documents from legal requirements.

1.11 CULTURAL RESOURCES

- A. In the event that any archaeological resources are encountered at any time during construction, it will be the responsibility of the construction project manager to stop work within 50 feet of any discovery and contact a qualified archaeologist who meets the Secretary of the Interior’s Standards for Archaeology. Work in the area shall be suspended until the archaeologist prepares a plan for the evaluation of the resource and the plan is submitted to the District for approval. If the finds are suspected to be Native American in origin, the Native American Heritage Commission (NAHC) will be contacted, and Native American monitoring will be initiated as directed by the NAHC.
- B. Stop-Work Provision: In the event that any paleontological resources are encountered at any time during construction, it will be the responsibility of the construction project manager to stop work within 50 feet of any discovery and contact a qualified paleontologist who meets the Society of Vertebrate Paleontology’s qualifications. Work in the area shall be suspended until the paleontologist prepares a plan for the evaluation of the resource and the plan is submitted to the District for approval.
- C. Pursuant to Section 7050.5 of the Health and Safety Code and Section 5097.94 of the Public Resources Code of the State of California, in the event of the discovery of human

remains during construction, the construction manager shall stop work and notify the Santa Clara County Coroner. If the Coroner determines that the remains are not subject to his/her authority, he/she shall notify the NAHC who shall attempt to identify the Most Likely descendant (MLD) of the deceased.

1.12 BIOLOGICAL RESOURCES

A. Nesting Bird Surveys

1. Any vegetation trimming or removal shall occur outside the avian nesting season (generally prior to February 1 or after August 31). If trimming or removal of trees or other vegetation must occur during the bird nesting season, a qualified biologist shall conduct a preconstruction survey of the affected trees and vegetation and a minimum 50 foot buffer no more than 5 days prior to the start of trimming or removal of trees or other vegetation. If any nests are found, the tree or shrub, etc. where the nest is located, and vegetation within a 50-foot buffer for passerines and a 250-foot buffer for raptors shall not be trimmed or removed until the chicks have fledged. Monitoring shall be required to ensure compliance with the Migratory Bird Treaty Act and relevant California Fish and Game Code requirements. Monitoring dates and findings shall be documented.

B. Storm Water and Drainage Controls

1. The project shall include BMPs to protect water quality and prevent erosion and sedimentation during construction. Such measures shall include, but are not limited to:
 - a. Construction activities shall cease when the National Weather Service (NWS) 72-hour weather forecast indicates a 30 percent or higher chance of precipitation. All necessary erosion control measures shall be implemented 12 hours prior to the onset of precipitation. Construction equipment and materials shall be removed if inundation is likely. Construction activities halted due to precipitation may resume when precipitation ceases and the NWS 72-hour weather forecast indicates a 30 percent or less chance of precipitation. No work shall occur during a dry-out period of 24 hours after a precipitation event that produces 0.2 inches or greater of rain. If work is conducted within 24 hours after a precipitation event that produces less than 0.2 inches of rain, additional erosion control materials may be needed to prevent saturated soil from entering runoff water.
 - b. Immediately removing and properly disposing of excavated material from the pipeline trenches. Stockpiled materials shall be protected from wind or water erosion and located away from the creek.
 - c. Backfilling or covering all trenches by the end of each work day (to prevent small animals from falling in and becoming trapped).

- d. Removing all trash from the work site at the end of each day.
 - e. Ensuring all construction staging, equipment maintenance and vehicle refueling are performed at least 100 feet away from the channel banks.
 - f. Maintaining all construction equipment and regularly inspecting equipment for leaks before bringing it into the work area near the creek.
 - g. Preparing a Spill Prevention and Response Plan and having on hand, at all times during construction, supplies (such as absorbent materials) necessary to implement it should the need arise.
 - h. If any unpaved areas are disturbed during construction, post-construction erosion control measures should be implemented in the disturbed areas. Such measures could include, but would not be limited to, mulching and/or seeding the soil with a native seed mix.
- C. Tree Protection
1. If any project feature such as a fire hydrant, etc. will be installed outside of the paved roadway and within the dripline of any tree, hand digging shall be employed. Roots over three inches in diameter shall be promptly clean cut and sealed with a latex paint. Trenches and pits adjacent to trees shall be promptly backfilled and compacted. No equipment shall be used or stored within the dripline of trees in unpaved areas. If any tree trimming is required, it shall be performed by a certified arborist using standard best practices.

1.13 TRANSPORTATION AND TRAFFIC

- A. Construction equipment and activities within the roadway could cause hazardous conditions for motorists, pedestrians, and bicyclists. A traffic management plan would be implemented in accordance with standard City practices.

1.14 AIR QUALITY AND DUST CONTROL

- A. The proposed project is located in the San Francisco Bay Area Air Basin (SFBAAB), an area of non-attainment for national and state ozone (O3), state particulate matter (PM10), and national and state fine particulate matter (PM2.5) air quality standards (BAAQMD 2017). The Bay Area Air Quality Management District (BAAQMD) is responsible for maintaining air quality and regulating emissions of criteria and toxic air pollutants within the SFBAAB. The BAAQMD CEQA Guidelines (2017) recommend a series of “basic” and “additional” measures to manage short-term construction emissions. For all projects, the BAAQMD recommends implementation of eight Basic Construction Mitigation Measures (BAAQMD 2017) to reduce construction emissions.

1. **BMP AIR-1: Air Quality and Dust Controls.** The District and/or its contractor shall implement the following Basic Construction Measures identified by the BAAQMD:
 - a. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day, or as needed.
 - b. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
 - c. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day, or as needed. The use of dry power sweeping is prohibited.
 - d. All vehicle speeds on unpaved roads shall be limited to 15 mph.
 - e. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.
 - f. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the *California Airborne Toxics Control Measure*, Title 13 § 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
 - g. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specification. All equipment shall be checked by a certified visible emissions evaluator at the beginning of construction.
 - h. Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The designated contact shall respond and take corrective action within 48 hours. The publicly visible sign shall also include the contact phone number for the BAAQMD to ensure compliance with applicable regulations.

1.15 TESTS

- A. All compaction testing will be done by the District, performed in accordance with the most recent version of ASTM D-1557. The Contractor shall cooperate with the District in making such tests.

1.16 LAYOUT OF THE WORK

- A. The District will mark the general alignment of the new watermain, location of valves, and appurtenances except for the bends.

1. The final location of the hydrants, water meters, blow-offs, CAV's will be determined by the District. Any appurtenances not approved by the District will be corrected at the Contractor's expense.
- B. The Contractor shall lay out the work by accurately measuring from these controls to set all additional controls he may require. All work improperly located due to Contractor's errors or omissions shall be corrected by him at no additional expense to the District.
- C. The Contractor shall preserve controls thus established. Controls originally set by the District that are destroyed by the Contractor will be replaced by the District, with the cost of replacement deducted from Contractor's final payment.
- D. Locations and elevations indicated on the drawings are subject to final field adjustment by the District prior to construction. The Contractor shall immediately notify the District of apparent errors discovered on the drawings or in the initial stakeout. If changes in stakeout are required, the Contractor shall cooperate with the District in prompt establishment of the field control for altered or adjusted work.
- E. All monumental benchmarks, land corners, and triangulation points, established by other surveys, existing within the construction area shall be preserved. If existing monuments interfere with the work, secure written permission before removing them.

1.17 CONSTRUCTION SEQUENCING AND SPECIAL CONSIDERATIONS

- A. Potholing
 1. All potholing shall occur a minimum of **5 working days** before placement of any water main to verify/locate existing utilities (shown or not shown on the plans) and to allow ample time for the Engineer to revise the water main profile if necessary.
- B. Sewer Laterals
 1. Sewer laterals are typically not marked. The Contractor shall have various types of fittings, repair clamps with sizes ranging between 2" and 4" on hand to permit immediate repair should an unmarked lateral be damaged.
- C. Service Relocations
 1. New relocated service connections are defined as removing the existing meter location and relocating it to another location as shown on the plans or as directed by the District.
 2. Remove and dispose of the existing meter box and relocate the meter as shown. The existing void shall be backfilled and compacted with native materials, concrete, or per the District. Any component removed related to the water service shall be returned to the District.

3. Install up to 20 feet of new copper service line between the new meter location and the old location to reconnect the service on the customer side. Adjust the meter accordingly to align as shown.
4. Mechanical fittings shall be used to make the connection on the customer side.

D. Tie-In and Pressure Test Notes:

1. Contractor shall coordinate with the District and submit a tie-in plan for review.
2. Contractor shall have all tie-ins excavated and ready prior to the shut-down date. The District reserves the right to cancel the shut-down if the District feels the Contractor has not done enough preparation for the shut-down. The District inspector will work with Contractor to assure all material are on site for the shut-down.
3. All tie-ins shall be disinfected per the project specifications.
4. Flushing is required after all completed tie-ins. BMP's with filter sock shall be set when flushing the water main to the satisfaction of the District.
5. Pressure test includes hydrant runs, CAV, blow-offs, and service lines up to the angle meter stop.
6. Tie-in distance shall be no more than 20 LF. Any tie-in connections over 20 LF needs to be pressure tested.

E. Hastings Drive

1. Contractor to excavate and expose the existing water main at the tee junction to expose the size and connection to determine the connection of an 8" valve.

F. Vine Street

1. City maps shows two (2) storm drain lines and one (1) sanitary sewer line that require confirmation and exposed on Vine Street from Arden Lane to Spring Lane to layout the new water main.
2. The main water feed comes from Arden Lane. Use the existing fire hydrant to connect, load, and pressure test the new water main.

G. Belmont Canyon Road

1. A new water main was installed from Ralston Ave on to Belmont Canyon Road and tied in at the intersection of Lodge Drive. The water main at the intersection is approximately 80" to the top of pipe.
2. First order of work is to install the water main on Belmont Canyon Road and tie-in to the new water main from Ralston Ave while keeping Lodge Drive, Belmont Canyon Road (East), and Upper Lock Ave in service.

H. Miscellaneous

1. Equipment with metal tracks will not be allowed to be used on this project.
2. Removal of USA markings shall be paid in the various bid items. Markings shall be removed from sidewalk and driveways with a pressure washer.
3. Contractor shall not block emergency access to fire hydrants.
4. Contractor is responsible for the safety of the project site including preventing fire hazards. A 10lb fire extinguisher shall be at the job site in plain view for anyone to use in the event of a fire incident especially when cutting pipe.

END OF SECTION

SECTION 01 20 10 - DEFINITION OF BID ITEMS

PART 1 GENERAL

1.01 GENERAL

- A. Work to be performed under this Contract shall be per Section 01 11 00 Summary of Work, 1.01 Description of Work.

1.02 DEFINITION OF BID ITEMS

- A. The following work shall be considered as included in the various bid items involving water main/appurtenance installation including but not limited to new pipe, fittings, valves, hydrants, combination air release valves, blow-offs, water services, cathodic protection testing stations; abandonment operations including but not limited to pipe, valve/valve clusters, fittings, hydrants, blow-offs, air release valves and no additional compensation will be made therefore:

1. Potholing and excavation at least 5 working days in advance to locate marked existing utilities along the pipe alignment; requesting utility locating, marking out and receiving approval for potholes, sawcutting pavement, removing existing pavement, excavating and stockpiling soil material, identifying and documenting existing out diameter of utility, locating the utility horizontally and vertically, placing and compacting backfill material, pavement restoration with temporary asphalt, all restoration; repairing damage, making modifications to or replacing existing utilities damaged by the Contractor's potholing operations. This is inclusive of all potholes either shown or not shown on the plans.
2. Saw-cutting operation to install the water main/appurtenance and second saw-cutting operation (T-Cut) to restore asphalt concrete (AC); trench excavation; cutting and removing of tree roots 4-inches of diameter or less and rock/boulders encountered during excavation; off-hauling and disposing of all excavated material during trench excavation; dewatering and proper disposal of water if encountered; installation of the water main/appurtenances with 36-inches minimum cover or as shown on the plans; import, placement and compaction of trench backfill material with specified materials; two-sack slurry between utilities; disinfection, pressure testing, and flushing of water mains and appurtenances; excavation, disposal, and backfill of all abandonments; temporary pavements, final roadway and surface restoration including asphalt concrete, pathways, shoulders, AC berms, concrete curb, concrete curb and gutter, concrete valley gutter, concrete driveway, and landscaping.
3. All coordination, including shutdown coordination with utility companies, garbage collection company, District, residents, public transit, emergency services and other affected agencies; protection of existing facilities and improvements; pre-construction documentation, reporting, and preservation; all required permit acquisitions; implementing safety equipment, materials, and measures to include but

not limited to cut-back, lighted barricades, cones, caution tape, night-lights, project safety signs, and trench plates to keep the jobsite safe during demolition and construction; daily general housekeeping; USA notification and removal of USA markings.

4. Planning, designing, engineering, preparation of submittals, furnishing, installing, and removing of all temporary sheeting, shoring and bracing of excavations for excavations greater than 5 feet or as required but not limited to the provisions of any permits, in accordance with OSHA, the Construction Safety Orders of the State of California.
5. Contractor to provide full size of red-marked plans illustrating the project as-built conditions and shall be paid and included in the various bid items. As-Built drawings will be part of the punch list item to complete and will contingent on the release of final project retention.

Bid Item 1 – 8” DIP

The contract unit price paid per linear foot (LF) of 8” DIP shall include full compensation for furnishing all labor, supervision, materials, tools, equipment and incidentals and for doing all work involved in the installation of the water main, complete in place, including removal of fittings/pipe/valve assemblies at tie-ins and other locations as shown; couplings/sleeves, fittings (tees, crosses, bends, reducers, flange coupling adapters, blind flanges), gaskets, mechanical restraints (mega-lugs), cathodic bonding per applicable details, pipe wrap (single and double wrap), pipe wrapping tape, warning tape, tracer wire, trench dams, 2-sack slurry as shown on the plans, thrust blocks; installation of temporary blow-offs; tie-ins and reconnections to existing mains, as shown on the plans, as specified the Standard Specifications and these Technical Specifications, and as directed by the District.

Installation of 8” PVC at isolation locations is paid per linear foot under this bid item.

Installation of 4” DIP is paid per linear foot under this bid item.

Bid Item 2 – 6” DIP

The contract unit price paid per linear foot (LF) of 6” DIP shall include full compensation for furnishing all labor, supervision, materials, tools, equipment and incidentals and for doing all work involved in the installation of the water main, complete in place, including removal of fittings/pipe/valve assemblies at tie-ins and other locations as shown; couplings/sleeves, fittings (tees, crosses, bends, reducers, flange coupling adapters, blind flanges), gaskets, mechanical restraints (mega-lugs), cathodic bonding per applicable details, pipe wrap (single and double wrap), pipe wrapping tape, warning tape, tracer wire, trench dams, 2-sack slurry as shown on the plans, thrust blocks; installation of temporary blow-offs; tie-ins and reconnections to existing

mains, as shown on the plans, as specified the Standard Specifications and these Technical Specifications, and as directed by the District.

Installation of 6" PVC at isolation locations is paid per linear foot under this bid item.

Bid Item 3 – 8" Gate Valve

The contract unit price paid for each (EA) 8" Gate Valve shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in the installation of the gate valve per Detail 5, Plan C1.2, complete in place, including the gate valve, continuous 8-inch PVC riser, valve box and lid, concrete collar, stainless steel hardware, pipe wrap, coating repair to valve if damaged, cathodic bonding per applicable details, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 4 – 1" Service Connection (In Situ)

The contract unit price paid for each (EA) 1" Service Connection (In Situ) shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in installing the service connection per Detail 3, Plan C1.3 complete in place, including service saddle, corporation stop, up to 30 LF of 1" copper pipe, angle meter valve, brass fittings, ball valve, quarry fines, and service box w/ cover; hand excavation as needed; removal and disposal of the existing meter box; setting, compacting, and cleaning in and around the new meter box; connecting the meter to the customer's line, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 5 – 1" Service Connection (Relocate)

The contract unit price paid for each (EA) 1" Service Connection (Relocate) shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in relocating the service connection per Detail 3, Plan C1.3 complete in place, including service saddle, 1" corporation stop, up to 30 LF of 1" copper pipe, 1" angle meter valve, brass fittings, ball valve, quarry fines, and service box w/ cover; up to 25 LF of 1" copper pipe between the ball valve and customer side reconnection point and necessary fittings/sleeves to make connection; relocating the meter to the new box; removal and disposal of the existing meter box and service materials to 18" below grade; backfilling and surface restoration of the old meter location; capping/crimping the existing service line; hand excavation as needed; setting, compacting, and cleaning in and around the new meter box; removal/replace/relocate of existing landscape (shrubs, oleanders, mail box, trees), fences, and utility structures, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 6 – 6” Fire Hydrant Assembly

The contract unit price paid for each (EA) 6” Fire Hydrant Assembly shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in the installation of the hydrant per Detail 7, Plan C1.2, complete in place, including the fire hydrant, 6-inch gate valve assembly per Detail 5, Plan C1.2, up to 20 LF of 6-inch DIP, fittings (tee and bends), bury (correct length - no extensions allowed), check valve, painting the hydrant yellow, a blue two-way reflective pavement marker, cathodic bonding per applicable details, pipe wrap (single or double wrap), pipe wrapping tape, warning tape, tracer wire, two (2) thrust blocks at the tee and bury, concrete collar, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 7 – 1” Combination Air Valve Assembly

The contract unit price paid for each (EA) 1” Combination Air Valve Assembly shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in the installation of the valve per Detail 5, Plan C1.3, complete in place, including combination air valve, saddle, corporation stop, up to 50 LF of 1-inch copper pipe, ball straight meter valve, valve riser/box and lid, angle meter, galvanized and brass fittings, air valve enclosure and associated locking mechanisms, concrete pad, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Include in bid a “rock-mock” enclosure substitution at no additional cost in lieu of the steel cage. District will determine type enclosure to be used after talking to the homeowner.

Bid Item 8 – 2” Blow-off Assembly

The contract unit price paid for each (EA) 2” Blow-off Assembly shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in the installation of the blowoff per Detail 6, Plan C1.3, complete in place, including 2 gate valve assemblies per Detail 5, Plan C1.2 (sans 1 valve), fittings, 4” DIP, pipe wrap, pipe wrapping tape, warning tape, tracer wire, two thrust blocks at the tee and bury, flanged adapter, brass nipple, 2” blowoff/flushing hydrant, drain rock, cathodic bonding per applicable details, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 9 – Cathodic Protection (CP) Test Stations

The contract unit price paid for each (EA) Cathodic Protection (CP) Test Stations shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in installing the CP test stations inclusive of insulating and anode test stations, complete in place, including all work and materials as shown in applicable details

on Plan C1.4, testing, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 10 – Retaining Wall

The contract unit price paid for each (EA) Retaining Wall shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in installing new retaining walls for hydrants, combination air valves, and services for per Detail 8, Plan C1.2 and Detail 1, Plan C1.5, complete in place, including excavation and disposal of excavated material to permit installation of new wall, installation of new lumber, fasteners, concrete, surface restoration around retaining wall, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 11 - Service Pad

The contract unit price paid for each (EA) Service Pad shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in installing a service pad for services on a down slope grade condition per Detail 1, Plan C1.5 complete in place, including excavation and disposal of excavated material to permit installation of new pad, installation of new lumber, fasteners, concrete, surface restoration around retaining wall, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 12 – Remove and Replace Gate Valve Boxes

The contract unit price paid for each (EA) Remove and Replace Gate Valve Boxes shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in removing and replacing the gate valve boxes per Construction Legend 10, Plan C1.1, complete in place, including excavation, removal and proper disposal of existing gate valve box including concrete collar if any, installation of gate valve box to existing grade conditions as required per Detail 5, Plan C1.2 including the backfill, compaction, and AC replacement, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 13 – Abandon Water Main

The contract lump sum (LS) price paid for Abandon Water Main shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in abandoning the existing water main and its appurtenances inclusive of Construction Legend Notes 3, 6, 7 and 9, complete in place, including draining and proper disposal/treatment of water; plugging/capping the existing water main; abandonment/recycling of hydrants, abandonment/disposal of bollards, blow offs, combination air valves, gate valves, service connections connected to the abandoned water main, meter boxes, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 14 – Abandon Pressure Regulating Vault

The contract lump sum (LS) price paid for Abandon Pressure Regulating Vault shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in abandoning the vault, complete in place, including draining and proper disposal/treatment of water; plugging/capping the existing inlet/outlet; excavating, cutting, removal/disposal of the vault structure and all internal piping/fittings/valve, backfill with native material, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 15 – Concrete Curb and Gutter

The contract unit price paid per linear foot (LF) of Concrete Curb and Gutter shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in constructing the curb and gutter per applicable City of Belmont Standard Detail in Appendix A, complete in place, including sawcutting, removal/disposal of existing concrete curb/gutter/aggregate base, saw cutting, providing minimum 4-inches Class 2 aggregate base (or as needed to meet existing grade), forming, placing of concrete; dowelling into existing concrete, and finish concrete surface, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 16 – Concrete Sidewalk

The contract unit price paid per square foot (SF) of Concrete Sidewalk shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in constructing the sidewalk per applicable City of Belmont Standard Detail in Appendix A to the nearest scoreline, complete in place, including sawcutting, removal/disposal of concrete/aggregate base, providing minimum 4" Class 2 Aggregate Base (or as needed to meet existing grade), forming, placing of concrete; dowelling into existing concrete, and finish concrete surface, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 17 – Concrete Driveway Approach

The contract unit price paid per square foot (SF) of Concrete Driveway Approach shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in constructing the concrete driveway approach at 3204 Upper Lock Avenue per applicable City of Belmont Standard Detail in Appendix A, complete in place, including sawcutting to curb and gutter to conform the driveway, removal/disposal of concrete/aggregate base, installation of new minimum 6-inches Class 2 Aggregate Base, forming, rebar, placing of concrete; dowelling into existing concrete, concrete finish, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 18 – Concrete Valley Gutter

The contract unit price paid per square foot (SF) of Concrete Valley Gutter shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in constructing the valley gutter per applicable City of Belmont Standard Detail in Appendix A, complete in place, including sawcutting, removal/disposal of concrete/aggregate base, installation of new minimum 6-inches Class 2 Aggregate Base, forming, rebar, placing of concrete; dowelling into existing concrete, concrete finish, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 19 – Asphalt Concrete Pavement Repairs

The contract unit price paid per square foot (SF) for Asphalt Concrete Repairs shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in replacing asphalt concrete (AC) if directed by the District, complete in place, including placement of HMA, saw-cutting full-depth, removal of the existing pavement up to 6" below the existing adjacent AC pavement finished grade, re-compaction of existing subgrade, bonding coat, installation of 6" of new AC pavement section, cleanup of AC spoils, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 20 – Type II Slurry Seal

The contract unit price paid per square foot (SF) for Type II Slurry Seal shall include full compensation for furnishing all labor, supervision, materials, tools, equipment and incidentals and for doing all the work involved in slurry seal placement, complete in place, including sweeping and clearing all debris from the roadway prior to the slurry seal (including pavement delineators), striping removal (thermoplastic, buttons, markers, and markings); installation of the slurry seal, hand carried notification to nearby residents a minimum of 72 hours prior to application of the slurry seal, protection of existing utility appurtenances such as gate valve covers, utility vaults, storm drains, and clean-up of slurry sand and any construction related materials related to the slurry seal, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 21 – CA MUTCD – Detail 22

The contract unit price per linear foot (LF) of CA MUTCD – Detail 22 shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in placing the traffic stripe, complete in place, including referencing existing stripe, temporary pavement delineation, cat-tracking operation; sweeping and cleaning of street prior to stripe placement, placement of new thermoplastic stripe and reflectors, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 22 – 12” White Traffic Stripe

The contract unit price per linear foot (LF) of CA MUTCD – 12” White Traffic Stripe shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in placing the traffic stripe, complete in place, including referencing existing stripe, temporary pavement delineation, cat-tracking operation; sweeping and cleaning of street prior to stripe placement, thermoplastic stripe placement, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 23 – Pavement Markings

The contract unit price per square foot (SF) of Pavement Markings shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in placing the pavement markings, complete in place, including referencing existing marking, temporary pavement delineation; cleaning of street prior to marking placement, new thermoplastic marking placement, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 24 – Potholing (District Requested)

The contract unit price price paid for each (EA) Pothole (District Requested) shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in additional potholing outside the final field marked alignment and for locating abandoned water main, if directed by the District, complete in place, including but not limited to: requesting utility locating, marking out and receiving approval for potholes, sawcutting pavement, removing existing pavement, excavating and stockpiling soil material, identifying and documenting existing out diameter of utility, locating the utility horizontally and vertically, placing and compacting backfill material, pavement restoration with temporary asphalt, all restoration; repairing damage, making modifications to or replacing existing utilities damaged by the Contractor’s potholing operations, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 25 – Street Sweeping

The contract unit price paid per each (EA) visit for Street Sweeping shall include full compensation for furnishing all labor, supervision, materials, tools, equipment and incidentals and for doing all work involved in street sweeping, complete in place, including sweeping using a regenerative air-type sweeper for a minimum 4 hours on the site, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 26 – Storm Water Pollution Control Plan

The contract lump sum (LS) price paid for Storm Water Pollution Control Plan shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals and for doing

all the work involved in developing and implementing storm water pollution control measures, complete in place, including preparation of a project site specific Storm Water Pollution Control plan, prepared in accordance with the California Storm Water Quality Association (CASQA) Storm Water Program requirements, and implementation of BMPs as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

Bid Item 27 – Traffic Control Plan

The contract lump sum (LS) price paid for Traffic Control Plan shall include full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals and for doing all work involved in implementing the traffic control plan prepared by a licensed civil engineer for all project areas, complete in place, including development of the traffic control plans, detour plans and road closures as needed during construction, pedestrian detour plan; placing, removing, storing, maintaining, and moving the system to new locations; maintaining traffic, cones, flaggers, radios; construction area traffic control signs; pavement delineation; traffic safety equipment and materials to include but not limited to, lighted barricades, cones, caution tape, night-lights, and trench plates, signs, static signs; installing, maintaining and removing four (4) temporary construction funding signs at various locations within the project limits, final sign layout with the sign manufacturer, and removing signs at the end of the project, as shown on the plans, as specified in the Standard Specifications and these Technical Specifications, and as directed by the Engineer.

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SECTION 01 33 00 - SUBMITTALS

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Work included in this section consists of furnishing various submittal items as listed herein, as required for the work.

1.02 SUBMITTAL PROCEDURE

- A. The Contractor shall deliver all applicable submittals listed in the schedule included in this section a minimum of twenty (20) days before the anticipated start of construction. This time limit shall not apply to those items to be furnished during the course of the work or near or at the conclusion of the work such as test reports and record drawings. Two (2) hard copies or electronic files in PDF format of all submittal materials shall be furnished. Prior to installation of materials, the Contractor shall submit two (2) hard copies or electronic files in PDF format of corrected final submittal material. Installation shall not commence until submittal material has been reviewed by the District and final submittals have been delivered.
- B. The Contractor shall use the following procedure in submitting and processing submittals for review by the District:
 - 1. Each submittal item shall be forwarded to the District with an individual transmittal letter or form. The letter or form shall include the following items:
 - a. Project name.
 - b. Submittal number.
 - c. Description of submittal item.
 - d. Specification section and drawing references.
 - e. Certification by the Contractor's representative that the submittal is complete and correct.
- C. When required in a specific specification section, a "Letter of Compliance" shall be furnished stating that material and/or equipment furnished complies with the specifications.
- D. The District reserves the right to require submittals in addition to those called for herein.

1.03 SHOP DRAWINGS

- A. The term "shop drawings" includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, furnished by Contractor to explain in detail specific portions of the work required by the contract.
- B. The Contractor shall coordinate all such drawings, and review them for legibility, accuracy, completeness and compliance with contract requirements and shall so indicate that such coordination and review has been done by signing the transmittal letters. Shop drawings submitted to the District without evidence of Contractor's review will be returned for resubmission.
- C. Review by the District shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with requirements of this contract. If shop drawings show variations from contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at time of submission. All such variations must be approved by the District.
- D. In these Standard Specifications, whenever the trade name of a product or the name of a manufacturer appears, it shall be understood to specify the product so identified and no equivalent is allowed. If the District Standards Specifications allow for use of an equivalent data may be submitted by the Contractor for a period of fifteen (15) days from receipt of the Notice to Proceed to substantiate a request for substitution as an equivalent item.
- E. Wherever in these Standard Specifications, or in any orders that may be given by the District pursuant to or supplementing the specifications, it is provided that the Contractor shall furnish materials for which no detailed specifications are set forth, the materials shall conform to accepted quality standards for materials of the kind required, with due consideration for the use to which they are to be put.

1.04 SAMPLES AND TESTS

- A. The source supply of each material furnished shall be approved by the District, unless the District advises the Contractor to the contrary at least ten (10) calendar days prior to the time when delivery is started, of any of the material used in work. Representative preliminary samples of the character and quality prescribed and the manufacturer's test certificates pertaining thereto shall be submitted by the Contractor for all materials to be used in work, as required by these Standard Specifications or as requested by the District.
- B. All tests of materials will be made in accordance with commonly recognized standards of national organizations, and such special methods and tests as are prescribed in these project specifications. The approval of any material on the basis of sample tests and/or certificates will be considered as general approval only, and will not constitute a waiver of the District's right to demand full compliance with the Contract requirements. After delivery of materials to the job, the District will make such check tests as deemed necessary in each instance, and may reject materials, equipment, or accessories which

fail to meet the check tests, even though such materials have previously been given general approval.

- C. Laboratory test reports shall cite the contract requirements, the test of analysis procedures used, the actual test results, and includes a statement that the item tested or analyzed conforms or fails to conform to specification requirements. All test reports shall be signed by a representative of the testing laboratory authorized to sign certified test reports.
- D. The cost of all testing will be borne by the District, except for the following situations: (1) The Contractor shall assume all costs of retesting materials which fails to meet Contract requirements; (2) The Contractor shall assume all costs of testing materials offered in substitution of those found to be deficient; (3) The Contractor shall assume all costs of testing materials offered in lieu of specified materials, to prove their quality equivalence.

1.05 CERTIFICATES

- A. For those items called for in individual sections of these Standard Specifications or shown on project drawings, furnish certificates from manufacturers, suppliers, or other certifying that materials or equipment being furnished under the contract comply with the requirements of these Standard Specifications.

1.06 PROGRESS SCHEDULES

- A. The Contractor shall submit a schedule at the preconstruction meeting for the project showing the estimated startup and completion date for each element of the work, in conformance with the requirements of the Standard Specifications.

1.07 TRAFFIC CONTROL PLAN

- A. The Contractor shall notify the City of Belmont Public Works Department, the City of Belmont Fire Department, the City of Belmont Police Department, the City of San Carlos Public Works Department, City of San Carlos Fire Department, County of San Mateo Fire Protection Services, County of San Mateo Public Works or/and County of San Mateo Sheriff's Office (if applicable) at least 72 hours in advance whenever lane closures are planned. Such notification shall include the details and location of such closure, its anticipated duration and traffic control and signing to be used during such closure.

1.08 RECORD DRAWINGS

- A. Using colored ink, each Contractor shall make changes on a set of clean prints. Indicate all changes and revisions to the original design that affect the permanent structures and will exist in the completed work. Reference underground utilities to semi-permanent or permanent physical objects. Reference water, sewer, telephone, storm drain, gas, and electric lines to corners of buildings and survey markers.

- B. The record drawings shall be kept current. Project record drawings are the property of the District. The original hard copies of the record drawings shall be delivered to the District before project closeout.

1.09 SUBMITTAL SCHEDULE

- A. The list below is a general representation of materials to be used on the project. The Contractor is responsible for reviewing each individual specification section for specific requirements to ensure all material information is submitted and reviewed.

Section No.	Item
	Safety Plan per the General Standard Specifications
01 50 00	Staging Plan Best Management Practices Plan
01 52 00	Traffic Control Plan
01 57 23	Water Pollution Control Plan
01 70 00	Tests Certificates and Guarantees Record Drawings
03 30 00	Concrete Rebar
31 80 00	Subgrade Material Bedding Material Aggregate Base Written Shoring Safety Plan (prepared by a registered Civil Engineer)
13 47 13	Catalog Data on Anodes Cables Cables to Pipe Connections Test Stations Terminal Boxes Shunts Cable Warning Tape, Identification Tags Insulating Flange Materials Thermite Welds Weld Coating
32 10 00	Aggregate Base Aggregate Surfacing Asphaltic Concrete Bonding Coat and Crack Seal Temporary Paving Controlled Density Fill Type II Slurry Seal Striping Materials (striping and markers)

33 14 13	Ductile Iron Pipe PVC Pipe Thrust-Resistant Restraint for Ductile Iron Pipe and/or PVC Pipe Thrust Blocks Hardware Tubing and Fittings V-Bio Polyethylene Encasement and tape Marker Tape for Buried Piping Tracer Wire Disinfection Plans Disposal of Chlorine Water
33 14 20	Gate Valves Gate Valve Marker Post Gate Valve Extensions Pressure Reducing Valves Blow-Off Assembly Materials Service Connection Fittings and Valves Combination Air Valve Materials Valve and Meter Boxes Hydrants Assembly Materials

PART 2 MATERIALS - NONE

PART 3 EXECUTION – NONE

END OF SECTION

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SECTION 01 45 00 - QUALITY CONTROL

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Work included under this section consists of performing or conforming to quality control procedures and requirements as listed herein and in the various sections that comprise these Standard Specifications.

1.02 GENERAL QUALITY

- A. All material shall be new and of a quality equivalent to that specified.
- B. The work shall be executed in conformity with the best accepted standard practice of the trade so as to contribute to maximum efficiency of operation, accessibility and appearance, and minimum cost of maintenance and construction of future alterations and additions.

1.03 QUALITY IN ABSENCE OF DETAILED SPECIFICATIONS

- A. Whenever the Contractor shall furnish materials or manufactured articles or shall do work for which no detailed specifications are set forth, the materials or manufactured articles shall be of the normal commercial grade in quality and workmanship obtained from firms normally furnishing such materials or equipment or, if not ordinarily carried in stock, shall conform to the usual standards for first-class materials or articles of the kind required with due consideration of the use to which they are to be put. In general, the work performed shall conform with the intent to secure the normal commercial standard of construction and equipment of the work as a whole or in part.

1.04 DEFECTIVE MATERIALS

- A. All materials not conforming to these Standard Specifications shall be considered defective, and all such materials, whether in place or not will be rejected and shall be immediately removed from the site of the work unless otherwise permitted to remain by the District. Rejected materials, the defects of which have been subsequently corrected, shall not be used until approval in writing has been obtained from the District. Upon failure of the Contractor to comply with any order of the District made under the Standard Specifications of this article, the District shall have the authority to remove and replace defective materials and to deduct the cost of same from any monies due or to become due the Contractor.

1.05 GUARANTEE

- A. All materials, and workmanship shall be guaranteed by the Contractor for a period of two (2) years from the date of initial operation or the date of acceptance thereof, whichever

is later, against all defects that might render the work unsatisfactory for the intended purpose. Defective materials and workmanship occurring during the guarantee period shall be replaced by the Contractor at his expense, together with the repair or replacement of any adjacent work which may be damaged or displaced in the process.

- B. In addition to the above guarantee, the Contractor shall assign to the District all material guarantees issued by manufacturers or subcontractors which guarantees extend beyond the two (2) year period stipulated.

PART 2 MATERIALS - NONE

PART 3 EXECUTION - NONE

END OF SECTION

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Work required under this section consists of providing temporary facilities or conforming to control procedures and requirements as listed herein and in the various technical specification sections that comprise these Standard Specifications.

1.02 SUBMITTALS

- A. The Contractor shall submit a detailed staging plan and how he intends to comply with the requirements of this section.

1.03 TEMPORARY FACILITIES

- A. Construction Utilities/Facilities
 1. Water - The District will furnish water required for water main and tank disinfection/flushing purposes, subject to availability. All other water required for construction related items shall be provided by the Contractor. Water can be obtained from one of the existing hydrants near the job site. The District will provide a 2" hydrant meter to be installed on the hydrant. It shall be the Contractor's responsibility to provide certified backflow preventer hoses and/or piping to convey water to the construction site. In no case shall the Contractor use and obtain water from a hydrant without a backflow preventer and hydrant meter. Quantities and delivery schedules shall be subject to availability from the local system, as approved by the District. The District will not be responsible for transporting water to the job site for use by the Contractor.
 2. Sanitary Facilities - The Contractor shall provide adequate toilet facilities for all workers and representatives of the District employed on the job. Facilities shall be immediately adjacent to the work area and subject to the approval of the District as to location and type. The Contractor shall maintain them in sanitary condition weekly from the beginning of the work until completion and shall then remove the facilities and disinfect the premises. All portions of the work shall be maintained at all times in a sanitary condition.
- B. Storage Facilities / Staging Area
 1. It is the Contractor's responsibility to find a staging area for equipment and material for the project duration. All materials and equipment shall be stored at the Contractor's staging area. Staging areas shall be fenced with at least a 6 ft high fence, screening, and security gate. Fencing materials and boundaries of staging areas shall be subject to approval of the District. All coordination with neighbors near the staging area is the Contractor's responsibility.

2. The staging area shall have a construction entrance per Section 01 57 23 - Storm Water Pollution Control Plan/ Erosion Control, to prevent dirt and mud from leaving the area. In the event material is tracked onto pavement, it shall be swept and cleaned immediately.

1.04 TEMPORARY CONTROLS

A. Housekeeping

1. Keep the project neat, orderly, and in a safe condition at all times. Immediately remove all hazardous rubbish. Do not allow rubbish to accumulate. Provide on-site containers for collection of rubbish or dispose of it at frequent intervals during progress of work. Dry material and rubbish shall be wet-down to prevent blowing dust. Keep volatile wastes in covered containers.
2. The Contractor shall properly dispose of all litter, trash, garbage which may accumulate on the project site on a daily basis.

B. Environmental Protection Requirements

1. Provide environmental protective measures as required to control pollution that develops during normal construction practice, and as required to correct conditions that develop during the construction of permanent or temporary features associated with the project. Comply with all federal, state, and local regulations pertaining to water, air, and noise pollution. Prior to the commencement of the work, meet with the District to develop a mutual understanding relative to details of environmental protection, including measures for protecting natural resources and measures to be taken should the Contractor fail to provide adequate protection in an adequate and timely manner.
2. Water containment barriers must be on site for accidental discharge of chlorinated water.

C. Protection of Trees and Other Vegetation

1. Except in areas indicated to be cleared, do not remove, cut, deface, injure, or destroy trees, shrubs or other vegetation without authorization from the District. Do not fasten or attach ropes, cables, or guys to any existing nearby trees for anchorages unless specifically authorized. Where such special emergency use is authorized, the Contractor shall be responsible for any resultant damage. Protect existing trees to remain and which may be injured, bruised, defaced, or otherwise damaged by construction operations.
2. Restore to their original condition landscape features scarred or damaged by the equipment or operations. Obtain approval of the restoration from the District prior to installation.

D. Air, Soil, and Water Pollution Control Measures

1. Take all necessary reasonable measures to reduce air, soil, and water pollution by any material or equipment used during construction.
2. No burning will be permitted.
3. Do not dispose of volatile wastes or oils or allow waste materials to be wash into storm or sanitary drains, nor allow such materials to reach watercourses.

E. Handling and Disposal of Waste Materials

1. Dispose of all waste materials legally.
2. Store chemical waste in corrosion resistant containers labeled to identify type of waste and date filled. Remove containers from the project site, and dispose of chemical waste in accordance with federal, state, and local regulations. For oil and hazardous material spills which may be large enough to violate federal, state, and local regulations, notify the District immediately.
3. Conduct fueling and lubricating of equipment and motor vehicles in a manner that affords the maximum protection against spills and evaporation. Dispose of lubricants to be discarded and excess oil in accordance with approved procedures meeting federal, state, and local regulations.
4. Take special measures to prevent oily or other hazardous substances from entering the ground, drainage areas, or local bodies of water. Surround all temporary fuel oil, petroleum, or liquid chemical storage tanks with a temporary earth berm of sufficient size and strength to contain the contents of the tanks in the event of content leakage or spillage. For oil and hazardous material spills which may be large enough to violate federal, state, and local regulations, notify the District immediately.

F. Erosion Protection

1. All earthwork brought to final grade shall be immediately finished as indicated or specified in the Standard Specifications or on the drawings. Immediately protect slopes upon completion of rough grading. Plan and conduct all earthwork in such a manner as to minimize the duration of exposure of unprotected soils.

G. Dust Control

1. Keep dust down at all times, including non-working hours, weekends, and holidays. Sprinkle or treat soil at the site, and other areas disturbed by operations, with a dust suppressor. No dry power brooming is permitted. Air blowing is permitted only for cleaning non-particulate debris, such as steel reinforcing bars. No sandblasting is permitted unless dust is confined. Only wet cutting of concrete and asphalt is permitted. No unnecessary shaking of bags is permitted where bagged cement, concrete mortar, and plaster is used.

H. Sound Control Requirements

1. The noise level from the Contractor's operations, between the hours of 8:00 a.m. and 5:00 p.m. shall not exceed 75dbA at a distance of 50 feet from the project site. This requirement in no way relieves the Contractor from responsibility for complying with local ordinances relating to noise.
2. Said noise level requirement shall apply to all equipment on the job or related to the job, including but not limited to trucks, or transient equipment that may or may not be owned by the Contractor. The use of load sound signals shall be avoided in favor of light warnings except those required by safety laws for the protection of personnel.

I. Preservation and Cleaning

1. The Contractor shall keep roads free from mud and other debris. If mud or debris is tracked onto the road, it shall be immediately cleared. The Contractor shall clean the roadways at the end of each day.

J. Cleanup and Removal of Temporary Facilities

1. Obliterate all signs of temporary construction facilities including work areas, staging area, structures, stockpiles of excess or waste materials, and all other vestiges of construction. Temporary parking areas and similar temporary use areas shall be graded in conformance with surrounding areas.
2. Sweep paved surfaces; rake other surfaces or grounds. Remove all tools, equipment, surplus materials, trash, garbage, and rubbish. At the time of final inspection, the project shall be thoroughly clean and ready for use.

K. Regenerative Air Sweeper

1. During the course of construction, the Contractor shall sweep the project site on haul routes a minimum of 6-hours on assigned Fridays or as requested by the District.
2. Contractor shall submit invoice copies showing the dates the sweeper was on site for compensation.

PART 2 MATERIALS - NONE

PART 3 EXECUTION - NONE

END OF SECTION

SECTION 01 52 00 - TRAFFIC CONTROL PLAN

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Work required under this section consists of furnishing all labor, materials, tools, and equipment incidentals to comply and provide traffic control plan. Traffic control is the sole responsibility of the Contractor.

1.02 SUBMITTALS

- A. The Contractor shall submit details on how he intends to comply with the requirements of this section.
- B. The Contractor shall submit the traffic control plans prepared by a licensed traffic engineer at the pre-construction meeting. Delay in submittal of traffic control plan shall not be a basis for any time extensions. Work shall not begin until the District and City/County has reviewed and approved the traffic control plan.
- C. In an event of sidewalk closure, a pedestrian detour plan meeting ADA requirement must be submitted for review and approval.

PART 2 MATERIALS

2.01 TRAFFIC CONTROL MATERIALS

- A. All materials used as part of the traffic control plan shall conform to the latest requirements of Caltrans Standard Specifications and the most current version of the California Manual of Uniform Traffic Devices, and the requirements of any necessary encroachment permits. In addition, the traffic control plan shall be in full compliance with said encroachment permits.

PART 3 EXECUTION

3.01 TRAFFIC CONTROL PLAN

- A. Access must be maintained to residents and businesses at all times along all affected streets during construction.
- B. Personal vehicles of the Contractor's employees shall not be parked on the traveled way or paved shoulder area, including any section closed to public traffic.
- C. The Contractor shall notify local authorities of the Contractor's intent to begin work at least 5 days before work is begun that impacts public access. The Contractor shall cooperate with local authorities relative to handling traffic through the area and shall make all arrangements relative to keeping the working area clear of parked vehicles.

- D. A minimum of one paved traffic lane, not less than 10 feet wide, shall be open for use by public traffic in each direction of travel at all. The full width of roadway used during construction 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 designated legal holidays, and when construction operations are not actively in progress.
- E. Contractor shall maintain access to all driveways, except when actually doing construction within the driveway boundaries, at which time, partial access will be maintained unless alternate arrangements can be made with the property owners or tenants in advance. Contractor shall coordinate work to minimize disruption to these homeowners during the course of the project. Ingress and egress for residents during construction must be provided during construction at all times.
- F. 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 District, public traffic will be better served and the work expedited. These deviations shall not be adopted by the Contractor until the District has approved them in writing.

3.02 CONSTRUCTION AREA SIGNS AND SYSTEM

- A. Construction area signs shall be furnished, installed, maintained, and removed when no longer required in conformance with the Standard Specifications in Section 12 - Temporary Traffic Control, of the latest requirements of Caltrans Standard Specifications and these Standard Specifications.
- B. The Contractor shall notify in writing the residences, District, City/County and any other pertinent local agencies at least two (2) working days prior to commencing installation for construction area signs posts.
- C. Excavation 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 determined there are no utility facilities in the area of the proposed post holes.
- D. Sign substrates for stationary mounted construction signs may be fabricated from fiberglass reinforced plastic under "Pre-qualified and Tested Signing and Delineation Materials" of the latest requirements of Caltrans Standard Specifications.
- E. The Contractor shall furnish and maintain a minimum of two construction funding signs per project site, 4'x4' in dimension, per the latest requirements of Caltrans Standard Specifications. The Contractor shall place signs in conjunction with the construction area signs at locations designated by the inspector. The exact language of the signs will be furnished to the Contractor by the District during the pre-construction meeting. At a minimum these signs shall contain the logo and address of the District and Contractor, project duration and funding information. These signs shall be maintained by the

contractor throughout the project's constructions. Damaged construction funding signs shall be replaced by the Contractor at his/her expense.

- F. The Contractor may be required to cover certain signs during the progress of the work. Signs that are no longer required or that convey inaccurate information to the public shall be immediately covered or removed or the information shall be corrected. Covers for construction signs shall be of sufficient size and density to completely block out the complete face of the signs. The retro-reflective face of the covered signs shall not be visible either during the day or at night. Covers shall be fastened securely so that the signs remain covered during inclement weather. Covers shall be replaced when they no longer cover the signs properly.
- G. When using trench plates at the end of the day, the Contractor shall place customized "Trench Plates Ahead" and "Uneven Pavement" signs on a working, lighted, barricade in each direction of traffic. Contractor shall also place "Trench Plates Ahead" signs at areas where trench plates are temporarily placed in the right-of-way during construction. Sand bags shall be used on each barricade to provide stability. The existing wind conditions and weather will determine the number of sand bags to be used.
- H. Letters of customized signs shall be black in color, 4-inch high, on orange background on non-running paint or color. Signs shall be maintained through the course of the project and shall be weather resistant. No paper signs are allowed.

3.03 MAINTAINING TRAFFIC

- A. Attention is directed to Sections 7-1.03 - Public Convenience, 7-1.04 - Public Safety, and 12 - Temporary Traffic Control, of the latest requirements of Caltrans Standard Specifications and these Standard Specifications.
- B. The Contractor must provide a "Notice to Customers" written notification to impacted Customers at least 1 week in advance prior the beginning of any operation which will impact properties, limit resident or business access to their driveways or potentially impact utility services. The Contractor shall obtain the District's written approval of the Notice to Residents prior to distribution and the beginning of any operations.
 - 1. The notice must clearly state the time, date, and duration of the contractor's planned operation, the impacts to the residents, the purpose of the project, and the prohibition of on-street parking. The notice shall also include the District's phone number and the Contractor's day and emergency phone numbers.
 - 2. Each notice shall be hand delivered or securely attached to the door in the event that no one is home. A Friday that occurs prior to a Holiday (three day) weekend shall not be considered as a working day for the purpose of this section.
- C. If needed, three (3) working days, prior to the day which will require the Contractor to remove parked cars, the Contractor shall furnish and erect "No Parking" signs. These shall

be attached to portable barricades and shall state the dates and time that parking will be restricted. The exact date and time signs are posted shall also be noted on the signs.

- D. Emergency vehicles shall be permitted to pass through the work area without delay at all times.
- E. Contractor shall not block emergency access to fire hydrants.
- F. Noncompliance with the requirements of this section shall be cause for the District to stop the work. Delays caused by failure to meet these requirements shall not be considered a valid basis for an extension of time for the purpose of calculating liquidating damages.

3.04 TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE

- A. A traffic control system shall consist of closing traffic lanes in conformance with the Standard Specifications in Section 12 - Temporary Traffic Control, of the latest requirements of Caltrans Standard Specifications and these Standard Specifications.
- B. The provisions in this section will not relieve the Contractor of responsibility for providing additional devices or taking measures as may be necessary to comply with the latest requirements of Caltrans Standard Specifications and these Standard Specifications.

END OF SECTION

SECTION 01 57 23 – STORM WATER POLLUTION CONTROL PLAN / EROSION CONTROL

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Work required under this section consists of furnishing all labor, materials, tools, and equipment incidentals to provide and comply with a storm water pollution control plan.
- B. General Background
 - 1. The National Pollution Discharge Elimination System (NPDES) General Permit for Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities (Construction General Permit) issued and regulated by the State Water Resources Control Board (SWRCB) has been in effect for construction sites for many years now. The latest Construction General Permit requires owners or operators of construction sites, regardless of project size, to implement Best Management Practice (BMP) measures to prevent contamination of storm water runoff from leaving the construction site. In addition to this general requirement, owners and operators of construction sites, including underground and aboveground water main installation projects, that result in land disturbance of one acre or more shall obtain coverage under the Construction General Permit prior to starting construction. Coverage under the Construction General Permit requires:
 - a. Electronically file all Permit Registration Documents (PRDs) to the State Water Board's Storm Water Multi-Application and Report Tracking System (SMARTS) website, which includes a Notice of Intent (NOI) notifying the SWRCB of the project, Risk Assessment, Site Map, signed Certification Statement, Storm Water Pollution Prevention Plan (SWPPP), changes of information, annual reporting and other compliance documents, and Notice of Termination (NOT).
 - b. Preparation of site-specific Storm Water Pollution Prevention Plan (SWPPP) identifying the potential sources of storm water runoff contamination and BMP measures that will be implemented and maintained on the project site to minimize storm water pollution.
 - c. Mailing Annual Permit Fee to SWRCB.
 - d. Obtaining Waste Discharger Identification (WDID) number.
- C. For All Traditional and/or Linear Underground/Overhead Project Sites Greater Than One Acre
 - 1. The District in accordance with the County of San Mateo, the City of Belmont/San Mateo Grading Ordinance will require all project applicants obtain coverage under and comply with the Construction General Permit regulations. Since installing new

services or mains on development sites typically involves land surface disturbance, the District will not provide work or inspection services on construction sites without current PRDs, an approved and current SWPPP document prepared by a Qualified SWPPP Developer (QSD), site-specific BMP measures in place and functioning and monitored by a Qualified SWPPP Practitioner (QSP) throughout the duration of the project.

D. For Traditional and/or Linear Underground/Overhead Project Sites less than One Acre and Part of a Larger Common Plan of Development or Sale of One or more Acres of Disturbed Land Surface

1. The District in accordance with the County of San Mateo, City of Belmont/San Mateo Grading Ordinance will require all project applicants obtain coverage under and comply with the Construction General Permit regulations, where these regulations specifically state that construction activities that results in land surface disturbance of less than one acre is subject to the regulations if the construction activity is part of a larger common plan of development or sale of one or more acres of disturbed land surface.
2. Since installing new services or mains on development sites typically involves land surface disturbance, the District will not provide work or inspection services on sites without current PRDs, an approved and current SWPPP document prepared by a Qualified SWPPP Developer (QSD), site-specific BMP measures in place and functioning and monitored by a Qualified SWPPP Practitioner (QSP) throughout the duration of the project.

E. For Traditional and/or Linear Underground/Overhead Project Sites less than One Acre

1. The District in accordance with the County of San Mateo, the City of Belmont/San Mateo Grading Ordinance will require all project applicants obtain approval of all improvement plans, including a project site-specific Storm Water Pollution Control Plan, from all lead agencies (County of San Mateo, City of Belmont/San Mateo, etc.), where projects disturb less than one acre of land surface and is not part of a larger common plan of development or sale of one or more acres of disturbed land surface. Per the current Construction General Permit these construction activities do not require filing of PRDs to obtain coverage under the permit. However, the District reserves the right to require a project site-specific Storm Water Pollution Control Plan prepared in accordance with the California Storm Water Quality Association (CASQA) Storm Water Program requirements and approved by the lead agency on a case by case basis. The project site-specific Storm Water Pollution Control Plan shall identify BMP measures necessary to protect the project site throughout all phases of construction during both the rainy-season (October 15th through April 15th) and dry-season. All project construction site BMP measures shall be in place, maintained and functioning before the wet-season (before September 15th).

2. Since installing new services or mains on development sites typically involves land surface disturbance, the District will not provide work or inspection services on sites without an approved and current site-specific Storm Water Pollution Control Plan and BMP measures in place, functioning and monitored by the project applicant and/or project applicants contractor in accordance with industry standards.

F. Related Documents:

1. State of California, Department of Transportation (Caltrans), Caltrans Standard Specifications, Section 13 – Water Pollution Control.
2. State Water Resource Control Board (SWRCB) General Permit for Storm Water Discharges Associated with Construction Activity.
http://www.waterboards.ca.gov/water_issues/programs/storm_water/
3. SWRCB General Permit for Storm Water Discharges Associated with Construction Activities from Small Linear Underground/Overhead Projects (State).
http://www.waterboards.ca.gov/water_issues/programs/storm_water/
4. California Stormwater Quality Association (CASQA) Storm Water Program.
<https://www.casqa.org/>
5. California Department of Transportation (Caltrans) Storm water Quality Program.
http://www.dot.ca.gov/hq/construc/storm_water/
6. Blueprint for a Clean Bay.
7. California Storm Water Best Management Practice Handbook.
8. Fish and Game Code.

1.02 SUBMITTALS

- A. The Contractor shall submit details on how he intends to comply with the requirements of this section.

PART 2 MATERIALS

- A. All materials used as part of the storm water pollution control plan shall conform to the requirements of the SWRCB Construction General Permit and latest edition of the California “Storm Water Best Management Practice Handbook: Construction” prepared by CASQA.

PART 3 EXECUTION

- A. Storm water pollution control work shall conform to the requirements in Section III “Discharge Prohibitions,” Section IV “Standard Specifications,” Section V “Effluent Standards,” Section VI “Receiving Water Limitations,” and Attachment A “Linear

Underground/Overhead Requirements” of the Construction General Permit, and these Standard Specifications.

- B. Storm water pollution control work shall conform to the requirements in the SWRCB Construction General Permit and the “Storm Water Best Management Practice Handbook: Construction” prepared by CASQA, and addenda thereto issued up to and including the date of advertisement of the project, hereafter referred to as the “Handbooks.”
- C. The Contractor shall become fully informed of, and comply with applicable Standard Specifications of the Handbook and 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. The Contractor shall incorporate appropriate Best Management Practices (BMPs) measures at all locations such as gutters, drainage inlets, etc., that may be affected by any operation, including saw cutting, grinding and paving, that may deposit pollutants in those facilities. Monitoring of the BMPs shall be done throughout the project and any upgrades or adjustments shall be made as directed by the project applicant’s QSP. Any spillage into gutters or drainage inlets shall be cleaned immediately.
- E. The District and/or City/County may order the suspension of construction operations which create water pollution if the Contractor fails to conform to the requirements of this section - Storm Water Pollution Control, as determined by the District. No extension of time and no delay charges shall result from such suspension by the District and/or City/County.
- F. If the District and/or City/County identify a deficiency in the deployment or functioning of an identified control measure, the deficiency shall be corrected by the Contractor immediately, or by a later date and time if requested by the Contractor and approved by the District and/or City/County in writing, but not later than the onset of subsequent precipitation events. The correction of deficiencies shall be at no additional cost to the District.
- G. Nothing in the terms of the Contract nor in the Standard Specifications in this Section shall relieve the Contractor of the responsibility for compliance with Section 5650 and 12015 of the Fish and Game Code, or other applicable statutes relating to prevention or abatement of water pollution.
- H. Contractor shall provide a designated area to clean and wash concrete from equipment during any concrete work on this project. Area shall be lined to prevent any run-off. Concrete residual shall be properly disposed.
- I. After every rainfall, Contractor shall inspect and replace any damaged BMP's. Any replacement of BMP's shall be paid in various bid items. Work shall include cleaning and

properly disposing debris from the inlets. Every inlet needs to be free from obstruction and sediments.

- J. Conformance with the requirements of this section - Storm Water Pollution Control, shall not relieve the applicant and their Contractor from the responsibilities, as provided in Sections 5-1.36 - Property and Facility Preservation, 7-1.05 - Indemnification, and 7-1.06 - Insurance, of the Standard Specifications.

END OF SECTION

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SECTION 01 70 00 - PROJECT CLOSEOUT

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Work included under this section consists of conforming to the job completion-related requirements of other sections in these Standard Specifications and of furnishing various materials needed to complete the project.

1.02 SUBMITTALS

- A. Tests
 - 1. Submit any test results done during the course of the work and not previously submitted in accordance with applicable sections of these Standard Specifications.
- B. Certificates and Guarantees
 - 1. Furnish all certificates and/or guarantees as required by individual Standard Specifications Sections and in accordance with applicable sections of these Standard Specifications.
- C. Record Drawings
 - 1. Furnish record drawings.

1.03 INSPECTION

- A. Final Inspection
 - 1. Submit written certification that project, or designated portion of project, is substantially complete, and request, in writing, a final inspection. The District will make an inspection within ten (10) days of receipt of the request.
 - 2. Should the District determine that the work is substantially complete, the District will prepare a punch list of deficiencies that do not preclude operation and use of the facility; however, final payment will be withheld until all deficiencies are corrected and all close-out requirements of the encroachment permits are met.
 - 3. Prior to the District accepting the project, the Contractor shall perform a final sweep using a regenerating air type street sweeper along the project limits fourteen (14) days after the paving and striping operations. Work shall be coordinated with the District inspector.
 - 4. Until receipt of a letter of final acceptance, the Contractor shall be responsible for the work.

B. Post Construction Inspection

1. Prior to expiration of the performance bond, and approximately twenty-three (23) months from date of final acceptance, the District will inspect project to determine whether corrective work is needed. The Contractor will be notified in writing of any deficiencies. The Contractor must begin corrective work on the noted deficiencies within ten (10) days after receipt of notification.

PART 2 MATERIALS - NONE

PART 3 EXECUTION

3.01 CLEANING

- A. Cleanup and cleaning shall be done in accordance with applicable sections of these Standard Specifications.

END OF SECTION

SECTION 03 30 00 - CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Work included under this section consists of furnishing and installing all materials, supplies, equipment, tools, transportation, and facilities, and performing all labor and services necessary for, required in connection with, or properly incidental to furnishing and installing cast-in-place concrete work as described in this section of the specifications, shown on the accompanying drawings, or reasonably implied therefrom except as hereinafter specifically excluded.
- B. Defective Work
 - 1. Work considered to be defective may be ordered by the District to be replaced, in which case the Contractor shall remove and replace the defective work at their expense.
- C. Applicable Standards
 - 1. All concrete shall be mixed, delivered, placed, finished, and cured in accordance with Sections 51 - Concrete Structures, and Section 90 - Concrete, of the latest requirements of Caltrans Standard Specifications, and with American Concrete Institute (ACI) 301-11 - Standard Specifications for Structural Concrete.

1.02 SUBMITTALS

- A. The Contractor shall make submittals for the following as required by Section 01 33 00 Submittals.
 - 1. Mix Designs in compliance with ACI and Caltrans procedures for each class of concrete on the project, and shall show names and brands of all materials, proportions, slump, strength, gradations of coarse and fine aggregates, and location to be used.
 - 2. Manufacturer's data including catalog cuts, drawings, and samples, and letters of compliance as appropriate for epoxies, grout, admixtures, curing compounds, chemical hardeners, moisture barriers, water stops and other items as referenced elsewhere.
 - 3. Shop Drawings and mill certificates for reinforcing steel that show diagrammatic elevations of all walls, footings, columns, beams, slabs, etc. at a scale sufficiently large enough to show clearly the positions and erection marks of reinforcing bars, their dowels, and splices. Shop drawings shall show details for congested areas and

connections. Contract drawings shall not be reproduced in whole or in part. Contract drawings modified into shop drawings will be returned without review.

4. Concrete placement schedule shall show all proposed construction joint locations, limits of each placement sequence, the order of placement, any type of joint at each joint location.

B. Approval of Testing Agencies and Reports

1. Any laboratory where testing of materials is to be performed shall receive prior approval from the District. Documentary evidence, satisfactory to the District, that the material has passed the required inspection and testing must be furnished prior to the incorporation of such materials in the work, and rejected materials must be promptly removed from the premises. Lab reports shall show the name of the testing agency, date of testing, types of tests performed, and shall be signed by a principal of the testing agency who is a licensed Civil Engineer in the State of California.

PART 2 MATERIALS

2.01 FORMWORK

- A. Plywood formwork shall be 5/8" plywood, Exterior Type, DFPA Grade "Concrete Form Exterior", or better.

2.02 PORTLAND CEMENT

- A. Portland cement shall conform to ASTM C150 for Type II cement, or Type II-V modified for corrosive environments. Use one standard brand throughout all work.
 1. Fly ash shall conform to ASTM C618 for Class F fly ash. Fly ash percentages shall conform to the latest requirements of Caltrans Standard Specifications.

2.03 ADDITIVES

- A. Water reducing additive shall conform to ASTM C-494 Type A
- B. Water reducing and retarding shall conform to ASTM C-494 Type D
- C. Retarding shall conform to ASTM C-494 Type B

2.04 CONCRETE AGGREGATES

- A. Concrete aggregates shall conform to Section 90 - Concrete of the latest requirements of Caltrans Standard Specifications for hardrock concrete aggregates.

2.05 WATER

- A. Water shall be clean and free from deleterious amounts of acids, alkalies, or organic materials.

2.06 CONCRETE

- A. All structures, minor structures, foundations, and slabs shall be constructed of concrete as specified in Section 51 - Concrete Structures, of the latest requirements of Caltrans Standard Specifications and shall develop a minimum compressive strength of 3,600 psi at twenty-eight (28) days.
- B. The maximum water-cement ration shall be 0.45. If a pozzolan is used in the concrete, the maximum water-cement plus pozzolan ratio shall be 0.45.
- C. The slump shall be 3-inch minimum and 4.5-inches maximum for footing slabs and walls. The slump shall be 1-inch minimum and 4-inches maximum for other slabs, beams, and columns.

2.07 CONTROLLED DENSITY FILL (2-SACK SLURRY)

- A. Controlled density fill shall consist of a fluid, workable mixture of aggregate, cement, and water. The aggregate cement and water shall be proportioned by weight. 188 pounds of cement shall be used for each cubic yard of material. The water content shall be sufficient to produce a fluid, workable mix that will flow and can be pumped without segregation of the aggregate while being placed.
- B. The control density fill should have a twenty-eight (28) day compressive strength of no more than 300 psi. The aggregate (sand) should conform to ASTM C33 (for gradation), and should have a Sand Equivalent of no less than 75.

2.08 BARS

- A. Bars for reinforcing shall be deformed, domestic steel bars conforming to ASTM A706, Grade 60, except that for Minor structures as defined in the latest requirements of Caltrans Standard Specifications, ASTM A615, Grade 60 may be used.

2.09 WIRE

- A. Wire for tying reinforcement in place shall be No. 18 or heavier, AWG black annealed.

2.10 THRUST BLOCKS

- A. Thrust blocks shall be constructed of 2,000 psi, high early strength, minor concrete, as defined in Section 90 – Concrete, of the latest requirements of Caltrans Standard Specifications with a minimum 505 pounds of cementations material per cubic yard.

PART 3 EXECUTION

3.01 FORMWORK

- A. Forms shall be designed and constructed in accordance with the requirements of Section 51 - Concrete Structures, of the latest requirements of Caltrans Standard Specifications, and ACI 301-11.
- B. The forms shall be smooth, mortar-tight, true to the required lines and grades, and of sufficient strength to resist springing out of shape during the placing and vibrating of concrete. All dirt, chips, sawdust, and other foreign matter shall be completely removed before concrete is deposited therein. Forms previously used shall be thoroughly cleaned of all dirt, mortar, and foreign matter before being reused. Before concrete is placed in forms, all inside surfaces of the forms shall be thoroughly coated with a form sealer. The form sealer shall be of high penetrating quality leaving no film on the surface of the forms that can be absorbed by the concrete or be incompatible with concrete paint.
- C. All exposed sharp edges shall be rounded or chamfered with triangular fillets, 3/4 -inch, unless shown otherwise on the drawings.
- D. Forms shall be removed in such a manner and at such time so as to ensure the complete safety of the structure and proper curing of the concrete.

3.02 INSTALLATION OF REINFORCING STEEL

- A. Reinforcing steel shall be cleaned, fabricated, placed, tied, and supported in accordance with the ACI detailing manual, SP-66(04), and Section 52 – Reinforcement, of the latest Caltrans Standard Specifications.
- B. Steel reinforcement shall be accurately placed and shall be supported and secured against displacement by the use of adequate and proper supporting and spacing devices, tie wires, etc., so that it will remain in its correct location in the finished work. No supporting devices shall be used that will impede the placement of concrete.
- C. The clear spacing between parallel bars shall be not less than 1-1/2 times the normal diameter of the maximum size aggregate, and in no case less than 1-1/2-inches except at splices which shall be wired together. Concrete cover, and other reinforcing spacing requirements, shall conform to the latest requirements of the ACI 318 2011 version.
- D. Reinforcing steel shall extend to the far face of the concrete and terminate in a 90° hook.
- E. Lap splice lengths shall be per the latest edition of ACI 318, dependent on bar orientation and confinement.

3.03 PLACEMENT OF CONCRETE

- A. Place concrete so that a uniform appearance of surfaces will be obtained, and the concrete will be free of all rock pockets, honeycombs, and voids.

3.04 CURING

- A. Freshly deposited concrete shall be protected from premature drying and excessively hot or cold temperatures, and shall be maintained with minimal moisture loss at a relatively constant temperature for the period of time necessary for the hydration of the cement and proper hardening of the concrete.

3.05 CONSTRUCTION JOINTS

- A. Joints not shown on the Drawings shall be so made and located as to least impair the strength of the structure. A pour schedule for each structure showing all construction joints shall be submitted to the District for review.
- B. The surfaces of all concrete joints shall be thoroughly cleaned and all laitance removed by sandblasting. In preparation for the next pour, the joints shall be dampened. Where directed by the District, joints shall be intentionally roughed as described in the Standard Specifications to amplitude of 1/4-inch.

3.06 EXPANSION JOINTS

- A. Pre-molded expansion joint material shall be installed where concrete walks abut buildings, walls, and curbs, where shown on the Drawings and at 20'-0" on centers maximum, where not specifically shown.

3.07 EMBEDDED ITEMS

- A. All sleeves, inserts, anchors, ladders, and other embedded items required for adjoining work or for its support shall be placed prior to concreting. Embedded items shall be positioned accurately and supported against displacement. Voids in sleeves, inserts, and anchor bolt slots shall be filled temporarily with a readily removable material to prevent entry of concrete into the voids.

3.08 REPAIR OF SURFACE DEFECTS

- A. All tie holes and all repairable defective areas shall be patched immediately after form removal in accordance with the applicable provisions of Section 51 - Concrete Structures, of the latest requirements of Caltrans Standard Specifications.

B. Finishes

1. Schedule of Finishes

<u>Element</u>	<u>Finish</u>
Walls not exposed	Ordinary Surface Finish
Exposed walls	Class 1 Finish
Exposed slabs	Broom finish

2. Ordinary and Class 1 Surface Finishes

- a. Shall conform to latest Standard Specifications.

3. Broom Finish

- a. Concrete shall first be finished with power floats, then with power trowels, and final by hand trowels before it is given a coarse, scored texture by drawing a broom, or burlap belt, across the slab surface.

3.09 CONCRETE COMPRESSIVE STRENGTH TESTS

- A. Concrete will be tested and inspected as work progresses. One compressive strength test shall be made for each pour and as described in the Standard Specifications. One complete test shall consist of making three (3) cylinders in accordance with ASTM C31, storing the cylinders for twenty-four (24) hours at the pour site, delivering the cylinders to the testing laboratory, testing one cylinder at seven (7) days and the other two (2) cylinders at twenty-eight (28) days in accordance with ASTM C39. Four copies of certified test results shall be forwarded to the District upon completion of the testing.

3.10 CONCRETE SLUMP TESTS

- A. Each pour shall be tested for slump at the beginning of the pour, at the time the sample for the strength test is taken, and whenever the consistency of the concrete appears to vary. The test shall conform to ASTM C143.

END OF SECTION

SECTION 13 47 13 – CATHODIC PROTECTION OF DUCTILE IRON WATER MAIN

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. The Work of this Section includes providing a complete galvanic anode cathodic protection (CP) system for ductile iron pipelines as outlined in this Section and the Standard Drawings.
- B. Electrical isolation of the structures from adjacent metallic structures, structures of dissimilar metal or dissimilar coatings, conduits, and all other metallic components that may impact the operation of the CP system.
- C. Electrical bonding of all non-insulated, non-welded pipe joints and mechanical joints.
- D. Installation of galvanic anodes, insulating joints, test stations, other components associated with the CP system, and all other work described herein and on the Standard Drawings.
- E. Testing of CP system during installation.
- F. Cleanup and restoration of work site.
- G. Final System Checkout: Testing of CP system after installation and backfilling.

1.02 REQUIREMENTS

- A. If the products installed as part of this Section are found to be defective or damaged or if the Work of this Section is not in conformance with these Specifications, then the products and Work shall be corrected at the Contractor's expense.
- B. Any retesting required due to inadequate installation or defective materials shall be paid for by the Contractor at no additional cost to the District.
- C. The Work also requires coordination of assembly, installation, and testing between the pipeline contractor and any CP material supplier or subcontractor.
- D. All electrical Work shall be in accordance with NEC and local requirements.

1.03 REFERENCED SPECIFICATIONS, CODES AND STANDARDS

- A. The Work of this Section shall comply with the current editions of the codes and standards referenced in this specification, including the following:
 - 1. AASHTO American Association of State Highway and Transportation Officials
 - a. H20 Specification for Highway Bridges

2. ASTM ASTM International
- a. A123 Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
 - b. A615 Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
 - c. B3 Standard Specification for Soft or Annealed Copper Wire
 - d. B8 Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft
 - e. B80 Standard Specification for Magnesium-Alloy Sand Castings
 - f. B187 Standard Specification for Copper, Bus Bar, Rod, and Shapes and General Purpose Rod, Bar, and Shapes
 - g. B418 Standard Specification for Cast and Wrought Galvanic Zinc Anodes
 - h. B843 Standard Specification for Magnesium Alloy Anodes for Cathodic Protection
 - i. C94 Standard Specification for Ready-Mixed Concrete
 - j. D1000 Standard Test Methods for Pressure-Sensitive Adhesive-Coated Tapes Used for Electrical and Electronic Applications
 - k. D1248 Standard Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable
 - l. D1785 Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
 - m. D2220 Standard Specification for Poly (Vinyl Chloride) Insulation for Wire and Cable, 75°C Operation
 - n. D3005 Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape
 - o. D4388 Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes

- p. D6386 Standard Practice for Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Painting
- q. G97 Standard Test Method for Laboratory Evaluation of Magnesium Sacrificial Anode Test Specimens for Underground Applications
- 3. AWWA American Water Works Association
 - a. C217 Petrolatum and Petroleum Wax Tape Coatings for the Exterior of Connections and Fittings for Steel Water Pipelines
- 4. NSF National Sanitation Foundation
 - a. NSF 61 Drinking Water System Components
- 5. NACE International, the Corrosion Society
 - a. RP0375 Field-Applied Underground Wax Coating Systems for Underground Pipelines: Application, Performance, and Quality Control
 - b. SP0169 Control of External Corrosion on Underground or Submerged Metallic Piping Systems
 - c. SP0286 Electrical Insulation of Cathodically Protected Pipelines
 - d. TM0497 Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metallic Piping Systems
- 6. NFPA National Fire Protection Association
 - a. NFPA 70 National Electric Code (NEC)
- 7. NEMA National Electrical Manufacturers Association
 - a. TC2 Electrical Polyvinyl Chloride (PVC) Tubing and Conduit
 - b. TC3 PVC Fittings for Use with Rigid PVC Conduit and Tubing
- 8. UL Underwriters Laboratories
 - a. 467 Grounding and Bonding Equipment
 - b. 514B Fittings for Cable and Conduit

- B. Whenever the Standard Drawings or these Specifications require a higher degree of workmanship or better quality of material than indicated in the above codes and standards, these Standard Drawings and Specifications shall prevail.

1.04 QUALITY ASSURANCE

- A. Installation of the CP equipment shall be performed by individuals having at least five years of experience in the installation of the CP equipment described herein.
- B. All testing required to be performed by a “Corrosion Technician” shall be performed by a NACE certified Corrosion Technician under the supervision of a Corrosion Engineer. A Corrosion Technician is a NACE CP2 (CP Technician), CP3 (CP Technologist), or CP4 (CP Specialist). A Corrosion Engineer is a Registered Professional Corrosion Engineer or a NACE CP4 (CP Specialist).

1.05 SUBMITTALS

- A. The following shall be submitted to the District prior to any equipment installation.
 - 1. Catalog cuts, bulletins, brochures, or data sheets for all materials specified herein.
 - 2. Statement that the equipment and materials proposed meet the Specifications and the intent of the Specifications.
 - 3. Statement of installation experience required.
 - 4. Schedule, including the expected start date and planned completion date.
- B. The following shall be submitted to the District after completion of the Work.
 - 1. Wire connection testing.
 - 2. Insulating joint testing, before and after backfilling.
 - 3. Joint bond testing, before and after backfilling.

1.06 INTERFERENCE AND EXACT LOCATIONS

- 1. The locations of CP equipment, test stations, devices, outlets, and appurtenances, as indicated are approximate only. Exact locations shall be determined by the District in the field.
- 2. The Contractor shall field verify all data and final locations of work done under other Sections of the Specifications required for placing of the electrical work.
- 3. In case of interference with other work, foreign pipeline, or erroneous locations with respect to equipment or structures, the Contractor shall furnish all labor and materials necessary to complete the Work in an acceptable manner to the District. Deviations

from the Standard Drawings and Specifications shall be submitted to the District for approval.

PART 2 MATERIALS

2.01 GENERAL

- A. All materials installed must be new. All equipment and materials supplied shall be similar to that which has been in satisfactory service for at least 5 years.
- B. All materials in contact with potable water shall be NSF 61 approved.

2.02 GALVANIC ANODES

- A. High-potential magnesium anodes: Cast magnesium anodes shall conform to ASTM B843 Type M1C. Anodes shall have an open circuit potential of -1.70 volts or more electronegative and a current efficiency of at least 48% when tested in accordance with ASTM G97. Anodes shall have the following size, form, and shape. Anodes shall be manufactured by Farwest, Corpro, Mesa, Matcor, or equivalent.

Ingot				Packaged		
Weight (lb)	Width (inch)	Height (inch)	Length (inch)	Weight (lb)	Diameter (inch)	Length (inch)
60	4 to 5	4	60	126 to 130	6 to 7	64

- B. Galvanic anodes shall be pre-packaged in a cloth bag containing backfill of the following composition: 75% gypsum, 20% bentonite, and 5% sodium sulfate. The anodes size and location, as shown on the Project Plans, shall be determined by the District.
- C. Anode lead wire:
 1. The wire size and type, attached to the anodes, shall be as specified on the Standard Drawing. The anode lead wire shall conform to the Section 2.10 of this Standard Specification.
 2. Connection of wire to the anode shall have a pulling strength that exceeds the wire’s tensile strength.
 3. Anode lead wires shall be of one continuous length, without splices, unless otherwise indicated on the Standard Drawings, from the anode connection to the test station.

2.03 READY-MIXED CONCRETE

- A. Ready-mixed concrete shall be in accordance with Section 03 30 00 of this Standards and Specification.

2.04 FLUSH-MOUNTED TEST STATION BOX

- A. Flush-mounted test station boxes shall be Christy G05 Utility Boxes, manufactured by Oldcastel Precast.
- B. Traffic box covers for test stations shall be cast iron with welded bead legend and labeled "ANODE".

2.05 TERMINAL BOARDS

- A. Terminal boards shall be made of 1/4-inch thick phenolic plastic and sized as indicated on the Standard Drawings.
- B. Connection hardware shall be brass or bronze. All connections shall be double nutted bolts with serrated lock washers.
- C. Copper bus bar shall be 1/8-inch thick and sized to fit. The copper bus bar shall be per ASTM B187 with 98% conductivity.

2.06 MECHANICAL LUGS

- A. Mechanical lugs shall be brass or copper with a brass, copper, or stainless-steel set screw. Tin plating on the lugs is optional. Aluminum lugs shall not be permitted. Zinc-plated steel set screws shall not be permitted. The lug shall be listed per UL 467, suitable for direct burial, and appropriately sized for the incoming wires. The lug shall be ILSCO Type XT-6DB, Burndy GKA8C, or an approved equivalent.

2.07 SHUNTS

- A. Shunts shall be selected by the size indicated on the Standard Drawings.
- B. 0.01-ohm, 6-amp shunts shall be manganin wire type, as indicated. Shunts shall be Type RS, as manufactured by Holloway, or equivalent.

2.08 CONDUIT AND FITTINGS

- A. The minimum conduit size shall be 2 inch unless otherwise indicated. Refer to NFPA 70 (NEC) for additional conduit size requirements.
- B. Conduit and fittings placed below grade shall be Schedule 80 PVC in accordance with NEMA TC2 and NEMA TC3.
- C. Conduit and fittings placed above grade shall be rigid steel. Rigid Steel conduit shall be galvanized and conform to UL 6.
- D. Conduit clamps shall be 316 stainless steel.

- E. Fittings for use with rigid steel conduit shall be galvanized cast ferrous metal, with gasketed covers, Crouse Hinds Condulets, Appleton Unilets, or equivalent. Rigid metallic conduit fittings shall be galvanized, conform to NEMA FB 1, and listed to UL 514B.
- F. Union couplings for conduit shall be Erickson or Appleton Type EC, 0-Z Gedney 3-piece Series 4, or equivalent.

2.09 CAUTION TAPE

- A. The caution tape shall be an inert plastic film designed for prolonged underground use. The caution tape shall be a minimum of 3 inches wide and a minimum of 5 mils thick.
- B. The caution tape shall be continuously printed over the entire length with the wording "CAUTION: CATHODIC PROTECTION CABLE BURIED BELOW."
- C. The wording shall be printed using bold black letters. The color of the tape shall be red.

2.10 WIRES

- A. Conductors shall consist of stranded copper of the gauge indicated on the Standard Drawings. Wire sizes shall be based on American Wire Gauge (AWG). Copper wire shall be in conformance with ASTM B3 and ASTM B8.
- B. Insulation Type and Colors: As shown on the Standard Drawings.
 - 1. High molecular weight polyethylene (HMWPE) wires shall be rated for 600 volts and shall conform to ASTM D1248, Type 1, Class C, Grade 5.

2.11 WIRE IDENTIFICATION TAGS

- A. Wire identification tags shall be the wrap-around type with a high resistance to oils, solvents, and mild acids. Wrap-around markers shall fully encircle the wire with imprinted alpha-numeric characters for pipe identification. The letters and numbers height shall be 3/16 inch at minimum.

2.12 EXOTHERMIC WELDS

- A. Exothermic welds shall be in accordance with the manufacturer's recommendations. Exothermic welds shall be Cadweld manufactured by Erico, Thermoweld manufactured by Burndy, or an approved equivalent.
- B. Prevent molten weld metal from leaking out of the mold, where necessary, by using Duxseal packing manufactured by Johns-Manville, Thermoweld packing material manufactured by Burndy, Cadweld T403 Mold Sealer manufactured by Erico, or an approved equivalent.
- C. The shape and charge of the exothermic weld shall be chosen based on the following parameters:

1. Pipe material
2. Pipe size
3. Wire size and requirement for sleeves
4. Number of wires to be welded
5. Orientation of weld (vertical or horizontal)

2.13 EXOTHERMIC WELD COATING

- A. After exothermic welding, repair coatings and linings in accordance with the coating and lining manufacturer's recommendation.
- B. For DIP, weld caps with integrated primer shall be used to cover the exothermic weld connecting the wire to the pipe. The weld cap shall be a 10-mil thick durable plastic sheet that has a dome filled with a moldable compound to assure complete encapsulation of the exothermic weld and a layer of elastomeric adhesive with integrated primer. The adhesive and primer shall be compatible with the pipe material and pipe coating material. Adhesion to DIP shall be at least 10 lb/in per ASTM D1000. Weld cap with integrated primer shall be Handy Cap IP manufactured by Royston or equivalent for wire size up to 8 AWG and Handy Cap XL IP manufactured by Royston or equivalent for wire size up to 2 AWG.

2.14 DIELECTRIC INSULATING FLANGE KITS

- A. Dielectric insulating flange kits shall only be used for above ground application.
- B. Insulating flange kits shall include full-faced gaskets, insulating sleeves and washers, and 316 stainless steel bolts, nuts, and washers. The complete assembly shall have a pressure rating equal to or greater than the flanges between which it is installed. Sleeves, gaskets, and insulating washers shall have a minimum dielectric constant of 300 volts per mil. Gaskets shall have a pressure rating of 350 psi. Stainless steel washers shall fit well within the bolt facing on the flange. Insulating washers shall fit within the bolt facing the flange over the outside diameter of the sleeve.
 1. Insulating gasket shall be full-faced, Type E, and 1/8-inch thick. Acceptable gasket materials include nitrile faced phenolic, G-10, or a material with equivalent or increased performance. Acceptable seal materials include EPDM, PTFE, or a material with equivalent or increased performance. When used in potable water systems, gasket and seal shall be NSF 61 approved.
 2. Insulating sleeves shall be 1/32-inch thick and equal the number of bolts on the flange. Acceptable materials include Mylar, G-10, or a material with equivalent or increased performance.

3. Insulating washers shall be 1/8-inch thick and equal to twice the number of bolts on the flange. Acceptable materials include G-10 or a material with equivalent or increased performance.

C. Dielectric insulating flange kits shall be manufactured by Advance Products & Systems Inc., GPT Industries, or an approved equivalent.

2.15 PVC PIPE FOR ISOLATION OF NEW FROM EXISTING PIPE

A. PVC pipe shall be used for isolation of new DIP to existing CIP underground.

1. The PVC pipe shall be AWWA C-900 DR-14 type.

2. The PVC pipe shall be minimum three feet in length.

B. PVC pipe shall be connected to DIP with Megalug mechanical joint and to CIP with a standard mechanical joint.

PART 3 EXECUTION

3.01 MATERIAL AND EQUIPMENT STORAGE

A. All materials and equipment to be used in construction shall be stored in such a manner to be protected from detrimental effects from the elements. If warehouse storage cannot be provided, materials and equipment shall be stacked well above ground level and protected from the elements with plastic sheeting or another method, as appropriate.

3.02 EXCAVATION AND BACKFILL

A. Buried wires shall have a minimum cover of 24 inches.

B. Caution tape shall be installed above buried wire. Caution tape shall be installed a minimum of 6 inches above underground wires and conduits.

C. Wire identification tags shall be placed on the wires prior to placing wire in conduit or backfilling.

3.03 SURFACE GROUND BED FOR GALVANIC ANODES

A. Prepackaged anodes shall be installed at the locations indicated on the STANDARD AND Project Plans.

B. Plastic or paper wrapping shall be removed from the anode prior to lowering the anode into the hole. Anodes shall not be suspended by the lead wires. Damage to the canvas bag, anode-to-wire connection, copper wire, or wire insulation before or during installation will require replacement of the entire anode assembly. Anodes shall be inspected and approved prior to backfilling.

- C. Anodes shall be backfilled with native soil. Backfilling with native soil shall proceed in 6-inch lifts, compacting the soil around the anode during each lift, until the backfill has reached grade. Upon completion of compaction of backfill to the top of the anode, and prior to filling the hole and compacting the backfill to the surface, a minimum of 10 gallons of fresh water shall be poured into the hole to saturate the prepackaged anode backfill and surrounding soil.
- D. Anode lead wires shall be routed and terminated on the panel board as shown in the Standard Drawings.

3.04 TEST STATIONS

- A. Test stations shall be installed at the approximate locations shown on the Project Plans. The Contractor shall field verify all final locations, subject to acceptance by the District. Test stations shall be located within the public right of way or pipeline easement. Test stations shall be located in areas not subject to vehicular traffic, such as sidewalks, unless otherwise approved by the District.
- B. For flush-mounted test stations, place the bottom of the test box on native soil. Do not place rock, gravel, sand, or debris in the box. Install 2,000 psi high early STRENGTH concrete collar after placement of the test box to finished grade. Provide sufficient sloping in the concrete pad or surrounding pavement to provide drainage away from the test box.
- C. Connect wires to the terminal board as shown on the Standard Drawings. Each wire shall be identified with a permanent wire identifier within 4 inches of the termination. After installation, all wire connections in the test station shall be tested by the Contractor to ensure they meet the requirements herein.

3.05 WIRES

- A. Buried wires shall be laid straight without kinks. Each wire run shall be continuous in length and free of joints or splices, unless otherwise indicated. Care shall be taken during installation to avoid punctures, cuts, or other damage to the wire insulation. Damage to insulation shall require replacement of the entire length of wire at the Contractor's expense.
- B. At least 12 inches of slack (coiled) shall be left for each wire at each flush-to-grade test station. Wire slack shall be sufficient to allow removal of wire extension for testing.
- C. Wire shall not be bent into a radius of less than eight times the overall wire diameter.
- D. The wire conduits must be of sufficient diameter to accommodate the wires. This shall be determined by the number and size of wires in accordance with the applicable codes and standards.
- E. Conduit shall be installed to a minimum depth of 24 inches below grade.

- F. Install caution tape a minimum of 6 inches above buried wire and conduits.

3.06 WIRE IDENTIFICATION TAGS

- A. All wires shall be coded with wire identification tags within 4 inches of the wire end indicating diameter and type of pipe.
- B. Wire identification tags shall be placed on all wires prior to backfilling and installation of test stations.

3.07 EXOTHERMIC WELD CONNECTIONS

- A. Exothermic weld connections shall be installed in the manner and at the locations indicated. Exothermic welds shall be spaced as far away as possible from other exothermic welds, fittings, and circumferential welds.
- B. Coating materials shall be removed from the surface over an area of sufficient size to make the connection and as indicated on the Drawings. The surface shall be cleaned to bare metal per SSPC SP11 (bare metal power tool cleaning) prior to welding the conductor. The use of resin impregnated grinding wheels will not be allowed.
- C. Only enough insulation shall be removed such that the copper conductor can be placed in the welding mold. If the wire conductor diameter is not the same as the opening in the mold, then a copper adapter sleeve shall be fitted over the conductor.
- D. The Contractor shall be responsible for testing all test lead and bond wire welds. The ENGINEER, at his or her discretion, shall witness these tests. After the weld has cooled, all slag shall be removed and the metallurgical bond shall be tested for adherence by the Contractor. A 22-ounce hammer shall be used for adherence testing by striking a blow to the weld. Care shall be taken to avoid hitting the wires. All defective welds shall be removed and replaced in a new location at least 6 inches away from the original weld location.
- E. All exposed surfaces of the copper and steel shall be covered with insulating materials.
 - 1. For dielectrically coated or polyethylene encased pipes, a plastic weld cap with integrated primer shall cover the exothermic weld and surrounding area. All surfaces must be clean, dry, and free of oil, dirt, loose particles, and all other foreign materials prior to application of the weld cap.
 - 2. For mortar coated pipes, epoxy putty covered with mortar shall be applied over the exothermic weld and surrounding area. The mortar shall match the exterior mortar on the pipe.
- F. The Contractor shall inspect the exterior of the pipe to confirm that all coatings removed or damaged as a result of the welding have been repaired. The Contractor shall furnish all materials, clean surfaces, and repair protective coatings damaged as a result of the

welding. Repair of any coating damaged during welding shall be performed in accordance with coating manufacturer's recommendations.

- G. After backfilling pipe, all test lead pairs shall be tested for broken welds using a standard ohmmeter. The resistance shall not exceed 150% of the theoretical wire resistance, as determined from published wire data.

3.08 JOINT BONDS

- A. Joint bonding shall be provided across flexible couplings and all non-welded joints to ensure electrical continuity, except where insulating joints have been installed to provide electrical isolation. Joint bonds type, size, length, and number shall be per Standard Drawings and installed as indicated.
- B. Bonding wires shall allow at least 2 inches of movement in the pipe joint. The wire shall be attached by exothermic welding. At least 2 bond wires shall be provided between all joints.
- C. For ductile iron pipe, the Contractor may, at his or her own expense, provide weld plates that are installed by the pipe manufacturer at the spigot end of the pipe. Provision of the weld plates does not relieve the Contractor from responsibility for repair of damage to the coating or lining as a result of exothermic welding of the pipe. Coating repairs shall be performed in accordance with coating manufacturer's recommendations.

3.09 DIELECTRIC INSULATING FLANGE KITS

- A. Dielectric insulating flange kits shall only be used for above ground applications.
- B. All insulating components of the insulating flanged gasket set shall be cleaned of dirt, grease, oil, and other foreign materials immediately prior to assembly. If moisture, soil, or other foreign matter contacts any portion of these surfaces, disassemble the entire joint and clean with a suitable solvent. Dry the entire joint. Once completely dry, reassemble the joint.
- C. Care shall be taken to prevent any excessive bending or flexing of the gasket. Creased or damaged gaskets shall be rejected and removed from the job site.
- D. Bolt holes in mating flanges shall be properly aligned at the time bolts and insulating sleeves are inserted to prevent damage to the insulation. Follow the manufacturer's recommended bolt tightening sequence. Center the bolt insulating sleeves within the insulation washers so that the insulating sleeve is not compressed and damaged.
- E. After flanged bolts have been tightened, each insulating washer shall be inspected for cracks or other damage. All damaged washers shall be replaced.
- F. When the flange is determined to be properly functioning to the full satisfaction of the District, approval will be granted to proceed with installation. Do not proceed with

coating, lining, or backfilling the insulating joint prior to gaining approval to proceed. If the coating or lining is applied prior to gaining approval to proceed, the coating or lining shall be completely removed to the satisfaction of the District at the Contractor's expense. If the insulating joint is backfilled prior to gaining approval from the District, the Contractor shall completely excavate the insulating joint at the Contractor's expense.

3.10 PVC PIPE FOR ISOLATION OF NEW FROM EXISTING PIPE

- A. PVC pipe shall be used for isolation of new DIP to existing CIP underground.
- B. Clean and inspect the pipe ends to insure they are cleaned of dirt, grease, oil, and other foreign materials immediately prior to assembly.
- C. Follow the manufacturer's installation recommendations to determine the correct sized mechanical joint as well as installation procedures.
- D. When the mechanical joint is determined to be properly functioning to the full satisfaction of the District, approval will be granted to proceed with installation. Do not proceed with coating, lining, or backfilling the mechanical joint prior to gaining approval to proceed. If the coating or lining is applied prior to gaining approval to proceed, the coating or lining shall be completely removed to the satisfaction of the District at the Contractor's expense. If the mechanical joint is backfilled prior to gaining approval from the District, the Contractor shall completely excavate the mechanical joint at the Contractor's expense.

3.11 WIRE CONNECTIONS

- A. After installation, all wire connections shall be tested to ensure electrical continuity at the test station locations by the Contractor to ensure that they meet the requirements and intent of the Standard Drawings and Specifications.

3.12 RESTORATION SERVICES

- A. Compaction of backfill for anodes and trenches shall be in conformance with the TRENCH EXCAVATION, BEDDING, AND BACKFILL Section (31 80 00).
- B. RESTORATION OF PAVEMENT: Patch pavement, sidewalks, curbs, and gutters where existing surfaces are removed for construction in conformance with the PAVING, RESTORATION, AND RESURFACING WORK Section (32 10 00) and the CAST-IN-PLACE CONCRETE Section (03 30 00).

3.13 ISOLATION TESTING ON INSULATING JOINTS

- A. Insulating joints shall be installed to effectively isolate DIP from existing metallic structures above ground. The Contractor shall test the performance of these insulating joints.

- B. The Contractor shall test the insulating joint using a Gas Electronics Model No. 601 Insulation Checker or an approved equivalent. If the testing results indicate less than 100% insulation, then the insulating joints shall be repaired and retested at the Contractor's expense.
- C. After installation, testing shall be performed by measurement of native pipe-to-soil potentials at both sides of the insulating joint. If the difference in native pipe-to-soil potentials on both sides of the insulating joint is within ± 100 mV, then additional testing shall be performed, as follows. Temporary CP current shall be circulated on one side of the insulating joint. "On" and "Instant Off" pipe-to-soil potentials shall be measured on the other side of the insulating joint. If the "Instant Off" potential is more negative than the native potential, the insulating joint shall be considered deficient and shall be repaired and retested at the Contractor's expense.

3.14 ISOLATION TESTING ON PVC PIPE MECHANICAL JOINTS

- A. PVC pipe shall be installed to effectively isolate DIP from CIP underground. The Contractor shall test the performance of the PVC pipe before backfilling.
- B. After backfilling, testing shall be performed by measurement of native pipe-to-soil potentials at both sides of the PVC pipe. If the difference in native pipe-to-soil potentials on both sides of the PVC pipe is within ± 100 mV, then additional testing shall be performed, as follows. Temporary CP current shall be circulated on one side of the PVC pipe. "On" and "Instant Off" pipe-to-soil potentials shall be measured on the other side of the PVC pipe. If the "Instant Off" potential is more negative than the native potential, the PVC pipe shall be considered deficient and shall be repaired and retested at the Contractor's expense.

3.15 CONTINUITY TESTING

- A. Continuity testing of joint bonds shall be performed by the District's qualified corrosion technician as defined in this section after backfilling. The electrical continuity test may additionally be performed before backfilling at the Contractor's option.
- B. The pipe shall be tested for electrical continuity. Continuity shall be verified using the linear resistance method. The pipe should be tested in spans that are no less than 250 feet, unless the pipe is shorter than 250 feet, and no more than 1,000 feet. Each test span shall have two test leads connected to the pipe at each end. Existing test stations can be used. A direct current shall be applied through the pipe using two of four test leads. The potential across the test span shall be measured using the other two test leads. The current applied and voltage drop shall be recorded for a minimum of three different current levels.
- C. The theoretical resistance of the pipe shall be calculated. It shall take into account the pipe wall thickness, material, and joint bonds.

- D. The average measured resistance shall be compared to the theoretical resistance of the pipe and bond wires. If the measured resistance is greater than 125% of the theoretical resistance, then the joint bonds shall be considered deficient and shall be repaired and retested at the Contractor's expense. If the measured resistance is less than 100% of the theoretical resistance, then the test and/or calculated theoretical resistance shall be considered deficient and the test span shall be retested and/or recalculated at the Contractor's expense. If the piping forms a loop which allows current to flow both in and out of the test span, then consideration shall be made for current circulating through both the loop and the test span.

3.16 FINAL SYSTEM CHECKOUT

- A. Upon completion of the installation, the District shall provide testing of the completed system by a Corrosion Technician, and the data shall be reviewed by a Corrosion Engineer to ensure conformance with the Standard Drawings and Specifications, NACE SP0169, and NACE SP0286.
- B. The testing described herein shall be in addition to and not substitution for any required testing of individual items at the manufacturer's plant and during installation.
- C. Testing shall be performed at all test leads of all test stations, junction boxes, and locations of exposed pipe as soon as possible after installation of the CP system.
- D. Testing shall include the following and shall be conducted in accordance with NACE TM0497:
 - 1. Measure and record native pipe-to-soil and anode-to-soil potentials at all test locations.
 - 2. Verify electrical isolation at all insulating joints per NACE SP0286.
 - 3. Confirm electrical continuity of the cathodically protected pipeline in accordance with this Section.
 - 4. Measure and record the "On" and "Instant Off" pipe-to-soil potentials at each location after the pipeline has been given adequate time to polarize.
 - 5. Measure and record the current output of each anode when the CP system is initially turned on and again after it has been given adequate time to polarize.
- E. Test results shall be analyzed to determine compliance with NACE SP0169.
- F. Test results shall be analyzed to determine if stray current interference is present. Stray current interference is defined as a ± 50 mV shift in a pipeline's pipe-to-soil potential that is caused by a foreign current source. Stray current interference shall be tested on the project pipeline and foreign pipelines that have a reasonable chance of being affected by stray currents.

- G. A written report shall be prepared by the Corrosion Engineer, documenting the results of the testing and recommending corrective work, as required to comply with the Contract Documents. Any deficiencies of systems tested shall be repaired and re-tested by the Contractor at no additional cost to the District.

END OF SECTION

SECTION 31 80 00 - TRENCH EXCAVATION, BEDDING, AND BACKFILL

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Work included under this section consists of furnishing all necessary labor, materials, tools, equipment, and services in connection with and reasonably incidental to clearing, saw-cutting/grinding pavement, excavating, installing bedding and backfill material, and disposing of excess excavated materials required for the construction of water mains and storm drains. Work required shall also include the furnishing of all materials and equipment necessary for the construction and installation of all temporary shoring, sheeting and bracing and other facilities which may be necessary to perform the excavations and to place and compact the bedding and backfill, and the subsequent removal of such sheeting, bracing and other facilities.
- B. Excavation and backfill shall be in accordance with the Standard Drawings and these Standard Specifications.

PART 2 MATERIALS

2.01 BEDDING MATERIAL

- A. Bedding material shall be "Quarry Fines," produced by Steven Creek Quarry, Cupertino, CA, free of organic material and clay.

2.02 AGGREGATE BASE (CLASS 2)

- A. Aggregate base shall conform to the requirements of Section 26 – Aggregate Bases of Caltrans Standard Specifications. Grading and Quality Characteristics requirements shall meet 3/4" maximum, Class 2 material.

2.03 DRAIN ROCK

- A. Drain rock shall be 3/4" crushed rock.

2.04 PAVEMENT

- A. Pavement shall conform to the requirements in Section 32 10 00 - Paving, Restoration, and Resurfacing Work of these Standard Specifications.

PART 3 EXECUTION

3.01 CONSTRUCTION ACROSS IMPROVED AREAS

- A. Asphalt concrete pavement or driveways removed or damaged in connection with construction shall be rebuilt to these Standard Specifications and have the same quality

as the portion removed. Where pavement or driveways must be removed, they shall be saw-cut prior to excavation.

- B. The Contractor may, when approved by the District, tunnel under driveways. Where existing driveways are removed or damaged by the Contractor, the Contractor shall replace after completion of the installation of the water main or utilities with the same type and quality of material as that which was removed or damaged.

3.02 UNDERGROUND OBSTRUCTIONS

- A. The Contractor shall notify North USA at (811) a minimum of 2 working days before proceeding with the work. Work may not begin until utilities marked.
- B. The Contractor shall determine the exact location of all existing utilities before commencing work, and agrees to be fully responsible for any and all damages by the Contractor's failure to exactly locate and preserve any and all underground utilities.
- C. Excavation and other work under or adjacent to existing water mains, conduits, or structures of any kind, shall be executed in such a manner as not to interfere with the safe operation and use of such installations. Should any damage occur to these facilities during the operations of the Contractor, they shall immediately notify the District and the facility owner(s) or authorities, and shall arrange for the immediate repair of the facilities at his own expense. If any conflicts are encountered during construction, the District shall be notified immediately.

3.03 TRENCH EXCAVATION

- A. Trench Width
 - 1. In all cases, trenches must be of sufficient width to permit the proper jointing of the pipe. However, trenches wider than the maximums specified herein will result in a greater earth load on the pipe than it was designed for; consequently, if the maximum trench widths specified are exceeded by the Contractor without the written permission of the District, the Contractor will be required, at their own expense for both labor and material, to provide a higher class of pipe or to embed the pipe in a concrete cradle as directed by the District.
 - 2. Permissible trench widths are as follows: For all pipes up to and including 18-inches diameter, and in all types of soil, maximum trench width of 24-inches greater than the outside diameter of the pipe will be permitted. This shall be interpreted to permit a maximum of no more than 12-inches on each side of the pipe. This clearance shall be measured from the outside of the barrel of the pipe to the sides of the trench and shall include any sheeting used. The minimum width of un-shored trenches shall be 12-inches plus the outside diameter of the pipe (a minimum of 6-inches on each side of the pipe). Where shoring is required, the Contractor shall allow sufficient width to comply with codes and regulatory safety requirements.

B. "T" Cut

1. A second saw-cut/grind operation is required prior to final paving to achieve the "T" cut section as shown on the standard drawings. Saw-cutting a wider trench during initial trench excavation to achieve a "T" cut section will not be allowed.

C. Shoring

1. The Contractor shall furnish, place and maintain shoring and bracing as may be required to support the sides of excavations for the protection of workers, to facilitate the work; to prevent damage to manholes, structures, and water mains being constructed; to protect adjacent embankments, structures or facilities from damage; and as required by applicable local, State and Federal safety codes.
2. Shoring shall be removed by the Contractor unless field conditions make the removal of sheeting impractical. In such case, the District may permit portions of the sheeting to be cut off to a specified depth and to remain in the trench. Backfill shall be brought to one foot above the top of the pipe before sheeting may be removed.
3. When trenching or excavation over 5-feet in depth, under the Labor Code Section 6705, Contractor shall provide the following:
 - a. Written and detailed plan covering trench and excavation safety procedures that meets CalOSHA requirements under the Construction Safety Orders Sections 1539-1543.
 - b. Submit a written safety plan reviewed and approved by a registered civil or structure engineer for review and approval prior to the start at work.
 - c. Assign a competent person to supervise trenching and excavation operations when work is being performed.
 - d. The Contractor shall obtain and provide the District a copy of a CalOSHA permit for all trench and excavation operations.
4. The Contractor must provide ladders or a safe access within 25-feet of a work area in trenches 4-feet or deeper.

D. Dewatering

1. During water main excavation and backfill operations, the Contractor shall provide temporary drains, diversion ditches, pumps, cofferdams, or other devices as may be necessary to remove surface water or groundwater from the work area. Unless otherwise specifically permitted by the District, water, either of surface or subsurface origin, will not be permitted in the trenches or in new or existing water mains at any time during construction and until backfilling over the top of the pipe has been

completed; nor will the groundwater level in the trench be permitted to rise above an elevation 4-inches below the invert of the pipe. If trench has been flooded prior to placement of bedding material, the bottom of the native trench shall be compacted to the satisfaction of the District. Special care shall be taken during dewatering to ensure compliance with Storm Water Pollution Control Plan.

2. All excavations shall be kept free from water during the time when concrete is being placed and until such time as water will not be detrimental to the finished work. Dewatering trenches, when required, may be accomplished in any manner the Contractor desires, provided the method is acceptable to the District. Any damage resulting from the failure of the chosen method to operate properly shall be the responsibility of the Contractor and shall be repaired in a manner satisfactory to the District, at the Contractor's expense.

E. Structural Clearances

1. Excavation near structures such as catch basins, manholes, and drain inlets shall be sufficient to leave at least 12-inches between the outer surfaces of the structure and the sides of the excavation.

F. Care of Excavated Material

1. All material excavated from trenches and piled adjacent to the trench, or in a roadway or public thoroughfare, must be piled and maintained in such a manner that the toe of the slope of the excavated material is at least a lateral distance equal to the height of the excavation from the edge of the trench. It shall also be piled so that as little inconvenience as possible is caused to public travel. Free access shall be provided to all fire hydrants, water valves, and meters, and all other conduits shall be kept clean to allow free flow of storm water.

G. Open Trench

1. Unless otherwise directed by the District or stated otherwise on the project drawings, no trench shall be excavated more than 200-feet, nor left unfilled past construction working hours or non-working hours.
2. All trenches in roads, whether located on the project roads or in an easement, shall either be backfilled or plated during non-working hours.

H. Excavation Below Grade

1. Except where unsatisfactory native subgrade material exists, no excavation below the bottom of the water main bedding will be permitted. If, for any reason other than unsatisfactory subgrade, excess material is excavated beyond the limits specified for bedding, such excavation below grade shall be replaced beneath the pipe zone with thoroughly compacted subgrade material at the expense of the Contractor.

Unsatisfactory subgrade material shall be removed and replaced as directed by the District.

I. Tree Roots

1. Tree roots two inches or more in diameter at adjacent trees shall not be cut without prior approval of a licensed arborist or the District. Material shall be removed from around root system to avoid damage thereto. Roots shall be protected with burlap wrapping while exposed.

J. Excavation

1. All excavation is unclassified. Work shall consist of performing all excavation operations regardless of the character of subsurface conditions. The Contractor shall make their own evaluation of the type of materials which may be encountered.

K. Excavated Trench Material Disposal

1. Any excess material resulting from trench excavation shall be disposed of offsite by the Contractor own expense in a manner satisfactory to the District. Such excess material may be deposited on private property if so, requested by the property owner and their approval, proper permits shall be obtained for the pertinent local agencies by the property owner and the Contractor. It is recommended that disposed of materials be recycled wherever possible.

L. Trench Plates

1. 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 shall be required to preserve unobstructed traffic flow. Smooth surface plates are not allowed. No more than two (2) trench plates in length will be allowed unless directed by the District.
2. Trench plates shall be A-36 grade steel, non-skid, a minimum of 1-inch thick, and rated for H/20 loading or greater.
3. Tack weld plates together when using multiple plates.
4. The Contractor shall maintain trench plates at all time and respond to and correct shifting trench plates regardless of the time of day. If the Contractor fails to correct sinking backfill material or shifting trench plates in a timely manner, the District reserves the right to correct the problem at the expense of the Contractor.
5. In the event pending inclement weather or other conditions as determined by the District may adversely affect the use of trench plates, they shall be removed, the excavation backfilled, and the surface secured with temporary asphalt.

3.04 TRENCH BACKFILL

A. General

1. No backfilling shall commence until the pipe has been inspected and approved by the District, until concrete in masonry structures such as thrust blocks or encasement has attained a proper strength, and until required fittings are installed and inspected.
2. In backfilling the trench, the Contractor shall take all necessary precautions to prevent damage or shifting of the pipe. Backfilling from the sides of the trench will be permitted after sufficient material has first been carefully placed over the pipe to such a depth as is acceptable to the District.
3. Any backfill which becomes displaced or depressed during construction or during the warranty period, shall be refilled, shaped, and restored to proper grade as frequently as is necessary until the surface is unyielding, at the Contractor's expense.
4. Placement and compaction operation shall be done in 8-inches maximum loose lifts unless otherwise specified by the District. Lifts shall be compacted by the use of mechanical means approved by the District. Compaction equipment or methods that produce horizontal or vertical earth pressures, which may cause excessive displacement or may damage the water main or structure, shall not be used. Ponding or jetting of backfill materials will not be permitted. The trench excavation and adjacent areas shall be backfilled to the grades existing prior to construction.

B. Pipe Embedment Zone Definitions

1. Quarry Fine Bedding shall be defined as the area between the bottom of the pipe and 4-inches below the bottom of the pipe. Pipe Bedding shall consist of leveling the bottom of the trench and furnishing, placing, and compacting quarry fines or other specified material as shown on the project drawings and as specified herein.
2. Quarry Fine Backfill shall be defined as the area between the pipe, the sides of the trench, and 6" above the pipe. Pipe Backfill shall consist of furnishing, placing and compacting quarry fines above the pipe or other specified material as shown on the project drawings and as specified herein.
3. Bedding and backfill material shall be compacted to 90% relative compaction and placed in three lifts. Quarry fines shall be placed in no more than 6-inches lifts or as specified here in. Vibratory plate will not be allowed to compact the pipe backfill.

C. Pipe Embedment Zone Lifts

1. **Lift One** – The first lift shall consist of placing 4-inches of compacted quarry fines to the satisfaction of the District prior to the placement of the pipe. The pipe shall be placed prior to the second lift.

2. **Lift Two** – The second lift shall consist of placing quarry fines around the pipe to the top of the pipe to the satisfaction of the District. The top of the pipe shall be visible prior to the start of compaction for the second lift. Compaction of the backfill around the pipe shall be performed by a pneumatic means such as a “Powder Puff.” No other means of compaction tool shall be allowed without prior approval by the District. Contractor shall use extreme care to avoid hitting the pipe and V-Bio polyethylene wrapping while compacting.
3. **Lift Three** – The third lift shall consist of placing and compacting 6” of quarry fines.

D. Pipe Upper Level Zone

1. “Type A” Trench (Paved Surfaces)
 - a. Defined as backfilling the trench with class 2 aggregate base and compacting it in uniform layers to a relative density of 95%. Temporary pavement of 2-inches minimum thickness shall be placed and maintained to the satisfaction of the District. Compact temporary pavement per Section 32 10 00 - Paving, Restoration, and Resurfacing. The existing paved surface shall then be replaced with a minimum 6-inches thickness of asphalt concrete within 30 days of placing temporary pavement.
2. “Type B” Trench (Graveled Areas / Road Shoulders)
 - a. Defined as backfilling the trench with class 2 aggregate base and compacting it in uniform layers to a relative compaction of 95% to the surface.
3. “Type C” Trench (Unimproved Areas)
 - a. Defined as backfilling with native material removed from the trench and compacting it in uniform layers to a relative density of 90%. Material removed from the trench shall be deposited at a suitable site acquired by the Contractor or on abutting property if requested by the property owner, in writing.
4. “Type D” (Controlled Density Fill)
 - a. Defined as backfilling the trench with controlled density fill as defined in Section 03 30 00 – Cast in Place Concrete Structures to within 6-inches minimum of the surface.

E. Subgrade

1. If the bottom of the trench contains stones or other hard objects which would interfere with the proper placement of bedding material or is unsatisfactory for supporting the pipe, it shall be removed to a depth to be determined by the District and backfilled with bedding material as directed by the District.

2. If water is encountered in the trench or the District inspector determines the subgrade below the pipe embedment zone is unstable the Contractor shall excavate and additional 12-inches and install crushed drain rock. Drain Rock at Bottom shall be defined as placing 3/4-inches crushed drain rock, as defined in Section 31 80 00, wrapped in filter fabric at 12" thickness layer at the bottom of the trench within 4-inches minimum of water main.

F. Compaction Tests

1. The Contractor is responsible achieving the compaction requirements of these specifications. At its discretion the District may perform compaction tests on its own to determine the adequacy of the trench bedding and. Retesting for compaction required by a failing test shall be paid for by the Contractor.

END OF SECTION

SECTION 32 10 00 - PAVING, RESTORATION, AND RESURFACING WORK

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Work required under this section consists of furnishing all labor, materials, tools, and equipment incidental to placing new asphalt concrete and/or driveway, road restoration. Paving shall include asphalt concrete surfacing and untreated aggregate base course. Paved and gravel roads includes excavation, filling, spreading, and compaction of the filled areas to conform to the lines, grades, and slopes as shown on the drawings. The work also includes furnishing, installing and maintaining temporary paving and trench plates during construction.

1.02 SUBMITTALS

- A. The Contractor shall submit manufacturer data including catalog cuts, drawings and samples, as appropriate, and letter(s) of compliance as required by Section 01 33 00 - Submittals.

PART 2 MATERIALS

2.01 AGGREGATE BASE/SURFACING

- A. Aggregate shall conform to the requirements of Section 26 - Aggregate Bases, of the latest requirements of Caltrans Standard Specifications. Grading requirements shall be for ¾-inches Class 2 aggregate base.

2.02 ASPHALT CONCRETE

- A. HMA shall be confirm to local agencies Standard and Specification and Section 39 - Asphalt Concrete, of the latest requirements of Caltrans Standard Specifications.

2.03 ASPHALT BINDER

- A. Asphalt binding shall be Grade PG 64-10 per Section 92 - Asphalt Binders, of Caltrans Standard Specifications.

2.04 TACK COAT

- A. Material for covering all (vertical and horizontal) surfaces of old pavement shall be asphalt emulsion Types SS-1 or RS-1 conforming Section 94, Asphalt Emulsions, of the latest requirements of Caltrans Standard Specifications.

2.05 TEMPORARY PAVING

- A. Temporary pavement shall consist of 2-inches of cold mix asphalt over Class 2 aggregate base. The aggregate base shall be equal in depth to the new pavement structural section

or more. The aggregate base shall be brought within 2-inches of the top of the existing pavement and covered with temporary "cold mix" asphalt paving using an SC-250, SC-800 or approved equal. All temporary surfacing shall be installed the same day as backfilling and shall be level with existing pavement.

2.06 SLURRY SEAL

- A. Slurry seal shall be Type II conforming Section 37 - Bituminous Seals, of the latest requirements of Caltrans Standard Specifications.

2.07 STRIPING AND PAVEMENT MARKINGS

- A. Striping and pavement markings shall be thermoplastic per Section 84 – Markings, of latest requirements of Caltrans Standard Specifications.
- B. Striping shall be placed in a continuous operation. The Contractor shall ensure there is enough material to prevent any stopping during placement. No overlapping of striping material or markings is permitted.

PART 3 EXECUTION

3.01 AGGREGATE BASE COURSE

- A. The aggregate base course shall be spread and compacted on the prepared subgrade. The base course material shall be placed in 6-inch max compacted layers and shall be compacted to a minimum relative density of 95%, or for water main work be spread and compacted as described under Section 31 80 00 - Trench Excavation, Bedding, and Backfill.

3.02 AGGREGATE SURFACING COURSE

- A. Gravel road surfacing shall be an aggregate course applied to the base course after compaction in the same manner as specified for the aggregate base course. The surface course shall be placed in one layer. Special care shall be taken to maintain crown or slope for drainage.

3.03 TACK COAT

- A. Apply tack coat to all horizontal and vertical surfaces of existing pavement and to vertical surfaces of curbs, gutters, conforms, and construction joints before placing asphalt concrete on or against them, at the rate of 0.10 gallons per square yard.

3.04 TEMPORARY PAVING

- A. Temporary paving shall be installed over all trenches to a thickness of 2-inches. Temporary paving shall be installed on the same day as acceptable trench compaction is obtained and base material installed and shall be smoothed out using a vibratory plate or

other means approved by the District. No tire/wheel rolling compaction will be allowed. Temporary paving shall be maintained on a daily basis until permanent paving is installed. The final paving operation shall occur within thirty (30) days of placing temporary paving.

3.05 ASPHALT CONCRETE

- A. Asphalt concrete shall be placed in accordance with local agencies Standard and Specifications and Section 39 - Asphalt Concrete, of the latest requirements of Caltrans Standard Specifications for method compaction.
 - 1. Minimum Temperature: The minimum temperature of asphalt concrete delivered to the site shall be at least 250° F, and no more than 370° F.
 - 2. Lift Thickness: Where the total thickness of asphalt concrete to be placed is greater than 3-inches, place in lifts of equal thickness, none of which shall exceed 3-inches.

3.06 SLURRY SEAL

- A. Slurry seal shall be placed in accordance with Section 37 - Bituminous Seals, of the latest Caltrans Standard Specifications. Slurry seal shall fully cure prior of traffic striping/marketing placement.
- B. Temporary traffic delineators (floppies, etc.) shall be removed prior to slurry seal placement.

3.07 TRAFFIC STRIPING

- A. Traffic striping shall be placed, per the City of Belmont, City of San Carlos and/or County of San Mateo requirements, minimum two weeks after placing slurry seal, and shall comply with Section 84 – Markings, of the latest requirements of Caltrans Standard Specifications. All damaged striping and reflectors shall be replaced in kind to duplicate, insofar as possible, pre-construction striping. Cat track shall be approved by the City/County prior to placing any striping and/or marking.

3.08 DAMAGE REPAIR

- A. The Contractor shall be responsible for any damage to existing infrastructures such as curbs, gutters, sidewalks, driveways and any asphalt concrete, liquid asphalt or asphaltic emulsion stains occurring during the course of this Contract. Stains shall be cleaned by sandblasting or any other method satisfactory to the District.

END OF SECTION

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SECTION 33 14 10 - ABANDONMENT OF EXISTING WATER MAIN AND FACILITIES

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Work included under this section consists of furnishing all necessary labor, materials, tools, equipment, and services necessary to abandon existing water main facilities as specified herein.
- B. Where indicated on the plans, the existing water main and any appurtenances connected to it or part of it, including but not limited to, hydrants, blowoffs, air release valves, service connections and gate valves shall be abandoned.

PART 2 MATERIALS

2.01 AGGREGATE BASE

- A. Aggregate base shall be as specified in Section 31 80 00 - Trench Excavation, Bedding and Backfill".

2.02 PAVEMENT REPLACEMENT

- A. Paving replacement materials and methods shall be as specified in Section 32 10 00 - Paving, Restoration and Resurfacing Work.

PART 3 EXECUTION

3.01 ABANDONMENT OF EXISTING WATER MAIN & FACILITIES

- A. The procedure described herein shall apply, as applicable, to all water mains and appurtenances designated for abandonment.
 - 1. This work shall not be done until the new water main has been successfully tested and is in operation. All work shall be coordinated with the District.
 - 2. After fire hydrant / check valve relocation, the existing hydrant/check valve shall be abandoned by cutting a minimum 18-inches below grade and concrete capping the pipe after the relocated hydrant assemblies have been installed and tested. The Contractor shall deliver the removed hydrants to the District's corporation yard. Stand pipes shall become the property of the Contractor. The Contractor shall also remove any hydrant marker posts for abandoned hydrants.
 - 3. Remove valve boxes (but not extensions of those boxes) and covers on valves located on water mains, fire hydrant runs, and blowoffs to be abandoned. Remove any valve marker posts for abandoned valves. Removed boxes, covers and marker posts shall become the property of the Contractor.

4. Remove existing meters and their respective boxes. The abandonment and removal of the existing meter box shall include removal of the angle meter stop and crimping the copper line within 2-feet of the meter box. Meters are to be delivered to the District's corporation yard. At the discretion of the District, the existing meter boxes, angle meter stops, and copper segments shall also be salvaged and delivered to the District's yard.
5. Services on live water mains shall be abandoned at the water main by installing a Smith-Blair stainless steel clamp as directed by District.
6. The new meter box for the service and/or PRV shall be installed after the abandonment and removal of the existing copper line and angle meter stop.
7. Water mains to be abandoned shall be drained until no water is visible in the pipe. Cut, drain, and plug/cap both ends of all existing water mains and tees with fittings approved by the District.
8. Backfill shall be in accordance with Section 31 80 00 - Trench Excavation, Bedding and Backfill.
9. Restore paved surface as specified in Section 32 10 00 - Paving, Restoration and Resurfacing Work.
10. All abandoned facilities shall be water-tight.
11. Contractor shall use due care when working with asbestos cement pipe and shall comply with all applicable laws and regulations regarding such work. When cutting asbestos cement pipe, Contractor shall ensure that adequate means are used to protect its workers and the environment against asbestos exposure. Asbestos cement pipe shall not be cut with a saw or comparable dust-generating tool, unless adequate encapsulation is provided. Asbestos cement pipe removed by the Contractor's operations shall become his property and be properly bagged and disposed of in an approved manner as required by federal, state, and local regulations.

B. Pressure Regulating Vault Abandonment

1. After removing all the appurtenances and the vault structure, concrete cap the water main and backfill with base rock to the satisfaction of the District. Contract can use native material to bring the last 6" to grade. Compact to 90% R.C.

END OF SECTION

SECTION 33 14 13 – WATER MAIN

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Work included under this section consists of furnishing and installing all water main piping, fittings and appurtenances shown on the project drawings and as specified herein.
 - 1. All water mains located west of the Caltrain R/W in the hills, including hydrant runs and tie-ins, shall be constructed entirely of Class 50 zinc coated ductile iron pipe with restrained joint, bonded together per Section 13 47 13 – Cathodic Protection of Ductile Iron Water Main; wrapped in low density V-Bio polyethylene film and marked with No. 8 standard tracer wire.
 - 2. All water mains located east of the Caltrain R/W or anywhere else with known corrosive soils as directed by the District, including hydrant runs and tie-ins, shall be constructed entirely of Polyvinyl Chloride (PVC) pipe; marked with No. 8 standard tracer wire.

1.02 SUBMITTALS

- A. The Contractor shall submit manufacturers' data including catalog cuts, drawings and samples, as appropriate, and letter(s) of compliance as required by Section 01 33 00 - Submittals.

PART 2 MATERIALS

2.01 DUCTILE IRON (DI) PIPE

- A. General
 - 1. Ductile iron pipe shall conform to ANSI A21.50 and A21.51 (AWWA C150 and C151) and shall be Zinc Coated Class 50 pipe with minimum working pressure of 350 psi.
- B. Joints
 - 1. Buried pipe shall all have restrained push-on joints (“Field Lok,”), unless specified otherwise. At fittings and tie-ins, pipe shall have restrained push-on joints, mechanical joints (mega-lugs), or flanged joints as directed by the District. Mechanical joints may be used for closures, subject to meeting thrust restraint requirements. Flanged ends, or plain ends with restrained couplings, shall be used for piping above ground.
 - 2. For mechanical joints, dimensional and material requirements for pipe ends, glands, bolts, nuts and gaskets shall conform to ANSI A21.11 (AWWA C111).

3. For flanged joints, ends of pipe and fittings shall be provided with ductile iron flanges conforming to ANSI A21.10 and A21.15 (AWWA C110 and C115), as applicable. Bolts, nuts, and gaskets for flanged connections shall conform to ANSI B16.1 and as specified in Section 2.08 - Hardware. All flanged connections shall use "Ring Flange-Tyte" gaskets as manufactured by U.S. Pipe capable of withstanding pressures up to 350 psi.

C. Fittings

1. Fittings shall be ductile iron conforming to ANSI A21.53 (AWWA C153) with push-on joint bell design to fit the particular make of the pipe furnished or to fit a pipe-to-fitting adapter unless specified on the plans. Fittings shall have a pressure rating at least equivalent to that of the pipe used.

D. Coating and Lining

1. Buried ductile iron pipe, sleeves and fittings shall be class 50 Zinc coated and asphalt seal-coated, with cement-mortar lined. The lining shall conform to the Standard Specifications of AWWA C104. All above ground fittings and couplings shall be fusion epoxy lined and coated.

E. V-Bio Polyethylene Encasement

1. All buried ductile iron pipe and fittings shall be wrapped in low density V-Bio polyethylene in accordance with AWWA C105, Method A. The tape used to secure the encasement shall be black PVC pipe wrap tape, minimum 10 mil thick. No other tape is allowed.

F. Pipe End Caps During Transport / Storage

1. The interior of all pipe, fittings, and other accessories shall be kept clean and free from organic matter at all times. All pipes shall be delivered to the construction site with end caps on both ends. End cap components must adhere sufficiently to withstand the stresses caused by wind during shipment. Pipes delivered on-site with damage shall be immediately field cleaned to remove all undesirable material along the entire length of the pipe interior. New end caps shall be installed after cleaning.
2. Cut pipe lengths of 5.0-feet or less, fittings, and valves do not require end caps but shall be field cleaned prior to installation.

2.02 PVC PIPE

A. General

1. PVC water mains shall conform to the applicable requirements of latest AWWA C900. Pipes shall be DR 14 pressure class 305 with a DI pipe equivalent outside diameter. Maximum length of each section of pipe between elastomeric rings shall be twenty (20) feet.

B. Joints

1. Buried pipe and pipe fittings shall all have internally restrained push-on joints, unless shown otherwise on the drawings or specified otherwise. At fittings and tie-ins, pipe shall have restrained push-on joints or mechanical joints (mega-lugs). Plain ends with restrained couplings, shall be used for piping above ground.
2. For mechanical joints, dimensional and material requirements for pipe ends, glands, bolts, nuts and gaskets shall conform to latest ANSI A21.11 (AWWA C111).
3. For flange joints with adapters, ends of pipe and fittings shall be provided with flange couplings. Bolts, nuts, and gaskets for flanged connections shall conform to ANSI B16.1 and as specified in Section 2.06 - Hardware. All flanged connections shall use "Ring Flange-Tyte" gaskets as manufactured by U.S. Pipe capable of withstanding pressures up to 350 psi.

C. Fittings

1. Fittings for use on C900 PVC shall be DI conforming to the applicable requirements of latest ANSI A21.53 (AWWA C153). Joints shall be restrained (mega-lug). All bolt-up sets (nuts, bolts and washers) and tie rods for buried valves and fittings shall be stainless steel, ASTM A-276 type 316. Isolated fitting and associate adjacent restraints shall be cathodically protected per Section 13 47 13 – Cathodic Protection of Ductile Iron Water Main.

D. Coating and Lining

1. Buried and/or above ground fittings and sleeves shall be class 50 zinc coated ductile iron and shall have all internal and external ferrous surfaces coated with a fusion bonded epoxy coating of 10 mils nominal thickness. The coating shall conform to latest AWWA C116.

E. Pipe End Caps During Transport / Storage

1. The interior of all pipe, fittings, and other accessories shall be kept clean and free from organic matter at all times. All pipes shall be delivered to the construction site with end-covers on both ends. End-cover components must adhere sufficiently to withstand the stresses caused by wind during shipment. Pipes delivered on-site with damage shall be immediately field cleaned to remove all undesirable material along the entire length of the interior of the pipe. New end covers shall be installed after cleaning.
2. All pipe to be used for water main installation located in the storage area, staging area, or left overnight prior to installation shall have the ends of the pipes covered with plastic (visqueen) and secured with tape to keep the pipe free of debris and dirt.

3. Cut pipe lengths of 5-feet or less, fittings, and valves do not require end-covers but shall be field cleaned prior to installation.

2.03 THRUST RESTRAINTS

A. Push-On Joint Locking Gasket

1. The locking gasket type restrained joint shall consist of stainless steel locking segments molded into the gasket that shall grip the spigot end of the pipe to prevent joint separation. This restrained joint system shall be "Field Lok", manufactured by U.S. Pipe for DI pipe and "Eagle Loc" manufactured by JM Eagle for PVC pipe or equivalent.

B. Mechanical Joint Restraint

1. Mechanical joint fittings shall be EBAA Iron "Megalug". Bolts, nuts, and washers shall be low alloy (Corten).
2. Wedge gaskets shall be used with all mechanical joints. Standard mechanical joint gaskets are not allowed.

2.04 THRUST BLOCKS

- ### **A. Concrete thrust blocks are optional except where required on the drawings. Thrust blocks shall be constructed per the Standard Drawings and Section 03 30 00 – Cast in Place Concrete**

2.05 PIPE CONNECTORS

A. Flexible Couplings

1. Flexible couplings shall be Macro HP Extended Range manufacturer by Romac Industries Inc. Flex coupling must conform to latest AWWA C-219, with Type 316 bolts, nuts, and washers.

B. Flanged Coupling Adapters

1. Flanged coupling adapters shall be EBAA 2100 adapter. Flanges, spools and sleeves shall be high strength ductile iron with Type 316 stainless steel bolts, nuts, and washers.
2. Flange gaskets shall conform to Section 2.01 – Ductile Iron Pipe, Sub-Section B, Joints and Section 2.02 – PVC Pipe, Sub-Section B, Joints.

C. Tapping Sleeves

1. Tapping sleeves shall be JMC Industries 6432, all Type 316 stainless steel bodies, mechanical joint, designed for ductile iron, cast iron and PVC pipe. Bolts, nuts,

washers and associated hardware not part of a mechanical joint assembly shall be plated. No tapping sleeves shall be used for asbestos cement pipe.

2.06 HARDWARE

- A. All bolts, nuts and washers, and restraining tie rods and associated hardware, used with flanged fittings, couplings and appurtenances shall be Type 316 stainless steel for all buried and exposed applications. All bolts shall be furnished with finished hexagonal nuts. The dimensions of all heads and nuts shall be not less than those required for the American Standard regular, and the height shall be sufficient to break the bolt in the body portion when tested. Threads shall be American Standard screw thread, coarse thread series.
- B. Type 316 Steel bolts and nuts hardware shall be used one time per application. Reusing Type 316 Steel hardware is not permitted.
- C. Mechanical joint hardware EBAA shall be high strength, low alloy (Corten).

2.07 TUBING AND FITTINGS

- A. Copper tubing and fittings used for service connections and reconnections shall be Type K, soft, and conform to ASTM 88. Copper tubing shall have blue seamless polyethylene coat, distributed by Mueller Streamline Co.

2.08 MARKER TAPE FOR BURIED PIPING

- A. Marker tape shall be metallic foil bonded to plastic film not less than 2-inches wide. The adhesive shall be colored and be compatible with the foil and film. Film shall be inert polyethylene plastic with thickness not less than 5-mil.
- B. The buried utility line tape shall be identified with an appropriate imprint such as "Caution: Water Main Below" and the identification repeated at approximately 24-inch intervals. Letters shall be 3/4-inch high minimum. The tape shall have a blue imprint.
- C. Marking and warning tape shall be as manufactured by Calpico, Inc., Allen Systems, Inc., Reef Industries, or equivalent.

2.09 TRACER WIRE

- A. Tracer wire shall be No. 8 AWG, standard copper THMW, 600 volt with solid blue insulation.

PART 3 EXECUTION

3.01 TRENCH EXCAVATION, BEDDING AND BACKFILL

- A. Trench excavation, bedding and backfill work shall be performed in accordance with Section 31 80 00 - Trench Excavation, Bedding and Backfill.

3.02 EXISTING UTILITIES AND STRUCTURES

- A. The locations of underground utilities and drainage facilities, where shown on the project drawings, are approximate only. It is the Contractor's responsibility to determine the exact locations of all existing utilities. Where existing culverts, underground facilities, under-ground structures, power, telephone or guy poles or guy wires interfere with construction, the Contractor shall be responsible for coordinating with the appropriate utility companies before removing or relocating any interfering utilities providing that the interfering utilities are shown on the drawings or are visible above grade.

3.03 HANDLING AND DISTRIBUTION OF MATERIALS

- A. Pipe and appurtenances shall be stored in a manner to avoid damage to the materials and to linings and coatings.
- B. The pipe shall be protected to prevent entrance of foreign materials during installation.
- C. All pipe and fittings shall be carefully examined for defects, and no piece shall be installed which is known to be defective. Special care shall be taken to avoid leaving bits of wood, dirt, or foreign particles in the pipe.
- D. All pipe and fittings shall be carefully handled at all times and at no time while loading, unloading, moving, or installing any lined pipe and fittings shall be dropped. All pipe and fittings shall be handled by mechanical means. Wye belt sling shall be used for all coated pipe.

3.04 INSTALLATION OF BURIED PRESSURE PIPING

- A. General
 - 1. Pipe, fittings, and appurtenances shall be installed in accordance with the manufacturer's instructions and in accordance with the latest AWWA C600 for DI pipe and AWWA C605 for PVC pipe.
 - 2. The Contractor shall furnish such parts and pieces as may be necessary to complete the fixtures and apparatus in accordance with best practices of the trade and to the satisfaction of the District.

B. Alignment

1. Piping shall be installed as indicated on the project drawings. Where not detailed, exposed pipe shall be installed in straight horizontal and vertical runs parallel to the axis of the structures.
2. Parallel runs of pipe shall be grouped and kept uniformly parallel. Bends and fittings shall be properly located to maintain uniform spacing and elevation of pipe groups at changes of direction and at branch connections.
3. All pipe shall be carefully placed and supported, and proper lined and grade. Minor adjustments may be necessary to avoid architectural and structural features. Major relocations shall be approved by the District.
4. Project drawings are diagrammatic for piping that is not shown in detail. Size of piping and their location are indicated, but it is not limited to show every offset and fitting nor every structural difficulty that may be encountered during the installation for the work. The pipe alignment shall be varied from indicated on the project's drawings without extra expense to the District where necessary to complete the fixtures and apparatus in accordance with the best practice of the trade and to the satisfaction of the District.
5. The allowable angle of deflection at any joint shall not exceed the amount recommended by the pipe, or coupling, manufacturer for the particular pipe size used.
6. A minimum 3-foot homogeneous length of pipe shall be installed before and after any fitting, valve or other appurtenance. Any sections less than 3-feet will not be permitted.
7. Trench Dams shall be placed on new water main alignments where slopes exceed 10% or as directed by the District and shall be placed every 100-feet in accordance with the Standard Drawings.

C. Valves

1. Valves shall be set with the stems upward and in vertical position, unless indicated otherwise on the drawings. The Contractor shall not operate existing District valves at any time.

D. Joints

1. Pipe shall be assembled and joined in accordance with the manufacturer's published instructions for the type of pipe and joint used. All portions of the joints shall be thoroughly cleaned before the sections of pipe are assembled. The ends of each pipe shall abut against the next pipe section in such a manner that there will be no unevenness of any kind along the bottom half of the interior of the pipe.

2. Where mechanical joints are used with ductile iron pipe, the pipe shall be marked in such a manner that it can be determined after installation that the pipe is properly seated.

E. Pipe Plugs

1. When pipe laying is not in progress, the open ends of the installed pipe shall be closed with a water tight plug. The plug shall be fitted with means for venting. When practical, the plug shall remain in place until the trench is pumped completely dry. Care must be taken to prevent pipe flotation if the trench fills with water.

F. Thrust Resistance

1. Restrained joints shall be provided on all joints, at all bends, vertical bends, tee branches, and dead ends for ductile iron pipe.
2. Concrete thrust blocks shall be cast between undisturbed ground and the fitting to be anchored as shown on Standard Drawings. Blocks shall be poured so that the pipe and the fitting will be accessible for repairs.
3. Restraints must be used throughout the full length of any DI and/or PVC pipe installed in a casing to the nearest fitting on each side of the casing (i.e., the casing installation does not provide effective thrust resistance).
4. Where restraints are used, the manufacturer's written instruction for installation shall be followed.

G. Encasement for Ductile Iron Pipe and Fittings

1. Encasement for ductile iron pipe and fittings shall be in accordance with ANSI/AWWA C105/A21.5-05 Method A.
2. Ductile iron pipe and fittings shall be encased with the encasement prior to placement in the trench. Encasement shall be cut approximately 2-feet. longer than the length of the pipe. It shall be slipped around the pipe, centering it to provide a 1-foot. overlap on each adjacent pipe section and bunching it in an accordion-fashion lengthwise until it clears the pipe end.
3. After assembling the pipe joint, the overlap of the encasement from the proceeding shall be pulled over to the new length of pipe and secured in place. Then, the overlap end of the encasement from the new pipe section shall be slip over to the preceding pipe and secured in place. Installation of the next section of pipe shall be in the same manner.
4. The excess encasement along the length of the pipe shall be folded back and secured at quarter points. The slack of the pipe shall be snug but not tight.

5. Encasement cuts, tears, punctures, or other damage to the encasement shall be repaired with adhesive tape or with a short length of encasement sheet wrapped around the damaged area.
6. Bends, reducers, offsets, and other pipe shaped appurtenances shall be covered with encasement in the same manner as the pipe.

H. Marker Tape Installation

1. Tape shall be installed in the backfill centered over the water main, as shown on the Standard Drawings.

I. Installation of Tracer Wire

Standard tracer wire No. 8 shall be taped to PVC and DI pipe every six feet (6') along top center axis.

J. Cathodic Protection

1. Cathodic protection for buried ductile iron pipe, fitting appurtenances shall be used per Section 13 47 13 – Cathodic Protection of Ductile Iron Water Main.

K. Disinfection

1. Water main disinfection shall be in accordance with the AWWA C651 and shall be supervised by the District. The Contractor shall not disinfect the water main until they have coordinated with the District.
2. The Contractor shall submit disinfection methodology and material information for District review and approval prior to disinfection, per Section 01 33 00 – Submittals.
3. Filling and contact time shall be per AWWA C651. When installation is completed, the water main shall be filled with water at a rate to ensure the water within the water main will flow at a velocity no greater than 1 ft/sec (0.3 m/sec). Precautions shall be taken to ensure air pockets are eliminated. This water shall remain in the pipe for at least twenty-four (24) hours. If the water temperature is less than 41° F (5° C), the water shall remain in the water main for at least forty-eight (48) hours.

L. Bacteriological Test

1. Standard conditions:
 - a. After the final flushing and before the new water main is connected to the distribution system, two consecutive sets of acceptable samples, taken at least 24 hours apart, shall be collected from the new water main. At least one set of samples shall be collected from every 1,200 ft of the new water main, plus one set from the end of the line and at least one set from each branch. Samples shall be tested for bacteriological (chemical and physical) quality in accordance with the

most recent *Standard Methods for the Examination of Water and Wastewater* (AWWA, 6666 W. Quincy Avenue, Denver, CO 80232, (303) 794-7711, APHA, 800 I Street, NW, Washington, DC 20001, (202) 777-2742, or WEF, 601 Wythe Street, Alexandria, VA 22314-1994, (800) 666-0203). Water shall show absence of coliform organisms, and the chlorine residual shall be within 0.4 mg/l of the chlorine residual of the water being used to fill the new water main and HPC count shall be less than 500 colony-forming units (cfu) per ml. If the first sample test fails the District will require additional tests to find the turbidity, pH, and a standard heterotrophic plate count (HPC) level.

2. Special conditions:

- a. If excessive quantities of dirt, debris, or trench water have entered the new water main, bacteriological samples shall be taken at intervals of approximately 200 ft or as directed by the District. Additional samples shall be taken of water that stood in the new water main for at least 16 hours after final flushing has been completed.

3. Sampling Procedure:

Samples for bacteriological analysis shall be collected in sterile bottles treated with sodium thiosulfate, as required by *Standard Methods for the Examination of Water and Wastewater*. No hose or fire hydrant shall be used in the collection of samples without prior approval from the District. If no other sampling ports are available, a well-flushed fire hydrant with a hose bib may be used with the understanding they do not represent optimum sampling conditions. A corporation-stop with a copper standpipe assembly or a temporary combination blow-off assembly may be used for sampling the new water main. The sampling pipe must be dedicated and clean, disinfected and flushed prior to sampling. There should be no water in the trench up to the connection for sampling. All samples shall be delivered to the lab within eight (8) hours after collection.

4. Sample Results.

- a. If sample results from the lab indicate a measured coliform organism and/or HPC greater than 500 colony-forming units (cfu) per mL, flushing should be resumed and another coliform and HPC set of samples should be taken until no coliform are present and the HPC is less than 500 cfu/mL.

5. Record of Compliance.

- a. The record of compliance shall be the bacteriological test results certifying the water sampled from the new water main is free of coliform bacteria contamination.

6. Re-disinfection

- a. If the initial disinfection fails to produce satisfactory bacteriological results, the new water main shall be re-flushed, re-chlorinated, and re-sampled at the expense of the Contractor. If check samples also fail to produce acceptable results, the water main shall be re-chlorinated until satisfactory results are obtained – that being two (2) consecutive sets of acceptable samples taken twenty-four (24) hours apart.

M. Tie-ins

1. Final connection to existing water main shall be in accordance with latest ANSI/AWWA C651.
2. Water main and all appurtenances must be completely installed, flushed, disinfected, and satisfactory bacteriological sample results received prior to permanent connections being made to the active distribution system. The new pipe, fitting, and valve(s) required for the connection shall be swabbed with a minimum 1-5% solution of chlorine just prior to installation.
3. District shall be notified at least two (2) working days in advance of any scheduled tie-ins.
4. No tie-ins, or shutdowns, will be allowed on Fridays or the day preceding a holiday.
5. No shutdown shall exceed six (6) hours in duration.
6. The Contractor shall designate a person to contact should trench maintenance or other problems arise during non-working hours or days. The District shall be given that person's name and phone number.

3.05 INSTALLATION OF ABOVE GROUND EXPOSED PRESSURE PIPING

A. General

1. Pipe, fittings, and appurtenances shall be installed in accordance with the manufacturer's specifications and related section 3.04 of these Standard Specifications or as directed by the District.

B. Exposed Pipe

1. Extreme care shall be taken to ensure watertight joints. All pipe shall be free of all dirt and grease to secure a tight bond with concrete or waterproof material.
2. Metallic pipe shall be coated with fusion epoxy bound.

3.06 CASING

A. Fittings

1. Field locks shall not be used on the first fittings on the pipe coming out of the steel casing.

3.07 PRESSURE PIPE ACCEPTANCE TESTS

- A. All newly installed sections of pressure piping including but not limited to service connections shall be pressure and leak tested as described herein. Testing procedures shall be in accordance with the requirements of latest AWWA C600 for ductile iron pipe and latest AWWA C605 for PVC pipe as modified herein. The tests may be run simultaneously at the Contractor's option.
- B. For buried pressure water mains, tests shall be made on sections not to exceed 2500 feet in length. All necessary equipment, material and labor required shall be furnished by the Contractor. The District will monitor all testing operations. Testing against new valves is permitted at the Contractor's risk. No testing is permitted against existing system valves.
- C. Tests can only occur after the trench has been backfilled.
- D. The test pressure shall not less than 1.5 times the stated working pressure at the lowest elevation of the test section. The test pressure in the main shall be maintained for a period of two (2) hours and shall not vary by more than 5 psi for the duration of the test. The water required to maintain the test pressure within the allowance pressure loss shall be measured by means of a graduated barrel, drum or similar device at the pump suction.
- E. No leakage shall be permitted for exposed piping.
- F. Allowable leakage for buried pipe shall be as follows:

$$L = \left(\frac{SD\sqrt{P}}{148,000} \right) \times 2$$

L = testing allowance (makeup water) (gph for 2 hours)

S = length of pipe tested (ft)

D = nominal diameter of the pipe (in.)

P = average test pressure during the hydrostatic test (psi [gauge])

Allowable Leakage for DI/PVC (gal/1000 ft./2 hrs.)

Test Pressure	6-inch	8-Inch	10-Inch	12-Inch
150 psi	0.99	1.32	1.66	1.99
175 psi	1.07	1.43	1.79	2.15
200 psi	1.15	1.53	1.91	2.29

- G. Should testing disclose leakage in excess of that required in the preceding table, defective joints or pipe shall be located, repaired and retested until satisfactory at no additional cost to the District.

3.08 FLUSHING AND DECHLORINATION

- A. Flushing and dechlorination of the water main shall be supervised by the District. The Contractor shall not flush or dechlorinate the water main until they have coordinated with the District.
- B. A Flushing/Dechlorination Plan and Water Pollution Control Plan must be approved by the District prior to any flushing or draining of the new/abandoned water main and appurtenances.
- C. Prior to any flushing, the Contractor shall install and secure BMP's at storm drain inlets/catch basins. Repair, replace, and secure BMP's if needed before proceeding with the flushing operation.
- D. A flushing sock shall be installed to treat chlorinated water with dechlorination tablets.
- E. All foreign matter shall be flushed from the water main prior to disinfection. Hoses, temporary piping, or other devices shall be provided to dispose of flushing water without damage to adjacent properties. An approved backflow device shall be used when flushing and filling newly-constructed mains.
- F. Following chlorination, all treated water shall be flushed from the mains until the replacement water shall, upon testing, both chemically and bacteriologically, be proven equal to the water quality at the point of supply. Chlorination shall be repeated, if necessary, by the Contractor if the replacement water does not prove equal to the water quality at the point of supply. Actual testing of the bacteriological water sample for chlorine residual shall be conducted by District personnel.
- G. A disposal plan of chlorine-water mixture shall be submitted to the District 5 working days in advanced for review. Upon approval of the disposal plan by the District, the Contractor may proceed with disposal of the chlorine-water mixture per Section 01 57 23 - Storm Water Pollution Control Plan\Erosion Control.
- H. The Contractor shall not allow the treated water to discharge onto open surface or waterway without adequate dechlorination or other satisfactory method of reducing the chlorine concentration to zero.

3.09 CUTTING AND DISPOSAL OF EXISTING ASBESTOS CEMENT PIPE

- A. Contractor shall use due care when working with asbestos cement pipe and shall comply with applicable laws and regulations regarding such work.
- B. Snap cutters shall be used to cut asbestos cement pipe. When cutting asbestos cement pipe, Contractor shall ensure that adequate means are used to protect its workers and the environment against asbestos exposure.
- C. Asbestos cement pipe shall not be cut with a saw or comparable dust-generating tool.
- D. Asbestos cement pipe removed by the Contractor's operations shall become their property and be properly bagged and disposed of in an approved manner as required by federal, state and local regulations.

END OF SECTION

SECTION 33 14 20 - VALVES AND APPURTENANCES

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Work included under this section consists of furnishing and installing valves and appurtenances as shown on the Standard Drawings and as specified herein.

1.02 SUBMITTALS

- A. The Contractor shall submit manufacturer's data including catalog cuts, drawings and letter(s) of compliance as required by Section 01 33 00 - Submittals.

PART 2 MATERIALS

2.01 GENERAL

- A. Brass goods furnished under this section shall be new and unused. All fittings shall conform to latest ANSI/AWWA Standard C800.
- B. All brass components in contact with potable water must be made from either CDA/UNS Brass Alloys C89520 or C89833 with a maximum lead content of .25% by weight. Brass alloys not listed in ANSI/AWWA C800 Paragraph 4.1.2 are not approved. Brass saddles shall be made from CDA/UNS C83600.
- C. All fittings shall be stamped or embossed with a mark or name indicating that the product is manufactured from the low-lead alloy as specified above.

2.02 GATE VALVES

- A. Gate valves shall be Mueller A-2362 and have either flanged or mechanical joint ends as shown on the Standard Drawings. The valve shall be resilient seat and fully comply with the latest AWWA C509, and also be UL listed and FM approved. The valves shall be tested and certified to ANSI/NSF 61.
- B. The valve shall have a 350 psig working pressure. Each valve shall be factory seat tested to 350 psig and shell tested to 500 psig. Buried valves shall be NRS (non-rising stem), equipped with a 2-inch square bronze operating nut (open left), and have an arrow cast on the operating nut opening direction. The bolt that attaches the operating nut to the stem shall be recessed into the operating nut so as not to interfere with valve wrench operation.
- C. All main line valves shall be 8-inches or larger in diameter and shall have flanged or mechanical joint ends (on PVC or DI pipes) or push-on with FieldLok (on DI pipes). Main line valves smaller than 8-inches shall require prior written approval by the District. Flanges shall be dimensioned, faced and drilled in accordance with ANSI B16.1 for Class

125 unless stated otherwise on the drawings or the specifications. All necessary caulking materials, gaskets, bolts, and nuts shall be provided. All valves shall be protected from damage before installation and until completion of work.

- D. All buried valves shall be furnished with Type 316 stainless steel valve stem packing and bonnet bolts. All external flanged bolts, nuts and washers for all valves shall be Type 316 stainless steel. Corten T-bolts are allowed on mechanical joints.
- E. The valve stem shall be made standard bronze material. The stem shall have at least one “anti-friction” thrust washer above and below the stem collar to reduce operating torque. The design of the NRS valve stem shall be such that if excessive input torque is applied, stem failure shall occur above the stuffing box at such a point as to enable the operation of the valve with a pipe wrench or other readily available tool. Valves with two-piece stem collars are unacceptable.
- F. The NRS valves shall have a stuffing box (with dirt seal) that is o-ring sealed. Two o-rings shall be placed above and one o-ring below the stem thrust collar. The thrust collar shall be factory lubricated. The thrust collar and its lubrication shall be isolated by the o-rings from the waterway and from outside contamination providing permanent lubrication for long term ease of operation. Valves without a stuffing box are unacceptable. Valves without at least three stem o-rings are also unacceptable.
- G. The valve disc and guide lugs must be fully (100%) encapsulated in EPDM. The peel strength shall not be less than 75 lbs/in. Guide caps of an Acetal bearing material shall be placed over solid guide lugs to prevent abrasion and to reduce the operating torque. Guide lugs placed over bare metal are not acceptable.
- H. The valves shall have all internal and external ferrous surfaces coated with a fusion bonded thermosetting powder epoxy coating of 10 mils nominal thickness. The coating shall conform to AWWA C550.
- I. The valves shall be warranted by the manufacturer against defects in materials or workmanship for a period of ten (10) years from the date of manufacture. The manufacturing facility for the valves must have current ISO certification.

2.03 GATE VALVE EXTENSION

- A. Gate valve extension is required on any valve nuts installed more than 3-feet below finished grade or as directed by the District. Gate valve extension shall be ProSelect, PS4000 series with centering plate.
- B. The Contractor shall have various sizes of valve extension on hand to accommodate varying field conditions. The extension length selected shall be such that the top of extension nut is installed at least 18-inches but no more than 20-inches below the finished grade.

2.04 HYDRANTS

- A. Hydrants shall be Clow 860 (wet barrel) with Muller J6000 break-off check valve assembly. The break-off check valve assembly shall have Type 316 stainless steel bolts and nuts and installed per manufacturer recommendation.
- B. Hydrants shall have two 2-1/2-inch outlets and one 4-1/2-inch pumper outlet. Hydrants shall have a 6-inches flanged inlet per the Standard Drawings.
- C. The Contractor shall have various sizes of hydrant buries on hand to accommodate varying field conditions. The bury length selected shall be such that the bottom of the break-off flange is at least 1-inch but no more than 4-inches above the finished grade.
- D. Hydrants and all metal above the concrete collar shall be factory painted "white" using Ellis priming V17500 and semi-gloss high solids polyurethane P29 direct to metal paint as manufactured by Ellis. Contractor shall submit a color sample for review.
- E. All bolts, nuts and washers, and restraining tie rods and associated hardware, used with flanged fittings, couplings and appurtenances shall be Type 316 stainless steel.

2.05 COMBINATION AIR VALVES

- A. Combination air valves shall be capable of positive action in releasing air accumulations in water mains under full line operating pressure and shall vent or exhaust air during filling and draining operations. Valves shall be of the size and pressure rating indicated on the project drawings or if not so indicated shall be 1-inch with a 5/64-inch orifice and simple type lever, rated for operation at 250 psi minimum for water main 8-inch and smaller, and 2-inch with a 3/32-inch orifice and simple type lever, rated for operation at 250 psi minimum for water main 10-inches and larger. Combination air valve shall be A.R.I. D-040.

2.06 METER VALVES AND COUPLINGS

- A. All service fittings shall be certified as suitable for contact with drinking water by an ANSI accredited organization in accordance with ANSI/NSF Standard 61, Drinking Water Systems Components – Health Effects.
- B. Compression ball angle meter valves shall be angle pattern, with lock wing. Compression ball angle meter valves for 5/8-inch and 1-inch meter connections shall be Mueller B-24258N. Compression ball angle meter valves for 1-1/2-inch and 2-inches meter connections shall be Mueller B-24276N.
- C. When a 5/8-inch meter is being installed, Ford A-13-NL and/or Ford A-14-NL meter adapters shall be installed on the inlet and/or outlet sides of the meter.
- D. Insulated meter couplings shall be Mueller H-10871N.
- E. Residential ball valve shall be Red White 5044AB

- F. When the customer's water service is PVC, Mueller V-15442 (female) or V-15440 (male) Pack Joint connection shall be used.

2.07 CORPORATION STOPS

- A. Corporation stops shall be Mueller N-35008N (insulated), with inlet AWWA taper thread and outlet compression connection for 5/8-inch and 1-inch service.
- B. Corporation stops shall be Mueller N-35008N on a 1-1/2-inch to 2-inches service connection.
- C. Corporation stops shall be Mueller B-30045N on a 1-inch and 2-inches combination air valve.

2.08 SERVICE SADDLES

- A. Service saddles shall be bronze with neoprene gaskets with double bronze straps, Mueller No. BR2B "CC" for DI pipe and Mueller No. BR2S "CC" for PVC pipe, sized for the exact outside diameters of the pipes on which they will be installed.

2.09 BLOWOFF ASSEMBLY

- A. Blowoff assembly shall have a 2-inches vertical FIP inlet and 2-inches NIP for mains 6-inches and smaller, or 4-inches vertical FIP inlet and 4-inch MIP outlet for mains 8-inches and larger. Blowoff assembly shall be operated by turning a top-mounted square operating nut. All internal working parts and the inlet and outlet fittings shall be manufactured from low-lead brass. All working parts shall be serviceable from above without removing the valve box. Blowoff assembly shall be Truflo Model No. TF550 (2-inches) or Model No. 7600 (4-inches) as manufactured by the Kupferle Foundry Co., St. Louis, MO.

2.10 BACKFLOW PREVENTER

- A. Backflow preventer shall operate on the reduced pressure principle and shall consist of two spring-loaded check valves and a spring-loaded, diaphragm actuated, differential pressure relief valve located between the two check valves, in accordance with the Standard Drawings. The backflow preventer assembly shall meet all applicable requirements of latest AWWA C511 and shall be included on the most current "List of Approved Backflow Prevention Assemblies" of the San Mateo County Health System.
- B. Backflow preventer shall be provided on all service connections to properties having a supplemental source of water, wells, fire sprinkler system, irrigation system that has an automatic chemical feeding control, pumps, multi-story buildings or any other instances that has a potential to contaminate potable water supply or as directed by the District.

2.11 VALVE AND METER BOXES

- A. Valve boxes shall be concrete traffic-type boxes with cast iron traffic covers. Covers shall be marked "WATER". Concrete extension pieces shall be provided with each box as required. For deep bury conditions for valve boxes, 8-inches SDR 35 PVC pipe extensions shall be. Diameter shall be 10-3/8-inches minimum with 9-inches throat diameter. Valve boxes shall be Christy "Machined Faced" Model G05T with G505CT cover.
- B. For 8/5-inch inch or 1-inch meters, meter boxes shall be Christy Model B16 concrete box with B16P reinforced concrete lid. For 1-1/2-inch or 2-inches meters, meter box shall be Christy Model FL30T Fiberlyte box with a FL30P Fiberlyte lid. For 1-1/2-inch or 2-inches meters with bypass, meter box shall be Christy Model N48 concrete box with a N48-62D-P Steel lid. Meter Lids shall be marked "WATER" and have one recessed probe hole, made for Sensus FlexNet radio readers. Traffic rated box and cover shall be provided in traffic area and where directed by the District.
- C. Water service PRV boxes shall be concrete reinforced concrete cover. For 1-inch PRV, boxes shall be a Christy BX09B with a BX09D reinforced concrete lid or as noted on the plans. For 2-inch PRV, boxes shall be a Christy B16B with a B16G reinforced concrete lid or as noted on the plans.
- D. Boxes for the 2-inches blowoff shall be G05T valve box with G505CT cover and for 4-inches blowoff assembly shall be Christy Model B1324 (H/20 loading) with B1324-61JH steel checker plate cover.
- E. Boxes installed in driveways and other paved areas shall be traffic rated box and have traffic rated covers.

2.12 PRESSURE REDUCING VALVE

- A. The pressure reducing valve shall be installed according to the project plans. Contractor shall submit for review and approval shop drawings for the pressure reducing valve and vault assembly.
- B. Pressure reducing valve shall be a Cla Val, models approved by the District, and installed per the plans and manufacturer's recommendation.
- C. Pipe supports shall be installed per detail drawings.
- D. Pressure gages shall be liquid filled and accommodated pressure shown on plans.
- E. After the pressure reducing valve and vault has been installed, the vault shall be cleaned from all construction debris.
- F. All bolts, nuts and washers, and restraining tie rods and associated hardware, used with flanged fittings, couplings and appurtenances shall be Type 316 stainless steel.
- G. Contractor shall coordinate with District for a temporary shutdown.

PART 3 EXECUTION

3.01 VALVES INSTALLATION

- A. Valves shall be carefully installed in their respective positions, accessible for operation and repair, and free from all distortion and strain, with joints made as specified, and shall be left in satisfactory operating condition. Buried gate valves, and valve boxes, shall be installed in accordance with the Standard Drawings.
- B. Before installation, all valves and appurtenances shall be thoroughly cleaned of all foreign material, and shall be inspected for proper operation, both opening and closing and to verify that the valves seat properly. Valves shall be installed so that the stems are vertical.
- C. A marker post shall be installed adjacent to each gate valve, combination air valve, and blow-off assembly. The location for each post will be selected by the District based on field conditions.
- D. Valves located within 10-feet of a fitting shall be moved directly to the fitting and connected via a flanged joint or as directed by the District.

3.02 VALVE AND METER BOX INSTALLATION

- A. Valve boxes shall be centered and set plumb over the wrench nuts of the valves and shall not transmit shock or stress to the valves. Valve box covers shall be set flush with the surface of the finished grade or as directed by the District. Backfill shall be placed around the valve boxes and thoroughly compacted to a 95% relative in such a manner that will not damage or displace the valve box from proper alignment or grade. Misaligned valve boxes shall be re-excavated, replumbed, and backfilled at the Contractor's expense. No riser or extension rings are allowed. 8-inches SDR 35 PVC pipe extensions shall overlap the gate valve box a minimum of 6-inches.
- B. Water meter boxes shall be the last item set after the existing angle meter and copper piping is removed. Meter boxes shall be set parallel to the service line following the contour of existing ground. After the box is set and aligned with the meter, contractor may use native material, aggregate base, or fines to backfill around the box as directed by the District and as applicable. Soil within a 12-inches perimeter of the box shall be compacted to a relative density of 90% using a pneumatic device such as a "Powder Puff" or other mechanical means approved by the District.
- C. Finished elevation of the box shall be 1-inch above finished grade when located in non-traffic areas and flush with pavement when located in traffic areas and pathways.
- D. Contractor shall set the box "knockout" in-line with service, and a 1-inch clearance between the box and service line. The box shall not sit on top of the service line.
- E. After the box has been set and compacted, any debris and dirt inside the box shall be removed and disposed of to the District's satisfaction.

- F. Contractor shall bear the responsibility of private property structures such as mail boxes, retaining walls, landscaping, etc., during construction.

3.03 INSTALLATION OF SERVICES

- A. All services shall be 1-inch or 2-inches in size and installed in conformance with the Standard Drawings.
- B. Applications for services larger than 1-inch require hydraulic calculation justification and prior approval from the District. Services larger than 2-inches also require submitting a shop drawing.
- C. Contractor is responsible to determine ahead of time the necessary material to connect the service with the resident's service line. Contractor shall coordinate with the District to determine the configuration and location of the service.
- D. Direct tapping of ductile iron pipe shall be done using the "preferred method" described in AWWA C600, Section 4.8 to preserve the integrity of the existing encasement. This method requires the application of two or three layers of polyethylene adhesive tape completely around the pipe to cover the area where the tapping machine and chain will be mounted. The corporation stop shall then be installed directly through the polyethylene tape and encasement. If damaged, the encasement and/or tape shall be repaired with tape.
- E. Direct tapping of PVC pipe shall be done using the "preferred method" described in AWWA C605, Section 6.4.
- F. Service relocations shall be done by "freezing" the service line with CO₂ or other approved method by the District to temporary discontinue the supply of water while relocating the service. Crimping will not be allowed to temporary block the supply of water.
- G. Relocation services is defined as removing the existing water meter and relocating to another location: 1) closer to the road, 2) around bushes, 3) around structures (poles, mailbox, etc.) 4) or to another location directed by the District. Relocation of services have its own bid item to include re-connection to the customer lines. Contractor shall be prepared to connection to PVC, copper, or galvanized pipe. Contractor shall pothole to determine the material necessary before final connection.

Contractor shall coordinate the final location of the new water meter with the District.

3.04 INSTALLATION OF FIRE HYDRANTS

- A. Fire hydrants shall be plumbed vertical and installed in accordance with the Standard Drawings. Fire hydrants shall be set so the bury line mark on the break-off is level with finish grade.

- B. All hydrants shall be flushed and tested after installation to ensure a sound setting and smooth operation. All valves shall close drip tight.
- C. Hydrants bury shall be one piece with the correct length.
- D. Contractor shall install a two-way, reflective pavement marker at each fire hydrant location as directed by the local agencies. If the marker does not adhere to existing ground, place it on top the gate valve cover located directly off the main. The markers shall be furnished and installed in accordance with applicable paragraphs of Section 84 – Markings, of the latest requirements of Caltrans Standard Specifications. Fire hydrant valve lid and rim shall be painted direct to metal white.

3.05 BLOW-OFF ASSEMBLY INSTALLATION

- A. Blow-off assembly shall be installed in accordance with the Standard Drawings.
- B. For dead end water mains, install the blow off 24” away from the last service connection. If needed, extend the water main with a short piece of pipe especially if there is combination air valve assembly.

3.06 COMBINATION AIR VALVES INSTALLATION

- A. Combination air valves shall be plumbed vertical and installed in accordance with the Standard Drawings.
- B. Install combination air valves 18” before a gate valve from blow-off assembly and away from the last service connection. If needed, extend the water main with a 5-LF DIP and sleeve connection.

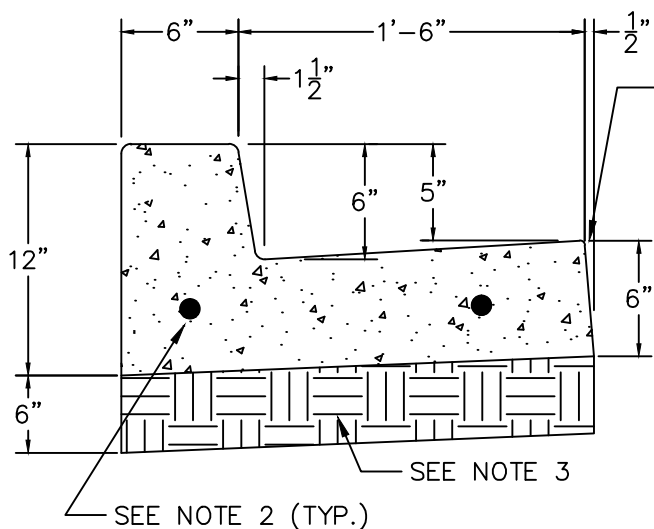
3.07 INSTALLATION OF BACKFLOW PREVENTERS

- A. Backflow preventer shall be installed horizontal and level, with the minimum clearances for obstructions as shown on the Standard Drawings. Vertical installations are allowed but require District approval prior to design and installation. A ball valve shall be installed on both sides of the backflow preventer assembly. Mueller’s H-15531N compression x MIPT 90°’s shall be used at both ends of the assembly to allow removal of the unit in the event of a malfunction. Backflow preventers assembly shall be tested and certified by a San Mateo County’s Certified Tester prior to being put in service. Valves failing the test shall be replaced, and retested.
- B. Contractor is responsible to determine ahead of time the necessary material to connect the backflow preventer with the resident’s service line. Contractor shall coordinate with the District to determine the configuration and location of the backflow preventer.

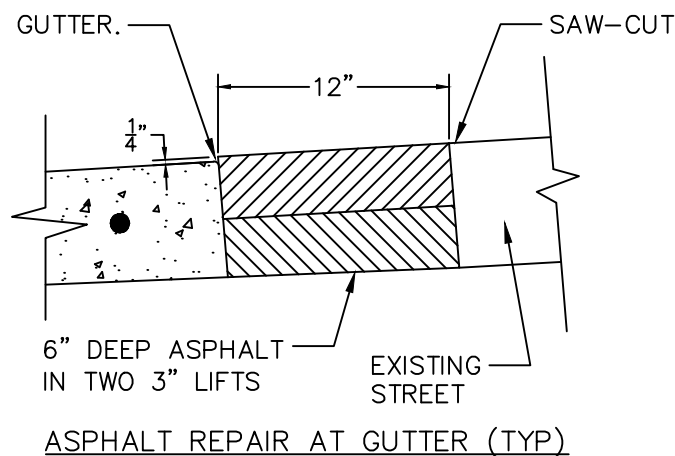
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APPENDIX

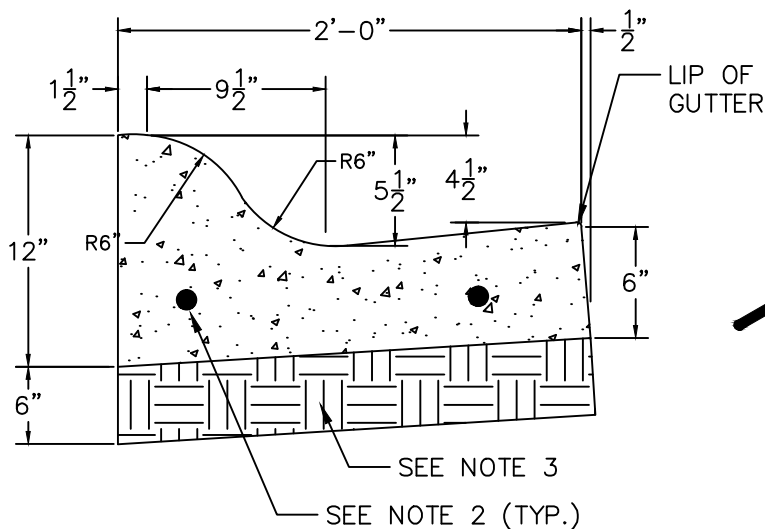
**HASTINGS DR, VINE ST, BELMONT CANYON RD
WATER MAIN IMPROVEMENTS**



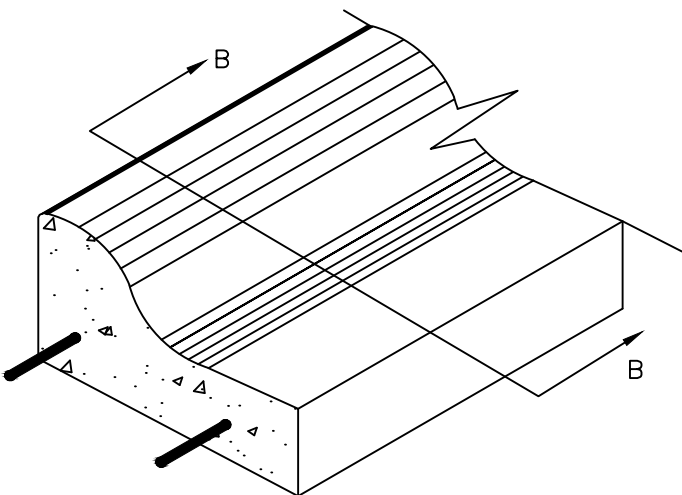
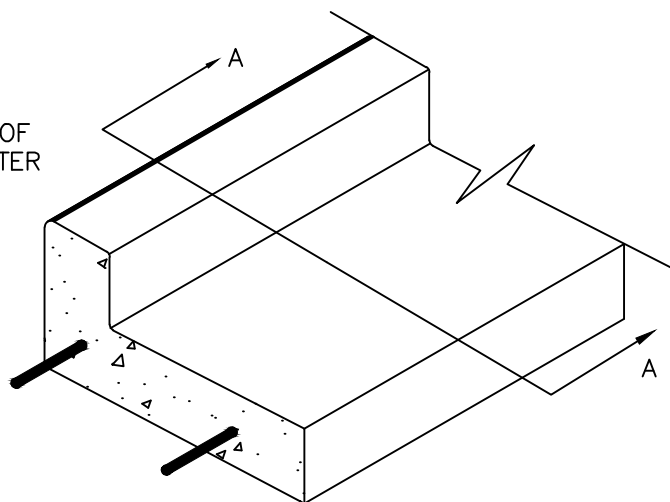
TYPE A CURB
SECTION A-A



ASPHALT REPAIR AT GUTTER (TYP)



TYPE E CURB
SECTION B-B



NOTES:

1. PRIOR TO BEGINNING ANY WORK, AN ENCROACHMENT PERMIT SHALL BE OBTAINED.
2. 12" #4 REBAR DOWELS, 6" MINIMUM DEPTH INTO EXISTING SIDEWALK, CURB & GUTTER. DO NOT DOWEL PRIVATE IMPROVEMENTS INTO PUBLIC IMPROVEMENTS.
3. 6" MINIMUM CLASS 2 A.B. COMPACTED TO 90%.
4. 1/2" DEEP CONTRACTION JOINTS AT 20', 1/4" DEEP CONTRACTION JOINTS AT 10'.
5. ALL CONCRETE SHALL BE 6 SACK 3/4" WITH ONE POUND LAMP BLACK PER CUBIC YARD. FINISH TO BE UNIFORM FINE BROOMED TEXTURE.
6. ASPHALT TO BE HOT MIX ASPHALT 1/2" FINE.



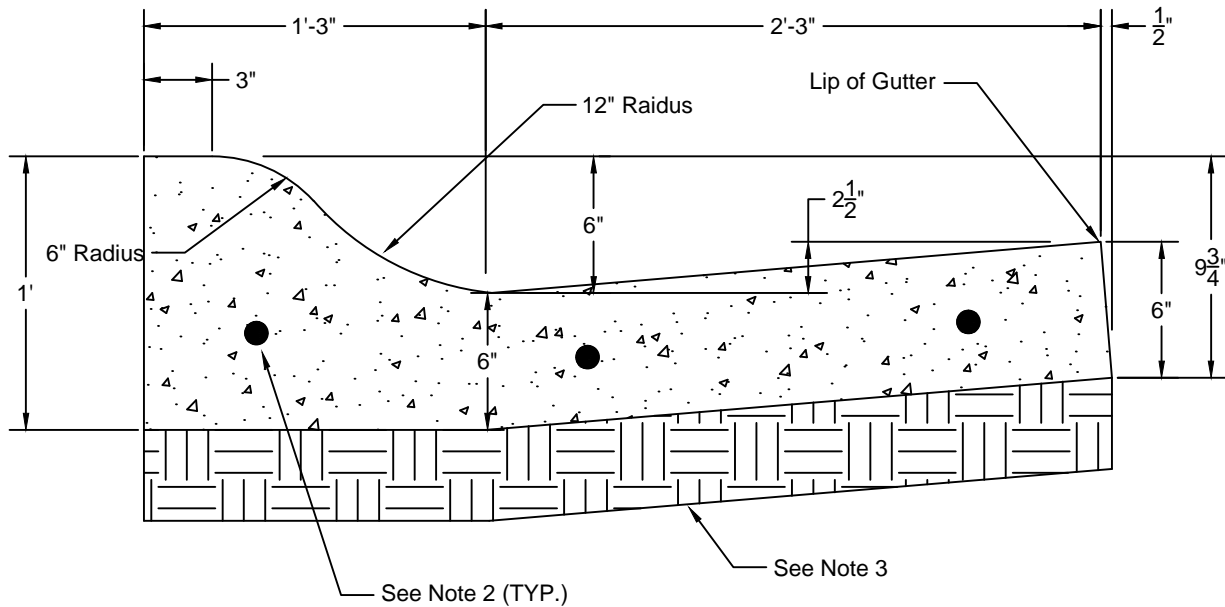
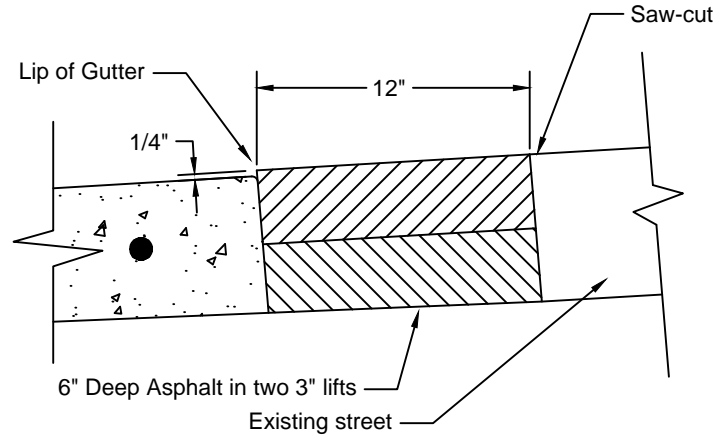
TYPE A & E CONCRETE
CURB AND GUTTER

APPROVED BY: L. ALVAREZ

DATE: NOVEMBER 2016

SI-100
N.T.S.

SHEET: 1 OF 2



NOTES:

1. PRIOR TO BEGINNING ANY WORK, AN ENCROACHMENT PERMIT SHALL BE OBTAINED.
2. 12" #4 REBAR DOWELS, 6" MINIMUM DEPTH INTO EXISTING SIDEWALK, CURB & GUTTER. DO NOT DOWEL PRIVATE IMPROVEMENTS INTO PUBLIC IMPROVEMENTS.
3. 6" MINIMUM CLASS 2 A.B. COMPACTED TO 90%.
4. 1/2" DEEP CONTRACTION JOINTS AT 20', 1/4" DEEP CONTRACTION JOINTS AT 10'.
5. ALL CONCRETE SHALL BE 6 SACK 3/4" WITH ONE POUND LAMP BLACK PER CUBIC YARD. FINISH TO BE UNIFORM FINE BROOMED TEXTURE.
6. ASPHALT TO BE HOT MIX ASPHALT 1/2" FINE.



TYPE A & E CONCRETE
CURB AND GUTTER

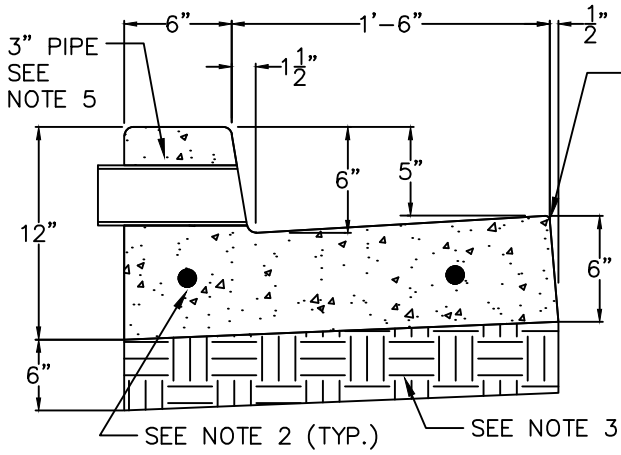
APPROVED BY: L. ALVAREZ

DATE: NOVEMBER 2016

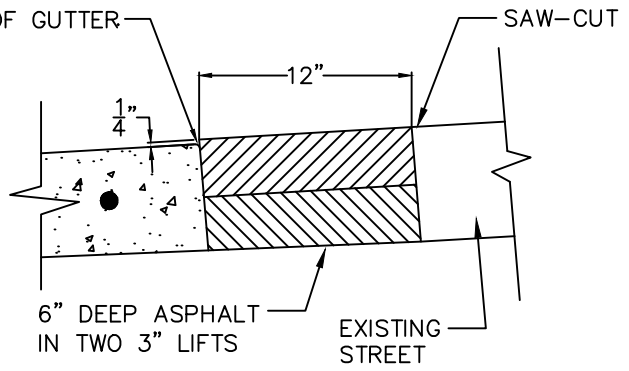
SI-100

N.T.S.

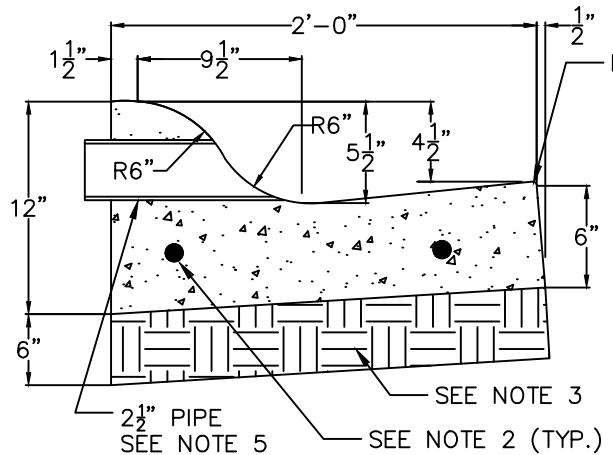
SHEET: 2 OF 2



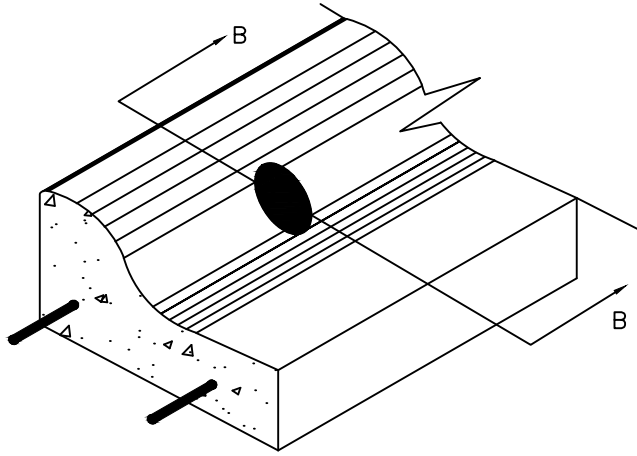
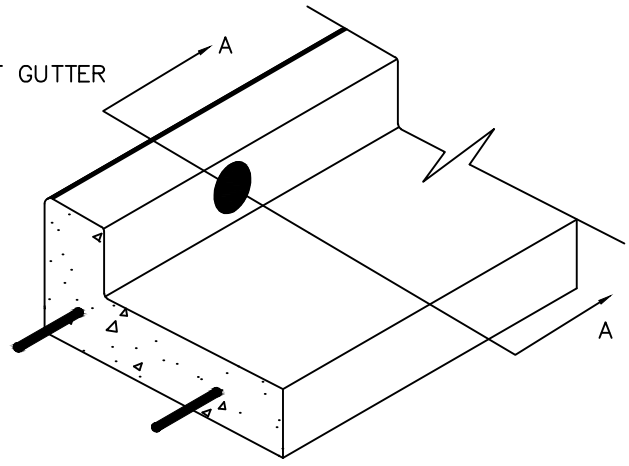
TYPE A CURB
SECTION A-A



ASPHALT REPAIR AT GUTTER (TYP)



TYPE E CURB
SECTION B-B



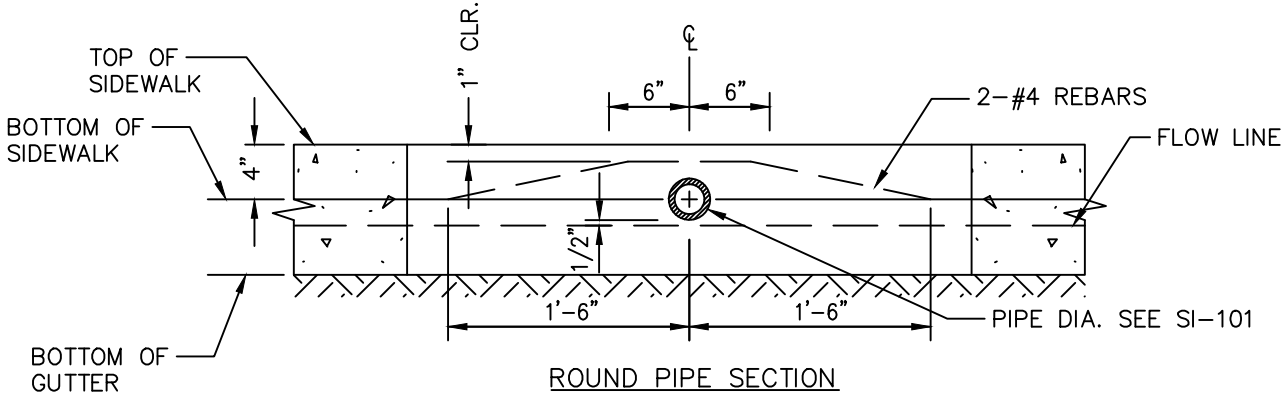
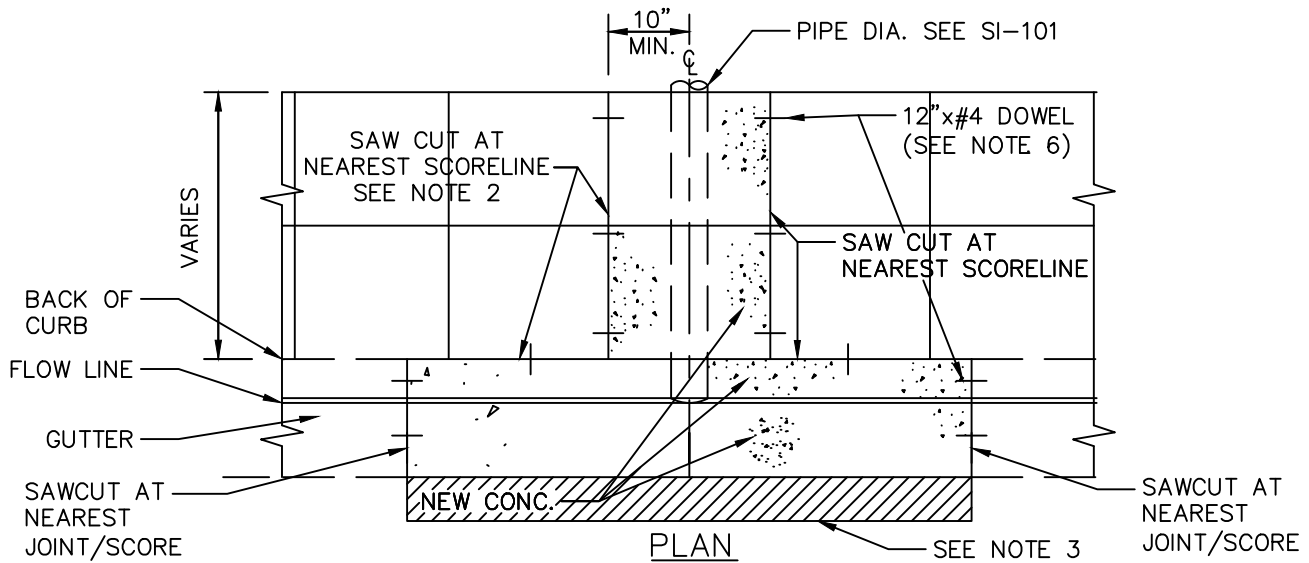
- NOTES:**
1. PRIOR TO BEGINNING ANY WORK, AN ENCROACHMENT PERMIT SHALL BE OBTAINED.
 2. 12" #4 REBAR DOWELS, 6" MINIMUM DEPTH INTO EXISTING SIDEWALK, CURB & GUTTER. DO NOT DOWEL PRIVATE IMPROVEMENTS INTO PUBLIC IMPROVEMENTS.
 3. 6" MINIMUM CLASS 2 A.B. COMPACTED TO 90%.
 4. 1/2" DEEP CONTRACTION JOINTS AT 20', 1/4" DEEP CONTRACTION JOINTS AT 10'.
 5. PIPE TO BE EITHER SCH 40 PVC OR CAST IRON.
 6. ALL CONCRETE SHALL BE 6 SACK 3/4" WITH ONE POUND LAMP BLACK PER CUBIC YARD. FINISH TO BE UNIFORM FINE BROOMED TEXTURE.
 7. IF TYPE A CURB & GUTTER IS IN GOOD CONDITION, CONTRACTOR MAY CORE DRILL WITH ENGINEER APPROVAL.
 8. ASPHALT TO BE HOT MIX ASPHALT 1/2" FINE.
 9. UNLESS OTHERWISE NOTED, ALL RADII TO BE 1/2".



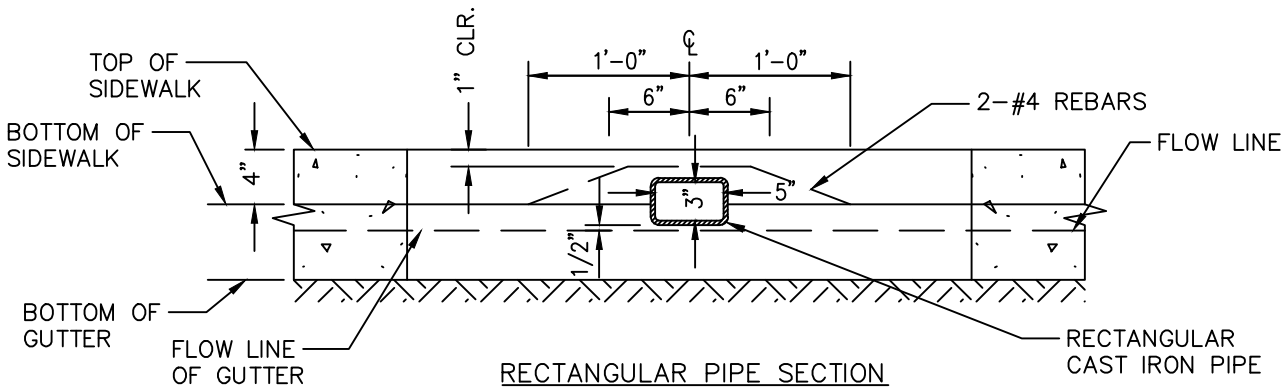
TYPE A & E CONCRETE
THRU CURB DRAIN

APPROVED BY: L. ALVAREZ DATE: NOVEMBER 2016

SI-101
N.T.S.
SHEET: 1 OF 2



ROUND PIPE SECTION
 MAXIMUM CAPACITY = 0.15 CUBIC FOOT PER SECOND



RECTANGULAR PIPE SECTION
 MAXIMUM CAPACITY = 0.24 CUBIC FOOT PER SECOND

NOTES:

1. PRIOR TO BEGINNING ANY WORK, AN ENCROACHMENT PERMIT SHALL BE OBTAINED.
2. THE NUMBER OF OUTLET PIPES IS SUBJECT TO REVIEW BY THE CITY ENGINEER.
3. REFER TO SI-101 FOR CURB & GUTTER DETAILS.
4. CONCRETE 6 SACK 3/4" WITH ONE POUND LAMP BLACK PER CUBIC YARD.
5. MINIMUM SLOPE OF DRAIN PIPE TO BE 1%.
6. 12" #4 REBAR DOWLS, 6" MINIMUM DEPTH INTO EXISTING SIDEWALK, CURB & GUTTER. DO NOT DOWEL PRIVATE IMPROVEMENTS INTO PUBLIC IMPROVEMENTS.



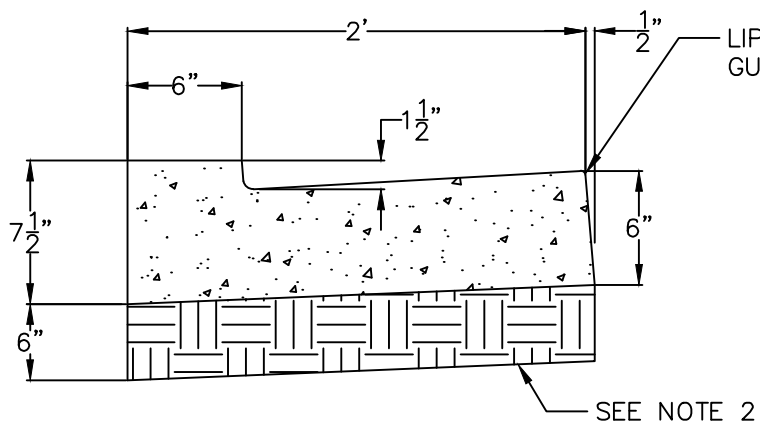
CURB DRAIN IN EXISTING
 CURB AND SIDEWALK

APPROVED BY: L. ALVAREZ

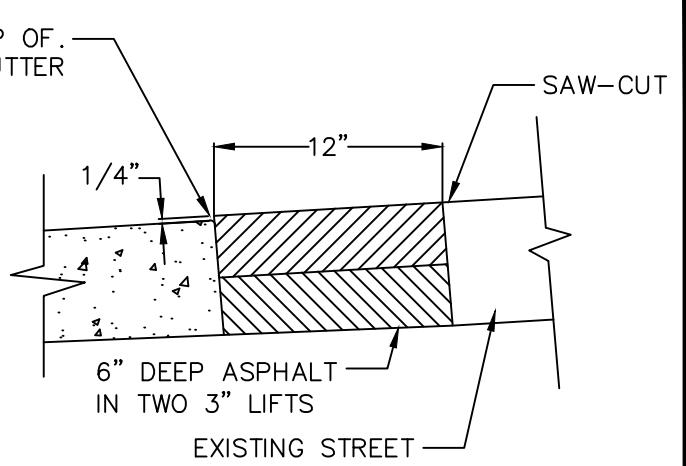
DATE: NOVEMBER 2016

SI-101
 N.T.S.

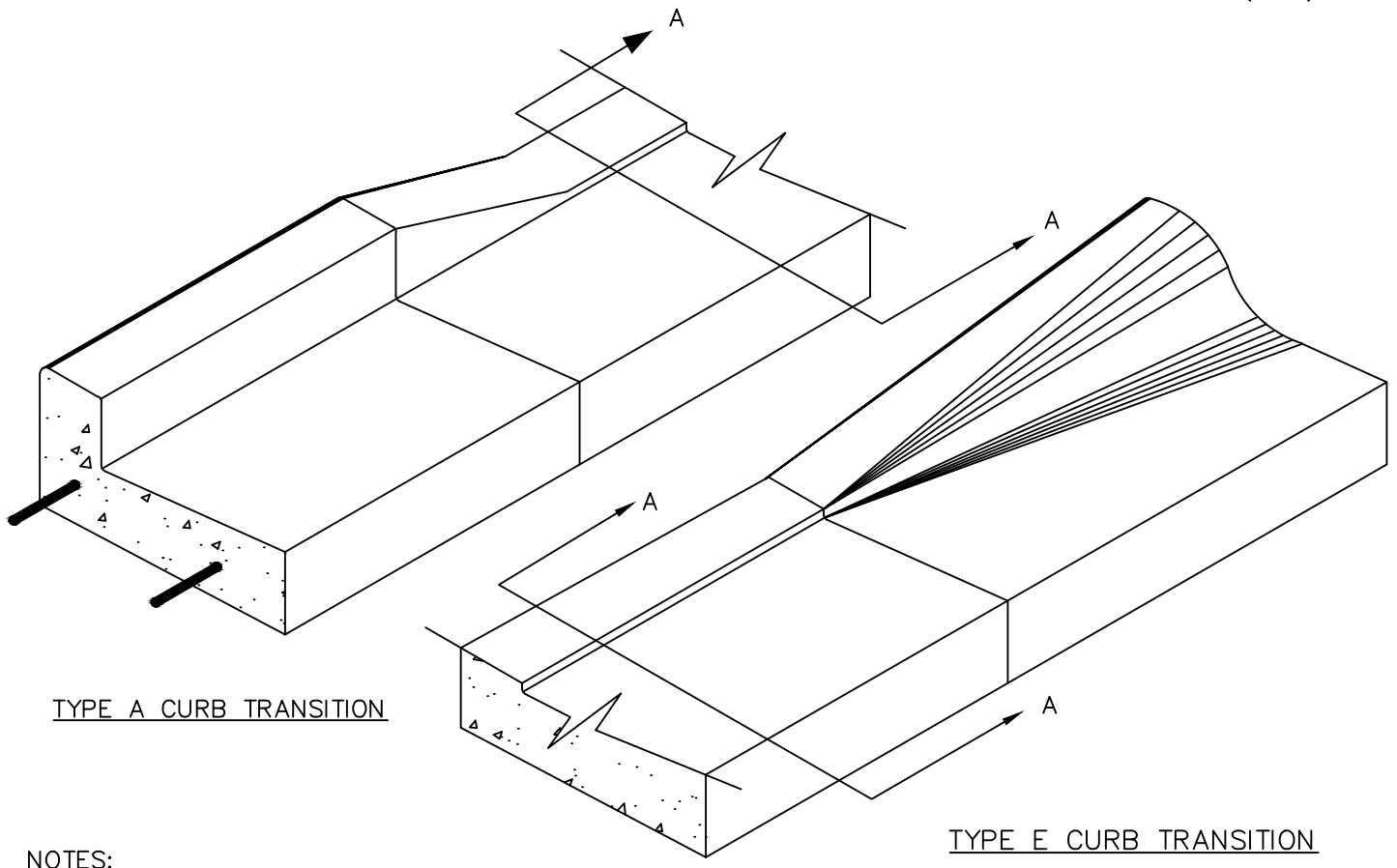
SHEET: 2 OF 2



SECTION A-A



ASPHALT REPAIR AT GUTTER (TYP)

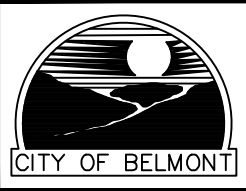


TYPE A CURB TRANSITION

TYPE E CURB TRANSITION

NOTES:

1. PRIOR TO BEGINNING ANY WORK, AN ENCROACHMENT PERMIT SHALL BE OBTAINED.
2. 6" MINIMUM CLASS 2 A.B. COMPACTED TO 90%.
3. ALL CONCRETE SHALL BE 6 SACK 3/4" WITH ONE POUND OF LAMP BLACK PER CUBIC YARD. FINISH TO BE UNIFORM FINE BROOMED TEXTURE.
4. ASPHALT TO BE HOT MIX ASPHALT 1/2" FINE.
5. 12" #4 REBAR DOWLS, 6" MINIMUM DEPTH INTO EXISTING SIDEWALK, CURB & GUTTER. DO NOT DOWEL PRIVATE IMPROVEMENTS INTO PUBLIC IMPROVEMENTS.
6. SEE SI-107 FOR DRIVEWAY APPROACH
7. SEE SI-100 FOR CURB AND GUTTER



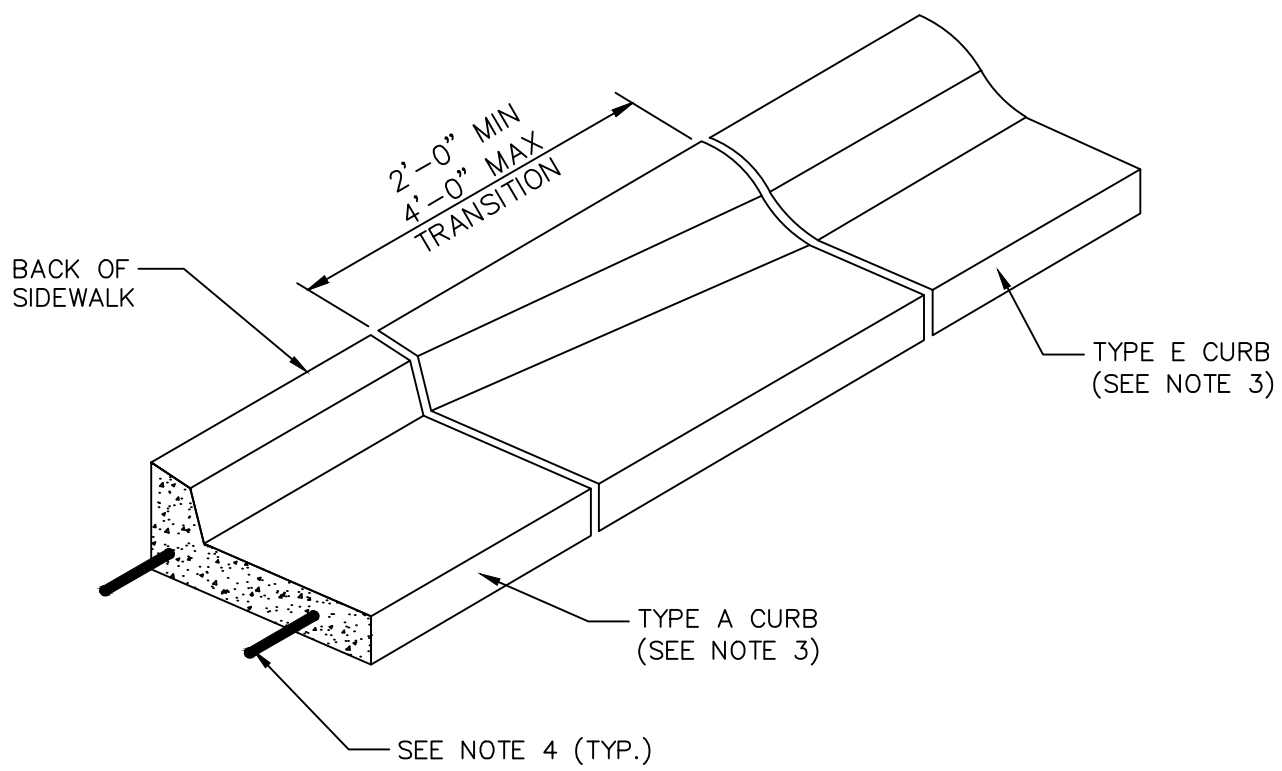
CONCRETE CURB & GUTTER
AT DRIVEWAY APPROACH

APPROVED BY: L. ALVAREZ

DATE: NOVEMBER 2016

SI-103
N.T.S.

SHEET: 1 OF 1



NOTES:

1. PRIOR TO BEGINNING ANY WORK, AN ENCROACHMENT PERMIT SHALL BE OBTAINED.
2. ALIGN BACK OF TYPE A, TRANSITION, AND TYPE E CURB PARALLEL TO FRONT OF SIDEWALK.
3. REFER TO STANDARD DETAILS SI-100 FOR CURB INFORMATION.
4. 12" #4 REBAR DOWELS, 6" MINIMUM DEPTH INTO EXISTING CURB & GUTTER. DO NOT DOWEL PRIVATE IMPROVEMENTS INTO PUBLIC IMPROVEMENTS.



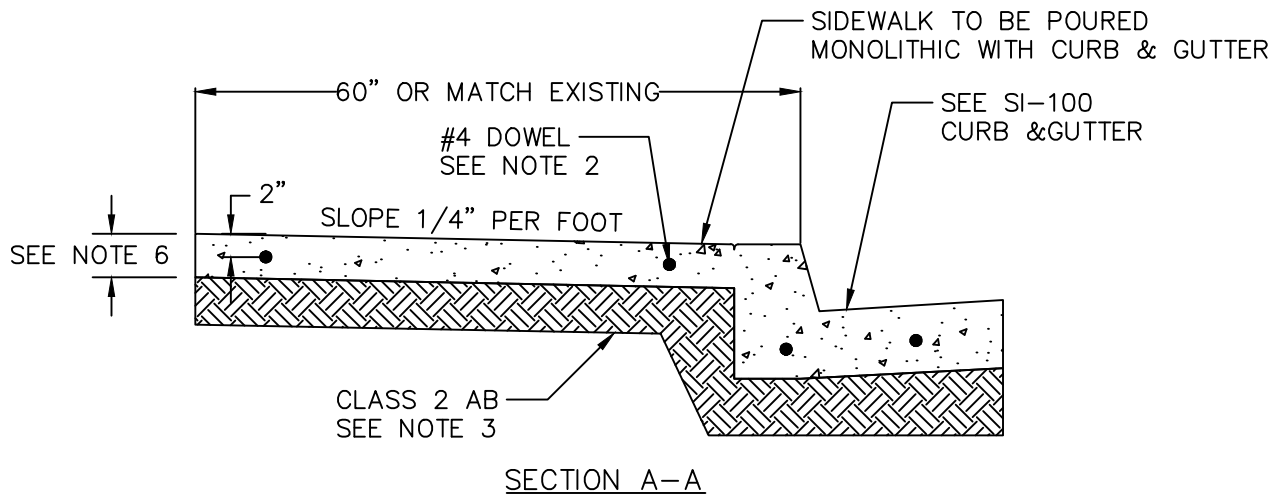
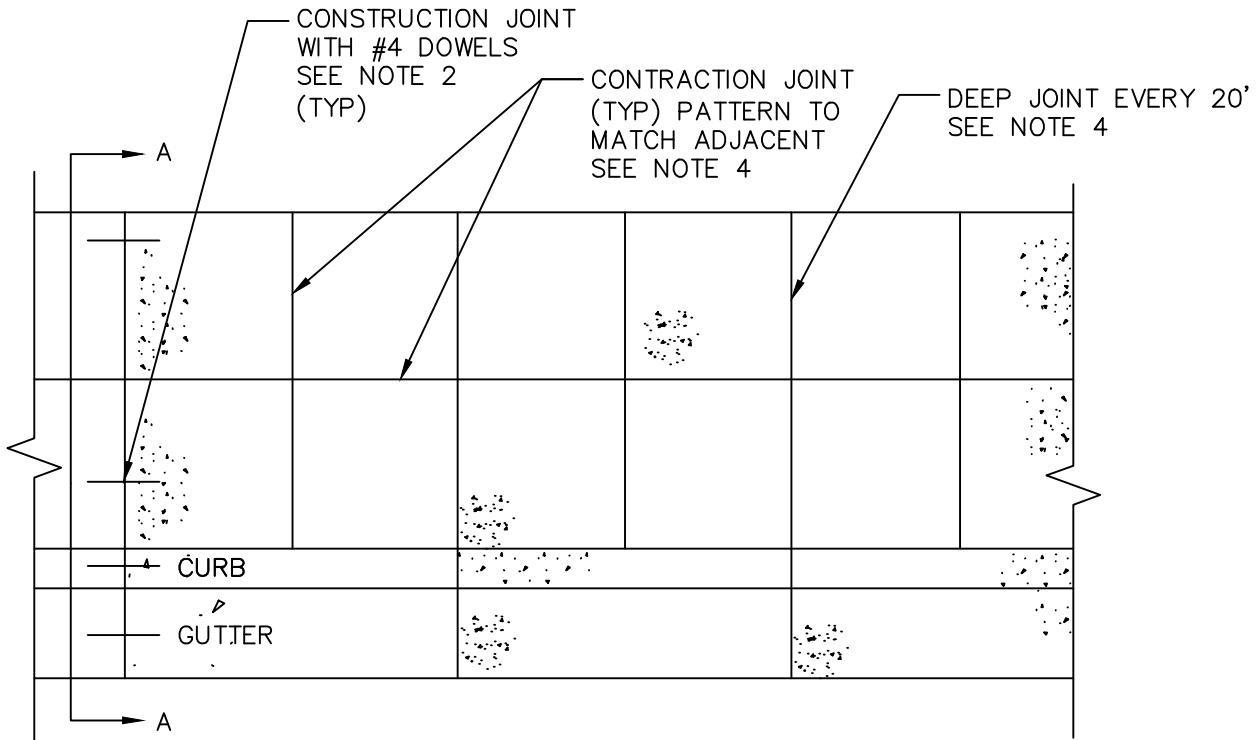
VERTICAL TO ROLLED CURB TRANSITION

APPROVED BY: L. ALVAREZ

DATE: NOVEMBER 2016

SI-104
N.T.S.

SHEET: 1 OF 1



NOTES:

1. PRIOR TO BEGINNING ANY WORK, AN ENCROACHMENT PERMIT SHALL BE OBTAINED.
2. 12" #4 REBAR DOWELS, 6" MINIMUM DEPTH INTO EXISTING OR NEW SIDEWALK. DO NOT DOWEL PRIVATE IMPROVEMENTS INTO PUBLIC IMPROVEMENTS.
3. 6" MINIMUM CLASS 2 A.B. COMPACTED TO 90%.
4. 1/2" DEEP CONTRACTION JOINTS AT 20', 1/4" DEEP CONTRACTION JOINTS AT 10' SIDEWALK SHALL BE SCORED TO MATCH CONTIGUOUS EXISTING SIDEWALK.
5. ALL CONCRETE SHALL BE 6 SACK 3/4" WITH ONE POUND OF LAMP BLACK PER CUBIC YARD.
6. 4" THICK SIDEWALK FOR VERTICAL CURB, 6" THICK SIDEWALK FOR ROLLED CURB.



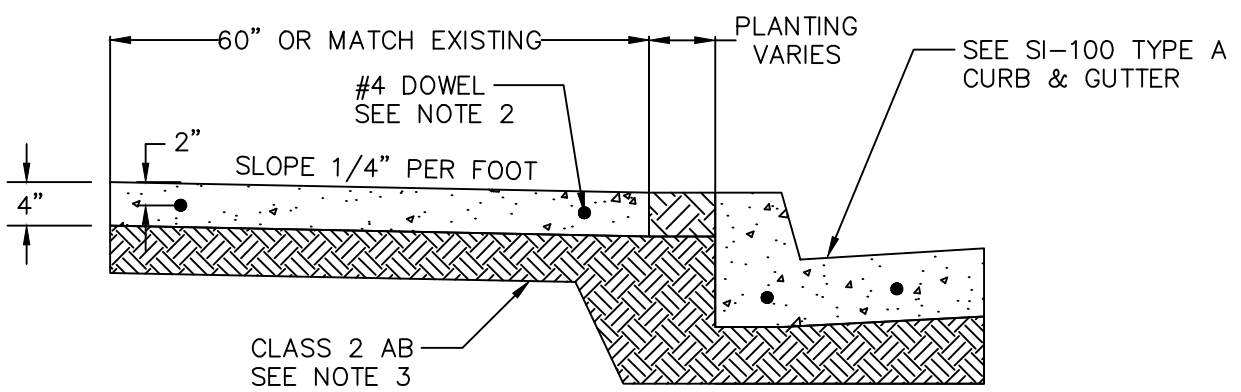
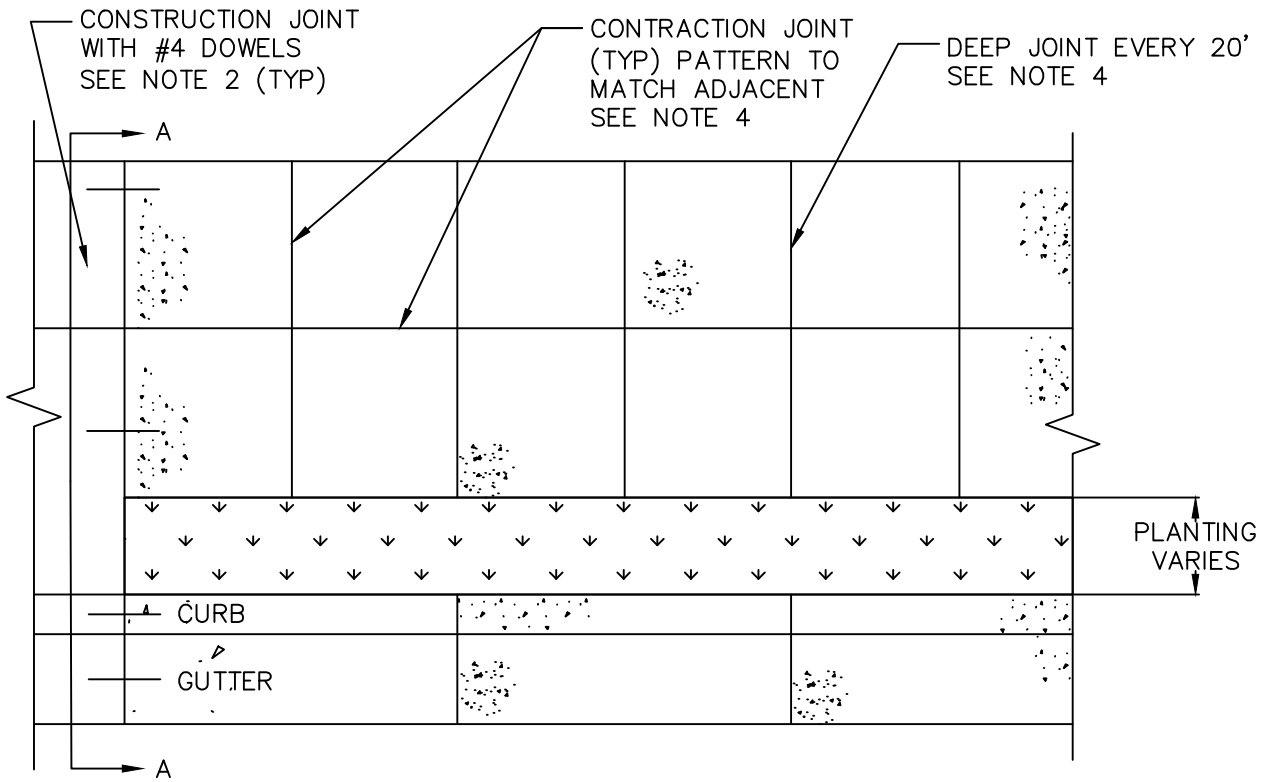
VERTICAL CURB AND GUTTER WITH SIDEWALK

APPROVED BY: L. ALVAREZ

DATE: NOVEMBER 2016

SI-105
N.T.S.

SHEET: 1 OF 1



SECTION A-A

NOTES:

1. PRIOR TO BEGINNING ANY WORK, AN ENCROACHMENT PERMIT SHALL BE OBTAINED.
2. 12" #4 REBAR DOWELS, 6" MINIMUM DEPTH INTO EXISTING OR NEW SIDEWALK. DO NOT DOWEL PRIVATE IMPROVEMENTS INTO PUBLIC IMPROVEMENTS.
3. 6" MINIMUM CLASS 2 A.B. COMPACTED TO 90%.
4. 1/2" DEEP CONTRACTION JOINTS AT 20', 1/4" DEEP CONTRACTION JOINTS AT 10' SIDEWALK SHALL BE SCORED TO MATCH CONTIGUOUS EXISTING SIDEWALK.
5. ALL CONCRETE SHALL BE 6 SACK 3/4" WITH ONE POUND OF LAMP BLACK PER CUBIC YARD.



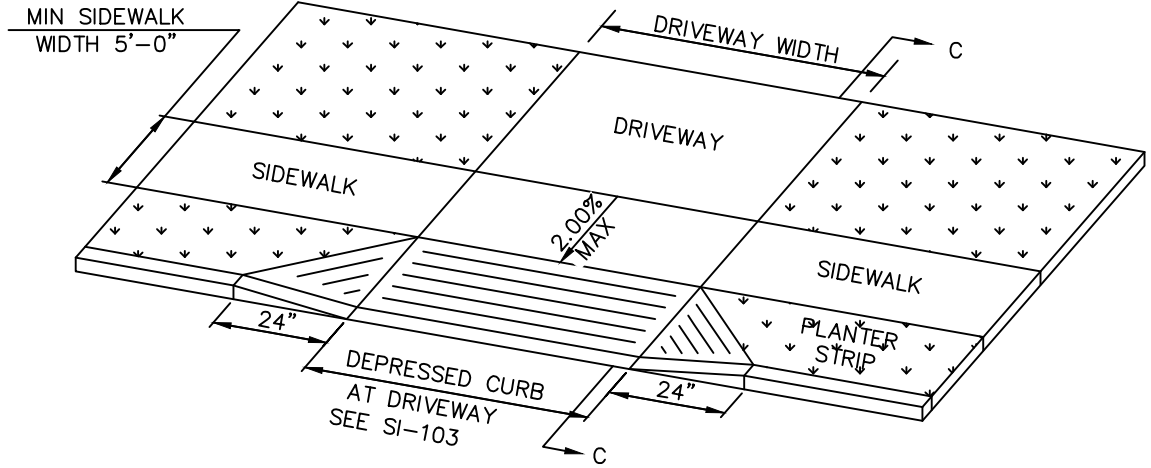
VERTICAL CURB AND GUTTER
PLANTER AND SIDEWALK

APPROVED BY: L. ALVAREZ

DATE: NOVEMBER 2016

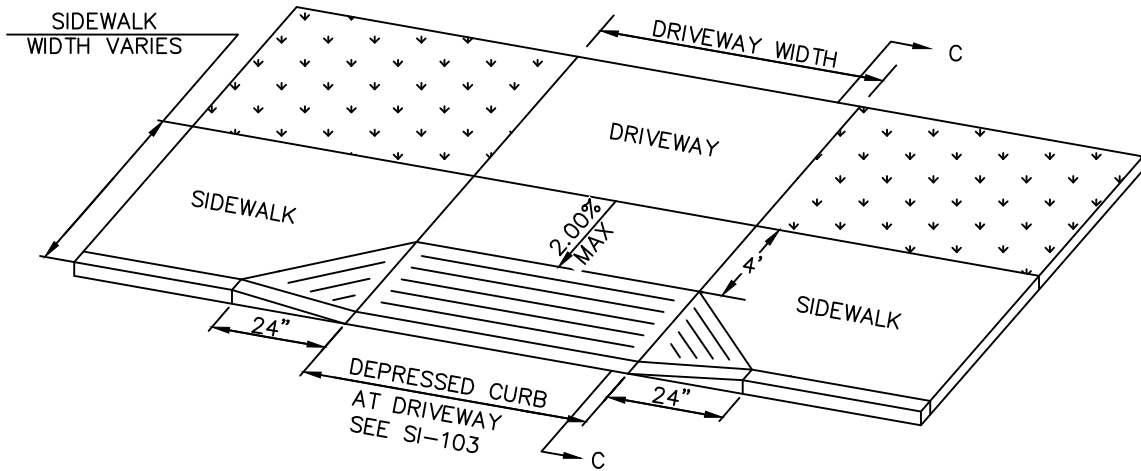
SI-106
N.T.S.

SHEET: 1 OF 1



TYPE 1
DRIVEWAY APRON

GUTTER NOT SHOWN
FOR CLARITY



TYPE 2
DRIVEWAY APRON

NOTES:

1. PRIOR TO BEGINNING ANY WORK, AN ENCROACHMENT PERMIT SHALL BE OBTAINED.
2. CONCRETE TO BE 6 INCHES THICK.



DRIVEWAY APPROACH

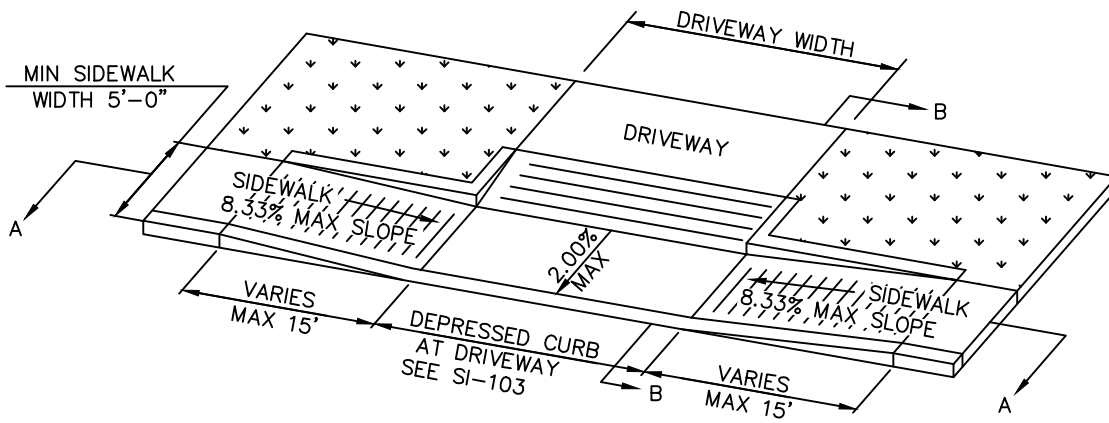
APPROVED BY: L. ALVAREZ

DATE: NOVEMBER 2016

SI-107

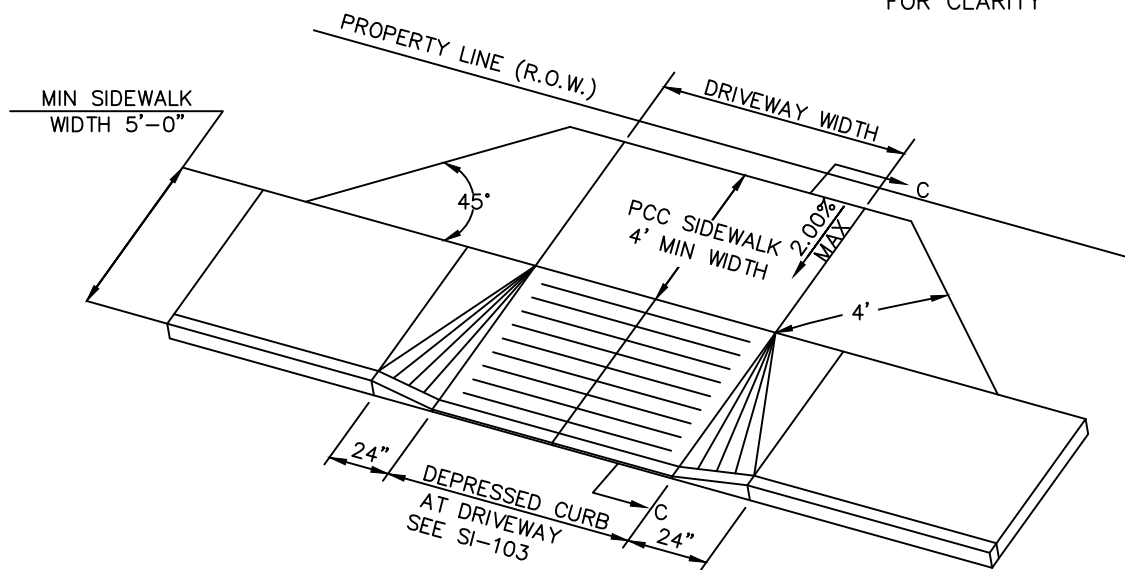
N.T.S.

SHEET: 1 OF 3



TYPE 3
DRIVEWAY APRON

GUTTER NOT SHOWN
FOR CLARITY



TYPE 4
DRIVEWAY APRON



CITY OF BELMONT

DRIVEWAY APPROACH

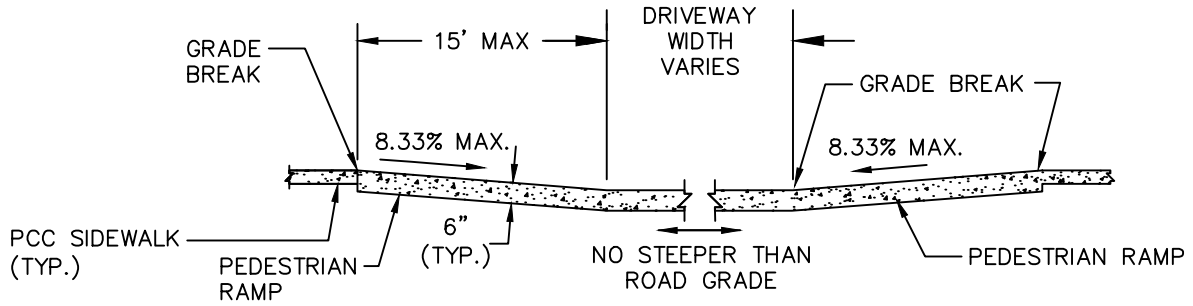
APPROVED BY: L. ALVAREZ

DATE: NOVEMBER 2016

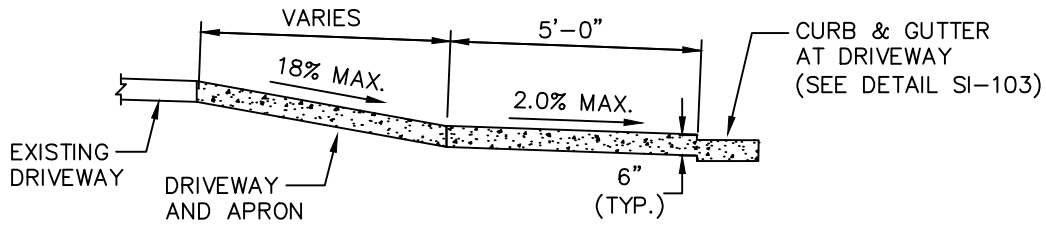
SI-107

N.T.S.

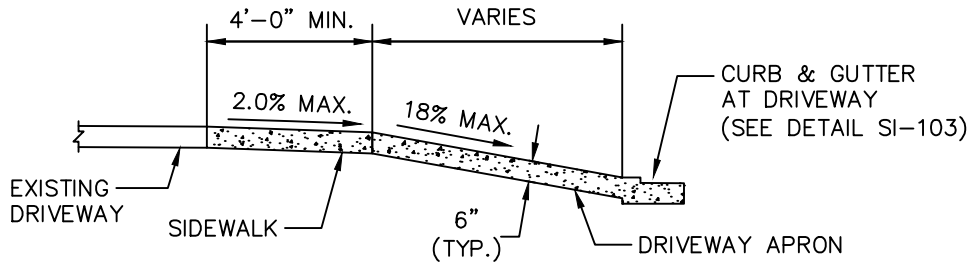
SHEET: 2 OF 3



SECTION A-A



SECTION B-B



SECTION C-C



DRIVEWAY APPROACH SECTIONS

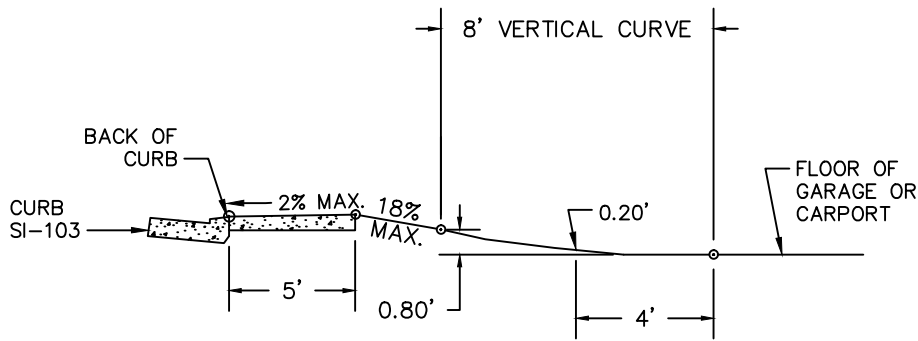
APPROVED BY: L. ALVAREZ

DATE: NOVEMBER 2016

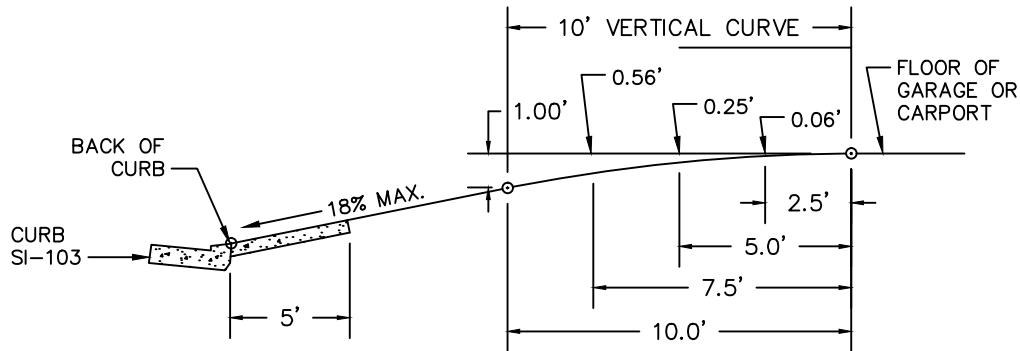
SI-107

N.T.S.

SHEET: 3 OF 3



DOWNWARD DRIVEWAY



UPWARD DRIVEWAY

NOTES:

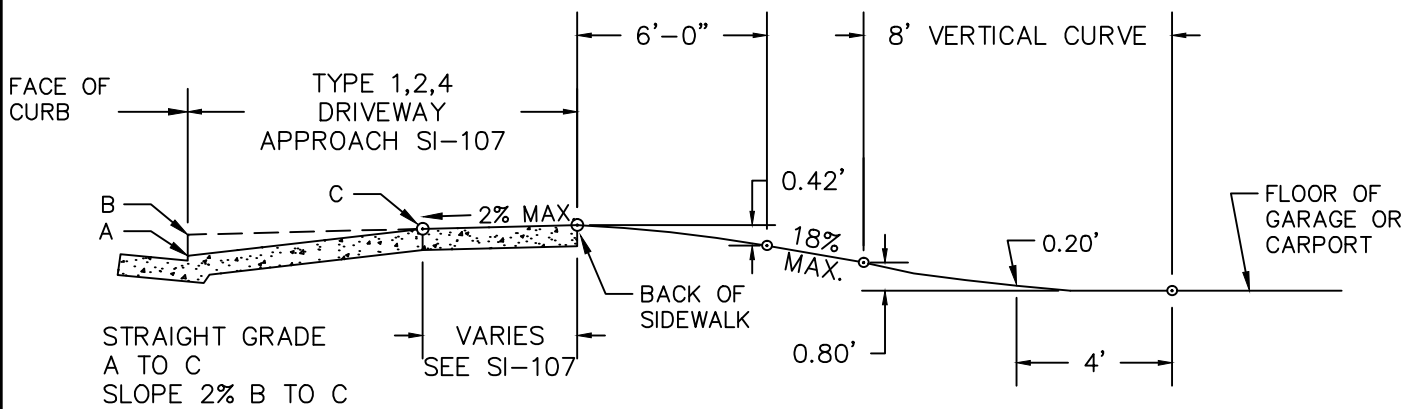
1. PRIOR TO BEGINNING ANY WORK, AN ENCROACHMENT PERMIT SHALL BE OBTAINED.
2. EIGHTEEN PERCENT (18%) MAXIMUM SLOPE FOR RESIDENTIAL USES. DEVIATION ALLOWED WITH SPECIAL CONSTRUCTION TECHNIQUES IF APPROVED BY THE CITY ENGINEER.
3. MAXIMUM RISE AND DESCENT, AND THE RUN, SHALL BE MEASURED FOR THE WORST CONDITION BETWEEN THE BACK OF THE SIDEWALK EXTENSION AND THE FINISHED FLOOR AT THE GARAGE OR CARPORT ENTRANCE.
4. FIRST 5' FROM BACK OF CURB TO BE 6" THICK CONCRETE.



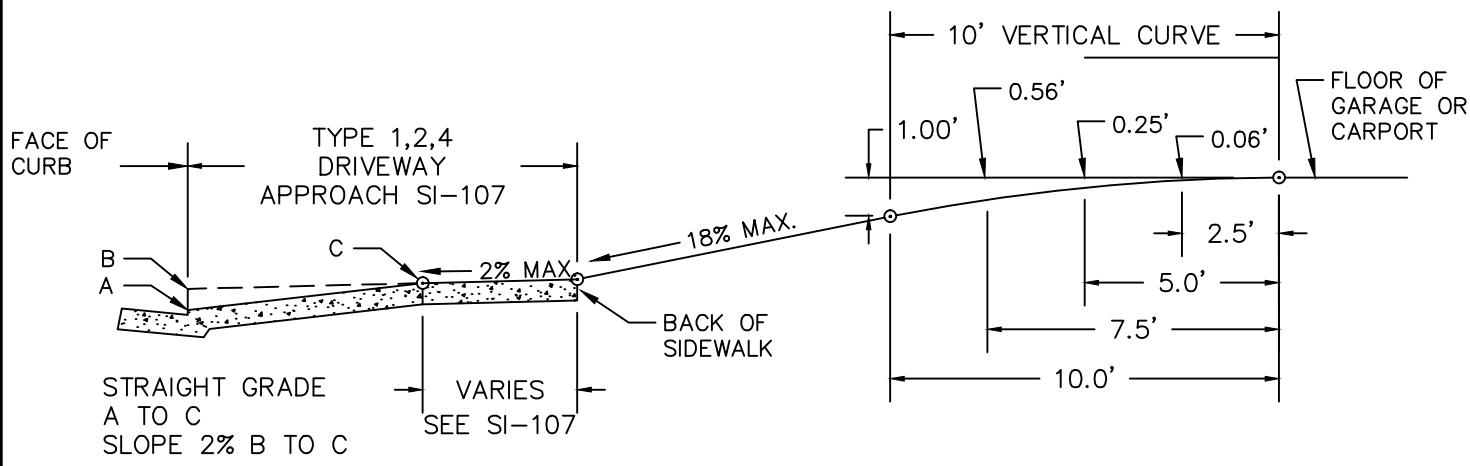
STEEP DRIVEWAY APPROACH
UPWARD & DOWNWARD
SI-103 CURB

APPROVED BY: L. ALVAREZ DATE: NOVEMBER 2016

SI-108
N.T.S.
SHEET: 3 OF 3



DOWNWARD DRIVEWAY



UPWARD DRIVEWAY

NOTES:

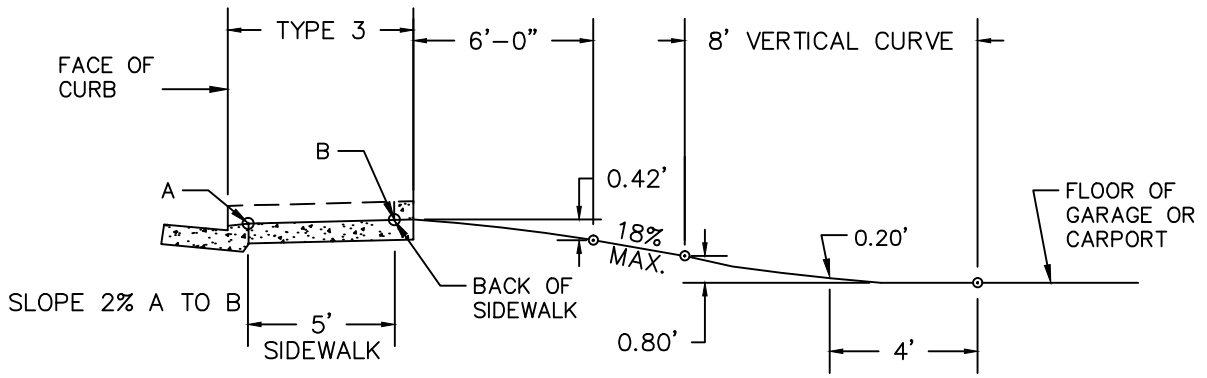
1. PRIOR TO BEGINNING ANY WORK, AN ENCROACHMENT PERMIT SHALL BE OBTAINED.
2. EIGHTEEN PERCENT (18%) MAXIMUM SLOPE FOR RESIDENTIAL USES. DEVIATION ALLOWED WITH SPECIAL CONSTRUCTION TECHNIQUES IF APPROVED BY THE CITY ENGINEER.
3. MAXIMUM RISE AND DESCENT, AND THE RUN, SHALL BE MEASURED FOR THE WORST CONDITION BETWEEN THE BACK OF THE SIDEWALK AND THE FINISHED FLOOR AT THE GARAGE OR CARPORT ENTRANCE.
4. SIDEWALK EXTENSION CROSS-SLOPE MAY NOT EXCEED TWO PERCENT (2%) AND MUST SLOPE TOWARD THE STREET.



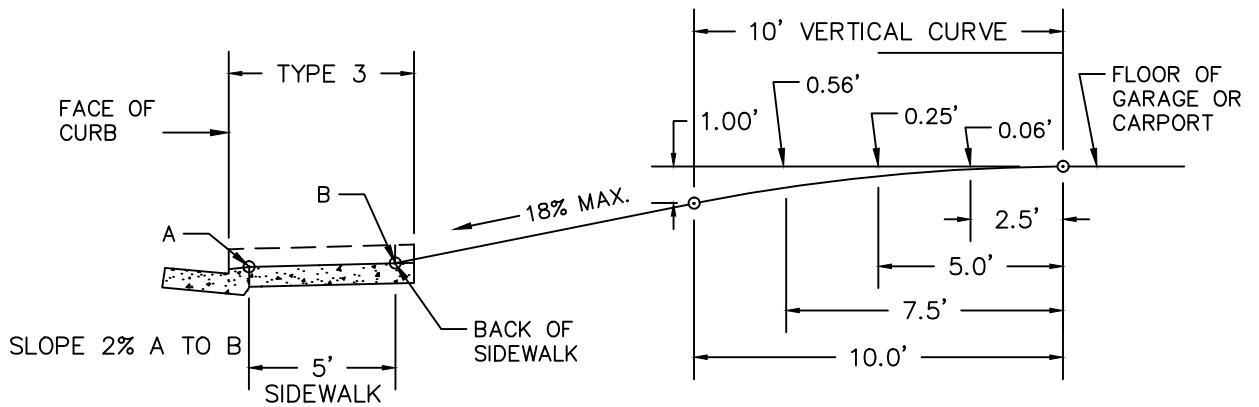
STEEP DRIVEWAY APPROACH
UPWARD & DOWNWARD
TYPE 1, 2 & 4 APPROACH

APPROVED BY: L. ALVAREZ DATE: NOVEMBER 2016

SI-108
N.T.S.
SHEET: 1 OF 3



DOWNWARD DRIVEWAY



UPWARD DRIVEWAY

NOTES:

1. PRIOR TO BEGINNING ANY WORK, AN ENCROACHMENT PERMIT SHALL BE OBTAINED.
2. EIGHTEEN PERCENT (18%) MAXIMUM SLOPE FOR RESIDENTIAL USES. DEVIATION ALLOWED WITH SPECIAL CONSTRUCTION TECHNIQUES IF APPROVED BY THE CITY ENGINEER.
3. MAXIMUM RISE AND DESCENT, AND THE RUN, SHALL BE MEASURED FOR THE WORST CONDITION BETWEEN THE BACK OF THE SIDEWALK EXTENSION AND THE FINISHED FLOOR AT THE GARAGE OR CARPORT ENTRANCE.
4. SIDEWALK EXTENSION CROSS-SLOPE MAY NOT EXCEED TWO PERCENT (2%) AND MUST SLOPE TOWARD THE STREET.

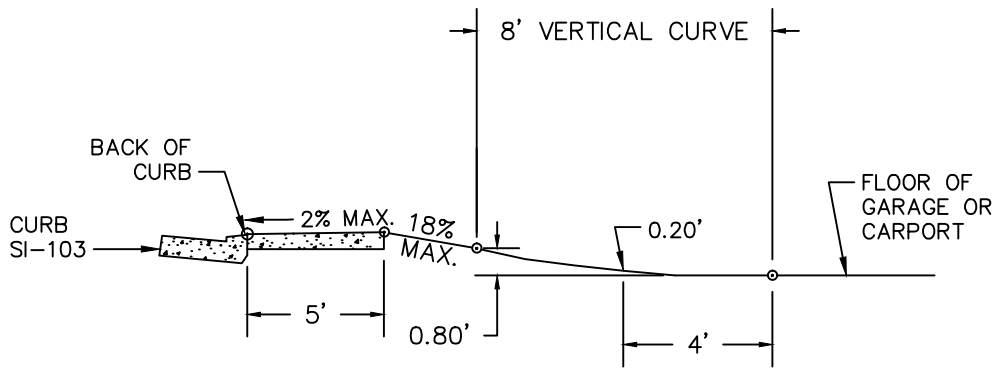


STEEP DRIVEWAY APPROACH
UPWARD & DOWNWARD
TYPE 3 APPROACH

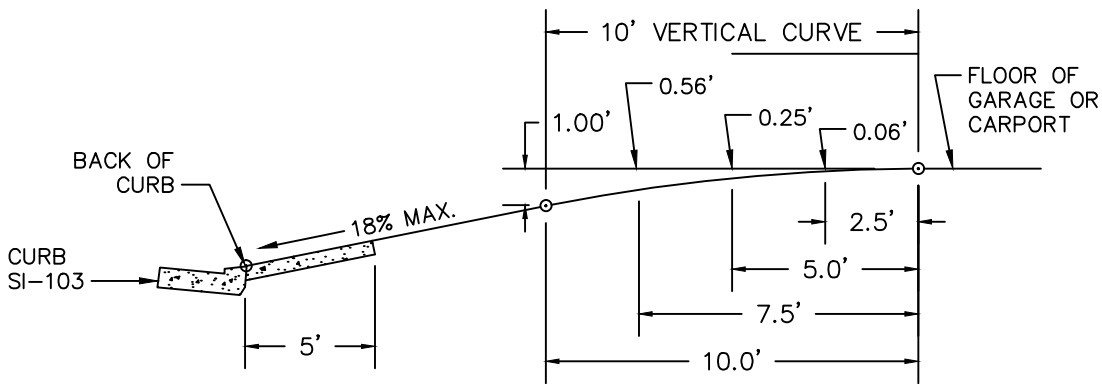
APPROVED BY: L. ALVAREZ

DATE: NOVEMBER 2016

SI-108
N.T.S.
SHEET: 2 OF 3



DOWNWARD DRIVEWAY



UPWARD DRIVEWAY

NOTES:

1. PRIOR TO BEGINNING ANY WORK, AN ENCROACHMENT PERMIT SHALL BE OBTAINED.
2. EIGHTEEN PERCENT (18%) MAXIMUM SLOPE FOR RESIDENTIAL USES. DEVIATION ALLOWED WITH SPECIAL CONSTRUCTION TECHNIQUES IF APPROVED BY THE CITY ENGINEER.
3. MAXIMUM RISE AND DESCENT, AND THE RUN, SHALL BE MEASURED FOR THE WORST CONDITION BETWEEN THE BACK OF THE SIDEWALK EXTENSION AND THE FINISHED FLOOR AT THE GARAGE OR CARPORT ENTRANCE.
4. FIRST 5' FROM BACK OF CURB TO BE 6" THICK CONCRETE.



STEEP DRIVEWAY APPROACH
UPWARD & DOWNWARD
SI-103 CURB

APPROVED BY: L. ALVAREZ

DATE: NOVEMBER 2016

SI-108
N.T.S.
SHEET: 3 OF 3