

**SPECIFICATIONS
AND
CONTRACT DOCUMENTS FOR**

2026 WATER METER INSTALLATION PROJECT



**SOUTH TAHOE PUBLIC UTILITY DISTRICT
SOUTH LAKE TAHOE, CALIFORNIA**

(March 2026)

SOUTH TAHOE PUBLIC UTILITY DISTRICT

Project Name

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DIVISION 00

**SECTION 00 10 00
SOLICITATION**

INVITATION TO BID

The South Tahoe Public Utility District (STPUD or District) invites sealed bids by electronic submission only for the construction of the **2026 Water Meter Installation Project** (“Project”).

Electronic Bids will be received until 4:00 PM, Tuesday, May 5th. Hard copy original Bid Bond (or other acceptable form of bid security) MUST be delivered to District in advance of the Bid deadline. Bids submitted after this time will not be accepted by the electronic bidding system. All bids that have been timely received will be publicly opened and the content read aloud at the STPUD offices, Board Room, located at 1275 Meadow Crest Drive, South Lake Tahoe, California. All interested parties are invited to attend. Bids shall be valid for 60 calendar days after the bid opening date, as required in the Bid Form.

The site of the work is located throughout the District’s service area in the City of South Lake Tahoe and the County of El Dorado, California.

The work to be performed consists of the installation of approximately 41 ¾” water meters and 30 1” water meters. Meter lids will be provided by STPUD and installed by Contractor. Work includes connections to existing water services, tapping of new water services, abandonment of water services, valve installations, paving restoration, and site restoration, including landscaping and other related work.

A copy of the Contract Documents are on file and may be examined at the South Tahoe Public Utility District Offices, 1275 Meadow Crest Drive, South Lake Tahoe, California.

In order to download the Contract Documents and receive addendums and notifications when issued, Bidders must register as a vendor at the District’s Vendor Portal:

<http://www.planetbids.com/portal/portal.cfm?CompanyID=21516>

Electronic bids will also be submitted through this website. Paper bids will not be accepted.

Contract Documents are available for free download on the District’s Vendor Portal. For assistance in downloading these documents or registering as a vendor contact Star Glaze, Contracts Specialist at (530) 543-6205.

All bids are to be submitted electronically as required in Section 00 20 00 Instructions for Procurement. **Paper bids will NOT be accepted. Hard copy original Bid Bond must be delivered to the District in advance of the bid deadline.** After electronic bidding, each bidder shall submit their original Bid Forms to South Tahoe Public Utility District at 1275 Meadow Crest Drive, South Lake Tahoe, California by **4:00 PM, Thursday, May 7th**.

Questions or comments regarding this Project must be submitted electronically via our electronic bidding system and must be received by the District no later than **4:00 PM, Wednesday, April 29th**. Questions received after the date indicated will not be accepted. Questions submitted via telephone call, email or faxes will not be accepted. Responses from the District will be

communicated via the electronic bidding system.

A mandatory Pre-Bid Conference will be held at the South Tahoe Public Utility District, Board Room, 1275 Meadow Crest Drive, South Lake Tahoe, California on Thursday, April 9 at 10:00 AM. Any bidder absent from the Pre-Bid Conference shall have their bid disqualified as non-responsive.

This project is being funded, in part, by the Bureau of Reclamation as the "AMI Meter Installation Project". The Contractor will be required to comply with State and federal contract rules and regulations including requirements for Disadvantaged Business Enterprise (DBE) and Build America Buy America (BABA) as detailed in Section 00 74 00 of the Specifications. The prime contractor is required to provide documentation that the local U.S. Small Business Administration (SBA) and/or the Minority Business Development Agency (MBDA) of the U.S. Department of Commerce were notified of the contracting opportunity approximately thirty (30) calendar days prior to the bid opening date. A bid will be considered non-responsive unless it includes the forms required in Section 00 75 00 to be completed and submitted with the Bid.

In accordance with the provisions of California Public Contract Code section 3300, the South Tahoe Public Utility District has determined that bidders shall possess a valid class A and a Class C-36 contractor license at the time of bid opening, the Contract is awarded and for the duration of the Contract. If the bidder possesses only a class A license, and does not possess the license(s) necessary for the remaining scope of work as described in Bid Item 11, any work required herein that does not fall under a Class A license must be subcontracted to a duly licensed contractor. Failure to possess the specified license shall render the bid as non-responsive and shall act as a bar to awarding the contract to any bidder not possessing said license at the time of award.

This project is subject to prevailing wage requirements. As a federally-funded project, the work is subject to both California labor standards and federal labor standards including the Davis-Bacon Act (40 USC 3142). Pursuant to Labor Code section 1773, the District has obtained the prevailing rate of per diem wages and the prevailing rate for holiday and overtime work in the locality in which the work will be performed for each craft, classification, or type of worker needed. The **higher** of either state of California or federal prevailing wages must be paid. The prevailing wages for the work are on file at the District's office. The federal prevailing wages for this project are included as an attachment to the bid documents.

This Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. Pursuant to Labor Code sections 1725.5 and 1771.1, all contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a contract to perform public work must be registered with the Department of Industrial Relations. No bid will be accepted nor any contract entered into without proof of the Bidder's and its subcontractors' current registration with the Department of Industrial Relations to perform public work. Bidder shall certify that Bidder and all listed subcontractors are currently and validly registered with the Department of Industrial Relations and shall include its registration number on its bid. If awarded a Contract, the Bidder and its subcontractors of every tier shall maintain active registration with the Department of Industrial Relations for the duration of the Project. It shall be the Bidder's sole responsibility to evaluate and include the cost of complying with all labor compliance requirements.

The California Air Resources Board ("CARB") implemented amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulations ("Regulation") which are effective on January 1, 2024 and apply broadly to all self-propelled off road diesel vehicles 25 horsepower or greater and other forms of equipment used in California. A copy of the Regulation is available at

<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/off-roaddiesel/appa-1.pdf>. Bidders are required to comply with all CARB and Regulation requirements, including, without limitation, all applicable sections of the Regulation, as codified in Title 13 of the California Code of Regulations section 2449 et seq. throughout the duration of the Project. Bidders must provide, with their Bid, a completed and signed copy of the Fleet Compliance Certification included in Section 00 41 00 Bid Forms. At the District's request, within 48 hours after the Bid Opening, Bidder must submit copies of Bidder's and all listed subcontractors' most recent, valid Certificate of Reported Compliance ("CRC") issued by CARB. Failure to provide valid CRCs as required herein may render the Bid non-responsive.

Notice is hereby given that the project is subject to federal requirements for Equal Employment Opportunity, set forth in 41 CFR Part 60 and defined in Section 00 74 00 of these Specifications, including the "Equal Opportunity Clause" and Standard Federal Equal Employment Specifications".

Pursuant to the provisions in Section 6707 of the California Labor Code, each Bid submitted in response to this Invitation to Bid shall contain adequate sheeting, shoring, and bracing, or equivalent method, for the protection of life and limb in trenches and open excavation, which shall conform to applicable safety orders for the State of California.

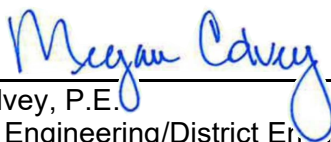
Pursuant to Section 22300 of the California Public Contract Code, the successful bidder may substitute securities for any moneys withheld by the District to ensure performance under the Contract as specified in Section 00 20 00.

Each bid shall be accompanied by cash, a certified or cashier's check, or bid bond secured from a surety company satisfactory to the District, the amount of which shall not be less than ten percent (10%) of the submitted bid price or as detailed in Section 00 20 00, Bid Security, Part 2.05, made payable to the South Tahoe Public Utility District as bid security.

The successful bidder will be required to furnish the District with a faithful performance bond and a labor and material payment bond each in an amount equal to 100% of the Contract Price, prior to execution of the Contract. All bonds are to be in the forms set forth herein, secured from a surety that meets all of the State of California bonding requirements, as defined in Code of Civil Procedure Section 995.120, and that is a California admitted surety insurer.

Pursuant to Public Contract Code §3400(b), if the District has made any findings designating certain materials products, things, or services by specific brand or trade name without alternative, such findings and the materials, products, things, or services and their specific brand or trade names will be set forth in Section 01 60 00, Product Requirements, of the Contract Documents.

The South Tahoe Public Utility District reserves the right to reject any or all bids, to waive any informality in a bid, and to make awards to the lowest responsive, responsible bidder in the best interest of the District.



Megan Colvey, P.E.
Director of Engineering/District Engineer
SOUTH TAHOE PUBLIC UTILITY DISTRICT

END OF SECTION

SECTION 00 20 00
INSTRUCTIONS FOR PROCUREMENT

INSTRUCTIONS TO BIDDERS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Conditions affecting award of Contract and procedures with which bidders and proposers must comply.

1.02 DEFINITIONS

- A. Terms used in these Instructions to Bidders and defined in Section 00 71 00, Contracting Definitions, shall have the meaning stipulated in such Section 00 71 00, Contracting Definitions.
- B. The electronic Bid Schedule consists of the table in the “Line Items” tab for the project on the electronic bidding system.
- C. The following additional terms used in these Instructions to Bidders shall have the meaning stipulated:
 - 1. Award: The formal acceptance of the Bid and other executed Bid Forms by the District.
 - 2. Bid: The price proposed by Bidder in the appropriate electronic Bid Schedule, completed on the electronic bidding system, for performance of the Work.
 - 3. Bidder: A person, firm, or corporation who having purchased a set of Contract Documents intends to submit a Bid and other Bid Forms to the District, or one who submits a Bid and other executed Bid Forms to the District.
 - 4. Successful Bidder: The Bidder to whom the District makes the award of the Contract for performance of the Work.

PART 2 PROCEDURES

2.01 EXAMINATION OF DOCUMENTS, SITE AND CONDITIONS

- A. Before submitting a Bid, Bidders shall carefully examine and be thoroughly familiar with the Contract Documents, visit the site of work, fully inform themselves as to all existing conditions and limitations, review those documents identified in Section 00 30 00, Information Available to Bidders, and shall include sums in the bid covering the cost of each item included in the Contract.
- B. Only the Contract Documents shall be relied upon for execution of Bids and other Bid Forms.
 - 1. Unless corroborated by the Contract Documents, statements or representations regarding the Work made prior, during, or after bidding by the District, Design Engineer, or Engineer will not be binding and shall not be considered by Bidders for preparation of Bids.

2. The District, Design Engineer, and Engineer will not be responsible for explanations or interpretations of the Contract Documents other than those issued by Addenda.
- C. Complete sets of Contract Documents shall be used by Bidders (and their respective subcontractors) to prepare Bids.
1. The District, Design Engineer, and Engineer assume no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Contract Documents.
- D. Submission of a Bid shall be considered prima facie evidence that the Bidder has made such examination and is satisfied as to the conditions to be encountered in performing the work and as to the requirements of Contract Documents. The failure or neglect of a Bidder to make such examinations shall in no way relieve the Bidder from any obligations with respect to its bid or to the Contract Documents. No claim for additional compensation will be allowed which is based upon a lack of knowledge of any provision of the Contract Documents.

2.02 PRE-BID CONFERENCE

- A. Time and Place: A mandatory pre-bid conference will be held at the time and place specified in the Section 00 10 00, Solicitation – Invitation to Bid.

2.03 ELECTRONIC BIDDING

- A. Plans and specifications may be obtained by visiting the District’s website at <http://www.planetbids.com/portal/portal.cfm?CompanyID=21516> which can be reached by selecting “NOTICE INVITING BIDS (PlanetBid-Portal)” on the STPUD website <https://www.stpud.us/current-bids>. Prime Bidders are advised that proposed subcontractors should obtain their own sets of Contract Documents from the District website so that they will be placed on the District’s email list for addenda. The District will not be responsible for sending addenda to any person not listed on the prospective bidder list.
- B. For a Bid to be considered responsive it must include the following parts, all submitted electronically through the online bidding system prior to the exact date and time set forth in Section 00 10 00. Forms may be submitted as a single electronic file, or separate files, at the Bidder’s discretion within the constraints of the electronic bidding system, but all parts must be present. In addition to the electronic bid, a hard copy of the bid security must be received by the District prior to the bid time and date as described in section 2.05, Bid Security.
1. Electronic Bid Schedule consisting of the table in the “Line Items” tab for the project on the electronic bidding system. A copy of the Bid Schedule is included in Section 00 41 00, Bid Forms, for reference only and need not be filled out.
 2. Section 00 41 00, Bid Forms- all forms provided (excepting the sample bid schedule) shall be completed in their entirety, including the Bid Security and long-hand signature of Bidder. Bid Forms may be printed, completed and scanned for submission, but shall not be altered or modified from their original form.

3. Section 00 75 00, Grant Forms – those forms identified in Part 1.01.A as necessary to be submitted with the Bid shall be completed in their entirety. Grant Forms may be printed, completed, and scanned for submission, but shall not be altered or modified from their original form.
- C. Bidders are responsible for submitting and having their Bids accepted by the electronic bidding system before the closing time set forth in Section 00 10 00, Solicitation-Invitation to Bid or as changed by addenda. NOTE: Pushing the submit button on the electronic bid system may not be instantaneous; it may take time for the Bidder's documents to upload and transmit before the Bid is accepted. It is the Bidder's sole responsibility to ensure their documents are uploaded, transmitted, and arrive in time electronically. The District will have no responsibility for bids that do not arrive in a timely manner, no matter what the reason. The electronic bid system will close exactly at the date and time set forth in Section 00 10 00, Solicitation - Invitation to Bid or as changed by addenda.
- D. The three lowest Bidders (at a minimum) will be required to submit the original Bid Forms within the time stated in Section 00 10 00, Solicitation – Invitation to Bid. Failure to do so may result in rejection of the Bid. The District reserves the right to request original Bid Forms from any or all Bidders.
- E. In the case of a discrepancy between the electronic bid amount and the original Bid Forms, the electronic bid amount will be the accepted Bid.
- F. For Bids to receive consideration, they shall be made in accordance with the following instructions:
 1. Bidder will be required to download all contract documents, including but not limited to the Bid Forms, Specifications, Plans, and any addenda, prior to submitting a Bid.
 2. All notations in the Bid must be in ink or typewritten. No erasures will be permitted. Mistakes may be crossed out and corrections typed or written in with ink adjacent thereto, and must be initialed in ink by the person or persons signing the Bid.
- G. All Bids shall be made in accordance with applicable statutes of the State of California including, but not limited to, the California Government, Labor and Public Contract Codes, applicable local laws, and as specified in these Contract Documents.
- H. Bid prices shall include everything necessary for the completion of the Project and fulfillment of the Contract including, but not limited to, furnishing all materials, equipment, tools, and other facilities and all management, superintendents, labor and services, except as may be provided otherwise in the Contract Documents. Bid prices shall include all applicable federal, state, and local sales and use taxes.
- I. The District is a Public Works Awarding Body, as defined under Title 13 California Code of Regulations section 2449(c)(46). Accordingly, Bidders must submit at the District's request, within 48 hours after the Bid Opening, the most recent, valid Certificates of Reported Compliance ("CRC") for the Bidder's fleet and for the fleet(s) of its listed subcontractors (including any applicable leased equipment or vehicles). Bidder must additionally complete and submit the Fleet Compliance

Certification, included in the Bid Documents. Failure to provide a CRC for the Bidder, and for all listed subcontractors, or failure to complete the Fleet Compliance Certification, may render the Bid non-responsive.

2.04 SIGNING THE BID FORM

- A. The Bid shall:
 - 1. Include the legal name of the Bidder.
 - 2. Identify the Bidder as a sole proprietor, a partnership, a corporation, or any other legal entity.
 - 3. Be signed by the person or persons legally authorized to bind the Bidder to a contract for the execution of the Work.
 - 4. Include a list of subcontractors.
- B. A Bid submitted by an agent shall have a valid Power of Attorney (Bid Certificate) attached certifying the agent's authority to bind the Bidder.
- C. The signature of all persons signing shall be in longhand.

2.05 BID SECURITY

- A. Each Bid shall be accompanied by a bid security in the form of: (a) cash, (b) certified check made payable to the District; (c) a cashier's check made payable to the District; or (d) a bid bond payable to the District, executed by the Bidder as principal and surety as obligor, in an amount not less than ten percent (10%) of the maximum amount of the Bid. Personal sureties and unregistered surety companies are unacceptable. The surety insurer shall be a California admitted surety insurer, as defined in Code of Civil Procedure Section 995.120. The bid security shall be given as a guarantee that the Bidder, if awarded the Contract, will promptly execute such Contract in accordance with the Bid and in manner and form required by these Contract Documents and will timely furnish the specified bonds. **The hard copy original bid security must be delivered to the District prior to the bid date/time for the bid to be considered responsive.**
- B. In the event a bond is submitted, the bond shall be signed by the Bidder and a corporate surety, or by the Bidder and two sureties who shall justify before any officer competent to administer an oath, in double said amount and over and above all statutory exemptions. The amount so posted shall be forfeited to said District in case the Bidder depositing the same does not, within fifteen (15) days after written notice that the contract has been awarded to him execute the agreement, provide the required insurance submittals, secure payment of workman's compensation insurance, furnish a satisfactory faithful performance bond and a labor and material payment bond each in an amount equal to one hundred percent (100%) of the Contract price.
- C. Retention of bid security:
 - 1. The bid securities of the three lowest Bidders will be retained until the Contract is awarded and signed and satisfactory bonds furnished, or other requirements completed to the reasonable satisfaction of the District.
 - 2. The bid securities of all Bidders will be returned within sixty (60) days upon award.

- D. Each Bidder shall be required to submit a copy of their bid security when submitting their electronic Bid. **The hard copy original bid security (in the acceptable forms listed in Part 2.05.A, above) MUST be delivered to the District Office in advance of the Bid Submission deadline specified in Section 00 10 00, Solicitation – Invitation to Bid.** Additionally, an electronic Bid not accompanied by a copy of (a) cash, (b) certified check made payable to the District; (c) a cashier's check made payable to the District; or (d) a bid bond payable to the District may be rejected.

2.06 AWARD OR REJECTION OF BIDS

- A. The District reserves the right to accept or reject any or all Bids when deemed best for the public good, and to waive any Bid informality, irregularity, and nonconformity when deemed best for the public good.
1. Bids shall be evaluated, in part, based on meeting the requirements of the Plans and Specifications. Bids that do not meet the requirements of the Plans and Specifications may be deemed non-responsive and rejected by the District.
 2. At the District's request, within 48 hours after the Bid Opening, Bidder shall provide evidence and documentation in support of the Good Faith Effort, as required in Section 00 74 00, Part 2.11.
- B. When Bids are not rejected, the Contract will be awarded to the lowest responsible Bidder submitting a responsive Bid.
1. The low Bid will be the Bid with the lowest net total arrived at by combining the Bid lump sum prices and unit prices for the Bid Items on the electronic Bid Schedule.
 2. If alternate bid items are called for in the Contract Documents, then consideration for alternatives in determining the low Bid shall be as set forth in Section 00 10 00.
 3. When award is made, Notice of Award will be sent to the selected Bidder by certified mail.
- C. The award, when made, will be made within the time stipulated for Bids to remain subject to acceptance in Section 00 41 00.

2.07 NOTICE OF AWARD

- A. Acceptance of Award: The acceptance of the Notice of Award must be executed and returned to the District within five (5) business days of the date of the Notice of Award.
- B. Required Bonds: The successful Bidder, upon issuance of the Notice of Award, is required to execute the contract and furnish the required Payment and Performance Bonds, in the form required by the District, and evidence of insurance, stipulated below, within fifteen (15) calendar days from the date of the Notice of Award.
- C. All bonds shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and Acceptable Reinsuring Companies" as published in Circular 570 by the

audit staff, bureau of government financial corporations, U.S. Treasury Department. All sureties shall be legally authorized to conduct business in the State of California.

- D. Insurance Documents: Insurance requirements are stipulated in Section 00 73 00, Supplementary Conditions. Successful Bidder shall furnish the insurance documents required in that Section. The Contract shall not become effective until such insurance documents have been supplied to and accepted by the District. No other insurance documents shall be accepted in substitution of, nor in addition to, those specified above.
- E. Examination of Forms: The forms of Contract, which the successful Bidder as Contractor will be required to execute, and the forms of bonds which the successful Bidder will be required to furnish, shall be carefully examined by the Bidder.
 - 1. Such forms are included in these Contract Documents.
- F. Number of Copies: The Contract and the Bonds will be executed in two (2) original counterparts.

2.08 EXECUTION OF CONTRACT

- A. The Notice of Award will be issued by the District to the successful bidder and will indicate the time schedule for execution of the Contract.
 - 1. The Contract package will be mailed with the Notice of Award.
 - 2. The Contract and all required related documents including the Performance Bond, Payment Bond, Corporate Resolution, insurance submittals and other required documents, as described in the Contract Documents shall be executed, completed, and delivered to the South Tahoe Public Utility District, not later than 4:30 PM on the fifteenth (15th) calendar day following the Notice of Award of the Contract.
- B. In the event the documents submitted do not meet the requirements of the District, District staff will notify the Bidder, by telephone followed by confirmation in writing, as to how the documents are insufficient, or incomplete, and the Bidder shall have five (5) business days, from the written notification to remedy such insufficient or incomplete documents.
- C. In the event the Bidder fails to remedy insufficient or incomplete documents within five (5) business days or the Bidder fails to submit the documents within the time limitation described in preceding Paragraph B, then the Bidder may be considered to have defaulted and would thus have no further rights under and by virtue of the award of the contract. If the Bidder is found to have defaulted, then:
 - 1. The District may award the contract to the next lowest, responsible Bidder submitting a responsive Bid or rebid the project as determined by the District in its sole discretion; and
 - 2. Upon default of the Bidder the District shall have the right to collect the bid security.

2.09 NOTICE TO PROCEED

- A. Upon providing the District the executed contract, evidence of insurance and the required bonds, in compliance with the Contract Documents, the District will issue a

Notice to Proceed. Notice to Proceed shall be signed within fifteen (15) calendar days from the date of the Notice to Proceed and returned to the District. No work shall proceed until said acceptance is signed and timely received by the District. All commitments, subcontracts, and materials ordered until the acceptance is received shall be at risk of Bidder.

PART 3 CONDITIONS AND INSTRUCTIONS

3.01 EXPERIENCE AND BUSINESS STANDING

- A. Qualification of Bidders: Each Bidder shall possess a contractor's license for the type of work required on this Contract, issued by the California Contractors State License Board, valid at the time of bid and time of award of Contract and for the duration of the Contract. Likewise, specialty subcontractors may also be required to possess a contractor's license for the type(s) of work required on this Contract. The class of license shall be as specified in Section 00 10 00, Solicitation - Invitation to Bid. Each Bidder shall also have no less than five (5) years experience in the magnitude and character of the work being bid. Each Bidder shall have successfully completed no less than five (5) similar type projects of the same or larger capacity and list the projects on the bid forms as required per Section 00 41 00, Bid Forms.
- B. Debarred Contractors: In accordance with the provisions of the Labor Code, contractors or subcontractors may not perform work on a public works project with a subcontractor who is ineligible to perform work on a public project pursuant to Section 1777.1 or 1777.7 of the Labor Code.
- C. Experience Statement: The District may require that Bidders under consideration for award of the Contract submit a statement setting forth that Bidder's experience.
 - 1. Along with this statement, each Bidder shall list similarly constructed projects showing total project costs, when constructed, and the names, addresses, and phone numbers of the owners.
- D. Financial Statement: Bidders may be requested to submit a financial statement, references, and other information sufficiently comprehensive to permit an appraisal of the Bidder's current financial condition. Such statement shall be in a form and substance similar to or equal to the form for that purpose developed and published by the Associated General Contractors of America
 - 1. The financial statement shall be submitted within five (5) days of receipt of the request from the District.
 - 2. If Bidder fails to timely submit a requested financial statement, or if the financial statement is not satisfactory to the District, the Bid of such Bidder may be considered non-responsive, and such Bid may be rejected by the District.
- E. Resume Statement: Bidders may be requested to submit the experience resume of the person who will be designated chief construction superintendent or onsite construction manager
 - 1. The experience resume shall be submitted within five (5) days of receipt of the request from the District.

2. Where Bidder fails to timely submit a requested experience resume, or where the experience resume is not satisfactory to the District, the Bid of such Bidder may be considered non-responsive, and such Bid may be rejected by the District.

3.02 COPIES AND USE OF BIDDING DOCUMENTS

- A. Contract Documents may be obtained as stipulated in Section 00 10 00, Solicitation - Invitation to Bid.
- B. Contract Documents are made available to Bidders for the purpose of obtaining Bids for performance of the Work. No license or grant is given for other uses of the Contract Documents.

3.03 INTERPRETATION OF CONTRACT DOCUMENTS

- A. Questions: If any Bidder contemplating submitting a Bid does not understand any part of the Contract Documents, or finds discrepancies in or omissions from the Contract Documents, that Bidder shall submit to the District a written request for an interpretation or correction by the means specified in 00 10 00, Solicitation – Invitation to Bid.
- B. Interpretations or Corrections: Interpretation or correction of the Contract Documents will be made only by Addendum duly issued and a copy of such Addendum will be distributed via the electronic bidding system.
 1. The District will not be responsible for any other explanations or interpretations of the Contract Documents.
- C. Documents to Rely Upon: Only the Contract Documents and Addenda shall be relied upon for preparation of Bids. Statements or representations made by or on behalf of the District regarding the Project prior, during, or after the bidding will not be binding upon the District.

3.04 QUESTIONS DURING BID PERIOD

- A. Questions regarding the Contract Documents and bidding procedures shall be submitted electronically to our electronic bidding system within the time limit specified in Section 00 10 00, Invitation to Bid.
- B. The request for clarification or interpretation shall be dated and shall identify (1) the Work, (2) the statement or the drawing that is in question, (3) the documents in which they occur, (4) the reasons for which the clarification or interpretation is necessary, and (5) the name and title of the person submitting the request.
- C. Clarifications, interpretation, and correction to Contract Documents will be issued only by Addendum, as set forth in Part 3.5, below.
- D. Questions regarding the Bid Documents should be submitted to the District in sufficient time for the District to prepare a response prior to bid opening.

3.05 ADDENDA

- A. A notice that an addendum has been issued will be distributed via email to persons, firms and corporations registered as Vendors and perspective bidders for the project on our electronic bidding system. Copies of all addenda must be downloaded from our electronic bidding system before a Bidder can submit a Bid.
- B. Addenda issued during the time of bidding shall be covered in the Bid and shall become a part of the Contract Documents.
- C. Bidders shall acknowledge receipt of any and all addenda in their Bid.
- D. In accordance with Public Contract Code §4014.5, if an addendum includes material change to the project and is issued less than 72 hours before the bid date, the District must extend the deadline for the submission of bids. The District reserves the right to determine in its sole discretion whether an addendum includes material changes to the project.
- E. It is the Bidder's responsibility to determine it has received any and all Addenda prior to bidding. The Bidder is advised to contact the District prior to the Bid opening to confirm that all Addenda have been received.

3.06 BIDDERS INTERESTED IN MORE THAN ONE BID

- A. Interest in More Than One Bid: No person, firm, or corporation, under the same or different name, shall make, file, or be interested in more than one Bid for the same work unless alternate bids are called for.
 - 1. A person, firm, or corporation who has submitted a sub-bid to a bidder, or who has quoted prices on materials to a Bidder, is not disqualified from submitting a sub-bid or quoting prices to other Bidders.
- B. Rejection in Case of Collusion:
 - 1. Reasonable grounds for believing that any Bidder is interested in more than one Bid for the same work, will cause the rejection of all bids for the Work in which such a Bidder is interested.
 - 2. Any or all bids will be rejected, in the sole discretion of the District, if there is reasonable grounds for believing that collusion exists among any of the bidders.
- C. Noncollusion Declaration: Pursuant to Public Contract Code Section 7106, Bidders shall submit with their Bids the Noncollusion Declaration executed in the form included with the bid documents.

3.07 SUBSTITUTION OF SECURITIES

- A. Section 01 20 00 calls for progress payments based upon the percentage of the work completed. The District will retain a portion of each progress payment as retention as provided by the Contract Documents. At the request and expense of the successful Bidder, the District will substitute securities for the amount so retained in accordance with Public Contract Code Section 22300.

- B. Securities may be deposited with the District, or with a state or federally chartered bank as the escrow agent, who shall pay such monies to the contractor upon satisfactory completion of the contract. Securities eligible for investment shall include those listed in Section 16430 of the California Government Code, or bank or savings and loan certificates of deposit. The contractor shall be the beneficial owner of any securities substituted for moneys withheld and shall receive any interest thereon.

3.08 SUBCONTRACTORS

- A. Bidders shall list, in Section 00 41 00, Bid Forms, the name, location of place of business, contractor's license number, DIR registration number, and the portion of the Work which will be performed by each Subcontractor who will furnish work or labor or render services to Bidder, as Contractor, in or about the Work, in an amount in excess of 0.5 percent of Bidder's total Bid.
- B. Circumventing by Bidder of the requirement to list subcontractors by the device of listing one subcontractor who will in turn sublet portions constituting the majority of the work covered by this Contract shall be considered a violation of the California Subletting and Subcontracting Fair Practices Act, Division 2, Part 1, Chapter 4 of the California Public Contract Code and shall subject Contractor to the penalties set forth in Sections 4110 and 4111 of said Code.
- C. Substitutions of subcontractors identified in the List of Subcontractors shall be granted only for those reasons allowed by Public Contract Code §4107.5. The procedures for substitution shall be as provided therein.
- D. Debarred subcontractors may not bid on the Project as defined in Part 3.01.B. Any contact on a public works project entered into between a contractor and a debarred subcontractor is void as a matter of law. A debarred subcontractor may not receive any public money for performing work as a subcontractor on a public works contract. Any public money that is paid to a debarred subcontractor by the Contractor for the Project shall be returned to the District. The Contractor shall be responsible for the payment of wages to workers of a debarred subcontractor who has been allowed to work on the Project.
- E. The District and the Engineer reserve the right to approve all subcontractors. Such approval shall be a consideration to the awarding of the Contract and unless notification to the contrary is given to the Contractor prior to the signing of the Contract, the list of subcontractors which is submitted with the Bid will be deemed to be acceptable.

3.09 MATERIALS AND EQUIPMENT LIST

- A. Bidders shall prepare, using the form provided in Section 00 41 00, Bid Forms, and submit with the Bid a complete list of materials and equipment, indicating manufacturer, identifying at a minimum the components included on the Materials and Equipment List in Section 00 41 00, Bid Forms.

3.10 NONRESTRICTIVE SPECIFICATION

- A. Materials and Equipment Identified by Brand or Trade Names
 - 1. Pursuant to Public Contract Code Section 3400(b) the District may make a finding that designates certain products, things, or services by specific brand or trade name. Such materials and equipment may not be substituted and are identified in the Contract Documents.
 - 2. Pursuant to Public Contract Code §3400, all brand or trade names shall be considered to be followed by the words “or equal” unless required findings have been made and noted in Section 00 10 00 – Solicitation, Invitation to Bid.

3.11 WORKERS’ COMPENSATION REQUIREMENTS

- A. The Bidder should be aware that in accordance with Section 3700 of the California Labor Code, the Bidder will, if awarded a Contract, be required to secure the payment of compensation to its employees and execute the workers’ compensation certificate in the form contained in these Contract Documents.

3.12 SHEETING, SHORING, AND BRACING

- A. Bidders shall state in the appropriate space on the electronic Bid Schedule, the price for sheeting, shoring, and bracing, or equivalent method meeting regulatory requirements, for the protection of life and limb in trenches and open excavation, in accordance with the requirements defined in Section 00 10 00, Solicitation – Invitation to Bid.

3.13 CONFINED SPACE ENTRY

- A. Pursuant to the provisions in General Industry Safety Orders, Article 108 (Title 8, CCR, Section 5156 et seq.) (CALOSHA), each bid submitted in response to Section 00 10 00, Solicitation - Invitation to Bid, shall contain adequate procedures, methods and personnel to complete confined space entry.

3.14 IRREGULAR BIDS

- A. Bids may be considered irregular and may be rejected as non-responsive by the District if they show any alterations of form, unauthorized additions, unauthorized conditional or alternate bids, incomplete bids, recapitulations, unbalanced prices, erasures, or irregularities of any kind.
- B. No bid will be considered unless accompanied by the Bid Security in the required type and amount.
- C. No oral, telegraphic, telephonic, or modified bid will be considered.

3.15 WITHDRAWAL OF BID

- A. Prior to Bid Opening: Any bidder may withdraw its bid via the online bidding system or by written request to the District prior to the scheduled closing time for receipt of bids.

- B. After Bid Opening:
 - 1. A bidder may withdraw its bid after the opening of bids providing the bidder can establish to the District's satisfaction that a mistake was made in preparing the bid as provided in the California Public Contracts Code.
 - a. A bidder desiring to withdraw its bid shall give written notice to the District within five (5) business days after opening of bids specifying in detail how the mistake occurred and how the mistake made the bid materially different than it was intended.
 - b. Withdrawal will be permitted for mistakes made in filling out the bid and will not be permitted for mistakes resulting from errors in judgment or carelessness in inspecting the site of Work or in reading the Contract Documents.

3.16 BIDDING PROTEST PROCEDURES

- A. Time for Submitting Protests: A protest regarding Bid opening procedures, Bids, or the selection of the Successful Bidder shall be submitted in writing, by the protesting Bidder to the District, so that the protest is received by the District within 7 calendar days after Bid opening.
- B. Protests shall include a clear detail of the reason for the protest and the remedies sought by the Bidder submitting the protest.
- C. The District will issue a response within 7 calendar days after receipt of a protest.
- D. As condition precedent for litigation on matters covered under this Part 3.16, Bidder shall have filed a protest and allowed time for the District's response in accordance with preceding paragraphs A. through C.
- E. These bidding protest procedures are also posted on the District's website at the following address <http://stpud.us/doing-business/construction-projects/construction-project-bids/>

3.17 CONSTRUCTION SCHEDULE AND SCHEDULE OF VALUES

- A. The bidder selected by the District shall be required to prepare and submit a construction schedule in accordance with Section 01 32 00, Construction Progress Documentation.
- B. Likewise, if the Basis for the Bid was Lump Sum, as defined in Part 2.07 herein, then the successful bidder may be required by the District to submit a schedule of values for the lump sum bid items, providing a breakdown of costs of which the lump sum bid items are comprised.

3.18 CONTRACT DOCUMENTS TO SUCCESSFUL BIDDER

- A. Sets Free of Charge: The bidder to whom award is made may obtain two (2) sets of Contract Documents for the Work at no extra cost.

- B. Additional Sets: Additional sets may be purchased at the cost of reproduction.
- C. The Contractor shall have no claim for excusable delay on account of the failure of the Engineer to deliver such Contract Documents unless the Engineer shall have failed to deliver the same within two weeks after receipt of the Notice of Award.

END OF SECTION

SECTION 00 30 00

INFORMATION AVAILABLE TO BIDDERS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: This Section references site information shown in the Contract Documents (i.e. existing utility locations) prepared for the District's purposes and made available to the Bidders and the Contractor for his information. Such site data is not a part of the Contract Documents notwithstanding its being bound with them or listed as among their contents.

PART 2 REQUIREMENTS

2.01 RESPONSIBILITY FOR ACCURACY OF SITE DATA

- A. Except as indicated in Section 01 73 00, Part 2.05, the Contractor is responsible for accuracy of site data; the District and Design Engineer do not guarantee their accuracy, nor their adequacy, nor their correctness, nor that data is representative of all conditions the Contractor may encounter on the project site and makes no representation as to their correctness.
- B. The Bidders and Contractor shall assume responsibility for results of acting on conclusions he draws from this data. If they choose not to accept such responsibility, they shall employ their own experts to determine additional information and they shall be responsible for results of acting on conclusions they draw from information obtained on their own initiative.

2.02 REPORTS

- A. Soils Report: A soils/hydrologic report was not prepared for this project. The Contractor shall be responsible for obtaining any data felt necessary regarding existing soil and hydrologic conditions to bid the project.

END OF SECTION

SECTION 00 41 00

BID FORMS

BID TO

**SOUTH TAHOE PUBLIC UTILITY DISTRICT
for the Construction of
2026 Water Meter Installation Project**

DOCUMENTS IN THIS SECTION CONSTITUTE THE BID FORMS. BIDDERS ARE TO COMPLETE AND ATTACH THE DOCUMENTS CONTAINED IN THIS SECTION AS INSTRUCTED IN SECTION 00 20 00, INSTRUCTIONS FOR BIDDERS, AND SUBMIT THE COMPLETED BID PROPOSAL PACKAGE IN ITS ENTIRETY ELECTRONICALLY PRIOR TO THE BID DEADLINE. BIDDER IS REQUIRED TO SUBMIT THE ORIGINAL DOCUMENTS CONTAINED IN THIS SECTION WITHIN THE TIME STATED IN SECTION 00 10 00, SOLICITATION – INVITATION TO BID (SEE SECTION 00 20 00, INSTRUCTIONS FOR BIDDERS, PART 2.03)

Name of Bidder: _____

Business Address: _____

Phone No: _____

To South Tahoe Public Utility District:

Pursuant to and in compliance with the Notice Inviting Bids and the other documents relating thereto, the undersigned, Bidder, being fully familiar with the terms of the Contract Documents, local conditions affecting the performance of the Contract, the character, quality, quantities, and the Scope of the Work, the cost of the Work at the place where the Work is to be done, hereby proposes and agrees to perform within the time stipulated in the Contract, including all of its component parts and everything required to be performed, and to furnish any and all of the labor, material, tools, equipment, transportation, services, permits, utilities, and all other items necessary to perform the Contract and complete in a workmanlike manner, all of the Work required in connection with the construction of said Work, all in strict conformity with the Specifications and other Contract Documents, including Addenda Nos. _____, for the prices hereinafter set forth.

Bids that are submitted via the District's electronic bidding system at the time set for opening of Bids shall be irrevocable, and may not be withdrawn for a period of sixty (60) days after the date set for the opening of the bids except as noted in Section 00 20 00, Part 3.14.

ELECTRONIC BID SCHEDULE PRICES:

All applicable sales taxes, State and/or Federal and any other special taxes, patent rights, or royalties are included in the prices quoted in this Bid.

The quantities specified are the DISTRICT's estimates and are approximate only, being given as a basis for the comparison of Bids. The DISTRICT does not, expressly or by implication, agree that the actual amount of work will correspond therewith. The total amount bid will be used to determine the lowest, responsive, responsible, Bidder.

Payment for each item will be based on the actual quantity of work performed times the item unit contract price. Determinations of the actual quantities and classifications of unit price work performed by the CONTRACTOR will be made by the DISTRICT and may be more or less than the specified, estimated quantities. Unless otherwise indicated in the Bid Item Descriptions, the unit price shall be valid for actual quantities up to 25% more than or less than the bid quantity.

All representations made by Bidder in this Bid are made under penalty of perjury.

DATED: _____

BIDDER: _____

SIGNATURE

BY: _____

TITLE: _____

INFORMATION REQUIRED OF BIDDER

DEPARTMENT OF INDUSTRIAL RELATIONS REGISTRATION:

Bidder hereby certifies that it is aware of the registration requirements set forth in Labor Code sections 1725.5 and 1771.1 and is currently registered as a contractor with the Department of Industrial Relations.

Contractor DIR Registration Number: _____

LIST OF SUBCONTRACTORS:

In compliance with the Subletting and Subcontracting Fair Practices Act Chapter 4 (commencing at Section 4100), Part 1, Division 2 of the Public Contract Code of the State of California and any amendments thereof, Bidder shall set forth below: (a) the name and the location of the place of business, (b) the California contractor license number, (c) the DIR public works contractor registration number unless exempt pursuant to Labor Code Sections 1725.5 and 1771.1, and (d) the portion of the work which will be done by each subcontractor who will perform work or labor or render service to the Bidder in or about the construction of the work or improvement to be performed under this Contract in an amount in excess of one-half of one percent (0.5%) of the Bidder's Total Bid Price. Notwithstanding the foregoing, if the work involves the construction of streets and highways, then the Bidder shall list each subcontractor who will perform work or labor or render service to the Bidder in or about the work in an amount in excess of one-half of one percent (0.5%) of the Bidder's Total Bid Price or \$10,000, whichever is greater. No additional time shall be granted to provide the below requested information.

If a Bidder fails to specify a subcontractor or if a contractor specifies more than one subcontractor for the same portion of work, then the Bidder shall be deemed to have agreed that it is fully qualified to perform that portion of work and that it shall perform that portion itself.

ATTACH ADDITIONAL PAGES, IF NECESSARY

	Work to be Performed	Subcontractor's CSLB License #	Subcontractor's DIR Registration #	Percent of Total Contract	Subcontractor's Name and Location of Business
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

EQUIPMENT/MATERIAL SUPPLIER LIST:

The Bidder shall indicate below which Supplier the Bidder intends to use to furnish under the Bid each item of equipment or material listed on this form by writing the supplier's name. Unless the use of alternatives for a particular item has been restricted by these Contract Documents, the Bidder may list any manufacturer whose product meets all of the requirements and technical criteria specified. The listing of more than one supplier for each equipment/material to be furnished with the words "and/or" **will not be permitted.**

Equipment/Material	Supplier	Manufacturer
1. Aggregate base material		
2. Asphalt mixes for paved areas		
3. Concrete and grout mixes		
4. Piping and fittings		
5. Meter and valve boxes		
6. Pipe bedding material		
8. Service valves, 2" and smaller		
10. Revegetation materials		
11. Meter Pits and Setters		

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BIDDER'S GENERAL INFORMATION:

The Bidder shall furnish the following information. Additional sheets shall be attached as required. Failure to complete Item Nos. 1 through 7, at the time of bid submittal will cause the bid to be non-responsive and may cause its rejection. Bidders shall submit Item Nos. 8 and 9 if requested by the OWNER prior to award of contract. No award will be made until all of the Bidder's General Information (i.e., Items 1 through 7, inclusive and Items 8 and 9, if requested) is delivered to and accepted by the OWNER.

(1) Bidder's Name and Address:

(2) Bidder's Telephone Number: _____

(3) Bidder's Preferred Email Address: _____

(4) Bidder's CSLB License: Primary Classification _____

State License No. _____

Expiration Date: _____

Supplemental Classifications held, if any: _____

Name of Licensee, if different from (1) above:

(5) Name of person who inspected site or proposed Work for your firm:

Name: _____ Date of Inspection: _____

(6) Name, address, and telephone number of surety company and agent who will provide the required bonds on this contract:

(7) Complete and sign the forms:

- a) Noncollusion Declaration
- b) Iran Contracting Act Certification
- c) Public Works Contractor Registration Certification
- d) Contractor's Certificate Regarding Workers' Compensation

- e) Fleet Compliance Certification
- f) Bid Bond
- g) Acknowledgement of Insurance Requirements
- h) Certification by Contractor's Insurance Broker

(8) List five (3) projects completed as of recent date involving work of similar type and complexity:

Project	Contract Price	Name, address, telephone # of Owner	Description of Bidder's Work	Completion Date
1.				
2.				
3.				

- (8) The experience resume of the person who will be designated chief construction superintendent or on-site construction manager.
- (9) A financial statement, references, and other information, sufficiently comprehensive to permit an appraisal of Bidder's current financial condition. The financial statement shall be in accordance with Section 00 20 00, Part 3.01.D.

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

The undersigned declares:

I am the _____ (Position) of _____ (Firm), 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].

Name of Bidder _____

Signature _____

Name _____

Title _____

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IRAN CONTRACTING ACT CERTIFICATION

(Public Contract Code section 2200 et seq.)

As required by California Public Contract Code Section 2204, the Contractor certifies subject to penalty for perjury that the option checked below relating to the Contractor's status in regard to the Iran Contracting Act of 2010 (Public Contract Code Section 2200 *et seq.*) is true and correct:

The Contractor is not:

(1) identified on the current list of person and entities engaged in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code Section 2203; or

(2) a financial instruction that extends, for 45 days or more, credit in the amount of \$20,000,000 or more to any other person or entity identified on the current list of persons and entities engaging in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code Section 2203, if that person or entity uses or will use the credit to provide goods or services in the energy sector in Iran.

The City has exempted the Contractor from the requirements of the Iran Contracting Act of 2010 after making a public finding that, absent the exemption, the City will be unable to obtain the goods and/or services to be provided pursuant to the Contract.

The amount of the Contract payable to the Contractor for the Project does not exceed \$1,000,000.

Signature: _____

Printed Name: _____

Title: _____

Firm Name: _____

Date: _____

Note: In accordance with Public Contract Code Section 2205, false certification of this form shall be reported to the California Attorney General and may result in civil penalties equal to the greater of \$250,000 or twice the Contract amount, termination of the Contract and/or ineligibility to bid on contracts for three years.

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PUBLIC WORKS CONTRACTOR REGISTRATION CERTIFICATION

Pursuant to Labor Code sections 1725.5 and 1771.1, all contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a contract to perform public work must be registered with the Department of Industrial Relations. See <http://www.dir.ca.gov/PublicWorks/PublicWorks.html> for additional information.

No bid will be accepted nor any contract entered into without proof of the contractor's and subcontractors' current registration with the Department of Industrial Relations to perform public work.

Bidder hereby certifies that it is aware of the registration requirements set forth in Labor Code sections 1725.5 and 1771.1 and is currently registered as a contractor with the Department of Industrial Relations.¹

Name of Bidder: _____

DIR Registration Number: _____

DIR Registration Expiration: _____

Small Project Exemption: _____ Yes or _____ No

Unless Bidder is exempt pursuant to the small project exemption, Bidder further acknowledges:

1. Bidder shall maintain a current DIR registration for the duration of the project.
2. Bidder shall include the requirements of Labor Code sections 1725.5 and 1771.1 in its contract with subcontractors and ensure that all subcontractors are registered at the time of bid opening and maintain registration status for the duration of the project.
3. Failure to submit this form or comply with any of the above requirements may result in a finding that the bid is non-responsive.

Name of Bidder _____

Signature _____

Name and Title _____

Dated _____

¹ If the Project is exempt from the contractor registration requirements pursuant to the small project exemption under Labor Code Sections 1725.5 and 1771.1, please mark "Yes" in response to "Small Project Exemption."

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CONTRACTOR'S CERTIFICATE REGARDING WORKERS' COMPENSATION

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

Name of Bidder _____

Signature _____

Name and Title _____

Dated _____

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FLEET COMPLIANCE CERTIFICATION

Bidder hereby acknowledges that they have reviewed the California Air Resources Board's policies, rules and regulations and are familiar with the requirements of Title 13, California Code of Regulations, Division 3, Chapter 9, effective on January 1, 2024 (the "Regulation"). Bidder hereby certifies, subject to penalty for perjury, that the option checked below relating to the Bidder's fleet, and/or that of their subcontractor(s) ("Fleet") is true and correct:

- The Fleet is subject to the requirements of the Regulation. At the District's request, within 48 hours after the Bid Opening, the Bidder must submit the most recent, valid Certificates of Reported Compliance ("CRC") for the Bidder's fleet and for the fleet(s) of its listed subcontractors (including any applicable leased equipment or vehicles).
- The Fleet is exempt from the Regulation under section 2449.1(f)(2), and a signed description of the subject vehicles, and reasoning for exemption has been attached hereto.
- Bidder and/or their subcontractor is unable to procure R99 or R100 renewable diesel fuel as defined in the Regulation pursuant to section 2449.1(f)(3). Bidder shall keep detailed records describing the normal refueling methods, their attempts to procure renewable diesel fuel and proof that shows they were not able to procure renewable diesel (i.e. third party correspondence or vendor bids).
- The Fleet is exempt from the requirements of the Regulation pursuant to section 2449(i)(4) because this Project has been deemed an Emergency, as defined under section 2449(c)(18). Bidder shall only operate the exempted vehicles in the emergency situation and records of the exempted vehicles must be maintained, pursuant to section 2449(i)(4).
- The Fleet does not fall under the Regulation or are otherwise exempted and a detailed reasoning is attached hereto.

Name of Bidder: _____

Signature: _____

Name: _____

Title: _____

Date: _____

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BID BOND

KNOW ALL MEN BY THESE PRESENTS,

The makers of this bond are, _____ as Principal, and _____ as Surety, are held and firmly bound unto **SOUTH TAHOE PUBLIC UTILITY DISTRICT**, hereinafter called "Owner," in the penal sum TEN PERCENT (10%) OF THE TOTAL BID PRICE of the Principal submitted to Owner for the work described below, for the payment of which sum in lawful money of the United States, well and truly to be made, 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 the accompanying bid dated _____, 20__ for the **2026 Water Meter Installation Project**.

If the Principal does not withdraw its bid within the time specified in the Contract Documents; and if the Principal is awarded the Contract and provides all documents to the Owner as required by the Contract Documents; then this obligation shall be null and void. Otherwise, this bond will remain in full force and effect.

Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract Documents shall affect its obligation under this bond, and Surety does hereby waive notice of such changes.

In the event a lawsuit is brought upon this bond by said Owner and judgment is recovered, the Surety shall pay all litigation expenses incurred by the Owner in such suit, including reasonable attorney's fees, court costs, expert witness fees and expenses.

By their signature hereunder, Surety and Principal hereby confirm under penalty of perjury that Surety is an admitted surety insurer authorized to do business in the State of California.

IN WITNESS WHEREOF, the above-bound parties have executed this instrument under their several seals this _____ day of _____, 20__, the name and corporate seal of each corporation.

(Corporate Seal)

Contractor/ Principal

By _____

Title _____

(Corporate Seal)

Surety

By _____

Attorney-in-Fact

(Attach Attorney-in-Fact Certificate)

Title _____

Notary Acknowledgment

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
 COUNTY OF _____

On _____, 20____, before me, _____, Notary Public, personally appeared _____, who proved to me on the basis of satisfactory

Name(s) of Signer(s)

evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

 Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

CAPACITY CLAIMED BY SIGNER

- Individual
- Corporate Officer

DESCRIPTION OF ATTACHED DOCUMENT

- | | | | |
|---|----------------------------------|--|---------------------------|
| | Title(s) | | Title or Type of Document |
| <input type="checkbox"/> Partner(s) | <input type="checkbox"/> Limited | | Number of Pages |
| | <input type="checkbox"/> General | | |
| <input type="checkbox"/> Attorney-In-Fact | | | Date of Document |
| <input type="checkbox"/> Trustee(s) | | | |
| <input type="checkbox"/> Guardian/Conservator | | | |
| <input type="checkbox"/> Other: | | | |

Signer is representing:
 Name Of Person(s) Or Entity(ies)

Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for Contractor/Principal.

Notary Acknowledgment

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
 COUNTY OF _____

On _____, 20____, before me, _____, Notary Public, personally appeared _____, who proved to me on the basis of satisfactory

evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

 Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

CAPACITY CLAIMED BY SIGNER

- Individual
- Corporate Officer

Title(s)

- Partner(s)
 - Limited
 - General

- Attorney-In-Fact
- Trustee(s)
- Guardian/Conservator
- Other:

Signer is representing:
 Name Of Person(s) Or Entity(ies)

DESCRIPTION OF ATTACHED DOCUMENT

Title or Type of Document

Number of Pages

Date of Document

Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for the Attorney-in-Fact. The Power-of-Attorney to local representatives of the bonding company must also be attached.

END OF BID BOND

ACKNOWLEDGMENT OF INSURANCE REQUIREMENTS

This Document Must Be Fully Executed By Contractor
and Submitted With The Bid

The following insurance requirements have been adopted by The South Tahoe Public Utility District hereinafter designated the "OWNER," and shall be applicable to this Contract.

Insurance Requirement Summary

The CONTRACTOR shall furnish, prior to Notice to Proceed, Insurance Certificates and Endorsements as set forth in Section 00 20 00, Part 2.08.D and Section 00 73 00, Supplementary Conditions, Part 2.01. No other insurance documents shall be accepted in substitution of, nor in addition to, those set forth in Section 00 20 00, Instructions for Procurement. Insurance requirements and coverage will be in accordance with Section 00 73 00, Supplementary Conditions, Part 2.01.

The CONTRACTOR shall not commence work under this Contract until all insurance required under this heading is obtained in a form acceptable to OWNER, nor shall the CONTRACTOR allow any Subcontractor to commence work on a subcontract until all insurance required of the Subcontractor has been obtained.

I, _____, the _____
(Insert Title)
of _____
(Name of Company or Corporation or Owner)

certify that the Insurance Requirements Summary has been read and understood and that as a material consideration of our bid, we are able to provide the document and coverage specified.

Signature of President, Secretary,
Manager, Owner, or Representative

Date: _____

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CERTIFICATION BY CONTRACTOR'S INSURANCE BROKER

This Document Must be Fully Executed By Contractor's
Insurance Broker and Submitted With the Bid

I, _____, am an authorized representative of
(Individual's name and brokerage name)

_____. This company is the insurance broker
(Insurance Company)

for _____ ("Contractor").
(Contractor)

By my signature below, I hereby attest to the following:

1. I have reviewed the insurance requirements for the South Tahoe Public Utility District's **2026 Water Meter Installation Project** ("Project"), including the requirements set forth in Section 00 73 00, Supplementary Conditions, Part 2.01 of the Contract Documents.

2. The Contractor is eligible to be insured for the policies necessary to satisfy the insurance requirements for the Project.

This certification is not intended to be binding of coverage and does not modify and/or alter the terms and conditions of the insurance policies issued to Contractor.

Date: _____

(Signature of authorized representative)

for _____

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
) ss.
County of _____)

On _____ before me, _____, personally appeared _____, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Notary Public

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DESCRIPTION OF BID ITEMS

The Bid Schedule includes the work to construct the 2026 Water Meter Installation Project throughout the District's water service area, including the one year warranty period on parts, labor, and materials.

The costs for any Work shown or required in the Contract Documents, but not specifically identified as a line item are to be included in the related line items and no additional compensation shall be due to Contractor for the performance of the Work.

The estimated quantities for Unit Price items are for purposes of comparing Bids only and the District makes no representation that the actual quantities of work performed will not vary from the estimates. Final payment shall be determined by the Engineer from measured quantities of work performed based upon the Unit Price.

General Note: Distances and measurements, except elevations and structural dimensions, shall be made on horizontal planes.

Bid Schedule items 1 through 18 are presented to indicate major categories of work for the purpose of comparative bid analysis and payment breakdown for monthly progress payments. Bid Items are not intended to be exclusive descriptions of the work categories. The CONTRACTOR shall determine and include in his pricing all materials, labor, and equipment necessary to complete each Bid Item (work phase) as shown and specified in the Contract Documents whether specifically described in the following or not.

Bid Item 1 - Mobilization and Demobilization: includes, but is not limited to: obtaining of bonds, insurance and financing, movement of equipment, materials and personnel to and from the job site, supervision, certificates, permits, submittals and RFIs, utilities, site maintenance, cleanup, dust control and work incidentals to the contract not specifically identified under the remaining items or costs incurred prior to beginning work and after completion of work on the various contract items. The cost for this item shall not exceed 10 percent (10%) of the total bid without documented justification, nor shall the CONTRACTOR submit for payment of all of the funds under this item until demobilization has been completed.

The CONTRACTOR's payment for this item shall be by the lump sum.

Bid Item 2 – Construction BMPs and Erosion Control: includes, but is not limited to, the installation, protection, maintenance, and removal of BMPs, with measures acceptable to the District and governing agencies including but not limited to coir logs, silt fence (straw bales are no longer acceptable), inlet protection, vegetation protection fencing, dust control and sweeping, spoils and stockpile maintenance, temporary hot mix asphalt, and other BMPs necessary to meet the requirements of the City, County, and TRPA Standard Conditions (Attachment Q), as applicable, and as otherwise specified and/or included in the Specifications and Plans.

The CONTRACTOR'S payment for this item shall be by the lump sum.

Bid Item 3 - Traffic Control: includes, but is not limited to: preparing an adequate traffic control plan, and maintaining proper traffic control measures during construction.

The CONTRACTOR'S payment for this item shall be by the lump sum.

The CONTRACTOR'S payment for this item shall be by the lump sum.

Bid Item 4 - Sheeting, Shoring, and Bracing or Equivalent Method: includes, but is not limited to: adequate sheeting, shoring and bracing or equivalent methods for the protection of life and limb, planning, designing, engineering, furnishing, constructing, and removing temporary sheeting, shoring and bracing, and any other work necessary to conform to the requirements of any permits, OSHA and the Construction Safety Orders of the State of California, pursuant to the provisions of Section 6707 of California Labor Code, and all labor, tools, materials and appurtenances complete in place per the plans and specifications.

The CONTRACTOR'S payment for this item shall be by the lump sum.

Bid Item 5 – Groundwater Dewatering: includes but is not limited to: all labor, materials, tools, equipment, and incidentals and for doing all the work involved in groundwater dewatering associated with bid items 5 and 6 when groundwater is encountered and a dewatering operation is necessary for the installation of those specific water meter installations, including system design, permitting, provision and installation of dewatering system, operation, appropriate water disposal and related BMPs, decommissioning, as specified herein, in compliance with all permitting agencies, and/or as otherwise directed and approved by the Engineer. This bid item shall include over excavation up to 12" deep, 2"-minus drain rock, and geotextile fabric wrap, as necessary to complete compaction and other requirements of the meter installation.

The CONTRACTOR'S payment for this item shall be by the lump sum.

Bid Item 6 – As-Directed Pothole: is not limited to all labor, materials, tools, equipment and incidentals required to confirm the location, depth, size, and material of a water service at the direction of the District. The bid item shall include excavation by hand or vacuum excavator for a hole up to 1' wide by 6' deep by 4' wide where the location of a service line and/or service valve is unknown for locations identified for ¾" and 1" meter installations.

The CONTRACTOR'S payment for this item shall be by the Each. The CONTRACTOR's unit price shall be valid for an actual quantity plus or minus 100% of the estimated quantity indicated on the Bid Form.

Bid Items 7 and 8 – ¾" and 1" Base Water Meter Installations: includes but is not limited to all labor, materials, tools, equipment, and incidentals, for new ¾" and 1" base meter installations, as shown on Plans per Detail 1/D1 and 3/D1, complete in place, including connection to the existing residential water service valve, new single or double service valve box, riser pipe, polyethylene tubing and fittings, installation of Sensus IPERL meter and radio read unit as provided by the District, meter pit and meter setter and insulation pad, meter pit lid as provided by the District, connections to the existing customer service line, excavation up to a base maximum depth of 60", fittings, all horizontal and vertical adjustments as necessary to install and connect new meter to the existing water service on both sides of the meter, tracer wire, exposure of the water service valve to determine service depth and orientation, bedding, backfill, compaction, testing. All piping, fittings, and meters to be disinfected and visually tested for leaks prior to backfill.

Bid Item 7 shall include the complete installation of one ¾" meter on the existing service valve. Bid item 8 shall include the complete installation of one 1" meter on the existing service valve

All meter installations shall include the installation of a valve box and riser for each water service valve. The Contractor is responsible for the removal from the project area and disposal of existing valve boxes, lids, and risers. Valve boxes may be Christy G05, B09, B1017 or equal. G05 and B1017 models are required in traffic locations. No composite or non-ferrous lids shall be allowed.

Additional bid items are detailed below which will be used to compensate contractor for various additional installation conditions, where applicable and approved by the District, including traffic-rated installations, patch paving, driveway pavers, groundwater dewatering, additional excavation depth, service valve replacement, and unknown conditions.

The District shall determine the actual location of the meter pit installation based on utility conflicts, vegetation, paving, and other factors. Bid item shall include protection and/or repair and/or replacement of existing fixtures encountered or damaged during the meter installation process including underground utilities, mailboxes, signs, natural and improved landscaping, irrigation piping, fence work, sod, bricks, landscaping fabric, amended soil, stone, wood chips, rock, or other mulch. Also included, where appropriate at the discretion and approval of the District on site, shall be the trimming of vegetation, and the relocation of bushes, shrubs, and trees. Bid item includes disposal of all waste materials, including packing and shipping materials for District provided items. All piping, fittings, and meters are to be disinfected and visually tested for leaks prior to backfill. Pavement replacement shall be paid for under Bid Items 17 and 18, as applicable. Groundwater dewatering, where required, shall be paid under Bid Item 5.

Bid Item 7 – 3/4” Base Water Meter Installation

Bid Item 8 – 1” Base Water Meter Installation

The CONTRACTOR’S payment for these items shall be by the Each. The CONTRACTOR’s unit price shall be valid for an actual quantity plus or minus 50% of the estimated quantity indicated on the Bid Form.

Bid Item 9 – Hot Tap New Water Service: includes, but is not limited to, full compensation for furnishing all labor, materials, tools, equipment, and incidentals, for doing all the work involved in performing a hot tap on an existing water main and installing a new water service line, complete in place, including, but not limited to, pavement saw cutting to full depth (as required), trenching and shoring, excavation, dewatering, and disposal of system water, furnishing and installing hot tap sleeve and valve, tapping of existing water main under pressure, furnishing and installing service line pipe, fittings, corporation stop, service valve, thrust restraint (as required), bedding material, backfill and compaction, pressure testing and disinfection (as required), connection to existing or new service infrastructure, restoration of disturbed surfaces, and all appurtenant work, in accordance with the details and as indicated on the Plans.

The CONTRACTOR’S payment for these items shall be by the EACH. The CONTRACTOR’s unit price shall be valid for an actual quantity plus or minus 100% of the estimated quantity indicated on the Bid Form.

Bid Item 10 – Abandon Water Service: includes but is not limited to all labor, material, tools, equipment and incidentals, and for doing all the work involved in the abandonment of existing water service lines as indicated on the Plans or as necessary and determined during construction, complete in place, including, but not limited to, pavement saw cutting, backfill and compaction, and pavement restoration per the trench patch detail, all in accordance with the General Notes and the details and as shown on the Plans.

The CONTRACTOR’S payment for these items shall be by the EACH. The CONTRACTOR’s unit price shall be valid for an actual quantity plus or minus 100% of the estimated quantity indicated on the Bid Form.

Bid Item 11 – Allowance for Customer Side Water Service Relocations: This item provides an allowance to address conditions that have not been identified in the Plans, Specifications, and

reports provided to the Contractor for bidding. The work is expected to include installation of water service piping between the customer side of the water meter and the customer's residential plumbing, including any required prep work, locating existing plumbing, layout with customer and District representative, abandonment of existing underground water service piping, disinfection, landscaping and other site restoration to return to existing conditions, labor, materials, and equipment necessary to complete the work. Contractor shall draw upon the allotted amount through the submittal and District approval of documented costs for materials, equipment, crew, and subcontractors. If the total amount is exceeded as the project progresses, the additional time and material costs will be addressed as a changed condition.

The CONTRACTOR'S payment for this item shall be on a time and materials basis, only with prior written agreement of the Engineer.

Bid Item 12 – Add for Traffic-Rated Installations: includes but is not limited to all additional labor, materials, tools, equipment, and incidentals for adding the traffic-rated components to the base ¾", 1", and 2" meter installations in paved or potential vehicle areas, at locations identified and approved by the District. Includes sawcutting, removal, and disposal of concrete or asphalt surfacings, includes backfill, aggregate base, compaction, temporary plating and/or temporary asphalt as required. For ¾" and 1" meter installations, payment includes placement of a metal meter pit frame as provided by the District, and formed concrete collar as detailed in the plans.

Bid item 12 will be paid in addition to the payment of a base meter installation under Bid Item 7 or 8 as applicable as shown in the Plans.

The CONTRACTOR'S payment for these items shall be by the Each. The CONTRACTOR's unit price shall be valid for an actual quantity plus or minus 100% of the estimated quantity indicated on the Bid Form.

Bid Items 13 and 14 – Water Service Valve Replacement: includes but is not limited to all labor, materials, tools, equipment and incidentals, for a new water service valve installation, complete in place, including removal of existing water service valve and connection from the existing water service line to the new meter installation, as shown on the plans, including excavation, piping, curb stop, fittings, bedding, backfill, compaction, testing, disinfection, return surface to previous conditions, protection, repair and reconnection of existing services and utilities encountered during the installation as required. Contractor shall have a crimping tool for use on poly services. Any necessary pavement replacement shall be paid for under Bid Items 17 and 18. The service box and riser are included in the base meter installation bid items.

Bid Item 13 – Water Service Valve Replacement, ¾" Single

Bid Item 14 – Water Service Valve Replacement, 1" Single

The CONTRACTOR'S payment for this item shall be by the Each. The CONTRACTOR's unit price shall be valid for an actual quantity plus or minus 100% of the estimated quantity indicated on the Bid Form.

Bid Item 15 – Freeze Water Service for Valve Replacement: includes but is not limited to all labor, materials, tools, equipment and incidentals, to freeze the existing water service lateral to facilitate a water service valve replacement (paid under Bid Item 7 or 8) in lieu of the District performing a shutdown of the water main, complete in place, and including excavation, bedding, backfill, compaction, testing, return surface to previous conditions, protection, repair and reconnection of existing services and utilities encountered during the process as required. Includes detwatering in the event of a failed freeze. Any necessary pavement replacement shall be paid for under Bid Items 17 and 18. The new water service valve(s) shall be paid for under the appropriate Bid Item 7 or 8.

The CONTRACTOR'S payment for this item shall be by the Each. The CONTRACTOR's unit price shall be valid for an actual quantity plus or minus 100% of the estimated quantity indicated on the Bid Form

Bid Item 16 - Additional 1-foot Excavation Depth: Includes all work for additional depth for the meter installation from normal cover (60") for excavation, backfill and shoring that may be required during the project due to conflicting utilities. Item shall include all vertical fittings, pipe segments for return, restraints, thrust blocks and tracer wire required for return or departure to normal depth. The pipe length along the bottom of the offset shall be paid by the linear foot under the typical meter bid item plus the additional depth per linear foot included in this bid item.

Payment will be made to nearest 1-foot of additional depth. For example if the extra depth is 0.6 to 1.5-feet, the additional payment will be for 1 additional foot of depth. If the extra depth is 1.6 to 2.5 feet, the additional payment will be for 2 additional feet of depth.

The CONTRACTOR'S payment for this item shall be by the linear foot multiplied by the nominal additional depth. The CONTRACTOR's unit price shall be valid for an actual quantity plus or minus 100% of the estimated quantity indicated on the Bid Form

Bid Item 17 - 3" Asphalt Patch Paving: includes but is not limited to all labor, materials, tools, equipment, and incidentals and for doing all work involved to install three inches (3") of paving restoration for driveways, driveway aprons, asphalt walkways, paved drainage/BMP swales, and all other pavement associated with the work, as approved by the District, including removal and disposal of excess materials. Payment includes required sawcutting and application of tackifier to existing edges. Bid item to include all work for compaction and setting of line and grade of the existing subgrade materials to preconstruction condition.

The CONTRACTOR'S payment for this item shall be by the Square Foot. The CONTRACTOR's unit price shall be valid for an actual quantity plus or minus 100% of the estimated quantity indicated on the Bid Form.

Bid Item 18 – 4" Asphalt Patch Paving: includes, but is not limited to, full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work involved in paving a four-inch (4") thick asphalt pavement patch, complete in two lifts to the specified and required width and length necessary to restore pavement surfaces within the area disturbed by construction of the new water main and services, either directly or indirectly as shown in the details and on the Plans, and as directed by the Engineer. The work shall include, but not be limited to, sawcutting of pavement to the full depth, subgrade preparation, furnishing, placing and compaction of aggregate base, furnishing, placing and compaction of hot-mix asphalt, tack coat, removal and disposal of excess materials, and as directed by the District. This bid item includes the restoration of all striping disturbed by construction work.

The Contractor's payment for this item shall be by the SQUARE FOOT. The Contractor's unit price shall be valid for the actual quantity, which may be plus or minus 100% of the estimated quantity indicated on the Bid Form.

END OF SECTION

**CONSTRUCTION OF
2026 Water Meter Installation Project
FOR
SOUTH LAKE TAHOE PUBLIC UTILITY DISTRICT**

THE BID SCHEDULE IS TO BE COMPLETED ELECTRONICALLY IN THE ELECTRONIC BIDDING SYSTEM AND IS INCLUDED HERE FOR INFORMATION PURPOSES ONLY.

BID SCHEDULE: (Refer to Bid Descriptions for a more detailed description for each of the following bid items)

Item No.	Description	Unit	Quantity	Unit Price	Amount
1.	Mobilization and Demobilization (not to exceed 10% of Total Bid Schedule)	LS	1		
2.	Construction BMPs and Erosion Control	LS	1		
3.	Traffic Control	LS	1		
4.	Sheeting, Shoring, and Bracing or Equivalent	LS	1		
5.	Groundwater Dewatering	LS	1		
6.	As-Directed Pothole	EA	14		
7.	3/4" Base Water Meter Installation	EA	26		
8.	1" Base Water Meter Installation	EA	31		
9.	Hot Tap New Water Service	EA	14		
10.	Abandon Water Service	EA	14		
11.	Allowance for Customer Side Water Service Relocations	EA	10		
12.	Add for Traffic-Rated Installations	EA	50		
13.	Water Service Valve Replacement, 3/4" Single	EA	8		
14.	Water Service Valve Replacement, 1" Single	EA	7		
15.	Freeze Water Service for Valve Replacement	EA	12		
16.	Additional 1-foot Excavation Depth	LF	20		
17.	3" Asphalt Patch Paving	SF	1500		
18.	4" Asphalt Patch Paving	EA	1500		

THE BID SCHEDULE IS TO BE COMPLETED ELECTRONICALLY IN THE ELECTRONIC BIDDING SYSTEM AND IS INCLUDED HERE FOR INFORMATION PURPOSES ONLY.

END OF BID SCHEDULE

SECTION 00 52 00

CONTRACT

THIS Contract, is made and entered into this _____ day of _____, 2026, by and between _____ hereinafter referred to as "Contractor," and South Tahoe Public Utility District, El Dorado County, California, hereinafter referred to as "District".

WITNESSETH

That for and in consideration of the promises and agreements hereinafter made and exchanged, the District and the Contractor agree as follows:

1. That the Contractor will furnish all labor, materials, equipment, tools, transportation, services, appliances, and appurtenances for the construction of the **2026 Water Meter Installation Project, (the "Project")** in accordance with the Contract Documents therefore, adopted by the Board of Directors of the above District, as prepared in part by the District.
2. That the District will pay the Contractor progress payments and the final payment in accordance with the method set forth in the Contract Documents with warrants drawn on the appropriate fund or funds as required, according to the prices as bid and accepted, based upon the Contract Documents, as follows:

Total Bid - \$ _____ Dollars and _____ Cents.

3. Contractor agrees to complete said work, following the issuance of the Notice to Proceed, by _____ (or approved extensions thereof) and to the entire satisfaction of the District before final payment is made. Contractor also agrees that all construction activities requiring excavation, earthwork or soil material removal shall occur between May 1, 2026 and October 15, 2026, 167 calendar days) in accordance

with requirements of the Tahoe Regional Planning Agency (TRPA) and to the entire satisfaction of the DISTRICT before final payment is made.

Time is of the essence for this Contract. By its signature hereunder, Contractor agrees the time for completion set forth above is adequate and reasonable to complete the Work.

4. In accordance with Government Code section 53069.85, Contractor will pay the DISTRICT the sum set forth in Part 2.04, Contract Time, and Liquidated Damages, of Section 00 72 00, General Conditions, of these Contract Documents, for each and every calendar day of delay beyond the time prescribed in the Contract Documents for finishing the Work, as Liquidated Damages and not as a penalty or forfeiture. In the event this is not paid, the Contractor agrees the DISTRICT may deduct that amount from any money due or that may become due the Contractor under the Contract. This Article does not exclude recovery of other damages specified in the Contract Documents.
5. Contractor shall be required to pay the prevailing rate of wages in accordance with the Labor Code which such rates shall be made available at the District's offices or may be obtained online at <http://www.dir.ca.gov> and which must be posted at the job site.
6. That the Contractor shall carry California Worker's Compensation Insurance and require all Subcontractors to carry California Worker's Compensation Insurance as required by the Labor Code of the State of California.
7. The Contractor shall, prior to the execution of the Contract, furnish certificates and endorsements evidencing all required insurance policies as required in Section 00 73 00, Supplemental Conditions, Part 2.01, and furnish the labor and material payment bond and faithful performance bond. If required bonds and insurance are not provided to the District, this can be considered a breach of contract.
- 8 This Formal Contract reference includes the Contract Documents, which includes the following:
Solicitation – Notice Inviting Bids

Instructions to Bidders
Information Available to Bidders
Electronic Bid Schedule
Bid Form
Formal Contract
Faithful Performance Bond
Payment (Labor and Materials) Bond
Project Definitions
General Conditions
Supplementary Conditions
Grant Conditions
Grant Forms
General Requirements
Technical Specifications
Addenda
Plans and Drawings
Approved and fully executed Change Orders
Any other documents contained in or incorporated into the Contract, except as otherwise indicated.

The Contractor shall complete the Work in strict accordance with all of the Contract Documents, following the intent and coordination of said documents set forth in Section 00 72 00, General Conditions. All of the Contract Documents are intended to be complementary. Work required by one of the Contract Documents and not by others shall be done as if required by all. This Contract shall supersede any prior agreement of the parties. Each and every provision of law required to be included in these Contract Documents shall be deemed to be included in these Contract Documents.

IN WITNESS WHEREOF, the said CONTRACTOR and the South Tahoe Public Utility District, have caused the names of said parties to be affixed hereto, each in duplicate, the day and year first above written.

Contractor
By _____
Title

SOUTH TAHOE PUBLIC UTILITY DISTRICT

By _____

Address for Giving Notice:

Address for Giving Notice:

SOUTH TAHOE PUBLIC UTILITY DISTRICT
1275 MEADOW CREST DRIVE
SOUTH LAKE TAHOE, CA 96150

ATTEST:

Melonie Guttry, Clerk of Board
South Tahoe Public Utility District

CONTRACTOR'S LICENSE NO:

CONTRACTOR'S LICENSE EXPIRATION

DATE: _____

CONTRACTOR'S FEDERAL I.D.#:

WORKER'S COMPENSATION CERTIFICATE

(AS REQUIRED BY SECTION 1861 OF THE CALIFORNIA LABOR CODE)

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

CONTRACTOR: _____
BY: _____
TITLE: _____

END OF SECTION

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SECTION 00 61 00

BOND FORMS

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, the South Tahoe Public Utility District, a public agency located in El Dorado County, California, (hereinafter designated the "Owner") has, on _____, 20__ awarded to _____, (hereinafter designated as the "Principal") a contract for the construction of the **2026 Water Meter Installation Project** (hereinafter referred to as the "Project").

WHEREAS, the work to be performed by the Contractor is more particularly set forth in the Contract Documents for the Project dated _____, (hereinafter referred to as "Contract Documents"), the terms and conditions of which are expressly incorporated herein by reference; and

WHEREAS, said Principal is required under the terms of said Contract Documents to perform the terms thereof and to furnish a bond for the faithful performance of said Contract Documents.

NOW, THEREFORE, WE, the Principal, and _____, as Surety, a corporation organized and duly authorized to transact business under the laws of the State of California, are held and firmly bound unto the Owner in the penal sum of _____ dollars (\$ _____), said sum being not less than one hundred percent (100%) of the total amount of the Contract, for which amount well and truly to be made, we bind ourselves, our heirs, executors and 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, shall in all things stand to and abide by, and well and truly keep and faithfully perform the covenants, conditions, and agreements in the Contract Documents and any alteration thereof made as therein provided, on its part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their intent and meaning; and shall faithfully fulfill all obligations including the one (1) year guarantee of all materials and workmanship; and shall indemnify and save harmless, Owner, its officials, officers, employees, and authorized volunteers, as stipulated in said Contract Documents, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

As a part of the obligation secured hereby and in addition to the face amount specified therefor, there shall be included costs and reasonable expenses and fees including reasonable attorney's fees, incurred by the Owner in enforcing such obligation.

As a condition precedent to the satisfactory completion of the Contract Documents, unless otherwise provided for in the Contract Documents, the above obligation shall hold good for a period of one (1) year after the acceptance of the Work by the Owner, during which time the Principal shall fail to make full, complete, and satisfactory repair and replacements and totally protect the Owner

from loss or damage resulting from or caused by defective materials or faulty workmanship. The obligations of Surety hereunder shall continue so long as any obligation of the Contractor remains. Nothing herein shall limit the Owner's rights or the Principal or Surety's obligations under the Contract, law or equity, including, but not limited to, California Code of Civil Procedure section 337.15.

Whenever Contractor shall be, and is declared by the Owner to be, in default under the Contract Documents, the Surety shall remedy the default pursuant to the Contract Documents, or shall promptly at the Owner's option:

- i. Take over and complete the Project in accordance with all terms and conditions in the Contract Documents; or
- ii. Obtain a bid or bids for completing the Project in accordance with all terms and conditions in the Contract Documents and upon determination by Surety of the lowest responsive and responsible bidder, arrange for a Contract between such bidder, the Surety and the Owner, and make available as work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the contract price, including other costs and damages for which Surety may be liable. The term "balance of the contract price" as used in this paragraph shall mean the total amount payable to Principal by the Owner under the Contract and any modification thereto, less any amount previously paid by the Owner to the Principal and any other set offs pursuant to the Contract Documents; or
- iii. Permit the Owner to complete the Project in any manner consistent with California law and make available as work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the contract price, including other costs and damages for which Surety may be liable. The term "balance of the contract price" as used in this paragraph shall mean the total amount payable to Principal by the Owner under the Contract and any modification thereto, less any amount previously paid by the Owner to the Principal and any other set offs pursuant to the Contract Documents.

Surety expressly agrees that the Owner may reject any contractor or subcontractor which may be proposed by Surety in fulfillment of its obligations in the event of default by the Principal.

Surety shall not utilize Principal in completing the Project nor shall Surety accept a bid from Principal for completion of the Project if the Owner, when declaring the Contractor in default, notifies Surety of the Owner's objection to Principal's further participation in the completion of the Project.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract Documents or to the Project to be performed thereunder shall in any way affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract Documents or to the Project.

By their signatures hereunder, Surety and Principal hereby confirm under penalty of perjury that Surety is an admitted surety insurer authorized to do business in the State of California.

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

(Corporate Seal)

Contractor/ Principal

By _____

Title _____

(Corporate Seal)

Surety

By _____
Attorney-in-Fact

(Attach Attorney-in-Fact Certificate) Title _____

The rate of premium on this bond is _____ per thousand. The total amount of premium charges is \$ _____.
(The above must be filled in by corporate attorney.)

THIS IS A REQUIRED FORM

Any claims under this bond may be addressed to:

(Name and Address of Surety) _____

(Name and Address of Agent or Representative for service of process in California, if different from above) _____

(Telephone number of Surety and Agent or Representative for service of process in California) _____

Notary Acknowledgment

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
COUNTY OF _____

On _____, 20____, before me, _____, Notary Public, personally appeared _____, who proved to me on the basis of satisfactory

evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

CAPACITY CLAIMED BY SIGNER

DESCRIPTION OF ATTACHED DOCUMENT

- Individual
- Corporate Officer

Title(s)

Title or Type of Document

- Partner(s) Limited
- General

Number of Pages

- Attorney-In-Fact
- Trustee(s)
- Guardian/Conservator
- Other:

Date of Document

Signer is representing:
Name Of Person(s) Or Entity(ies)

Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for Contractor/Principal.

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END OF PERFORMANCE BOND

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PAYMENT BOND (LABOR AND MATERIALS)

KNOW ALL PERSONS BY THESE PRESENTS THAT

WHEREAS, the South Tahoe Public Utility District, a public agency located in El Dorado County, California (hereinafter designated the "Owner") has, on _____, _____, awarded to _____, hereinafter designated as the "Principal," a contract for the construction of the **2026 Water Meter Installation Project** (the "Project"); and

WHEREAS, said Principal is required to furnish a bond in connection with said contract; providing that if said Principal, or any of its Subcontractors, shall fail to pay for any materials, provisions, provender, equipment, or other supplies used in, upon, for, or about the performance of the work contracted to be done, or for any work or labor done thereon of any kind, or for amounts due under the Unemployment Insurance Code or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of said Principal and its Subcontractors with respect to such work or labor the Surety of this bond will pay for the same to the extent hereinafter set forth:

NOW, THEREFORE, WE, the Principal, and _____, as Surety, are held and firmly bound unto the Owner in the penal sum of _____ dollars (\$_____) lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if said Principal, its subcontractors, heirs, executors, administrators, successors or assigns, shall fail to pay any of the persons named in California Civil Code Section 9100, fail to pay for any materials, provisions or other supplies used in, upon, for or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or amounts due under the Unemployment Insurance Code with respect to work or labor performed under the contract, or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department or Franchise Tax Board from the wages of employees of employees of the Principal and his subcontractors pursuant to Revenue and Taxation Code §18663, with respect to such work and labor the Surety or Sureties will pay for the same, in an amount not exceeding the sum herein above specified, and also, in case suit is brought upon this bond, all litigation expenses incurred by Owner in such suit, including reasonable attorney's fees, court costs, expert witness fees and investigation expenses.

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

It is further stipulated and agreed that the Surety on this bond shall not be exonerated or released from the obligation of this bond by any change, extension of time for performance, addition, alteration, or modification in, to, or of any contract, plans, specifications, or agreement pertaining or relating to any scheme or work of improvement herein above described, or pertaining or relating to the furnishing of labor, materials, or equipment therefor, nor by any change or modification of any terms of payment or extension of time for any payment pertaining or relating to any scheme or work

of improvement herein above described, nor by any rescission or attempted rescission of the contract, agreement or bond, nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such contract or agreement or under the bond, nor by any fraud practiced by any person other than the claimant seeking to recover on the bond and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given, and under no circumstances shall Surety be released from liability to those for whose benefit such bond has been given, by reason of any breach of contract between the Owner and original contractor or on the part of any obligee named in such bond, but the sole conditions of recovery shall be that claimant is a person described in Civil Code Section 9100, and has not been paid the full amount of his claim and that Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned, including but not limited to the provisions of sections 2819 and 2845 of the California Civil Code.

By their signatures hereunder, Surety and Principal hereby confirm under penalty of perjury that surety is an admitted surety insurer authorized to do business in the State of California.

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

(Corporate Seal)

Contractor/ Principal

By _____

Title _____

(Corporate Seal)

Surety

By _____
Attorney-in-Fact

(Attach Attorney-in-Fact Certificate)

Title _____

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STATE OF CALIFORNIA
 COUNTY OF _____

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 Signature of Notary Public

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Signer is representing:
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END OF PAYMENT BOND

END OF SECTION

SECTION 00 71 00

CONTRACTING DEFINITIONS

PART 1 GENERAL

1.01 SUMMARY

- A. Wherever the following abbreviations and terms, or pronouns in place of them, are used in the Contract Documents but not otherwise defined therein, the intent and meaning shall be interpreted as provided below.
- B. If an abbreviation on a drawing is not explained in the Contract Documents, it shall be as explained in ANSI Y1.1.
- C. The interpretation of abbreviations shall consider the context or discipline in which they are used, for example:
 - 1. FF usually means "finish floor" when referring to a floor slab.
 - 2. FF usually means "flat face" when referring to a pipe flange.
- D. Titles of Sections and Parts: Captions accompanying specification sections and parts are for convenience of reference only, and do not form a part of the Specifications.

PART 2 ABBREVIATIONS

The following abbreviations may be used in the Contract Documents:

"Bureau" - United States Bureau of Reclamation

"State" - State of California

"State Standard Specifications" - Standard Specifications issued by Caltrans. Dated January 1984, and as amended, unless a specific edition is referenced.

"TRPA" – Tahoe Regional Planning Agency

"RWQCB" – Regional Water Quality Control Board, Lahontan Region

PART 3 DEFINITIONS

Acceptance - The formal written acceptance by the District of the entire Contract which has been completed in all respects in accordance with the Specifications and any approved modifications. The formal written acceptance will be entitled "Notice of Completion and Release of Claims" (standard form will be provided by the District).

As Approved - The words "as approved", unless otherwise qualified, shall be understood to be followed by the words "by the Engineer".

As Shown, and as Indicated - The words "as shown" and "as indicated" shall be understood to be followed by the words "on the Plans".

Bid - The offer of the bidder for the work when made out and submitted on the prescribed bid form, properly signed and guaranteed.

Bid Bond - The cash, cashier's check, certified check, or bidder's bond accompanying the bid submitted by the bidder, as a guarantee that the bidder will enter into a Contract with the District for the performance of work herein described (may also be referred to as bidders security).

Bidder - Any individual, firm, partnership or corporation submitting a bid for the work contemplated, and acting directly or through a duly authorized representative.

Board of Directors or Board - The Board of Directors of the South Tahoe Public Utility District.

Claim - A separate demand by the Contractor for (i) a time extension, (ii) payment of money or damages arising from work done by or on behalf of the Contractor pursuant to the contract for a public work and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or (iii) an amount the payment of which is disputed by the District.

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 all Contract Documents and supplemental agreements amending or extending the work contemplated which may be required to complete the work in a substantial and acceptable manner. Supplemental agreements are written agreements covering alterations, amendments or extensions to the Contract and include Addenda and Contract Change Orders. Said Contract shall also contain obligatory language to compensate the Contractor in an amount and times set forth herein.

Contract Documents - The Contract Documents are any or all of the documents listed in Item 12 of the Contract.

Contractor - The person or persons, firm, partnership or corporation or other entity who has entered into the Contract with the District to perform the work.

County - County of El Dorado, California.

Date of Execution of the Contract - The date on which the Contract is signed by the DISTRICT's authorized representative. Notice of Award shall be issued pursuant to the provisions of the Contract. Acceptance of Award and compliance with provisions of Notice of Award shall be completed by Contractor no later than the fifteenth day after notice.

Datum - The figures given in the Specifications or upon the drawings after the word "Elevation" or an abbreviation of it shall mean District provided information.

Days - Unless otherwise designated, days as used in the Contract Documents shall mean calendar days, and is defined as every day appearing on the calendar.

Design Engineer - The person, firm or corporation, including its principals, agents, and employees, designated by the District to prepare drawings and specifications for the work. The District is the design engineer for the preparation of the **2026 Water Meter Installation Project**.

District - The South Tahoe Public Utility District, may also be referred to as the Owner and/or STPUD.

Engineer - Person or firm retained by the District, or the person designated by the District, as its Architectural or Engineering representative during the course of

construction, acting either directly or through properly authorized agents, such agents acting within the scope of the particular duties delegated to them.

His - "His" shall include "her" and "its".

Or Equal - The term "or equal" shall be understood to indicate that the "equal" product be 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.

OWNER - The South Tahoe Public Utility District, may also be referred to as the DISTRICT and/or STPUD.

Plans or Specification Drawings - The term "Plans or Specification Drawings" refers to the official Plans, profiles, cross sections, elevations, details, and other working drawings and supplementary drawings, or reproductions thereof, signed by the Engineer, which show the location, character, dimensions, and details of the work to be performed. 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.

Specifications - The term "specifications" refers to the terms, provisions, and requirements contained herein. 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.

STPUD - The South Tahoe Public Utility District (STPUD), may also be referred to as the District and/or Owner.

Substantial completion - the stage in the progress of the Work when the Work (or a portion thereof designated by the Contract Documents or in writing by the Owner) is sufficiently **complete** in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. Substantial completion does not constitute Acceptance.

Subcontractors - The term "Subcontractor", as employed herein, includes only those having a direct contract with the Contractor and it includes one who furnishes material worked to a special design according to the Plans or Specifications of this work, but does not include one who merely furnishes material not so worked and would be considered a supplier only.

Work - All the work specified, indicated, shown or contemplated in the Contract Documents to construct the improvements, including all alterations, amendments or extensions thereto made by Contract Change Order or other written orders of the Engineer.

Written Notice - "Written Notice" shall be deemed to have been duly served when delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered mail, then it shall be deemed to have been duly served two days after mailing to the last business address known to him who gives the notice.

Definitions - Whenever in the Specifications or upon the drawings the words DIRECTED, REQUIRED, PERMITTED, ORDERED, DESIGNATED, PRESCRIBED, or words of like import are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the Engineer is intended, and similarly the words APPROVED, ACCEPTABLE, SATISFACTORY,

or words of like import, shall mean approved or acceptable to, or satisfactory to the Engineer, unless otherwise expressly stated.

END OF SECTION

SECTION 00 72 00

GENERAL CONDITIONS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: General clauses that establish the basic rights, responsibilities and relationships of the parties to the Contract.

PART 2 DESCRIPTION

2.01 INTENT OF CONTRACT DOCUMENTS

- A. The intent of the Contract Documents is to describe the details for the construction and completion of the work which the Contractor undertakes to perform in accordance with the terms of the Contract. Where the Contract Documents describe portions of the work in general terms, but not in complete detail, it is understood that only the best general practice is to prevail and that only materials and workmanship of the first quality are to be used. Unless otherwise specified, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals and do all the work involved in performing the Contract in a satisfactory and workmanlike manner.
- B. The technical provisions are presented in sections for convenience. However, this presentation does not necessarily delineate trades or limits of responsibility. All sections of the Contract Documents are interdependent and applicable to the project as a whole.
- C. The Contract Documents are complementary, and what is called for in any one portion shall be binding as if called for in all other applicable portions of the Contract Documents.

2.02 CONTRACTOR'S UNDERSTANDING

- A. It is understood and agreed that the Contractor has, by careful examination, satisfied himself as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of equipment and facilities needed preliminary to and during the prosecution of the work, the general and local conditions, and all other matters which can in any way affect the work under this Contract. No verbal agreement or conversation with any officer, agent or employee of the District, either before or after the execution of this Contract, shall affect or modify any of the terms or obligations herein contained.

2.03 COORDINATION AND INTERPRETATION OF CONTRACT DOCUMENTS

- A. In the event of conflict between the Plans and the Specifications, the Specifications shall govern, except that, where items are shown on the Plans and are not specifically included in the Specifications, the Plans shall govern.
- B. Notwithstanding the order of precedence established above, in the event of conflicts the higher standard shall always apply.
- C. Should it appear that the work to be done or any of the relative matters are not sufficiently detailed or explained in the Contract Documents, the Contractor shall apply to the Engineer for such further 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, reference shall be made to the Engineer, whose written decision thereon shall be final and conclusive.
- D. If the Contractor, in the course of the work, finds any discrepancy between the Contract Documents and the physical condition of the locality, or any errors or omissions in the Contract Documents, or in the layout as given by points and instructions, it shall be his duty to inform the Engineer in writing, and the Engineer will promptly verify the same in writing.
- E. The Contractor shall not, nor allow its subcontractors to, proceed with work with respect to which there is any uncertainty without obtaining written clarification. If Contractor performs, permits, or causes the performance of any Work which is in error, inconsistent or ambiguous, or not sufficiently detailed or explained, it shall bear any and all costs, including, without limitation, the cost of correction as required in Parts 2.16 of this Section.
- F. Upon authorization of a change to the Work by the Engineer, the Contractor shall record such changes on the project record documents as required in Section 01 77 00, Part 2.06, and, where applicable, the changes shall be surveyed by a California Registered Land Surveyor.
- G. In the event of any discrepancy between any Plans and the figures written thereon, the figures shall be taken as correct. Detailed drawings shall prevail over general drawings.
- H. Any reference made in these Specifications or on the Plans to any specification, standard, method, or publication of any scientific or technical society or other organization shall, in the absence of a specific designation to the contrary, be understood to refer to the Specification, standard, method, or publication in effect as of the date that the work is advertised for Bids with the exception of prevailing wages, which can change after the project has been bid and awarded if updates have been published at the time of bid.

2.04 CONTRACT TIME AND LIQUIDATED DAMAGES

- A. The Contract Time shall be 127 (one hundred and twenty seven) calendar days from the date specified in the Notice to Proceed. All excavation or work that would disturb existing ground shall not commence until May 1, 2026 and shall be completed by October 15, of the year in which the excavation or work occurs, in accordance with requirements of the Tahoe Regional Planning Agency.
- B. In addition, for timely completion of the Project, the District requires that the Contractor meet intermediate contract deadlines to assure that the Project complies with permit requirements.
 - 1. Intermediate Milestone 1: All earthwork activities including permanent site stabilization and restoration of disturbed areas as well as all paving work including raising iron and concrete collars shall be completed by October 1, 2026.
 - 2. Intermediate Milestone 2: All unpaved staging areas shall be demobilized, clean, and restored by October 15, 2026.
- C. Extensions to the intermediate deadline for earthwork activities may be allowed in accordance with these Contract Documents. The Contractor is hereby notified that the availability of contract extensions is dependent upon the weather (after October 15 in any year). Extensions are granted by the Tahoe Regional Planning Agency and the Lahontan Regional Water Quality Control Board.
- D. Pursuant to the provisions under Liquidated Damages in Section 01 35 00, Special Procedures, of these Contract Documents, Two Thousand dollars (\$2,000.00), shall be the amount of liquidated damages for every day of delay in the completion of earthwork-related activities. Two Thousand dollars (\$2,000.00) shall be the amount of liquidated damages for every day of delay in the completion of the Work.

2.05 MEASUREMENT OF QUANTITIES

- A. Where the Contract provides for payment on a lump sum price basis, no measurement of quantity will be made. Where the Contract provides for payment on a unit price basis, the quantities of work performed will be computed by the Engineer on the basis of measurements taken by the Engineer, and these measurements shall be final and conclusive.
- B. All quantities of work computed under the Contract shall be based upon measurements by the Engineer according to United States Measurements and Weights.
- C. Methods of measurement are specified in these Specifications.

2.06 SCOPE OF PAYMENT

- A. 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 District and for all risks of every description connected with the prosecution of the work, also for all expenses incurred in consequence of the suspension or discontinuance of the work as provided in the Contract; and for completing the work according to the Specifications and Plans. Neither the payment of any estimate nor of any retained percentage shall relieve the Contractor of any obligation to make good any defective work or material.

- B. No compensation will be made in any case for loss of anticipated profits. Increased or decreased work involving supplemental agreements will be paid for as provided in such agreements.

2.07 PAYMENT OF TAXES

- A. 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 governments.

2.08 PATENTS

- A. The Contractor shall assume all costs arising from the use of patented materials, equipment, devices, or processes used on or incorporated into the work, and agrees to indemnify and hold harmless the District, the Engineer, and their duly authorized representatives, from all action at law or in equity, actions of every nature for, or on account of, the use of any patented materials, equipment, devices, or processes.

2.09 CHANGES IN THE WORK

- A. The District may, at any time, by written order make changes in the work as deemed necessary by the Engineer. If such changes cause an increase or decrease in the Contractor's cost of, or time required for, performance of the Contract an equitable adjustment will be made to the Contract and the Contract modified in writing accordingly. Such modifications are subject to approval by the Board, in accordance with Public Contract Code §20206.2 and 20206.3.
- B. Such modification will be in the form of a Contract Change Order which will describe the work to be done or the method by which the change and cost and/or time adjustment, if any, will be determined, and the time of completion of the work.
- C. The compensation to be paid for any extra work or change shall be determined in one or more of the following ways:
 - 1. By agreed unit prices;
 - 2. By estimate and acceptance of an agreed upon lump sum; or
 - 3. By cost plus.

The unit prices established in the Bid for a particular item shall be valid for deviations in the bid quantity within the range established in the Bid Form (Section 00 41 00).

- D. Until one of the above methods is agreed on, or if the work is to be paid for on cost plus basis, the Contractor shall keep full and complete records of the cost of such work in the form and manner prescribed by the Engineer and shall permit the Engineer to have access to such records as may be necessary to assist in the determination of the compensation payable for such work. Contractor must obtain the Engineer's permission, on a daily basis, as to the size of the crew, hours worked, and material to be used.
- E. Upon receipt of a Contract Change Order, the Contractor shall proceed with the ordered work. If ordered in writing by the Engineer, the Contractor shall proceed with the work so ordered prior to actual receipt of a Contract Change Order. A Contract Change Order executed by the Contractor and approved by the Engineer is an executed Contract Change Order as that term is used throughout this Section.
- F. A Contract Change Order may be issued to the Contractor at any time. Should the Contractor disagree with any terms or conditions set forth in a Contract Change Order which has not been executed, the Contractor shall submit a written protest to the Engineer within ten (10) days after the receipt of such Contract Change Order. The protest shall state the points of disagreement, and, if possible, the quantities and cost involved. If a written protest is not submitted, payment will be made as provided in the Contract Change Order and such payment will constitute full compensation for all work included therein or required thereby. Such unprotested Contract Change Orders will be considered as executed Contract Change Orders. Contractor's disagreement with any Change Order does not relieve the Contractor from performance of the work, including extra work, promptly and expeditiously.
- G. Where the protest concerning a Contract Change Order relates to compensation, the compensation payable for all work specified or required by said Contract Change Order to which such protest relates will be determined in the same manner as provided in Part 2.10 for claims for extra work. The contractor shall keep full and complete records of the cost of such work and shall permit the Engineer to have such access thereto as may be necessary to assist in the determination of the compensation payable for such work.
- H. Where the protest concerning a Contract Change Order relates to the adjustment of time and the completion of the work, the time to be allowed therefore will be determined as provided in this Section.
- I. The consent of the Contractor's sureties shall not be required as to any change or extra work, and the liability of the Contractor's Bonds shall be increased or decreased accordingly without notice to the sureties.

2.10 EXTRA WORK

- A. If, during the performance of the Contract, it shall, in the opinion of the District or the Engineer, become necessary or desirable for the proper completion of the Contract to order work done or materials or equipment furnished which in the opinion of the Engineer are not susceptible of classification under the unit-price items in the Bidding Schedule and are not included in any item for which a lump sum is bid, the Contractor shall do and perform such work and furnish such materials and equipment. Such labor, materials and/or equipment will be classed as extra work, and shall be ordered in writing before such work is started. No extra work will be paid for unless ordered in writing. Extra work and materials will ordinarily be paid for at a lump sum or unit-price agreed on in writing by the Engineer and Contractor prior to the time when the Engineer ordered the extra work to be done. The performance of any extra work or the furnishing of extra material which, in the judgment of the Engineer, is of like character to and susceptible of classification under the unit-price items of the Contract as specified shall, if the order of the Engineer shall so provide, be paid for at the unit-price named for such work in the Bidding Schedule. Whenever, in the judgment of the Engineer, such extra work or such extra material as the case may be, is not of like character to and susceptible of classification under the unit-price items of the Contract as specified, and it is impracticable because of the nature of the work, or for any other reason, to fix the price before order for the extra work shall be issued, the Contractor shall be entitled to be paid the sum of the following costs for doing the extra work, which shall be known as the cost plus basis of payment:
1. Direct Labor Cost - Charges for all of the labor furnished and used by the Contractor shall be as identified in the California Prevailing Wage Determination. Under no circumstances shall the Contractor be allowed to pay for labor, any amount that is less than the California prevailing Wage Determination. The Contractor shall be allowed to add to actual wages paid the 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 performed. The 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 9-1.04B1 of the California Department of Transportation Standard Specifications.
 2. Equipment Cost - Charges for the rental and operation of the equipment furnished and used by the Contractor shall be made for all prime construction and automotive equipment. It shall not include charges for listed equipment or major tools with a new cost of \$500.00 or less. Equipment time charges shall be subject to the daily approval of the Engineer and evidence of such daily approval submitted with the billing. The equipment rental and operation rates used shall be at the established CalTrans rental rates. No time or charges will be allowed except when equipment is actually being used for the proper and efficient performance or completion of the extra work as authorized. A

fifteen percent (15%) markup to the equipment rental and operation rates will be allowed.

3. Material Costs - Charges for the cost of materials furnished by the Contractor shall be made provided such furnishing was specifically authorized in the extra work order and the actual use verified by the Engineer. Charges shall be net cost to the Contractor delivered at the job, including all applicable sales taxes and vendor's invoice must accompany the billing along with verification of use of such materials by the Engineer. A fifteen percent (15%) markup to the materials cost will be allowed.
 4. Tools, Supplies, Supervision, Overhead and Profit - A charge for major tools, supplies, home office overhead, field overhead, labor liability insurance, additional bond costs, other fixed or administrative costs that are not costs of labor used in the direct performance of the work, supervision, and profit will be allowed in the amount of thirty five percent (35%) of the total direct labor costs as defined above.
 5. Work by Subcontractor - When all or any part of extra work is performed by any of the Contractor's Subcontractors, the markups for tools, supplies, additional bond costs, supervision, overhead and profit applied to the Subcontractor's actual cost of such work (determined as above) will be allowed in the amount of ten percent (10%) of the total direct labor costs, equipment costs and material costs, as defined above, to which a markup of five percent (5%) on the subcontracted portion of the extra work may be added by the Contractor.
- B. The Contractor agrees that he shall not be entitled to claim damages for anticipated profits on any portion of work that may be deleted. The amount of any adjustment for work deleted shall be estimated at the time deletion of work is ordered and the estimated adjustment will be deducted from the Contract amount by Contract Change Order.
- C. The District reserves the right to contract with any person or firm other than the Contractor for any or all extra work.

2.11 CLAIMS FOR EXTRA COSTS

- A. 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, or the happening of any event, thing, or occurrence, unless he shall have given the Engineer written notice of claims specified in Part 2.20 below, provided, however, that compliance with this section shall not be a prerequisite as to matters within the scope of the protest provisions in Part 2.09.
- B. Contractor shall not reserve a right to assert impact costs, extended job site costs, extended overhead, constructive acceleration and/or actual acceleration beyond what is stated in the change order for work. No claims shall be allowed of impact, extended overhead costs, constructive acceleration and/or actual acceleration due to a multiplicity of changes and/or clarifications. The Contractor may not change or modify the District's change order form in an attempt to reserve additional rights.

- C. The District's liability to Contractor for delays for which the District is responsible shall be limited to only an extension of time unless such delays were unreasonable under the circumstances. In no case shall the District be liable for any costs which are borne by the Contractor in the regular course of business, including, but not limited to, home office overhead and other ongoing costs. Damages caused by unreasonable District delay, including delays caused by items that are the responsibility of the District pursuant to Government Code section 4215, shall be based on actual costs only, no proportions or formulas shall be used to calculate any delay damages. In the event of an emergency endangering life or property, the Contractor shall act as stated in Section 01 35 00, Special Procedures, Part 2.01, and after execution of the emergency work shall present an accounting of labor, materials, and equipment. The procedure for any payment that may be due for emergency work will be as specified in Part 2.09 above.

2.12 CHANGES IN CHARACTER OF WORK

- A. If an ordered change in the Contract Documents materially changes the character of the work of a Contract item from that upon which the Contractor based its Bid price, and if the change increases or decreases the actual unit costs of such changed item as compared to the actual or estimated unit cost of performing the work of said item in accordance with the Contract Documents originally applicable thereto, in the absence of an executed Contract Change Order specifying the compensation payable, an adjustment in compensation therefore will be made in accordance with the following:
 - 1. The basis of such adjustment in compensation will be the difference between the Contract unit-price to perform the work of said item or portion thereof involved in the change as originally planned and the actual unit cost of performing the work of said item or portion thereof involved in the change, as changed. Actual unit costs will be as agreed upon by the Contractor and the Engineer. If they cannot agree or if there is no unit price for the subject work, then the costs of the work will be determined by the Engineer in the same manner as if the work were to be paid for on the cost plus basis as provided in Part 2.10. Any such adjustment will apply only to the portion of the work of said item actually changed in character.
 - 2. Failure of the Engineer to recognize the change in character of the work at the time the Contract Change Order is issued shall not be construed as relieving the Contractor of its duties and responsibility of filing a written protest within the ten (10) day limit as hereinabove provided.

2.13 RIGHT TO WITHHOLD PAYMENTS

- A. In addition to all other rights and remedies of the District hereunder and by virtue of the law, the District may withhold or nullify the whole or any part of any partial or final payment to such extent as may reasonably be necessary to protect the District from loss on account of:
 - 1. Stop Notice Claims
 - 2. Defective work not remedied, irrespective of when any such work was found to be defective;

3. Claims or liens filed or reasonable evidence indicating probable filing of claims or liens including, but not limited to claims under Sections 1775, 1776, or 1777.7 of the Labor Code;
4. Failure of the Contractor to make payments properly for labor, materials, equipment, or other facilities, or to subcontractors and/or suppliers;
5. A reasonable doubt that the work can be completed for the balance then unearned;
6. A reasonable doubt that the Contractor will complete the work within the agreed time limits;
7. Liquidated Damages;
8. Costs to the District resulting from failure of the Contractor to complete the work within the proper time, liquidated and identified in Section 01 35 00, Part 2.06;
9. Damage to the District, work or property;
10. Damage to another contractor or third party;
11. Persistent failure to carry out the work in accordance with the Contract Documents;
12. Site clean-up;
13. Failure of Contractor to keep the project schedule and/or record ("as-built") drawings up to date;
14. Legally permitted penalties, including governmental and regulatory fines incurred by the District as a result of delays resulting from Contractor's performance of the work as set forth in Section 01 35 00, Part 2.06; and
15. Damages and costs incurred by the District as a result of Contractor's performance of the work, including, but not limited to, legal, engineering, inspection, superintendence, regulatory fines, and other expenses.

- B. Whenever the District shall, in accordance herewith, withhold any monies otherwise due the Contractor, written notice of the amount withheld and the reasons therefore will be given the Contractor. After the Contractor has corrected the enumerated deficiencies, the District will promptly pay to the Contractor the amount so withheld. When monies are withheld to protect the District against claims or liens of mechanics, materialmen, Subcontractors, etc., the District may at its discretion permit the Contractor to deliver a surety bond in terms and amount satisfactory to the District, indemnifying the District against any loss or expense, and upon acceptance thereof by the District, the District shall release to the Contractor monies so withheld. The surety providing the stop notice bond shall be a separate legal entity from the surety on the performance and/or payment bonds provided for the Project.
- C. If insufficient funds have been withheld, Contractor shall promptly reimburse the District for any of the items set forth above that occur.

2.14 SECURITIES FOR MONEY WITHHELD

- A. Pursuant to section 22300 of the Public Contract Code of the State of California, Contractor may request the District to make retention payments

directly to an escrow agent or may substitute securities for any money withheld by the District to ensure performance under the contract. At the request and expense of Contractor, securities equivalent to the amount withheld shall be deposited with the District or with a state or federally chartered bank as the escrow agent who shall return such securities to Contractor upon satisfactory completion of the contract. Deposit of securities with an escrow agent shall be subject to a written agreement substantially in the form provided in section 22300 of the Public Contract Code.

2.15 GUARANTEE

- A. In addition to warranties, representations and guarantees stated in the Contract Documents, the Contractor unconditionally guarantees all materials and workmanship furnished hereunder, and agrees to replace at his sole cost and expense, and to the satisfaction of the Engineer and the District, any and all materials and/or equipment which may be defective or improperly installed.
- B. The Contractor shall repair or replace to the satisfaction of the Engineer any or all such work that may prove defective in workmanship or materials, ordinary wear and tear excepted, together with any other work which may be damaged or displaced in so doing.
- C. All work or materials which have been rejected shall be remedied, or removed and replaced by the Contractor in an acceptable manner and no additional compensation will be allowed for such removal, replacement, or remedial work.
- D. Any work done beyond the lines and grades shown on the Plans or established by the Engineer or any extra work done without written authority will be considered as unauthorized work and will not be paid. Upon order of the Engineer, unauthorized work shall be remedied, removed, or replaced at the Contractor's expense.
- E. Upon failure of the Contractor to comply with any order of the Engineer, the District may cause rejected or unauthorized work to be remedied, removed or replaced, and may deduct the costs from any monies due or to become due the Contractor in the form of a Change Order.
- F. If deemed necessary by the District to maintain uninterrupted operation of District facilities while the defective or improperly installed materials and/or equipment is repaired or replaced, the Contractor shall provide temporary replacement materials and/or equipment at no additional cost to the District.
- G. The Contractor must commence warranty repairs within ten (10) days after receiving written notice from the District. In the event of failure to complete such repairs within a reasonable time, the District is authorized to have the defect repaired and corrected at the expense of the Contractor who will pay the costs and charges therefor immediately upon demand, including any reasonable management and administrative costs, engineering, legal and other consultant fees incurred to enforce this section.

- H. If the Engineer deems it inexpedient for the Contractor to correct work damaged or not done in accordance with the Contract, an equitable deduction from the Contract price shall be made therefore, and such sum may be withheld by District from Contractor's payment.
- I. The Contractor must obtain and enforce on the District's behalf all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work and materials provided under the Contract.
- J. The signing of the Contract by the Contractor shall constitute execution of the above guarantees. Except as otherwise provided in this Contract, the guarantees and warranties shall remain in effect through the one-year maintenance warranty period without any expense to the District, ordinary wear and tear and unusual abuse and neglect excepted.
- K. Nothing herein shall be construed to limit the rights and remedies available to the District at law or in equity, including, but not limited to, Code of Civil Procedure section 337.15.

2.16 FINAL ACCEPTANCE AND PAYMENT

- A. The acceptance of the Work on behalf of the District will be made by the Engineer. Such acceptance by the District shall not constitute a waiver of defects. When the Work has been accepted there shall be paid to Contractor a sum equal to the contract price less any amounts previously paid Contractor and less any amounts withheld by the District from Contractor under the terms of the contract. The final five percent (5%), or the percentage specified in the notice inviting bids where the District has adopted a finding of substantially complete, shall not become due and payable until five (5) calendar days shall have elapsed after the expiration of the period within which all claims may be filed under the provisions of Civil Code section 9356. If the Contractor has placed securities with the District as described herein, the Contractor shall be paid a sum equal to one hundred percent (100%) of the contract price less any amounts due the District under the terms of the Contract.
- B. Unless Contractor advises the District in writing prior to acceptance of the final five percent (5%) or the percentage specified in the notice inviting bids where the District has adopted a finding of substantially complete, or the return of securities held as described herein, said acceptance shall operate as a release to the District of all claims and all liability to Contractor for all things done or furnished in connection with this work and for every act of negligence of the District and for all other claims relating to or arising out of this work. If Contractor advises the District in writing prior to acceptance of final payment or return of the securities that there is a dispute regarding the amount due the Contractor, the District may pay the undisputed amount contingent upon the Contractor furnishing a release of all undisputed claims against the District with the disputed claims in stated amounts being specifically excluded by Contractor from the operation of the release. No payments, however, final or otherwise, shall operate to release Contractor or

its sureties from the Faithful Performance Bond, Labor and Material Payment Bond, or from any other obligation under this contract.

- C. In case of suspension of the contract any unpaid balance shall be and become the sole and absolute property of the District to the extent necessary to repay the District any excess in the cost of the Work above the contract price.
- D. Final payment shall be made no later than 60 days after the date of acceptance of the Work by the District or the date of occupation, beneficial use and enjoyment of the Work by the District including any operation only for testing, start-up or commissioning accompanied by cessation of labor on the Work, provided that a release of liens and claims has been received from the Contractor pursuant to Civil Code section 8136. In the event of a dispute between the District and the Contractor, the District may withhold from the final payment an amount not to exceed 150% of the disputed amount.
- E. Within ten (10) calendar days from the time that all or any portion of the retention proceeds are received by Contractor, Contractor shall pay each of its subcontractors from whom retention has been withheld each subcontractor's share of the retention received. However, if a retention payment received by Contractor is specifically designated for a particular subcontractor, payment of the retention shall be made to the designated subcontractor if the payment is consistent with the terms of the subcontract.

2.17 OCCUPANCY

- A. The District reserves the right to occupy or utilize any portion of the Work at any time before completion, and such occupancy or use shall not constitute acceptance of any part of Work covered by this Contract. This use shall not relieve the Contractor of its responsibilities under the Contract.

2.18 INDEMNIFICATION

- A. To the fullest extent permitted by law, Contractor shall immediately defend (with counsel of the District's choosing), indemnify and hold harmless the District, officials, officers, agents, employees, and representatives, and each of them from and against:
 - 1. Any and all claims, demands, causes of action, costs, expenses, injuries, losses or liabilities, in law or in equity, of every kind or nature whatsoever, but not limited to, injury to or death, including wrongful death, of any person, and damages to or destruction of property of any person, arising out of, related to, or in any manner directly or indirectly connected with the Work or this Contract, including claims made by subcontractors for nonpayment, including without limitation the payment of all consequential damages and attorney's fees and other related costs and expenses, however caused, regardless of whether the allegations are false, fraudulent, or groundless, and regardless of any negligence of the District or its officers, employees, or authorized volunteers (including passive negligence), except the sole negligence

or willful misconduct or active negligence of the District or its officials, officers, employees, or authorized volunteers.

2. Contractor's defense and indemnity obligation herein includes, but is not limited to damages, fines, penalties, attorney's fees and costs arising from claims under the Americans with Disabilities Act (ADA) or other federal or state disability access or discrimination laws arising from Contractor's Work during the course of construction of the improvements or after the Work is complete, as the result of defects or negligence in Contractor's construction of the improvements.
 3. Any and all actions, proceedings, damages, costs, expenses, fines, penalties or liabilities, in law or equity, of every kind or nature whatsoever, arising out of, resulting from, or on account of the violation of any governmental law or regulation, compliance with which is the responsibility of Contractor.
 4. Any and all losses, expenses, damages (including damages to the Work itself), attorney's fees, and other costs, including all costs of defense which any of them may incur with respect to the failure, neglect, or refusal of Contractor to faithfully perform the Work and all of Contractor's obligations under the agreement. Such costs, expenses, and damages shall include all costs, including attorney's fees, incurred by the indemnified parties in any lawsuit to which they are a party.
- B. Contractor shall immediately defend, at Contractor's own cost, expense and risk, any and all such aforesaid suits, actions or other legal proceedings of every kind that may be brought or instituted against the District, its officials, officers, agents, employees and representatives. Contractor shall pay and satisfy any judgment, award or decree that may be rendered against the District, its officials, officers, employees, agents, employees and representatives, in any such suit, action or other legal proceeding. Contractor shall reimburse the District, its officials, officers, agents, employees and representatives for any and all legal expenses and costs incurred by each of them in connection therewith or in enforcing the indemnity herein provided. The only limitations on this provision shall be those imposed by Civil Code section 2782.

2.19 NO PERSONAL LIABILITY

- A. Neither the District, the Engineer, nor any of their other officers, agents, or employees shall be personally responsible for any liability arising under the Contract, except such obligations as are specifically set forth herein..

2.20 DISPUTES

- A. Except as otherwise specifically provided in the Contract Documents, the Engineer will initially decide all disputes arising under and by virtue of the Contract. A dispute will be processed and decided by the Engineer as soon as practicable after its submission and the submission or availability of any additional information necessary to its decision. If the Contractor is dissatisfied with the Engineer's decision, the Contractor may, within fifteen

(15) days from the date of the Engineer's decision, file a claim following the procedures in Part 2.19 of this Section. If the Contractor fails to follow the procedures in Part 2.19 of this Section within the fifteen (15) day period, then the Engineer's decision shall be final, conclusive, and binding on the Contractor.

2.21 PROCEDURE FOR RESOLVING DISPUTES

- A. Contractor shall timely comply with all notices and requests for changes to the Contract Time or Contract Price, including but not limited to all requirements of Sections 2.09 through 2.12, Changes and Extra Work, as a prerequisite to filing any claim governed by this Article. The failure to timely submit a notice of delay or notice of change, or to timely request a change to the Contract Price or Contract Time, or to timely provide any other notice or request required herein shall constitute a waiver of the right to further pursue the claim under the Contract or at law.
- B. Intent. Effective January 1, 1991, Section 20104 et seq., of the California Public Contract Code prescribes a process utilizing informal conferences, non-binding judicial supervised mediation, and judicial arbitration to resolve disputes on construction claims of \$375,000 or less. Effective January 1, 2017, Section 9204 of the Public Contract Code prescribes a process for negotiation and mediation to resolve disputes on construction claims. The intent of this Article is to implement Sections 20104 et seq. and Section 9204 of the California Public Contract Code. This Article shall be construed to be consistent with said statutes.
- C. Claims. For purposes of this Article, "Claim" means a separate demand by the Contractor, after a change order duly requested in accordance with Sections 2.09 through 2.12 "Changes and Extra Work" has been denied by the District, for (A) a time extension, (B) payment of money or damages arising from Work done by or on behalf of the Contractor pursuant to the Contract, or (C) an amount the payment of which is disputed by the District. Claims governed by this Article may not be filed unless and until the Contractor completes all procedures for giving notice of delay or change and for the requesting of a time extension or change order, including but not necessarily limited to the procedures contained in Sections 2.09 through 2.12, Changes and Extra Work, and Contractor's request for a change has been denied in whole or in part. Claims governed by this Article must be filed no later than the date of final payment. The claim shall be submitted in writing to the District and shall include on its first page the following in 16 point capital font: "THIS IS A CLAIM." Furthermore, the claim shall include the documents necessary to substantiate the claim. Nothing herein is intended to extend the time limit or supersede notice requirements otherwise provided by contract for the filing of claims, including all requirements pertaining to compensation or payment for extra Work, disputed Work, and/or changed conditions. Failure to follow such contractual requirements shall bar any claims or subsequent lawsuits for compensation or payment thereon.

- D. Supporting Documentation. The Contractor shall submit all claims in the following format:
1. Summary of claim merit and price, reference Contract Document provisions pursuant to which the claim is made
 2. List of documents relating to claim:
 - a. Specifications
 - b. Drawings
 - c. Clarifications (Requests for Information)
 - d. Schedules
 - e. Other
 3. Chronology of events and correspondence
 4. Analysis of claim merit
 5. Analysis of claim cost
 6. Time impact analysis in CPM format
 7. If Contractor's claim is based in whole or in part on an allegation of errors or omissions in the Drawings or Specifications for the Project, Contractor shall provide a summary of the percentage of the claim subject to design errors or omissions and shall obtain a certificate of merit in support of the claim of design errors and omissions.
- E. District's Response. Upon receipt of a claim pursuant to this Article, District shall conduct a reasonable review of the claim and, within a period not to exceed 45 Days, shall provide the Contractor a written statement identifying what portion of the claim is disputed and what portion is undisputed. Any payment due on an undisputed portion of the claim will be processed and made within 60 Days after the District issues its written statement.
1. If the District needs approval from its governing body to provide the Contractor a written statement identifying the disputed portion and the undisputed portion of the claim, and the District's governing body does not meet within the 45 Days or within the mutually agreed to extension of time following receipt of a claim sent by registered mail or certified mail, return receipt requested, the District shall have up to three Days following the next duly publicly noticed meeting of the District's governing body after the 45-Day period, or extension, expires to provide the Contractor a written statement identifying the disputed portion and the undisputed portion.
 2. Within 30 Days of receipt of a claim, the District may request in writing additional documentation supporting the claim or relating to defenses or claims the District may have against the Contractor. If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of District and the Contractor. The District's written response to the claim, as further documented, shall be submitted to the Contractor within 30 Days (if the claim is less than \$15,000, within 15 Days) after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor in producing the additional information or requested documentation, whichever is greater.
- F. Meet and Confer. If the Contractor disputes the District's written response, or the District fails to respond within the time prescribed, the Contractor may so notify the District, in writing, either within 15 Days of receipt of the

District's response or within 15 Days of the District's failure to respond within the time prescribed, respectively, and demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand, the District shall schedule a meet and confer conference within 30 Days for settlement of the dispute.

- G. Mediation. Within 10 business Days following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, the District shall provide the Contractor a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the claim shall be processed and made within 60 Days after the District issues its written statement. Any disputed portion of the claim, as identified by the Contractor in writing, shall be submitted to nonbinding mediation, with the District and the Contractor sharing the associated costs equally. The District and Contractor shall mutually agree to a mediator within 10 business Days after the disputed portion of the claim has been identified in writing, unless the parties agree to select a mediator at a later time.
 - 1. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator.
 - 2. For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.
 - 3. Unless otherwise agreed to by the District and the Contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Public Contract Code Section 20104.4 to mediate after litigation has been commenced.
 - 4. The mediation shall be held no earlier than the date the Contractor completes the Work or the date that the Contractor last performs Work, whichever is earlier. All unresolved claims shall be considered jointly in a single mediation, unless a new unrelated claim arises after mediation is completed.

- H. Procedures After Mediation. If following the mediation, the claim or any portion remains in dispute, the Contractor must file a claim pursuant to Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code prior to initiating litigation. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time the Contractor submits his or her written claim pursuant to subdivision (a) until the time the claim is denied, including any period of time utilized by the meet and confer conference.

- I. Civil Actions. The following procedures are established for all civil actions filed to resolve claims of \$375,000 or less:

1. Within 60 Days, but no earlier than 30 Days, following the filing or responsive pleadings, the court shall submit the matter to non-binding mediation unless waived by mutual stipulation of both parties or unless mediation was held prior to commencement of the action in accordance with Public Contract Code section 9204 and the terms of this Contract. The mediation process shall provide for the selection within 15 Days by both parties of a disinterested third person as mediator, shall be commenced within 30 Days of the submittal, and shall be concluded within 15 Days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court.
2. If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1114.11 of that code. The Civil Discovery Act of 1986 (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of Part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration. In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, (A) arbitrators shall, when possible, be experienced in construction law, and (B) any party appealing an arbitration award who does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, also pay the attorney's fees on appeal of the other party.

J. Government Code Claims. In addition to any and all contract requirements pertaining to notices of and requests for compensation or payment for extra Work, disputed Work, construction claims and/or changed conditions, the Contractor must comply with the claim procedures set forth in Government Code Sections 900, et seq. prior to filing any lawsuit against the District. Such Government Code claims and any subsequent lawsuit based upon the Government Code claims shall be limited to those matters that remain unresolved after all procedures pertaining to extra Work, disputed Work, construction claims, and/or changed conditions have been followed by Contractor. If no such Government Code claim is submitted, or if the prerequisite contractual requirements are not satisfied, no action against the District may be filed. A Government Code claim must be filed no earlier than the date the Work is completed or the date the Contractor last performs Work on the Project, whichever occurs first. A Government Code claim shall be inclusive of all unresolved claims unless a new unrelated claim arises after the Government Code claim is submitted.

K. Non-Waiver. The District's failure to respond to a claim from the Contractor within the time periods described in this Article or to otherwise meet the time requirements of this Article shall result in the claim being deemed rejected in its entirety.

2.22 AUTHORITY OF THE ENGINEER

A. The Engineer is the representative of the District and has full authority to interpret the Contract Documents, to conduct the construction review and

inspection of the Contractor's performance, and to decide questions which arise during the course of the work and the Engineer's decisions on these matters shall be final and conclusive. The Engineer has the authority to reject all work and materials which do not conform to the Contract Documents, and has the authority to stop the work whenever such stoppage may be necessary to insure the proper execution of the Contract. To prevent disputes, oral modifications will not be permitted.

- B. If at any time the Contractor is on force account and the Contractor's work force, tools, plant, or equipment appear to the Engineer to be insufficient or inappropriate to secure the required quality of work or the proper rate of progress, the Engineer may order the Contractor to increase their efficiency, improve their character, to augment their number or to substitute other personnel, new tools, plant, or equipment, as the case may be, and the Contractor shall comply with such order. Neither the failure of the Engineer to demand such increase of efficiency, number, or improvement, nor the compliance by the Contractor with the demand, shall relieve the Contractor of its obligation to provide quality work at the rate of progress necessary to complete the work within the specified time.
- C. The Engineer shall have the authority to make minor changes in the work, not involving extra costs, and not inconsistent with the purposes of the work.
- D. Any order given by the Engineer, not otherwise required by the Contract Documents to be in writing shall, on request of the Contractor, be given or confirmed by the Engineer in writing.
- E. Whenever work, methods of procedure, or any other matters are made subject to direction or approval, such direction or approval will be given by the Engineer.

2.23 HOURS OF WORK

- A. As provided in Article 3 (commencing at section 1810), Chapter 1, Part 7, Division 2 of the Labor Code, Contractor stipulates that eight (8) hours of labor shall constitute a legal day's work. The time of service of any worker employed at any time by the Contractor or by any subcontractor on any subcontract under this Contract upon the Work or upon any part of the Work contemplated by this Contract is limited and restricted to eight (8) hours during any one calendar day and 40 hours during any one calendar week, except as hereinafter provided. Notwithstanding the provisions herein above set forth, work performed by employees of Contractor in excess of eight (8) hours per day, and 40 hours during any one week, shall be permitted upon this public work upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half times the basic rate of pay.
- B. The Contractor and every subcontractor shall keep an accurate record showing the name of and actual hours worked each calendar day and each calendar week by each worker employed in connection with the Work or any part of the Work contemplated by this Contract. The record shall be kept

open at all reasonable hours to the inspection of the District and to the Division of Labor Law Enforcement, Department of Industrial Relations of the State of California.

- C. The Contractor shall pay to District a penalty of twenty-five dollars (\$25.00) for each worker employed in the execution of this Contract by the Contractor or by any subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any calendar day and 40 hours in any one calendar week in violation of the provisions of Article 3 (commencing at section 1810), Chapter 1, Part 7, Division 2 of the Labor Code.
- D. Any work necessary to be performed after regular working hours, or on Saturdays and Sundays or other holidays, shall be performed without additional expense to the District.
- E. District will provide inspection during normal working hours from 8:00 a.m. to 5:00 p.m. Monday through Friday. Inspection before or after this time will be charged to the Contractor as reimbursable inspection time. Inspections on weekends requires three days' notice for review and approval. Upon written request and approval the 8 hour working day may be changed to other limits subject to city/county ordinance.
- F. It shall be unlawful for any person to operate, permit, use, or cause to operate any of the following at the Project site, other than between the hours of 8:00 a.m. to 5:00 p.m., Monday through Friday, with no Work allowed on the District-observed holidays, unless otherwise approved by the District:
 - 1. Powered Vehicles
 - 2. Construction Equipment
 - 3. Loading and Unloading Vehicles
 - 4. Domestic Power Tools

2.24 PAYROLL RECORDS; LABOR COMPLIANCE

- A. Pursuant to Labor Code section 1776, Contractor and all subcontractors shall maintain weekly certified payroll records, showing the names, addresses, Social Security numbers, work classifications, 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 them in connection with the Work under this Contract. Contractor shall certify under penalty of perjury that records maintained and submitted by Contractor are true and accurate. Contractor shall also require subcontractor(s) to certify weekly payroll records under penalty of perjury.
- B. In accordance with Labor Code section 1771.4, the Contractor and each subcontractor shall furnish the certified payroll records directly to the Department of Industrial Relations ("DIR") on the specified interval and format prescribed by the DIR, which may include electronic submission. Contractor shall comply with all requirements and regulations from the DIR relating to labor compliance monitoring and enforcement. The requirement to submit certified payroll records directly to the Labor Commissioner under

Labor Code section 1771.4 shall not apply to work performed on a public works project that is exempt pursuant to the small project exemption specified in Labor Code Section 1771.4.

- C. Any stop orders issued by the Department of Industrial Relations against Contractor or any subcontractor that affect Contractor's performance of Work, including any delay, shall be Contractor's sole responsibility. Any delay arising out of or resulting from such stop orders shall be considered Contractor caused delay subject to any applicable liquidated damages and shall not be compensable by the District. Contractor shall defend, indemnify and hold the District, its officials, officers, employees and agents free and harmless from any claim or liability arising out of stop orders issued by the Department of Industrial Relations against Contractor or any subcontractor.
- D. The payroll records described herein shall be certified and submitted by the Contractor at a time designated by the District. The Contractor shall also provide the following:
 - 1. A certified copy of the employee's payroll records 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 described herein shall be made available for inspection or furnished upon request of the DIR.
- E. Unless submitted electronically, the certified payroll records shall be on forms provided by the Division of Labor Standards Enforcement ("DLSE") of the DIR or shall contain the same information as the forms provided by the DLSE.
- F. Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency, the District, 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 awarded the Contract or performing the contract shall not be marked or obliterated.
- G. In the event of noncompliance with the requirements of this Article, the Contractor shall have ten (10) calendar days in which to comply subsequent to receipt of written notice specifying in what respects the Contractor must comply with this Article. Should noncompliance still be evident after such 10-day period, the Contractor shall pay a penalty of one hundred dollars (\$100.00) to the District 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 payment then due.
- H. The responsibility for compliance with this Article shall rest upon the Contractor.

2.25 PREVAILING RATES OF WAGES

- A. The Contractor is aware of the requirements of Labor Code sections 1720 *et seq.* and 1770 *et seq.*, as well as California Code of Regulations, Title 8, Section 16000 *et seq.* (“Prevailing Wage Laws”), which require the payment of prevailing wage rates and the performance of other requirements on certain “public works” and “maintenance” projects. Since this Project involves an applicable “public works” or “maintenance” project, as defined by the Prevailing Wage Laws, and since the total compensation is \$1,000 or more, Contractor agrees to fully comply with such Prevailing Wage Laws. The Contractor shall obtain a copy of the prevailing rates of per diem wages at the commencement of this Contract from the website of the Division of Labor Statistics and Research of the Department of Industrial Relations located at www.dir.ca.gov. In the alternative, the Contractor may view a copy of the prevailing rate of per diem wages which are on file at the District’s Administration Office and shall be made available to interested parties upon request. Contractor shall make copies of the prevailing rates of per diem wages for each craft, classification, or type of worker needed to perform work on the Project available to interested parties upon request, and shall post copies at the Contractor’s principal place of business and at the Project site. Contractor shall defend, indemnify and hold the District, its officials, officers, employees and authorized volunteers free and harmless from any claims, liabilities, costs, penalties or interest arising out of any failure or allege failure to comply with the Prevailing Wage Laws.
- B. The Contractor shall forfeit as a penalty to the District not more than Two Hundred Dollars (\$200.00), pursuant to Labor Code section 1775, for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rate as determined by the Director of the Department of Industrial Relations for such work or craft in which such worker is employed for any public work done under the Contract by it or by any subcontractor under it. The difference between such prevailing wage rate and the amount paid to each worker for each calendar day or portion thereof, for which each worker was paid less than the prevailing wage rate, shall be paid to each worker by the Contractor.
- C. Contractor shall post, at appropriate conspicuous points on the Project site, a schedule showing all determined general prevailing wage rates and all authorized deductions, if any, from unpaid wages actually earned.

2.26 PUBLIC WORKS CONTRACTOR REGISTRATION

- A. Pursuant to Labor Code sections 1725.5 and 1771.1, the Contractor and its subcontractors must be registered with the Department of Industrial Relations prior to the execution of a contract to perform public works. By entering into this Contract, Contractor represents that it is aware of the registration requirement and is currently registered with the DIR. Contractor shall maintain a current registration for the duration of the Project. Contractor shall further include the requirements of Labor Code sections 1725.5 and 1771.1 in any subcontract and ensure that all subcontractors are registered at the time this Contract is entered into and maintain registration

for the duration of the Project. Notwithstanding the foregoing, the contractor registration requirements mandated by Labor Code Sections 1725.5 and 1771.1 shall not apply to work performed on a public works project that is exempt pursuant to the small project exemption specified in Labor Code Sections 1725.5 and 1771.1

2.27 EMPLOYMENT OF APPRENTICES

- A. Contractor and all subcontractors shall comply with the requirements of Labor Code sections 1777.5 and 1777.6 in the employment of apprentices.
- B. Information relative to apprenticeship standards, wage schedules, and other requirements may be obtained from the Director of Industrial Relations, ex officio the Administrator of Apprenticeship, San Francisco, California, or from the Division of Apprenticeship Standards and its branch offices.
- C. Knowing violations of Labor Code section 1777.5 will result in forfeiture not to exceed one hundred dollars (\$100.00) for each calendar day of non-compliance pursuant to Labor Code section 1777.7.
- D. The responsibility for compliance with this Article shall rest upon the Contractor.

2.28 NONDISCRIMINATION/EQUAL EMPLOYMENT OPPORTUNITY

- A. Pursuant to Labor Code section 1735 and other applicable provisions of law, the Contractor and its subcontractors shall not discriminate against any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, or any other classifications protected by law on this Project. The Contractor will take affirmative action to insure that employees are treated during employment or training without regard to their race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, sexual orientation, or any other classifications protected by law.
- B. Employment Eligibility; Contractor. By executing this Contract, Contractor verifies that it fully complies with all requirements and restrictions of state and federal law respecting the employment of undocumented aliens, including, but not limited to, the Immigration Reform and Control Act of 1986, as may be amended from time to time. Such requirements and restrictions include, but are not limited to, examination and retention of documentation confirming the identity and immigration status of each employee of the Contractor. Contractor also verifies that it has not committed a violation of any such law within the five (5) years immediately preceding the date of execution of this Contract, and shall not violate any such law at any time during the term of the Contract. Contractor shall avoid any violation of any such law during the term of this Contract by participating in an electronic verification of work authorization program operated by the United States Department of Homeland Security, by participating in an equivalent federal work authorization program operated by the United States Department of

Homeland Security to verify information of newly hired employees, or by some other legally acceptable method. Contractor shall maintain records of each such verification, and shall make them available to the District or its representatives for inspection and copy at any time during normal business hours. The District shall not be responsible for any costs or expenses related to Contractor's compliance with the requirements provided for or referred to herein.

- C. Employment Eligibility; Subcontractors, Sub-subcontractors and Consultants. To the same extent and under the same conditions as Contractor, Contractor shall require all of its subcontractors, sub-subcontractors and consultants performing any part of the Work or of this Contract to make the same verifications and comply with all requirements and restrictions provided for herein.
- D. Employment Eligibility; Failure to Comply. Each person executing this Contract on behalf of Contractor verifies that he or she is a duly authorized officer of Contractor, and understands that any of the following shall be grounds for the District to terminate the Contract for cause: (1) failure of Contractor or its subcontractors, sub-subcontractors or consultants to meet any of the requirements provided for herein; (2) any misrepresentation or material omission concerning compliance with such requirements; or (3) failure to immediately remove from the Work any person found not to be in compliance with such requirements.

2.29 DEBARMENT OF CONTRACTORS AND SUBCONTRACTORS

- A. Contractors or subcontractors may not perform work on a public works project with a subcontractor who is ineligible to perform work on a public project pursuant to Labor Code section 1777.1 or 1777.7. Any contract on a public works project entered into between a contractor and a debarred subcontractor is void as a matter of law. A debarred subcontractor may not receive any public money for performing work as a subcontractor on a public works contract. Any public money that is paid, or may have been paid to a debarred subcontractor by a contractor on the project shall be returned to the District. The Contractor shall be responsible for the payment of wages to workers of a debarred subcontractor who has been allowed to work on the project.

2.30 LABOR/EMPLOYMENT SAFETY

- A. General - The Contractor shall be solely and completely responsible for the conditions of the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours. Safety provisions shall conform to all applicable Federal, State, and local laws, ordinances, and codes, and to the rules and regulations established by the California Occupational Safety and Health Administration, and to other rules of law applicable to the work.
- B. The services of the Engineer in conducting construction review of the Contractor's performance is not intended to include review of the adequacy

of the Contractor's work methods, equipment, bracing or scaffolding or safety measures, in, on, or near the construction site, and shall not be construed as supervision of the actual construction nor make the Engineer or the District responsible for providing a safe place for the performance of work by the Contractor, Subcontractors, or suppliers, or for access, visits, use work, travel, or occupancy by any person.

- C. All work and materials shall be in strict accordance with all applicable State, Federal, and local laws, rules, regulations, and codes.
- D. Nothing in this Contract is to be construed to permit work not conforming to governing law. When Contract Documents differ from governing law, the Contractor shall furnish and install the higher standards called for without extra charge. All equipment furnished shall be grounded and provided with guards and protection as required by safety codes. Where vapor-tight or explosion-proof electrical installation is required by law, this shall be provided.
- E. The Contractor shall comply with all applicable laws and regulations of the federal, state, and local government, including Cal/OSHA requirements and requirements for verification of employees' legal right to work in the United States.
- F. The Contractor shall maintain emergency first aid treatment for his employees which complies with the Federal Occupational Safety and Health Act of 1970 (29 U.S.C. § 651 *et seq.*), and California Code of Regulations, Title 8, Industrial Relations Division 1, Department of Industrial Relations, Chapter 4. The Contractor shall ensure the availability of emergency medical services for its employees in accordance with California Code of Regulations, Title 8, Section 1512.
- G. The Contractor shall submit the Illness and Injury Prevention Program and a Project site specific safety program to the District prior to beginning Work at the Project site. Contractor shall maintain a confined space program that meets or exceeds the District Standards. Contractor shall adhere to the District's lock out tag out program.
- H. The Contractor shall be aware of and comply with the District's safety program requirements of Contractors. A copy of the program is available from the District upon request.

2.31 DISTRICT'S RIGHT TO TERMINATE CONTRACT

- A. **Termination for Cause by the District:**
 - 1. In the sole estimation of the District, if the Contractor refuses or fails to prosecute the Work or any separable part thereof with such diligence as will insure its completion within the time specified by the Contract Documents, or any extension thereof, or fails to complete such Work within such time, or if the Contractor should be adjudged a bankrupt, or if it should make a general assignment for the benefit of its creditors, or if a receiver should be appointed on account of its insolvency, or the Contractor or any of its subcontractors should violate any of the

provisions of this Contract, the District may serve written notice upon the Contractor and its Surety of the District's intention to terminate this Contract. This notice of intent to terminate shall contain the reasons for such intention to terminate this Contract, and a statement to the effect that the Contractor's right to perform this Contract shall cease and terminate upon the expiration of ten (10) calendar days unless such violations have ceased and arrangements satisfactory to the District have been made for correction of said violations.

2. In the event that the District serves such written notice of termination upon the Contractor and the Surety, the Surety shall have the right to take over and perform the Contract. If the Surety does not: (1) give the District written notice of Surety's intention to take over and commence performance of the Contract within 15 calendar days of the District's service of said notice of intent to terminate upon Surety; and (2) actually commence performance of the Contract within 30 calendar days of the District's service of said notice upon Surety; then the District may take over the Work and prosecute the same to completion by separate contract or by any other method it may deem advisable for the account and at the expense of the Contractor.
3. In the event that the District elects to obtain an alternative performance of the Contract as specified above: (1) the District may, without liability for so doing, take possession of and utilize in completion of the Work such materials, appliances, plants and other property belonging to the Contractor that are on the site and reasonably necessary for such completion (A special lien to secure the claims of the District in the event of such suspension is hereby created against any property of Contractor taken into the possession of the District under the terms hereof and such lien may be enforced by sale of such property under the direction of the District without notice to Contractor. The proceeds of the sale after deducting all expenses thereof and connected therewith shall be credited to Contractor. If the net credits shall be in excess of the claims of the District against Contractor, the balance will be paid to Contractor or Contractor's legal representatives.); and (2) Surety shall be liable to the District for any cost or other damage to the District necessitated by the District securing an alternate performance pursuant to this Article.

B. Termination for Convenience by the District:

1. The District may terminate performance of the Work called for by the Contract Documents in whole or, from time to time, in part, if the District determines that a termination is in the District's interest.
2. The Contractor shall terminate all or any part of the Work upon delivery to the Contractor of a Notice of Termination specifying that the termination is for the convenience of the District, the extent of termination, and the Effective Date of such termination.
3. After receipt of Notice of Termination, and except as directed by the District, the Contractor shall, regardless of any delay in determining or adjusting any amounts due under this Termination for Convenience clause, immediately proceed with the following obligations:
 - a. Stop Work as specified in the Notice.

- b. Complete any Work specified in the Notice of Termination in a least cost/shortest time manner while still maintaining the quality called for under the Contract Documents.
 - c. Leave the property upon which the Contractor was working and upon which the facility (or facilities) forming the basis of the Contract Document is situated in a safe and sanitary manner such that it does not pose any threat to the public health or safety.
 - d. Terminate all subcontracts to the extent that they relate to the portions of the Work terminated.
 - e. Place no further subcontracts or orders, except as necessary to complete the continued portion of the Contract.
 - f. Submit to the District, within ten (10) calendar days from the Effective Date of the Notice of Termination, all of the usual documentation called for by the Contract Documents to substantiate all costs incurred by the Contractor for labor, materials and equipment through the Effective Date of the Notice of Termination. Any documentation substantiating costs incurred by the Contractor solely as a result of the District's exercise of its right to terminate this Contract pursuant to this clause, which costs the contractor is authorized under the Contract documents to incur, shall: (1) be submitted to and received by the Engineer no later than 30 calendar days after the Effective Date of the Notice of Termination; (2) describe the costs incurred with particularity; and (3) be conspicuously identified as "Termination Costs occasioned by the District's Termination for Convenience."
4. Termination of the Contract shall not relieve Surety of its obligation for any just claims arising out of or relating to the Work performed.
5. In the event that the District exercises its right to terminate this Contract pursuant to this clause, the District shall pay the Contractor, upon the Contractor's submission of the documentation required by this clause and other applicable provisions of the Contract Documents, the following amounts:
- a. All actual reimbursable costs incurred according to the provisions of this Contract.
 - b. A reasonable allowance for profit on the cost of the Work performed, provided Contractor establishes to the satisfaction of the District that it is reasonably probable that Contractor would have made a profit had the Contract been completed and provided further, that the profit allowed shall in no event exceed fifteen (15%) percent of the costs.
 - c. A reasonable allowance for Contractor's administrative costs in determining the amount payable due to termination of the Contract under this Article.
- C. Notwithstanding any other provision of this Article, when immediate action is necessary to protect life and safety or to reduce significant exposure or liability, the District may immediately order Contractor to cease Work on the Project until such safety or liability issues are addressed to the satisfaction of the District or the Contract is terminated.

2.32 STATE LICENSE BOARD NOTICE

- A. Contractors are required by law to be licensed and regulated by the Contractors' State License Board which has jurisdiction to investigate complaints against contractors if a complaint regarding a patent act or omission is filed within four (4) years of the date of the alleged violation. A complaint regarding a latent act or omission pertaining to structural defects must be filed within ten (10) years of the date of the alleged violation. Any questions concerning a contractor may be referred to the Registrar, Contractors' State License Board, P.O. Box 26000, Sacramento, California 95826.

2.33 THIRD PARTY CLAIMS

- A. Pursuant to Public Contract Code section 9201, the District shall provide the Contractor with timely notification of the receipt of any third-party claims relating to the Contract. The District is entitled to recover reasonable costs incurred in providing such notification.

2.34 DOCUMENT RETENTION & EXAMINATION

- A. In accordance with Government Code section 8546.7, records of both the District and the Contractor shall be subject to examination and audit by the State Auditor General for a period of three (3) years after final payment.
- B. Contractor shall make available to the District any of the Contractor's other documents related to the Project immediately upon request of the District.
- C. In addition to the State Auditor rights above, the District shall have the right to examine and audit all books, estimates, records, contracts, documents, bid documents, subcontracts, and other data of the Contractor (including computations and projections) related to negotiating, pricing, or performing the modification in order to evaluate the accuracy and completeness of the cost or pricing data at no additional cost to the District, for a period of four (4) years after final payment.

2.35 INTEGRATION

- A. **Oral Modifications Ineffective.** No oral order, objection, direction, claim or notice by any party or person shall affect or modify any of the terms or obligations contained in the Contract Documents.
- B. **Contract Documents Represent Entire Contract.** The Contract Documents represent the entire agreement of the District and Contractor.

2.36 ASSIGNMENT OF CONTRACT

- A. Contractor shall not assign, transfer, convey, sublet or otherwise dispose of the rights or title of interest of any or all of this contract without the prior written consent of the District. Any assignment or change of Contractor's name of legal entity without the written consent of the District shall be void. Any assignment of money due or to become due under this Contract shall

be subject to a prior lien for services rendered or material supplied for performance of Work called for under the Contract Documents in favor of all persons, firms, or corporations rendering such services or supplying such Materials to the extent that claims are filed pursuant to the Civil Code, the Code of Civil Procedure or the Government Code.

2.37 ASSIGNMENT OF ANTITRUST ACTIONS

- A. Pursuant to Public Contract Code section 7103.5, in entering into a public works contract or subcontract to supply goods, services, or materials pursuant to a public works contract, Contractor or subcontractor offers and agrees to assign to the District all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 USC, Section 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 the purchase of goods, services, or materials pursuant to this contract or any subcontract. This assignment shall be made and become effective at the time the District tenders final payment to the Contractor, without further acknowledgment by the parties.

2.38 NOTICE OF TAXABLE POSSESSORY INTEREST

- A. In accordance with Revenue and Taxation Code section 107.6, the Contract Documents may create a possessory interest subject to personal property taxation for which Contractor will be responsible.

2.39 CONTROLLING LAW

- A. Notwithstanding any subcontract or other contract with any subcontractor, supplier, or other person or organization performing any part of the Work, this Contract shall be governed by the law of the State of California excluding any choice of law provisions.

2.40 JURISDICTION; VENUE

- A. Contractor and any subcontractor, supplier, or other person or organization performing any part of the Work agrees that any action or suits at law or in equity arising out of or related to the bidding, award, or performance of the Work shall be maintained in the Superior Court of El Dorado County, California, and expressly consent to the jurisdiction of said court, regardless of residence or domicile, and agree that said court shall be a proper venue for any such action.

2.41 SURVIVAL OF OBLIGATIONS

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

2.42 CALIFORNIA AIR RESOURCES BOARD

- A. Contractor shall comply, and shall ensure all subcontractors comply, with all applicable requirements of the most current version of the regulations imposed by California Air Resources Board (“CARB”) including, without limitation, all applicable terms of Title 13, California Code of Regulations Division 3, Chapter 9 and all pending amendments (“Regulation”).
- B. Throughout the Project, and for three (3) years thereafter, Contractor shall make available for inspection and copying any and all documents or information associated with Contractor’s and its subcontractors’ fleets including, without limitation, the Certificates of Reported Compliance (“CRCs”), fuel/refueling records, maintenance records, emissions records, and any other information the Contractor is required to produce, keep or maintain pursuant to the Regulation upon two (2) calendar days’ notice from the District.
- C. Contractor shall be solely liable for any and all costs associated with compliance with the Regulation as well as for any and all penalties, fines, damages, or costs associated with any and all violations, or failures to comply with the Regulation. Contractor shall defend, indemnify and hold harmless the District, its officials, officers, employees and authorized volunteers free and harmless from any claims, liabilities, costs, penalties or interest arising out of any failure or alleged failure to comply with the Regulation.

END OF SECTION

SECTION 00 73 00

SUPPLEMENTARY CONDITIONS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Modifications and supplements to the general conditions for basic rights, responsibilities and relationships of the parties unique to the Contract.

PART 2 DESCRIPTION

2.01 INSURANCE

- A. The Contractor shall not commence any work until all required insurance has been obtained at its own expense, required submittals delivered to the District, and the submittals reviewed and approved by the District for general conformance with the Contract. The Contractor shall procure and maintain the insurance required under this section for the duration of the Contract, except as otherwise indicated in this Section. The procurement and maintenance of the insurance required by this section is a material element of the Contract and failure to timely procure and/or maintain such insurance shall be a material breach of the Contract.
- B. Prior to execution of the Contract, the Contractor shall deliver to the District the following:
 - 1. Certificate(s) of Insurance, issued in duplicate, covering all policies. Such certificates shall make explicit reference to each of the provisions and endorsements required in this Section, and shall be signed on behalf of the insurer by an authorized representative;
 - 2. Original endorsements for each policy of insurance required by this section and signed on behalf of the insurer by an authorized representative;
 - 3. Upon request, the District may obtain the policies of insurance.
- C. The provisions of Section 00 20 00, Part 2.07 B, shall be strictly enforced with regard to the fifteen (15) calendar days limit for furnishing evidence of insurance.
- D. The Contractor shall not permit any Subcontractor to commence work on this project unless all Subcontractors are included as named Additional Insureds under its insurance policies required by this section or until each Subcontractor has satisfied the Contractor that the Subcontractor has the required insurance in effect. The Contractor shall receive and maintain satisfactory evidence from its Subcontractors that verifies that they are in compliance with these requirements. The Contractor shall continuously maintain such evidence and, upon request, provide copies to the District for review. If the Contractor fails to assure that a Subcontractor has and maintains the required insurance, the Contractor shall be liable for any loss arising out of work under the Contract that would be covered by

the required insurance of the subcontractor if the Contractor had assured that the subcontractor had maintained the required insurance.

- E. All insurance required by this section shall be placed with insurance companies authorized by the State of California to transact insurance business in the State of California for the types of insurance required by the Contract. Each insurance company shall have a current A. M. Best Insurance Guide rating of not less than A-/VI unless prior written approval is secured from the District as to the use of such insurer, with the following exceptions:
 - 1) Underwriters at Lloyd's of London, which are not rated by A.M. Best.
 - 2) Workers' Compensation which is provided through a State Compensation Insurance Fund or a qualified self-insurer for Workers' Compensation under California law.
 - 3) For liability insurance required under Section 2.01.O.6. (Environmental Liability insurance), insurance requirements shall be placed with insurance companies with a current A.M. Best rating of at least B+:VII.
- F. The requirements as to the types, limits, deductibles and the District's review and/or approval of insurance coverages to be maintained by the Contractor are not intended to and shall not in any manner limit or qualify the liabilities and obligations assumed by the Contractor under the Contract. Further, the District's review and approval of any deviation, unless specifically stated in writing and signed by the District, shall not release or relieve the Contractor or its Subcontractors from complying with the requirements of this section.
- G. If any policy of insurance required by this Section includes an "aggregate" limit, the aggregate limit shall be a project-specific limit applicable to work under this Contract only.
- H. Any policy of insurance required by this Section shall be an "occurrences" policy.
- I. In addition to any other remedy the District may have, if the Contractor or any of the subcontractors fail to maintain the insurance coverage as required in this Section, the District may obtain such insurance coverage as is not being maintained, in form and amount substantially the same as required herein, and the District may deduct the cost of such insurance from any amounts due or which may become due the Contractor under this Contract.
- J. In the event the Contractor changes any insurance company(ies) providing the insurance coverage required by this section, the Contractor shall timely resubmit to the District for review and approval, the insurance documents required by this section for each new insurance company providing insurance coverage. The Contractor shall submit such documents at least thirty (30) days prior to the change in any required insurance to enable the District to timely review and approve the insurance coverages provided by such new insurance company(ies).
- K. Insurance policies providing coverage which contains self-insured retention shall not be acceptable except with the prior written approval of the District regardless of the amount of the self-insured retention.

- L. The premiums paid by the Contractor and/or Subcontractor(s) for the insurance required by this section shall be considered as included in the Contract price for the project and no additional allowance will be made for payment of premiums which may be required to be paid by the Contractor and/or its Subcontractors in order to procure and maintain the requisite insurance coverage.
- M. (Not Used)
- N. (Not Used)
- O. The Contractor shall, at its expense, maintain in effect at all times during the performance or work under the Contract not less than the following coverage and limits of insurance, which shall be maintained with insurers and under forms of policy satisfactory to the District:
 - 1. Worker's Compensation:
 - a. California Workers' Compensation - Insurance to protect the Contractor or its Subcontractor(s) from all claims under California Worker's Compensation and Employer's Liability Acts). Such coverage shall be maintained, in type and amount, in strict compliance with all applicable State and Federal statutes and regulations. The Contractor shall execute a certificate in compliance with Labor Code Section 1861, on the form provided in the Contract Documents.
 - b. The Worker's Compensation policy shall also include the provisions and/or endorsements required in Other Provisions, Part 2.01.O.6.a of this Section.
 - c. Claims Against District - If an injury occurs to any employee of the Contractor or any of the Subcontractors for which the employee or his dependents, in the event of his death, may be entitled to compensation from the District under the provisions of the Acts, or for which compensation is claimed from the District, there will be retained out of the sums due the Contractor under this Contract, an amount sufficient to cover such compensation as fixed by the Acts, until such compensation is paid or it is determined that no compensation is due. If the District is required to pay such compensation, the amount paid will be deducted and retained from such sums due, or to become due the Contractor.
 - d. In the event the Contractor is self-insured, the Contractor shall furnish a Certificate of Permission to Self-Insure by the Department of Industrial Relations Administration of Self-Insurance, Sacramento.
 - 2. General Liability: The insurance shall include, but shall not be limited to, protection against claims arising from death, bodily or personal injury, or damage to property resulting from actions, failures to act, operations or equipment of the insured, or by its employees, agents, consultants, or by anyone directly or indirectly employed by the insured. Coverage shall be at least as broad as "Insurance Services Office (ISO) Commercial General Liability Coverage Form CG 0001" (occurrence). The amount of insurance shall not be less than \$5,000,000 combined single limit per occurrence coverage applying to bodily and personal injury and property damage. If the policy contains a general aggregate limit, such limit must be amended to apply separately to the project/location. The general liability insurance coverage shall also include the provisions and/or endorsements required in Other Provisions, Part 2.01.O.6.b of this Section.

3. Automobile Liability: The insurance shall include, but shall not be limited to, protection against claims arising from death, bodily or personal injury, or damage to property resulting from actions, failures to act, operations, maintenance or use of equipment of the insured, or by its employees, agents, consultants, or by anyone directly or indirectly employed by the insured. Coverage shall be at least as broad as "Insurance Services Office Business Auto Coverage Form CA 0001," symbol 1 (any auto). Use of any symbols other than symbol 1 for liability for corporate/business owned vehicles must be declared to and approved by the District. If there are no owned or leased vehicles, symbols 8 and 9 for non-owned and hired autos shall apply. Personal automobile insurance shall apply if vehicles are individually owned. The amount of insurance shall not be less than \$5,000,000 combined single limit per accident coverage for corporate-/business-owned or commercially insured vehicles, including non-owned and hired, applying to bodily and personal injury and property damage. The amount of insurance shall not be less than \$500,000 combined single limit per accident coverage for individually-owned vehicles, applying to bodily and personal injury and property damage, or if split limits are used, \$250,000 per person, \$500,000 each accident, \$100,000 property damage. Deductible shall not exceed \$20,000. The contractor shall request the District's approval in writing for any deductible exceeding that stated. The automobile liability insurance coverage shall also include the provisions and/or endorsements required in Other Provisions, Part 2.01.O.6.c of this Section.
4. Excess/Umbrella Liability: If the Contractor's primary General Liability and/or Automobile Liability insurance coverage limits requirements are insufficient, the Contractor may provide additional limits with an excess liability and/or umbrella liability insurance policy. This form of insurance will be acceptable only if the primary and excess liability and/or umbrella liability policies provide the required coverages and include the provisions and/or endorsements required for the policies that it supplements, and those required in Other Provisions, Part 2.01.O.6.d of this Section..
5. Builder's Risk: Section Not Used.
6. Other Provisions:
 - a. The Contractor's Workers Compensation policy shall provide that:
 - 1) Not Used
 - b. The Contractor's General Liability policy shall contain the following provisions:
 - 1) The South Tahoe Public Utility District, the design engineer(s), any independent engineer and its consultants, City of South Lake Tahoe, County of El Dorado and each of their officers, elected officials, and employees (including, without limitation permanent, temporary and contract employees) shall be covered as additional insureds as respects liability arising out of the acts or omissions by or on behalf of the Contractor, or premises owned, occupied, or used by the Contractor. The policy shall contain no special limitations on the scope of coverage afforded to the additional insureds.
 - 2) The Contractor's General Liability policy shall be specifically endorsed to name the parties identified in 1) as additional insureds utilizing ISO form CG 20 10 11 85, or both CG 20 10 10 01 and CG 20 37 10 01, or equivalent approved by the District, to provide

- additional insured coverage. Other versions of ISO forms CG 20 10 and CG 20 37 alone will not be considered equivalent.
- 3) The Contractor's General Liability policy shall be endorsed to include a waiver of subrogation in favor of the parties named on the "Additional Insured" endorsement. Such waiver of subrogation shall be on ISO Form CG 24 04 10 93 "Waiver of Transfer of Rights of Recovery Against Others to Us" or its equivalent approved by the District.
 - 4) For any claims related to this Contract, the Contractor's insurance coverage shall be primary insurance as respects the parties named on the additional insured endorsement. Any insurance or self-insurance maintained by the additional insureds shall be excess of the Contractor's insurance and shall not contribute with it. The contractor shall supply either an endorsement or policy language demonstrating compliance with this requirement.
 - 5) The Contractor's General Liability insurance policies shall contain an endorsement stating that any aggregate limits shall apply separately to the Work.
 - 6) 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.
 - 7) Any failure to comply with the claim reporting provisions of the policies or any breach of a policy warranty shall not affect coverage under the policy applicable to the Additional Insureds.
- c. The Contractor's Automobile Liability policy shall contain the following provisions:
- 1) The South Tahoe Public Utility District, the design engineer(s), any independent engineer and its consultants, City of South Lake Tahoe, County of El Dorado and each of their officers, elected officials, and employees (including, without limitation permanent, temporary and contract employees) shall be covered as additional insureds, utilizing ISO form CA 20 48 02/99 Designated Insured, or its equivalent approved by the District.
 - 2) This insurance shall be primary as respects the additional insureds and any other insurance maintained by the additional insureds named above shall be in excess of this insurance and shall not be called upon to contribute in the event of a loss.
 - 3) This insurance includes cross-liability and/or severability of interest and 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.
 - 4) This insurance, subject to all other terms and conditions, applies to the liability assumed by the Contractor under the terms of the Contract.
 - 5) The insurer waives any and all transfer rights of recovery (subrogation) it may have against the additional insureds named above or any other additional insureds.
 - 6) Any failure to comply with the claim reporting provisions of the policies or any breach of a policy warranty shall not affect coverage under the policy applicable to the Additional Insureds.

- d. The Contractor's Excess or Umbrella Liability policy shall provide the following provisions:
 - 1) Any insurance maintained by the Additional Insureds, whether primary, excess or otherwise, shall be in excess of the insurance provided by this policy.
 - 2) The policy shall include a Schedule of Underlying Insurance which matches the actual policy numbers and coverage limits in the actual underlying policies, and a total underlying coverage limit plus excess/umbrella limit equal to or greater than the required coverage limit for each type of coverage. The contractor shall request the District's approval in writing for any deductible.
 - 3) Any failure to comply with the claim reporting provisions of the policies or any breach of a policy warranty shall not affect coverage under the policy applicable to the Additional Insureds.
- e. The Contractor's Builders Risk policy shall contain the following provisions:
 - 1) Coverage is amended to include the South Tahoe Public Utility District as an additional insured and as the loss payee.
 - 2) For any claims related to this Contract, the Contractor's insurance coverage shall be primary insurance as respects the District. Any insurance or self-insurance maintained by the District shall be excess of the Contractor's insurance and shall not contribute with it.
 - 3) The insurer waives any and all transfer rights of recovery (subrogation) it may have against the South Tahoe Public Utility District.
 - 4) Any failure to comply with the claim reporting provisions of the policies or any breach of a policy warranty shall not affect coverage under the policy applicable to the Additional Insureds.
- f. Each insurance policy shall state that coverage shall not be cancelled by the Contractor or the District, reduced in scope of coverage or in limits, non-renewed, or otherwise materially changed unless the insurer(s) provide thirty (30) days written notice to the District prior to such change. Ten (10) days prior written notice shall be given to the District in the event of cancellation due to nonpayment of premium.

P. Tracking and Reporting Job-Related Incidents

- 1. The Contractor shall report by telephone to the District within twenty-four (24) hours and also provide a written report to the District within fifteen (15) days after the Contractor or any subcontractors or agents have knowledge of any incident involving death of or injury to any person or persons, or damage in excess of ten thousand dollars (\$10,000) to the Work, property of the District or others, arising out of any work done by or on behalf of the Contractor as part of the Contract. Such report shall contain:
 - a. the date and time of the incident,
 - b. the names and addresses of all persons involved, and
 - c. a description of the incident and the nature and extent of injuries and/or damages.
- 2. The Contractor and all Subcontractors shall cooperate with the District's independent investigatory efforts and provide the District with related documentation when requested (excluding confidential information restricted by law).

3. If requested, the Contractor shall report to the District their Recordable Incidence Rate (RIR) and Lost Time Incidence Rate (LTIR) at the end of each project. The Contractors' incidence rates shall be calculated in accordance with the following:
 - a. Recordable Incidence Rate (RIR)

$$\frac{\text{Number of OSHA Recordable Cases X 200,000}^*}{\text{Total hours worked by all employees for the Contract}}$$
 - b. Lost Time Incidence Rate (LTIR)

$$\frac{\text{Number of Lost Time injuries and illnesses X 200,000}^*}{\text{Total hours worked by all employees for the Contract}}$$

Note: A fatality shall not be considered a Lost Time Case (LTC) and shall not be included in the rate. Furthermore, all work-related fatalities, and all other serious injuries meeting the legal criteria for "reporting", shall be reported immediately to Cal/OSHA as required by law and reported immediately to the District as indicated above.

** 200,000 is equivalent to the number of work hours worked by 100 full time employees at 40 hours per week/50 weeks per year.*

2.02 SUBCONTRACTS

- A. The attention of the Contractor is directed to the provisions of Public Contract Code section 4100 et seq. regarding subcontracting.
- B. Each Subcontract shall contain a suitable provision for the suspension or termination should the work be suspended or terminated or should the Subcontractor neglect or fail to conform to every provision of the Contract Documents insofar as such provisions are relevant. No Subcontractor or supplier will be recognized as such, and all persons engaged in work will be considered as employees of the Contractor, and the Contractor will be held responsible for their work, which shall be subject to the provisions of the Contract Documents. The Contractor shall be fully responsible to the District for the acts or omissions of its Subcontractors and of the persons either directly or indirectly employed by the Contractor. Nothing contained in the Contract Documents shall create any contractual relationship between any Subcontractor and the District. If a legal action, including arbitration and litigation, against the District is initiated by a Subcontractor or Supplier, the Contractor shall reimburse the District for the amount of legal, engineering, and all other expenses incurred by the District in defending itself in said action.
- C. In addition to reviewing certified payroll records, the District and the Engineer reserve the right to audit the Contractor's employment and subcontractor agreements and related documents in order to verify the Contractor's compliance with the provisions of the California Labor Code and the Public Contract Code.
- D. The Contractor shall bind every subcontractor to the terms of the Contract Document as far as such terms are applicable to subcontractor's portion of the Work, and Contractor shall be responsible to the District for the acts and omissions of its subcontractors.

- E. Contractor shall perform not less than thirty percent (30%) of the total value of the Work excluding the value of materials and equipment with its own forces (i.e., without subcontracting). The 30 percent requirement shall be understood to refer to monetary value of the Work performed by Contractor, the value of which totals not less than 30 percent of the Contract Price excluding the value of materials and equipment.

END OF SECTION

SECTION 00 74 00

GRANT CONDITIONS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Added provisions to the conditions of the contract for compliance with the various State and Federal contract rules and regulations.
- B. Related Sections:
 - 1. 00 10 00, Solicitation-Invitation to Bid.
 - 2. 00 20 00, Instructions to Bidders.
 - 3. 00 41 00, Bid Forms.
 - 4. 00 52 00, Formal Contract.
 - 5. 00 61 00, Bond Forms.
 - 6. 00 72 00, General Conditions.
 - 7. 00 73 00, Supplementary Conditions.
 - 8. 00 75 00, Grant Forms
 - 9. 01 32 00, Construction Progress Documentation.
 - 10. 01 35 00, Special Procedures.
 - 11. 01 41 00, Regulatory Requirements.
 - 12. 01 77 00, Closeout Requirements.
- C. The conditions set forth in this Section are in addition to conditions set forth elsewhere in these Contract Documents. If the conditions set forth elsewhere are more stringent and/or restrictive, then those conditions shall prevail over the conditions set forth in this Section.

1.02 REFERENCES

- A. Davis-Bacon Wage Rate Determinations (attached)
- B. Implementation of American Iron and Steel provisions of P.L. 113-76, Consolidated Appropriations Act, 2014 (USEPA, March 20, 2014).
- C. State Water Resources Control Board "Guidelines for Meeting the California State Revolving Fund (CASRF) Loan Programs (Clean Water and Drinking Water SRF) Disadvantaged Business Enterprise (DBE) Requirements" (Revised September 2025).

PART 2 DESCRIPTION

2.01 [NOT USED]

2.02 DOMESTIC PREFERENCE

- A. As appropriate and to the extent consistent with law, the Contractor should, to the greatest extent practicable, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award.
1. Produced in the United States" means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.
 2. Manufactured products" means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber

2.03 DAVIS-BACON ACT PROVISIONS

- A. Contractor shall comply with the following provisions of the Davis-Bacon Act.
- “(1) Minimum wages.
- (i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the DB Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided that the employer's payroll records

accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the DB poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Sub recipients may obtain wage determinations from DOL's website, <https://sam.gov/>.

(ii)(A) The sub recipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the sub recipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the sub recipient (s) to the State award official. The State award official will transmit a completed conformance request form (SF-1444 or similar) and supporting materials to WHDCBACONFORMANCE_INCOMING@dol.gov and to the EPA DB Regional Coordinator concurrently. The DOL Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the sub recipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the sub recipient (s) to the State award official. The State award official will transmit a completed conformance request form (SF-1444 or similar) which indicates the State award official's disagreement and supporting materials to WHD- CBACONFORMANCE_INCOMING@dol.gov

and to the EPA DB Regional Coordinator concurrently. The DOL Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the DB Act have been met. The Secretary of Labor may require the contractor to set aside assets in a separate account for the meeting of obligations under the plan or program.

(2) Withholding. The sub recipient(s), shall upon written request of the EPA Award Official or an authorized representative of the DOL, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to DB prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the EPA may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the DB Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor

has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the DB Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the sub recipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the sub recipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead, the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division website at <http://www.dol.gov/whd/forms/wh347instr.htm> or its successor site.

The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker and shall provide them upon request to the sub recipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the DOL for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sub recipient(s).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of

Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the EPA or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated

above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be

permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may be appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with DB and Related Act requirements. All rulings and interpretations of the DB and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the DOL set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and sub recipient(s), State, EPA, DOL, or the employees or their representatives.

(10) Certification of eligibility. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the DB Act or 29 CFR 5.12(a)(1).

No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the DB Act or 29 CFR 5.12(a)(1).

The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001."

- B. Contract Work Hours and Safety Standards Act. For any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act, the following clauses shall be included, in addition

to the clauses required by Part A, above. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

“ (1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (a)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of \$29 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The sub recipient, upon written request of the EPA Award Official or an authorized representative of the DOL, shall withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (a)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.”

- C. For any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in Sec. 5.1, the following shall be required in addition to the clauses in Part A, above:

“the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Sub recipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the EPA and the DOL, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.”

D. Wage Rate Determinations.

1. The Contractor shall, at a minimum, pay wages and benefits consistent with the determinations for the applicable classifications and groups, as set forth in current versions of the Davis Bacon Act Wage Determinations.
 - a. These rates shall be applicable for the term of the Contract. A copy of the General Decision listing the minimum rates to be paid by labor classification is attached to this Section.
 - b. If the California Prevailing Wage rate for a given classification is greater than the wage rate set in the General Decision identified in 1. (above) at the time the work is performed, then the minimum wage paid shall be consistent with the California Prevailing Wage rate.

- E. Compliance Verification: The Contractor and its subcontractors shall cooperate with the District and not hinder its performance of periodic interviews of a sufficient number of employees entitled to Davis Bacon prevailing wages (covered employees), its review of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates, and its review of apprentice and trainee programs, if applicable. The Contractor is required to Certified Payroll to the District on a weekly basis.

2.04 DISADVANTAGED BUSINESS ENTERPRISES (DBE) REQUIREMENTS

- A. Compliance with the most recent requirements of the Bureau of Reclamation § 200.321 “Contracting with small businesses, minority businesses, women’s business enterprises, veteran-owned businesses, and labor surplus area firms” and completion of the applicable forms identified below and included in Section 00 75 00 of these Specifications together satisfy the Disadvantaged Business Enterprise (DBE) requirements for this construction contract. Failure to take the six (6) Good Faith Efforts prior to bid opening may cause the bid to be rejected as a non-responsive bid.
1. When possible, the recipient or subrecipient should ensure that small businesses, minority businesses, women’s business enterprises, veteran-owned businesses, and labor surplus area firms (See U.S. Department of Labor’s list) are considered as set forth below.
 2. Such consideration means:
 - a. These business types are included on solicitation lists;

- b. These business types are solicited whenever they are deemed eligible as potential sources;
 - c. Dividing procurement transactions into separate procurements to permit maximum participation by these business types;
 - d. Establishing delivery schedules (for example, the percentage of an order to be delivered by a given date of each month) that encourage participation by these business types;
 - e. Utilizing organizations such as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce; and
 - f. Requiring a contractor under a Federal award to apply this section to subcontracts.
- B. Documentation by the Bidder of the steps taken to complete the six (6) Good Faith Efforts is required. This documentation should include mail logs, phone logs, electronic searches and communication, newspaper clippings or similar records documenting the use of the above identified sources of information about DBEs, the prime contractor's efforts to contact them, and other efforts to meet the Good Faith Effort six step requirements.
- C. The following steps, at a minimum, shall be performed and documented in support of the Good Faith Effort (GFE). If any of the following steps are not performed and documented then the District may find the Contractor non-responsive, and the Bid may be rejected.
- 1. Utilize the services of the SBA and/or MBDA to advertise the project approximately 30 calendar days prior to the bid date, and provide proof of advertisement (date/time). If the resources of the SBA and MBDA are unresponsive or unavailable for advertising the project, and the Contractor provides verifiable documentation that a good-faith effort was made to use these services in advance of the 30 day goal, then the Contractor may substitute for this requirement advertisement in other publications or online resources that serve the disadvantaged business community (such as the CalTrans Unified Certification Program). Proof of a minimum of one verifiable advertisement is required.
 - 2. Record efforts to contact DBEs for solicitation (and DBE responses) on Form 1. Provide District with a copy of the solicitation / invite to bid and record the list of recipients on Form 1.
 - 3. Not Used.
 - 4. Not Used.
 - 5. Identify all subcontractors, suppliers and brokers from which bids were received for the Work, DBEs and non-DBEs included, and provide all information requested on Form 5.

6. Except as indicated in Section 00 75 00, GFE supporting documentation must be provided at District request within the time frame indicated in Section 00 20 00, Part 2.06.

- D. Under the DBE Program, entities can no longer self-certify and contractors and sub-contractors must be certified at bid opening.
- E. For the duration of the Contract, the Contractor and all subcontractors will be required to report progress made in fulfilling the GFE in semi-annual reports to the District, including but not limited to DBE utilization reporting. The District will provide forms and instructions for reporting their GFEs. Contractor shall provide these forms, including but not limited to DBE Subcontractor Participation Form 4500-2, to any selected DBE subcontractors or suppliers. Failure to provide this information as stipulated will be cause for termination of the Contract.
- F. The District accepts the Fair Share Goals negotiated with US EPA by the State Water Resources Control Board for Safe Drinking Water State Revolving Fund Projects for Minority Business Enterprises (MBE) and Women’s Business Enterprises (WBE) listed in the following table. Under the program, the District cannot be penalized for not meeting its fair share objectives. The Contractor, likewise, affirms the acceptance of these Fair Share Goals and cannot be penalized for not meeting its fair share objectives.

PROCUREMENT CATEGORY	MBE PARTICIPATION GOAL	WBE PARTICIPATION GOAL
Construction	11%	4%
Supplies	2%	1%
Services	4%	2%
Equipment	2%	2%

2.05 LABOR COMPLIANCE

- A. Each CONTRACTOR having a contract containing the provisions prescribed in Section 202 of Executive Order 11246 shall file, and shall cause each of his subcontractors to file, Compliance Reports with the contracting agency or the Secretary of Labor as may be directed. Compliance Reports shall be filed within such times and shall contain such information as to the practices, policies, programs, and employment policies, programs, and employment statistics of the CONTRACTOR and each subcontractor, and shall be in such form, as the Secretary of Labor may prescribe.
- B. Bidders or prospective CONTRACTORs or subcontractors may be required to state whether they have participated in any previous contract subject to the provisions of this Order, or any preceding similar Executive order, and in that event to submit, on behalf of themselves and their proposed subcontractors, Compliance Reports prior to or as an initial part of their bid or negotiation of a contract.
- C. Whenever the CONTRACTOR or subcontractor has a collective bargaining agreement or other contract or understanding with a labor union or an agency

referring workers or providing or supervising apprenticeship or training for such workers, the Compliance Report shall include such information as to such labor union's or agency's practices and policies affecting compliance as the Secretary of Labor may prescribe: Provided, That to the extent such information is within the exclusive possession of a labor union or an agency referring workers or providing or supervising apprenticeship or training and such labor union or agency shall refuse to furnish such information to the CONTRACTOR, the CONTRACTOR shall so certify to the contracting agency as part of its Compliance Report and shall set forth what efforts he has made to obtain such information.

- D. The contracting agency or the Secretary of Labor may direct that any bidder or prospective CONTRACTOR or subcontractor shall submit, as part of his Compliance Report, a statement in writing, signed by an authorized officer or agent on behalf of any labor union or any agency referring workers or providing or supervising apprenticeship or other training, with which the bidder or prospective CONTRACTOR deals, with supporting information, to the effect that the signer's practices and policies do not discriminate on the grounds of race, color, creed, or national origin, and that the signer either will affirmatively cooperate in the implementation of the policy and provisions of this Order or that it consents and agrees that recruitment, employment, and the terms and conditions of employment under the proposed contract shall be in accordance with the purposes and provisions of the Order. In the event that the union or the agency shall refuse to execute such a statement, the Compliance Report shall so certify and set forth what efforts have been made to secure such a statement and such additional factual material as the contracting agency or the Secretary of Labor may require.

2.06 NON-DISCRIMINATION AND CIVIL RIGHTS

- A. Contractors and subcontractors must comply with the following federal nondiscrimination requirements:
 - 1. California Government Code Section 11135 states that no person in the State of California shall, on the basis of sex, race, color, religion, ancestry, national origin, ethnic group identification, age, mental disability, physical disability, medical condition, genetic information, marital status, or sexual orientation, be unlawfully denied full and equal access to the benefits of, or be unlawfully subjected to discrimination under, any program or activity that is conducted, operated, or administered by the state or by any state agency, is funded directly by the state or receives any financial assistance from the state.
 - 2. Contractors and subcontractors must not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, sexual orientation, physical disability (including HIV and AIDS), mental disability, medical condition (cancer), age (over 40), marital status, denial of family care leave, or genetic information, gender, gender identity, gender expression, or military and veteran status. Contractors and subcontractors must ensure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment.
 - 3. Contractors and subcontractors must ensure that the evaluation and treatment of their employees and applicants for employment are free from discrimination and harassment.

4. Contractors and subcontractors must comply with all applicable federal civil rights regulations, including statutory and national policy requirements. (2 CFR § 200.300). This includes, to the greatest extent practicable and to the extent permitted by law, the requirement to respect and protect the freedom of persons and organizations to engage in political and religious speech. (Executive Order 13798).
 5. Contractors and subcontractors must provide written notice to collective bargaining units
 6. Title VI of the Civil Rights Act of 1964, which prohibits discrimination based on race, color, and national origin, including limited English proficiency (LEP).
 7. Section 504 of the Rehabilitation Act of 1973, which prohibits discrimination against persons with disabilities.
 8. The Age Discrimination Act of 1975, which prohibits age discrimination.
 9. Section 13 of the Federal Water Pollution Control Act Amendments of 1972, which prohibits discrimination based on sex.
 10. 40 CFR Part 7, as it relates to the foregoing.
 11. Title IX of the Education Amendments of 1972, which prohibits discrimination under any education program based on sex.
 12. Fair Housing Act, Fair Credit Reporting Act, Equal Educational Opportunities Act, Uniform Relocation Act.
- B. During the performance of this contract, the contractor agrees as follows:
1. The contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.
 2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.
 3. The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with Contractor's legal duty to furnish information.

4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
5. The contractor will comply with all provisions of Executive Order No. 11246 of Sept. 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
6. The contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
7. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of Sept 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
8. The contractor will include the provisions of Paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of Sept. 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, That in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

2.07 41 CFR 60-4.2 - CONSTRUCTION CONTRACTORS--AFFIRMATIVE ACTION REQUIREMENTS (in relevant part)

Notice of requirement for Affirmative Action to ensure Equal Employment Opportunity (EEO) by Executive Order 11246, as amended by Executive Order 11375.

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the CONTRACTOR's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Time- tables	Goals for minority participation for each trade	Goals for female participation for each trade
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The Office of Federal Contract Compliance Programs' web site for compliance issues and preaward registry is at <http://www.dol.gov/esa/welcome>.

These goals are applicable to all the CONTRACTOR's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the CONTRACTOR performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the CONTRACTOR also is subject to the goals for both its federally involved and non-federally involved construction.

The CONTRACTOR's compliance with the Executive Order and the regulations in 41 CFR Part 60 4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60 4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the CONTRACTOR shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from CONTRACTOR to CONTRACTOR or from project to project for the sole purpose of meeting the CONTRACTOR's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60 4. Compliance with the goals will be measured against the total work hours performed.

3. The CONTRACTOR shall provide written notification to the Director of the Office of Federal Contract Compliance Programs (notify the applicable Regional Office found at www.dol.gov/esa) within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.
4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is (insert description of the geographical areas where the contract is to be performed giving the state, county and city, if any).

§ 60 4.3 Equal opportunity clauses (in relevant part)

Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246)

1. As used in these specifications:
 - a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

- b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
 - c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
 - d. "Minority" includes:
 - 1) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - 2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - 3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - 4) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
5. Whenever the CONTRACTOR, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
6. If the CONTRACTOR is participating (pursuant to 41 CFR 60 4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. CONTRACTORS must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each CONTRACTOR or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other CONTRACTORS or Subcontractors toward a goal in an approved Plan does not excuse any covered CONTRACTOR's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
7. The CONTRACTOR shall implement the specific affirmative action standards provided in paragraphs 7 a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the CONTRACTOR should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction CONTRACTORS performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be

obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The CONTRACTOR is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

8. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the CONTRACTOR has a collective bargaining agreement, to refer either minorities or women shall excuse the CONTRACTOR's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.
9. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the CONTRACTOR during the training period, and the CONTRACTOR must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
10. The CONTRACTOR shall take specific affirmative action's to ensure equal employment opportunity. The evaluation of the CONTRACTOR's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The CONTRACTOR shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
 - e. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the CONTRACTOR's employees are assigned to work. The CONTRACTOR, where possible, will assign two or more women to each construction project. The CONTRACTOR shall specifically ensure that all foremen, superintendents, and other on site supervisory personnel are aware of and carry out the CONTRACTOR's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - f. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the CONTRACTOR or its unions have employment opportunities available, and maintain a record of the organizations' responses.
 - g. Maintain a current file of the names, addresses and telephone numbers of each minority and female off the street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the CONTRACTOR by the union or, if referred, not employed by the CONTRACTOR, this shall be documented in the file with the reason therefore, along with whatever additional actions the CONTRACTOR may have taken.
 - h. Provide immediate written notification to the Director when the union or unions with which the CONTRACTOR has a collective bargaining agreement has not referred to the CONTRACTOR a minority person or woman sent by the CONTRACTOR, or when the CONTRACTOR has

other information that the union referral process has impeded the CONTRACTOR's efforts to meet its obligations.

- i. Develop on the job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the CONTRACTOR's employment needs, especially those programs funded or approved by the Department of Labor. The CONTRACTOR shall provide notice of these programs to the sources compiled under 7b above.
- j. Disseminate the CONTRACTOR's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the CONTRACTOR in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- k. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- l. Disseminate the CONTRACTOR's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the CONTRACTOR's EEO policy with other CONTRACTORs and Subcontractors with whom the CONTRACTOR does or anticipates doing business.
- m. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the CONTRACTOR's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the CONTRACTOR shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- n. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a CONTRACTOR's work force.
- o. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60 3.
- p. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and

- encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
- q. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the CONTRACTOR's obligations under these specifications are being carried out.
 - r. Ensure that all facilities and company activities are Non-Segregated except that separate or single user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
 - s. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction CONTRACTORs and suppliers, including circulation of solicitations to minority and female CONTRACTOR associations and other business associations.
 - t. Conduct a review, at least annually, of all supervisors' adherence to and performance under the CONTRACTOR's EEO policies and affirmative action obligations.
11. CONTRACTORs are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a CONTRACTOR association, joint CONTRACTOR union, CONTRACTOR community, or other similar group of which the CONTRACTOR is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the CONTRACTOR actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the CONTRACTOR's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the CONTRACTOR. The obligation to comply, however, is the CONTRACTOR's and failure of such a group to fulfill an obligation shall not be a defense for the CONTRACTOR's noncompliance.
12. A single goal for minorities and a separate single goal for women have been established. The CONTRACTOR, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non minority. Consequently, the CONTRACTOR may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the CONTRACTOR has achieved its goals for women generally, the CONTRACTOR may be in violation of the Executive Order if a specific minority group of women is underutilized).
13. The CONTRACTOR shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
14. The CONTRACTOR shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
15. The CONTRACTOR shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be

imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any CONTRACTOR who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

16. The CONTRACTOR, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the CONTRACTOR fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60 4.8.
17. The CONTRACTOR shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, CONTRACTORS shall not be required to maintain separate records.
18. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

2.08 ELIMINATION OF SEGREGATED FACILITIES - NOTICE TO PROSPECTIVE FEDERALLY-ASSISTED CONSTRUCTION CONTRACTORS

- A. A Certification of Non-Segregated Facilities, as required by the May 9, 1967, Order (32 F.R. 7439, May 19, 1967) on Elimination of Segregated Facilities, by the Secretary of Labor, must be submitted prior to the award of a Federally-assisted construction contract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity Clause.
- B. CONTRACTORS receiving Federally-assisted construction contract awards exceeding \$10,000 which, are not exempt from the provisions of the Equal Opportunity Clause, will be required to provide for the forwarding of the following notice to prospective subcontractors for supply and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity Clause.

NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENT FOR CERTIFICATION OF NON-SEGREGATED FACILITIES

- a. A Certification of Non-Segregated Facilities, as required by the May 9, 1967 Order (32 F.R. 7439, May 19, 1967) on Elimination of Segregated Facilities, by the Secretary of Labor, must be submitted prior to the award of a subcontract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity Clause.
- b. CONTRACTORS receiving subcontract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause will be required to provide for the forwarding of this notice to prospective subcontractors for supply and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity Clause.

2.09 EXCLUSIONS, DEBARMENT AND SUSPENSION

The District may not contract or allow subcontracting with any party who is debarred or suspended or otherwise excluded from or ineligible for participation in any work overseen, directed, funded, or administered by the federal government entity for which this funding is authorized. This District must not contract with any individual or organization on the that are identified as debarred or suspended or otherwise excluded from or ineligible for participation in any work overseen, directed, funded, or administered by the federal program for which funding under this Agreement is authorized. The District will review SAM.gov for debarred, suspended, or excluded individuals and businesses. The Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion Certification contained in this package is required to do business with the District.

2.10 SUBMITTING OF BIDS AND AGREEING TO ASSIGN

- A. GOVERNMENT CODE SECTION 4552 (in relevant part)
 1. In submitting a bid to a public purchasing body, the bidder offers and agrees that if the bid is accepted, it will assign to the purchasing body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S. C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, materials, or services by the bidder for sale to the purchasing body pursuant to the bid. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the bidder. (1978)

2.11 AUDIT, INSPECTION AND RECORDKEEPING

- A. The District may be subject to examination and audit, with respect to all matters connected with the performance of the project, by State Water Board, California State Auditor (Government Code Section 8546.7), Bureau of State Audits, the USEPA and the USEPA's Office of Inspector General, the Internal Revenue Service, the Governor, any federal, state, or local funding source, or any authorized representatives of the aforementioned. The District must retain books, records, and other materials for itself and each contractor or subcontractor who performed or performs work on this project for a minimum of three years after the final closeout of the funding agreement. This District requires that any contractor or subcontractor

allow interviews with any employees who might reasonably have information related to such records during normal business hours.

- B. The District may, at any time, and from time to time, during the performance of the work, enter the work site for the purpose of meeting, audit, inspection, and recordkeeping requirements. The funding agency and the District shall have the right, but not the duty, to inspect the work being performed on the project at any and all reasonable times during the term of the funding agreement. This right extends to the inspection of any portion of the project under control of the contractor and/or their subcontractors.
- C. At any and all reasonable times during the term of the funding agreement, the District and the funding agency shall have the right to inspect and to make copies of any books, records, or reports pertaining to the funding agreement. The District must maintain and make available records of all its costs, disbursements, and receipts with respect to its activities under the funding agreement.
- D. Contractors and subcontractors are required to maintain books, records, and other documents pertinent to their work on the project in accordance with Generally Accepted Accounting Principles.
- E. The Bureau of Reclamation, as a funder of the work performed under this contract, has the right to inspect and evaluate the work, and the premises where the work is being performed, at all reasonable times and in a manner that will not unduly delay the work. The District will facilitate these inspections with the contractor to ensure minimal disruption, and the contractor and subcontractor shall furnish all reasonable facilities and assistance for the safe and convenient performance of these duties.

2.12 CLEAN WATER ACT AND CLEAN AIR ACT PROCUREMENT PROHIBITIONS

- A. Procurement Prohibitions under Section 306 of the Clean Air Act and Section 508 of the Clean Water Act, including Executive Order 11738, Administration of the Clean Air Act and the Federal Water Pollution Control Act with Respect to Federal Contracts, Grants, or Loans; 42 USC § 7606; 33 USC § 1368. Except where the purpose of this Agreement is to remedy the cause of the violation, the Contractors may not procure goods, services, or materials from suppliers excluded under the federal System for Award Management: sam.gov. Contractors must ensure that the procurement, receipt, and payment for goods and services comply with Federal statutes, regulations, and the terms and conditions in this contract.

2.13 TRAFFICKING IN PERSONS

- A. The Contractor, subcontractor and their employees may not engage in severe forms of trafficking in persons during the term of this Contract, procure a commercial sex act during the term of this Contract, or use forced labor in the performance of this Contract.

2.14 DRUG-FREE WORKPLACE

- A. No person, other than an individual, shall receive a grant or provide contract services for any Federal agency unless such person agrees to provide a drug-free workplace by:
1. publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violations of such prohibition;
 2. establishing a drug-free awareness program to inform employees about:
 - a. the dangers of drug abuse in the work- place;
 - b. the grantee's policy of maintaining a drug-free workplace;
 - c. any available drug counseling, rehabilitation, and employee assistance programs; and
 - d. the penalties that may be imposed upon employees for drug abuse violations;
 3. making it a requirement that each employee to be engaged in the performance of such grant be given a copy of the statement required by Part A.1.
 4. notifying the employee in the statement required by Part A.1 that as a condition of employment in such grant, the employee will:
 - a. abide by the terms of the statement; and
 - b. notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than 5 days after such conviction;
 5. notifying the granting agency within 10 days after receiving notice of a conviction under Part A.4.b from an employee or otherwise receiving actual notice of such conviction;
 6. imposing a sanction on, or requiring the satisfactory participation in a drug abuse assistance or rehabilitation program by, any employee who is so convicted, as required by section 703 of this title; and
 7. making a good faith effort to continue to maintain a drug-free workplace through implementation of Parts A.1 to 7.

2.15 LOBBYING

- A. Contractor must certify that no federal funds have or will be paid to persons to influence the funding decision (lobby) for the proposal that is being submitted for consideration.
1. No federal appropriated funds have been paid or will be paid by the District to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement..

2. If any funds other than federal appropriated funds have been paid or will be paid to any person (other than a regularly employed officer or employee of the applicant) for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, the Contractor shall request, complete, and submit Standard Form LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.
3. The language of this certification shall be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

2.16 CONFLICT OF INTEREST

- A. The Contractor must maintain written standards of conduct covering conflicts of interest and governing the actions of its employees engaged in the selection, award and administration of contracts and subcontracts. No employee, officer, or agent may participate in the selection, award, or administration of a contract and subcontract supported by a Federal award if he or she has a real or apparent conflict of interest. Such a conflict of interest would arise when the employee, officer, or agent, any member of his or her immediate family, his or her partner, or an organization which employs or is about to employ any of the parties indicated herein, has a financial or other interest in or a tangible personal benefit from a firm considered for a contract or subcontract. The officers, employees, and agents of the Contractor may neither solicit nor accept gratuities, favors, or anything of monetary value from contractors or parties to subcontracts. However, the Contractor may set standards for situations in which the financial interest is not substantial or the gift is an unsolicited item of nominal value. The standards of conduct must provide for disciplinary actions to be applied for violations of such standards by officers, employees, or agents of the Contractor.
- B. By submitting this bid, the Contractor and subcontractors certify that its owners, officers, directors, agents, representatives, and employees are in compliance with applicable state and federal conflict of interest laws. Contractors must disclose in writing any potential conflicts of interest to the District.

2.17 ENVIRONMENTAL COMPLIANCE AND CULTURAL RESOURCES

- A. Work that is subject to CEQA, NEPA, or TRPA regulations may not proceed without environmental clearance from the District. As directed by the District, Contractor and Subcontractors will comply with:
 1. Provisions of and compliance with any adopted environmental mitigation plan.
 2. In compliance with 36 CFR 800 and Section 106 of the National Historic Preservation Act, if a potential historic property or cultural resource is discovered during construction, the Contractor must cease work in the area and take all reasonable measures to avoid or minimize harm to the

discovered property/resource. During construction, the contractor will monitor ground disturbance activity, and if any potential archeological resources are discovered, will immediately cease work in that area, and contact the District. Construction in the area may only resume with the District's written approval.

3. In the event of the discovery of human remains during construction, the Contractor must cease construction and take other action required by any applicable laws, which may include but are not limited to Health and Safety Code, section 7050.5 and Public Resources Code, section 5097.98.
4. [NOT USED]

B. As directed by the District, Contractor and Subcontractors will comply with the following federal cross-cutters:

1. Archeological and Historic Preservation Act (54 U.S.C. §§ 312501-312508);
2. Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668-668c);
3. Clean Air Act (42 U.S.C. § 7401);
4. Coastal Barriers Resources Act (16 U.S.C. § 3501 et seq.);
5. Coastal Zone Management Act (16 U.S.C. § 1451 et seq.);
6. Endangered Species Act (16 U.S.C. § 1531 et seq.);
7. Environmental Justice (Executive Order 12898);
8. Farmland Protection Policy Act (7 U.S.C. § 4201 et seq.);
9. Fish and Wildlife Coordination Act (16 U.S.C. § 661 et seq.);
10. Floodplain Management (Executive Order 11988, as amended by Executive Orders 12148 and 13690);
11. Historic Sites Act (54 U.S.C. § 320101 et seq.);
12. Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.);
13. Marine Mammal Protection Act (16 U.S.C. § 1361 et seq.);
14. Migratory Bird Treaty Act (16 U.S.C. § 703 et seq.);
15. National Historic Preservation Act (54 U.S.C. §§ 300101 et seq.);
16. Protection of Wetlands (Executive Order 11990 (1977), as amended by Executive Order 12608 (1997); q. Rivers and Harbors Act (33 U.S.C. § 403 et seq.);
17. Safe Drinking Water Act (42 U.S.C. § 300f et seq.);
18. Wild and Scenic Rivers Act (16 U.S.C. § 1271 et seq.);
19. Wilderness Act (16 U.S.C. § 1131 et seq.

2.18 ADDITIONAL FEDERAL REQUIREMENTS AND 2 CFR 200 REQUIRED PROVISIONS

The terms, conditions, and requirements of the District's Bureau of Reclamation Federal Financial Assistance (the "Funding Agreements") are incorporated into this Contract by reference. Copies of the Funding Agreements are available upon request. Contractor shall comply with all requirements in and arising out of the Funding Agreements, and all federal requirements applicable to this Contract, including but not limited to the provisions listed in this Exhibit.

Contractor shall comply with 2 CFR 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, which is expressly incorporated herein by

reference. The full text is available at: <https://www.ecfr.gov/current/title-2/subtitle-A/chapter-II/part-200?toc=1>

Compliance with the following provisions provided herein is mandatory. Failure to comply may constitute a material breach of contract.

Appendix II to Part 200 (A) - Remedies.

The Parties shall comply with the administrative, contractual, or legal remedies in the Contract Documents when Contractor violates or breaches the Contract terms and shall comply with the applicable sanctions and penalties as appropriate in the Contract Documents.

Appendix II to Part 200 (B) - Termination for Cause/Convenience.

The Parties shall comply with the termination for cause provision and the termination for convenience provision in the Contract Documents.

Appendix II to Part 200 (C) – Equal Employment Opportunity.

- A. Since the Contract meets the definition of a “federal assisted construction contract” in 41 CFR 60-1.3, Contractor agrees as follows during the performance of the Contract:
1. Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor agrees to post in conspicuous places available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.
 2. Contractor will, in all solicitations or advertisements for employees placed by or on behalf of Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
 3. Contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with Contractor's legal duty to furnish information.
 4. Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided by the agency contracting officer, advising the labor union or workers'

representative of Contractor's commitments under section 202 of Executive Order 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

5. Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
6. Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
7. In the event of Contractor's non-compliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
8. Contractor will include the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. Contractor will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions including sanctions for noncompliance:
 - A. Provided, however, that in the event Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, Contractor may request the United States to enter into such litigation to protect the interests of the United States.
 - B. District further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, that if District so participating is a state or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the Construction Contract.
 - C. District agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of Contractor and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.
 - D. District further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and

federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, District agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: cancel, terminate, or suspend in whole or in part the grant (contract, loan, insurance, guarantee) for this project; refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

Appendix II to Part 200 (D), (E) – Davis-Bacon Act; Contract Work Hours and Safety Standards Act.

Contractor shall comply with the Davis-Bacon Act (40 U.S.C. 3141–3148), the Copeland Anti-Kickback Act (40 U.S.C. 3145), and the Contract Work Hours and Safety Standards Act (40 U.S.C. 3701–3708), as applicable. These labor standards provisions required by Appendix II to 2 CFR 200 are set forth in Exhibit B: Federal Labor Standards, which are incorporated herein by reference and made part of this Contract.

Appendix II to Part 200 (F) – Rights to Inventions Made Under a Contract or Agreement.

This provision is not applicable to the Contract.

Appendix II to Part 200 (G) – Clean Air Act and Federal Water Pollution Control Act.

- A. Contractor shall comply with the following:
1. Pursuant to the Clean Air Act, (1) Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq., (2) Contractor agrees to report each violation to District and understands and agrees that District will, in turn, report each violation as required to assure notification to the Federal awarding agency and the appropriate Environmental Protection District Regional Office, and (3) Contractor agrees to include these requirements in each subcontract exceeding \$150,000.
 2. Pursuant to the Federal Water Pollution Control Act, (1) Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq., (2) Contractor agrees to report each violation to District and understands and agrees that District will, in turn, report each violation as required to assure notification to the Federal awarding agency and the appropriate Environmental Protection Agency Regional Office, and (3) Contractor agrees to include these requirements in each subcontract exceeding \$150,000.

Appendix II to Part 200 (H) – Debarment and Suspension.

- A. This Contract is a covered transaction for purposes of 2 CFR 180 and 2 CFR 3000 regarding federal regulations governing non-procurement debarment and suspension.

As such Contractor is required to verify that none of Contractor's principals (defined at 2

MARCH 2026
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SECTION 00 74 00
GRANT CONDITIONS

CFR 180.995) or its affiliates (defined at 2 CFR 180.905) are excluded (defined at 2 CFR § 180.940) or disqualified (defined at 2 CFR § 180.935).

- B. Contractor must comply with 2 CFR 180, subpart C and 2 CFR 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.
- C. This certification is a material representation of fact relied upon by District. If it is later determined that Contractor did not comply with 2 CFR 180, subpart C and 2 CFR 3000, subpart C, in addition to remedies available to District, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
- D. Contractor agrees to comply with the requirements of 2 CFR 180, subpart C and 2 CFR 3000, subpart C throughout the Contract. Contractor further agrees to include a provision requiring such compliance in its subcontracts.
- E. Contractor warrants that it is not debarred, suspended, or otherwise excluded from or ineligible for participation in any federal programs. Contractor also agrees to verify that all subcontractors performing work under this Contract are not debarred, disqualified, or otherwise prohibited from participation in accordance with the requirements above. Contractor further agrees to notify District in writing immediately if Contractor or its subcontractors are not in compliance during the term of this Contract.
- F. The District will not award a contract to parties listed on the government exclusions in the System for Award Management (<https://sam.gov/entity-information>). As such, Contractor is required to verify that none of Contractor's principles or subcontractors are excluded.

Appendix II to Part 200 (I) – Byrd Anti-Lobbying Act:

Contractors that apply or bid for an award exceeding \$100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the District who in turn will forward the certification(s) to the awarding agency. The Lobbying Certification and Standard Form-LLL, "Disclosure Form to Report Lobbying" are included in the Exhibit C: Grant Forms section of this package.

Appendix II to Part 200 (J) – §200.323 Procurement of Recovered Materials.

- A. Contractor shall comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity

acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement.

- B. In the performance of this Contract, Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired: competitively within a timeframe providing for compliance with the contract performance schedule; meeting contract performance requirements; or at a reasonable price.
- C. Information about this requirement, along with the list of EPA-designate items, is available at EPA's Comprehensive Procurement Guidelines website, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.
- D. Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.

Appendix II to Part 200 (K) – §200.216 Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment:

- A. Contractor shall not contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system funded under this Contract. As described in Public Law 115–232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).
 - 1. For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).
 - 2. Telecommunications or video surveillance services provided by such entities or using such equipment.
 - 3. Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.
- B. See Public Law 115-232, section 889 for additional information.

Appendix II to Part 200 (L) – §200.322 Domestic Preferences for Procurement.

- A. Contractor shall, to the greatest extent practicable, purchase, acquire, or use goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subcontracts.
- B. For purposes of this section:

1. “Produced in the United States” means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.
2. “Manufactured products” means items and construction materials composed in whole or in part of nonferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

2.19 RIGHTS IN DATA

- A. All data, plans, drawings, specifications, reports, computer programs, operating manuals, notes, and other written or graphic work produced in the performance of this Agreement are subject to the rights of the District and the project funder. The District and the funder shall have the right to reproduce, publish, and use all such work, or any part thereof, in any manner and for any purposes whatsoever and to authorize others to do so.

2.20 [NOT USED]

2.21 [NOT USED]

2.22 [NOT USED]

2.23 [NOT USED]

2.24 VIDEO SURVEILLANCE AND TELECOMMUNICATIONS EQUIPMENT

- A. Contractor and subcontractors certify that no Project Funds will be used on:
 1. Video surveillance or telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities), telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities);
 2. Telecommunications or video surveillance services produced by such entities;
 3. Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country; or
 4. Other telecommunications or video surveillance services or equipment in violation of 2 CFR 200.216.

2.25 [NOT USED]

2.26 [NOT USED]

2.27 FAIR EMPLOYMENT AND HOUSING ACT

- A. Contractors, and subcontractors must comply with the provisions of the Fair Employment and Housing Act and the applicable regulations promulgated thereunder. (Gov. Code, §12990, subds. (a)-(f) et seq.; Cal. Code Regs., tit. 2, § 7285 et seq.) Such regulations are incorporated into this Agreement by reference and made a part hereof as if set forth in full.

2.28 CONTRACTOR EMPLOYEE WHISTLEBLOWER RIGHTS (NOV 2023)

- A. This contract and employees working on this contract will be subject to the whistleblower rights and remedies established at 41 U.S.C. 4712 and Federal Acquisition Regulation (FAR) 3.900 through 3.905.
- B. The Contractor shall inform its employees in writing, in the predominant language of the workforce, of employee whistleblower rights and protections under 41 U.S.C. 4712, as described in FAR 3.900 through 3.905.
- C. The Contractor shall insert the substance of this clause, including this paragraph C, in all subcontracts.

2.29 PROHIBITION OF FUNDS TO THE ENEMY

- A. The Contractor must exercise due diligence to ensure that none of the funds, including supplies and services, received under this contract are provided directly or indirectly (including through subcontracts) to a person or entity who is actively opposing the United States or coalition forces involved in a contingency operation in which members of the Armed Forces are actively engaged in hostilities, which must be completed through 2 CFR 180.300 prior to issuing a subaward or contract. In addition to any other existing examination-of-records authority, the Federal Government, facilitated by the District, is authorized to examine any records of the contracts to the extent necessary to ensure that funds, including supplies and services, available under this grant or cooperative agreement are not provided, directly or indirectly, to a person or entity that is actively opposing United States or coalition forces involved in a contingency operation in which members of the Armed Forces are actively engaged in hostilities, except for awards awarded by the Department of Defense on or before Dec 19, 2017 that will be performed in the United States Central Command (USCENTCOM) theater of operations.

END OF SECTION

WORKER RIGHTS

UNDER THE DAVIS-BACON ACT

FOR LABORERS AND MECHANICS WORKING ON FEDERAL OR FEDERALLY ASSISTED CONSTRUCTION PROJECTS

The law requires employers to display this poster where employees can readily see it.

PREVAILING WAGES

You must be paid not less than the wage rate listed in the Davis-Bacon Wage Decision posted with this Notice for the work you perform.

OVERTIME

You must be paid not less than one and one-half times your basic rate of pay for all hours worked over 40 in a work week. There are few exceptions.

ENFORCEMENT

Contract payments can be withheld to ensure workers receive wages and overtime pay due, and liquidated damages may apply if overtime pay requirements are not met. Davis-Bacon contract clauses allow contract termination and debarment of contractors from future federal contracts for three years. A contractor who falsifies certified payroll records or induces wage kickbacks may be subject to civil or criminal prosecution, fines and/or imprisonment.

APPRENTICES

Apprentice rates apply only to apprentices properly registered under approved Federal or State apprenticeship programs.

RETALIATION

The law prohibits discharging or otherwise retaliating against workers for filing a complaint, cooperating in an investigation, or testifying in a proceeding under the Davis-Bacon and Related Acts.

PROPER PAY

If you do not receive proper pay, or require further information on the applicable wages, contact the Contracting Officer listed below:

or contact the U.S. Department of Labor's Wage and Hour Division.



WAGE AND HOUR DIVISION
UNITED STATES DEPARTMENT OF LABOR

1-866-487-9243
TTY: 1-877-889-5627
www.dol.gov/whd



"General Decision Number: CA20260019 01/30/2026

Superseded General Decision Number: CA20250019

State: California

Construction Type: Residential

Counties: Alameda, Contra Costa, El Dorado, Marin, Monterey, Napa, Placer, Sacramento, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma, Sutter, Yolo and Yuba Counties in California.

RESIDENTIAL CONSTRUCTION PROJECTS (including single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	01/02/2026
1	01/09/2026
2	01/16/2026
3	01/23/2026
4	01/30/2026

ASBE0016-002 01/01/2024

AREA 1: ALAMEDA, CONTRA COSTA, MARIN, NAPA, SAN FRANCISCO, SAN MATEO & SANTA CLARA COUNTIES

AREA 2: EL DORADO, MONTEREY, PLACER, SACRAMENTO, SAN BENITO, SANTA CRUZ, SOLANO, SONOMA, SUTTER, YOLO, & YUBA COUNTIES

	Rates	Fringes
--	-------	---------

Asbestos Workers/Insulator
(Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems)

Area 1.....	\$ 84.76	25.07
Area 2.....	\$ 64.56	25.07

ASBE0016-009 05/01/2024

AREA 1: EL DORADO, MONTEREY, PLACER, SACRAMENTO, SAN BENITO, SANTA CRUZ, SOLANO, SANOMA, SUTTER, YOLO & YUBA COUNTIES

AREA 2: ALAMEDA, CONTRA COSTA, MARIN, NAPA, SAN FRANCISCO, SAN MATEO & SANTA CLARA COUNTIES

	Rates	Fringes
--	-------	---------

Asbestos Removal
worker/hazardous material handler (Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from

mechanical systems, whether they contain asbestos or not)

Area 1.....	\$ 34.56	11.40
Area 2.....	\$ 36.53	9.27

BRCA0003-001 08/01/2024

	Rates	Fringes
MARBLE FINISHER.....	\$ 42.06	19.80

BRCA0003-002 05/01/2024

	Rates	Fringes
BRICKLAYER		
(7) Marin, Napa, San Francisco, San Mateo, Solano, Sonoma.....	\$ 57.02	28.50
(8) Alameda, Contra Costa, San Benito, Santa Clara.....	\$ 56.94	26.28
(9) El Dorado, Placer, Sacramento, Sutter.....	\$ 52.76	25.01
(16) Monterey, Santa Cruz...	\$ 54.18	27.82

SPECIALTY PAY:

- (A) Underground work such as tunnel work, sewer work, manholes, catch basins, sewer pipes and telephone conduit shall be paid \$1.25 per hour above the regular rate. Work in direct contact with raw sewage shall receive \$1.25 per hour in addition to the above.
- (B) Operating a saw or grinder shall receive \$1.25 per hour above the regular rate.
- (C) Guniting nozzle person shall receive \$1.25 per hour above the regular rate.

BRCA0003-007 07/01/2024

	Rates	Fringes
TERRAZZO FINISHER.....	\$ 44.93	20.98
TERRAZZO WORKER.....	\$ 60.58	29.79

FOOTNOTE: Base machine operator: \$1.00 per hour additional.

BRCA0003-009 08/01/2024

	Rates	Fringes
MARBLE MASON.....	\$ 61.72	30.31

BRCA0003-012 04/01/2024

	Rates	Fringes
TILE FINISHER		
Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano.....	\$ 37.75	19.28
El Dorado, Placer, Sacramento, Sutter, Yolo,		

Yuba.....	\$ 35.00	17.44
Sonoma.....	\$ 35.78	19.23

Tile Layer

Alameda, Contra Costa, Marin, Monterrey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano.....	\$ 59.92	22.62
El Dorado, Placer, Sacramento, Sutter, Yolo, Yuba.....	\$ 55.55	21.08
Sonoma.....	\$ 56.79	22.54

 CARP0022-001 07/01/2023

San Francisco County

Rates Fringes

Carpenters

Bridge Builder/Highway Carpenter.....	\$ 60.39	33.52
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 60.54	33.52
Journeyman Carpenter.....	\$ 60.39	33.52
Millwright.....	\$ 60.49	35.11

 CARP0035-005 07/01/2021

AREA 1: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano & Sonoma Counties

AREA 2: Monterey, San Benito & Santa Cruz Counties

AREA 4: El Dorado, Placer, Sacramento, Sutter, Yolo, & Yuba Counties

Rates Fringes

Drywall Installers/Lathers:

Area 1.....	\$ 54.85	31.93
Area 2.....	\$ 48.97	31.93
Area 4.....	\$ 48.12	31.93

Drywall Stocker/Scrapper

Area 1.....	\$ 27.43	18.58
Area 2.....	\$ 24.49	18.58
Area 4.....	\$ 24.07	18.58

 CARP0035-009 07/01/2020

Marin County

Rates Fringes

CARPENTER

Bridge Builder/Highway Carpenter.....	\$ 52.65	30.82
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw		

Filer.....	\$ 52.80	30.82
Journeyman Carpenter.....	\$ 52.65	30.82
Millwright.....	\$ 52.75	32.41

 CARP0046-001 07/01/2023

El Dorado (West), Placer (West), Sacramento and Yolo Counties

Rates Fringes

Carpenters

Bridge Builder/Highway Carpenter.....	\$ 60.39	33.52
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 54.66	33.52
Journeyman Carpenter.....	\$ 54.51	33.52
Millwright.....	\$ 57.01	35.11

Footnote: Placer County (West) includes territory West of and including Highway 49 and El Dorado County (West) includes territory West of and including Highway 49 and territory inside the city limits of Placerville.

 CARP0046-003 07/01/2023

El Dorado (East), Placer (East), Sutter and Yuba Counties

Rates Fringes

Carpenters

Bridge Builder/Highway Carpenter.....	\$ 60.39	33.52
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 53.31	33.52
Journeyman Carpenter.....	\$ 53.16	33.52
Millwright.....	\$ 55.66	35.11

 CARP0152-001 07/01/2020

Contra Costa County

Rates Fringes

Carpenters

Bridge Builder/Highway Carpenter.....	\$ 52.65	30.82
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 52.80	30.82
Journeyman Carpenter.....	\$ 52.65	30.82
Millwright.....	\$ 52.75	32.41

 CARP0180-001 07/01/2021

Solano County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter.....	\$ 54.85	31.49
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 55.00	31.49
Journeyman Carpenter.....	\$ 54.85	31.49
Millwright.....	\$ 54.95	33.08

 CARP0217-001 07/01/2023

San Mateo County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter.....	\$ 60.39	33.52
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 60.54	33.52
Journeyman Carpenter.....	\$ 60.39	33.52
Millwright.....	\$ 60.49	35.11

 CARP0405-001 07/01/2021

Santa Clara County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter.....	\$ 54.85	31.49
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 55.00	31.49
Journeyman Carpenter.....	\$ 54.85	31.49
Millwright.....	\$ 54.95	33.08

 CARP0405-002 07/01/2021

San Benito County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter.....	\$ 54.85	31.49
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 49.12	31.49
Journeyman Carpenter.....	\$ 48.97	31.49
Millwright.....	\$ 51.47	33.08

 CARP0505-001 07/01/2021

Santa Cruz County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter.....	\$ 54.85	31.49
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 49.12	31.49
Journeyman Carpenter.....	\$ 48.97	31.49
Millwright.....	\$ 51.47	33.08

CARP0605-001 07/01/2021		

Monterey County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter.....	\$ 54.85	31.49
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 49.12	31.49
Journeyman Carpenter.....	\$ 48.97	31.49
Millwright.....	\$ 51.47	33.08

CARP0713-001 07/01/2021		

Alameda County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter.....	\$ 54.85	31.49
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 55.00	31.49
Journeyman Carpenter.....	\$ 54.85	31.49
Millwright.....	\$ 54.95	33.08

CARP0751-001 07/01/2021		

Napa and Sonoma Counties

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter.....	\$ 54.85	31.49
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer.....	\$ 55.00	31.49
Journeyman Carpenter.....	\$ 54.85	31.49

Millwright.....\$ 54.95 33.08

ELEC0006-003 12/01/2025

SAN FRANCISCO COUNTY

Rates Fringes

Sound & Communications

Installer.....\$ 58.83 3%+29.75
Technician.....\$ 67.65 3%+29.75

SCOPE OF WORK: Including any data system whose only function is to transmit or receive information; excluding all other data systems or multiple systems which include control function or power supply; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding fire alarm work when installed in raceways (including wire and cable pulling) and when performed on new or major remodel building projects or jobs; excluding installation of raceway systems, line voltage work, industrial work, life-safety systems (all buildings having floors located more than 75' above the lowest floor level having building access); excluding energy management systems.

ELEC0006-005 06/01/2025

SAN FRANCISCO COUNTY

Rates Fringes

ELECTRICIAN.....\$ 55.50 3%+23.98

Work on residential wood frame remodel and repair in all wood-constructed buildings not to exceed 24 living units; and new wood frame single structure 1 or 2 family houses, or on all wood- constructed buildings not to exceed 20 living units under 1 roof excluding projects or tracts containing more than 2 houses, or more than 1 building

ELEC0006-009 06/01/2024

SAN FRANCISCO COUNTY:

Rates Fringes

ELECTRICIAN
All other work.....\$ 91.25 3%+45.315

ELEC0180-002 12/01/2023

NAPA & SOLANO COUNTIES

Rates Fringes

ELECTRICIAN.....\$ 38.50 21.16

ELEC0234-002 12/30/2025

MONTEREY, SAN BENITO, AND SANTA CRUZ COUNTIES:

Rates Fringes

ELECTRICIAN

Zone A.....	\$ 70.41	33.76
Zone B.....	\$ 77.45	33.97

Zone A: All of Santa Cruz, Monterey, and San Benito Counties within 25 air miles of Highway 1 and Dolan Road in Moss Landing, and an area extending 5 miles east and west of Highway 101 South to the San Luis Obispo County Line

Zone B: Any area outside of Zone A

 ELEC0234-004 12/01/2021

MONTEREY, SAN BENITO, AND SANTA CRUZ COUNTIES

	Rates	Fringes
Sound & Communications		
Installer.....	\$ 47.93	24.09
Technician.....	\$ 55.12	24.30

SCOPE OF WORK: Including any data system whose only function is to transmit or receive information; excluding all other data systems or multiple systems which include control function or power supply; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding fire alarm work when installed in raceways (including wire and cable pulling) and when performed on new or major remodel building projects or jobs; excluding installation of raceway systems, line voltage work, industrial work, life-safety systems (all buildings having floors located more than 75' above the lowest floor level having building access); excluding energy management systems.

 ELEC0302-002 03/01/2025

CONTRA COSTA COUNTY

	Rates	Fringes
CABLE SPLICER.....	\$ 74.54	36.09
ELECTRICIAN.....	\$ 66.26	35.84

 ELEC0302-004 12/01/2025

CONTRA COSTA COUNTY

	Rates	Fringes
Sound & Communications		
Installer.....	\$ 53.08	3%+29.25
Technician.....	\$ 61.04	3%+29.25

SCOPE OF WORK: Including any data system whose only function is to transmit or receive information; excluding all other data systems or multiple systems which include control function or power supply; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding fire alarm work when installed in raceways (including wire and cable pulling) and when performed on new or major remodel building projects or

jobs; excluding installation of raceway systems, line voltage work, industrial work, life-safety systems (all buildings having floors located more than 75' above the lowest floor level having building access); excluding energy management systems.

ELEC0332-002 06/01/2025

SANTA CLARA COUNTY

	Rates	Fringes
ELECTRICIAN.....	\$ 47.35	23.49

ELEC0332-004 12/01/2025

SANTA CLARA COUNTY

	Rates	Fringes
Sound & Communications		
Installer.....	\$ 58.33	31.00
Technician.....	\$ 67.08	31.26

SCOPE OF WORK: Including any data system whose only function is to transmit or receive information; excluding all other data systems or multiple systems which include control function or power supply; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding fire alarm work when installed in raceways (including wire and cable pulling) and when performed on new or major remodel building projects or jobs; excluding installation of raceway systems, line voltage work, industrial work, life-safety systems (all buildings having floors located more than 75' above the lowest floor level having building access); excluding energy management systems.

ELEC0340-001 02/01/2016

EL DORADO, PLACER, SACRAMENTO, SUTTER, YOLO AND YUBA COUNTIES

	Rates	Fringes
ELECTRICIAN		
Four stories.....	\$ 39.06	24.51
Work on single family homes and apartments up to and including 3 stories.....	\$ 23.10	12.48

ELEC0340-004 03/01/2025

COLUSA, PLACER, SUTTER, YOLO AND YUBA COUNTIES

	Rates	Fringes
Sound & Communications		
Installer.....	\$ 40.00	25.50
Technician.....	\$ 46.00	25.68

SCOPE OF WORK: Including any data system whose only function is to transmit or receive information; excluding all other data systems or multiple systems which include control

function or power supply; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding fire alarm work when installed in raceways (including wire and cable pulling) and when performed on new or major remodel building projects or jobs; excluding installation of raceway systems, line voltage work, industrial work, life-safety systems (all buildings having floors located more than 75' above the lowest floor level having building access); excluding energy management systems.

ELEC0401-006 01/01/2021

EL DORADO AND PLACER COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 31.88	3%+7.50

ZONE PAY:

- Zone 1 - 0 to 70 miles \$0.00 Per Hour
- Zone 2 - 70 to 90 miles \$5.00 Per Hour
- Zone 3 - 91 miles and over \$7.00 Per Hour

ELEC0551-003 12/01/2025

MARIN AND SONOMA COUNTIES:

	Rates	Fringes
ELECTRICIAN.....	\$ 41.00	3%+23.03

ELEC0595-004 06/01/2025

ALAMEDA COUNTY

	Rates	Fringes
CABLE SPLICER.....	\$ 87.40	3%+46.79
ELECTRICIAN.....	\$ 76.00	3%+46.79

ELEC0595-007 12/01/2024

ALAMEDA COUNTY

	Rates	Fringes
Sound & Communications		
Installer.....	\$ 56.68	3%+26.65
Technician.....	\$ 65.18	3%+26.65

SCOPE OF WORK: Including any data system whose only function is to transmit or receive information; excluding all other data systems or multiple systems which include control function or power supply; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding fire alarm work when installed in raceways (including wire and cable pulling) and when performed on new or major remodel building projects or jobs; excluding installation of raceway systems, line voltage work, industrial work, life-safety systems (all buildings having floors located more than 75' above the lowest floor level having building access); excluding

energy management systems.

ELEC0617-002 06/01/2025

SAN MATEO COUNTY

	Rates	Fringes
ELECTRICIAN.....	\$ 86.00	51.07

ELEV0008-001 01/01/2025

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 84.05	38.435+a+b

FOOTNOTE:

- a. PAID VACATION: Employer contributes 8% of regular hourly rate as vacation pay credit for employees with more than 5 years of service, and 6% for 6 months to 5 years of service.
- b. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, Friday after Thanksgiving, and Christmas Day.

ENGI0003-009 06/30/2025

EL DORADO, MONTEREY, NAPA, PLACER, SACRAMENTO, SAN BENITO, SANTA CRUZ, SONOMA, SUTTER, YOLO AND YUBA COUNTIES

""AREA 1"" WAGE RATES ARE LISTED BELOW

""AREA 2"" RECEIVES AN ADDITIONAL \$2.00 PER HOUR ABOVE AREA 1 RATES.

SEE AREA DESCRIPTIONS BELOW

	Rates	Fringes
OPERATOR: Power Equipment (AREA 1:)		
GROUP 1.....	\$ 65.54	34.69
GROUP 2.....	\$ 64.09	34.69
GROUP 3.....	\$ 62.69	34.69
GROUP 4.....	\$ 61.36	34.69
GROUP 5.....	\$ 60.15	34.69
GROUP 6.....	\$ 58.88	34.69
GROUP 7.....	\$ 57.79	34.69
GROUP 8.....	\$ 56.71	34.69
GROUP 8-A.....	\$ 54.69	34.69
OPERATOR: Power Equipment (Cranes and Attachments - AREA 1:)		
GROUP 1		
Cranes.....	\$ 66.39	34.69
Oiler.....	\$ 43.79	31.15
Truck crane oiler.....	\$ 46.08	31.15
GROUP 2		
Cranes.....	\$ 64.70	34.69
Oiler.....	\$ 42.83	31.15
Truck crane oiler.....	\$ 45.07	31.15
GROUP 3		
Cranes.....	\$ 63.06	34.69

Hydraulic.....	\$ 44.44	31.15
Oiler.....	\$ 42.55	31.15
Truck crane oiler.....	\$ 44.83	31.15
GROUP 4		
Cranes.....	\$ 45.76	31.15

FOOTNOTE: Work suspended by ropes or cables, or work on a Yo-Yo Cat: \$.60 per hour additional.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Operator of helicopter (when used in erection work); Hydraulic excavator, 7 cu. yds. and over; Power shovels, over 7 cu. yds.

GROUP 2: Highline cableway; Hydraulic excavator, 3-1/2 cu. yds. up to 7 cu. yds.; Licensed construction work boat operator, on site; Power blade operator (finish); Power shovels, over 1 cu. yd. up to and including 7 cu. yds. m.r.c.

GROUP 3: Asphalt milling machine; Cable backhoe; Combination backhoe and loader over 3/4 cu. yds.; Continuous flight tie back machine assistant to engineer or mechanic; Crane mounted continuous flight tie back machine, tonnage to apply; Crane mounted drill attachment, tonnage to apply; Dozer, slope brd; Gradall; Hydraulic excavator, up to 3 1/2 cu. yds.; Loader 4 cu. yds. and over; Long reach excavator; Multiple engine scraper (when used as push pull); Power shovels, up to and including 1 cu. yd.; Pre-stress wire wrapping machine; Side boom cat, 572 or larger; Track loader 4 cu. yds. and over; Wheel excavator (up to and including 750 cu. yds. per hour)

GROUP 4: Asphalt plant engineer/box person; Chicago boom; Combination backhoe and loader up to and including 3/4 cu. yd.; Concrete batch plant (wet or dry); Dozer and/or push cat; Pull-type elevating loader; Gradesetter, grade checker (GPS, mechanical or otherwise); Grooving and grinding machine; Heading shield operator; Heavy-duty drilling equipment, Hughes, LDH, Watson 3000 or similar; Heavy-duty repairperson and/or welder; Lime spreader; Loader under 4 cu. yds.; Lubrication and service engineer (mobile and grease rack); Mechanical finishers or spreader machine (asphalt, Barber-Greene and similar); Miller Formless M-9000 slope paver or similar; Portable crushing and screening plants; Power blade support; Roller operator, asphalt; Rubber-tired scraper, self-loading (paddle-wheels, etc.); Rubber-tired earthmoving equipment (scrapers); Slip form paver (concrete); Small tractor with drag; Soil stabilizer (P & H or equal); Spider plow and spider puller; Tubex pile rig; Unlicensed construction work boat operator, on site; Timber skidder; Track loader up to 4 yds.; Tractor-drawn scraper; Tractor, compressor drill combination; Welder; Woods-Mixer (and other similar Pugmill equipment)

GROUP 5: Cast-in-place pipe laying machine; Combination slusher and motor operator; Concrete conveyor or concrete pump, truck or equipment mounted; Concrete conveyor, building site; Concrete pump or pumpcrete gun; Drilling equipment, Watson 2000, Texoma 700 or similar; Drilling and boring machinery, horizontal (not to apply to waterliners, wagon drills or jackhammers); Concrete mixer/all; Person and/or material hoist; Mechanical finishers (concrete) (Clary, Johnson, Bidwell Bridge Deck or similar types); Mechanical burm, curb and/or curb and gutter machine, concrete or asphalt; Mine or shaft hoist; Portable crusher; Power jumbo operator (setting slip-forms,

etc., in tunnels); Screed (automatic or manual); Self-propelled compactor with dozer; Tractor with boom D6 or smaller; Trenching machine, maximum digging capacity over 5 ft. depth; Vermeer T-600B rock cutter or similar

GROUP 6: Armor-Coater (or similar); Ballast jack tamper; Boom-type backfilling machine; Assistant plant engineer; Bridge and/or gantry crane; Chemical grouting machine, truck-mounted; Chip spreading machine operator; Concrete saw (self-propelled unit on streets, highways, airports and canals); Deck engineer; Drilling equipment Texoma 600, Hughes 200 Series or similar up to and including 30 ft. m.r.c.; Drill doctor; Helicopter radio operator; Hydro-hammer or similar; Line master; Skidsteer loader, Bobcat larger than 743 series or similar (with attachments); Locomotive; Lull hi-lift or similar; Oiler, truck mounted equipment; Pavement breaker, truck-mounted, with compressor combination; Paving fabric installation and/or laying machine; Pipe bending machine (pipelines only); Pipe wrapping machine (tractor propelled and supported); Screed (except asphaltic concrete paving); Self-propelled pipeline wrapping machine; Tractor; Self-loading chipper; Concrete barrier moving machine

GROUP 7: Ballast regulator; Boom truck or dual-purpose A-frame truck, non-rotating - under 15 tons; Cary lift or similar; Combination slurry mixer and/or cleaner; Drilling equipment, 20 ft. and under m.r.c.; Firetender (hot plant); Grouting machine operator; Highline cableway signalperson; Stationary belt loader (Kolman or similar); Lift slab machine (Vagtborg and similar types); Maginnes internal full slab vibrator; Material hoist (1 drum); Mechanical trench shield; Pavement breaker with or without compressor combination); Pipe cleaning machine (tractor propelled and supported); Post driver; Roller (except asphalt); Chip Seal; Self-propelled automatically applied concrete curing machine (on streets, highways, airports and canals); Self-propelled compactor (without dozer); Signalperson; Slip-form pumps (lifting device for concrete forms); Tie spacer; Tower mobile; Trenching machine, maximum digging capacity up to and including 5 ft. depth; Truck-type loader

GROUP 8: Bit sharpener; Boiler tender; Box operator; Brakeperson; Combination mixer and compressor (shotcrete/gunite); Compressor operator; Deckhand; Fire tender; Forklift (under 20 ft.); Generator; Gunite/shotcrete equipment operator; Hydraulic monitor; Ken seal machine (or similar); Mixermobile; Oiler; Pump operator; Refrigeration plant; Reservoir-debris tug (self-propelled floating); Ross Carrier (construction site); Rotomist operator; Self-propelled tape machine; Shuttlecar; Self-propelled power sweeper operator (includes vacuum sweeper); Slusher operator; Surface heater; Switchperson; Tar pot firetender; Tugger hoist, single drum; Vacuum cooling plant; Welding machine (powered other than by electricity)

GROUP 8-A: Elevator operator; Skidsteer loader-Bobcat 743 series or smaller, and similar (without attachments); Mini excavator under 25 H.P. (backhoe-trencher); Tub grinder wood chipper

ALL CRANES AND ATTACHMENTS

GROUP 1: Clamshell and dragline over 7 cu. yds.; Crane, over

100 tons; Derrick, over 100 tons; Derrick barge pedestal-mounted, over 100 tons; Self-propelled boom-type lifting device, over 100 tons

GROUP 2: Clamshell and dragline over 1 cu. yd. up to and including 7 cu. yds.; Crane, over 45 tons up to and including 100 tons; Derrick barge, 100 tons and under; Self-propelled boom-type lifting device, over 45 tons; Tower crane

GROUP 3: Clamshell and dragline up to and including 1 cu. yd.; Cranes 45 tons and under; Self-propelled boom-type lifting device 45 tons and under;

GROUP 4: Boom Truck or dual purpose A-frame truck, non-rotating over 15 tons; Truck-mounted rotating telescopic boom type lifting device, Manitex or similar (boom truck) over 15 tons; Truck-mounted rotating telescopic boom type lifting device, Manitex or similar (boom truck) - under 15 tons;

AREA DESCRIPTIONS:

POWER EQUIPMENT OPERATORS, CRANES AND ATTACHMENTS, TUNNEL AND UNDERGROUND [These areas do not apply to Piledrivers and Steel Erectors]

AREA 1: ALAMEDA, CONTRA COSTA, MARIN, NAPA, SACRAMENTO, SAN BENITO, SAN FRANCISCO, SANTA CLARA, SANTA CRUZ, SOLANO, YOLO, AND YUBA COUNTIES

THE REMAINING COUNTIES ARE SPLIT BETWEEN AREA 1 AND AREA 2 AS NOTED BELOW:

ELDORADO COUNTY:
Area 1: North Central part
Area 2: Remainder

MONTEREY COUNTY
Area 1: Remainder
Area 2: Southwestern part

PLACER COUNTY:
Area 1: All but the Central portion
Area 2: Remainder

PLUMAS COUNTY:
Area 1: Western portion
Area 2: Remainder

SHASTA COUNTY:
Area 1: All but the Northeastern corner
Area 2: Remainder

SIERRA COUNTY:
Area 1: Western part
Area 2: Remainder

SISKIYOU COUNTY:
Area 1: Central part
Area 2: Remainder

SONOMA COUNTY:
Area 1: All but the Northwestern corner
Area 2: Remainder

TEHAMA COUNTY:

Area 1: All but the Western border with mendocino & Trinity Counties

Area 2: Remainder

TRINITY COUNTY:

Area 1: East Central part and the Northeaster border with Shasta County

Area 2: Remainder

TULARE COUNTY;

Area 1: Remainder

Area 2: Eastern part

ENGI0003-010 06/30/2025

ALAMEDA, CONTRA COSTA, MARIN, SAN FRANCISCO, SAN MATEO, SANTA CLARA AND SOLANO COUNTIES

""AREA 1"" WAGE RATES ARE LISTED BELOW

""AREA 2"" RECEIVES AN ADDITIONAL \$2.00 PER HOUR ABOVE AREA 1 RATES.

SEE AREA DESCRIPTIONS BELOW

	Rates	Fringes
OPERATOR: Power Equipment (AREA 1:)		
GROUP 1.....	\$ 65.54	34.69
GROUP 2.....	\$ 64.09	34.69
GROUP 3.....	\$ 62.69	34.69
GROUP 4.....	\$ 61.36	34.69
GROUP 5.....	\$ 60.15	34.69
GROUP 6.....	\$ 58.88	34.69
GROUP 7.....	\$ 57.79	34.69
GROUP 8.....	\$ 56.71	34.69
GROUP 8-A.....	\$ 54.69	34.69
OPERATOR: Power Equipment (Cranes and Attachments - AREA 1:)		
GROUP 1		
Cranes.....	\$ 66.39	34.69
Oiler.....	\$ 35.59	28.03
Truck crane oiler.....	\$ 38.05	28.03
GROUP 2		
Cranes.....	\$ 64.70	34.69
Oiler.....	\$ 35.34	28.03
Truck crane oiler.....	\$ 37.83	28.03
GROUP 3		
Cranes.....	\$ 63.06	34.69
Hydraulic.....	\$ 37.20	28.03
Oiler.....	\$ 35.11	28.03
Truck crane oiler.....	\$ 37.58	28.03
GROUP 4		
Cranes.....	\$ 37.86	28.03

FOOTNOTE: Work suspended by ropes or cables, or work on a Yo-Yo Cat: \$.60 per hour additional.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Operator of helicopter (when used in erection work); Hydraulic excavator, 7 cu. yds. and over; Power shovels, over 7 cu. yds.

GROUP 2: Highline cableway; Hydraulic excavator, 3-1/2 cu. yds. up to 7 cu. yds.; Licensed construction work boat operator, on site; Power blade operator (finish); Power shovels, over 1 cu. yd. up to and including 7 cu. yds. m.r.c.

GROUP 3: Asphalt milling machine; Cable backhoe; Combination backhoe and loader over 3/4 cu. yds.; Continuous flight tie back machine assistant to engineer or mechanic; Crane mounted continuous flight tie back machine, tonnage to apply; Crane mounted drill attachment, tonnage to apply; Dozer, slope brd; Gradall; Hydraulic excavator, up to 3 1/2 cu. yds.; Loader 4 cu. yds. and over; Long reach excavator; Multiple engine scraper (when used as push pull); Power shovels, up to and including 1 cu. yd.; Pre-stress wire wrapping machine; Side boom cat, 572 or larger; Track loader 4 cu. yds. and over; Wheel excavator (up to and including 750 cu. yds. per hour)

GROUP 4: Asphalt plant engineer/box person; Chicago boom; Combination backhoe and loader up to and including 3/4 cu. yd.; Concrete batch plant (wet or dry); Dozer and/or push cat; Pull-type elevating loader; Gradesetter, grade checker (GPS, mechanical or otherwise); Grooving and grinding machine; Heading shield operator; Heavy-duty drilling equipment, Hughes, LDH, Watson 3000 or similar; Heavy-duty repairperson and/or welder; Lime spreader; Loader under 4 cu. yds.; Lubrication and service engineer (mobile and grease rack); Mechanical finishers or spreader machine (asphalt, Barber-Greene and similar); Miller Formless M-9000 slope paver or similar; Portable crushing and screening plants; Power blade support; Roller operator, asphalt; Rubber-tired scraper, self-loading (paddle-wheels, etc.); Rubber-tired earthmoving equipment (scrapers); Slip form paver (concrete); Small tractor with drag; Soil stabilizer (P & H or equal); Spider plow and spider puller; Tubex pile rig; Unlicensed construction work boat operator, on site; Timber skidder; Track loader up to 4 yds.; Tractor-drawn scraper; Tractor, compressor drill combination; Welder; Woods-Mixer (and other similar Pugmill equipment)

GROUP 5: Cast-in-place pipe laying machine; Combination slusher and motor operator; Concrete conveyor or concrete pump, truck or equipment mounted; Concrete conveyor, building site; Concrete pump or pumpcrete gun; Drilling equipment, Watson 2000, Texoma 700 or similar; Drilling and boring machinery, horizontal (not to apply to waterliners, wagon drills or jackhammers); Concrete mixer/all; Person and/or material hoist; Mechanical finishers (concrete) (Clary, Johnson, Bidwell Bridge Deck or similar types); Mechanical burm, curb and/or curb and gutter machine, concrete or asphalt); Mine or shaft hoist; Portable crusher; Power jumbo operator (setting slip-forms, etc., in tunnels); Screed (automatic or manual); Self-propelled compactor with dozer; Tractor with boom D6 or smaller; Trenching machine, maximum digging capacity over 5 ft. depth; Vermeer T-600B rock cutter or similar

GROUP 6: Armor-Coater (or similar); Ballast jack tamper; Boom-type backfilling machine; Assistant plant engineer; Bridge and/or gantry crane; Chemical grouting machine, truck-mounted; Chip spreading machine operator; Concrete saw (self-propelled

unit on streets, highways, airports and canals); Deck engineer; Drilling equipment Texoma 600, Hughes 200 Series or similar up to and including 30 ft. m.r.c.; Drill doctor; Helicopter radio operator; Hydro-hammer or similar; Line master; Skidsteer loader, Bobcat larger than 743 series or similar (with attachments); Locomotive; Lull hi-lift or similar; Oiler, truck mounted equipment; Pavement breaker, truck-mounted, with compressor combination; Paving fabric installation and/or laying machine; Pipe bending machine (pipelines only); Pipe wrapping machine (tractor propelled and supported); Screed (except asphaltic concrete paving); Self-propelled pipeline wrapping machine; Tractor; Self-loading chipper; Concrete barrier moving machine

GROUP 7: Ballast regulator; Boom truck or dual-purpose A-frame truck, non-rotating - under 15 tons; Cary lift or similar; Combination slurry mixer and/or cleaner; Drilling equipment, 20 ft. and under m.r.c.; Firetender (hot plant); Grouting machine operator; Highline cableway signalperson; Stationary belt loader (Kolman or similar); Lift slab machine (Vagtborg and similar types); Maginnes internal full slab vibrator; Material hoist (1 drum); Mechanical trench shield; Pavement breaker with or without compressor combination); Pipe cleaning machine (tractor propelled and supported); Post driver; Roller (except asphalt); Chip Seal; Self-propelled automatically applied concrete curing machine (on streets, highways, airports and canals); Self-propelled compactor (without dozer); Signalperson; Slip-form pumps (lifting device for concrete forms); Tie spacer; Tower mobile; Trenching machine, maximum digging capacity up to and including 5 ft. depth; Truck-type loader

GROUP 8: Bit sharpener; Boiler tender; Box operator; Brakeperson; Combination mixer and compressor (shotcrete/gunite); Compressor operator; Deckhand; Fire tender; Forklift (under 20 ft.); Generator; Gunite/shotcrete equipment operator; Hydraulic monitor; Ken seal machine (or similar); Mixermobile; Oiler; Pump operator; Refrigeration plant; Reservoir-debris tug (self-propelled floating); Ross Carrier (construction site); Rotomist operator; Self-propelled tape machine; Shuttlecar; Self-propelled power sweeper operator (includes vacuum sweeper); Slusher operator; Surface heater; Switchperson; Tar pot firetender; Tugger hoist, single drum; Vacuum cooling plant; Welding machine (powered other than by electricity)

GROUP 8-A: Elevator operator; Skidsteer loader-Bobcat 743 series or smaller, and similar (without attachments); Mini excavator under 25 H.P. (backhoe-trencher); Tub grinder wood chipper

 ALL CRANES AND ATTACHMENTS

GROUP 1: Clamshell and dragline over 7 cu. yds.; Crane, over 100 tons; Derrick, over 100 tons; Derrick barge pedestal-mounted, over 100 tons; Self-propelled boom-type lifting device, over 100 tons

GROUP 2: Clamshell and dragline over 1 cu. yd. up to and including 7 cu. yds.; Crane, over 45 tons up to and including 100 tons; Derrick barge, 100 tons and under; Self-propelled boom-type lifting device, over 45 tons; Tower crane

GROUP 3: Clamshell and dragline up to and including 1 cu. yd.;
Cranes 45 tons and under; Self-propelled boom-type lifting
device 45 tons and under;

GROUP 4: Boom Truck or dual purpose A-frame truck, non-rotating
over 15 tons; Truck-mounted rotating telescopic boom type
lifting device, Manitex or similar (boom truck) over 15 tons;
Truck-mounted rotating telescopic boom type lifting device,
Manitex or similar (boom truck) - under 15 tons;

AREA DESCRIPTIONS:

POWER EQUIPMENT OPERATORS, CRANES AND ATTACHMENTS, TUNNEL AND
UNDERGROUND [These areas do not apply to Piledrivers and Steel
Erectors]

AREA 1: ALAMEDA, CONTRA COSTA, MARIN, NAPA, SACRAMENTO, SAN
BENITO, SAN FRANCISCO, SANTA CLARA, SANTA CRUZ, SOLANO, YOLO,
AND YUBA COUNTIES

THE REMAINING COUNTIES ARE SPLIT BETWEEN AREA 1 AND AREA 2 AS
NOTED BELOW:

ELDORADO COUNTY:
Area 1: North Central part
Area 2: Remainder

MONTEREY COUNTY
Area 1: Remainder
Area 2: Southwestern part

PLACER COUNTY:
Area 1: All but the Central portion
Area 2: Remainder

ENGI0003-011 06/30/2025

SEE AREA DESCRIPTIONS BELOW

	Rates	Fringes
OPERATOR: Power Equipment (LANDSCAPE WORK ONLY)		
GROUP 1		
AREA 1.....	\$ 55.85	28.56
AREA 2.....	\$ 57.85	28.56
GROUP 2		
AREA 1.....	\$ 52.25	28.56
AREA 2.....	\$ 54.25	28.56
GROUP 3		
AREA 1.....	\$ 47.64	28.56
AREA 2.....	\$ 49.64	28.56

GROUP DESCRIPTIONS:

GROUP 1: Landscape Finish Grade Operator: All finish grade
work regardless of equipment used, and all equipment with a
rating more than 65 HP.

GROUP 2: Landscape Operator up to 65 HP: All equipment with
a manufacturer's rating of 65 HP or less except equipment

covered by Group 1 or Group 3. The following equipment shall be included except when used for finish work as long as manufacturer's rating is 65 HP or less: A-Frame and Winch Truck, Backhoe, Forklift, Hydragraphic Seeder Machine, Roller, Rubber-Tired and Track Earthmoving Equipment, Skiploader, Straw Blowers, and Trencher 31 HP up to 65 HP.

GROUP 3: Landscae Utility Operator: Small Rubber-Tired Tractor, Trencher Under 31 HP.

AREA DESCRIPTIONS:

AREA 1: ALAMEDA, CONTRA COSTA, MARIN, NAPA, SACRAMENTO, SAN BENITO, SAN FRANCISCO, SANTA CLARA, SANTA CRUZ, SOLANO, YOLO, AND YUBA COUNTIES

THE REMAINING COUNTIES ARE SPLIT BETWEEN AREA 1 AND AREA 2 AS NOTED BELOW:

ELDORADO COUNTY:

Area 1: North Central part
Area 2: Remainder

MONTEREY COUNTY

Area 1: Remainder
Area 2: Southwestern part

PLACER COUNTY:

Area 1: All but the Central portion
Area 2: Remainder

IRON0377-001 01/01/2025

ALAMEDA, CONTRA COSTA, SAN MATEO, SANTA CLARA COUNTIES

Table with 2 columns: Rates, Fringes. Rows include Ironworkers: Fence Erector, Ornamental, Reinforcing and Structural.

PREMIUM PAY:

\$6.00 additional per hour at the following locations:

China Lake Naval Test Station, Chocolate Mountains Naval Reserve-Niland, Edwards AFB, Fort Irwin Military Station, Fort Irwin Training Center-Goldstone, San Clemente Island, San Nicholas Island, Susanville Federal Prison, 29 Palms - Marine Corps, U.S. Marine Base - Barstow, U.S. Naval Air Facility - Sealey, Vandenberg AFB

\$4.00 additional per hour at the following locations:

Army Defense Language Institute - Monterey, Fallon Air Base, Naval Post Graduate School - Monterey, Yermo Marine Corps Logistics Center

\$2.00 additional per hour at the following locations:

Port Hueneme, Port Mugu, U.S. Coast Guard Station - Two Rock

IRON0377-003 01/01/2025

SAN FRANCISCO CITY and COUNTY

	Rates	Fringes
Ironworkers:		
Fence Erector.....	\$ 45.78	26.51
Ornamental, Reinforcing and Structural.....	\$ 55.83	35.15

PREMIUM PAY:

\$6.00 additional per hour at the following locations:

China Lake Naval Test Station, Chocolate Mountains Naval Reserve-Niland, Edwards AFB, Fort Irwin Military Station, Fort Irwin Training Center-Goldstone, San Clemente Island, San Nicholas Island, Susanville Federal Prison, 29 Palms - Marine Corps, U.S. Marine Base - Barstow, U.S. Naval Air Facility - Sealey, Vandenberg AFB

\$4.00 additional per hour at the following locations:

Army Defense Language Institute - Monterey, Fallon Air Base, Naval Post Graduate School - Monterey, Yermo Marine Corps Logistics Center

\$2.00 additional per hour at the following locations:

Port Hueneme, Port Mugu, U.S. Coast Guard Station - Two Rock

IRON0433-005 01/01/2025

REMAINING COUNTIES

	Rates	Fringes
IRONWORKER		
Fence Erector.....	\$ 45.78	26.51
Ornamental, Reinforcing and Structural.....	\$ 50.70	35.15

PREMIUM PAY:

\$6.00 additional per hour at the following locations:

China Lake Naval Test Station, Chocolate Mountains Naval Reserve-Niland, Edwards AFB, Fort Irwin Military Station, Fort Irwin Training Center-Goldstone, San Clemente Island, San Nicholas Island, Susanville Federal Prison, 29 Palms - Marine Corps, U.S. Marine Base - Barstow, U.S. Naval Air Facility - Sealey, Vandenberg AFB

\$4.00 additional per hour at the following locations:

Army Defense Language Institute - Monterey, Fallon Air Base, Naval Post Graduate School - Monterey, Yermo Marine Corps Logistics Center

\$2.00 additional per hour at the following locations:

Port Hueneme, Port Mugu, U.S. Coast Guard Station - Two Rock

LAB00067-007 06/30/2025

AREA 1: ALAMEDA, CONTRA COSTA, MARIN, NAPA, SAN FRANCISCO, SAN MATEO, SANTA CLARA

AREA 2: EL DORADO, MONTEREY, PLACE, SACRAMENTO, SAN BENITO, SANTA CRUZ, SOLANO, SONOMA, SUTTER, YOLO, AND YUBA COUNTIES:

	Rates	Fringes
LABORER (ASBESTOS/MOLD/LEAD LABORER)		
AREA 1.....	\$ 39.15	30.03
AREA 2.....	\$ 38.15	30.03

SCOPE OF WORK: Covers site mobilization; initial site clean-up; site preparation; removal of asbestos-containing materials from walls and ceilings; or from pipes, boilers and mechanical systems only if they are being scrapped; encapsulation, enclosure and disposal of asbestos-containing materials by hand or with equipment or machinery; scaffolding; fabrication of temporary wooden barriers; and assembly of decontamination stations.

LAB00185-001 06/26/2023

EL DORADO, PLACER, SACRAMENTO, SUTTER, YOLO AND YUBA COUNTIES

	Rates	Fringes
Laborers: (CONSTRUCTION CRAFT LABORERS)		
Construction Specialist.....	\$ 36.20	27.30
GROUP 1.....	\$ 35.50	27.30
GROUP 1-a.....	\$ 35.72	27.30
GROUP 1-c.....	\$ 35.55	27.30
GROUP 1-e.....	\$ 36.05	27.30
GROUP 1-f.....	\$ 30.37	23.20
GROUP 2.....	\$ 35.35	27.30
GROUP 3.....	\$ 35.25	27.30
GROUP 4.....	\$ 28.94	27.30
Laborers: (GUNITE)		
GROUP 1.....	\$ 36.46	27.30
GROUP 2.....	\$ 35.96	27.30
GROUP 3.....	\$ 35.37	27.30
GROUP 4.....	\$ 35.25	27.30
Laborers: (WRECKING)		
GROUP 1.....	\$ 35.50	27.30
GROUP 2.....	\$ 35.35	27.30
Landscape Laborer (GARDENERS, HORTICULTURAL & LANDSCAPE LABORERS)		
Establishment Warranty Period.....	\$ 28.94	27.30
New Construction.....	\$ 35.25	27.30

FOOTNOTE: Laborers working off or with or from bos'n chairs,

swinging scaffolds, belts (not applicable to workers entitled to receive the wage rate set forth in Group 1-a): \$0.25 per hour additional.

LABORER CLASSIFICATIONS

CONSTRUCTION SPECIALIST GROUP: Asphalt ironer and raker; Chainsaw; Laser beam in connection with laborers' work; Cast-in-place manhole form setter; Pressure pipelayer; Davis trencher - 300 or similar type (and all small trenchers); Blaster; Diamond driller; Multiple unit drill; Hydraulic drill

GROUP 1: Asphalt spreader boxes (all types); Barko, Wacker and similar type tampers; Buggymobile; Caulker, bander, pipewrapper, conduit layer, plastic pipelayer; Certified hazardous waste worker including Lead Abatement; Compactors of all types; Concrete and magnesite mixer, 1/2 yd. and under; Concrete pan work; Concrete sander; Concrete saw; Cribber and/or shoring; Cut granite curb setter; Dri-pak-it machine; Faller, logloader and bucket; Form raiser, slip forms; Green cutter; Headerboard, Hubsetter, aligner, by any method; High pressure blow pipe (1-1/2" or over, 100 lbs. pressure/over); Hydro seeder and similar type; Jackhammer operator; Jacking of pipe over 12 inches; Jackson and similar type compactor; Kettle tender, pot and worker applying asphalt, lay-kold, creosote, lime, caustic and similar type materials (applying means applying, dipping or handling of such materials); Lagging, sheeting, whaling, bracing, trenchjacking, lagging hammer; Magnesite, epoxyresin, fiberglass, mastic worker (wet or dry); No joint pipe and stripping of same, including repair of voids; Pavement breaker and spader, including tool grinder; Perma curb; Pipelayer (including grade checking in connection with pipelaying); Precast-manhole setter; Pressure pipe tester; Post hole digger, air, gas and electric; Power broom sweeper; Power tampers of all types (except as shown in Group 2); Ram set gun and stud gun; Riprap stonepaver and rock-slinger, including placing of sacked concrete and/or sand (wet or dry) and gabions and similar type; Rotary scarifier or multiple head concrete chipping scarifier; Roto and Ditch Witch; Rototiller; Sandblaster, pot, gun, nozzle operators; Signalling and rigging; Tank cleaner; Tree climber; Turbo blaster; Vibrascreed, bull float in connection with laborers' work; Vibrator; Hazardous waste worker (lead removal); Asbestos and mold removal worker

GROUP 1-a: Joy drill model TWM-2A; Gardner-Denver model DH143 and similar type drills; Track driller; Jack leg driller; Wagon driller; Mechanical drillers, all types regardless of type or method of power; Mechanical pipe layers, all types regardless of type or method of power; Blaster and powder; All work of loading, placing and blasting of all powder and explosives of whatever type regardless of method used for such loading and placing; High scalers (including drilling of same); Tree topper; Bit grinder

GROUP 1-b: Sewer cleaners shall receive \$4.00 per day above Group 1 wage rates. "Sewer cleaner" means any worker who handles or comes in contact with raw sewage in small diameter sewers. Those who work inside recently active, large diameter sewers, and all recently active sewer manholes, shall receive \$5.00 per day above Group 1 wage

rates.

GROUP 1-c: Burning and welding in connection with laborers' work; Synthetic thermoplastics and similar type welding

GROUP 1-d: Maintenance and repair track and road beds (underground structures). All employees performing work covered herein shall receive \$.25 per hour above their regular rate for all work performed on underground structures not specifically covered herein. This paragraph shall not be construed to apply to work below ground level in open cut. It shall apply to cut and cover work of subway construction after the temporary cover has been placed.

GROUP 1-e: Work on and/or in bell hole footings and shafts thereof, and work on and in deep footings. (A deep footing is a hole 15 feet or more in depth.) In the event the depth of the footing is unknown at the commencement of excavation, and the final depth exceeds 15 feet, the deep footing wage rate would apply to all employees for each and every day worked on or in the excavation of the footing from the date of inception.

GROUP 1-f: Wire winding machine in connection with guniting or shot crete

GROUP 2: Asphalt shoveler; Cement dumper and handling dry cement or gypsum; Choke-setter and rigger (clearing work); Concrete bucket dumper and chute; Concrete chipping and grinding; Concrete laborer (wet or dry); Driller tender, chuck tender, nipper; Guinea chaser (stake), grout crew; High pressure nozzle, adductor; Hydraulic monitor (over 100 lbs. pressure); Loading and unloading, carrying and hauling of all rods and materials for use in reinforcing concrete construction; Pittsburgh chipper and similar type brush shredders; Sloper; Single foot, hand-held, pneumatic tamper; All pneumatic, air, gas and electric tools not listed in Groups 1 through 1-f; Jacking of pipe - under 12 inches

GROUP 3: Construction laborers, including bridge and general laborer; Dump, load spotter; Flag person; Fire watcher; Fence erector; Guardrail erector; Gardener, horticultural and landscape laborer; Jetting; Limber, brush loader and piler; Pavement marker (button setter); Maintenance, repair track and road beds; Streetcar and railroad construction track laborer; Temporary air and water lines, Victaulic or similar; Tool room attendant (jobsite only)

GROUP 4: All clean-up work of debris, grounds and building including but not limited to: street cleaner; cleaning and washing windows; brick cleaner (jobsite only); material cleaner (jobsite only). The classification ""material cleaner"" is to be utilized under the following conditions: A: at demolition site for the salvage of the material. B: at the conclusion of a job where the material is to be salvaged and stocked to be reused on another job. C: for the cleaning of salvage material at the jobsite or temporary jobsite yard. The material cleaner classification should not be used in the performance of ""form stripping, cleaning and oiling and moving to the next point of erection"".

GUNITE LABORER CLASSIFICATION

GROUP 1: Structural nozzleman

GROUP 2: Nozzleman, Gunman, Potman, Groundman

GROUP 3: Reboundman

GROUP 4: Gunite laborer

WRECKING WORK LABORER CLASSIFICATIONS

GROUP 1: Skilled wrecker (removing and salvaging of sash, windows and materials)

GROUP 2: Semi-skilled wrecker (salvaging of other building materials)

LAB00185-003 07/01/2023

EL DORADO, PLACER, SACRAMENTO, SUTTER, YOLO AND YUBA COUNTIES

	Rates	Fringes
LABORER		
Mason Tender-Brick.....	\$ 36.29	25.55

LAB00185-007 07/01/2023

EL DORADO, MARIN, NAPA, PLACER, SACRAMENTO, SOLANO, SONOMA, SUTTER, YOLO AND YUBA COUNTIES

	Rates	Fringes
Plasterer tender.....	\$ 39.77	28.54

Work on a swing stage scaffold: \$1.00 per hour additional.

LAB00261-001 06/26/2023

MARIN, SAN FRANCISCO, AND SAN MATEO COUNTIES

	Rates	Fringes
Laborers: (CONSTRUCTION CRAFT LABORERS)		
Construction Specialist.....	\$ 37.20	27.30
GROUP 1.....	\$ 36.50	27.30
GROUP 1-a.....	\$ 36.72	27.30
GROUP 1-c.....	\$ 36.55	27.30
GROUP 1-e.....	\$ 37.05	27.30
GROUP 1-f.....	\$ 31.37	23.20
GROUP 2.....	\$ 36.35	27.30
GROUP 3.....	\$ 36.25	27.30
GROUP 4.....	\$ 29.94	27.30

See groups 1-b and 1-d under laborer classifications.

Laborers: (GUNITE)		
GROUP 1.....	\$ 37.46	27.30
GROUP 2.....	\$ 36.96	27.30
GROUP 3.....	\$ 36.37	27.30
GROUP 4.....	\$ 36.25	27.30

Laborers: (WRECKING)		
GROUP 1.....	\$ 36.50	27.30
GROUP 2.....	\$ 36.35	27.30

Landscape Laborer (GARDENERS,
HORTICULTURAL & LANDSCAPE
LABORERS)

Establishment Warranty		
Period.....	\$ 29.94	27.30
New Construction.....	\$ 36.25	27.30

FOOTNOTE: Laborers working off or with or from bos'n chairs, swinging scaffolds, belts (not applicable to workers entitled to receive the wage rate set forth in Group 1-a): \$0.25 per hour additional.

LABORER CLASSIFICATIONS

CONSTRUCTION SPECIALIST GROUP: Asphalt ironer and raker; Chainsaw; Laser beam in connection with laborers' work; Cast-in-place manhole form setter; Pressure pipelayer; Davis trencher - 300 or similar type (and all small trenchers); Blaster; Diamond driller; Multiple unit drill; Hydraulic drill

GROUP 1: Asphalt spreader boxes (all types); Barko, Wacker and similar type tampers; Buggymobile; Caulker, bander, pipewrapper, conduit layer, plastic pipelayer; Certified hazardous waste worker including Leade Abatement; Compactors of all types; Concrete and magnesite mixer, 1/2 yd. and under; Concrete pan work; Concrete sander; Concrete saw; Cribber and/or shoring; Cut granite curb setter; Dri-pak-it machine; Faller, logloader and bucket; Form raiser, slip forms; Green cutter; Headerboard, Hubsetter, aligner, by any method; High pressure blow pipe (1-1/2" or over, 100 lbs. pressure/over); Hydro seeder and similar type; Jackhammer operator; Jacking of pipe over 12 inches; Jackson and similar type compactor; Kettle tender, pot and worker applying asphalt, lay-kold, creosote, lime, caustic and similar type materials (applying means applying, dipping or handling of such materials); Lagging, sheeting, whaling, bracing, trenchjacking, lagging hammer; Magnesite, epoxyresin, fiberglass, mastic worker (wet or dry); No joint pipe and stripping of same, including repair of voids; Pavement breaker and spader, including tool grinder; Perma curb; Pipelayer (including grade checking in connection with pipelaying); Precast-manhole setter; Pressure pipe tester; Post hole digger, air, gas and electric; Power broom sweeper; Power tampers of all types (except as shown in Group 2); Ram set gun and stud gun; Riprap stonepaver and rock-slinger, including placing of sacked concrete and/or sand (wet or dry) and gabions and similar type; Rotary scarifier or multiple head concrete chipping scarifier; Roto and Ditch Witch; Rototiller; Sandblaster, pot, gun, nozzle operators; Signalling and rigging; Tank cleaner; Tree climber; Turbo blaster; Vibrascreed, bull float in connection with laborers' work; Vibrator; Hazardous waste worker (lead removal); Asbestos and mold removal worker

GROUP 1-a: Joy drill model TWM-2A; Gardner-Denver model DH143 and similar type drills; Track driller; Jack leg driller; Wagon driller; Mechanical drillers, all types regardless of type or method of power; Mechanical pipe layers, all types regardless of type or method of power; Blaster and powder; All work of loading, placing and blasting of all powder and explosives of whatever type regardless of method used for such loading and placing; High scalers (including drilling

of same); Tree topper; Bit grinder

GROUP 1-b: Sewer cleaners shall receive \$4.00 per day above Group 1 wage rates. ""Sewer cleaner"" means any worker who handles or comes in contact with raw sewage in small diameter sewers. Those who work inside recently active, large diameter sewers, and all recently active sewer manholes, shall receive \$5.00 per day above Group 1 wage rates.

GROUP 1-c: Burning and welding in connection with laborers' work; Synthetic thermoplastics and similar type welding

GROUP 1-d: Maintenance and repair track and road beds (underground structures). All employees performing work covered herein shall receive \$.25 per hour above their regular rate for all work performed on underground structures not specifically covered herein. This paragraph shall not be construed to apply to work below ground level in open cut. It shall apply to cut and cover work of subway construction after the temporary cover has been placed.

GROUP 1-e: Work on and/or in bell hole footings and shafts thereof, and work on and in deep footings. (A deep footing is a hole 15 feet or more in depth.) In the event the depth of the footing is unknown at the commencement of excavation, and the final depth exceeds 15 feet, the deep footing wage rate would apply to all employees for each and every day worked on or in the excavation of the footing from the date of inception.

GROUP 1-f: Wire winding machine in connection with guniting or shot crete

GROUP 2: Asphalt shoveler; Cement dumper and handling dry cement or gypsum; Choke-setter and rigger (clearing work); Concrete bucket dumper and chute; Concrete chipping and grinding; Concrete laborer (wet or dry); Driller tender, chuck tender, nipper; Guinea chaser (stake), grout crew; High pressure nozzle, adductor; Hydraulic monitor (over 100 lbs. pressure); Loading and unloading, carrying and hauling of all rods and materials for use in reinforcing concrete construction; Pittsburgh chipper and similar type brush shredders; Sloper; Single foot, hand-held, pneumatic tamper; All pneumatic, air, gas and electric tools not listed in Groups 1 through 1-f; Jacking of pipe - under 12 inches

GROUP 3: Construction laborers, including bridge and general laborer; Dump, load spotter; Flag person; Fire watcher; Fence erector; Guardrail erector; Gardener, horticultural and landscape laborer; Jetting; Limber, brush loader and piler; Pavement marker (button setter); Maintenance, repair track and road beds; Streetcar and railroad construction track laborer; Temporary air and water lines, Victaulic or similar; Tool room attendant (jobsite only)

GROUP 4: All clean-up work of debris, grounds and building including but not limited to: street cleaner; cleaning and washing windows; brick cleaner (jobsite only); material cleaner (jobsite only). The classification ""material cleaner"" is to be utilized under the following conditions: A: at demolition site for the salvage of the material. B: at the conclusion of a job where the material is to be

salvaged and stocked to be reused on another job. C: for the cleaning of salvage material at the jobsite or temporary jobsite yard. The material cleaner classification should not be used in the performance of ""form stripping, cleaning and oiling and moving to the next point of erection"".

GUNITE LABORER CLASSIFICATION

GROUP 1: Structural nozzleman

GROUP 2: Nozzleman, Gunman, Potman, Groundman

GROUP 3: Reboundman

GROUP 4: Gunitite laborer

WRECKING WORK LABORER CLASSIFICATIONS

GROUP 1: Skilled wrecker (removing and salvaging of sash, windows and materials)

GROUP 2: Semi-skilled wrecker (salvaging of other building materials)

LAB00261-008 07/01/2023

MARIN COUNTY

	Rates	Fringes
LABORER		
Mason Tender-Brick.....	\$ 37.54	25.55

LAB00261-011 07/01/2023

SAN FRANCISCO AND SAN MATEO COUNTIES:

	Rates	Fringes
MASON TENDER, BRICK.....	\$ 37.05	27.45

FOOTNOTES: Underground work such as sewers, manholes, catch basins, sewer pipes, telephone conduits, tunnels and cut trenches: \$5.00 per day additional. Work in live sewage: \$2.50 per day additional.

LAB00261-012 07/01/2023

EL DORADO, MARIN, NAPA, PLACER, SACRAMENTO, SOLANO, SONOMA, SUTTER, YOLO AND YUBA COUNTIES

	Rates	Fringes
Plasterer tender.....	\$ 39.77	28.54

Work on a swing stage scaffold: \$1.00 per hour additional.

LAB00261-013 07/01/2023

SAN FRANCISCO AND SAN MATEO COUNTIES:

	Rates	Fringes
PLASTER TENDER.....	\$ 41.93	30.32

Work on a swing stage scaffold: \$1.00 per hour additional.

LAB00270-001 06/26/2023

AREA ""A"" - SANTA CLARA COUNTY

AREA ""B"" - MONTEREY, SAN BENITO, AND SANTA CRUZ COUNTIES

	Rates	Fringes
Laborers: (CONSTRUCTION CRAFT		
LABORERS - AREA A:)		
Construction Specialist.....	\$ 37.20	27.30
GROUP 1.....	\$ 36.50	27.30
GROUP 1-a.....	\$ 36.72	27.30
GROUP 1-c.....	\$ 36.55	27.30
GROUP 1-e.....	\$ 37.05	27.30
GROUP 1-f.....	\$ 37.08	27.30
GROUP 2.....	\$ 36.35	27.30
GROUP 3.....	\$ 36.25	27.30
GROUP 4.....	\$ 29.94	27.30

See groups 1-b and 1-d under laborer classifications.

Laborers: (CONSTRUCTION CRAFT		
LABORERS - AREA B:)		
Construction Specialist		
Group.....	\$ 36.20	27.30
GROUP 1.....	\$ 35.50	27.30
GROUP 1-a.....	\$ 35.72	27.30
GROUP 1-c.....	\$ 35.55	27.30
GROUP 1-e.....	\$ 36.05	27.30
GROUP 1-f.....	\$ 36.08	27.30
GROUP 2.....	\$ 35.35	27.30
GROUP 3.....	\$ 35.25	27.30
GROUP 4.....	\$ 28.94	27.30

Laborers: (GUNITE - AREA A:)		
GROUP 1.....	\$ 37.46	27.30
GROUP 2.....	\$ 36.96	27.30
GROUP 3.....	\$ 36.37	27.30
GROUP 4.....	\$ 36.25	27.30

Laborers: (GUNITE - AREA B:)		
GROUP 1.....	\$ 36.46	27.30
GROUP 2.....	\$ 35.96	27.30
GROUP 3.....	\$ 35.37	27.30
GROUP 4.....	\$ 35.25	27.30

Laborers: (WRECKING - AREA A:)		
GROUP 1.....	\$ 36.50	27.30
GROUP 2.....	\$ 36.35	27.30

Laborers: (WRECKING - AREA B:)		
GROUP 1.....	\$ 35.50	27.30
GROUP 2.....	\$ 35.35	27.30

Landscape Laborer (GARDENERS,		
HORTICULTURAL & LANDSCAPE		
LABORERS - AREA A:)		
Establishment Warranty		
Period.....	\$ 29.94	27.30
New Construction.....	\$ 36.25	27.30

Landscape Laborer (GARDENERS,		
HORTICULTURAL & LANDSCAPE		
LABORERS - AREA B:)		
Establishment Warranty		

Period.....	\$ 28.94	27.30
New Construction.....	\$ 35.25	27.30

FOOTNOTE: Laborers working off or with or from bos'n chairs, swinging scaffolds, belts (not applicable to workers entitled to receive the wage rate set forth in Group 1-a): \$0.25 per hour additional.

LABORER CLASSIFICATIONS

CONSTRUCTION SPECIALIST GROUP: Asphalt ironer and raker; Chainsaw; Laser beam in connection with laborers' work; Cast-in- place manhole form setter; Pressure pipelayer; Davis trencher - 300 or similar type (and all small trenchers); Blaster; Diamond driller; Multiple unit drill; Hydraulic drill

GROUP 1: Asphalt spreader boxes (all types); Barko, Wacker and similar type tampers; Buggymobile; Caulker, bander, pipewrapper, conduit layer, plastic pipelayer; Certified hazardous waste worker including Leade Abatement; Compactors of all types; Concrete and magnesite mixer, 1/2 yd. and under; Concrete pan work; Concrete sander; Concrete saw; Cribber and/or shoring; Cut granite curb setter; Dri-pak-it machine; Faller, logloader and buckler; Form raiser, slip forms; Green cutter; Headerboard, Hubsetter, aligner, by any method; High pressure blow pipe (1-1/2" or over, 100 lbs. pressure/over); Hydro seeder and similar type; Jackhammer operator; Jacking of pipe over 12 inches; Jackson and similar type compactor; Kettle tender, pot and worker applying asphalt, lay-kold, creosote, lime, caustic and similar type materials (applying means applying, dipping or handling of such materials); Lagging, sheeting, whaling, bracing, trenchjacking, lagging hammer; Magnesite, epoxyresin, fiberglass, mastic worker (wet or dry); No joint pipe and stripping of same, including repair of voids; Pavement breaker and spader, including tool grinder; Perma curb; Pipelayer (including grade checking in connection with pipelaying); Precast-manhole setter; Pressure pipe tester; Post hole digger, air, gas and electric; Power broom sweeper; Power tampers of all types (except as shown in Group 2); Ram set gun and stud gun; Riprap stonepaver and rock-slinger, including placing of sacked concrete and/or sand (wet or dry) and gabions and similar type; Rotary scarifier or multiple head concrete chipping scarifier; Roto and Ditch Witch; Rototiller; Sandblaster, pot, gun, nozzle operators; Signalling and rigging; Tank cleaner; Tree climber; Turbo blaster; Vibrascreed, bull float in connection with laborers' work; Vibrator; Hazardous waste worker (lead removal); Asbestos and mold removal worker

GROUP 1-a: Joy drill model TWM-2A; Gardner-Denver model DH143 and similar type drills; Track driller; Jack leg driller; Wagon driller; Mechanical drillers, all types regardless of type or method of power; Mechanical pipe layers, all types regardless of type or method of power; Blaster and powder; All work of loading, placing and blasting of all powder and explosives of whatever type regardless of method used for such loading and placing; High scalars (including drilling of same); Tree topper; Bit grinder

GROUP 1-b: Sewer cleaners shall receive \$4.00 per day above Group 1 wage rates. ""Sewer cleaner"" means any worker who

handles or comes in contact with raw sewage in small diameter sewers. Those who work inside recently active, large diameter sewers, and all recently active sewer manholes, shall receive \$5.00 per day above Group 1 wage rates.

GROUP 1-c: Burning and welding in connection with laborers' work; Synthetic thermoplastics and similar type welding

GROUP 1-d: Maintenance and repair track and road beds (underground structures). All employees performing work covered herein shall receive \$.25 per hour above their regular rate for all work performed on underground structures not specifically covered herein. This paragraph shall not be construed to apply to work below ground level in open cut. It shall apply to cut and cover work of subway construction after the temporary cover has been placed.

GROUP 1-e: Work on and/or in bell hole footings and shafts thereof, and work on and in deep footings. (A deep footing is a hole 15 feet or more in depth.) In the event the depth of the footing is unknown at the commencement of excavation, and the final depth exceeds 15 feet, the deep footing wage rate would apply to all employees for each and every day worked on or in the excavation of the footing from the date of inception.

GROUP 1-f: Wire winding machine in connection with guniting or shot crete

GROUP 2: Asphalt shoveler; Cement dumper and handling dry cement or gypsum; Choke-setter and rigger (clearing work); Concrete bucket dumper and chute; Concrete chipping and grinding; Concrete laborer (wet or dry); Driller tender, chuck tender, nipper; Guinea chaser (stake), grout crew; High pressure nozzle, adductor; Hydraulic monitor (over 100 lbs. pressure); Loading and unloading, carrying and hauling of all rods and materials for use in reinforcing concrete construction; Pittsburgh chipper and similar type brush shredders; Sloper; Single foot, hand-held, pneumatic tamper; All pneumatic, air, gas and electric tools not listed in Groups 1 through 1-f; Jacking of pipe - under 12 inches

GROUP 3: Construction laborers, including bridge and general laborer; Dump, load spotter; Flag person; Fire watcher; Fence erector; Guardrail erector; Gardener, horticultural and landscape laborer; Jetting; Limber, brush loader and piler; Pavement marker (button setter); Maintenance, repair track and road beds; Streetcar and railroad construction track laborer; Temporary air and water lines, Victaulic or similar; Tool room attendant (jobsite only)

GROUP 4: All clean-up work of debris, grounds and building including but not limited to: street cleaner; cleaning and washing windows; brick cleaner (jobsite only); material cleaner (jobsite only). The classification ""material cleaner"" is to be utilized under the following conditions: A: at demolition site for the salvage of the material. B: at the conclusion of a job where the material is to be salvaged and stocked to be reused on another job. C: for the cleaning of salvage material at the jobsite or temporary jobsite yard. The material cleaner classification should not be used in the performance of ""form stripping,

cleaning and oiling and moving to the next point of erection".

GUNITE LABORER CLASSIFICATION

GROUP 1: Structural nozzleman

GROUP 2: Nozzleman, Gunman, Potman, Groundman

GROUP 3: Reboundman

GROUP 4: Gunite laborer

WRECKING WORK LABORER CLASSIFICATIONS

GROUP 1: Skilled wrecker (removing and salvaging of sash, windows and materials)

GROUP 2: Semi-skilled wrecker (salvaging of other building materials)

LAB00270-002 07/01/2023

SANTA CLARA AND SANTA CRUZ COUNTIES

	Rates	Fringes
MASON TENDER, BRICK		
Santa Clara County.....	\$ 35.29	26.85
Santa Cruz County.....	\$ 35.29	26.85

LAB00270-006 07/01/2023

MONTEREY AND SAN BENITO COUNTIES

	Rates	Fringes
LABORER		
Mason Tender-Brick.....	\$ 36.29	25.55

LAB00270-008 07/01/2023

SANTA CLARA & SANTA CRUZ

	Rates	Fringes
PLASTER TENDER.....	\$ 40.68	29.68

Work on a swing stage scaffold: \$1.00 per hour additional.

LAB00270-009 07/01/2023

MONTEREY AND SAN BENITO COUNTIES:

	Rates	Fringes
Plasterer tender.....	\$ 40.68	29.68

Work on a swing stage scaffold: \$1.00 per hour additional.

LAB00304-001 06/26/2023

ALAMEDA COUNTY

	Rates	Fringes
Laborers: (CONSTRUCTION CRAFT LABORERS)		
Construction Specialist.....	\$ 37.20	27.30
GROUP 1.....	\$ 36.50	27.30
GROUP 1-a.....	\$ 36.72	27.30
GROUP 1-c.....	\$ 36.55	27.30
GROUP 1-e.....	\$ 37.05	27.30
GROUP 1-f.....	\$ 37.08	27.30
GROUP 2.....	\$ 36.35	27.30
GROUP 3.....	\$ 36.25	27.30
GROUP 4.....	\$ 29.94	27.30

See groups 1-b and 1-d under laborer classifications.

Laborers: (GUNITE)		
GROUP 1.....	\$ 37.46	27.30
GROUP 2.....	\$ 36.96	27.30
GROUP 3.....	\$ 36.37	27.30
GROUP 4.....	\$ 36.25	27.30

Laborers: (WRECKING)		
GROUP 1.....	\$ 36.50	27.30
GROUP 2.....	\$ 36.35	27.30

Landscape Laborer (GARDENERS, HORTICULTURAL & LANDSCAPE LABORERS)		
Establishment Warranty		
Period.....	\$ 29.94	27.30
New Construction.....	\$ 36.25	27.30

FOOTNOTE: Laborers working off or with or from bos'n chairs, swinging scaffolds, belts (not applicable to workers entitled to receive the wage rate set forth in Group 1-a): \$0.25 per hour additional.

LABORER CLASSIFICATIONS

CONSTRUCTION SPECIALIST GROUP: Asphalt ironer and raker; Chainsaw; Laser beam in connection with laborers' work; Cast-in- place manhole form setter; Pressure pipelayer; Davis trencher - 300 or similar type (and all small trenchers); Blaster; Diamond driller; Multiple unit drill; Hydraulic drill

GROUP 1: Asphalt spreader boxes (all types); Barko, Wacker and similar type tampers; Buggymobile; Caulker, bander, pipewrapper, conduit layer, plastic pipelayer; Certified hazardous waste worker including Leade Abatement; Compactors of all types; Concrete and magnesite mixer, 1/2 yd. and under; Concrete pan work; Concrete sander; Concrete saw; Cribber and/or shoring; Cut granite curb setter; Dri-pak-it machine; Faller, logloader and bucket; Form raiser, slip forms; Green cutter; Headerboard, Hubsetter, aligner, by any method; High pressure blow pipe (1-1/2" or over, 100 lbs. pressure/over); Hydro seeder and similar type; Jackhammer operator; Jacking of pipe over 12 inches; Jackson and similar type compactor; Kettle tender, pot and worker applying asphalt, lay-kold, creosote, lime, caustic and similar type materials (applying means applying, dipping or handling of such materials); Lagging, sheeting, whaling, bracing, trenchjacking, lagging hammer; Magnesite, epoxyresin, fiberglass, mastic worker (wet or dry); No joint pipe and stripping of same, including repair of voids; Pavement breaker and spader, including tool grinder; Perma curb; Pipelayer (including grade checking in

connection with pipelaying); Precast-manhole setter; Pressure pipe tester; Post hole digger, air, gas and electric; Power broom sweeper; Power tampers of all types (except as shown in Group 2); Ram set gun and stud gun; Riprap stonepaver and rock-slinger, including placing of sacked concrete and/or sand (wet or dry) and gabions and similar type; Rotary scarifier or multiple head concrete chipping scarifier; Roto and Ditch Witch; Rototiller; Sandblaster, pot, gun, nozzle operators; Signalling and rigging; Tank cleaner; Tree climber; Turbo blaster; Vibrascreed, bull float in connection with laborers' work; Vibrator; Hazardous waste worker (lead removal); Asbestos and mold removal worker

GROUP 1-a: Joy drill model TWM-2A; Gardner-Denver model DH143 and similar type drills; Track driller; Jack leg driller; Wagon driller; Mechanical drillers, all types regardless of type or method of power; Mechanical pipe layers, all types regardless of type or method of power; Blaster and powder; All work of loading, placing and blasting of all powder and explosives of whatever type regardless of method used for such loading and placing; High scalers (including drilling of same); Tree topper; Bit grinder

GROUP 1-b: Sewer cleaners shall receive \$4.00 per day above Group 1 wage rates. "Sewer cleaner" means any worker who handles or comes in contact with raw sewage in small diameter sewers. Those who work inside recently active, large diameter sewers, and all recently active sewer manholes, shall receive \$5.00 per day above Group 1 wage rates.

GROUP 1-c: Burning and welding in connection with laborers' work; Synthetic thermoplastics and similar type welding

GROUP 1-d: Maintenance and repair track and road beds (underground structures). All employees performing work covered herein shall receive \$.25 per hour above their regular rate for all work performed on underground structures not specifically covered herein. This paragraph shall not be construed to apply to work below ground level in open cut. It shall apply to cut and cover work of subway construction after the temporary cover has been placed.

GROUP 1-e: Work on and/or in bell hole footings and shafts thereof, and work on and in deep footings. (A deep footing is a hole 15 feet or more in depth.) In the event the depth of the footing is unknown at the commencement of excavation, and the final depth exceeds 15 feet, the deep footing wage rate would apply to all employees for each and every day worked on or in the excavation of the footing from the date of inception.

GROUP 1-f: Wire winding machine in connection with guniting or shot crete

GROUP 2: Asphalt shoveler; Cement dumper and handling dry cement or gypsum; Choke-setter and rigger (clearing work); Concrete bucket dumper and chute; Concrete chipping and grinding; Concrete laborer (wet or dry); Driller tender, chuck tender, nipper; Guinea chaser (stake), grout crew; High pressure nozzle, adductor; Hydraulic monitor (over 100 lbs. pressure); Loading and unloading, carrying and hauling of all rods and materials for use in reinforcing concrete

construction; Pittsburgh chipper and similar type brush shredders; Sloper; Single foot, hand-held, pneumatic tamper; All pneumatic, air, gas and electric tools not listed in Groups 1 through 1-f; Jacking of pipe - under 12 inches

GROUP 3: Construction laborers, including bridge and general laborer; Dump, load spotter; Flag person; Fire watcher; Fence erector; Guardrail erector; Gardener, horticultural and landscape laborer; Jetting; Limber, brush loader and piler; Pavement marker (button setter); Maintenance, repair track and road beds; Streetcar and railroad construction track laborer; Temporary air and water lines, Victaulic or similar; Tool room attendant (jobsite only)

GROUP 4: All clean-up work of debris, grounds and building including but not limited to: street cleaner; cleaning and washing windows; brick cleaner (jobsite only); material cleaner (jobsite only). The classification "material cleaner" is to be utilized under the following conditions: A: at demolition site for the salvage of the material. B: at the conclusion of a job where the material is to be salvaged and stocked to be reused on another job. C: for the cleaning of salvage material at the jobsite or temporary jobsite yard. The material cleaner classification should not be used in the performance of "form stripping, cleaning and oiling and moving to the next point of erection".

GUNITE LABORER CLASSIFICATION

GROUP 1: Structural nozzleman

GROUP 2: Nozzleman, Gunman, Potman, Groundman

GROUP 3: Reboundman

GROUP 4: Gunitite laborer

WRECKING WORK LABORER CLASSIFICATIONS

GROUP 1: Skilled wrecker (removing and salvaging of sash, windows and materials)

GROUP 2: Semi-skilled wrecker (salvaging of other building materials)

LAB00304-006 07/01/2023

ALAMEDA COUNTY

	Rates	Fringes
Brick Tender.....	\$ 37.05	27.45

FOOTNOTES: Work on jobs where heat-protective clothing is required: \$2.00 per hour additional. Work at grinders: \$.25 per hour additional. Manhole work: \$2.00 per day additional.

LAB00304-007 07/01/2023

ALAMEDA AND CONTRA COSTA COUNTIES:

	Rates	Fringes
Plasterer tender.....	\$ 41.93	30.32

Work on a swing stage scaffold: \$1.00 per hour additional.

LAB00324-001 06/26/2023

AREA ""A"" - CONTRA COSTA COUNTY

AREA ""B"" - NAPA, SOLANO, AND SONOMA COUNTIES

	Rates	Fringes
Laborers: (CONSTRUCTION CRAFT LABORERS - AREA A:)		
Construction Specialist.....	\$ 37.20	27.30
GROUP 1.....	\$ 36.50	27.30
GROUP 1-a.....	\$ 36.72	27.30
GROUP 1-c.....	\$ 36.55	27.30
GROUP 1-e.....	\$ 37.05	27.30
GROUP 1-f.....	\$ 37.08	27.30
GROUP 1-g (Contra Costa County).....	\$ 36.70	27.30
GROUP 2.....	\$ 36.35	27.30
GROUP 3.....	\$ 36.25	27.30
GROUP 4.....	\$ 29.94	27.30

See groups 1-b and 1-d under laborer classifications.

Laborers: (CONSTRUCTION CRAFT LABORERS - AREA B:)		
Construction Specialist.....	\$ 36.20	27.30
GROUP 1.....	\$ 35.50	27.30
GROUP 1-a.....	\$ 35.72	27.30
GROUP 1-c.....	\$ 35.55	27.30
GROUP 1-e.....	\$ 36.05	27.30
GROUP 1-f.....	\$ 36.08	27.30
GROUP 2.....	\$ 35.35	27.30
GROUP 3.....	\$ 35.25	27.30
GROUP 4.....	\$ 28.94	27.30

Laborers: (GUNITE - AREA A:)		
GROUP 1.....	\$ 37.46	27.30
GROUP 2.....	\$ 36.96	27.30
GROUP 3.....	\$ 36.37	27.30
GROUP 4.....	\$ 36.25	27.30

Laborers: (GUNITE - AREA B:)		
GROUP 1.....	\$ 36.46	27.30
GROUP 2.....	\$ 35.96	27.30
GROUP 3.....	\$ 35.37	27.30
GROUP 4.....	\$ 35.25	27.30

Laborers: (WRECKING - AREA A:)		
GROUP 1.....	\$ 36.50	27.30
GROUP 2.....	\$ 36.35	27.30

Laborers: (WRECKING - AREA B:)		
GROUP 1.....	\$ 35.50	27.30
GROUP 2.....	\$ 35.35	27.30

Landscape Laborer (GARDENERS, HORTICULTURAL & LANDSCAPE LABORERS - AREA A:)		
Establishment Warranty Period.....	\$ 29.94	27.30
New Construction.....	\$ 36.25	27.30

Landscape Laborer (GARDENERS, HORTICULTURAL & LANDSCAPE LABORERS - AREA B:)		
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Establishment Warranty		
Period.....	\$ 28.94	27.30
New Construction.....	\$ 35.25	27.30

FOOTNOTE: Laborers working off or with or from bos'n chairs, swinging scaffolds, belts (not applicable to workers entitled to receive the wage rate set forth in Group 1-a): \$0.25 per hour additional.

LABORER CLASSIFICATIONS

CONSTRUCTION SPECIALIST GROUP: Asphalt ironer and raker; Chainsaw; Laser beam in connection with laborers' work; Cast-in- place manhole form setter; Pressure pipelayer; Davis trencher - 300 or similar type (and all small trenchers); Blaster; Diamond driller; Multiple unit drill; Hydraulic drill

GROUP 1: Asphalt spreader boxes (all types); Barko, Wacker and similar type tampers; Buggymobile; Caulker, bander, pipewrapper, conduit layer, plastic pipelayer; Certified hazardous waste worker including Leade Abatement; Compactors of all types; Concrete and magnesite mixer, 1/2 yd. and under; Concrete pan work; Concrete sander; Concrete saw; Cribber and/or shoring; Cut granite curb setter; Dri-pak-it machine; Faller, logloader and bucket; Form raiser, slip forms; Green cutter; Headerboard, Hubsetter, aligner, by any method; High pressure blow pipe (1-1/2" or over, 100 lbs. pressure/over); Hydro seeder and similar type; Jackhammer operator; Jacking of pipe over 12 inches; Jackson and similar type compactor; Kettle tender, pot and worker applying asphalt, lay-kold, creosote, lime, caustic and similar type materials (applying means applying, dipping or handling of such materials); Lagging, sheeting, whaling, bracing, trenchjacking, lagging hammer; Magnesite, epoxyresin, fiberglass, mastic worker (wet or dry); No joint pipe and stripping of same, including repair of voids; Pavement breaker and spader, including tool grinder; Perma curb; Pipelayer (including grade checking in connection with pipelaying); Precast-manhole setter; Pressure pipe tester; Post hole digger, air, gas and electric; Power broom sweeper; Power tampers of all types (except as shown in Group 2); Ram set gun and stud gun; Riprap stonepaver and rock-slinger, including placing of sacked concrete and/or sand (wet or dry) and gabions and similar type; Rotary scarifier or multiple head concrete chipping scarifier; Roto and Ditch Witch; Rototiller; Sandblaster, pot, gun, nozzle operators; Signalling and rigging; Tank cleaner; Tree climber; Turbo blaster; Vibrascreed, bull float in connection with laborers' work; Vibrator; Hazardous waste worker (lead removal); Asbestos and mold removal worker

GROUP 1-a: Joy drill model TWM-2A; Gardner-Denver model DH143 and similar type drills; Track driller; Jack leg driller; Wagon driller; Mechanical drillers, all types regardless of type or method of power; Mechanical pipe layers, all types regardless of type or method of power; Blaster and powder; All work of loading, placing and blasting of all powder and explosives of whatever type regardless of method used for such loading and placing; High scalars (including drilling of same); Tree toppler; Bit grinder

GROUP 1-b: Sewer cleaners shall receive \$4.00 per day above

Group 1 wage rates. ""Sewer cleaner"" means any worker who handles or comes in contact with raw sewage in small diameter sewers. Those who work inside recently active, large diameter sewers, and all recently active sewer manholes, shall receive \$5.00 per day above Group 1 wage rates.

GROUP 1-c: Burning and welding in connection with laborers' work; Synthetic thermoplastics and similar type welding

GROUP 1-d: Maintenance and repair track and road beds (underground structures). All employees performing work covered herein shall receive \$.25 per hour above their regular rate for all work performed on underground structures not specifically covered herein. This paragraph shall not be construed to apply to work below ground level in open cut. It shall apply to cut and cover work of subway construction after the temporary cover has been placed.

GROUP 1-e: Work on and/or in bell hole footings and shafts thereof, and work on and in deep footings. (A deep footing is a hole 15 feet or more in depth.) In the event the depth of the footing is unknown at the commencement of excavation, and the final depth exceeds 15 feet, the deep footing wage rate would apply to all employees for each and every day worked on or in the excavation of the footing from the date of inception.

GROUP 1-f: Wire winding machine in connection with guniting or shot crete

GROUP 1 g: CONTRA COSTA COUNTY: Pipelayer (including grade checking on connection with peiplaying); Caulker; Bander; Pipewrapper; Conduit layer; Plastic pipe layer; ?ressure pipe tester; No joint pipe and stripping of same, including repair of voids; Precast manhole setters, cast in place manhole from setters

GROUP 2: Asphalt shoveler; Cement dumper and handling dry cement or gypsum; Choke-setter and rigger (clearing work); Concrete bucket dumper and chute; Concrete chipping and grinding; Concrete laborer (wet or dry); Driller tender, chuck tender, nipper; Guinea chaser (stake), grout crew; High pressure nozzle, adductor; Hydraulic monitor (over 100 lbs. pressure); Loading and unloading, carrying and hauling of all rods and materials for use in reinforcing concrete construction; Pittsburgh chipper and similar type brush shredders; Sloper; Single foot, hand-held, pneumatic tamper; All pneumatic, air, gas and electric tools not listed in Groups 1 through 1-f; Jacking of pipe - under 12 inches

GROUP 3: Construction laborers, including bridge and general laborer; Dump, load spotter; Flag person; Fire watcher; Fence erector; Guardrail erector; Gardener, horticultural and landscape laborer; Jetting; Limber, brush loader and piler; Pavement marker (button setter); Maintenance, repair track and road beds; Streetcar and railroad construction track laborer; Temporary air and water lines, Victaulic or similar; Tool room attendant (jobsite only)

GROUP 4: All clean-up work of debris, grounds and building including but not limited to: street cleaner; cleaning and washing windows; brick cleaner (jobsite only); material

cleaner (jobsite only). The classification ""material cleaner"" is to be utilized under the following conditions: A: at demolition site for the salvage of the material. B: at the conclusion of a job where the material is to be salvaged and stocked to be reused on another job. C: for the cleaning of salvage material at the jobsite or temporary jobsite yard. The material cleaner classification should not be used in the performance of ""form stripping, cleaning and oiling and moving to the next point of erection"".

GUNITE LABORER CLASSIFICATION

GROUP 1: Structural nozzleman

GROUP 2: Nozzleman, Gunman, Potman, Groundman

GROUP 3: Reboundman

GROUP 4: Gunite laborer

WRECKING WORK LABORER CLASSIFICATIONS

GROUP 1: Skilled wrecker (removing and salvaging of sash, windows and materials)

GROUP 2: Semi-skilled wrecker (salvaging of other building materials)

LAB00324-011 07/01/2023

SOLANO AND SONOMA COUNTIES

	Rates	Fringes
LABORER		
Mason Tender-Brick.....	\$ 36.84	26.24

FOOTNOTE: Refractory work where heat-protective clothing is required: \$2.00 per hour additional.

LAB00324-015 07/01/2023

CONTRA COSTA COUNTY

	Rates	Fringes
Brick Tender.....	\$ 37.05	27.45

FOOTNOTES: Work on jobs where heat-protective clothing is required: \$2.00 per hour additional. Work at grinders: \$.25 per hour additional. Manhole work: \$2.00 per day additional.

LAB00324-017 07/01/2023

EL DORADO, MARIN, NAPA, PLACER, SACRAMENTO, SOLANO, SONOMA, SUTTER, YOLO AND YUBA COUNTIES

	Rates	Fringes
Plasterer tender.....	\$ 39.77	28.54

Work on a swing stage scaffold: \$1.00 per hour additional.

PAIN0016-002 01/01/2025

EL DORADO, PLACER, SACRAMENTO, SUTTER, YOLO AND YUBA COUNTIES

Rates Fringes

Painters:

Brush.....\$ 43.45 22.80

SPRAY/SANDBLAST: \$0.50 additional per hour.

EXOTIC MATERIALS: \$1.25 additional per hour.

HIGH TIME: Over 50 ft above ground or water level \$2.00 additional per hour. 100 to 180 ft above ground or water level \$4.00 additional per hour. Over 180 ft above ground or water level \$6.00 additional per hour.

PAIN0016-009 01/01/2024

ALAMEDA, CONTRA COSTA, MONTEREY, SAN BENITO, SAN FRANCISCO, SAN MATEO, SANTA CLARA, SANTA CRUZ AND SONOMA COUNTIES

Rates Fringes

SOFT FLOOR LAYER.....\$ 59.00 33.03

PAIN0016-011 01/01/2025

AREA 1: ALAMEDA, CONTRA COSTA, NAPA, SAN FRANCISCO, SAN MATEO, SANTA CLARA, SOLANO AND SONOMA COUNTIES

AREA 2: EL DORADO COUNTY, MONTEREY, PLACER, SACRAMENTO, SAN BENITO, SANTA CRUZ, SIERRA, SUTTER AND YUBA COUNTIES

Rates Fringes

Drywall Finisher/Taper

AREA 1.....\$ 63.76 32.69

AREA 2.....\$ 59.63 31.29

PAIN0016-013 01/01/2025

ALAMEDA, CONTRA COSTA, MARIN, MONTEREY, NAPA, SAN BENITO, SAN MATEO, SANTA CLARA, SANTA CRUZ, SOLANO & SONOMA COUNTIES

Rates Fringes

PAINTER.....\$ 53.38 28.04

FOOTNOTES:

Spray Work: \$0.50 additional per hour.

Exotic Materials: \$1.25 additional per hour

PAIN0016-019 01/01/2025

SAN FRANCISCO COUNTY

Rates Fringes

PAINTER.....\$ 57.00 28.04

PAIN0169-006 01/01/2024

ALAMEDA, CONTRA COSTA, MARIN, MONTEREY, NAPA, SAN BENITO, SAN FRANCISCO, SAN MATEO, SANTA CLARA, SANTA CRUZ, SONOMA COUNTIES;and SOLANO COUNTY (west of a line defined as follows: Hwy. 80 corridor beginning at the City of Fairfield, including Travis Air Force Base and Suisun City; going north of Manakas Corner Rd., continue north on Suisun Valley Rd. to the Napa County line; Hwy. 80 corridor south on Grizzly Island Rd. to the Grizzly Island Management area):

Rates Fringes

GLAZIER.....\$ 56.22 34.00

* PAIN0567-002 07/01/2025

EL DORADO AND PLACER COUNTIES

Rates Fringes

PAINTER

Paper Hanger.....\$ 42.19 16.16
Brush and Roller.....\$ 39.43 16.16
Spray Painter.....\$ 41.43 16.16

PREMIUMS:

Spray & Paperhanger = \$0.85/hr
Special Coatings (Brush), & Sandblast = \$0.50/hr
Special Coatings (Spray), & Steeplejack = \$1.00/hr
Swing Stage = \$2.00/hr

*A special coating is a coating that requires the mixing of 2 or more products.

PAIN0567-008 07/01/2022

EL DORADO AND PLACER COUNTIES

Rates Fringes

SOFT FLOOR LAYER.....\$ 34.27 16.47

PAIN0567-011 07/01/2024

EL DORADO AND PLACER COUNTIES

Rates Fringes

DRYWALL FINISHER/TAPER.....\$ 42.79 16.12

STEEPLEJACK-Drywall Finisher over 40 ft with open space below: \$1.50 additional per hour.

PAIN0767-002 01/01/2024

EL DORADO, PLACER, SACRAMENTO, SOLANO, SUTTER, YOLO AND YUBA COUNTIES

	Rates	Fringes
GLAZIER.....	\$ 43.25	35.62

PAID HOLIDAYS: New Year's Day, Martin Luther King, Jr. Day, President's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day.

FOOTNOTE: Employee required to wear a body harness shall receive \$1.50 above the basic hourly rate at any elevation.

PAIN1176-001 07/01/2022

HIGHWAY IMPROVEMENT

	Rates	Fringes
Parking Lot Striping/Highway Marking:		
GROUP 1.....	\$ 40.83	17.62
GROUP 2.....	\$ 34.71	17.62
GROUP 3.....	\$ 35.11	17.62

CLASSIFICATIONS

GROUP 1: Striper: Layout and application of painted traffic stripes and marking; hot thermo plastic; tape, traffic stripes and markings

GROUP 2: Gamecourt & Playground Installer

GROUP 3: Protective Coating, Pavement Sealing

PAIN1237-002 01/01/2024

EL DORADO, PLACER, SACRAMENTO, SUTTER, YOLO AND YUBA COUNTIES

	Rates	Fringes
SOFT FLOOR LAYER.....	\$ 48.54	26.59

PLAS0066-001 07/01/2019

ALAMEDA, CONTRA COSTA, SAN FRANCISCO AND SAN MATEO COUNTIES:

	Rates	Fringes
PLASTERER.....	\$ 42.41	30.73

PLAS0300-002 07/01/2018

	Rates	Fringes
PLASTERER		
AREA 224: San Benito, Santa Clara & Santa Cruz Counties.....	\$ 32.88	31.68
AREA 295: El Dorado, Napa, Placer, Sacramento, Solano, Sonoma, Sutter, Yolo & Yuba Counties.....	\$ 32.70	31.68
AREA 337: Monterey County...	\$ 32.88	31.68

AREA 355: Marin County.....\$ 36.73 31.68

 PLAS0300-005 07/01/2016

Rates Fringes

CEMENT MASON/CONCRETE FINISHER...\$ 32.15 23.27

 PLUM0038-003 07/01/2025

MARIN, SAN FRANCISCO & SONOMA COUNTIES

Rates Fringes

PLUMBER (Plumber,
 Steamfitter, Refrigeration
 Fitter)

(1) Wood Frame
 Construction in San
 Francisco, and all work in
 Marin & Sonoma Counties.....\$ 82.00 48.18

(2) New Construction in
 San Francisco County.....\$ 91.00 49.49

 PLUM0038-007 07/01/2025

MARIN, SAN FRANCISCO & SONOMA COUNTIES

Rates Fringes

Landscape/Irrigation Fitter
 (Underground/Utility Fitter).....\$ 77.35 36.53

 PLUM0062-001 01/01/2026

MONTEREY AND SANTA CRUZ COUNTIES

Rates Fringes

PLUMBER & STEAMFITTER.....\$ 57.75 43.60

 PLUM0159-002 07/01/2024

CONTRA COSTA COUNTY

Rates Fringes

Plumber, Pipefitter,
 Steamfitter.....\$ 43.72 20.29

 PLUM0228-002 01/01/2026

SUTTER & YUBA COUNTIES

Rates Fringes

PLUMBER.....\$ 52.75 41.39

 PLUM0342-002 07/01/2025

ALAMEDA COUNTY

Rates Fringes

PLUMBER & STEAMFITTER.....\$ 80.50 50.45

PLUM0343-002 01/01/2026

NAPA AND SOLANO COUNTIES

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 37.35	21.15

FOOTNOTES: Work from trusses, temporary staging, unguarded structures 35' from the ground or water: \$.75 per hour additional. Work from swinging scaffolds, boatswains chairs or similar devices: \$.75 per hour additional.

PLUM0350-002 08/01/2023

EL DORADO AND PLACER COUNTIES (LAKE TAHOE BASIN ONLY)

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 52.14	18.71

PLUM0355-002 07/01/2025

ALAMEDA, CONTRA COSTA, EL DORADO, MONTEREY, NAPA, PLACER, SACRAMENTO, SAN BENITO, SAN MATEO, SANTA CLARA, SANTA CRUZ, SOLANO, SUTTER, YOLO AND YUBA COUNTIES

	Rates	Fringes
Underground Utility Worker /Landscape Fitter.....	\$ 36.01	18.50

PLUM0393-002 09/01/2013

SAN BENITO & SANTA CLARA COUNTIES

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 30.90	7.90

PLUM0447-003 07/01/2025

EL DORADO, PLACER, SACRAMENTO AND YOLO COUNTIES:

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 55.58	24.02

PLUM0467-001 07/01/2025

SAN MATEO COUNTY

	Rates	Fringes
Plumber/Pipefitter/Steamfitter...	\$ 87.75	41.44

ROOF0040-001 08/01/2024

SAN FRANCISCO & SAN MATEO COUNTIES:

Rates	Fringes
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ROOFER.....\$ 55.30 22.97

ROOF0081-003 08/01/2024

ALAMEDA, CONTRA COSTA, MARIN, NAPA, SOLANO, AND SONOMA COUNTIES:

Rates Fringes

ROOFER.....\$ 54.94 23.34

ROOF0081-005 08/01/2023

EL DORADO, PLACER, SACRAMENTO, SUTTER, YOLO AND YUBA COUNTIES

Rates Fringes

ROOFER.....\$ 46.73 21.36

ROOF0095-001 08/01/2023

MONTEREY, SAN BENITO, SANTA CLARA, AND SANTA CRUZ COUNTIES

Rates Fringes

ROOFER

Bitumastic, Enameler, Coal
Tar, Pitch and Mastic

worker.....\$ 57.17 21.51

Journeyman.....\$ 53.17 21.51

Kettle person (2 kettles)...\$ 55.17 21.51

* SFCA0483-002 01/01/2026

ALAMEDA, CONTRA COSTA, MARIN, NAPA, SAN FRANCISCO, SAN MATEO,
SANTA CLARA, SOLANO AND SONOMA COUNTIES:

Rates Fringes

SPRINKLER FITTER.....\$ 49.82 18.05

SFCA0669-006 01/01/2026

MONTEREY, SAN BENITO AND SANTA CRUZ COUNTIES

Rates Fringes

SPRINKLER FITTER.....\$ 49.69 29.72

SFCA0669-012 01/01/2026

EL DORADO, PLACER, SACRAMENTO, SUTTER, YOLO AND YUBA COUNTIES

Rates Fringes

SPRINKLER FITTER.....\$ 52.06 29.86

* SHEE0104-002 07/01/2025

AREA 1: ALAMEDA, CONTRA COSTA, MARIN, NAPA, SAN FRANCISCO, SAN
MATEO, SANTA CLARA, SOLANO & SONOMA

AREA 2: MONTEREY & SAN BENITO

AREA 3: SANTA CRUZ

	Rates	Fringes
SHEET METAL WORKER		
AREA 1.....	\$ 67.03	50.79
AREA 2.....	\$ 60.64	39.04
AREA 3.....	\$ 55.16	34.18

 SHEE0104-017 07/01/2020

EL DORADO, PLACER, SACRAMENTO, SUTTER, YOLO AND YUBA COUNTIES

	Rates	Fringes
SHEET METAL WORKER.....	\$ 30.29	16.41

 TEAM0094-001 07/01/2025

	Rates	Fringes
Truck drivers:		
GROUP 1.....	\$ 43.26	34.28
GROUP 2.....	\$ 43.56	34.28
GROUP 3.....	\$ 43.86	34.28
GROUP 4.....	\$ 44.21	34.28
GROUP 5.....	\$ 44.56	34.28

FOOTNOTES:

Articulated dump truck; Bulk cement spreader (with or without auger); Dumpcrete truck; Skid truck (debris box); Dry pre-batch concrete mix trucks; Dumpster or similar type; Slurry truck: Use dump truck yardage rate.
 Heater planer; Asphalt burner; Scarifier burner; Industrial lift truck (mechanical tailgate); Utility and clean-up truck: Use appropriate rate for the power unit or the equipment utilized.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Dump trucks, under 6 yds.; Single unit flat rack (2-axle unit); Nipper truck (when flat rack truck is used appropriate flat rack shall apply); Concrete pump truck (when flat rack truck is used appropriate flat rack shall apply); Concrete pump machine; Fork lift and lift jitneys; Fuel and/or grease truck driver or fuel person; Snow buggy; Steam cleaning; Bus or personhaul driver; Escort or pilot car driver; Pickup truck; Teamster oiler/greaser and/or serviceperson; Hook tender (including loading and unloading); Team driver; Tool room attendant (refineries)

GROUP 2: Dump trucks, 6 yds. and under 8 yds.; Transit mixers, through 10 yds.; Water trucks, under 7,000 gals.; Jetting trucks, under 7,000 gals.; Single-unit flat rack (3-axle unit); Highbed heavy duty transport; Scissor truck; Rubber-tired muck car (not self-loaded); Rubber-tired truck jumbo; Winch truck and "A" frame drivers; Combination winch truck with hoist; Road oil truck or bootperson; Buggymobile; Ross, Hyster and similar straddle carriers; Small rubber-tired tractor

GROUP 3: Dump trucks, 8 yds. and including 24 yds.; Transit mixers, over 10 yds.; Water trucks, 7,000 gals. and over; Jetting trucks, 7,000 gals. and over; Vacuum trucks under

7500 gals. Trucks towing tilt bed or flat bed pull trailers; Lowbed heavy duty transport; Heavy duty transport tiller person; Self-propelled street sweeper with self-contained refuse bin; Boom truck - hydro-lift or Swedish type extension or retracting crane; P.B. or similar type self-loading truck; Tire repairperson; Combination bootperson and road oiler; Dry distribution truck (A bootperson when employed on such equipment, shall receive the rate specified for the classification of road oil trucks or bootperson); Ammonia nitrate distributor, driver and mixer; Snow Go and/or plow

GROUP 4: Dump trucks, over 25 yds. and under 65 yds.; Water pulls - DW 10's, 20's, 21's and other similar equipment when pulling Aqua/pak or water tank trailers; Helicopter pilots (when transporting men and materials); Lowbedk Heavy Duty Transport up to including 7 axles; DW10's, 20's, 21's and other similar Cat type, Terra Cobra, LeTourneau Pulls, Tournorocker, Euclid and similar type equipment when pulling fuel and/or grease tank trailers or other miscellaneous trailers; Vacuum Trucks 7500 gals and over and truck repairman

GROUP 5: Dump trucks, 65 yds. and over; Holland hauler; Low bed Heavy Duty Transport over 7 axles

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Note: Executive Order 13658 generally applies to contracts subject to the Davis-Bacon Act that were awarded on or between January 1, 2015 and January 29, 2022, and that have not been renewed or extended on or after January 30, 2022. Executive Order 13658 does not apply to contracts subject only to the Davis-Bacon Related Acts regardless of when they were awarded. If a contract is subject to Executive Order 13658, the contractor must pay all covered workers at least \$13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025. The applicable Executive Order minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections

under Executive Order 13658 is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007

6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

- a) a survey underlying a wage determination
- b) an existing published wage determination
- c) an initial WHD letter setting forth a position on a wage determination matter
- d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION"

SECTION 00 75 00

GRANT FORMS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
1. To comply with the Contract requirements for Grant Funding, the Contractor must complete the following forms (attached) and submit them **with the Bid:**
 - a. None
 2. To comply with Contract requirements for Grant Funding, the Contractor must complete the following forms and submit them at the District's request following Bid opening in accordance with Section 00 20 00, Part 2.06.A:
 - a. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
 - b. Lobbying Forms, only one shall be completed, as applies:
 - 1) Certification Regarding Lobbying, or
 - 2) Disclosure of Lobbying Activities
 - c. Form 1: DBE "Good Faith" Effort List of Subcontractors Solicited
 - d. Form 5: Summary of Bids Received – DBE and non-DBE.
 3. To comply with Contract requirements for Grant Funding, the Contractor must complete the following forms and submit them at the District's request following award of the project.
 - a. Certification of Non-Segregated Facilities
 - b. Drug-Free Workplace Certification
 - c. Non-Discrimination Clause
- B. The certification requirements included herein are described in more detail in Section 00 74 00, Grant Conditions.

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CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND
VOLUNTARY EXCLUSION

CONTRACTOR/APPLICANT:

(1) The contractor certifies, by submission of this proposal, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any Federal agencies;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the contractor is unable to certify to any of the statements in this certification, such contractor shall attach an explanation to this proposal*.

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

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized legally to bind the contractor or loan recipient to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

OFFICIAL'S NAME:

DATE EXECUTED:

EXECUTED IN COUNTY OF:

CONTRACTOR/APPLICANT SIGNATURE:

TITLE:

MARCH 2026
2026 WATER METER INSTALLATION PROJECT

SECTION 00 75 00
GRANT FORMS

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DRUG-FREE WORKPLACE CERTIFICATION

CONTRACTOR/APPLICANT:

The contractor or applicant named above hereby certifies compliance with Government Code Section 8355 in matters relating to providing a drug-free workplace. The above named contractor or applicant will:

1. Publish a statement notifying employees that unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited and specifying actions to be taken against employees for violations, as required by Government Code Section 8355(a).
2. Establish a Drug-Free Awareness Program as required by Government Code Section 8355(b), to inform employees about all of the following:
 - (a) The dangers of drug abuse in the workplace,
 - (b) The person's or organization's policy of maintaining a drug-free workplace,
 - (c) Any available counseling, rehabilitation and employee assistance programs, and
 - (d) Penalties that may be imposed upon employees for drug abuse violations.
3. Provide as required by Government Code Section 8355(c), that every employee who works on the proposed contract or loan:
 - (a) Will receive a copy of the company's drug-free policy statement, and
 - (b) Will agree to abide by the terms of the company's statement as a condition of employment on the contract or loan.

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized legally to bind the contractor or loan recipient to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

OFFICIAL'S NAME:

DATE EXECUTED:

EXECUTED IN COUNTY OF:

CONTRACTOR/APPLICANT SIGNATURE:

TITLE:

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NON-DISCRIMINATION CLAUSE

CONTRACTOR/APPLICANT:

1. During the performance of this contract, contractor and its subcontractors shall not unlawfully discriminate against any employee or applicant for employment because of sex, race, religion, color, national origin, ancestry, physical disability (including HIV and AIDS), mental disability, medical condition (cancer), marital status, age (over 40) or denial of family care leave. Contractors and subcontractors shall insure that the evaluation and treatment of their employees and applicants for employment are free of such discrimination and harassment. Contractors and subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code Section 12900 (a-f) et seq.) and the applicable regulations promulgated thereunder (California Administrative Code, Title 2, Section 7285.0 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code, Section 12900 (a-f), set forth in Chapter 5 of Division 4 of Title 2 or the California Administrative Code are incorporated into this contract by reference and made a part hereof as if set forth in full. Contractor and its subcontractor shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.

 2. The contractor shall include the nondiscrimination and compliance provisions of this clause in all subcontracts to perform work under the contract.
-

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized legally to bind the contractor or loan recipient to the above described certification. I hereby certify that the Contractor will abide by the above requirements. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

OFFICIAL'S NAME:

DATE EXECUTED:

EXECUTED IN COUNTY OF:

CONTRACTOR/APPLICANT SIGNATURE:

TITLE:

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CERTIFICATION REGARDING LOBBYING

CONTRACTOR/APPLICANT:

The undersigned certifies to the best of his or her knowledge and belief that:

(1) No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in conjunction with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan or cooperative agreement, the undersigned shall complete and submit Standard Form LLL, Disclosure Form to Report Lobbying, in accordance with its instructions.

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized legally to bind the contractor or loan recipient to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

OFFICIAL'S NAME:

DATE EXECUTED:

EXECUTED IN COUNTY OF:

CONTRACTOR/APPLICANT SIGNATURE:

TITLE:

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DISCLOSURE OF LOBBYING ACTIVITIES

Approved by OMB

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

0348-0046

(See reverse for public burden disclosure.)

1. Type of Federal Action: <input type="checkbox"/> a. contract <input type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance	2. Status of Federal Action: <input type="checkbox"/> a. bid/offer/application <input type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award	3. Report Type: <input type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change For Material Change Only: year _____ quarter _____ date of last report _____
4. Name and Address of Reporting Entity: <input type="checkbox"/> Prime <input type="checkbox"/> Subawardee Tier _____, if known : Congressional District, if known :	5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime: Congressional District, if known :	
6. Federal Department/Agency:	7. Federal Program Name/Description: CFDA Number, if applicable: _____	
8. Federal Action Number, if known :	9. Award Amount, if known : \$ _____	
10. a. Name and Address of Lobbying Registrant <i>(if individual, last name, first name, MI):</i>	b. Individuals Performing Services <i>(including address if different from No. 10a)</i> <i>(last name, first name, MI):</i>	
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.	Signature: _____ Print Name: _____ Title: _____ Telephone No.: _____ Date: _____	
Federal Use Only:		Authorized for Local Reproduction Standard Form LLL (Rev. 7-97)

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, State and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, State and zip code of the prime Federal recipient. Include Congressional District, if known.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, State and zip code of the lobbying registrant under the Lobbying Disclosure Act of 1995 engaged by the reporting entity identified in item 4 to influence the covered Federal action.

(b) Enter the full names of the individual(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).
11. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

According to the Paperwork Reduction Act, as amended, no persons are required to respond to a collection of information unless it displays a valid OMB Control Number. The valid OMB control number for this information collection is OMB No. 0348-0046. Public reporting burden for this collection of information is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, DC 20503.

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FORM 1

DISADVANTAGED BUSINESS ENTERPRISE (DBE)
“GOOD FAITH” EFFORT LIST OF SUBCONTRACTORS SOLICITED

Contractor Name	Contractor Address	How Located	Date of Contact	Contact Method	Type of Work/Trade	Response (Yes/No)

Provide complete list. Use additional sheets, if necessary

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END OF SECTION

DIVISION 01

SECTION 01 10 00

GENERAL PROJECT REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Description of construction delivered under Contract, separate Contracts and restrictions affecting construction activities.

PART 2 SUMMARY OF WORK

2.01 PROJECT DESCRIPTION

- A. It is the District's intent to retrofit and install seventy one new water service connections ranging from $\frac{3}{4}$ " to 1" in size with new meters, radio read units, meter pits or boxes, required insulation, vaults, transmitting units (MXUs), required valve replacements, and associated restoration work.

2.02 DEFINITION OF WORK

- A. The Work to be performed under the Contract Documents shall include the furnishings of all labor, materials, equipment, tools, transportation, and incidentals necessary for the completion of all Work for the 2026 Water Meter Installation Project.

2.03 LOCATION OF PROJECT

- A. The Work is located within the District boundaries at or near South Lake Tahoe, California.

PART 3 WORK RESTRICTIONS

3.01 CONTRACTOR'S USE OF PREMISES

- A. Contractor access during construction shall be limited to those areas of the site indicated on the Plans. Access to additional areas of the site may be granted to Contractor with approval of the Engineer.
- B. Contractor access ways, staging areas and materials storage are shown on the Plans.
- C. Safety and security of the Contractor's equipment and materials on District property is the responsibility of the Contractor.

- D. Contractor's use of premises shall be limited to those activities that are necessary for the completion of the Work, and shall be limited to the Work Hours defined in Part 3.02
- E. Overnight storage of equipment on road shoulder within the Right of Way will be allowed if the following requirements are met:
 - 1. Driveways and other entrances or exits from properties are not to be obstructed.
 - 2. A 24 hour contact number is provided to the District in the event that equipment must be moved for any reason.
 - 3. Areas for proposed overnight storage of equipment are digitally photographed in advance by the Contractor and the photographs are provided to the District.
 - 4. Any damage or land disturbance caused by storing of equipment overnight will be repaired on a daily basis by the Contractor at the Contractor's expense.
 - 5. Area's used for overnight storage of equipment will be brought back to conditions equivalent to the pre-project conditions at the contractor's expense.
 - 6. The safety and security of equipment and storage area is the sole responsibility of the Contractor.

3.02 WORK HOURS

- A. On-site work hours shall be as indicated on the Plans.

3.03 WORK BY OTHERS

- A. The District, utility companies, and others may be working within the project area while the Work is in progress. If so, the Contractor shall schedule its work, in conjunction with these other persons to minimize mutual interference, to the extent reasonably possible within the time constraints of this Project.
- B. Others working on associated facilities and probably interfacing with the Contractor at some time during the execution of the work include:
 - 1. Operations and Maintenance personnel of the South Tahoe Public Utility District;
 - 2. Other utilities and/or agencies including, but not limited to, Caltrans, City of South Lake Tahoe, El Dorado County, Southwest Gas, Sierra Pacific Power, AT&T/SBC and Cable TV suppliers.
- C. The Contractor shall cooperate to make the necessary connections at a minimum cost and time delay for all involved. In the event of lack of agreement, the Engineer will determine how and where the interface shall be made and his decision shall be final.

3.04 USE OF COMPLETED PORTIONS, RIGHT TO OPERATE UNSATISFACTORY EQUIPMENT OR FACILITIES

- A. The District may, at any time, and from time to time, during the performance of the work, enter the work site for the purpose of installing any necessary work by the District labor or other contracts, and for any other purpose in connection with the installation of facilities. In doing so, the District shall endeavor not to interfere with the Contractor and the Contractor shall not interfere with other work being done by or on behalf of the District.
- B. If, prior to completion and final acceptance of all the work, the District takes possession of any structure or facility (whether completed or otherwise) comprising a portion of the work with the intent to retain possession (as distinguished from temporary possession contemplating the return to the Contractor) then, while the District is in possession of the same, the Contractor shall be relieved of liability for loss or damage to such structure other than that resulting from the Contractor's fault or negligence. Such taking of possession by the District shall not relieve the Contractor from any provisions of this Contract respecting such structure, other than to the extent specified in the preceding sentence, nor constitute a final acceptance of such structure or facility.
- C. If, following installation of any equipment or facilities furnished by the Contractor, defects requiring correction by the Contractor are found, the District shall have the right to operate such unsatisfactory equipment or facilities and make reasonable use thereof until the equipment or facilities can be shut down for correction of defects without injury to the District.

3.05 PUBLIC CONVENIENCE

- A. This section defines the Contractor's responsibility with regard to convenience of the public and public traffic in connection with his operations.
- B. The Contractor shall so conduct its operations as to offer the least possible obstruction and inconvenience to the public and shall have under construction no greater length or amount of work than can be prosecuted properly with due regard to the rights of the public.
- C. Unless otherwise provided in the Contract Documents, all public traffic shall be permitted to pass through the work with as little inconvenience and delay as possible.
- D. Spillage resulting from hauling operations along or across any publicly traveled way shall be removed immediately by the Contractor at its expense.
- E. Construction operations shall be conducted in such a manner as to cause as little inconvenience as possible to abutting property owners.
- F. Convenient access to driveways, houses, and buildings along the line of the work shall be maintained and temporary approaches to crossings or intersecting highways shall be provided and kept in good condition. When

the abutting property owner's access across the right-of-way line is to be eliminated, or to be replaced under the Contract by other access facilities, the existing access shall not be closed until the replacement access facilities are usable.

- G. Water shall be supplied if ordered by the Engineer for the alleviation or prevention of dust nuisance affecting the public and traffic, as provided in Section 01 50 00, Part 2.06.

END OF SECTION

SECTION 01 20 00

PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Administrative and procedural requirements for cash and quantity allowances for products, installation, testing and contingencies.

PART 2 PRICE AND PAYMENT PROCEDURES

2.01 PROGRESS PAYMENT

- A. Progress Payment Spreadsheet. By the first Monday of the month, the District will provide the Contractor a Progress Payment Spreadsheet (Spreadsheet). In consultation with the Engineer (or Engineer's designee), the parties will work collaboratively to determine the estimated bid item quantities (or percentage of work) completed by the Contractor through the end of the previous month. By close of business on Friday of that week, the Contractor will submit the Spreadsheet, along with such supporting documentation and calculations required by the Contract Documents, to the District. The Engineer will review the Spreadsheet and determine whether the estimated quantities are correct. If the estimated quantities are not correct in the opinion of the District, the Engineer and Contractor will attempt to resolve differences in the estimated quantities. If an agreement cannot be reached for a particular item quantity, the proposed Pay Estimate Package provided to the Contractor will be based on the District's estimated quantity for the item.
- B. Pay Estimate Package. The District will prepare the proposed Pay Estimate Package and distribute it to the Contractor. Within three (3) calendar days of receiving the proposed Pay Estimate Package, the Contractor shall review the proposed Pay Estimate Package and submit an executed Pay Estimate Package to the District pursuant to Public Contract Code section 20104.50. The Contractor is responsible for the accuracy of the submitted Pay Estimate Package and by submitting the Pay Estimate Package to the District, the Contractor verifies the accuracy of the pay quantities. Upon receipt, the District shall review the Pay Estimate Package to determine whether it is undisputed and suitable for payment. If the Pay Estimate Package is unsuitable for payment, it shall be returned to Contractor as soon as practicable, but not later than seven (7) calendar days after receipt, accompanied by a document setting forth in writing the reasons why the Pay Estimate Package is not proper. The Contractor shall make the necessary corrections and resubmit the Pay Estimate Package within three (3) days of receiving the Pay Estimate Package unsuitable for payment. After receipt of a Pay Estimate Package that is determined by the District to be undisputed and suitable for payment, the Pay Estimate Package will be presented to the District Board of

Directors for approval at a future Board meeting. The District shall have the right to adjust any estimate of quantity and to subsequently correct any error made in any estimate for payment. Nothing in this section waives any rights or remedies reserved for the District, including, but not limited to, withholding payment of encumbered funds, under this Contract or allowed by law..

- C. The payment request may, under separate line item, give consideration to materials on hand as a convenience to the Contractor. Consideration shall only be upon Contractor's request, and shall be presented in a form that is acceptable to the Engineer for counting and tracking materials. Materials on hand will be paid only for materials delivered to the work site, and for which the Contractor provides paid invoices. The Contractor shall be responsible for updating the summary on a monthly basis to zero out items that have been installed in the prior month.
- D. In reviewing the payment request, the Engineer shall deduct from the amount of the request:
 - 1. amounts due to the District for equipment or materials furnished or services rendered;
 - 2. amounts due to the District under the terms of the Contract; and
 - 3. amounts required to be deducted by federal, state or local governmental authority.
- E. The Contractor shall submit with each payment request the Contractor's conditional waiver of lien for the entire amount covered by such payment request, in the forms prescribed by California Civil Code §3262.
- F. The Contractor may, in accordance with the provisions of Public Contract Code section 22300, substitute securities for any monies which the District may withhold to insure performance under the Contract.
- G. When, in the judgment of the Engineer, the work is not proceeding in accordance with the provisions of the Contract, no pay payment request will be prepared and no payment will be made.
- H. No payment request or payment shall be considered to be an approval or acceptance of any work, materials, or equipment. Estimated amounts and values of work done and materials and equipment furnished will be conformed with actual amounts and values as they become available in subsequent payment requests, progress payments and the final estimate and payment. All requests and payments will be subject to correction in subsequent and final payment requests and payment.
- I. No payments made under the Contract, including progress payments and the final payment, shall be evidence of the performance of the Contract, either wholly or in part, and no payment shall be construed to be an acceptance of any defective or incomplete work or improper materials.
- J. If the validity of a properly filed request for payment by the Contractor is not disputed, payment of the request by the District shall include interest at the rate provided in Subdivision (a) of Section 685.010 of the Code of Civil Procedures if payment has not been made within thirty (30) days after the proper submission of the claim to the District. The District shall review each payment request as soon as

practicable after receipt for the purpose of determining whether the payment request is a proper payment request. Any payment request determined not to be a proper payment request suitable for payment shall be returned to the Contractor as soon as practicable, but not later than seven (7) days, after receipt. A request returned pursuant to this subsection shall be accompanied by a written explanation of the reasons why the payment request is not proper. The number of days available to the District to make a payment without incurring interest pursuant to this subsection shall be reduced by the number of days by which the District exceeds the seven (7) day return requirement set forth above.

2.02 FINAL PAYMENT

- A. Final Payment shall be in conformance with the terms set forth Section 01 77 00, Closeout Procedures.

END OF SECTION

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SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Administrative and procedural requirements for the management and coordination of subcontractors and coordination with other Contractors and the District.

PART 2 PROJECT MANAGEMENT AND COORDINATION

2.01 RESPONSIBILITY OF CONTRACTOR

- A. If any part of the Work depends on proper execution or results of the work of others, the Contractor shall inspect and promptly report to the Engineer any apparent discrepancies or defects in such work of others that render it unsuitable for such proper execution and results. Failure of the Contractor to so inspect and report constitutes acceptance of the work of others as fit and proper except as to defects which may develop in the work of others after execution of the Work by the Contractor.

2.02 CONTRACT DOCUMENTS

- A. The Contractor shall keep one copy of the Contract Documents, Shop Drawings, Change Orders and other modifications in good order, available to the Engineer and his representatives, and convenient to the work site. This set of Contract Documents shall be marked as the project progresses to record the details of all changes made during construction. Contract Drawings shall include schematic depictions of changes, and Specifications shall include redline strikeout of changes to language; showing only reference to related Requests for Information, Shop Drawings or written directive will not suffice.
- B. During the progress meetings, defined in Part 3.02 below, such documents shall be reviewed to ascertain that all changes have been recorded.
- C. If the Contractor, in the course of the work, finds any discrepancy between the Contract Documents and the physical condition of the locality, or any errors or omissions in the Contract Documents, or in the layout as given by points and instructions, the Contractor shall follow the procedures outlined in Section 00 72 00, General Conditions.

2.03 SEPARATE CONTRACTS

- A. The District reserves the right to let other contracts in connection with this work. The Contractor shall afford such other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate his work with the other contractor's work.
- B. To insure the proper execution of his subsequent work, the Contractor shall measure work already in place and shall at once report to the Engineer any discrepancy between the executed work and the drawings.

2.04 COOPERATION OF CONTRACTORS

- A. 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 said 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 (including material sources) at any time, by the use of other forces.
- B. When two or more contractors are employed on related or adjacent work, each shall conduct its operation 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 its unnecessary delays or failure to finish the work within the time specified for completion.

2.05 COORDINATION OF WORK

- A. The Contractor shall maintain overall coordination for the execution of the Work. Based on the Construction Schedule prepared in accordance with the Contract Documents, the Contractor shall obtain from each of its subcontractors a similar schedule which shall be integrated into the construction schedule. The Contractor shall then be responsible for all parties maintaining these schedules and coordinating required modifications as approved by the District.

2.06 SUPERINTENDENCE

- A. Contractor's Representative: The Contractor shall designate in writing before starting work an individual as authorized representative who shall have the authority to represent and act for the Contractor. This authorized representative shall be present at the site of the work at all times while work is actually in progress on the Contract. The Contractor shall not change representatives without the written approval of the Engineer.

- B. When work is not in progress and during periods when work is suspended, arrangements acceptable to the Engineer shall be made for the performance and supervision of any emergency work which may be required.
- C. It is the intent of this section that the Contractor (1) supervise all work, including that of subcontractors, (2) be responsible for the quality and conformance with contract provisions of all work, and (3) maintain responsibility for the actions of subcontractors and suppliers at the job site. The Contractor is solely responsible, at all times, for the superintendence of the work and for its safety and progress.
- D. Whenever the Contractor or its authorized representative is not present on any particular part of the work where it may be desired to give direction, such direction will be given by the Engineer, which shall be received and obeyed by the superintendent or foreman who may have charge of the particular work in reference to which the orders are given.
- E. Any order given by the Engineer, not otherwise required by the Contract Documents to be in writing, will on request of the Contractor, be given or confirmed by the Engineer in writing.
- F. The Contractor shall place on record at the District, and keep current, the name of the Contractor's representative and the phone number at which he can be contacted at such times that he is not at the work site (such as after working hours and on holidays and weekends) to respond to District requests to correct safety and other problems that may arise in connection with the work.

2.07 CHARACTER OF WORKERS

- A. If any Subcontractor, or person employed by the Contractor or any Subcontractor shall fail or refuse to carry out the directions of the District or its agents or shall appear to the District or its agents to be incompetent or to act in a disorderly, unsafe, or improper manner, that person shall be removed from the project work immediately on the request of the District or its agents, and such person shall not again be employed on the work. Such discharge shall not be the basis for any claim for compensation or damages against the District, or any of its officers or agents.

2.08 SAFETY

- A. The Contractor shall carefully instruct all personnel working in potentially hazardous work areas as to potential dangers and shall provide such necessary safety equipment and instruction as is necessary to prevent injury to personnel and damage to property. Special care shall be exercised relative to electrical work, work involving excavation, and in work involving confined spaces.
- B. The Contractor shall provide its personnel with additional training to address the following:

- C. Contractor shall be required to comply with the District's Lockout/Tagout program and procedures. A copy of the program will be provided to the Contractor prior to the start of work.
- D. Refer to Section 01 33 00, Submittals Process, for submittals requirements pertaining to project safety.

PART 3 PROJECT MEETINGS

3.01 PRECONSTRUCTION CONFERENCE

- A. Upon receipt of the Notice to Proceed, or at an earlier time if mutually agreeable, the Engineer will arrange a pre-construction conference to be attended by the Contractor's superintendent, the District, the Engineer, or his representative, and representatives of utilities, major subcontractors, and others involved in the execution of the Work.
- B. The purpose of this conference shall be to establish a working understanding between the parties and to discuss the Construction Schedule prepared in accordance with Section 01 32 00, Part 2.01, shop drawing submittals preparation and processing in accordance with Section 01 33 00, Part 2.02, cost breakdown of major lump sum items, applications for payments and their processing, and such other subjects as may be pertinent for the execution of the Work.

3.02 PROGRESS MEETINGS

- A. The Contractor shall arrange and conduct progress meetings. These meetings shall be conducted at least once every two (2) weeks and shall be attended by the Contractor's superintendent and representatives of all subcontractors, utilities, and others, that are active in the execution of the Work. The purpose of these meetings shall be to expedite the work of any subcontractor or other organization that is behind schedule, resolve conflicts, and in general coordinate and expedite the execution of the Work.
- B. The agenda of progress meetings shall include review of progress and schedule, review of payment requests at monthly intervals, review of narrative report, review of the latest Construction Schedule update, and review of the record documents if necessary.

END OF SECTION

SECTION 01 32 20

WEB-BASED CONSTRUCTION DOCUMENT MANAGEMENT

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Procedures and requirements for managing construction documentation and submittals for the Work.
 - 2. Responsibilities of the Contractor and the District for the management of construction documentation and submittals.
- B. The District and Contractor shall utilize Procore Technologies, Procore Construction Software (Procore) system for electronic submittal and tracking of all data and documents (unless specified otherwise by the District's representative) throughout the duration of the Contract.
 - 1. Procore is a web-based electronic media service hosted by Procore Technologies utilizing their Procore web solution.
 - 2. Procore will be paid for by the District, and the District will maintain the Service Agreement with Procore.
 - 3. Procore will be made available to the Contractor, their personnel, subcontractor personnel, suppliers, and consultants.
 - 4. The joint use of this system is to facilitate electronic exchange of information, automation of key processes, and overall management of Contract Documentation.
 - 5. Procore shall be the primary means of project information submission and management for the project.
- C. The intent of utilizing a web based construction management application is to reduce cost and schedule risk, improve quality and safety, and maintain a healthy team dynamic by improving information flow, reducing non-productive activities, reducing rework and decreasing turnaround times.

1.02 DEFINITIONS

- A. "Copy" or "Copies" shall refer to electronic copies unless a hard copy is specified. Where a hard copy is specified, both electronic and paper versions shall be submitted.

1.03 USER ACCESS LIMITATIONS

- A. The Engineer will control the Contractor's access to Procore by allowing access and assigning user profiles to accept Contractor personnel.
- B. User profiles will define levels of access into the system and determine assigned function-based authorizations and user privileges.

- C. Subcontractors and suppliers will be given access to Procore by and through the Contractor. Entry of information exchanged and transferred on Procore between the Contractor and its subcontractors, suppliers and consultants shall be the responsibility of the Contractor.

1.04 JOINT OWNERSHIP OF DATA

- A. Data entered in a collaborative mode (ie., entered with the intent to share as determined by permissions and workflows within the Procore system) by the District and the Contractor shall be jointly owned.

1.05 AUTOMATED SYSTEM NOTIFICATION AND AUDIT LOG TRACKING

- A. Review comments made (or lack thereof) by the District on Contractor-submitted documentation shall not be interpreted as changes to the Contract nor shall they relieve the Contractor from compliance with the Contract Documents.
- B. As discussed elsewhere in these Contract Documents, the Contractor is responsible for managing, tracking and documenting the Work to comply with the requirements of the Contract Documents.
- C. The District's acceptance via automated system notifications or audit logs extends only to the face value of the submitted documentation, and does not constitute validation of the Contractor's submitted documentation.
- D. In compliance with Public Contract Code §1601, Procore provides both (1) automatic transmission of receipts confirming that documents submitted by Contractor have been received by the District, and (2) an electronic online record of the history of transmission and receipt of each document submitted by the Contractor.

1.06 SUBMITTALS

- A. See Section 01 33 00 for submittal requirements.
- B. Preconstruction submittals:
 - 1. Contractor shall provide a list of personnel responsible for Procore administration within one week following the Notice to Proceed.
 - 2. The list shall include key personnel's roles and responsibilities, including email addresses. Contractor should also identify the corporations' system administrator on the list.

1.07 COMPUTER SYSTEM REQUIREMENTS

- A. The Contractor shall use computer hardware and software that meets the requirements of the Procore system, as recommended by Procore Technologies, to access and utilize Procore. As recommendations are modified by Procore, the Contractor shall upgrade their system(s) to meet or exceed the recommendations. The cost to procure or upgrade the Contractor's computer systems to meet Procore requirements shall be the

responsibility of the Contractor, and will not be considered a justifiable basis for cost or time modification to the Contract.

- B. The Contractor shall be responsible for providing connectivity to the Procore system through DSL, cable, T-1 or wireless communication systems at no additional cost to the District. If connectivity is to be established at the Site, the means of connection shall be acceptable to the District. The minimum bandwidth requirement for using the system is 25 mb/s. It is recommended that a faster connection be used when uploading pictures and files into the system.
- C. Procore is web based and supports the current versions of Google Chrome, Mozilla Firefox, Microsoft Edge, and Apple Safari. Older versions may be supported, however the newest versions will provide the best experience.
- D. Procore provides a mobile application (app) for both iOS and Android devices.
 - 1. The mobile app is expected to be utilized by District and Contractor representatives on-site. The iOS app currently supports iOS 17.1 and 18 and iOS or iPad OS devices which support these software versions. The Android app supports Android 13 and newer versions.
 - 2. While compatibility is based on software requirements, the user experience will be impacted by the mobile hardware being utilized. Procore recommends devices be replaced every 2-3 years to keep up with the demands of up-to-date software requirements. Procore also recommends a minimum of 64 GB of free storage including 5-10 GB of free storage per project on each device.
 - 3. Devices may not be Jailbroken or Rooted as these processes significantly compromise the security of the data on the device.
- E. The Contractor shall ensure that PDF files are compatible with Adobe Acrobat 9.0 or later. Vector PDF shall be used for all drawing files and as often as possible for all PDF files.

1.08 CONTRACTOR RESPONSIBILITY

- A. The Contractor shall be responsible for the validity of their information placed in Procore and for the abilities of their personnel.
- B. Accepted users shall be knowledgeable in the use of computers, including internet browsers, email programs, CAD drawing applications, and Portable Document Format (pdf) document distribution program.
- C. The Contractor shall utilize the existing forms in Procore to the maximum extent possible. If a required form does not exist in Procore, the Contractor must include a form of their own or provided by the District as an attachment to a submittal or other document.
- D. PDF documents will be created through electronic conversion rather than optically scanned, whenever possible. If optically scanned, the document shall be converted through an OCR (Optical Character Reader) so that all

documents are searchable. The Contractor is responsible for the training of their personnel in the use of Procore and the other programs indicated above, as needed. Lack of training will not be considered a justifiable basis for cost or time modification to the Contract.

- E. User Access Administration
 - 1. The Contractor shall provide a list of key project personnel for the District's review and acceptance.
 - 2. Each user must have a unique email address.
 - 3. The Contractor is responsible for adding users to the project directory, as appropriate. The Contractor will be given permission to add personnel to Procore. The Contractor will be responsible for managing the permissions of each user they add to the Directory.
 - 4. The District reserves the right to perform a security check on all potential users.
 - 5. There is no limit to the number of users which may be added to the Directory and given access to Procore.
 - 6. The Contractor may add Subcontractor companies to the project directory and provide access to Procore tools for subcontractor use. The Contractor is responsible for managing the workflow of their Subcontractors.

1.09 CONNECTIVITY PROBLEMS

- A. Procore is a web-based environment and, therefore, subject to the inherent speed and connectivity problems of the internet. The Contractor is responsible for its own connectivity to the internet. Procore response time is dependent on the Contractor's equipment, including processor speed, internet access speed, etc., and current traffic on the internet. The District will not be liable for any delays associated from the usage of Procore including, but not limited: slow response time, down time periods, connectivity problems, or loss of information. The Contractor will ensure that they maintain connectivity to the Procore system (whether at the home office or project site). Under no circumstances shall the usage of Procore be grounds for a time extension or cost adjustment to the Contract.

1.10 TRAINING

- A. Procore training is provided at no cost at <https://learn.procore.com/>. The training is self-paced learning through videos and interactive web pages. The Contractor Project Manager is expected to complete the Project Management Certification at a minimum; this course is approximately 3 hours. The Quality & Safety (1-2 hours) and Financial Management (3-4 hours) are also recommended for complex projects. Contractor Superintendents are expected to complete the Superintendent Certification at a minimum; this course is approximately 3.5 hours. Specific Procore tool trainings are also available.
- B. Contractor shall arrange and pay for the facilities and hardware/software required to facilitate all training.

PART 2 PRODUCTS

2.01 DESCRIPTION

- A. Procore project management application (no equal) provided by Procore Technologies at:

<https://www.procore.com/>

2.02 SOFTWARE CAPABILITIES

- A. It is intended that the contractor utilize the following capabilities of the Procore Software. Some functions will be initiated by District staff or their representatives, other functions will be initiated by the Contractor and/or their Subcontractors.
- B. Directory
1. Provides a directory of all team member's contact information that is accessible from web and mobile.
- C. Dashboards
1. Provides a dashboard that shows the status of all currently assigned items with drill down capability to see the subject, assignee and due date of each item.
- D. Drawings
1. Provides access to a system maintained current set of drawings on web and mobile, with access to all previous revisions as well.
 2. Provides automatic hyperlinking capability for detail callouts.
 3. Provides drawing markup capabilities on web and mobile.
 4. Provides ability to link RFIs, Submittals, Punchlist Items, Photos and Project Documents to the drawings.
 5. Drawing Markups are carried forward when new revisions are uploaded.
 6. Markups and linked documentation are able to be public or private.
- E. Specifications
1. Provides ability to upload project specifications and manage them at the individual specification level.
 2. Provides ability to view and search specifications on web and mobile.
 3. Provides ability to upload revisions to individual specifications and maintain all revision history.
 4. Provides an auto-generated current specification log that provides access to the current version of each specification.
 5. Provides ability to link specifications to submittals and view the specification from the submittal.
- F. Schedule
1. Provides ability to display schedules from typical scheduling software such as Microsoft Project, Primavera P3, Primavera P6 or Asta Powerproject.

- G. Requests for Information (RFIs)
 - 1. Provides ability to create RFIs with assignees, due dates and attachments.
 - 2. Provides ability for assignees to respond to RFIs both via the software and by responding to the system generated email.
 - 3. Provides an auto-generated log of all RFIs.
- H. Submittals
 - 1. Provides ability to upload a submittal register of all expected submittals.
 - 2. Provides ability to create multi-step approval workflows for submittals, with reminder notifications for the current assignee.
 - 3. Provides the ability to upload any file type without size restrictions.
 - 4. Provides an auto-generated submittal log.
- I. Documents
 - 1. Provides a storage location for miscellaneous project documents.
 - 2. There is no file size storage limit.
 - 3. Provides download tracking.
 - 4. Provides the ability to revise and check out files, with access to all previous revisions.
- J. Financial Management
 - 1. Provides ability to manage contracts, payment applications, change events, and change orders through the software.
- K. Meetings
 - 1. Provides ability to create, edit and view meeting minutes from web and mobile.
 - 2. Provides ability to create action items with assignees and due dates from a meeting item.
- L. Daily Log
 - 1. Provides daily log entry from web and mobile with automatic capture of daily weather conditions.
 - 2. Provides ability to attach photographs to entries directly from mobile.
- M. Photos
 - 1. Provides ability to upload and view photos from web and mobile.
 - 2. Provides ability to markup photos from mobile to clarify anything important in the photo.
 - 3. Provides ability to link photos to specific locations on drawings.
- N. Inspections
 - 1. Provides ability to create inspections from web and mobile.
 - 2. Provides ability to create a deficiency item from an inspection that can be assigned and tracked to completion.
- O. Deficiency Tracking

1. Provides a means for recording, assigning and confirming completion of any deficiency or observation noted during the course of construction.
- P. Punchlist
1. Provides ability to create punchlist items from web and mobile and link them to specific locations on the drawings.
 2. Provides ability to distribute punchlist items to all contractors, for contractors to mark them as resolved with photographic proof of resolution via mobile, and for the items to be marked as complete via mobile or web.

PART 3 EXECUTION

3.01 PROCORE UTILIZATION

- A. Procore shall be utilized in connection with all document and information management required by these Contract Documents. Documents and information to be submitted electronically include, but are not limited to, the documents described in Part 3.02 below.
- B. Procore shall be utilized for on-site documentation of construction activities including, but not limited to, the activities described in Part 3.03 below.
- C. Procore shall be utilized for Schedule and Meetings management including, but not limited to, the activities described in Part 3.04 below.
- D. Procore shall be utilized for all financial documentation required by the contract including, but not limited to, the activities described in Part 3.05 below.

3.02 SUBMITTALS

- A. Shop Drawings
 1. Shop drawing and design data documents shall be submitted as PDF attachments to the Procore submittal workflow process and form. Examples of shop drawings include, but are not limited to:
 - a. All shop drawings identified in Section 01 33 00, Part 2.03.
 - b. Standard manufacturer installation drawings.
 - c. Drawings prepared to illustrate portions of the work designed or developed by the Contractor.
 - d. Steel fabrication, piece, and erection drawings.
 - e. Electrical interconnection drawings.
- B. Product Data
 1. Product data shall be submitted as PDF attachment to the Procore submittal workflow process and form. Examples of product data include, but are not limited to:
 - a. All product data identified in Section 01 33 00, Part 2.03.
 - b. Manufacturer's printed literature.

- c. Preprinted product specification data and installation instructions.
- d. Made in America Certification, if required by Contract.

C. Samples

- 1. Sample submittals shall be physically submitted as specified in Section 01 33 00, Part 2.04. Contractor shall enter submittal data information into Procore with a copy of the submittal form(s) attached to the sample. Photographs of the samples shall be attached to the submittal in Procore. Examples of samples include, but are not limited to:
 - a. Product finishes and color selection samples.
 - b. Product finishes and color verification samples.
 - c. Finish/color boards.
 - d. Physical samples of materials, including soil samples.

D. Administrative Submittals

- 1. All correspondence and pre-construction submittals shall be submitted using Procore. Examples of administrative submittals include, but are not limited to:
 - a. Permits
 - b. Lists of project personnel and contact information
 - c. Project schedule and progress schedules, as required in Section 01 32 00 and Part 3.02.D.2, below.
 - d. Requests for Information (RFI)
 - e. Shut-down Requests and Demolition Requests
 - f. Evidence of qualifications
- 2. Network Analysis Schedules and associated reports and updates. Each schedule submittal specified in these Contract Documents shall be submitted as a native backed-up file of the scheduling program being used. The schedule shall also be posted as a PDF file.
- 3. Plans for safety, demolition, environmental protection, and similar activities, as identified in Section 01 33 00, Part 2.06, and elsewhere in these Contract Documents.
- 4. Any general correspondence submitted.

E. Compliance Submittals

- 1. Test reports, certificates and manufacturer field report submittals shall be submitted on Procore as PDF attachments. Examples of compliance submittals include, but are not limited to:
 - a. Certificates of Compliance, as identified in Section 01 33 00, Part 2.05
 - b. Field test reports
 - c. Quality control certifications
 - d. Manufacturers documentation and certifications for quality of products and materials provided

F. Record and Closeout Submittals

- 1. Operations and maintenance data closeout submittals shall be submitted on Procore as PDF documents during the approval and review stage as specified, with hard copy sets of documents submitted for final. Examples of record submittals include, but are not limited to:
 - a. Preventive Maintenance Forms

- b. O&M Manuals, as identified in Section 01 33 00, Part 2.07
 - c. Extra materials, Spare Stock, etc.: Submittal forms shall indicate when actual materials are submitted. Photos of spare parts shall be attached to the submittal in Procore.
2. Other Closeout submittals
- a. Contractor red-line markups (in both pdf and editable form).
 - b. Contractor photographs.
 - c. Survey data (in both pdf and editable form).

3.03 CONSTRUCTION ACTIVITY DOCUMENTATION

- A. Daily Logs
- 1. Daily Logs will be utilized by District staff and their assignees to record daily construction activities. These logs will be available for the Contractor to view, but will be owned by the District.
- B. Photos
- 1. The Photos tool can be utilized by both District and Contractor staff. This tool is intended to document the work in progress.
 - 2. Contractor shall coordinate with District representatives to classify photos into Albums and tag Locations and Trades as appropriate.
 - 3. Photos can be taken directly in the Procore mobile application.
- C. Observations
- 1. District representative will utilize the Observations tool to track specific events, quality, safety, warranty, or environmental concerns.
 - 2. District representatives may assign observations to Contractor staff to address. Contractor shall address identified issues and respond in Procore with comments as appropriate, and update the Status to Ready to Review once addressed.
- D. Punch List
- 1. District representative or Contractor will add items to the Pump List and add Assignees.
 - 2. District representative will typically assign items to the Contractor and it will be the responsibility of the Contractor to add Subcontractor Assignees when needed.
 - 3. Contractor shall mark items as Ready for Review once completed and District representative will Resolve and Close each item.

3.04 SCHEDULING AND MEETINGS

- A. Schedule
- 1. The Contractor shall utilize Procore's Schedule tool to provide and update the Master Schedule in accordance with specification section 01 32 00 – Construction Progress Documentation.
 - 2. Procore supports importing MPP, MPX, XER, PP, XML, PPX, and other files. Visit <https://support.procore.com/> for additional details.
 - 1) The Master Schedule will be a Read-Only project schedule.
 - 2) Updating the Master Schedule requires updates be made in an external application and imported into Procore.

3. Lookahead Schedules shall be prepared to show a detailed schedule encompassing the upcoming three-to-six-week period.
 - a. Lookahead Schedules will be generated from the Master Schedule.
 - b. Lookahead schedules shall be prepared at a minimum interval of every two weeks during periods of active construction activity.

B. Meetings

1. The Meetings tool shall be used to schedule construction progress meetings in accordance with specification section 01 31 00 – Project Management and Coordination.
2. The Meetings tool shall be used to create agenda items which may be assigned to Procure users.
3. Meeting Minutes shall be recorded within this tool.

3.05 FINANCIAL MANAGEMENT

A. Commitments

1. The District's Contract Specialist will create the Project Commitment for the Contract.
 - a. For Lump Sum contracts (contracts where the majority of bid items are Lump Sum as opposed to Unit Price), the Contractor will be required to enter a Schedule of Values to further break down each Lump Sum bid item.
 - b. For Unit Price contracts, the unit prices provided in the bid will be utilized for tracking progress and payment.
2. Change Events, Change Orders, RFQs (Requests for Quotations), and Invoices will be tied to the Commitment

B. Change Events

1. Change Events shall be used to track all changes to the contract including, but not limited to, no-cost changes, contract change requests, additional work tracked on a time and material basis, and requests for changes to the Contract Time.
2. Change Events may be initiated by the District or the Contractor.
3. Additional or reduced costs shall be provided by the Contractor using the RFQ (Request for Quote) tool.

C. Change Orders

1. Upon review and approval of Change Events, the District will create a Change Order including one or more Change Events. The District will route the Change Order to the Contractor for review and approval within the Procure Workflow. Upon Contractor approval, the District will route for internal review prior to finalizing.
2. Once the Change Order has been approved by the District's internal staff, it will be presented to the District's Board of Directors for approval.
3. Once the Board of Directors has approved a Change Order, the PDF document will be routed for electronic signature using Adobe Sign.
4. Once the Change Order Document is fully executed, the document will be copied into Procure and the Change Order will be Approved and

added to the Commitment, allowing for payment to be requested on Invoices.

- D. Invoicing
 - 1. Applications for Payment will be submitted by the Contractor by utilizing the Invoicing Tool.
 - 2. The District's Contract Specialist will create the monthly Billing Periods.
 - 3. The Contractor will create and submit invoices for approval in accordance with specification section 01 20 00 – Price and Payment Procedures.
 - 4. District representatives will review and Return or Approve the submitted invoice. Comments will be tracked using the associated Workflow.
 - 5. The PDF document will be prepared by the District's Contracts Specialist routed for electronic signature using Adobe Sign and the executed document will be copied into Procore.

3.06 CORRESPONDENCE

- A. The Correspondence tool allows for custom tools to be created for common project correspondence items when an existing Procore tool is not available.
- B. Certified Payroll Reports
 - 1. When Certified Payroll Reports (CPR) are required to be submitted to the District, the Contractor shall utilize the Correspondence tool.
 - 2. Each CPR shall include the Start and End date of the week being submitted.
 - 3. For each CPR Correspondence, there is a separate attachment area for General Contractor reports and Subcontractor reports.
 - a. The attachment filename shall include the contractor or subcontractor company name as well as any unique identifiers such as CPR number and/or date.
 - b. Multiple subcontractor reports can be submitted on the same Correspondence item but must be separate file attachments.
 - 4. CPRs may be returned to the Contractor if revisions and resubmittal are required.

END OF SECTION

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SECTION 01 33 00
SUBMITTALS PROCESS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Administrative and procedural requirements for processing of submittals during the construction stage.
 - 2. The requirements of this Section are in addition to the requirements for individual materials and equipment stated elsewhere in these Contract Documents.

PART 2 SUBMITTAL PROCEDURES

2.01 GENERAL INSTRUCTIONS FOR SUBMITTALS

- A. The Contractor shall submit to the Engineer such schedules, reports, drawings, lists, literature samples, instructions, directions, and guarantees as are specified or reasonably required for construction, operation, and maintenance of the Work in ample time for each to serve its purpose and function. All submittals shall be provided to the District within the time necessary to allow District review, to allow resubmittal and second review, if necessary, and to avoid delays in the work.
- B. Further, the Contractor must submit to the District for approval, any land use agreements between the Contractor and private property owners that affect the project.
- C. Each type of product shall have a separate submittal. For example, waterline pipe, sewer pipe, valves, aggregate base, and manholes will each require a submittal.
- D. Where product data from a manufacturer is submitted, clearly mark which model is proposed, with all pertinent data, capacities, clearances, diagrams, controls, connections, anchorage, and supports. Present a sufficient level of detail for assessment of compliance with contract documents.
- E. Each submittal shall be assigned a unique number. Submittals shall be numbered sequentially. The submittal numbers shall be clearly noted on the transmittal. Original submittals shall be assigned a numeric submittal number. Resubmittals shall bear an alphanumeric system which consists of the number assigned to the original submittal for that item followed by a letter of the alphabet to represent that it is a subsequent of the original. For example, if Submittal 25 requires a resubmittal, the first resubmittal will bear

the designation "25-A", the second resubmittal will bear the designation "25-B", and so on.

- F. Resubmittals of submittals will be reviewed and returned in the same review period as for the original submittal. It is considered reasonable that the Contractor shall make a complete and acceptable submittal by the second submission of a submittal item. The District reserves the right to withhold monies due to the Contractor to cover additional costs of any review beyond the second submittal.
- G. The drawings, lists, prints, specifications, samples, and other data required as project submittals and described herein shall become a part of the Contract Documents, and a copy of the same shall be kept with the job site Contract Documents, and the fabrications furnished shall be in conformance with the same. However, the Engineer's review of the above drawings, lists, prints, specifications, samples, or other data shall in no way release the Contractor from its responsibility for the proper completion of the requirements of this Contract nor for fulfilling the purpose of the installation nor from Contractor's liability to replace the same, should it prove defective or fail to meet the specified requirements.

2.02 CRITICAL EQUIPMENT SUBMITTALS

- A. The Contractor shall make shop drawing submittals to the Engineer in a timely manner for the Work to be completed within the specified Contract time. No contract extensions will be granted based solely on submittal review time.
- B. Critical equipment requiring early submittal for completion of the project include (but are not limited to):
 - 1. $\frac{3}{4}$ " and 1" Meter Pits and Setters
 - 2. $\frac{3}{4}$ " and 1" Meters
 - 3. Components subject to AIS requirements, including valve and meter boxes, pipe fittings, valves, and reinforcing steel
- C. Requests for substitution of critical equipment shall be made within 14 days after the Contract is signed.

2.03 SHOP DRAWINGS

- A. The Plans & Specifications shall be supplemented by such shop drawings prepared by the Contractor as are necessary to adequately control the work. Shop Drawings, layout diagrams, catalog data, test reports and information in sufficient detail to show complete compliance with all specified requirements shall be furnished to the Engineer covering, without limitation, the items included in the Materials and Equipment List.
- B. The Contractor, at its own expense, shall make such changes in the required drawings as may be necessary to conform to the Contract Documents. After completion of such review, verification, and revising, the

Contractor shall stamp and sign the drawings indicating his approval and submit the Shop Drawings and pertinent data to the Engineer for review.

- C. In addition, if the Contractor submits shop drawings of equipment by manufacturers other than those listed in the specifications, provide the following information with the submittal:
 - 1. The name and address of at least three companies or agencies that are currently using the equipment.
 - 2. The name and telephone number of at least one person at each of the above companies or agencies whom the Engineer may contact.
 - 3. A description of the equipment that was installed at the above locations. The description shall be in sufficient detail to allow the Engineer to compare it with the equipment that is proposed to be installed with this project.

- D. Prior to the Engineer's review of such drawings, any work which the Contractor may perform on the fabrications covered by the drawings shall be at Contractor's own risk and the District will not be responsible for any expenses or delays incurred by the Contractor for changes to make the drawings conform to the Contract Documents.

- E. Unless otherwise indicated elsewhere in these Contract Documents, Shop drawings and data shall be submitted to the Engineer with sufficient number as will allow the Engineer to retain four (4) copies of each submittal. The submittal shall clearly indicate the specific area of the Contract Documents for which the submittal is made. Any additional copies received by the Engineer will be returned to the Contractor's representative at the job site. The Engineer's notations of the actions taken will be noted on the returned copies

- F. Unless otherwise stated, the ENGINEER shall have fourteen (14) days from the date of receipt of shop drawings for review. No changes shall be made by the CONTRACTOR in any shop drawings after they have been reviewed and accepted by the ENGINEER.

- H. CONTRACTOR agrees that shop drawings processed by the ENGINEER are not Contract Change Orders; that the purpose of shop drawings submitted by the CONTRACTOR is to demonstrate to the ENGINEER that the CONTRACTOR understands the design concept, that he demonstrates his understanding by indicating which equipment and material he intends to furnish and by detailing the fabrication methods he intends to use. It is expressly understood, however, that favorable review of the CONTRACTOR's shop drawings shall not relieve the CONTRACTOR of any responsibility for accuracy of dimensions and details, or for mutual agreements of dimensions and details. It is mutually agreed that the CONTRACTOR shall be responsible for agreement and conformity of his shop drawings with the Specifications. CONTRACTOR further agrees that if deviations, discrepancies, or conflicts between shop drawings and Specifications are discovered either prior to or after shop drawings are processed by the ENGINEER, the Specifications shall control and shall be followed.

- I. 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. Any cost related to the ENGINEER's review of any particular set of shop drawings more than twice, due to incompleteness or unacceptability, shall be borne by the CONTRACTOR, and the DISTRICT reserves the right to withhold such costs from payments due the CONTRACTOR.

2.04 SAMPLES

- A. Representative preliminary samples of the character and quality prescribed shall be submitted by the Contractor or supplier in sufficient quantities or amounts for testing or examination, without additional charge.
- B. No material shall be used until the Engineer has had the opportunity to test or examine such materials. Samples will be secured and tested whenever necessary to determine the quality of the material. Samples and test specimens prepared at the job site, such as concrete test cylinders, shall be taken or prepared by the Engineer in the presence and with the assistance of the Contractor.
- C. Testing of samples shall be in conformance with the requirements of Part 2.04 of Section 01 43 00, Quality Assurance.

2.05 CERTIFICATE OF COMPLIANCE

- A. A Certificate of Compliance shall be furnished prior to the use of any materials for which the Contract Documents require that such a certificate be furnished. In addition, when so authorized in the Contract Documents, the Engineer may permit the use of certain materials or assemblies prior to sampling and testing if accompanied by a Certificate of Compliance. The Certificate shall be signed by the manufacturer of the material or the manufacturer of assembled materials and shall state that the materials involved comply in all respects with the requirements of the Contract. A Certificate of Compliance shall be furnished with each lot of material delivered to the work and the lot so certified shall be clearly identified in the Certificate. The Certificate of Compliance shall be in a form approved and prepared by the District.
- B. 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. In the event of rejection, the Contractor shall remove the rejected materials, at its cost, and replace them with conforming materials.
- C. The District reserves the right to refuse to permit the use of material on the basis of a Certificate of Compliance.

- D. The form of the Certificate of Compliance and its disposition shall be as directed by the Engineer.

2.06 SAFETY SUBMITTALS

- A. Shoring and Trench Safety Plan - Attention is directed to Section 832 of the Civil Code of the State of California relating to lateral and subjacent support, and the Contractor shall conduct its operations and act in such a manner in order to ensure compliance with this law. In accordance with Section 6705 of the State Labor Code, the Contractor shall submit to the District specific plans to show details of provisions for worker protection from caving ground. The Contractor shall furnish to the Engineer working drawings of the Contractor's trench safety plan, which must be accepted not less than fifteen (15) days before beginning excavation for any trench or trenches five (5) feet or more in depth required under this Contract. The trench safety plan working drawings shall be detailed plans showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground. If such plan varies from the shoring system standards established by the Construction Safety Orders of the California Occupational Safety and Health Administration or the Federal safety standards of the Department of Health, Education and Welfare, the plan shall be prepared by a registered civil or structural engineer. In no event shall the Contractor use a shoring, sloping, or protective system less effective than that required by said Construction Safety Orders, or less effective than that required by said Federal Safety Standards. Submission of this plan in no way relieves the Contractor from the requirement to maintain safety in all operations performed by him or his Subcontractors.
- B. In accordance with General Industry Safety Orders, Article 108 (Title 8, California Code of Regulations, Section 5156 et seq.), the Contractor shall submit to the District their program plan for controlling, and, where appropriate, for protecting employees from, confined space hazards and for regulating employee entry into confined spaces.

2.07 OPERATIONS AND MAINTENANCE MANUALS

- A. Submit electronic copies of completed Preventive Maintenance and Operating Requirement form **only**, summarizing the manufacturer's maintenance instructions and recommendations for the following equipment/materials supplied for the project:
 - 1. Pipe
 - 2. Gate Valves
 - 3. Fittings
 - 4. Meters

A blank data sheet and a sample data sheet are attached to this Section.

- B. Submit four paper copies and one electronic copy of all manufacturer's operation and maintenance (O&M) manuals and data for the following equipment:
 - 1. Valves

2. Meters

C. O&M manuals shall include:

1. A list of equipment furnished for Project with name, address, and telephone numbers of equipment furnished;
2. A list of serial numbers of equipment furnished;
3. A copy of shop drawings for mechanical, electrical, and instrument equipment in final form;
4. Complete operating and maintenance instructions for each and every item of equipment, setting forth in detail and step-by-step the procedure for starting, stopping, operating, and maintaining the system as installed;
5. Any test reports required by the Specifications;
6. A schedule of recommended maintenance intervals;
7. Complete parts list of replaceable parts, their part numbers, and the name and address of their nearest vendor.
8. Tabulation of motor nameplate horsepower, nameplate current, field-measured current, overload relay setting, and catalog number for polyphase motors, if applicable.
9. A list of fuses, lamps, seals, and other expendable equipment and devices, if applicable. Specify size, type and ordering description. List name, address, e-mail address, fax number and telephone number of vendor.
10. With each O&M submittal, the Contractor shall also submit a completed Preventive Maintenance and Operating Requirement sheet, summarizing the manufacturer's maintenance instructions and recommendations. A blank data sheet and a sample data sheet are attached to this Section.

- D. O&M Manuals specified herein are in addition to any operation, maintenance or installation instructions required by the Contractor to install, test and start up equipment.

2.08 PROJECT REDLINES

- A. Periodically during the project, the Contractor shall submit to the District for review and comment, a copy of the Contract Documents, or relevant portions thereof, marked to identify all changes made during construction, as directed in Section 013100, Part 2.02. The Contract Documents shall be marked to show in explicit detail all modifications and changes to the Contract requirements. It will not be sufficient for the Contractor to simply reference a separate written document; the details of the change must be shown on the working set of the Contract Documents. The Contractor shall submit these documents in the manner directed in Part 2.03 of this Section.
- B. The District may require the Contractor to submit redlines for review within five (5) business days when any of the following occur:
1. At the completion of a particular phase of work;
 2. At the completion of a particular discipline of work;
 3. At the completion of a particular structure; and
 4. Any time it is requested by the Engineer.

Project-specific requirements for timing of redline submittals will be established at the pre-construction meeting.

- C. At the completion of the Project the redlines, with review comments provided by the District, shall be submitted as the Contract Record Documents in accordance with Section 017700, Part 2.06 within fifteen (15) days of completion of the Work.

Preventive Maintenance and Operating Requirement Sheets

Preventive Maintenance Program		Equipment Record Number	
EQUIPMENT DESCRIPTION		ELECTRICAL OR MECHANICAL DATA	
Name: Tag No:		Size:	
Serial No.:		Model:	
Vendor:			
Vendor Address:		Type:	
		Mfr.:	
Vendor Rep:		Voltage:	Amps:
Phone:		Phase:	rpm:
Warranty Period:		Install Date:	
Asset Life Expectancy:			
Initial Meter Reading: 1.		Units:	
2.		Units:	
Other equip. info:			
Maintenance Work to be Done			Frequency*

*D - Daily; W - Weekly; B - Biweekly; M - Monthly; Q - Quarterly;
S - Semiannually; A - Annually.

Preventive Maintenance and Operating Requirement Sheets

OPERATING REQUIREMENTS AND REFERENCE	
PARTS LIST	
Description	Replaceable?
PERFORMANCE CRITERIA*	

* including, but not limited to vibration tolerances, alignment limits, and heat generation limits

SAMPLE

Preventive Maintenance and Operating Requirement Sheets

Preventive Maintenance Program		Equipment Record Number	
EQUIPMENT DESCRIPTION		ELECTRICAL OR MECHANICAL DATA	
Name: Influent Pump No. 1 Tag No.: P01		Size: 15 hp	
Serial No.: 123456ABC		Model: 140T Frame Serial No. 987654ZY Class F Insulation W/Space Heater	
Vendor: ABC Pump Co.			
Vendor Address: 1111 Pump Circle Newport Beach, CA 92663		Type:	
		Mfr.: DEF Motors, Inc.	
Vendor Rep: XYZ Equipment, Inc.		Voltage: 460	Amps: 20
Phone: 714/752-0505		Phase: 3	rpm: 1,800
Warranty Period: 2 years		Install Date: 8/15/17	
Asset Life Expectancy: 20 years			
Initial Meter Reading: 1. 12.3		Units: Hours	
2.		Units:	
Other equip. info:			
Maintenance Work to be Done			Frequency*
1. Operate all valves and check such things as a) bearing temperature, b) changes in running sound, c) suction and discharge gauge readings, d) pump discharge rate, and e) general condition of the drive equipment.			D
2. Check packing.			D
3. Checking pumping unit for any dust, dirt, or debris.			W
4. Lubricate bearing frame and motor bearings (consult manufacturer's instructions for type of grease or oil).			Q
5. Disassemble and change or repair the following: a) impeller, b) shafts, c) shaft sleeve, d) rotary seals, and e) sleeve bearings.			A

*D - Daily; W - Weekly; B - Biweekly; M - Monthly; Q - Quarterly;
S - Semiannually; A - Annually.

Preventive Maintenance and Operating Requirement Sheets

OPERATING REQUIREMENTS AND REFERENCE	
For manufacturer's instructions regarding installation, operation, maintenance, and trouble shooting of this equipment, see Volume ____, Section _____.	
PARTS LIST	
Description	Replaceable?
Impellor type, diameter and part number	Y
Coupling size, style, and part number	Y
Motor type, and part number	Y
Bearing numbers	Y
Filter	Y
Shaft sizes - pump and motor	Y
Seal size and composition	Y
Pump housing numbers	Y
Pump control valve, manufacturer and size	Y
PERFORMANCE CRITERIA*	

* including, but not limited to vibration tolerances, alignment limits, and heat generation limits

END OF SECTION

SECTION 01 35 00

SPECIAL PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Administrative and procedural requirements for special project situations.

PART 2 SPECIAL PROCEDURES

2.01 EMERGENCY WORK

- A. In an emergency affecting the safety of life, or of the work, or of adjoining property, the Contractor, without special instruction or authorization from the Engineer, is required to act at its discretion to prevent such threatened loss or injury. Any compensation claimed by the Contractor on account of emergency work shall be determined as specified under Part 2.11 of Section 00 72 00, General Conditions.
- B. Should the Engineer deem an emergency condition to exist, the Contractor shall immediately do those things and take those steps ordered by the Engineer. The decision of the Engineer in this respect shall be final and conclusive. Any claims for compensation made by the Contractor on account of emergency work shall be determined as specified under Part 2.11 of Section 00 72 00, General Conditions.

2.02 ARCHAEOLOGICAL ARTIFACTS

- A. If the Contractor encounter items of suspected archaeological significance are during excavation, the Contractor shall immediately stop excavation and inform the Engineer. The Contractor can resume excavation upon approval of the Engineer after consultation with the District's consulting archaeologist.

2.03 SUSPENSION OF WORK

- A. The Engineer may at any time, by notice in writing to the Contractor, suspend any part of the work for such period of time as may be necessary to prevent improper execution of the work on the project by the Contractor, its Subcontractors or agents, and the Contractor shall have no claim for damages or additional compensation on account of any such suspension.
- B. The District may at any time suspend any part or all of the work upon ten (10) days written notice to the Contractor, who shall immediately discontinue all work suspended except for all operations to prevent loss or damage to work already executed as may be directed by the Engineer. In the event a part of the work is suspended, the Contractor, if the suspension is not through his

fault or the fault of its Subcontractors or agents, shall be paid on the same basis as Extra Work for costs of work performed in accordance with such orders of the Engineer during such suspension, provided that this shall not include any cost pertaining to work not suspended by said notice. Work shall be resumed by the Contractor after such suspension on written notice from the District. In the event of suspension of the entire work by the District, the Contractor, if the suspension is not through fault of the Contractor or the fault of his Subcontractors or agents, shall be paid the sum of \$500.00 for each calendar day during which the entire work shall have been suspended. This amount is fixed as liquidated damages in full settlement of all costs and expenses, losses, and damages resulting to the Contractor from such suspension. The parties expressly agree that it is impractical to determine the actual amount of damage to Contractor by reason of such delay and that this liquidated damages clause is reasonable under the circumstances existing at the time the Contract was made. Work shall be resumed by the Contractor after such suspension on written notice from the District.

- C. In the event of any suspension of the work in whole or in part B above, the Contractor shall be entitled to an extension of time to complete the work to the extent of the delay caused to the Contractor.
- D. In the event the entire work shall be suspended by order of the District, as provided above, and remains suspended for a period of sixty (60) consecutive days, through no fault of the Contractor, and notice to resume the work shall not have been served on the Contractor, the Contractor may, at its option, by written notice to the District, terminate the Contract in the same manner as if the termination had been initiated by the District, and the District shall have no claim for damages because of such termination of the Contract.
- E. In the event the District or the Engineer receives or obtains notice of any termination, suspension, voiding, cancellation, or lack of existence of, or of any material reduction of coverage in, any policy of insurance required to be maintained by the Contractor or any subcontractor, the District or the Engineer, without any prior notice and without prejudice to any other remedy of the District, may immediately suspend work under the contract and order the Contractor and/or subcontractor(s) off the work site immediately, until the required insurance is reinstated or obtained. In the event of suspension under this paragraph, Contractor shall not be responsible for payment of liquidated damages established under Subpart B (above).

2.04 TERMINATION FOR DEFAULT - DAMAGES FOR DELAY - TIMELY EXTENSION

- A. The District may, without prejudice to any other right or remedy, service written notice upon Contractor of its intention to terminate this Contract if the Contractor: (1) refuses or fails to diligently prosecute the work as defined in Subpart B (below), (2) fails to complete the Work within the required times defined in Section 00 72 00, (3) files a bankruptcy petition or is adjudged a bankrupt; (iv) should make a general assignment for the benefit of its creditors; (v) should have a receiver appointed, or (vi) violates any requirements of law or the Contract Documents.

- B. The Contractor shall at all times employ such force, labor plant, materials, and tools as will be sufficient, in the opinion of the Engineer, to prosecute the work at not less than the rate provided in the progress schedule and to complete the work within the time limits fixed by the Contract.
- C. The District may, after giving ten (10) days written notice to the Contractor, terminate its right to proceed with the work or such part of the work as to which there has been delay. The notice of intent to terminate shall contain the reasons for such intention to terminate.
- D. The Contractor's right to proceed shall not be so terminated nor the Contractor charged with resulting damage if:
 - 1. The delay in the completion of the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to Acts of God, acts of the public enemy, acts of the District, acts of another contractor in the performance of a Contract with the District, fires, floods, excluding site flooding due to groundwater, epidemics, quarantine restrictions, strikes, lockouts, freight embargoes, unusually severe weather, or delays of subcontractors and suppliers arising from unforeseeable causes beyond the control and without the fault or negligence of either the Contractor or such subcontractors and suppliers; and
 - 2. The Contractor, within ten (10) days from the beginning of any such delay (unless the Engineer grants further period of time before the date of final payment under the Contract), notifies the Engineer in writing of the causes of delay and requests an extension of time.
- E. The Engineer shall ascertain the facts and the extent of the delay and extend the time for completing the work when, in the Engineer's judgment, the findings of fact justify such an extension, and the findings of fact shall be final and conclusive on the parties.
- F. A request for an extension of time, or the granting of an extension of time, shall not constitute a basis for any claim against the District for additional compensation or damages unless caused by the District or another contractor employed by the District.
- G. If the Contractor should be adjudged bankrupt, or if he should make a general assignment for the benefit of creditors, or if a receiver should be appointed for the Contractor on account of insolvency and not be discharged within ten (10) days after his appointment, or if the Contractor fails to make prompt payments to subcontractors or suppliers, or should he persistently disregard laws, ordinances, or the instructions of the Engineer, or otherwise commit a material breach of any provisions of the Contract, the District may, after giving ten (10) days written notice to the Contractor, terminate the Contract and the Contractor's right to proceed with the work.
- H. The rights and remedies of the District provided in this section are in addition to any of the rights and remedies provided by law or under this Contract.

- I. In addition to the District's rights under this section, if at any time before completion of the work under the Contract, it shall be determined by the District that reasons beyond the control of the parties render it impossible or against the interests of the District to complete the work, or if the work shall be stopped by an injunction of a court of competent jurisdiction or by order of any competent authority, the District may, upon ten (10) days written notice to the Contractor, discontinue the work and terminate the Contract. Upon service of such notice of termination, the Contractor shall discontinue the work in such manner, sequence, and at such times as the Engineer may direct. The Contractor shall have no claim for damages for such discontinuance or termination, nor any claim for anticipated profits on the work thus dispensed with, nor any other claim except for the work actually performed up to the time of discontinuance, including the cost of materials and equipment on hand, in transit, or on definite commitment and any extra work ordered by the Engineer to be done, nor for any claim for liquidated damages in accordance with the provisions of Part 2.03. The value of the work performed and the cost of materials and equipment delivered to the site will be determined by the Engineer in accordance with the procedure prescribed for the making of the final application for payment. The Contractor shall assign to the District, as directed by the Engineer, all right, title, and interest of the Contractor under the subcontracts terminated, in which case the District shall have the right to settle or to pay any termination settlement proposal arising out of those terminations. As directed by the Engineer, the Contractor shall transfer title and deliver to the District:
 1. the fabricated or unfabricated parts, work-in-progress, completed work, supplies, and other materials produced or acquired for the work terminated; and
 2. the completed or partially completed plans, drawings, information, and other property that, if the Contract had been completed, would be required to be furnished to the District.

2.05 RIGHTS OF DISTRICT UPON TERMINATION

- A. In the event the right of the Contractor to proceed with the work, or any portion thereof, has been terminated because of the fault of the Contractor and the Contractor has been given ten (10) days notice to cure such fault and has not done so, the District may issue a notice of termination to the Contractor and the Contractor's surety.
- B. Upon termination the Contractor shall not be entitled to receive any further payment until the work is finished. If upon completion of the work the total cost to the District, including engineering, legal, and other consultant fees, costs of managerial and administrative services, construction costs, and liquidated damages shall be less than the amount which would have been paid if the work had been completed by the Contractor in accordance with the terms of the Contract, then the difference shall be paid to the Contractor in the same manner as the final payment under the Contract. If the total cost incurred by the District on account of termination of the Contract and subsequent completion of the work by the District by whatever method the District may deem expedient shall exceed said amount which the Contractor

would otherwise have been paid, the Contractor and his sureties shall be liable to the District for the full amount of such excess expense.

- C. Upon termination, if the District takes over the Work, the District may, without liability for so doing, take possession of and utilize in completing the Work such materials, appliances, plant, and other property belonging to the Contractor as may be left on the Project site.
- D. The rights and remedies of the District provided in this Section are in addition to any of the rights and remedies provided by law or under this Contract.

2.06 FAILURE TO COMPLETE THE WORK IN THE TIME AGREED UPON; LIQUIDATED DAMAGES

- A. Liquidated Damages -In case all the work is not completed before or upon the expiration of the time limit as set in the Bid, Contract, and Progress Schedule, or within any time extensions that may have been granted, substantial damage will be sustained by the District; it is impracticable to determine the actual amount of damage by reason of such delay. It is, therefore, agreed that the Contractor and its Surety shall be liable for and pay to the District as damages, and not as a penalty, the amount specified in Section 00 72 00, General Conditions, for each and every day's delay in finishing the work in excess of the number of days specified. The parties expressly agree that this liquidated damage clause is reasonable under the circumstances existing at the time the Contract was made.
- B. In addition to liquidated damages for delay, if the delay results in the imposition of regulatory fines for late performance, it is agreed that the Contractor and its Surety shall be liable for and pay to the District as damages, and not as a penalty, the liquidated amount specified in Section 00 72 00.
- C. Exclusions - Notwithstanding the provisions above, the Contractor shall not be liable for liquidated damages or delays caused by the removal or relocation of utilities when such removal or relocation is the responsibility of the District or the owner of the utility under Government Code Section 4215.

2.07 RESPONSIBILITY FOR REPAIR OF FACILITIES

- A. All public or private facilities, including but not limited to gravel surfacing at existing canals, structures, telephone cables, roadways, curbs, gutters, parking lots, private drives, levees, and embankments for creeks, ponds, and reservoirs disturbed during construction of the work shall be repaired and/or replaced by the Contractor to match facilities existing prior to construction. In addition, the Contractor shall be responsible for any settlement damage to such facilities or adjoining areas for a period of one year after acceptance of such required facilities.

2.08 DISTRICT'S REPAIR

- A. In the event the Contractor refuses or neglects to make good any loss or damage for which it is responsible under this Contract, the District may, or by the employment of others, remedy any such loss or damage, and the cost and expense of doing so, including any reasonable engineering, legal, and other consultant fees, and any costs of administrative and managerial services, shall be charged to the Contractor. Such costs and expenses may be deducted by the District from claims for payment made by the Contractor for work completed or remaining to be completed as provided for in Part 2.04 of Section 01 20 00, Price and Payment Procedures.

END OF SECTION

SECTION 01 41 00

REGULATORY REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: permits, licenses, restrictions, lands, easements and right-of-ways required for the project.

PART 2 REQUIREMENTS

2.01 GENERAL COMPLIANCE WITH LAWS - PERMITS, REGULATIONS, TAXES

- A. Contractors and subcontractors will comply with all applicable federal and state laws, rules, guidelines, regulations, and requirements.
- B. Contractor is an independent contractor and shall at his sole cost and expense comply with all laws, rules, ordinances, and regulations of all governing bodies having jurisdiction over the work, obtain all necessary permits and licenses, pay all manufacturers' taxes, sales taxes, use taxes, processing taxes, and all federal and state taxes, insurance, and contributions for social security and unemployment which are measured by wages, salaries, or any remuneration paid to Contractor's employees, whether levied under existing or subsequently enacted laws, rules, or regulations. Contractor shall also pay all property tax assessments on materials or equipment used until acceptance by the District.
- C. If any discrepancy or inconsistency is discovered in the Contract Documents, or in this Contract in relation to any such law, rule, ordinance, regulation, order or decree, the Contractor shall forthwith report the same to the Engineer in writing.
- D. Without limitation, materials furnished and performance by the Contractor shall comply with Safety Orders of the Division of Industrial Safety, State of California, Federal Safety regulations of the Bureau of Labor, Department of Labor, and any other applicable Federal regulations.
- E. The Contractor, upon request, shall furnish evidence satisfactory to the District and Engineer that any or all of the foregoing obligations have been or are being fulfilled. The Contractor warrants to the District that it is licensed by all applicable governmental bodies to perform this Contract and will remain so licensed throughout the progress of the work, and that it has, and will have, throughout the progress of the work, the necessary experience, skill and financial resources to enable him to perform this Contract.
- F. Contractor shall be responsible for familiarity with the Americans with Disabilities Act (ADA) (42 USC§12101 et seq.) and California Government Code 11135(b). The Work shall be performed in compliance with ADA regulations.

- G. The Contractor shall be responsible for familiarity with local requirements for the diversion of recyclable waste materials. The Work shall be performed in compliance with these requirements. Upon request, the Contractor will be required to present weight tickets and written proof of diversion. All costs incurred for these waste diversion efforts shall be the responsibility of the Contractor.
- H. In accordance with Revenue and Taxation Code §107.6, the Contract Documents may create a possessory interest subject to personal property taxation for which Contractor will be responsible at no additional cost to the District.

2.02 ENVIRONMENTAL AND CULTURAL COMPLIANCE

- A. In addition to the requirements set forth in Part 2.01, above, for general compliance with laws, permits, regulations and taxes, the Contractor, by entering into this Contract, shall be obligated to abide by the requirements of any project-specific environmental and cultural resource documents prepared for and adopted by the District, notwithstanding specific rules and requirements not being specifically identified within these Specifications and Plans.

2.03 PERMITS AND LICENSES

- A. Procurement of Permits and Licenses:
 - 1. Permits and licenses, of a temporary nature, necessary for the prosecution of the work shall be secured and paid for by the Contractor. The Contractor shall obtain and pay the fees for the following permits.

Name or Type of Permit	Permitting Agency
City Business License	City of South Lake Tahoe
County Business License	El Dorado County
Construction water permit for water obtained from District-owned fire hydrants (fee waived)	South Tahoe PUD

- 2. Permits, licenses, and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the District unless otherwise specified. The following permits for the permanent work have been obtained by the District:
 - a. Waste Discharge Permit for discharging water for pressure testing, leakage testing, and disinfection into the sewer collection system.
 - b. City of South Lake Tahoe Encroachment Permit
 - c. El Dorado County Encroachment Permit
 - d. Tahoe Regional Planning Agency Permit
- B. The Contractor shall procure all permits and licenses, as described in Part 2.02.A.1, pay all charges, fees, and taxes and give all notices necessary and incidental to the due and lawful prosecution of work.
- C. The Contractor shall be aware of and abide by the conditions and restrictions of the TRPA permit for this project. The standard conditions of approval applicable to this project (Attachment Q – Standard Conditions for Grading) are available from the TRPA website (www.trpa.org) for review by the Contractor.

- D. The Contractor shall be aware of and abide by the conditions and restrictions of the Lahontan Regional Water Quality Control Board permits for this project, including but not limited to Waste Discharge Requirements (WDRs) and/or Stormwater Pollution Prevention Plan (SWPPP) as applicable. The standard terms of the RWQCB Construction Activity Stormwater Permit can be reviewed online at: http://www.waterboards.ca.gov/lahontan/board_decisions/adopted_orders/2005/docs/r6t_2005_0007.pdf.
- E. The Contractor shall be aware of and abide by the conditions and restrictions of the City of South Lake Tahoe and the County of El Dorado. It shall be the Contractor's responsibility to obtain all necessary permits from the City of South Lake Tahoe and El Dorado County.
- F. California Contractor's License: the Contractor shall have a valid California contractor's license for the type of work required on this Contract, as specified in Sections 00 10 00, Solicitation, and 00 20 00, Instructions for Procurement.
- G. The Contractor shall give all notices and comply with all laws, ordinances, rules, and regulations bearing on the conduct of the work as shown on the Plans and described in the Specifications. The Contractor shall promptly notify the Engineer in writing of any variance and any necessary changes shall be adjusted as provided in the Contract for changes in the work. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules, and regulations and without such notice to the Engineer, Contractor shall bear all related costs.

2.04 LANDS FOR WORK, RIGHT-OF-WAY CONSTRUCTION ROADS

- A. The District will provide the lands, easements, right-of-ways, and/or encroachment permits necessary or other rights to enter and work on lands necessary for the performance of the work. Other permits and licenses are addressed by Part 2.02. Should the Contractor find it advantageous to use any additional land for any purpose whatever, the Contractor shall provide for the use of such land at its risk and expense. The Engineer shall be furnished with a copy of written agreements or otherwise be notified in writing of additional working space which is acquired. Nothing herein contained and nothing marked on the Plans shall be interpreted as giving the Contractor exclusive occupancy of the territory provided by the District. When two or more contracts are being executed at one time on the same or adjacent land in such a manner that work on one contract may interfere with that on another, the Engineer shall decide which contractor shall cease work, and which shall continue, or whether the work on both contracts shall progress at the same time and in what manner, and the decision of the Engineer shall be final and binding. When the territory of one contract is the necessary or convenient means of access for the performance of another contract, such privilege of access or any other reasonable privilege may be granted by the Engineer to the contractor so desiring, to the extent, amount, in the manner, and at the time permitted. No such decision as to the method or time of conducting the work or the use of territory shall be the basis of any claim for delay or damage.
- B. Lands, easements, or right-of-ways to be furnished by the District for construction operations will be specifically shown on the Plans.

END OF SECTION

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SECTION 01 42 00

REFERENCES

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. List of reference standards used in the Contract Documents.

1.02 ABBREVIATIONS AND DEFINITIONS

- A. Terms used in these Contract Documents shall have the meaning stipulated in Section 00 71 00, Contracting Definitions.

PART 2 REFERENCES

2.01 GENERAL

- A. Applicable Publications: Whenever in these Specifications references are made to published specifications, codes, standards or other requirements, it shall be understood that wherever no date is specified, only the latest specifications, standards or requirement so the respective issuing agencies which have been published as of the date of execution of the Contract, shall apply; except to the extent that said standards or requirements may be in conflict with applicable laws, ordinances or governing codes. No requirements set forth herein or indicated in the Contract shall be waived because of any provision of, or omission from, said standard or requirements.

2.02 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. Without limiting the generality of other requirements of the Specifications, all Work specified herein shall conform to or exceed the requirements of applicable codes and the applicable requirements of the following documents.
- B. References herein to "Building Code" or "Uniform Building Code" shall mean Uniform Building Code of the International Conference of Building Officials (ICBO). Similarly, references to "Mechanical Code" or "Uniform Mechanical Code", "Plumbing Code" or "Uniform Plumbing Code", "Fire Code" or "Uniform Fire Code", shall mean Uniform Mechanical Code, Uniform Plumbing Code and Uniform Fire Code of the International Conference of the Building Officials (ICBO). "Electric Code" or "National Electric Code (NEC)" shall mean the National Electric Code of the National Fire Protection Association (NFPA). The latest edition of the codes as used by the local agency as of the date of execution of the Contract, as adopted by the

agency having jurisdiction, shall apply to the Work herein, including all addenda, modifications, amendments or other lawful changes thereto.

- C. In case of conflict between codes, reference standards, drawing and the Contract, the most stringent requirements shall govern. All conflicts shall be brought to the attention of the District for clarification and direction prior to ordering or providing any materials or furnishing labor.
- D. The Contractor shall construct the Work indicated herein in accordance with the requirements of the Contract and the referenced portions of those referenced codes, standards and specifications listed herein.

END OF SECTION

SECTION 01 43 00

QUALITY ASSURANCE

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Administrative and procedural requirements for reactive activities to evaluate completed activities and elements for conformance with the requirements.
 - 2. The requirements of this Section are in addition to the requirements for individual materials and equipment stated elsewhere in these Contract Documents.

PART 2 REQUIREMENTS

2.01 CONFORMITY WITH CONTRACT DOCUMENTS AND ALLOWABLE DEVIATIONS

- A. Work and materials shall conform to the lines, grades, cross sections, dimensions, and material requirements, including tolerances, shown on Contract Documents.
- B. Although measurement, sampling, and testing may be considered evidence as to such conformity, the Engineer shall be the sole judge as to whether the work or materials deviate from the Contract Documents, and the Engineer's decision as to any allowable deviations shall be final and conclusive, as set forth in Section 00 72 00, General Conditions.

2.02 QUALITY CONTROL

- A. All materials and equipment shall be new and of the specified quality and, if samples have been submitted, equal to the samples found to be acceptable by the Engineer.
- B. The Work shall be performed and completed in a thorough, workmanlike manner, notwithstanding any omission in the Contract Documents; and it shall be the duty of the Contractor to call the Engineer's attention to apparent errors or omissions and request instructions before proceeding with the Work. The Engineer may, by appropriate instructions provided in conformance with Section 00 72 00, Part 2.03, correct errors and omissions, which instructions shall be as binding upon the Contractor as though contained in the original Contract Documents.

2.03 INSPECTION OF WORK

- A. Unless otherwise provided, all equipment, materials, and work shall be subject to inspection and testing by the Engineer. The Engineer will observe the progress and quality of the work and determine, in general, if the work is proceeding in accordance with the intent of the Contract Documents. The Engineer shall not be

required to make comprehensive or continuous inspections to check the quality of the work, and shall not be responsible for construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the work. Visits and observations made by the Engineer shall not relieve the Contractor of its obligation to conduct comprehensive inspections of the work and to furnish proper materials, labor, equipment, and tools, and perform acceptable work, and to provide adequate safety precautions, in conformance with the intent of the Contract.

- B. Whenever the Contractor varies the period during which work is carried on each day, prior notice shall be given to the Engineer so that proper inspection may be provided. Any work done in the absence of the Engineer shall be subject to rejection. Proper facilities for safe access for inspection to all parts of the work shall at all times be maintained for the necessary use of the Engineer and other agents of the District, and agents of the Federal, State, or local governments at all times.
- C. One or more inspectors may be assigned to observe the work and to act in matters of construction under this Contract. It is understood that inspectors shall have the power to issue instructions and make decisions within the limitations of the authority of the Engineer. Such inspection shall not relieve the Contractor of its obligation to conduct comprehensive inspections of the work, to furnish proper materials, labor, equipment, and tools, and perform acceptable work, and to provide adequate safety precautions in conformance with the intent of the Contract.
- D. The Engineer and its representatives shall at all times have access to the Work wherever it is in progress, to the shops where the Work is in preparation, and to all warehouses and storage yards where materials and equipment are stored, and the Contractor shall provide safe and convenient facilities for such access and for inspection. If the Contract Documents, the Engineer's instructions, laws, ordinances, or any public authority require any material, equipment or work to be specifically tested or approved, the Contractor shall give the Engineer timely notice of its readiness for inspection, and if the inspection is by an authority other than the District, of the time fixed for inspection. Inspections by the Engineer will be made promptly and, where practicable, at the source of supply.
- E. Work performed without inspection may be required to be removed and replaced under proper inspection and the entire cost of removal and replacing, including the cost of District furnished materials used in the work, shall be borne by the Contractor, regardless of whether or not the work exposed is found to be defective. Examination of questioned work, other than that installed without inspection, may be ordered by the Engineer and, if so ordered, the work must be uncovered by Contractor. If such work is found to be in accordance with the Contract Documents, the District will pay the cost of re-examination and replacement. If such work is found to be not in accordance with the Contract Documents, the Contractor shall pay such cost unless he can show that the defect in the work was caused by another Contractor, and in that event the District will pay such costs.
- F. The inspection of the work shall not relieve the Contractor of its obligation to fulfill the Contract as prescribed, or in any way alter the standard of performance provided by the Contractor, and defective work shall be corrected and

nonconforming materials may be rejected, notwithstanding that such work and materials have been previously overlooked by the Engineer and accepted or estimated for payment. If the work or any part shall be found defective, Contractor shall, within ten (10) calendar days, correct such defect in a manner satisfactory to the Engineer. If the Contractor shall fail or neglect to make ordered repairs of defective work or to remove the condemned materials from the work within ten (10) calendar days after direction by the Engineer in writing, the District may make the ordered repairs, or remove the nonconforming materials, and deduct the cost from any monies due the Contractor.

- G. The Contractor shall furnish promptly without additional charge all facilities, labor, and materials reasonably needed by the Engineer for performing all inspection and tests. Contractor shall be charged with any additional cost of inspection when material and workmanship are not ready at the time specified by the Contractor for its inspection.
- H. Where any part of the work is being done under an encroachment permit or building permit, or is subject to Federal, State, County or City codes, laws, ordinances, rules or regulations, representatives of the government agency shall have full access to the work and shall be allowed to make any inspection or tests in accordance with such permits, codes, laws, ordinances, rules, or regulations. If advance notice of the readiness of the work for inspection by the governing agency is required, the Contractor shall furnish such notice to the appropriate agency.
- I. The Engineer may inspect the production of the material, or the manufacture of products at the source of supply. Plant inspection, however, will not be undertaken until the Engineer is assured of the cooperation and assistance of both the Contractor and the material producer. The Engineer or its authorized representative shall have free entry at all times to such parts of the plant as concerns the manufacture or production of the materials. Adequate facilities shall be furnished free of charge to make the necessary inspection.
- J. Materials, equipment, and workmanship shall be subject to the inspection of, and rejection by, the Engineer, if not in conformance with the Contract Documents. Defective materials, equipment, or Work shall be removed from the premises by the Contractor, whether in place or not, and shall be replaced with new and acceptable materials, equipment, or work. Repair of defective materials, equipment, or work shall be subject to the Engineer's acceptance.
- K. The District assumes no obligation to inspect materials at the source of supply.
- L. On all questions concerning the acceptability of materials or equipment, classification of materials, or equipment, execution of the Work, and the determination of costs, the decision of the Engineer shall be final and binding upon all parties.

2.04 SAMPLING AND TESTING

- A. Unless specified otherwise, the Contractor shall perform at its expense all tests specified or required by the Technical Specifications. The Engineer will perform such tests as he deems necessary to determine the quality of work or compliance

with Contract Documents. The Contractor shall furnish promptly without additional charge all facilities, labor, and material reasonably required for performing safe and convenient tests as may be required by the Engineer. All tests by the Engineer will be performed in such a manner as will not unnecessarily delay the work.

- B. At the option of the Engineer, the source of material supplies for the Work shall be subject to tests and inspection before delivery is started and before such materials are used in the Work.
- C. In the event the Contractor protests a failing test of material in place or to be used, he shall take additional samples as specified in the Contract Documents and have additional tests run at his own expense. In the event the original test proves to have been in error, the Contractor shall be reimbursed for his direct costs of additional sampling and testing.
- D. For materials originating outside of the United States for which tests are required, provide recertification and retesting by an independent domestic testing laboratory.
- E. All sampling, specimen preparation, and testing of materials shall be in accordance with the standards of nationally recognized technical organizations.
- F. The physical characteristics of all materials not particularly specified shall conform to the latest standards published by the American Society for Testing Materials, where applicable.

2.05 MILL TESTS

- A. The Contractor, at his own expense, shall submit, in triplicate, certified copies of all required factory and mill test reports to verify material quality and composition. Any materials shipped by the Contractor from a factory or mill prior to having satisfactorily passed testing and inspection shall not be incorporated in the Work, unless the Engineer shall have notified the Contractor in writing that such testing and inspection will not be required. The cost of performing all mill and factory tests shall be paid by the Contractor unless otherwise provided in the Contract Documents.

2.06 COMPACTION TESTING

- A. The District's laboratory may perform soil compaction testing during this project. The testing completed by the District's laboratory shall be used to determine if the degree of compaction required in the specifications for earthwork has been reached in the field by the Contractor for Quality Control and payment purposes. The Contractor may wish to complete his own compaction tests in addition to or ahead of District tests to enhance his operations and for Quality Assurance purposes.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Procedures and requirements for utilities and facilities used on site during construction.
 - 2. Procedures and requirements for temporary access facilities required to accommodate construction or the District's operations.

PART 2 TEMPORARY CONTROLS

2.01 PROTECTION OF WORK

- A. The Contractor shall be responsible for the care of all work until its completion and final acceptance; and, at its own expense, replace damaged or lost material and repair damaged parts of the work or the same may be done at its expense by the District and the Contractor and its sureties shall be liable therefore. The Contractor shall make its own provisions for properly storing and protecting all material and equipment against theft, injury, or damage from any and all causes. Damaged material and equipment shall not be used in the work. The Contractor shall take all risks from floods and casualties except as provided by law, and shall make no charge for the restoration of such portions of the work as may be destroyed or damaged by flood or other casualties or because of danger from flood or other casualties or for delays from such causes. The Contractor may, however, be allowed a reasonable extension of time on account of such delays, subject to the conditions of these Contract Documents. The Contractor shall not be responsible for the cost, in excess of five percent (5%) of the contracted amount, of repairing or restoring damage to the work, if the damage was proximately caused by an earthquake in excess of a magnitude of 3.5 on the Richter Scale, or by tidal waves; provided that the work damaged was built in accordance with accepted and applicable building standards, and the Plans and Specifications of the District.
- B. The Contractor shall use extreme care during construction to prevent damage from dust to adjacent property. The Contractor, at its own expense, shall provide adequate dust control for the right-of-way and take other preventative measures as directed by the Engineer.
- C. The Contractor shall be responsible for all damage to any property resulting from trespass by the Contractor or its subcontractors, whether such trespass was committed with or without the consent or knowledge of the Contractor.

- D. The Contractor shall see that the work site is kept drained and free of all ground water and any other water which may impede the progress or execution of the Contract work.
- E. The Contractor shall be responsible for any damage caused by drainage or water runoff from construction areas and from construction plant areas.
- F. Subject to the provisions of this Section, where the work to be performed under the Contract crosses or otherwise interferes with existing streams, watercourses, canals, farm ditches, pipelines, drainage channels, or water supplies, the Contractor shall provide for such watercourse or pipelines and shall perform such construction during the progress of the work so that no damage will result to either public or private interests, and the Contractor shall be liable for all damage that may result from failure to so provide during the progress of the work.

2.02 PROTECTION OF PERSON AND PROPERTY

- A. The Contractor shall take whatever precautions are necessary to prevent damage to all existing improvements, including above ground and underground utilities, trees, shrubbery that is not specifically shown to be removed, fences, signs, mailboxes, survey markers and monuments, buildings, structures, the District's property, adjacent property, and any other improvements or facilities within or adjacent to the work. If such improvements or property are injured or damaged by reason of the Contractor's operations, they shall be replaced or restored, at the Contractor's expense, to a condition at least as good as the condition they were in prior to the start of the Contractor's operations.
- B. The Contractor shall adopt all practical means to minimize interference to traffic and public inconvenience, discomfort or damage. The Contractor shall protect against injury any pipes, conduits, or other structures, crossing the trenching or encountered in the work and shall be responsible for any injury done to such pipes or structures, or damage to property resulting there from. The Contractor shall support or replace any such structures without delay and without any additional compensation to the entire satisfaction of the Engineer. All obstructions to traffic shall be guarded by barriers illuminated at night. The Contractor shall be responsible for all damage to persons and property directly or indirectly caused by its operations and, under all circumstances, must comply with the laws and regulations of the County and the State of California relative to safety of persons and property and the interruption of traffic and the convenience of the public within the respective jurisdictions.
- C. The Contractor is cautioned that it must replace all improvements in right-of-ways and within the public streets to a condition equal to what existed prior to entry onto the job or in compliance with current laws, regulations, ordinances and codes, whichever is most restrictive.
- D. Type and time of construction required at any road subject to interference by Contract work will be determined by those authorities responsible for maintenance of said road. It shall be the responsibility of the Contractor to

determine the nature and extent of all such requirements, including provision of temporary detours as required; however, the construction right-of-way obtained by the District at affected roadways will be adequate for provision of all required detours. As required at any road crossing, the Contractor shall provide all necessary flagpersons, guardrails, barricades, signals, warning signs, and lighting to provide for the safety of existing roads and detours. Immediately after the need for temporary detours ceases, or when directed, the Contractor shall remove such detours and perform all necessary cleanup work, including replacement of fences, and removal of pavement. Included shall be all necessary replacement of existing roadway appurtenances, grading work, soil stabilization, and dust control measures, as required and directed. The cost of all work specified under this Section shall be borne by the Contractor.

- E. The Contractor shall examine all bridges, culverts, and other structures over which he will move his materials and equipment, and before using them, I shall properly strengthen such structures where necessary. The Contractor shall be responsible for any and all injury or damage to such structures caused by reason of its operations.

2.03 ACCIDENT PREVENTION AND RESPONSE

- A. Precaution shall be exercised by the Contractor at all times for the protection of persons (including employees) and property. The safety provisions of all applicable laws, and of building and construction codes shall be observed. Machinery, equipment, and other hazards shall be guarded or eliminated.
- B. The Contractor shall promptly report in writing to the Engineer all accidents whatsoever arising out of, or in connection with, the performance of the work, whether on or adjacent to the site, which caused death, personal injury, or property damage, giving full details and statements of witnesses. In addition, if death or serious injury or serious damage are caused, the accident shall be reported immediately by telephone or messenger to the District and the Engineer.
- C. The Contractor shall make all reports as are, or may be, required by any governmental entity having jurisdiction, and permit all safety inspections of the Work being performed under this Contract. Before proceeding with any construction work, the Contractor shall take all necessary actions to comply with all provisions for safety and accident prevention.
- D. If any claim is made by anyone against the Contractor or any Subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to the Engineer, giving full details of the claim.

2.04 HAZARDS IN PROTECTED AREAS

- A. Excavation on project sites from which the public is excluded shall be marked or guarded in a manner appropriate to the degree of hazard.

2.05 PROJECT SECURITY

- A. The Contractor shall make adequate provision for the protection of the Work area against fire, theft, and vandalism, and for the protection of the public against exposure to injury.

2.06 DUST AND EMISSIONS CONTROL

- A. The Contractor shall take any necessary steps, procedures, or means as required to prevent its operations in connection with the execution of the Work from causing abnormal dust conditions. The Contractor shall prevent dust from construction activities from being produced in amounts that may be harmful or cause a nuisance to persons living nearby or occupying buildings in the vicinity of the Work.
- B. Dust control measures shall be applied, as needed to control particulate emissions from all unpaved parts of the site, including but not limited to any unpaved road which the Contractor or any of his Subcontractors are using, excavation or fill areas, demolition areas, and stockpile and staging areas.
- C. Dust control shall be conducted by sprinkling of water, use of dust palliatives or non-toxic stabilizers, modification of operations, reducing traffic speed, covering of stockpiles, installing temporary erosion controls or any other means acceptable to governmental entities having jurisdiction, as needed to control emissions.
- D. The Contractor shall cover or wet soil and other excavated material leaving and arriving at the Work site to prevent blowing dust.
- E. All paved areas of the site, including public access roads into and out of the site, shall be kept clean by sweeping.
- F. To ensure that emissions from construction equipment exhaust will be reduced, the following measures will be implemented:
 - 1. Use alternative fuel construction equipment to the fullest extent possible.
 - 2. Minimize idling time (e.g., 5 minute maximum).
 - 3. Maintain properly tuned equipment according to equipment manufacturer's guidelines.
 - 4. Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use as specified for noise mitigation purposes.

2.07 SPECIAL CONTROLS

- A. The Contractor shall take all reasonable means to minimize inconvenience and injury to the public by dust, diversion of storm water, or other individuals or entities under its control.

2.08 NOISE ABATEMENT

- A. In inhabited areas, particularly residential, Contractor's operations shall be performed in a manner to minimize unnecessary noise. In residential areas, special measures shall be taken to suppress noise generated by repair and service activities during the night hours. The more stringent of either Cal-OSHA limits or the limits established by local ordinance shall control.

2.09 ODOR CONTROL

- A. The Contractor shall take any necessary steps, procedures, or means as are required to prevent abnormal odors being caused by its operations.

2.10 DRAINAGE CONTROL

- A. In performing excavation, fill, and grading operations, care shall be taken to disturb the pre-existing drainage pattern as little as possible. Particular care shall be taken not to direct drainage water onto private property or into streets or drainage ways which are inadequate for the increased flow. Adequate drainage shall be provided to protect the Work.

2.11 EROSION CONTROL

- A. All excavated and disturbed areas, including trench excavation at the site, shall be provided with temporary erosion control. The temporary erosion control shall be by means of:
 - 1. Filter fabric fences or sediment control barriers placed to completely circumvent the down slope side of the excavation and stockpiled material;
 - 2. All spoils, waste material, or stockpiled material shall not be placed in areas subject to washout, flooding, or natural drainage areas;
 - 3. All stockpiled materials on site during or after hours shall be completely encircled with temporary erosion control devices as described in Item 1 above and covered with plastic sheeting during threat of inclement weather;
 - 4. Construction equipment and vehicles shall be restricted to approved access roads only;
 - 5. Any dewatering of trenches shall be done to avoid causing erosion or runoff from the construction site;
 - 6. Protected areas shall be regularly inspected and maintained by the Contractor during the course of the work.
- B. Adequate erosion containment as described above shall be subject to the approval of the Engineer and the TRPA representative.

2.12 WATER POLLUTION

- A. The Contractor shall exercise every reasonable precaution to protect streams, lakes, reservoirs, and canals 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, and canals. Care shall be exercised to preserve vegetation beyond the limits of construction. The Contractor shall comply with Section 5650 of the California Fish and Game Code and all other applicable statutes and regulations relating to the prevention and abatement of water pollution.

2.13 TRAFFIC CONTROLS

- A. The Contractor shall implement those traffic controls required by the Plans and by project permits and applicable regulations.
- B. In order to expedite the passage of public traffic through or around the work and where ordered by the Engineer, the Contractor shall install signs, lights, flares, barricades, and other facilities for the sole convenience and direction of public traffic. Also, where directed by the Engineer, the Contractor shall provide and station competent flagpersons whose sole duties shall consist of directing the movement of public traffic through or around the work. The cost of furnishing and installing such signs, lights, flares, barricades, and other facilities, and the cost of providing and stationing such flagpersons, all for the convenience and direction of public traffic, will be considered as included in the Contract price and no additional compensation will be allowed.
- C. Flagpersons and guards, while assigned to traffic control, shall perform their duties and shall be provided with the necessary equipment in accordance with the current "Instructions to Flagmen" of the California Department of Transportation. The equipment shall be furnished and kept clean and in good repair by the Contractor at his expense.
- D. The Contractor shall prepare a detailed plan describing the method by which Contractor will provide for the convenience of the public and public traffic for submission to the appropriate governmental entity with jurisdiction over the streets, highways, roads or other property upon which work pursuant to the Contract will proceed. Contractor's plan shall be approved by such governmental entity no less than ten (10) working days prior to commencement of the work. Contractor shall amend and revise its plan in accordance with any changes directed or required by such governmental entity.

2.14 TEMPORARY PAVING

- A. Immediately after underground work is installed and backfilled, Contractor shall install and maintain one-inch (1") of temporary hot mix asphalt anywhere asphalt has been removed for that work, including access to driveways, until the permanent asphalt patch is completed. No unprotected vertical pavement edges shall be allowed at the end of the work day.

PART 3 TEMPORARY FACILITIES

3.01 GENERAL REQUIREMENTS

- A. The Contractor shall provide all temporary facilities and utilities required for prosecution of the work, protection of employees and the public, protection of the work from damage by fire, weather or vandalism, and such other facilities as may be specified or required by any applicable law, ordinance, rule, regulation, or permit, at no additional cost to the District.

3.02 ELECTRICAL SERVICE

- A. The Contractor shall be responsible, if required, for obtaining adequate temporary electrical service. The Contractor shall then provide adequate job site distribution facilities conforming to applicable codes and safety regulations.
- B. The cost of temporary electrical service shall be included in the appropriate bid items to which it is appurtenant and shall include full compensation for furnishing all labor, materials, tools, and equipment required to obtain and distribute power for construction purposes.

3.03 TEMPORARY LIGHTING

- A. The Contractor shall provide temporary lighting in all work areas sufficient to maintain during working hours a lighting level not less than the lighting level required by California OSHA standards.

3.04 HEATING AND VENTILATION

- A. The Contractor shall provide means for heating and ventilating all work areas as may be required to protect the Work from damage due to freezing, high temperatures or weather, or to provide a safe environment for workers.
- B. Unvented, direct fired heaters shall not be used in areas where freshly placed concrete will be exposed to combustible gases until at least two hours after the concrete has attained its initial set.

3.05 WATER

- A. The Contractor shall construct all facilities necessary to furnish water for its use during construction. Water used for human consumption shall be kept free from contamination and shall conform to the requirements established by State and local authorities for potable water.
- B. The Contractor shall be responsible for providing the water necessary for the project. The source shall have prior approval of the District. Construction water is available from the District potable supply. An approved backflow preventer shall be installed by the Contractor at the District's fire hydrant in accordance with District Ordinance No. 405. The water sources shall be approved prior to use by owner of the water source.

- C. The Contractor shall include the cost of construction water in the appropriate bid item to which it is appurtenant. The cost shall include full compensation for furnishing all labor, materials, tools, and equipment and doing all the work necessary to develop a sufficient water supply and furnishing the necessary equipment for applying the water as described in these Specifications.

3.06 SANITARY CONVENIENCES

- A. The Contractor shall provide suitable and adequate sanitary conveniences for the use of all persons at the site of the Work. Such conveniences shall include chemical toilets or water closets and shall be located at appropriate locations at the site of the Work. All sanitary conveniences shall conform to the regulations of the governmental entities having jurisdiction over such matters. At the completion of the Work, all such sanitary conveniences shall be removed and the site left in a sanitary condition.

3.07 FIRST-AID

- A. First-Aid facilities and information posters conforming, at a minimum, to the requirements of the Occupational Safety and Health Administration shall be provided in a readily accessible location or locations.

3.08 CONSTRUCTION FACILITIES

- A. Construction hoists, elevators, scaffolds, stages, shoring and similar temporary facilities shall be of ample size and capacity to adequately support and move the loads to which they will be subjected. Railings, enclosures, safety devices, and controls required by law or for adequate protection of life and property shall be provided.

3.09 SHEETING, SHORING, AND BRACING

- A. Temporary supports shall be designed with sufficient safety considerations to assure adequate load bearing capability. The Contractor shall submit design calculations by a professional registered engineer for sheeting, shoring and bracing prior to application of loads.
- B. Acceptance of design calculations does not in any way relieve the Contractor from being solely responsible for the installation of adequate sheeting and shoring for the work being undertaken. The District assumes no liability for the Contractor's operations.

3.10 TEMPORARY ENCLOSURES

- A. When sandblasting, spray painting, spraying insulation, or performing other activities which are inconvenient or dangerous to property or the health of employees or the public, the area of activity shall be enclosed adequately to contain the dust, spray, or other hazard. In the event there are no permanent enclosures of the area, or such enclosures are incomplete or inadequate, the Contractor shall provide suitable temporary enclosures.

3.11 WARNING DEVICES AND BARRICADES

- A. The Contractor shall adequately identify and guard all hazardous areas and conditions by visual warning devices and, where necessary, physical barriers. Such devices shall, at a minimum, conform to the requirements of Cal/OSHA.

3.12 FIRE SUPPRESSION

- A. Minimize fire danger in the vicinity of and adjacent to the construction site.
- B. A sufficient number of fire extinguishers of the type and capacity required to protect the Work and ancillary facilities shall be provided in readily accessible locations.
- C. Provide labor and equipment to protect the surrounding property from fire damage resulting from construction operations.

END OF SECTION

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Procedures and requirements for products used in construction.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Unless otherwise specifically stated in the Contract Documents, the Contractor shall furnish all materials necessary for the execution and completion of the work. Unless otherwise specified, all materials shall be new and shall be manufactured, handled, and installed in a workmanlike manner to insure completion of the work in accordance with the Contract Documents. The Contractor shall, upon request of the Engineer, furnish satisfactory evidence as to the kind and quality of materials.
- B. Where materials are to be furnished by the District, the type, size, quantity, and location at which they are available will be stated in the Contract Documents.
- C. Manufacturers' warranties, guarantees, instruction sheets and parts listed, which are furnished with certain articles or materials incorporated in the work, shall be delivered to the Engineer before acceptance of the Contract.

2.02 STORAGE OF MATERIALS

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

2.03 EQUIPMENT AND PLANTS

- A. Only equipment and plants suitable to produce the quality of work and materials required will be permitted to operate on the Project.
- B. Plants will be designed and constructed in accordance with general practice for such equipment and shall be of sufficient capacity to insure the production of sufficient material to carry the work to completion within the time limit and met all Federal, State, County, & Local requirements.
- C. The Contractor shall provide adequate and suitable equipment and plants to meet the above requirements, and when ordered by the Engineer, shall

remove unsuitable equipment from the work and discontinue the operation of unsatisfactory plants.

- D. The Contractor shall identify each piece of its equipment, other than hand tools, by means of an identifying number plainly stenciled or stamped on the equipment at a conspicuous location, and shall furnish to the Engineer a list giving the description of each piece of equipment and its identifying number. In addition, the make, model number and empty gross weight of each unit of compacting equipment shall be plainly stamped or stenciled in a conspicuous place on the unit. The gross weight shall be either the manufacturer's rated weight or the scale weight.
- E. In the case of termination of this Contract before completion from any cause whatever, the Contractor, if notified to do so by the District, shall promptly remove any part or all of his equipment and supplies from the property of the District. If the Contractor fails to do so, the District shall have the right to remove such equipment and supplies at the expense of the Contractor.

2.04 TRADE NAMES AND ALTERNATIVES

- A. 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 its catalog information. 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 burden of proof as to the quality and suitability of alternatives shall be upon the Contractor who shall furnish all information necessary as required by the Engineer. The Engineer shall be the sole judge as to the quality and suitability of alternative articles or materials and his decision shall be final.
 - 2. Whenever the Contract Documents permit the substitution of a similar or equivalent material or article, no tests or action relating to the approval of such substitute material or article will be made until the request for substitution is made in writing by the Contractor accompanied by complete data as to the equality of the material or article proposed. Such request by the Contractor must be made within thirty-five (35) days after award of Contract, unless otherwise noted in Section 01 33 00, Submittals Process, Part 2.02, Critical Equipment Submittals. Contractor must provide back-up materials to substantiate a request for substitution, including Contractor's affidavit stating that, and describing how, the substituted "or equal" material, process or article is equivalent to that specified in every way except as listed on the affidavit.
 - 3. The District's approval or denial of any substitution shall not entitle the Contractor to any adjustment to the Contract amount or schedule, even if the Contractor based its bid upon obtaining such substitution.
- B. As approved by the District's Board of Directors and as is allowed by the California Public Contract Code (PCC) §3400 and supported by case law, the District has made findings that certain products shall be used for this

project without alternative. Exceptions to the prohibition on sole-branding or sole-sourcing are as follows:

1. Field Test or Experiment: To make a field test or experiment to determine the product's suitability for future use.
2. Match Existing Products: To match other products already in use on a particular public improvement, either completed or in progress.
3. Only Available from One Source: To obtain a necessary item that is available only from one source.
4. Emergency Response:
 - a. To respond to a local agency emergency declared with a four-fifths vote of the governing board, or
 - b. To respond to a state or political subdivision emergency, if the emergency reasons are documented in the public records of the authority.

C. Following is a list of sole-branded or sole-sourced products that has been approved in advance by the District, and the basis for the sole-source determination identified by reference to the findings listed in Part 2.04.B (above).

1. Sensus Water Meters and MXU's [Finding 2]
 - a. See appendices to these Specifications for BABA Waiver from Bureau of Reclamation

END OF SECTION

SECTION 01 73 00

PROJECT EXECUTION

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Procedures and requirements for determining acceptable conditions for construction.
 - 2. Procedures and requirements for working in coordination with the existing system.
 - 3. Administrative and procedural requirements for executing the work.

PART 2 EXECUTION

2.01 COMMENCEMENT AND PROGRESS OF THE WORK AND TIME OF COMPLETION

- A. The Contractor shall begin work within ten (10) days after receiving the Notice to Proceed and shall diligently prosecute the work to completion as specified in the Contract Documents.

2.02 WORK INVOLVING EXISTING SYSTEM

- A. All work shall be executed while the existing system is in operation, unless otherwise indicated in the Contract Documents. Operation of the existing system shall not be jeopardized or materially reduced in efficiency as a result of the execution of Work.
 - 1. The CONTRACTOR shall provide thrust blocks/supports as required to prevent movement of existing piping that is under operation while being exposed during construction.
 - 2. The CONTRACTOR's activities and actions shall in no way impact the quality of the potable water or jeopardize the District's operating permit. The District's operating permit will be made available to the CONTRACTOR for review at the District's headquarters.
- B. The Contractor shall request shutdowns of any portion or all of the existing system by the District at least 48 hours (two working days) in advance of the scheduled shutdown. Likewise, the Contractor shall notify the District of pending demolition of any structure at least 48 hours (two working days) in advance of the scheduled demolition. No shutdown or demolition shall occur without obtaining prior District approval.
- C. The maximum export capacity of the WWTP is 8 MGD (5,555 gallons per minute). The Contractor shall be responsible for any fines, penalties, or other actions levied against the District during construction that are a direct

result of the Contractor's acts or omissions. Contractor shall defend and indemnify the District against any such fines, penalties or other actions, as provided in Section 00 73 00, Part 2.02.

- D. To facilitate the District's compliance with the Lead and Copper Rule, to the best of the Contractor's abilities, the Contractor shall note the type of material of all water service lines exposed during the course of the work and provide the information to the District.

2.03 CONSTRUCTION STAKES, LINES, AND GRADES

- A. The Work shall be executed in accordance with the lines and grades indicated in the Contract Documents. Distances and measurements, except elevations and structural dimensions, shall be made on horizontal planes.
- B. The Engineer will provide the Contractor with drawings showing benchmarks and reference points as it deems necessary to establish lines and grades required for the completion of the site work specified in the Contract Documents. The Contractor shall make or furnish all surveys and set all construction stakes necessary for the completion of the work. In addition, Contractor shall collect survey data for the installation of all underground utilities, including all tie-in locations, bends, tees/wyes, and valves. All construction staking shall be performed by a California Registered Land Surveyor. Survey records will be provided to the District at the request of the Engineer in accordance with Section 01 33 00, and at the completion of the project in accordance with Section 01 77 00
- C. Stakes and marks set by the District or Engineer, if any, shall be carefully preserved by the Contractor. The Contractor shall be charged for the cost of replacing or restoring the stakes and marks which are destroyed or damaged by his operation. This charge will be deducted from any monies due or to become due to the Contractor under the Contract Change Order.

2.04 SITE WORK

- A. The Contractor shall establish such control and reference points as it may need and as will be required to properly lay out the Work. Monuments for principal control points shall be set by the Contractor and shall be protected by the Contractor from disturbance. If the monuments are disturbed, any work that is governed by these monuments shall be held in abeyance until the monuments are re-established by the Contractor. The accuracy of all the Contractor's stakes, alignments, and grades is the responsibility of the Contractor. However, the Engineer has the discretionary right to check the Contractor's stakes, alignments and grades at any time. Where such discretion is to be exercised by the Engineer, he will notify the Contractor of his intention, stating the time at which the checking will commence. Any part of the work in progress, the results of which are predicated directly upon the Contractor's stakes, alignments, or grades to be checked, shall be held in abeyance until the Engineer has notified the Contractor that the checking has been completed.

2.05 LOCATING AND REPAIRING UNDERGROUND UTILITIES

- A. Except as provided by Government Code Section 4215, the Contractor shall be responsible for the removal, relocation and protection of all public and private utilities, including irrigation facilities in the nature of utilities, located on the site of the construction project if and to the extent that the same are identified in the Contract Documents, and the Contractor shall not be entitled to any extension of time or claim for damages for extra compensation in connection therewith.
- B. If and to the extent that such utilities or facilities are not identified in the Contract Documents, as between the Contractor and the District, the District will be responsible for the cost of their removal, relocation, or protection, to the extent required by law, but the Contractor shall immediately notify the District and the Utility in writing upon their discovery and shall perform any such work in conformance with applicable provisions of Section 00 72 00, General Conditions, if so directed by the Engineer and in such situation the Contractor shall not be responsible for liquidated damages for delay in completion of the project caused by the failure of the District or the owner of the utility to provide for such removal or relocation. If the Contractor, while performing the Contract, discovers utility or irrigation facilities not identified by the District in the Contract Documents, he shall immediately notify the Engineer and the utility in writing.
- C. In accordance with Government Code Section 4215, the Contractor shall be compensated for the costs of locating, repairing damage not due to the failure of the Contractor to exercise reasonable care, and removing or relocating existing main or trunk line utility facilities not indicated in the Contract Documents with reasonable accuracy, and for the equipment on the project necessarily idled during such work; provided that the Contractor shall first notify the Engineer before commencing work on locating, repairing damage to, removing, or relocating such utilities.

2.06 WORK SEQUENCE AND CONSTRAINTS

- A. The District envisions the work being completed in the following sequence. The Contractor may propose an alternate sequence for District review and acceptance when he submits his initial construction schedule.
 - 1. Mobilization
 - 2. Preliminary potholing to confirm size and location for bid items 9, 10, and 11 a minimum of seven (7) days prior to planned installations and prior to ordering materials
 - 3. Completion of Loop Road meter installations (P-14)
 - 4. Completion of meter installations within the City of South Lake Tahoe (P-7 thru P-13)
 - 5. Complete Installation of meters within El Dorado County (P-1 thru P-6)
 - 6. Demobilization
- B. The work shall be subject to the following scheduling constraints:
 - 1. No planned shutdowns shall occur on Mondays or Fridays, State and/or Federal holidays, or weekends.

2. Work shall be restricted to the hours of 8am – 6:30pm per TRPA standards.
3. Contractor shall coordinate activities and shutdowns to prevent any customer from being out of water for more than 8 hours. Water shall be restored at the end of each work day to all customers.
4. All paving and stabilization work shall be completed by October 1, 2026.

C. The work shall be subject to the following requirements:

1. Temporary asphalt patch paving is required to be installed and maintained within the traveled right-of-way until permanent asphalt paving is completed.
2. Contractor shall prevent off tracking and erosion of disturbed areas until permanent stabilization, revegetation, surface restoration, and/or asphalt paving is completed.
3. No unprotected vertical pavement edges subject to vehicle or pedestrian traffic shall be allowed.
4. Testing shall include pipeline disinfection, pressure testing and bacteriological testing, as required in the Contract Documents.
5. Access shall be maintained to all driveways.
6. Contractor shall coordinate with the District to notify customers via door hangers, 72 hours prior to disrupting water service.
7. Contractor shall provide a courtesy notification approximately 15 minutes prior to performing work on a water service and again prior to disrupting water service.
8. Water service disruptions shall be limited to a maximum of three (3) hours.
9. Installations, including restoration of improvements disturbed by the meter installation, shall be completed within two weeks of initial disturbance.

- D. The Contractor shall be aware that there may be change orders involved with this Work. The Engineer has made every reasonable attempt to determine the extent and location of all existing facilities within the project area. However, the inexact nature of existing knowledge and as-built plans may require change orders to reflect changed conditions. All change orders shall be handled using the procedures contained in the General Conditions of the Contract Documents.

2.07 CONTRACTOR'S MEANS AND METHODS

- A. Contractor is solely responsible for the means and methods utilized to perform the Work. In no case shall the Contractor's means and methods deviate from commonly used industry standards.

2.08 CLEAN-UP

- A. Throughout the period of construction the Contractor shall keep the Work site free and clean of all rubbish and debris, and shall promptly remove from the site, or from property adjacent to the site of the Work or from public access

roads, all unused and rejected materials, surplus earth, concrete, plaster, and debris, excepting select material which may be required for refilling or grading. The Contractor shall assure that buildings, grounds, and public properties are maintained free from accumulations of waste materials and rubbish from the Work.

- B. The Contractor shall provide containers for collection and disposal of waste materials, debris, and rubbish.
- C. If applicable, remove concrete, concrete wash, stucco splatter, gunite overspray, and all other waste and debris prior to final grading and landscaping.
- D. The requirements of this Section are in addition to the requirements for individual materials and equipment stated elsewhere in these Contract Documents.

END OF SECTION

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SECTION 01 77 00

CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Administrative and procedural requirements for completion of the work.
 - 2. The requirements of this Section are in addition to the requirements for closeout procedures and closeout submittals for individual materials and equipment stated elsewhere in these Contract Documents.

PART 2 CLOSEOUT PROCEDURES

2.01 PROJECT CLOSEOUT

- A. It is the intent of these Contract Documents that the Contractor deliver a complete and operable facility capable of performing its intended functions and ready for use.

2.02 PARTIAL ACCEPTANCE OF WORK

- A. After completion of certain portions of the Work, including all testing and other preparation necessary for operation of such portions by the District as specified in these Special Conditions, but prior to final completion of the Work, provisions may be made for partial acceptance in writing by the District for such portions only. The portions of the Work to be included for partial acceptance prior to final project completion will be noted at the pre-construction conference in accordance with Contractor's schedule, or by written notice to the Contractor at the earliest possible time.
- B. The guarantee period for such portions of the Work shall commence with the date of their acceptance for use by the District. However, full payment for such portions will not be made until final acceptance of the entire Work.
- C. Acceptance of any portion of the Work prior to acceptance of the whole shall not be construed as absolving the Contractor of responsibility for any item of construction or incidental work included in the Contract.
- D. Prior to such occupancy or use, the District will enter into a written agreement with the Contractor delineating the portions of the Work released to the District for occupancy or use and indicating what, if any, work remains to be done within the occupied or released area. If such prior use increases the cost of or delays the Work, the Contractor shall be entitled to such extra compensation, or extension of time, or both, as may be determined by the District after consideration of recommendations by the Engineer.

- E. Should any portion of the Work in use be damaged by such use, the District shall bear the expense for repairing such damage. However, if the portion being so used should reveal deficiencies of materials or workmanship, it shall be the Contractor's responsibility to replace the defective construction.

2.03 FINAL SITE CLEAN-UP

- A. Upon completion of work and before the final estimate is submitted, the Contractor shall at its own cost and expense remove from the vicinity of the work all plant, buildings, equipment, rubbish, unused work materials, concrete forms, temporary bridging and other like materials, belonging to Contractor or used under its his direction during the construction, but not required as part of or appurtenant to the completed work.
- B. The Contractor shall clean, sweep, wash, and polish all work and installed equipment including finishes. The Contractor shall remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed interior and exterior finished surfaces. The Contractor shall broom clean paved surfaces and rake clean landscaped areas.
- C. Where the construction has crossed yards or driveways, they shall be restored by the Contractor to the complete satisfaction of the Engineer, at the Contractor's expense.
- D. In the event of failure to do so, the same may be removed by the District after ten (10) calendar days notice to the Contractor, such removal to be at the expense of the Contractor.

2.04 WASTE DISPOSAL

- A. The Contractor shall dispose of surplus materials, waste products and debris and shall make necessary arrangements for such disposal.

2.05 TOUCH-UP AND REPAIR

- A. The Contractor shall touch up or repair finished surfaces on structures, or installations, that have been damaged prior to final acceptance. Surfaces on which such touch up or repair cannot be successfully accomplished shall be completely refinished or, in the case of hardware and similar small items, shall be replaced.

2.06 PROJECT RECORD DOCUMENTS

- A. In accordance with Section 01 31 00, Project Management and Coordination, the Contractor shall maintain at the site, available to the District and Engineer, one copy of the Contract Documents, Drawings, Shop Drawings, Change Orders and other modifications, in good order and marked to record all changes made during construction. These documents shall be delivered to the Engineer upon completion of the Work.

- B. In the case that portions of the Work are required by the Contract Documents to be designed by a licensed professional under agreement with the Contractor, as-built drawings for this portion of the Work shall be prepared by the licensed professional and included in the Project Record Documents.

2.07 FINAL ACCEPTANCE AND DATE OF COMPLETION

- A. Whenever the Contractor shall deem all work under this Contract to have been completed in accordance therewith, it shall so notify the Engineer in writing, and the Engineer shall promptly ascertain whether the work has been satisfactorily completed and, if not, shall advise the Contractor in detail and in writing of any incomplete or nonconforming work. When all the provisions of the Contract have been fully complied with to the satisfaction of the Engineer, the Engineer shall proceed with all reasonable diligence to determine accurately the total value of all work performed by the Contractor at the prices set forth in the Contract or fixed by Change Orders, and the total value of all extra work, all in accordance with the Contract. The Engineer will then certify to said final estimate and to the completion of the work, and will file copies thereof with the District and the Contractor. The date of completion shall be the date upon which the District makes its formal written acceptance of the work.

2.08 FINAL SUBMITTALS

- A. Prior to requesting final payment, the Contractor shall obtain and submit the following items to the Engineer for transmittal to the District: (1) written guarantees, where required; (2) operating manuals, training and instruction; (3) keying schedule; (4) maintenance stock items, spare parts and special tools; (5) completed project record documents; (6) releases from all parties who are entitled to claims against the Project, property or the Work in a form required by law; (7) complete underground utility and survey data.

2.09 FINAL PAYMENT

- A. Within ten (10) days after the date of completion, and including the receipt of Final Release, the District will file in the Office of the County Recorder, a Notice of Completion of the work herein agreed to be done by the Contractor. On the expiration of thirty-five (35) days after the recordation of such Notice of Completion, the difference between said final estimate and all payments theretofore made to the Contractor shall be due and payable to the Contractor, subject to any requirements concerning the furnishings of a maintenance bond, and excepting only such sum or sums as may be withheld or deducted in accordance with the provisions of the Contract Documents or as required by law. All prior certifications upon which partial payments may have been made, being merely estimates, shall be subject to correction in the final certificate.

2.10 FINAL RELEASE

- A. Final payment to the Contractor, in accordance with the final estimate, is contingent upon the Contractor furnishing the District with a signed written release of all claims against the District arising by virtue of the Contract. This will be accomplished by execution of the CLOSEOUT AGREEMENT AND RELEASE OF CLAIMS -attached. Disputed Contract claims in stated amounts may be specifically excluded by the Contractor from the CLOSEOUT AGREEMENT AND RELEASE OF CLAIMS.

2.11 RIGHT TO WITHHOLD PAYMENTS

- A. In addition to all other rights and remedies of the District hereunder and by virtue of the law, the District may withhold or nullify the whole or any part of final payment for reasons described in Section 00 72 00, General Conditions.

2.12 CONTRACTOR'S CONTINUING OBLIGATION

- A. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by Engineer, nor the issuance of a certificate of Substantial Completion, nor any payment by District to Contractor under the Contract Documents, nor any use or occupancy of the Work or any part thereof by District, nor any act of acceptance by District nor any failure to do so, nor any review and approval of a Shop Drawing or sample submission, nor the issuance of a Notice of Acceptability by Engineer, nor any correction of defective Work by District will constitute an acceptance of Work not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents.

2.13 WAIVER OF INTEREST

- A. The District shall have no obligation to pay and the Contractor hereby waives the right to recover interest with regard to monies which the District is required to withhold by reason of judgment, order, statute, or judicial process.

2.14 SATISFACTION OF CLAIMS AND LIENS

- A. Neither the final payment nor any part of the retained percentage shall become due until the Contractor, if required, shall deliver to the District, a complete release of all liens and claims arising out of this Contract, or receipts in full in lieu thereof and, if required in either case, an affidavit that so far as he has knowledge or information the releases and receipts include all the labor and material for which a lien or claim could be filed; but the Contractor may, if any Subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the Engineer, to indemnify the District against any lien or claim. If any lien or claim remains unsatisfied after all payments are made, the Contractor shall refund to the District all monies

that the latter may be compelled to pay in discharging such a lien, or claim, including all costs and reasonable attorney's fees.

- B. Prior to final payment by the District, the Contractor shall submit a final waiver of lien for the Contractor's work, in the forms prescribed by California Civil Code §8136, together with releases of lien from any subcontractor or supplier.

2.15 DISBURSEMENT OF RETENTION PROCEEDS

- A. In accordance with Section 7107 of the Public Contracts Code with respect to all contracts entered into on or after January 1, 1993 relating to the construction of any public work of improvement the following shall apply.
- B. The retention proceeds withheld from any payment by the District from the original Contractor, or by the original Contractor from any Subcontractor, shall be subject to this paragraph.
 - 1. Within sixty (60) days after the date of completion of the work, the retention withheld by the District shall be released.
 - 2. In the event of a dispute between the District and the original Contractor, the District may withhold from the final payment an amount not to exceed one hundred fifty percent (150%) of the disputed amount.
- C. Subject to subsection D, within seven (7) days from the time that all or any portion of the retention proceeds are received by the original Contractor, the original Contractor shall pay each of its subcontractors from whom retention has been withheld, each subcontractor's share of the retention received. However, if a retention payment received by the original Contractor is specifically designated for a particular subcontractor, payment of the retention shall be made to the designated subcontractor, if the payment is consistent with the terms of the subcontract.
- D. The original Contractor may withhold from a subcontractor its portion of the retention proceeds if a bona fide dispute exists between the subcontractor and the original Contractor. The amount withheld from the retention payment shall not exceed one hundred fifty percent (150%) of the estimated value of the disputed amount.
- E. In the event that retention payments are not made within the time periods required by this Part, the District or original Contractor withholding the unpaid amount shall be subject to a charge of two percent (2%) per month on the improperly withheld amount, in lieu of any interest otherwise due. Additionally, in any action for the collection of funds wrongfully withheld, the prevailing party shall be entitled to attorneys' fees and costs.
- F. Any attempted waiver of the provisions of Section 7107 of the California Public Contract Code shall be void as against the public policy of this state.

2.16 REUSE OF DOCUMENTS

- A. Neither Contractor nor any Subcontractor or Supplier or other person or entity performing or furnishing any of the Work under a direct or indirect contract with District shall have or acquire any title to or ownership rights in any of the Drawings, Plans and Specifications or other documents (or any copies of such documents) prepared by or bearing the seal of Engineer, and they shall not reuse any of such documents on extensions of the Project or any other project without written consent of District and Engineer and specific written verification or adaptation by Engineer.

2.17 RETENTION OF RECORDS

- A. In accordance with Government Code §8546.7, records of both the District and the Contractor shall be subject to examination and audit by the State Auditor General for a period of three (3) years after final payment. Contractor shall make available to the District any of the Contractor's other documents related to the Project immediately upon request of the District. In addition to the State Auditor rights above, the District shall have the right to examine and audit all the books, estimates, records, contracts, documents, bid documents, subcontracts, and other data of the Contractor (including computations and projections) related to negotiating, pricing, or performing the modification in order to evaluate the accuracy and completeness of the cost or pricing data at not additional cost to the District, for a period of four (4) years after final payment.

END OF SECTION

CLOSEOUT AGREEMENT AND RELEASE OF CLAIMS

THIS AGREEMENT AND RELEASE OF CLAIMS is made in South Lake Tahoe, California, this day of _____, _____, by and between South Tahoe Public Utility DISTRICT, hereinafter referred to as "DISTRICT", and _____, hereinafter referred to as "CONTRACTOR".

KNOW ALL PERSONS BY THESE PRESENTS:

1. That the undersigned, as the authorized representative of CONTRACTOR, for and in consideration of _____ (\$ _____), contract amount, and the sum of _____ (\$ _____) for said Contract Change Orders Nos. 1 through ____, receipt of which is hereby acknowledged, has submitted waivers from all subcontractors and suppliers in the form required by Civil Code §8132 - 8138, and does hereby and for each of its successors, assigns and partners, release acquit and forever discharge the SOUTH TAHOE PUBLIC UTILITY DISTRICT OF EL DORADO COUNTY, CALIFORNIA, and each of its successors, assigns, officers, agents, servants, and employees, from any and all rights, claims, demands, debts, obligations, liabilities, actions, damages, costs, expenses and other claims whatsoever, which might have been asserted against DISTRICT by reason of any matter or thing which was the subject matter of or basis for:
 - A. The performance of all terms and conditions of that certain agreement dated _____ for Purchase Order No. _____ DISTRICT project described as **2026 Water Meter Installation Project**.
 - B. Change Orders Nos. 1 through __ as approved by the parties, pertaining to Purchase Order No. _____ and shown in Payment Request No. _____, dated _____.

2. That the undersigned, as the authorized representative of DISTRICT, for and in consideration of the CONTRACTOR's completion of Purchase Order No. _____ does hereby and for each of its successors, and assigns, releases, acquits and forever discharge _____ and each of its successors, assigns, officers, agents, servants, and employees, and sureties from any and all rights, claims, demands, debts, obligations, liability, actions, costs, expenses whatsoever which might have been asserted against CONTRACTOR, except for all rights accruing to the DISTRICT arising out of (1) patent and latent construction defects as codified by California Code of Civil Procedure Sections 337.10 and 337.15, (2) third party claims brought against the DISTRICT, and (3) warranty claims, which rights are specifically reserved and not released, provided by reason of any matter or thing which was the subject matter of or basis for:
 - A. The performance of all terms and conditions of that certain agreement dated _____ for Purchase Order No. _____ DISTRICT project described as **2026 Water Meter Installation Project**.
 - B. Change Orders Nos. 1 through _____ as approved by the parties, pertaining to Purchase Order No. _____ and shown in Payment Request No. dated _____.

3. Nothing contained herein shall waive or alter the rights, privileges, and powers of the DISTRICT or the duties, liabilities and obligations of the CONTRACTOR and its surety in respect to any portions of the Specifications for Purchase Order No. _____, including but not limited to indemnity and warranty obligations.
4. The DISTRICT has received no claims from the CONTRACTOR.
5. The DISTRICT filed and recorded a NOTICE OF COMPLETION with the El Dorado County Recorder on _____, 2021 as such the statutory lien period expired on _____, 2021.

6.	The presently retained amount is	\$
	Original Contract amount	\$
	Total Change Order Amount	\$
	Other Encumbrances	\$
	Less: Amount Previously Paid (Request Nos. 1 through ____)	\$
	Retainage	\$
	BALANCE:	\$

The retainage will be released to the CONTRACTOR within sixty (60) calendar days after date of recording a NOTICE OF COMPLETION by El Dorado County Recorder or when all stop notices and other encumbrances have been released, whichever last occurs. Release pursuant to this agreement shall not apply to CONTRACTOR's rights to the presently retained amount until such time as such amounts are received in full by CONTRACTOR.

7. CONTRACTOR and DISTRICT agree that the total adjusted contract price and time of performance for Purchase Order No. after the execution of change orders shall be as follows:

Original Contract Price	\$
Original Calendar Days	
Total Adjusted Price	\$
Total Adjusted Calendar Days	

8. It is understood and agreed by the undersigneds that the facts with respect to which the foregoing Release is given may hereafter turn out to be other than or different from the facts in that connection now known to be or believed by said undersigneds to be true, and the undersigneds hereto expressly assume the risk of the facts turning out to be different than they now so appear, and agree that the foregoing Release shall be, in all respects, effective and not subject to termination or recession by any such difference in facts and undersigneds hereby expressly waive any and all rights the undersigneds have or may have under California Civil Code Section 1542, which provides as follows:

"A general release does not extend to claims which the creditor does not know or suspect to exist in his favor at the time of executing the Release which if known by him must have materially affected his settlement with the debtor."

9. The releases made by the CONTRACTOR and the DISTRICT herein are not to be construed as an admission or admissions of liability on the part of either party and that the parties deny liability hereof. Unless arising out of a right expressly reserved herein, the undersigneds agree that they will forever refrain and forebear from commencing, instituting or prosecuting any lawsuit, action or other proceeding against the other party based on, arising out of, or in any way connected with the subject matter of this Release.
10. The CONTRACTOR hereby releases the DISTRICT from all claims, including those of its Subcontractors for all delay and impact costs, if any.
11. The CONTRACTOR represents and warrants to the DISTRICT that the CONTRACTOR has not heretofore assigned or transferred or purported to assign or transfer to any person, firm, corporation, association or entity any of the rights, claims, warranties, demands, debts, obligations, liabilities, actions, damages, costs, expenses and other claims whatsoever and the CONTRACTOR agrees to indemnify and hold harmless the DISTRICT against, without limitation, any and all rights, claims, warranties, demands, debts, obligations, liabilities, actions, damages, costs, expenses and other claims, including attorney's fees, arising out of or connected with any such assignment or transfer or purported assignment or transfer.
12. The undersigned acknowledge that they have been represented by counsel of their own choice in connection with the preparation and execution of this Closeout Agreement and Release of Claims. The undersigned acknowledge and represent that they understand and voluntarily consent and agree to each and every provision contained herein.
13. The undersigned further declare and represent that no promise, inducement or agreement, not herein expressed, have been made to the undersigned and that this Release contains the entire agreement among the parties hereto and that the terms of the Release are contractual and not a mere recital.
14. The persons executing this Closeout Agreement and Release of Claims represent and warrant to the other party that the execution and performance of the terms of this Release have been duly authorized by all requisite corporate, partnership, individual, or other entity requirements and that said persons have the right, power, legal capacity and authority to execute and enter in the Closeout Agreement and Release of Claims.

PAUL HUGHES, GENERAL MANAGER

DATED

ATTEST: MELONIE GUTTRY, CLERK OF BOARD

DATED

CONTRACTOR

DATED

DIVISION 03

SECTION 03 10 00

CONCRETE FORMING AND ACCESSORIES

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Permanent and temporary forms for structural and architectural cast-in-place concrete.
- B. Related Sections:
 - 1. 03 20 00 Concrete Reinforcing
 - 2. 03 30 00 Cast-in-Place Concrete
 - 3. 31 23 19 Dewatering
 - 4. 31 20 00 Earthwork

1.02 DESIGN REQUIREMENTS

- A. The design of all concrete forms, falsework, and shoring shall be the responsibility of the Contractor and the design and installations of these items shall comply with all local, State, and Federal regulations

1.03 QUALIFICATIONS

- A. Except as otherwise specified, or accepted in writing by the Engineer, only forming systems by manufacturers with a minimum of five years' experience shall be considered.

1.04 SUBMITTALS

- A. Information on the Contractor's proposed forming system shall be submitted in such detail as the Engineer may require to assure himself that the intent of the Specifications can be complied with by the use of the proposed system.
- B. Shop Drawings: formwork showing Manufacturer's installation instructions and acknowledgement that products submitted meet requirements of standards referenced.
- C. Manufacturer and type of proposed form materials, form ties and form coating materials.

PART 2 PRODUCTS

2.01 FORMS

- A. Forms shall be wood or steel. Forms shall be tight to prevent leakage, free of rust and straight without dents or warps in order to attain uniform dimensions and dangles as shown on Project Drawings.
- B. Wales shall be formed of double 2" x 4" lumber as a minimum. Studding and wales shall contain no loose knots and shall be free of warps, cups, and bows.
- C. The number of reuses of forms will depend upon the durability of the surface coating or overlay used, and the Contractor's ability to maintain the forms in a condition, which will produce a flat, smooth, hard, dense finish on the concrete when stripped. Alternate combinations of plywood thickness and stud spacing may be submitted to the Engineer for review and acceptance.

2.02 FORM TIES

- A. Form ties for the forming system selected shall be the cone-snap tie or flat bar type as manufactured by a recognized manufacturer of concrete forming equipment. Forms shall be tied together at not less than 2' centers vertically and horizontally. Wire ties or wood spreaders of any form shall not be used. Ties shall be of a type that will accurately tie, lock, and spread the forms. Forms and ties shall be designed to withstand concrete pressures without bulging, spreading, or lifting of the forms. The form tie shall be of such design that when the forms are removed no metals shall be within 3/4" of any surface. Holes in the forms for ties shall not allow leakage during placement of concrete.

PART 3 EXECUTION

3.01 FORM INSTALLATION, BRACING AND ALIGNMENT

- A. Forms shall be so constructed that the finished concrete will conform to the shapes, lines, grades, and dimensions indicated on the Plans. It is intended that the surface of the concrete after stripping shall present a smooth, hard, and dense finish that will require a minimum amount of finishing. Sufficient number of forms shall be provided so that the work may be prosecuted rapidly and present a uniform appearance in form patterns and finish. Forms shall be clean and free from all dirt, debris, concrete, etc. and shall be coated with an acceptable form oil if required, prior to use or reuse.
- B. It shall be the Contractor's responsibility to limit deviations in line and grade to tolerances which will permit proper installation of all structurally embedded items or mechanical and electrical equipment and piping.
- C. All formwork shall be securely braced, supported, tied down, or otherwise held in place to prevent any movement of formwork. Adequate provisions shall be made for uplift pressure, lateral bulging of forms, and deflection of forms for slabs and beams.

- D. When a second lift is placed on hardened concrete, special precautions shall be taken in the form work at the top of the old lift and bottom of the new lift to prevent spreading, vertical or horizontal displacement of forms; and to prevent grout "bleeding" on finished concrete surfaces. Pipe stubs, anchor bolts, and other embedded items shall be set in the forms where required.
- E. Concrete beams or slabs shall not be placed directly on masonry walls so that any of the weight of the concrete either before or after the concrete has set is on the masonry wall, unless the masonry wall is identified on the Plans as "bearing wall."
- F. No concrete shall be placed until all forms have been thoroughly checked by the Contractor for alignment, level, strength, and to assure accurate location of all mechanical and electrical inserts or other embedded items. All cracks, openings, or offsets at joints in the formwork which are 1/16" or larger shall be closed by tightening the forms or by filling with an acceptable crack filler.

3.02 FORM REMOVAL

- A. Vertical forms shall remain in place a minimum of 24 hours after the concrete is placed. If, after 24 hours, the concrete is sufficiently hardened to resist surface or other damage, the vertical forms may be removed. Other forms supporting concrete and shoring shall remain in place as follows:
 - Sides of footings: 24 hours (minimum)
 - Slabs, beams, and girders: 10 days (minimum) and until concrete strength reaches 85 percent of the specified strength
 - Shoring for slabs, beams, and girders: 10 days (minimum) and until concrete strength reaches 85 percent of the specified strength
 - Wall bracing: until concrete strength of the slab laterally supporting the wall reaches 85 percent of the specified strength
- B. Forms shall not be removed from the concrete which has been placed with outside ambient air temperature below 50°F until the concrete has attained 85 percent of specified strength as determined by test cylinders stored in the field under equivalent conditions as the concrete structure. No heavy loading on green concrete (85 percent of specified strength) will be permitted. Immediately after forms are removed, the surface of the concrete shall be carefully examined, and any irregularities in the surface shall be repaired and finished as specified hereinafter.

END OF SECTION

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SECTION 03 15 00

CONCRETE BONDING ADHESIVE

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Repair mortar for vertical, overhead or horizontal patch and repair of existing substrate.
- B. Related Sections:
 - 1. 03 01 30 Concrete Repair Mortar
 - 2. 03 20 00 Concrete Reinforcing
 - 3. 03 30 00 Cast-in-Place Concrete
 - 4. 03 62 00 Non-Shrink Grout

1.02 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation for each material and product used. Include manufacturer's Material Safety Data Sheets.

1.03 REFERENCES

- A. ASTM C 882: Slant Shear Bond Strength

1.04 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: The manufacturer shall be a company with at least fifteen years of experience in the manufacture and marketing of products specified herein.
- B. Installer's Qualifications: The contractor shall be qualified to perform the work specified by reason of experience.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in original packaging, labeled with product identification, manufacturer, batch number and shelf life.
- B. Store products in a dry area. Protect from freezing. Do not store in areas over 100°F (38°C).
- C. Handle products in accordance with manufacturer's printed recommendations.

PART 2 PRODUCTS

2.01 MATERIALS

- A. ASTM C 1059 Type I and Type II Ethylene Polyvinyl Acetate Co - Polymer Bonding Agent for Portland Cement Repair Mortars. Comply with the following:
 - 1. Manufacturer: Concrete Bonding Adhesive (No. 9902) as manufactured by the QUIKRETE® Companies, One Securities Centre, 3490 Piedmont Road, NE, Suite 1300, Atlanta, GA 30305; telephone (404) 634-9100. Or Equal.
 - 2. Performance and Physical Properties at 73 degrees F (23 degrees C) and 50 percent relative humidity.
 - a. Application:
 - 1) Paint-on: Spray, brush roller or squeeze application
 - 2) Slurry coat: trowel, brush, roller or squeegee application
 - b. Bond Strength, ASTM C 1059
 - 1) Type I (paint-on): > 400 psi (2.8 Mpa)
 - 2) Type II (slurry coat): > 1250 psi (8.6 MPa) @ 20 days.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.
- B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas landscaping from contact due to mixing and handling of materials.

3.02 SURFACE PREPARATION

- A. Comply with manufacturer's printed instructions and the following:
 - 1. Remove all spalled and unsound materials from area to be repaired.
 - 2. Clean surfaces of bond-inhibiting materials including mildew, dust, dirt, oil, grease and standing water.

3.03 MIXING

- A. Comply with manufacturer's printed instructions and the following:
 - 1. Paint on Application: Apply undiluted, shake well before using
 - 2. Slurry Coat Applications:
 - a. Blend approximately 2 parts Portland Cement and 1 part Concrete Bonding Adhesive.
 - b. Pour the powder into the adhesive and mix until a lump free consistency is achieved.
 - 3. Primer Applications: Dilute 1 part Concrete Bonding Adhesive with 2 parts of clean water, stir well before using.

3.04 APPLICATION

- A. Comply with manufacturer's printed instructions and the following:
 - 1. Paint on Application
 - a. Apply to surface with a brush, roller or spray to the thickness of a coat of paint.
 - b. Place new concrete, topping mixes, Portland cement, plaster mixes or patches as soon as adhesive is dry. Gypsum plasters and finish plasters should be applied while the adhesive is still tacky.
 - c. Base coat plasters must be dry before applying adhesive.
 - d. Tools, brushes and other application accessories should be immediately cleaned with warm soapy water. Use hot water to clean-up any drippings.
 - 2. Slurry Coat application
 - a. Apply a thin layer of slurry onto the properly prepared substrate using a trowel, brush or squeegee. Rub the slurry thoroughly into the surface.
 - b. Apply the topping or repair material before the slurry dries.
 - 3. Primer Application
 - a. Apply with broom, roller or garden sprayer to saturate the surface. Clean tools and equipment immediately with warm soapy water.
 - b. Low porosity concrete in good condition requires one coat. Porous concrete requires 2 coats.
 - c. Allow Concrete Bonding Adhesive to become dry to the touch. If there is not visible sheen to the concrete apply a second coat and allow to dry. A drying time of 2-3 hours is typical.
 - d. Toppings may be applied up to 48 hrs after Concrete Bonding Adhesive has been applied. Keep the coated area clean and dry

3.05 CLEANING

- A. Remove excess material before material cures. If material has cured, remove using mechanical methods that will not damage substrate.

END OF SECTION

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SECTION 03 20 00

CONCRETE REINFORCING

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Reinforcement of all types to increase the structural capabilities of concrete.
- B. Related Sections:
 - 1. 03 10 00 Concrete Forming and Accessories
 - 2. 03 30 00 Cast-in-Place Concrete
 - 3. 31 23 19 Dewatering
 - 4. 31 20 00 Earthwork

1.02 REFERENCES

- A. ASTM International
 - 1. A615: Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
- B. American Concrete Institute
 - 1. 318: Building Code Requirements for Structural Concrete and Commentary
 - 2. SP66: ACI Detailing Manual
- C. American Welding Society
 - 1. D1.4: Structural Welding Code - Reinforcing Steel

PART 2 PRODUCTS

2.01 REINFORCEMENT

- A. All reinforcing steel shall be new material, of the quality specified, free from excessive rust or scale or any defects affecting its usefulness.

2.02 REINFORCING_BARS

- A. Reinforcing bars to be embedded in concrete or masonry shall be Grade 60 deformed bars conforming to ASTM A615 and shall include the supplementary requirements. No field bending of bars will be allowed. All reinforcement bars lacking grade identification marks shall on delivery be accompanied by a manufacturer's guarantee of grade which will identify variations.
- B. All bars shall be new stock free from rust scale, loose mill scale, excessive rust, dirt, oil, and other coatings which adversely affect bonding capacity when placed in the work. A thin coating of red rust resulting from short exposure will not be considered

objectionable, but any bars having rust scale, loose mill scale, or a thick rust coat shall be thoroughly cleaned, or shall be rejected and removed from the premises upon order of the Engineer.

- C. Bars shall be delivered bundled and tagged with identifying tags.
- D. Bars shall be cut and bent in accordance with the provisions of ACI SP66 and ACI 318. All bars shall be bent cold. Bars shall be free from defects and kinks and from bends not indicated on the Plans.
- E. Reinforcing bars shall be welded where indicated on the Plans or acceptable to the Engineer. Welding shall be performed in accordance with AWS D1.4 "Structural Welding Code Reinforcing Steel."
- F. Shop drawings on reinforcing steel detailed by the Contractor in accordance with the Contract Documents will not be reviewed and returned. The Contractor shall supply the Engineer with a copy of all reinforcing steel detail drawings. Changes to the Contract Documents made by the Contractor in reinforcing steel shop drawings shall be called out in the letter of submittal. Such changes will not be acceptable unless the Engineer has expressed consent to such changes in writing.

PART 3 EXECUTION

3.01 PLACING BAR REINFORCEMENT

- A. Reinforcing bars shall be accurately placed and adequately secured in position. Bars at splices shall overlap as specified or indicated on the Plans. If the lap splice length is not specified or indicated on the Plans, bars shall be lap spliced in accordance with ACI 318. Lap splices for masonry, if not specified or indicated on the Plans or specifications, shall be in accordance with the Uniform Building Code. Bar supports shall be galvanized steel, shall conform to ACI 315, and shall be furnished in sufficient number to prevent sagging and to support loads during construction, but in no case shall the quantities and locations of the supports be less than indicated in ACI SP66. Bar supports, where used in slabs which will be exposed to view, shall be equipped with plastic tips. Reinforcing for concrete placed on the ground shall be supported by standard manufactured chairs, with steel plates for resting on the ground. No use shall be made of brick, broken concrete masonry units, spalls, rocks, or similar material for supporting reinforcing steel.
- B. Unless otherwise indicated on the Plans, reinforcement shall be placed to provide the thickness of protective concrete covering as indicated on the Typical Details. If not indicated on the Plans or Typical Details protective covering shall be in accordance with ACI 318.
- C. The Contractor shall submit to the Engineer for review and acceptance samples of all chairs he proposes to use along with a letter stating where each type chair will be used. No concrete shall be placed until this prior acceptance has been obtained.

3.02 TYING BAR REINFORCEMENT

- A. Bars shall be fastened securely in place with annealed steel wire ties. Bars shall be tied sufficiently often to prevent shifting. There shall be at least three ties in each bar length (does not apply to dowel laps or to bars shorter than 4', unless necessary for rigidity). Slab bars shall be tied at every intersection around the periphery of the slab. Wall bars and slab bar intersections other than around the periphery shall be ties at not less than every fourth intersection, but at not greater than the following maximum spacings:

	Slab Bars, <u>inches</u>	Wall Bars, <u>inches</u>
Bars No. 5 and smaller	60	48
Bars No. 6 through No. 9	96	60
Bars No. 10 and No. 11	120	96

- B. The above tying requirements do not apply to reinforcement for masonry. For masonry, vertical bars shall be held in position at top and bottom and at intervals not exceeding 192-bar diameter.
- C. Where bars are to be lapped spliced at joints in the concrete, all bars shall project from the concrete first placed, a length equal to the lap splice length indicated on the Plans. Where the lap splice length is not indicated on the Plans, then the lap splice length shall be as specified in ACI-318 and this Division. All concrete or other deleterious coating shall be removed from dowels and other projecting bars by wire brushing or sandblasting before the bars are embedded in a subsequent concrete placement.
- D. The Plans and Typical Details contain general notes concerning amount of reinforcement and placing, details of reinforcement at wall corners and intersections, and details of extra reinforcement around openings in concrete.

3.03 PROTECTION OF EXPOSED REBAR

- A. Any rebar which is exposed due to cutting of concrete shall be removed to a depth of 1-2" into face of concrete and the resulting hole shall be grouted flush with concrete face.

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SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Cast-in-place concrete composed of Portland cement, fine aggregate, coarse aggregate, and water.
- B. Related Sections:
 - 1. 03 10 00 Concrete Forming and Accessories
 - 2. 03 20 00 Concrete Reinforcing
 - 3. 31 23 19 Dewatering
 - 4. 31 20 00 Earthwork

1.02 REFERENCES

- A. ASTM International
 - 1. C31: Standard Practice for Making and Curing Concrete Test Specimens in the Field;
 - 2. C33: Standard Specification for Concrete Aggregates;
 - 3. C39: Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens;
 - 4. C40: Standard Test Method for Organic Impurities in Fine Aggregates for Concrete;
 - 5. C42: Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete;
 - 6. C88: Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate;
 - 7. C94: Standard Specification for Ready-Mixed Concrete;
 - 8. C114: Standard Test Methods for Chemical Analysis of Hydraulic Cement;
 - 9. C117: Standard Test Method for Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing;
 - 10. C123: Standard Test Method for Lightweight Particles in Aggregate;
 - 11. C125: Standard Terminology Relating to Concrete and Concrete Aggregates;
 - 12. C131: Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine;
 - 13. C142: Standard Test Method for Clay Lumps and Friable Particles in Aggregates;
 - 14. C143: Standard Test Method for Slump of Hydraulic-Cement Concrete;
 - 15. C150: Standard Specification for Portland Cement;
 - 16. C172: Standard Practice for Sampling Freshly Mixed Concrete
 - 17. C173: Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method;
 - 18. C260: Standard Specification for Air-Entraining Admixtures for Concrete
 - 19. C295: Standard Guide for Petrographic Examination of Aggregates for Concrete;

20. C289: Standard Test Method for Potential Alkali-Silica Reactivity of Aggregates (Chemical Method)
 21. C309: Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete;
- B. American Concrete Institute (ACI)
1. 318: Building Code Requirements for Structural Concrete and Commentary
 2. 117: Specifications for Tolerances for Concrete Construction and Materials and Commentary

1.03 WORKMANSHIP AND METHODS

- A. Concrete work, including detailing of reinforcing, shall be in accordance with the best standard practices and as set forth in the ACI Building Code, Manuals, and Recommended Practices.
- B. All concrete materials shall be so delivered, stored, and handled as to prevent damage to the materials and the inclusion of foreign substances. Packaged materials shall be delivered and stored in original containers until ready for use. Material containers or materials showing evidence of water or other damage shall be rejected.

1.04 MEASUREMENTS OF MATERIALS

- A. Materials shall be measured by weighing, except as otherwise specified or where other methods are specifically authorized in writing by the Engineer. The apparatus provided for weighing the aggregates and cement shall be suitably designed and constructed for this purpose. Cement shall be weighed separately. The accuracy of all weighing devices shall be such that successive quantities of the individual item can be measured to within 1 percent of the desired amount of that item. Cement in unbroken standard packages (sack) need not be weighed, but bulk cement and fractional packages shall be weighed. The mixing water shall be measured by volume or by weight. The water measuring device shall be capable of control of water quantities to an accuracy of 1 percent of the desired amount. All measuring or weighing devices shall be subject to review and acceptance by the Engineer, and shall bear a valid seal of the Sealer of Weights and Measures having jurisdiction.

1.05 SUBMITTALS

- A. Concrete Mix:
1. Prior to placement of concrete the Contractor shall submit to the Engineer for review and acceptance full details, including mix design calculations for the concrete mix he proposes to use for each class of concrete.
 2. The Contractor shall submit laboratory compression test data performed within the past six months provided by the concrete supplier to verify concrete strength and mix requirements. Each past-test shall provide data regarding concrete mix, admixtures, and 7-day and 28-day results.
 3. In the submittal, the Contractor must clearly identify which past mix will be used for each class of concrete to be used on this project.
 4. After acceptance, the mixes shall not at any time be changed without reacceptance by the Engineer, except that at all times the batching of water

shall be adjusted to compensate for the free moisture content of the fine aggregate. The total water content of each of the type concretes shall not exceed those listed in Table A of this Division. Satisfactory means shall be provided at the batching plant for checking the moisture content of the fine aggregate. The details of concrete mixes submitted for review shall include information on the correction of the batching for varying moisture contents of the fine aggregate.

5. If there is a change in the aggregate source, or if there is a change in aggregate quality from the same source, the Contractor shall submit to the Engineer for review and acceptance a new set of design mixes covering each class of concrete, and a new trial batch and test program shall be undertaken as hereinbefore specified. Each new trial batch and test program shall be at the expense of the Contractor.

B. Mill Tests:

1. Certified copies in triplicate of mill tests representative of each shipment of cement shall be furnished to the Engineer for verification of compliance with these Specifications. Mill tests on cement shall include a report on alkali content.

C. Delivery Tickets

1. Provide delivery tickets for ready-mix concrete or weighmasters certificate per ASTM C94, including weights of cement and each size aggregate and amount of water added at the plant and record of pours. Record the amount of water added on the job on the delivery ticket. Water added at the plant shall account for moisture in both coarse and fine aggregate.

PART 2 PRODUCTS

2.01 GENERAL

- A. Except as otherwise specified, concrete shall be composed of Portland cement, fine aggregate, coarse aggregate, and water so proportioned and mixed as to produce a plastic, workable mixture in accordance with all requirements of these Specifications and suitable to the specific conditions of placement. The proportions of materials shall be such as to secure the lowest water-cement ratio which is consistent with good workability, a plastic, cohesive mixture, and one which is within the specified slump range. The proportion of fine and coarse aggregate shall be such as not to product harshness in placing nor honeycombing in the structures.
- B. Concrete Proportions and Consistency
1. The concrete shall be of such consistency and composition that it can be worked readily into the corners and angles of the forms and around the reinforcement without excessive vibration and without permitting the materials to segregate or free water to collect on the surface.
 2. The ratio of coarse aggregate to fine aggregate shall not be less than 1.0 nor more than 2.0 for all concrete.
 3. To avoid unnecessary or haphazard changes in consistency, the aggregate shall be obtained from a source which will insure uniform quality, moisture content, and grading during any single day's operation. Aggregate shall be

delivered to the Work and handled in such a manner that variations in moisture content will not interfere with the steady production of concrete of the specified degree of uniformity and slump.

4. See Table A of this Specification for the strength requirements, concrete mix water to cement ratio, minimum cement content, and slump range for Class A and C concrete. For the gradation requirements for Class B concrete see Table B.
5. It is the Contractor's responsibility to control and adjust the concrete batch weights so as to secure the maximum yield, yet at all times the Contractor shall maintain the proportions of the concrete mix within the specified limits.
6. If it is required, in the opinion of the Engineer, the mixture shall be modified within the limits set forth in these Specifications.

C. Classes of Concrete

1. Concrete used shall be of three classes, herein referred to as Classes A, B, and C, which shall be as specified herein and which shall be used in the respective places called for in these Specifications. These classes of concrete shall have a minimum weight of 140 pounds per cubic foot. Class C concrete may be used for fill for unauthorized excavation, for thrust blocks and ground anchors for piping, for bedding of pipe, when noted on the Plans. Class B concrete will be used for sidewalk, curb and gutter, valley gutters and driveway aprons. All other concrete, unless specified or noted otherwise, shall be Class A concrete.

TABLE "A"

CONCRETE WITH AIR ENTRAINMENT				
Class	Compressive Strength at 28 days (psi)	Max. Net Water to Cement Ration by Weight*	Min. Cement Per Yard of Concrete (lbs)	Consistency Range in Slump (inches)
A	4,000	0.48	658	2 to 4**
C	2,500	0.62	423	3 to 6
* See Part 2.01.D - Admixtures				
** Slump for Slabs, decks, walks, and beams shall not be more than 3½".				

TABLE "B"

CLASS B 7-SACK BATCH WITH LAMPBLACK Sieve Size	PORTLAND CEMENT CONCRETE	
	Percent Passing Operating Range	Percent Passing Contract Compliance
3/8"	100	100
No. 4	95-100	93-100
No. 8	65-95	61-99
No. 16	52-72	49-75
No. 30	26-44	23-47
No. 50	6-18	3-21
No. 100	2-10	1-12
No. 200	0-5	0-7

Add 1lb lampblack per cubic yard. 6.0% ±1% air entrainment. Slump shall not exceed 4".
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2. Any concrete that is pumped shall meet all the requirements of these Specifications. In no case shall concrete be placed which shows a slump outside the limits indicated in the table.
3. Classes B and C concrete shall be made with Type II low alkali. Class A concrete shall be made with Type III low alkali cement. See Admixtures for allowable admixtures.

D. ADMIXTURES

1. Admixtures of any type, except as otherwise specified, shall not be used unless written authorization has been obtained from the Engineer. Admixtures used shall be compatible with the concrete and other admixtures. Admixtures containing chlorides calculated as chloride ion in excess of 0.5 percent by weight shall not be used. Admixtures shall be used in accordance with the manufacturer's recommendations and shall be added separately to the concrete mix.

E. Custom Colors

1. Unless otherwise indicated on plans and specs no coloration shall be added.
2. Concrete for conduit encasement, the concrete shall be three (3) pounds of Red Oxide per sack of cement.

2.02 AGGREGATE

A. General

1. All concrete aggregate shall be sound, uniformly graded, and free of deleterious material in excess of the allowable amounts specified.
2. The Contractor shall furnish the Engineer certified copies in triplicate of commercial laboratory tests of all samples of concrete aggregates submitted. Tests on concrete aggregates shall indicate as a minimum all specified tests. All concrete aggregate tests shall be at the Contractor's expense.
3. Aggregate shall be sampled and graded in accordance with ASTM D 75 and C 136.
4. Sieves for testing grading of aggregates shall have square openings.
5. Sieve analyses of the fine and coarse aggregates being used shall be furnished the Engineer in triplicate at any time there is a significant change in the grading of the materials, and in any event, shall be furnished at least every three weeks. If such sieve analyses indicate a significant change in the materials, the Engineer may require that a new mix design be submitted for review and acceptance before further placing of concrete.
6. If either fine or coarse aggregate is to be batched from more than one bin, analyses shall be furnished for each bin, and a composite analysis made up from these, using the proportions of materials to be used in the mix.
7. The unit weight of fine and coarse aggregate shall be of a unit weight which will produce in place concrete with a weight of not less than 140 pounds per cubic foot.

B. FINE AGGREGATE

1. Fine aggregate for concrete or mortar shall consist of clean, natural sand or of sand prepared from crushed stone or crushed gravel. Deleterious substances shall not be present in excess of the following percentages by weight of contaminating substances. In no case shall the total exceed 3 percent.

	Test Method	Percent
Removed by decantation (dirt, silt, etc.)	ASTM C117	3
Shale or Chert	ASTM C295	1
Clay Lumps	ASTM C142	1

2. Fine aggregate shall not contain strong alkali nor organic matter which gives a color darker than the standard color when tested in accordance with ASTM C 40. Fine aggregate shall have a fineness modulus not less than 2.50 nor greater than 3.00 when tested in accordance with ASTM C 125. Except as otherwise specified, fine aggregate shall be graded from coarse to fine in accordance with the requirements of ASTM C 33. Aggregate soundness shall comply with the requirements of ASTM C 33 when tested in accordance with ASTM C 88. Aggregate shall comply with the reactivity requirements contained in ASTM C-33 when tested in accordance with ASTM C-289.

C. COARSE AGGREGATE

1. Coarse aggregate shall consist of gravel or crushed stone made up of clean, hard, durable particles free from calcareous coatings, organic matter, or other foreign substances. Thin or elongated pieces having a length greater than five times the average thickness shall not exceed 15 percent by weight. Deleterious substances shall not be present in excess of the following percentages by weight, and in no case shall the total of all deleterious substances exceed 2 percent.

	Test Method	Percent
Shale or Chert	ASTM C295	1
Coal and lignite	ASTM C 123	1/4
Clay Lumps and Friable Particles	ASTM C142	1/4
Materials finer than #200 Sieve	ASTM C117	2*

* Except that when material finer than No. 200 sieve consists of crusher dust, the maximum amounts shall be 1 percent.

2. Aggregate when tested in accordance with ASTM C 88 for soundness shall have a loss not greater than 10 percent when tested with sodium sulfate.
3. Abrasion loss of coarse aggregate shall not exceed 45 percent after 500 revolutions when tested in accordance with ASTM C 131. Coarse aggregate reactivity shall not exceed the limits specified in the appendix of ASTM C 33 when tested with accordance with ASTM C 289.

4. Except as otherwise specified or authorized in writing by the Engineer, coarse aggregate shall be graded as specified in ASTM C 33, Size No. 57. Coarse aggregate for Class CE concrete for encasement of electrical conduits shall be graded as specified in ASTM C 33, Size NO. 8; concrete utilizing this aggregate will be equal to Class C concrete in all other respects, and will be designated as Class CE.

2.03 WATER

- A. Water for concrete, washing aggregate, and curing concrete shall be clean and free from oil and deleterious amounts of alkali, acid, organic matter, or other substances. Water shall not contain more than 1,000 milligrams per liter of chlorides calculated as chloride ion, nor more than 1,000 milligrams per liter of sulfates calculated as sulfate ion for conventional reinforced concrete. Water for pre-stressed or post-tensioned concrete shall not contain more than 650 milligrams per liter of chlorides calculated as chloride ion, nor more than 800 milligrams per liter of sulfates calculated as sulfate ion.

2.04 PORTLAND CEMENT

- A. Except as otherwise specified all Portland cement shall conform to the specifications and test for Portland cement ASTM C 150, Types II or III, low alkali. Low alkali Portland cement shall contain not more than 0.6 percent total alkali. The word "alkali" shall be taken to mean the sum of sodium oxide and potassium oxide calculated as sodium oxide. The determination for total alkali shall be made by the method set forth in ASTM C 114. Only one brand of Portland cement shall be used for exposed concrete in any individual structure.

2.05 AIR ENTRAINING ADMIXTURE

- A. All concrete shall contain 5 percent, plus or minus 1 percent, (unless the mix specified in Section 2.01 calls for more), entrained air of evenly dispersed air bubbles at the time of placement. The air-entraining agent shall contain no chlorides and shall conform to ASTM C 260. The air-entraining agent shall be added to the batch in a portion of the mixing water. The solution shall be batched by means of a mechanical batcher capable of accurate measurement.
- B. Concrete that does not meet the Specification requirements as to air entrainment shall not be used, and shall be removed from the job. The Engineer may at any time test the percent of entrained air in the concrete received on the job. Air entrainment in the concrete shall be tested in accordance with ASTM C 173.

PART 3 EXECUTION

3.01 GENERAL

- A. It is the intent of this Specification to secure for every part of the Work concrete and grout of homogeneous structure, which when hardened will have the required strength, watertightness, and resistance to weathering.

- B. It is recognized that some surface hairline cracks and crazing will develop in the concrete surfaces. Construction, contraction, and expansion joints have been positioned in structures, and curing methods specified, for the purpose of reducing the number and size of these expected cracks, due to the normal expansion and contraction expected from the specified concrete mixes. Class A and Class B concrete shall be watertight. Cracks which develop in walls or slabs shall be repaired. Cracks which show any signs of leakage shall be repaired until all leakage is stopped.
- C. Pipes, anchor bolts, steps, reglets, castings, and other inserts, as indicated on the Plans or as required, shall be encased in the concrete. Dovetail anchors or ties shall be used in conjunction with the slots or inserts for the various materials as specified under their respective sections and as may be necessary for the required work.

3.02 JOINTS AND BONDING

- A. As far as practicable the concrete work shall be constructed as a monolith. The locations of contraction, construction, and other joints are indicated on the Plans or specified herein. Where not specified or indicated otherwise, all slabs and walls shall have construction joints at intervals not greater than 30'. In order to preserve the strength and watertightness of the structures, no other joints shall be made except as the Engineer may authorize. At construction joints, the concrete in place shall be thoroughly cleaned of laitance, grease, oil, mud, dirt, curing compounds, mortar droppings, or other objectionable matter by means of a bush hammer or heavy sandblasting, after which the surfaces shall be washed just prior to the succeeding concrete placement. Immediately prior to resuming concrete placing operations, a bed of grout not less than 2" in thickness nor more than 1" in thickness shall be thoroughly spread over the horizontal joint surfaces. Keyways in joints shall be provided as indicated on the Plans. Material for keyways shall be steel, plastic or lumber treated with form release coating, applied in accordance with the manufacturer's published instructions.
- B. Construction joints shall be washed free of sawdust, chips, and other debris after forms are built and immediately before the concrete placement. Should formwork confine sawdust, chips, or other loose matter in such a manner that it is impossible to remove them by flushing with water, a vacuum cleaner shall be used for their removal, after which the cleaned surfaces shall be flushed with water. A cleanout hole shall be provided at the base of each wall and column for inspection and cleaning.
- C. In any case where it is necessary to repair concrete by bonding mortar or new concrete to concrete which has reached its initial set, the surface of the set concrete shall first be coated with epoxy bonding agent Concessive No. 1001 LPL as manufactured by Adhesive Engineering; Sikadur Hi-Mod as manufactured by Sika Chemical Corporation; or equal. This material shall be applied in accordance with the manufacturer's published instructions. Bonding agent will not be required for filling form tie holes or for normal finishing and patching of similar sized small defects.

- D. Expansion, contraction, and construction joints shall be constructed where and as indicated on the Plans. Waterstops, expansion joint material, synthetic rubber sealing compound, and other similar materials, shall be as specified elsewhere herein.
- E. The Contractor shall schedule the placing of concrete in such a manner as to complete any single placing operation to a construction, contraction, or expansion joint. Special care shall be taken to insure that concrete is well consolidated around and against waterstops and that waterstops are secured in the proper position.

3.03 MIXING CONCRETE

A. General

- 1. Mixing equipment shall be subject to review and acceptance by the Engineer. Mixers may be of the stationary plant, paver, or truck mixer type. Adequate equipment and facilities shall be provided for accurate measurement and control of all materials and for readily changing the proportions of the material.
- 2. The mixing equipment shall be capable of combining the aggregates, cement, and water within the specified time into a thoroughly mixed and uniform mass and of discharging the mixture without segregation.
- 3. Concrete mixing plant and equipment shall be maintained in good working order and shall be operated at the loads, speeds, and timing recommended by the manufacturer or as specified.
- 4. The cement and aggregate shall be proportioned by weight.

B. Machine Mixing

- 1. The batch plant shall be capable of controlling the delivery of all material to within 1 percent by weight of the individual material. If bulk cement is used, it shall be weighed on a separate visible scale which will accurately register the scale load at any stage of the weighing operation from zero to full capacity.
- 2. Cement shall not come in contact with aggregate or with water until the materials are in the mixer ready for complete mixing with all mixing water. The procedure of mixing cement with sand or with sand and coarse aggregate for delivery to the jobsite for final mixing and addition of mixing water will not be permitted. Retempering of concrete will not be permitted. The entire batch shall be discharge before recharging. The volume of the mixed material per batch shall not exceed the manufacturer's rated capacity of the mixer.
- 3. Mixing shall be done in batch mixers of acceptable type. Each mixer shall be equipped with a device for accurately measuring and indicating the quantity of water entering the concrete, and the operating mechanism shall be such that leakage will not occur when the valves are closed. Each mixer shall be equipped with a device for automatically measuring, indicating, and controlling the time required for mixing. This device shall be interlocked to prevent the discharge of concrete from the mixer before the expiration of the mixing period.
- 4. Transit-mixed concrete shall be mixed and delivered in accordance with ASTM C 94. The total elapsed time between the addition of water at the batch plant and discharging the completed mix shall not exceed 90 minutes nor shall the elapsed time at the jobsite exceed 30 minutes. Under conditions contributing to quick setting, the total elapsed time permitted may be reduced by the Engineer. Each truck mixer shall be equipped with a device for counting the

number of revolutions of the drum which device shall be interlocked so as to prevent the discharge of concrete from the drum before the required number of turns. After the drum is once started, it shall be revolved continuously until it has completely discharged its batch. Water shall not be admitted to the mix until the drum has started revolving. The right is reserved to increase the required minimum number of revolutions or to decrease the designated maximum number of revolutions allowed, if necessary, to obtain satisfactory mixing, and the Contractor will not be entitled to additional compensation because of such increase or decrease.

5. In the case of other types of mixers, mixing shall be as follows: The concrete shall be mixed until there is uniform distribution of the materials, and the mixer shall be discharged completely before being recharged. Neither speed nor volume loading of the mixer shall exceed the manufacturer's recommendations. Mixing shall be continued for a minimum of 1-1/2 minutes after all materials are in the drum, and for batches larger than 1 cubic yard the minimum mixing time shall be increased 15 seconds for each additional cubic yard or fraction thereof.

3.04 CONVEYING AND PLACING CONCRETE

- A. Concrete shall be conveyed from the mixer to the place of final deposit by methods which will prevent the separation or loss of the materials.

3.05 PLACING AND CONSOLIDATION

- A. General
 1. No concrete shall be placed without the prior authorization of the Engineer.
 2. Concrete shall not be placed until all reinforcement is securely and properly fastened in its correct position and loose form ties at construction joints have been retightened, nor until all dowels, bucks, sleeves, hangers, pipes, conduits, bolts, and any other fixtures required to be embedded therein have been placed and adequately anchored, nor until the forms have been cleaned and oiled as specified.
 3. Placement of concrete in which initial set has occurred or of re-tempered concrete will not be permitted.
 4. No concrete shall be placed during rainstorms or high velocity winds. Concrete placed immediately before rain shall be protected to prevent the water from coming in contact with it or winds causing excessive drying. Sufficient protective covering shall be kept on hand at all times for protection purposes.
- B. Placing Concrete
 1. The Contractor shall prepare and submit to the Engineer for review, a proposed sequence of placing concrete showing proposed beginning and ending of individual placements. After acceptance, this sequence shall be adhered to except when specific changes are requested by the Contractor and accepted by the Engineer. The Contractor shall notify the Engineer by written memorandum of his readiness (not just his intention) to place concrete in any portion of the Work. This notification shall be such time in advance of the operation as the Engineer deems necessary for him to make final inspection of the preparations at the location of the proposed concrete placing. All forms,

steel, screeds, anchors, ties, and inserts shall be in place before the Contractor's notification of readiness is given to the Engineer.

2. Concrete shall be deposited at or near its final position to avoid segregation caused by rehandling or flowing. Concrete shall not be deposited in large quantities in one place and worked along the forms with the vibrator or otherwise. No concrete shall be dropped freely into place from a greater height than 5'. Tremies shall be used for placing concrete where the drop is over 5'. Placement of concrete on slopes shall commence at the bottom of the slope.
3. Concrete shall be placed in approximately horizontal layers not to exceed 24" in depth and shall be brought up evenly in all parts of the forms. Concrete placement shall continue without avoidable interruption, in a continuous operation, until the end of the placement is reached. The placement of concrete in wall forms shall not proceed at a faster rate of rise than 6 feet per hour when the temperature is 70°F or over, and at a lesser rate for lower temperatures.
4. If it takes more than 20 minutes lapse prior to placement of new concrete over concrete previously placed, the depth of the layers being placed at one time shall be reduced, and/or placing equipment increased, until it is possible to return with the placing operation to previously placed concrete within 20 minutes. If concrete is to be placed over previously placed concrete and more than 20 minutes have elapsed, then a layer of grout not less than 2" thick nor more than 1" in thickness shall be spread over the surface before placing the additional concrete.
5. The placement of concrete for slabs, beams, or walkways cast monolithically with walls or columns shall not commence until the concrete in the walls or columns has been allowed to set and shrink. The time allowed for shrinkage shall be not less than one hour.

C. Consolidating Concrete

1. Concrete shall be placed with the aid of acceptable mechanical vibrators. Vibration shall be supplemented by manual forking or spading adjacent to the forms on exposed faces in order to secure smooth dense surfaces. The concrete shall be thoroughly consolidated around reinforcement, pipes, or other shapes built into the work. The vibration shall be sufficiently intense to cause the concrete to flow and settle readily into place and to visibly affect the concrete over a radius of at least 18".
2. Sufficient vibrators shall be on hand at all times to vibrate the concrete as placed. In addition to the vibrators in actual use while concrete is being placed, the Contractor shall have on hand one spare vibrator in serviceable condition. No concrete shall be placed until it has been ascertained that all vibrating equipment, including spares, is in serviceable condition.
3. Special care shall be taken to place the concrete solidly against the forms to leave no voids. Every precaution shall be taken to make all concrete solid, compact, and smooth, and if for any reason the surfaces or interiors have voids or are in any way defective, such concrete shall be repaired in a manner acceptable to the Engineer.

D. Requirements For Extreme Weather Conditions

1. For concrete placed when the ambient air temperature is above 90°F, the forms and reinforcing steel shall be cooled to below 90°F by water spraying.

- The temperature of the concrete mix at time of placement shall be kept below 90°F by means possible which do not impair the quality of the concrete.
2. The Contractor shall secure the Engineer's acceptance for type of equipment to be used for heating materials and/or new concrete in the process of curing during excessively cold weather. For concrete placed below an ambient air temperature of 40°F, or 45°F and falling, provision shall be made for heating the water. If materials have been exposed to freezing temperatures to the degree that any material is below 35°F, the material shall be heated. Water, cement, or aggregate materials shall not be heated in excess of 160°F. Concrete in the forms shall be protected by means of covering with tarpaulins, or other acceptable covering, and a means shall be provided for circulating warm moist air around the forms to maintain a temperature of 50°F for at least five days.
 3. For conditions which promote rapid drying of freshly placed concrete such as low humidity, high temperature, and wind, the Contractor shall take corrective measures to minimize the rapid water loss from the concrete. The Contractor shall submit the corrective measures he plans to use for review and acceptance by the Engineer prior to placing concrete.
 4. The Contractor shall provide and use a sufficient number of maximum and minimum self-recording thermometers to adequately indicate the temperature around the concrete.

3.06 FOOTINGS AND SLABS ON GRADE

- A. Concrete to be placed on ground or compacted fill shall not be placed until the subgrade is in a moist condition acceptable to the Engineer. If necessary, the subgrade shall be well sprinkled with water not less than 6 nor more than 20 hours in advance of placing concrete. If it becomes dry prior to the actual placing of concrete, it shall be sprinkled again, without forming pools of water. No concrete shall be placed if the subgrade is muddy or soft.

3.07 CURING CONCRETE

A. GENERAL

1. All concrete shall be cured by the methods specified herein.
2. All concrete shall be cured a minimum of seven days.
3. All concrete that is to be painted shall be water or plastic membrane cured. No curing compound shall be used on any concrete surface that is to receive paint or upon which any material is to be bonded. All other concrete shall be cured by water curing or sprayed curing membrane at the Contractor's option, except floors and slabs which are specified to be sealed with a concrete sealer. Floor slabs may be cured using a plastic film membrane curing.

B. WATER CURING

1. All surfaces of concrete being water cured shall be kept constantly and visibly moist day and night for a period of not less than seven days and nights. Each day the forms remain in place may count as one day of water curing. No further curing credit will be allowed for forms in place after contact has once been broken between the concrete surface and the forms. Ties shall not be loosened during the period when concrete is being cured by leaving the forms in place. The top of walls shall be flooded with water at least three times per

day, and the concrete surface shall be kept moist at all times during the seven day curing period.

C. SPRAYED MEMBRANE CURING

1. Membrane curing compound shall be a clear type with fugitive dye conforming to ASTM C 309, Type 1D.
2. The curing compound shall be applied to the concrete surface after repairing and patching, and within one hour after the forms are removed. If more than one hour elapses after the removal of the forms, membrane compound shall not be used and water curing shall be applied for the full curing period. If the surface requires repairing or painting, the concrete shall be water cured.
3. Curing compound shall not be removed from the concrete in less than seven days. Curing compound may be removed by the Contractor only upon written request by the Contractor and acceptance by the Engineer, stating what measures the Contractor shall take to adequately cure the structure.
4. Care shall be taken to apply curing compound in the area of construction joints to see that curing compound is placed within the construction joint silhouette. The curing compound placed within the construction joint silhouette shall be removed by sandblasting prior to placing any new concrete. The Contractor has the option of water curing the construction joint. Any curing compound shall be removed through heavy sandblasting of the joint.
5. Curing compound shall be applied by a mechanical, power-operated sprayer and mechanical agitator that will uniformly mix all pigment and compound. The compound shall be applied in at least two coats. Each coat shall be applied in a direction opposite to the preceding coat. The compound shall be applied in sufficient quantity so that the surface will have a uniform appearance and will effectively and completely conceal all natural color of the concrete at the time of the spraying. The Contractor shall continue to coat and recoat the surface until the specified coverage is achieved and until a coating film remains on the surface of the concrete. The thickness and coverage of the compound shall be such that the film can be scraped from the surface at any and all points after drying for at least 24 hours.
6. The Contractor is cautioned that the method of applying curing compound specified herein may require more compound than normally suggested by the manufacturer of the compound and also more than is customary in the trade. The amounts specified herein shall be applied, regardless of manufacturer's recommendations or customary practice, if the Contractor elects to use curing compound in place of water curing.
7. If the Contractor desires to use a curing compound other than the specified compound, the Contractor shall coat sample areas of concrete wall with the proposed compound and also a similar adjacent area with the specified compound in the specified manner for comparison. Complete data on the proposed compound shall also be submitted for review. If the proposed sample is not equal or better, in the opinion of the Engineer, in all features, the proposed substitution will not be allowed.
8. Prior to final acceptance of the work, the Contractor shall remove, by sandblasting or other acceptable method, any curing compound on surfaces that will be exposed to view, so that only the natural color of the finished concrete will be visible uniformly over the entire surface.

3.08 CONCRETE FINISHING

- A. Concrete surfaces shall be finished as indicated on the Plans and Typical Details. Where not specified or indicated on the Plans, the surfaces shall be finished as follows:

Concrete surfaces which are specified or indicated to be painted, and all concrete surfaces, interior or exterior, exposed to view shall have fins removed and joints ground smooth, and shall be "sacked" with cement mortar so that all pits and holes are filled. Surfaces in open channels, basins, and similar structures, which are normally below the water surface shall have fins removed, but need not have joints ground. However, surfaces in such locations which are above the normal water surface and exposed to view shall have fins removed and joints ground smooth, and shall be "sacked" with cement mortar so that all pits and holes are filled. Concrete surfaces in closed boxes or channels where there is normally no access or passageway shall have the fins removed. All form ties shall be removed from all surfaces, and holes shall be filled after roughening with a rotohammer.

- B. The following surfaces shall receive a smooth steel trowel finish: floors and slabs.
- C. The final steel trowel finish shall be uniformly smooth and free of all irregularities. Building and machine room floors which are not to be covered with surfacing material shall be free from trowel marks. Trowel marks will be permitted in other locations. Concrete floor surfaces to which a surfacing material is to be applied shall be finished level and smooth with a tolerance of not over 1/8" in 10' in any direction.
- D. Edges of all control joints shall be as indicated on the Plans and Typical Details. Edges shall include any line where placement is stopped. All wall and slab surfaces at edges shall be protected against concrete spatter and shall be thoroughly cleaned upon completion of each placement.
- E. Where not shown otherwise on the Plans and Typical Details, all external angles of walkways, slabs, walls, beams, columns, and openings shall have a 3/4" bevel formed by utilizing a true dimensioned wood or solid plastic chamfer strip and external angles of walkways, walls, and slabs as expansion, contraction, and construction joints shall be a 2" bevel formed by utilizing a true dimensioned wood or solid plastic chamfer strip. Reentrant angles may be left square. Level strips shall be installed at the top of all wall concrete placements to maintain a true line at all horizontal construction joints.

3.09 QUALITY ASSURANCE

A. TESTING OF CONCRETE

1. During the progress of construction, at the option of the Engineer, the Owner shall have tests made to determine whether the concrete, as being produced, complies with the standards of quality specified herein. These tests shall be made in accordance with ASTM C 31, ASTM C 39, and ASTM C 172. Test

cylinders will be made and delivered to the laboratory by the Engineer and the testing expense will be borne by the Owner.

2. Not less than three cylinder specimens, 6" x 12", will be tested for each 20 cubic yards of each grade of concrete with a minimum of three specimens for each grade placed. One cylinder will be broken at 7 days and two at 28 days.
3. The Contractor shall test the slump of concrete using a slump cone in accordance with the requirements of ASTM C 143. The Contractor shall provide the test equipment. Concrete that does not meet the Specification requirements as to slump shall not be used but shall be removed from the job. The Contractor shall test the slump at the beginning of each placement, as often as necessary to keep the slump within the specified range, and when requested to do so by the Engineer.
4. The Contractor shall make provisions for and furnish all concrete for the test specimens, and provide manual assistance to the Engineer in preparing said specimens. The Contractor shall be responsible for the care of and providing curing conditions for the test specimens in accordance with ASTM C 31.

B. ENFORCEMENT OF STRENGTH REQUIREMENT

1. Concrete is expected to reach a higher compressive strength than that which is indicated in Table A as compressive strength. The strength level of the concrete will be considered satisfactory if the averages of all sets of three consecutive strength test results equal or exceed the required strength by more than 500 psi. Where an individual strength test falls below the required strength by more than 500 psi, the Engineer shall have the right to ask for additional curing of the affected portion followed by cores taken in accordance with ASTM C 42 and ACI 318, all at the Contractor's expense. If the additional curing does not bring the average of three cores taken in the affected area to at least the strength specified, the Engineer may require strengthening of the affected portions of the structures by means of additional concrete or steel or he may require replacement of these affected portions, all at the Contractor's expense.

C. TOLERANCES

1. It is the intent that the finished concrete conforms to the shapes, lines, grades, and dimensions indicated on the Plans. It shall be the responsibility of the Contractor to comply with the intent of these Specifications, but it is also recognized that there will be occasions when some deviation will occur or be required. It shall therefore be agreed that the maximum deviation from true line and grade shall not exceed the tolerances listed below at the time of acceptance of the project:
 - a. In general all tolerances shall comply with AC1 117-81, paragraphs 2.0 through 2.2 and paragraphs 4.0 through 4.5, except as modified in the following. All slabs shall be uniformly sloped to drain when a slope is indicated. Slabs which are indicated to be level shall have a maximum deviation of 1/8" in 10' without any apparent changes in grade.
 - b. On circular tank walls, the Contractor may deviate from the finish line indicated on the Plans by the used of chord lengths not to exceed 2'.
 - c. All inserts shall be set to the tolerances required for the proper installation and operation of the equipment or systems to which the insert pertains. The following shall be considered maximum tolerances.

<u>Item</u>	<u>Maximum Tolerance</u> <u>inches</u>
Sleeves and inserts	plus 1/8 minus 1/8
Projected ends of anchor bolts	plus 1/4 minus 0.0
Anchor bolt setting	plus 1/16 minus 1/16

3.10 REPAIR OF DEFECTIVE CONCRETE

- A. All defective work shall be removed and replaced or repaired. Any work which has not been constructed in accordance with the Plans and Specifications shall be considered defective.
- B. Correction of defective work shall be as specified herein. No defective work shall be patched, repaired, or covered without inspection by the Engineer. Repair shall have a strength equal or greater than the specified concrete for the area. The Contractor shall provide a mix design for the grout which is proposed for use to the Engineer for review and acceptance. All imperfections in the work shall be chipped out and keyed ready for repair. The dry pack method shall be used for holes having a depth nearly equal to or greater than the least surface dimension of the hole, for cone-bolt, and narrow slots cut for repair. Smooth holes shall be roughened with a rotohammer before repair. The mortar method of replacement shall be used for holes too wide to dry pack and too shallow for concrete replacement and shall be used for comparatively shallow depressions, large or small, which extend no deeper than the reinforcement nearest the surface. Concrete replacement shall be used when holes extend entirely through the concrete section or when holes are more than 1 square foot in area and extend halfway through the section. All surfaces of the set concrete to be repaired shall first be coated with epoxy bonding agent, Adhesive Engineering Concessive No. 1001 LPL; Sika Chemical Corporation, Sikadur Hi-Mod; or equal. No repair shall be made until the Engineer has accepted the method of preparing the surface and proposed method of repair.
- C. The color of the repair concrete dry pack and grout shall match that of the adjoining concrete. The use of white cement may be required to match color. The Contractor shall prepare test panels for proposed repairs at the beginning of the project for review and approval by the Engineer. This panel will serve as a standard for repairs during the project.
- D. Curing of all repaired concrete shall be the same as specified for concrete.

END OF SECTION

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SECTION 03 62 00

NON-SHRINK GROUTING

PART 1 GENERAL

1.01 SUMMARY

- A. Provide high strength, non-metallic, Portland cement based non shrink grout.
- B. Related Sections:
 - 1. 03 15 00 Concrete Bonding Adhesive
 - 2. 03 30 00 Cast-in-Place Concrete
 - 3. 03 62 00 Non-Shrink Grout

1.02 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation for each material and product used. Include manufacturer's Material Safety Data Sheets.

1.03 REFERENCES

- A. ASTM C 109: Compressive Strength of Hydraulic Mortars.
- B. ASTM C 191: Setting Time of Hydraulic Cement.
- C. ASTM C 827: Change in Height at Early Ages of Cylindrical Specimens of Cementitious Mixtures.
- D. ASTM C 939: Flow of Grout for Preplaced – Aggregate Concrete (Flow Cone Method)
- E. ASTM C 1107: Packaged Dry, Hydraulic Cement Grout (Non-Shrink)
- F. ASTM C 488: Pull-Out Strength
- G. Army Corps of Engineers CRD – 621: Non-Shrink Grout

1.04 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: The manufacturer shall be a company with at least fifteen years of experience in the manufacture and marketing of products specified herein.
- B. Installer's Qualifications: The contractor shall be qualified to perform the work specified by reason of experience.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in original packaging, labeled with product identification, manufacturer, batch number and shelf life.
- B. Store products in a dry area. Protect from direct sunlight.
- C. Handle products in accordance with manufacturer's printed recommendations.

PART 2 PRODUCTS

2.01 MATERIALS

- A. High Strength, Non – Metallic, Portland Cement Based Non-Shrink Grout. Comply with the following:
 - 1. Manufacturer: Precision Non-Shrink Grout (No. 1585-00), General Purpose Grout (No. 1585-01), as manufactured by the QUIKRETE® Companies, One Securities Centre, 3490 Piedmont Road, NE, Suite 1300, Atlanta, GA 30305; telephone (404) 634-9100. Or Equal.
 - 2. Performance and Physical Properties at 73 degrees F (23 degrees C) and 50 percent relative humidity.
 - a. Non-Shrink Grout: Precision Non-Shrink Grout
 - 1) Compliance: ASTM C 1107; CRD 621
 - 2) Working Time, ASTM C: 25 minutes @ 50°F (10°C), 25 minutes @ 73°F (23°C), 15 minutes @ 90°F (32°C).
 - 3) Compressive Strength, ASTM C: 109 Modified
 - a) Plastic: 3 ksi (24hr); 9.5 ksi (3 day); 10 ksi (7 day); 14 ksi (28 day)
 - b) Flowable: 3 ksi (24hr); 9 ksi (3 day); 9.5 ksi (7 day); 12.5 ksi (28 day)
 - c) Fluid: 2.5 ksi (24hr); 5 ksi (3 day); 6 ksi (7 day); 8 ksi (28 day)
 - 4) Height Change, ASTM C 1090: 0 – 0.2% at 1, 3, 7 and 28 days
 - 5) Pull out Strength, ASTM C 488: 35,000 psi (1 1/4" (31 mm) bolts embedded 9" deep in 3" hole in 2000 psi concrete
 - b. Non-Shrink Grout: General Purpose Non-Shrink Grout
 - 1) Compliance at 73°F (23°C): ASTM C 1107, Working time at 73°F: > 10 min
 - 2) Compressive Strength, ASTM C: 109 Modified
 - a) Plastic: 3 ksi (24hr); 9 ksi (7 day); 10 ksi (28 day)
 - b) Flowable: 3 ksi (24hr); 8 ksi (7 day); 9 ksi (28 day)
 - c) Fluid: 2 ksi (24hr); 6 ksi (7 day); 8 ksi (28 day)
 - 3) Height Change, ASTM C 1090: 0 – 0.2% at 1, 3, 7 and 28 days

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.

- B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas landscaping from contact due to mixing and handling of materials.

3.02 SURFACE PREPARATION

- A. Comply with manufacturer's printed instructions and the following:
 - 1. Clean surface to receive grout of all materials including dust, oil, dirt, and grease or Efflorescence.
 - 2. Dampen with clean water before patching and remove standing water.

3.03 FORMS

- A. Comply with manufacturer's printed instructions and the following:
 - 1. Forms must be water tight, strong, properly braced, and properly coated.
 - 2. Allow a minimum clearance of 2 inches (50 mm) between forms and baseplate for grout entry.
 - 3. Allow a minimum grout head of 6 inches (150 mm).
 - 4. Slope form on placing side to assist in grout movement and to prevent trapping air.
 - 5. Allow 1 inch (25mm) horizontal clearance and 1 inch (25 mm) vertical clearance for height above bottom of baseplate.
 - 6. Provide venting of forms to avoid entrapment of air.

3.04 MIXING

- A. Comply with manufacturer's printed instructions and the following:
 - 1. Material should be mechanically mixed for a minimum of 5 minutes using a five gallon (19L) bucket with a ½" (12mm) drill and paddle mixer. For large grouting applications a standard mortar mixer should be used.
 - 2. Add approximately 1 gallon + 3 pints (5.2L) of clean water for each 50lb (22.7 kg) bag to achieve a fluid consistency. For a Flowable consistency add about 1 Gallon + 1 Pint (4.3L). For a plastic approximately 1 Gallon (3.8L) is needed. Add the powder to the water and mix to a stiff gel-like consistency. Add water sparingly to reach the desired consistency. Do not exceed a flow of 20 seconds per ASTM C 939. Do not mix more material that can be placed in 15 minutes.
 - 3. Do not re-temper with additional water.

3.05 APPLICATION

- A. Comply with manufacturer's printed instructions and the following:
 - 1. The area to be grouted should be thoroughly flushed and soaked with clean water prior to grouting. Leave no standing water.
 - 2. Place the grout quickly and continuously use light rodding or strapping to eliminate air bubbles.
 - 3. Grout temperature should be maintained from 50°F to 90°F (10°C - 32°C) to achieve specified results. Use cold water in hot weather or hot water in cold weather to achieve desired grout temperature. Do not use if temperature is expected to go below 32°F (0°C) within a 12 hour period.

3.06 CURING

- A. A damp cure of at least 3 days is necessary to control the Non-Shrink characteristics and maintain strength levels.

3.07 CLEANING

- A. Remove excess material before material cures. If material has cured, remove using mechanical methods that will not damage substrate.

END OF SECTION

DIVISION 31

SECTION 31 20 00

EARTHWORK

PART 1 GENERAL

1.01 SUMMARY

- A. This Section specifies requirements for earthwork, which consists of excavation, filling, grading, and disposal of excess material.
- B. Related Sections:
 - 1. 31 23 19 Dewatering
 - 2. 31 25 00 Erosion Control
 - 3. 33 14 13 Water Distribution Piping
 - 4. 33 14 16 Water Distribution Valves

1.02 REFERENCES

- A. American Society of Testing and Materials (ASTM)
 - 1. C33 Standard Specification for Concrete Aggregates
 - 2. C618 Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
 - 3. D422 Method for Particle-Size Analysis of Soils.
 - 4. D1557 Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb (4.54-kg) Rammer and 18-in (457-mm) Drop.
 - 5. D2419 Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
 - 6. D2487 Classification of Soils for Engineering Purposes.
 - 7. D2922 Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 8. D3017 Test Method for Moisture Content of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth)
 - 9. D4253 Test Methods for Maximum Index Density of Soils Using a Vibratory Table.
 - 10. D4254 Test Methods for Minimum Index Density of Soils and Calculation of Relative Density.
 - 11. D4318 Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
 - 12. D6938 Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

1.03 DEFINITIONS

- A. Pipe Zone Backfill: The pipe zone is defined as that portion of the vertical trench cross-section lying between a plane 6" below the bottom surface of the pipe, i.e., the trench subgrade, and a plane 12" above the top surface of the pipe.
- B. Pipe Bedding: The bedding for flexible pipe is defined as that portion of pipe. Zone backfill material between the trench subgrade and the bottom of the pipe.

- C. Trench Zone Backfill: The trench zone is defined as that portion of the vertical trench cross-section lying between a plane 12” above the top surface of the pipe and a plane at a point 12” below the finished surface grade, or if the trench is under pavement, 9” below the roadway subgrade.
- D. Final Backfill: Final backfill is all backfill in the trench cross-sectional area within 12” of finished grade, or if the trench is under pavement, all backfill within 9” of the pavement.

1.04 SUBMITTALS

- A. The Contractor's attention is directed to the provisions for "Shoring and Bracing Drawings" in Section 6705 of the California Labor Code. The Contractor shall submit a detailed plan and obtain the Owner’s written acceptance prior to beginning any excavation 5 feet deep or deeper. This plan shall include the design of all shoring, bracing, sloping of the sides of excavation, or other provisions for worker protection against the hazard of caving ground during the excavation. If such plan varies from the shoring system standards established in the Construction Safety Orders of the State of California, such alternative systems plans shall be prepared by a civil or structural engineer licensed in the State of California.
- B. The Contractor shall submit samples of materials in accordance with the Contract Documents.

1.05 QUALITY ASSURANCE

- A. General: All soils testing will be done by a testing laboratory of the Owner's choice at the Owner's expense except as specified in Paragraph 1.04C, below. Additional testing may be performed by City of South Lake Tahoe staff for backfill within the City right-of-way.
- B. Where soil material is required to be compacted to a percentage of maximum density, the maximum density at optimum moisture content will be determined in accordance with ASTM D 1557. Where cohesionless, free draining soil material is required to be compacted to a percentage of relative density, the calculation of relative density will be determined in accordance with ASTM D 4253 and D 4254. Field density in-place tests will be performed in accordance with ASTM D 2922, or by such other means acceptable to the Engineer. No correlating sand cone tests (ASTM D 1556) are planned.
- C. In case the tests of the fill or backfill show non-compliance with the required density, the Contractor shall accomplish such remedy as may be required to insure compliance. Subsequent testing to show compliance shall be by a testing laboratory selected by the Owner and shall be at the Contractor's expense.
- D. Tests will be made by the Engineer in accordance with the following methods:

Test	Standard Procedure
Moisture content	ASTM D3017

Gradation	ASTM D422
Density in-place	ASTM D6938
Moisture-density relationships	ASTM D1557
Plasticity Index	ASTM D4318

- E. Unified Soil Classification System: The Contractor shall be bound by all applicable provisions of ASTM D 2487 in the interpretation of soil classifications.

PART 2 PRODUCTS

2.01 GENERAL

- A. Backfill materials shall be suitable selected or processed clean, fine earth, rock, or sand, free from grass, roots, brush, or other vegetation.
- B. Fill and backfill materials to be placed within 6 inches of any structure or pipe shall be free of rocks or unbroken masses of earth materials having a maximum dimension larger than 3 inches.

2.02 FILL MATERIALS

- A. Soils not classified as unsuitable as defined in Paragraph entitled "Unsuitable Material" herein, are defined as suitable materials and may be used in fills, backfilling, and embankment construction subject to the specified limitations. In addition, when acceptable to the Engineer, some of the material listed as unsuitable may be used when thoroughly mixed with suitable material to form a stable composite.
- B. Suitable materials may be obtained from on-site excavations, may be processed, on-site materials, or may be imported. If imported materials are required to meet the requirements of this Section or to meet the quantity requirements of the project, the Contractor shall provide the imported materials at no additional expense to the Owner, unless a unit price item is included for imported materials in the bidding schedule.
- C. Aggregate Base/Recycled Aggregate Base:
1. Material shall conform to CALTRANS Class 2 aggregate base with 3/4-inch maximum size conforming to the following gradation:

U.S. standard sieve size	Percent by weight passing
1 inch	100
3/4 inch	90-100
No. 4	35-60
No. 30	10-30

U.S. standard sieve size	Percent by weight passing
No. 200	2-9

Liquid limit: ≤ 35

Plasticity index: ≤ 5

2. Pipe Zone Material shall meet the requirements of Section 2.02.C.1. However, no recycled material can be used within the pipe zone of the pipe being installed.

D. Engineered Fill (Structural and Non-Structural Applications):

1. Material shall be native soils or import, as required, and should consist of relatively non-plastic material containing no organic material or debris. The soils shall conform to the following gradation:

U.S. standard sieve size	Percent Passing by weight
4 inch	100
3/4 - inch	70 - 100
No. 40	15 - 50
No. 200	5 - 25

Liquid limit: ≤ 35

Plasticity index: ≤ 10

E. Open Graded Gravel / Drain Rock:

1. Material shall be imported, clean, crushed, uniformly graded gravel containing no organic material or debris. The soils shall conform to the following gradation:

U.S. standard sieve size	Percent by weight passing
2 inch	100
1-1/2 inch	90-100
No. 4	0-10
No. 200	0-3

F. Sand

1. Material shall conform to requirements of ASTM C33 for "Fine Aggregate" except that all material shall pass #4 sieve, and no more than 5% shall pass a #100 sieve.

G. Slurry (Dry)

1. Dry slurry may also be referred to as 2-Sack Sand Slurry
2. Submittals and testing as per Section 03 30 00.
3. Performance requirements:
 - a. Total calculated air content: 6-12%

- b. Diggable after fully cured
- c. Slump: Zero to 9 inches.
- 4. Materials:
 - a. Portland cement: Type IP Low Alkali or Type II Low Alkali at a rate of 188 lb per batch.
 - b. Fly ash: Class F fly ash in accordance with ASTM C 618.
 - c. Water: as per Section 03 30 00.
 - d. Admixture: Air entrainment admixture as per Section 03 30 00.
 - e. Fine aggregate: As per Section 03 30 00, and non-plastic with no more than 12 % passing No. 200 sieve.
 - f. Coarse aggregate: none.
- H. Slurry (Wet)
 - 1. Wet slurry may also be referred to as Flowable Slurry or Controlled Low Strength Material.
 - 2. Submittals and testing as per Section 03 30 00.
 - 3. Performance requirements:
 - a. Total calculated air content: 8-12%.
 - b. Unconfined compressive strength at 28 days: 50 psi-150 psi; diggable after fully cured.
 - c. Wet density: <133 pcf.
 - d. Slump: at least 9 inches; free flowing during placement.
 - 4. Materials
 - a. Portland cement: Type II low alkali as per Section 03 30 00.
 - b. Fly ash: Class F fly ash in accordance with ASTM C 618.
 - c. Water: as per Section 03 30 00.
 - d. Admixture: Air entrainment admixture as per Section 03 30 00.
 - e. Fine aggregate: As per Section 03 30 00, and non-plastic with no more than 12 % passing No. 200 sieve.
 - f. Coarse aggregate: pea gravel no larger than 3/8-inch.

PART 3 EXECUTION

3.01 GENERAL

- A. Clearing and Stripping: The Contractor shall remove all paving, subpaving, curbing, gutters, brick, paving block, granite curbing or flagging or shall grub and clear the entire surface over the areas to be excavated and shall remove and dispose of said material as required by the Specifications. In all cases, the Contractor shall machine cut in an approved width and manner all bituminous, asphaltic, and portland cement concrete pavements before stripping or excavating is begun.
- B. Dewatering: In accordance with Section 31 23 19 Dewatering.
- C. Maintaining Rights-of-Way:
 - 1. Work shall be conducted as to cause a minimum of inconvenience to pedestrian and vehicular traffic and to private and public properties along the line of work. When specifically directed by the District, the Contractor shall complete the work in private and public rights-of-way up to a designated point

before continuing with further work in order to give required access to local facilities and property. It shall be the duty of the Contractor during the progress of the work to maintain crossings, walks, sidewalks and other roadways open to traffic in a satisfactory condition and to keep all fire hydrants, water valves, fire alarm boxes and mail boxes accessible for use. Whenever it is necessary to maintain pedestrian traffic over open trenches, safe timber bridges at least three (3) feet in width and equipped with side railings shall be provided. Where the trench is so close to the curb line that the excavated material would encroach upon the sidewalk or private property, the District may order the Contractor at the Contractor's expense to erect a plank fence together with other necessary lumber so placed to keep the sidewalk and property clear.

2. In important thoroughfares, highways or in narrow streets, the material excavated from the trench shall, if the District so directs, be removed from the site of the work at the Contractor's expense as soon as excavated in order to provide suitable space for traffic. When it is necessary to haul excavated material over the streets near the job location, the Contractor shall provide suitable type vehicles and shall promptly and thoroughly clean up all material dropped on streets and highways outside of the immediate trenching area.
3. Guard rails and other highway and street structures disturbed or altered in any way by the construction activities shall be promptly restored to a condition equal to or better than original and shall be replaced in proper alignment. Facilities discolored in anyway by the construction activities shall be refinished by the Contractor by washing and repainting as necessary.

3.02 SITE PREPARATION FOR STRUCTURAL FILLS

- A. All topsoil, soils with significant organics, and organic materials including vegetation shall be removed from the area receiving structural fill.
- B. All foundation soil which will receive structural fill shall be densified to 8 inches minimum depth, to at least 90 percent relative compaction in accordance with ASTM D1557. Immediately before this densification, soils shall have optimum moisture content, within plus or minus 2 percent, unless otherwise approved by the Engineer.
- C. Scarification and moisture conditioning of foundation soils may be required.
- D. If native foundation soils are too coarse to allow density testing (i.e., greater than 30% by weight is retained on a $\frac{3}{4}$ " sieve), then foundation soil shall be proof-rolled:
 1. For mass grading, at least 5 passes with a minimum 10-ton roller.
 2. For trenches, at least 5 passes with a hand compactor.
- E. Where boulders are encountered protruding from an excavation, they shall be removed, and the depression shall be backfilled and compacted with structural fill to meet the moisture-density requirements listed above. The terms of Part 3.04.I shall also apply to boulder removal activities for excavations.
- F. Where the undisturbed condition of natural soils is inadequate for support of the planned construction, the Engineer will direct the Contractor to overexcavate to adequate supporting soils. The excavated space shall be filled to the specified

elevation with Engineered (Structural) fill in accordance with Table A - Fill Placement. The overexcavated space under footings may be filled with concrete. The quantity and placement of such material will be compensated as extra work.

3.03 FILL PLACEMENT

- A. Backfill shall not be dropped directly upon any structure or pipe so as to cause damage. Backfill shall not be placed around or upon any structure until the concrete has attained sufficient strength to withstand the loads imposed. Backfill around water retaining structures shall not be placed until the structures have been tested.
- B. Except for drain rock materials being placed in over-excavated areas or trenches, backfill shall be placed after all water is removed from the excavation.
- C. Fill material shall be placed in even horizontal layers and thoroughly mixed as necessary to promote uniformity of material in each layer. Pipe zone backfill materials shall be manually spread around the pipe so that when compacted the pipe zone backfill will provide uniform bearing and side support.
- D. Where the backfill material moisture content is below the optimum moisture content water shall be added before or during spreading until the proper moisture content is achieved.
- E. Where the backfill material moisture content is too high to permit the specified degree of compaction the material shall be dried until the moisture content is satisfactory.
- F. Material type, maximum layer depth, relative compaction, and general application are specified in Table A.
- G. Fill material shall be compacted with power-operated tampers, rollers, idlers, or vibratory equipment, as appropriate for the soil type and application.
 - 1. Open-graded gravel/drain rock materials shall be compacted by means of at least two passes from a flat plate vibratory compactor.
 - 2. Additionally, when native soil is free draining and above groundwater, pipe zone backfill materials that are granular will be compacted by mechanical means and by jetting, unless directed otherwise by the Engineer.
 - a. Jetting:
 - 1) The purpose of jetting is to consolidate backfill beneath the haunches of the pipe.
 - 2) Jetting will only be performed in the portion of the trench zone from the bottom of the pipe to the top of the pipe.
 - 3) Water is injected into backfill through a jet pipe. The next injection site will be such that each backfill layer is saturated and consolidated to its full depth before the next layer is placed. The amount of jetted water, duration of jetting at each site, and frequency of jetting will be adjusted based on field conditions and equipment used.
 - 4) Jet pipes shall be kept at least 6 inches away from the pipe where the backfill is being consolidated and 2 feet away from other pipes or utilities. Care must be taken to ensure that the install pipe is not floated or moved during this operation.

- 5) If jetting is used, the pipe shall be filled with water to prevent flotation, if required by the Engineer.
- 6) Each layer shall not exceed 6" in thickness after compaction
3. Equipment that is consistently capable of achieving the required degree of compaction shall be used and each layer shall be compacted over its entire area while the material is at the required moisture content.
4. Equipment weighing more than 10,000 pounds shall not be used closer to walls than a horizontal distance equal to depth of the fill at that time.
5. Hand operated power compaction equipment shall be used where use of heavier equipment is impractical or restricted due to weight limitations.

H. Unless otherwise specified, fill placement classes shall be used where specified in Table A under general application, in accordance with ASTM D1557.

Table A, Fill Placement

Fill Type	Maximum uncompressed layer thickness, inches	Minimum relative compaction, percent	Moisture content, percent	General application
Aggregate Base	8	95	± 2 of optimum	Pipe Zone Backfill (No Recycled Material), Tank Floor Base; Final Backfill under pavement
Engineered Fill (Structural)	8	95	± 2 of optimum	Structural Fill for Foundations, Trench Zone Backfill Beneath Pavement And Under Structures
Engineered Fill (Non-Structural)	12	90	± 2 of optimum	Trench Zone Backfill in Unpaved Areas. Site Fill and Nonstructural Fill Outside Perimeter of Structure or Other Nonstructural Areas
Open-Graded Gravel / Drain Rock	12	NA	NA	Infiltration Trenches, Surface Stabilization
Recycled Aggregate Base	8	95	± 2 of optimum	Trench Zone Backfill in Paved Areas (DO NOT USE IN PIPE ZONE); Final Backfill under pavement
Slurry (Dry)	36 (or less if required to protect adjacent structures)	NA	NA	Trench Zone Backfill, Structural Fill, Nonstructural Fill, and Final Backfill under pavement, where site conditions do not allow for compaction.
Slurry (Wet)	36 (or less if required to protect adjacent	NA	NA	As per Plans

Fill Type	Maximum uncompressed layer thickness, inches	Minimum relative compaction, percent	Moisture content, percent	General application
	structures)			

3.04 SITE FILL AND NONSTRUCTURAL FILL

- A. Unless otherwise specified, site fill and nonstructural fill shall be Engineered (Non-Structural) fill. If the existing slope in an area to be filled is greater than 5:1, the Contractor shall bench and key the slope prior to filling, as shown in the Drawings.

3.05 PIPELINE AND UTILITY TRENCHES

- A. General:
 1. The Contractor shall do all excavating of whatever substance encountered to a depth as indicated on the approved plans or as specified herein. Excavated materials not required or unsuitable for backfill shall be removed from the site and disposed of by the Contractor at a site approved by TRPA. Pipe trenches shall be sufficiently straight between the designated angle points to permit the pipe to be laid true to line in the approximate center of the trench.
 2. Unless otherwise shown or ordered, excavation for pipelines and utilities shall be open-cut trenches. Trench widths shall be kept as narrow as is practical for the method of pipe zone densification selected by the Contractor, but shall have a minimum width at the bottom of the trench of 24 inches for pipe 10 inches or less in diameter. For pipe greater than 10 inches but less than 18 inches, minimum trench width shall be 30 inches. The maximum width below the top of the pipe, when laid to the required grade, shall in no event exceed the outside diameter of the pipe plus twenty four inches (24"). Where sheeting and shoring are used, the maximum allowable width shall be measured between the closest interior faces of the sheeting or shoring as placed. Overall width of the excavation equipment used shall in no case exceed the maximum allowable trench width. Whenever, for any reason, the maximum allowable trench width is exceeded at the top of the pipe, the Contractor shall employ one or more of the following procedures as approved by the District:
 - a. The pipe shall be bedded in a monolithic cradle of plain or reinforced concrete having a minimum thickness of one fourth (1/4) the inside pipe diameter or a minimum of four inches (4") under the barrel and extending up the sides for a height equal to one half (1/2) the outside diameter. The cradle shall have a width at least equal to the outside diameter of the pipe barrel plus eight inches (8"). Backfill above the crown of the pipe shall be compacted carefully.
 - b. Provide a higher strength pipe required to withstand the increased loading on the pipe caused by the excessive trench width.
 - c. Install temporary sheeting and shoring while the pipe is being installed with the backfill placed and compacted to a height at least one (1) foot above the top of the pipe.

- B. Trench Bottom: Except when pipe bedding is required, the bottom of the trench shall be excavated uniformly to the grade of the bottom of the pipe. The trench bottom shall be given a final trim, using a string line for establishing grade, such that each pipe section when first laid will be continually in contact with the ground along the extreme bottom of the pipe. For bell and spigot pipe, the Contractor shall round out a cradle for the bell so that the bottom of the pipe is in continual contact with the bedding. Rounding out the trench to form a cradle for the pipe will not be required, except as in 3.02.A.2.a described above.
- C. Open Trench: The maximum amount of open trench permitted in any one location shall be 500 feet, or the length necessary to accommodate the amount of pipe installed in a single day, whichever is greater. All trenches shall be fully backfilled at the end of each day or, in lieu thereof, shall be covered by heavy steel plates adequately braced and capable of supporting vehicular traffic in roadways or smooth, continuous plywood covers suitable for carrying foot or bicycle traffic safety in unpaved areas where it is impractical to backfill at the end of each day. The above requirements for backfilling or use of steel plate or plywood covers will not be waived at any time. In addition, barricades and warning lights meeting OSHA requirements shall be provided and maintained.
- D. Trench Over-Excavation: Where the Drawings indicate that trenches shall be over-excavated, they shall be excavated to the depth shown, and then backfilled to the grade of the bottom of the pipe.
- E. Over-Excavation: When ordered by the Engineer, whether indicated on the Drawings or not, trenches shall be over-excavated beyond the depth shown. Such over-excavation shall be to the depth ordered. The trench shall then be backfilled to the grade of the bottom of the pipe. All work specified in this Section shall be performed by the Contractor when the over-excavation ordered by the Engineer is less than 6" below the limits shown. When the over-excavation ordered by the Engineer is 6" or greater below the limits shown, additional payment will be made to the Contractor for that portion of the work which is located below said 6" distance. Said additional payment will be made under separate unit price bid items for over-excavation and bedding if such bid items have been established; otherwise payment will be made in accordance with a negotiated price.
- F. Completion of Excavation: The Contractor shall notify the District when excavations for pipelines or utilities are completed, and no concrete shall be deposited, nor pipes installed, until the excavations have been approved by the District.
- G. OVER-EXCAVATION NOT ORDERED, SPECIFIED, OR SHOWN
 - 1. Any over-excavation carried below the grade ordered, specified, or shown, shall be backfilled to the required grade with the specified material and compaction. Such Work shall be performed by the Contractor at his/her own expense.
- H. TRENCH BACKFILL AND COMPACTION
 - 1. Bedding shall be provided for all pipelines.
 - 2. After compacting the bedding, the Contractor shall perform a final trim using a stringline for establishing grade, such that each pipe section when first laid will

be continually in contact with the bedding along the extreme bottom of the pipe.

3. The pipe zone shall be backfilled with the specified backfill material. The Contractor shall exercise care to prevent damage to the pipe itself during the installation and backfill operations.
4. After the pipe zone backfill has been placed as specified above, and after all excess water has completely drained from the trench, backfilling of the trench zone may proceed.

I. EXCAVATION IN LAWN AREAS

1. Where excavation occurs in lawn areas, the sod shall be carefully removed and stockpiled to preserve it for replacement. Excavated material may not, under any circumstances, be placed on the lawn. Immediately after completion of backfilling and testing of the pipeline, the sod shall be replaced in a manner so as to restore the lawn to its original condition. Contractor shall provide new sod if stockpiled sod has remained so for more than 72 hours within the scope of the Contract. Sod compressed or otherwise damaged by the Contractor's operations shall be replaced.

J. EXCAVATION AND COMPACTION IN VICINITY OF TREES

1. Except where trees are shown to be removed, trees shall be protected from injury during construction operations. No tree roots over 1-1/2" in diameter shall be cut without express permission of the Engineer. Trees shall be supported during excavation by any means previously reviewed by the Engineer.
2. Where delineated on the plans, or where required for preservation of the roots, the Contractor shall provide hand excavation. Hand excavation shall be to the depth required for pipe installation, up to a depth of 5'.
3. In areas which require hand excavation, the backfill must be compacted such that tree roots 1.5" and larger are preserved.

3.06 ROCK EXCAVATION

1. Rock excavation shall include removal and disposal of the following:
 - a. all boulders that cannot be moved using the largest piece of equipment onsite;
 - b. all rock material in ledges, bedding deposits, and unstratified masses which cannot be removed without systematic drilling and splitting or blasting;
 - c. concrete or masonry structures which have been abandoned; and,
 - d. conglomerate deposits which are so firmly cemented that they possess the characteristics of solid rock and which cannot be removed without systematic drilling and splitting or blasting.
2. No rock splitting or blasting shall commence without the approval of the Engineer.
3. Said rock excavation shall be performed by the Contractor. Should the quantity of rock excavation be affected by any change in the scope of the work, an appropriate adjustment of the contract price will be made under a separate bid item if such bid item has been established; otherwise, payment will be made in accordance with a negotiated price.
4. Explosives and Blasting:

- a. Blasting will not be permitted, except by express permission of the Engineer on a case-by-case basis. The use of explosives will be subject to the approval and regulations of all agencies having jurisdiction. If blasting is utilized at the site of the Work, the Contractor shall take all precautions and provide all protective measures necessary to prevent damage to property and structures or injury to person. Prior to blasting, the Contractor shall secure all permits required by law for blasting operations and shall provide any additional hazard insurance required by the Owner. The Contractor shall have a fully qualified, licensed and experienced blasting foreman in charge of all blasting operations.
- b. The Contractor will be held responsible for all explosives and blasting and shall repair any damage caused by blasting or resulting from its possession or use of explosives on the Work.
- c. All operations involving the handling, storage, and use of explosives shall be conducted in accordance with the requirements of the OSHA Standards for Construction, and in accordance with all local laws and regulations.

3.07 DISPOSAL OF EXCESS EXCAVATED MATERIAL

1. The Contractor shall remove and dispose of all excess excavated material at a site selected by the Contractor and reviewed by the Engineer.
2. Unless otherwise specified, surplus excavated material shall be disposed of off site in accordance with applicable ordinances and environmental requirements.
3. If the quantity of surplus material is specified, the quantity specified is approximate. The Contractor shall satisfy himself that there is sufficient material available for the completion of the embankments before disposing of any material inside or outside the site. Shortage of material, caused by premature disposal of any material by the Contractor, shall be replaced by the Contractor.
4. Material shall not be stockpiled to a depth greater than 5 feet above finished grade within 25 feet of any excavation or structure except for those areas designated to be preconsolidated. For these areas, the depth of stockpiled material shall be as specified. The Contractor shall maintain stability of the soil adjacent to any excavation.

3.08 MEASUREMENT AND PAYMENT

- A. Measurement and payment for the unit price bid items excavation and fill will be based on the volume indicated and cross sections shown on the grading plan for each site. Incidental excavation not ordered, specified or shown will not be considered for payment under these items. Earthwork quantities will be measured and paid by unit bid cost on the basis of material in place. Swell and shrinkage will not be considered for measurement of work or payment.
- B. If the Contractor believes there is a significant difference between the cross section shown on the grading plan or the quantities indicated and the excavation in the field, and would like to verify or adjust the quantities for the pay items excavation and/or fill, then he/she shall have the site cross sectioned at his/her expense and submit them to the Engineer for consideration. These sections shall be prepared by a California licensed surveyor. If the new sections are acceptable to the

Engineer, they shall become the basis for adjusting payment for the items excavation and fill.

SECTION 31 23 19

DEWATERING

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Removal and exclusion of water, including stormwater, groundwater, irrigation water, water from leaking pipes and wastewater, from all excavations.
- B. Related Sections:
 - 1. 31 23 33 Trenching and Backfilling
 - 2. 31 25 13 Erosion Control
 - 3. 31 71 19 Boring and Jacking

1.02 SUBMITTALS

- A. Prior to commencement of excavation, the Contractor shall submit a detailed plan and operation schedule of dewatering of excavations. The Contractor may be required to demonstrate the system proposed and to verify that adequate equipment, personnel, and materials are provided to dewater the excavations at all locations and times. All elements of the Contractor's dewatering plan are subject to review and approval by the Engineer.
- B. The dewatering plan shall show the arrangement and location of wells or wellpoints, sump pumps, methods of installation, location of headers and discharge lines, flow control valves, meters, sampling ports and points of discharge disposal. Review by the Engineer shall not relieve the Contractor of responsibility for the adequacy of the dewatering system to achieve the specified result.
- C. After completion of the dewatering installation and prior to commencement of excavation, the Contractor shall submit for review a detailed plan of the dewatering system as constructed, together with site data and computations demonstrating that the system is capable of achieving the specified result.

1.03 QUALITY ASSURANCE

- A. It shall be the sole responsibility of the Contractor to control the rate and effect of the dewatering in such a manner as to avoid all objectionable settlement and subsidence.
- B. All dewatering operations shall be adequate to assure the integrity of the finished project and shall be the responsibility of the Contractor.
- C. Where critical structures or facilities exist immediately adjacent to areas of proposed dewatering, reference points shall be established and observed at frequent intervals to detect any settlement which may develop. The

responsibility for conducting the dewatering operation in a manner which will protect adjacent structures and facilities rests solely with the Contractor. The cost of repairing any damage to adjacent structures and restoration of facilities shall be the responsibility of the Contractor.

PART 2 PRODUCTS

2.01 EQUIPMENT

- A. Dewatering equipment may include the use of well points, sump pumps, temporary pipelines for water disposal, storage tanks, desilting equipment, rock or gravel placement, and other apparatus. Standby pumping equipment shall be maintained on the job site once dewatering operations commence.

PART 3 EXECUTION

3.01 GENERAL

- A. The Contractor shall provide all equipment necessary for dewatering and shall have on hand, at all times, sufficient pumping equipment and machinery in good working condition and shall have available, at all times, competent workmen for the operation of the pumping equipment. Adequate standby equipment shall be kept available at all times to insure efficient dewatering and maintenance of dewatering operation during power failure.
- B. Dewatering for structures and pipelines shall commence when groundwater is first encountered, and shall be continuous until such times as water can be allowed to rise in accordance with the provisions of this Section or other requirements.
- C. At all times, site grading shall promote drainage. Surface runoff shall be diverted from excavations. Water entering the excavation from surface runoff shall be collected in shallow ditches around the perimeter of the excavation, drained to sumps, and be pumped or drained by gravity from the excavation to maintain a bottom free from standing water.
- D. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation.
- E. If foundation soils are disturbed or loosened by the upward seepage of water or an uncontrolled flow of water, the affected areas shall be excavated and replaced with drain rock at no additional cost to the Owner.
- F. The Contractor shall maintain the water level below the bottom of excavation in all work areas where groundwater occurs during excavation, construction, backfilling, and until acceptance.

- G. Flotation shall be prevented by the Contractor by maintaining a positive and continuous removal of water. The Contractor shall be fully responsible and liable for all damages which may result from failure to adequately keep excavations dewatered.
- H. If well points or wells are used, they shall be adequately spaced to provide the necessary dewatering. The pumping of fine sands or silts from the subsurface shall be prevented by sand packing or other means. The Contractor shall continually check and verify that subsurface soil is not being removed by the dewatering operation.
- I. Open pumping with sumps and ditches, if it results in boils, loss of fines, softening of the ground, or instability of slopes will not be permitted.
- J. The Contractor shall dispose of water from the Work in a suitable manner without damage to adjacent property. Sanitary sewers may be used for disposal of water if approved by the Owner. No water shall be drained into work built or under construction without prior consent of the Engineer. Water shall be filtered using an approved method to remove sand and fine-sized soil particles before disposal into any drainage system. Water disposed of into the sanitary sewer shall have turbidity less than 200 NTU with less than 300 MG/L of suspended solids. The discharge shall be arranged to facilitate collection of samples by the Engineer. The Owner is to be notified prior to any disposal of water in any drainage system or sewer. Water discharges shall comply with the requirements of the Tahoe Regional Planning Agency and the Lahontan Regional Water Quality Control Board.
- K. The release of groundwater to its static level shall be performed in such a manner as to maintain the undisturbed state of the natural foundation soils, prevent disturbance of compacted backfill and prevent flotation or movement of structures, pipelines, sewers, and other facilities.

END OF SECTION

SECTION 31 25 00

EROSION CONTROL

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: provision, installation and maintenance of temporary erosion control devices and vegetation protective fencing during construction and revegetation of disturbed areas after construction.
- B. Related Sections:
 - 1. 01 50 00 Temporary Facilities and Controls
 - 2. 31 23 19 Dewatering
 - 3. 31 23 33 Trenching and Backfilling
 - 4. 31 71 19 Boring and Jacking

PART 2 PRODUCTS

2.01 GENERAL

- A. Temporary erosion control measures include filter fabric fence and/or other approved sediment control barriers.

PART 3 EXECUTION

3.01 GENERAL

- A. A pre-grading inspection attended by the District, TRPA, Lahontan and the Contractor is required prior to commencement of any grading activities.
- B. Erosion control work is subject not only to the approval of the Engineer, but also to the approval of both the TRPA and Lahontan representatives for the project.
- C. Erosion control measures shall be installed as shown on the Plans or as otherwise directed by the Engineer, TRPA or Lahontan.
- D. Filter fabric fence and/or sediment control barriers shall be properly installed and conscientiously maintained during the project and, if requested by the Engineer, shall be left in place after completion of construction.
- E. The Contractor shall locate material stockpiles away from drainages, upslope from excavations where practical, and generally so as to minimize erosion potential in the event of a storm. The Contractor shall have on hand plastic sheeting to cover small spoils piles during storms

3.02 DISTURBED AREAS

- A. Grading and ground disturbance shall be limited to the areas of work as shown on the Plans.

END OF SECTION

DIVISION 32

SECTION 32 12 16

ASPHALTIC PAVING

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Hot Mix Asphalt on prepared subgrade or aggregate base course to lines, grades and compacted thickness as indicated on the Drawings.
- B. Related Sections:
 - 1. 31 20 00 Earthwork
 - 2. 31 25 13 Erosion Control

1.02 REFERENCES

- A. State of California Department of Transportation Standard Specifications, latest edition (CALTRANS Standard Specifications).
 - 1. Section 24 – Lime Stabilization
 - 2. Section 37 – Bituminous Seals.
 - 3. Section 39 – Hot Mix Asphalt.
 - 4. Section 92 – Asphalts.
 - 5. Section 93 – Liquid Asphalts.
 - 6. Section 94 – Asphaltic Emulsions.
- B. CALTRANS Standard Test Methods:
 - 1. Calif Test 204 - Plasticity Index of Soils
 - 2. Calif Test 304 - Preparation of Bituminous Mixtures for Testing.
 - 3. Calif Test 309 - Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
 - 4. Calif Test 362 - Determining Asphalt Content in Bituminous Mixtures by Vacuum Extraction.
 - 5. Calif. Test 366 – Method of Test for Stabilometer Value
 - 6. Calif Test 367 – Recommending Optimum Bitumen Content (OBC)
 - 7. Calif Test 371 - Resistance of Compacted Bituminous Mixture to Moisture Induced Damage
 - 8. Calif Test 375 - Determining the In-Place Density and Relative Compaction of AC Pavement.
 - 9. Calif Test 379 - Determining Asphalt Content in Bituminous Mixtures (Troxlner Nuclear Gage Model 3241).
- C. CALTRANS Standard Laboratory Procedures
 - 1. LP-1 Determination of Theoretical Maximum Specific Gravity of Mixtures with Different Asphalt Contents
 - 2. LP-2 Determination of the Voids in Mineral Aggregate
 - 3. LP-3 Determination of the Voids Filled with Asphalt
 - 4. LP-4 Determination of Dust Proportion
 - 5. LP-5 Liquid Anti-Strip Mix Design

6. LP-6 Dry Lime on Damp Aggregate Mix Design
 7. LP-7 Lime Slurry Marination Mix Design
- D. American Society for Testing and Materials (ASTM) Standards:
1. D1561 Practice for Preparation of Bituminous Mixture Test Specimens by Means of California Kneading Compactor.
 2. D2074 Standard Test Methods for Total, Primary, Secondary, and Tertiary Amine Values of Fatty Amines by Alternative Indicator Method.
 3. D217 Standard Test Methods for Cone Penetration of Lubricating Grease.

1.03 SYSTEM DESCRIPTION

- A. This Work shall consist of furnishing and mixing aggregate and asphalt binder at a central mixing plant, spreading and compaction of the mixture as specified and as indicated on the Drawings.
- B. In general, asphalt concrete and asphalt concrete base shall conform to Section 39 "Hot Mix Asphalt," and all applicable referenced sections, of the CALTRANS Standard Specifications.
1. Where conflicts exist, this specification shall govern.

1.04 DEFINITIONS

- A. "Asphalt Concrete" shall be considered the "Surface Course," or the final lift of the pavement section.
- B. "Asphalt Concrete Base" shall be the remaining portion of the asphalt pavement section excluding the final lift.
- C. "Hot Mix Asphalt" (HMA) as used by CALTRANS refers to the total pavement section of asphalt including Asphalt Concrete and Asphalt Concrete Base.

1.05 SUBMITTALS

- A. Mix design.
1. Contractor shall submit the proposed asphalt concrete mix design and test results which conform to these specifications. The proposed mix design shall be reviewed and approved by the Engineer prior to commencing work.
 2. Contractor shall provide a mix design that conforms to the applicable requirements of Part 2.01 of this Section and complies with the following design requirements set forth in Section 39-1.03B of the CALTRANS Standard Specifications.

Quality Characteristic	Test Method	HMA Type		
		A	B	RHMA-G Special Provisions
Air Voids Content (%)	CT 367 ^a	4.0	4.0	
Voids in mineral aggregate (% min)	LP-2			
No. 4 grading		17.0	17.0	--
3/8" grading		15.0	15.0	--
1/2" grading		14.0	14.0	18.0-23.0 ^b
3/4" grading		13.0	13.0	18.0-23.0 ^b
Voids filled with asphalt (%)	LP-3			
No. 4 grading		76.0-80.0	76.0-80.0	Note d

3/8" grading		73.0-76.0	73.0-76.0	
1/2" grading		65.0-75.0	65.0-75.0	
3/4" grading		65.0-75.0	65.0-75.0	
Dust proportion No. 4 and 3/8" gradings 1/2" and 3/4" gradings	LP-4	0.9-2.0 0.6-1.3	0.9-2.0 0.6-1.3	Note d
Stabilometer value (min.) ^c No. 4 and 3/8" gradings 1/2" and 3/4" gradings	CT 366	30 37	30 35	-- 23

Notes:

- a. Calculate the air voids content of each specimen using California Test 309 and Lab Procedure LP-1. Modify California Test 367, Paragraph C5, to use the exact air voids content specified in the selection of OBC.
- b. Voids in mineral aggregate for RHMA-G must be within this range.
- c. Modify California Test 304, Part 2.B.2.c: "After compaction in the compactor, cool to 140° ± 5°F by allowing the briquettes to cool at room temperature for 0.5-hour, then place the briquettes in the oven at 140°F for a minimum of 2 hours and not more than 3 hours.
- d. Report this value in the job mix formula Submittal.

3. Mix shall have a tensile strength ratio of at least 70, as determined by California Test 371.
 - a. If the tensile strength ratio of untreated HMA is less than 70, then the mix shall be treated with an appropriate antistripping treatment, and retested to achieve a minimum tensile strength ratio of 70.
4. Submittal shall conform to the requirements of Section 39-1.03C of CALTRANS Standard Specifications.

B. Test Results

1. Contractor shall submit the results of all tests which conform to these specifications.
2. Contractor shall provide one sieve analysis per day taken from the previous day's run.

C. Shop Drawings.

D. Product data:

1. Asphalt.
2. Asphalt aggregate
3. Pavement reinforcing fabric.

E. Quality Control Submittals:

1. Test Results.
2. Certificate of Compliance.
3. Certificate of Competence.

F. Equipment List.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Hot Mix Asphalt Delivery:

1. Transport the mixture from the mixing plant to the point of use in vehicles having tight bodies previously cleaned of all foreign materials.
2. Treat bodies as necessary to prevent material from sticking to the bodies.
3. Cover each load with canvas or other suitable material of sufficient size and thickness to protect the asphalt mixture from the weather.

1.07 Quality Assurance

- A. Comply with the Section 01 43 00 Quality Assurance

PART 2 PRODUCTS

2.01 HOT MIX ASPHALT MATERIALS

- A. Asphalts:
1. Asphalt Binder: Steam-refined paving asphalt conforming to Section 92-1.02B "Grades" of the CALTRANS Standard Specifications. The Contractor shall furnish asphalt in conformance with the CALTRANS "Certification Program for Suppliers of Asphalt" (http://www.dot.ca.gov/hq/esc/Translab/ofpm/pdf/COC_Guidelines.pdf).
 2. Tack Coat: Grade SC-70, conforming to Section 93-1.01 of the CALTRANS Standard Specifications.
 3. Fog Seal: Asphaltic Emulsion, Grade SS-1h, conforming to Section 94-1.02 of the CALTRANS Standard Specifications.

- B. Asphalt Aggregate:
1. Aggregate for asphalt concrete shall conform to Section 39-1.02E of the CALTRANS Standard Specifications for Type A grading.
 2. Aggregate for asphalt concrete base shall conform to Section 39-1.02E of the CALTRANS Standard Specifications for Type B grading.
 3. For all asphalt concrete paving performed for Trench And Miscellaneous Patching within the State of California (Caltrans) Right-of-Way, or for 2-inch mill and Asphalt Concrete Overlay within Caltrans Right-of-Way, the following specifications shall apply to bituminous aggregates:
 - a. Bituminous aggregate material shall be Type A and conform to the provisions of Section 39, Hot Mix Asphalt of the Caltrans Standard Specifications.
 - b. Unless otherwise directed by the Engineer, asphalt binder to be mixed with the mineral aggregate, shall be steam refined paving asphalt, viscosity PG64-28 PM The percentage of asphalt in the mix shall be determined by California Test Method 367..
 - c. Aggregate gradations shall conform to the grading specified for ¾-inch HMA in Section 39-1.02E, Aggregate, of the Caltrans Standard Specifications.

Sieve Size	Percentage Passing	Allowable Tolerance
3/4	90-100	±5
1/2	70-90	±6
No. 4	45-55	±7
No. 8	32-40	±5
No. 30	12-21	±4
No. 200	2-7	±2

- d. Aggregate shall comply with the Aggregate Quality criteria set forth in Section 39-1.02E of the CALTRANS Standard Specifications.

- e. Bituminous aggregate material shall be treated with anti-strip treatment in accordance with Part 2.01.D.
- 4. For all asphalt concrete paving performed for Trench And Miscellaneous Patching within the Caltrans, City of South Lake Tahoe or County of El Dorado Right-of-Way, 2-inch Mill and Asphalt Concrete Overlay with-in the City of South Lake Tahoe or El Dorado County Right-of-Way, or for all new paving in the South Tahoe Public Utility District Plant, the following specifications shall apply to bituminous aggregates:
 - a. Bituminous aggregate material shall be Type B and conform to the provisions of Section 39, Hot Mix Asphalt of the Caltrans Standard Specifications.
 - b. Unless otherwise directed by the Engineer, asphalt binder to be mixed with the mineral aggregate, shall be steam refined paving asphalt, viscosity PG64-28 PM The percentage of asphalt in the mix shall be determined by California Test Method 367.
 - c. Aggregate gradations shall conform to the surface course grading for 1/2-inch HMA specified in Section 39-1.02E, Aggregate, of the Caltrans Standard Specifications.

Sieve Size	Percentage Passing	Allowable Tolerance
1/2	95-99	±6
3/8	75-95	±6
No. 4	55-66	±7
No. 8	38-49	±5
No. 30	15-27	±4
No. 200	2-8	±2

- d. Aggregate shall comply with the Aggregate Quality criteria set forth in Section 39-1.02E of the CALTRANS Standard Specifications.
- e. Bituminous aggregate material shall be treated with liquid anti-strip treatment in accordance with Part 2.01.D.
- C. Hot Mix Asphalt shall be produced in a batch mixing plant or a continuous mixing plant in accordance with Section 39-1.08 of the CALTRANS Standard Specifications.
 - 1. Production shall conform to Section 39-1.08.A of the CALTRANS Standard Specifications.
 - 2. Mixing shall conform to Section 39-1.08.B of the CALTRANS Standard Specifications.
- D. Anti-strip treatment
 - 1. General
 - a. Apply an appropriate antistrip treatment, as indicated in the following table, based on the plasticity index of the aggregate determined by California Test Method 204.

Antistrip Treatment Procedures

Antistrip Treatment Type	Lab Procedure for Mix Design
Plasticity Index = 4 to 10 ^a	
Dry hydrated lime with marination	LP-6

Lime Slurry with marination	LP-7
Plasticity Index < 4	
Liquid Antistrip	LP-5
Dry hydrated lime without marination	LP-6
Dry hydrated lime with marination	LP-6
Lime slurry with marination	LP-7

^a Aggregate shall not have a PI > 10

- b. Full compensation for anti-strip treatment is included in the contract price paid for HMA as designated in the Bid Form and no separate payment will be made thereafter.
2. Liquid Anti-Strip Treatment
- a. This work shall consist of furnishing liquid anti-strip and treating asphalt concrete, rubberized asphalt concrete, and open graded asphalt concrete with liquid anti-strip in conformance with these special provisions.
 - b. Material:
 - 1) Minimum total amine value shall be 325 as measured by ASTM Designation: D2074. Formulation with no solvents will be used as cutback.
 - 2) Liquid anti-strip shall be of only one type or brand at any one time during production. Liquid anti-strip of more than one type or more than one brand shall not be mixed.
 - 3) After treatment with liquid antistrip, the asphalt binder must comply with Section 39 of the CALTRANS Standard Specifications and the requirements of Part 2.01 of this Section.
 - c. Construction
 - 1) Liquid anti-strip shall be stored and introduced either at refinery or into the asphalt concrete at the asphalt concrete plant in conformance with the manufacturer's recommendations.
 - 2) Liquid anti-strip shall be added at a rate of 0.5 to 1 percent by mass of the asphalt binder.
 - a) If three consecutive sets of recorded production data show actual delivered liquid anti-strip weight is more than ± 1 percent of the approved mix design liquid anti-strip weight, then stop production and take corrective action.
 - b) If a set of recorded production data shows actual delivered liquid anti-strip weight is more than ± 2 percent of the approved mix design liquid anti-strip weight, then stop production.
 - c) If the liquid anti-strip weight exceeds 1.2 percent of the asphalt binder weight, do not use the hot mix asphalt represented by that data.
 - d. Quality Assurance
 - 1) The continuous mixing plant controller proportioning the hot mix asphalt must produce a production data log. The log consists of a series of data sets captured at 10-minute intervals throughout daily production. The data must be a production activity register, not a summation. The material represented by the data is the amount produced 5 minutes before and 5 minutes after the capture time. For the duration of the contract, collected data must be stored by the plant controller or a computer's memory at the plant.

3. Lime Treatment

- a. This work shall consist of furnishing and treating aggregates with lime by the slurry method or dry method in accordance with the requirements of these specifications.
- b. Materials
 - 1) High-calcium hydrated lime and water must comply with Section 24-1.02 of the CALTRANS Standard Specifications.
 - 2) Aggregate must conform to aggregate quality specifications before it is treated with lime slurry. Treated aggregate shall only be tested for gradation for quality control purposes.
 - 3) Treated aggregate must not have lime balls or clods.
 - 4) The lime ratio is the pounds of dry hydrated lime per 100 pounds of dry aggregated expressed as a percent. Water content of slurry or untreated aggregate must not affect the lime ratio. Lime ratio ranges are:

Aggregate Gradation	Lime Ratio
Coarse	0.4 to 1.0
Fine	1.5 to 2.0
Combined	0.8 to 1.5

- a) For open graded friction course, the combined aggregate lime ratio may be reduced to 0.5 to 1.0 percent.
 - b) The lime ratio for fine and coarse aggregate must be within ± 0.2 percent of the lime ratio in the accepted job mix.
 - c) The lime ratio must be within ± 0.2 percent of the approved lime ratio when you combine the individual aggregate sizes in the job mix formula proportions.
 - d) If three consecutive sets of recorded treatment data indicate deviation more than 0.2 percent above or below the lime ratio in the accepted job mix, stop treatment.
 - e) If a set of recorded treatment data indicates a deviation of more than 0.4 percent above or below the lime ratio in the accepted job mix, stop treatment and do not use the day's total treatment in HMA.
 - f) If treatment is stopped for noncompliance, the corrective action must be implemented and successful treatment must be demonstrated for a 20 minute treatment period. Notify the Engineer before beginning the 20-minute treatment period.
- c. Slurry Method
- 1) Prior to being incorporated into asphalt concrete, aggregate shall be treated with a slurry of lime and water according to the requirements of these specifications, and placed in stockpiles to marinate.
 - 2) Proportioning and Mixing
 - a) Proportion lime and water with a continuous or batch operation.
 - b) Treat HMA aggregate by proportioning lime slurry and aggregate by weight in a continuous operation.
 - c) Marinate treated aggregate in stockpiles from 24 hours to 60 days before using the HMA. Do not use aggregate marinated longer than 60 days.
 - 3) Quality Control

- a) The device controlling slurry proportioning must produce a treatment data log. The log consists of a series of data sets captured at 10-minute intervals throughout daily treatment. The data must be a treatment activity register and not a summation. The material represented by the data set is the amount produced 5 minutes before and 5 minutes after the capture time. For the Contract's duration, collected data must be stored by the controller.
- d. Dry Lime Method
 - 1) Prior to being incorporated into asphalt concrete, aggregate shall be treated with lime using the dry lime method according to the requirements of these specifications, either with marination or without.
 - 2) The dry lime method shall be used to treat aggregate for Type A HMA.
 - 3) Proportioning and Mixing
 - a) Proportion dry lime by weight with a continuous operation.
 - b) If you use a batch-type proportioning operation for HMA production, control proportioning in compliance with the specifications for continuous mixing plants. Use a separate dry lime aggregate treatment operation from HMA batching operations including:
 - (1) Pugmill mixer;
 - (2) Controller;
 - (3) Weigh belt for the lime;
 - (4) Weigh belt for the aggregate.
 - c) If using a continuous mixing operation for HMA without lime marinated aggregates, use a controller that measures the blended aggregate weight after any additional water is added to the mixture. The controller must determine the amount of lime added to the aggregate from the aggregate weight belt input in connection with the manually input total aggregate moisture, the manually input target lime content, and the lime proportioning system output. Use a continuous aggregate weight belt and pugmill mixer for the lime treatment operation in addition to the weight belt for the aggregate proportioning to asphalt binder in the HMA plant. If you use a water meter for moisture control for lime treatment, the meter must comply with California Test Method 109.
 - d) At the time of mixing dry lime with aggregate, the aggregate moisture content must ensure complete lime coating. The aggregate moisture content must not cause aggregate to be lost between the point of weighing the combined aggregate continuous stream and the dryer. Add water for mixing and coating aggregate to the aggregate before dry lime addition. Immediately before mixing lime with aggregate, water must not visibly separate from aggregate.
 - e) The HMA plant must be equipped with a bag house dust system. Material collected in the dust system must be returned to the mix.

- f) Mix aggregate, water and dry lime with a continuous pugmill mixer with twin shafts.
- g) Store dry lime in a uniform and free flowing condition.
- h) Introduce dry lime to the pugmill in a continuous operation. The introduction must occur after the aggregate cold feed and before the point of proportioning across a weigh belt and the aggregate dryer. Prevent loss of dry lime.
- i) If marination is required, marinate treated aggregate in stockpiles between 24 hours and 60 days before using in HMA. Do not use aggregate marinated more than 60 days.
- j) The pugmill must be equipped with paddles arranged to provide sufficient mixing action and mixture movement. The pugmill must produce a homogeneous mixture of uniformly coated aggregates at mixer discharge.
- k) If the aggregate treatment operation is stopped longer than 1 hour, clean the equipment of partially treated aggregate and lime.
- l) Aggregate must be completely treated before introduction in the mixing drum.

E. Paint Binder:

- 1. Prior to placing asphalt concrete on any other type of asphalt concrete or on an existing bituminous pavement, paint binder shall be applied in one application at a rate between 0.05 to 0.10 gallons per square yard of surface area to be covered. Paint binder shall be composed of a bituminous material uniformly emulsified with water and an emulsifying or stabilizing agent. The mixture shall consist of a 60% bituminous material to a 40% water and emulsifier ratio.
- 2. Paint binder shall be asphaltic emulsion SS-1 and shall conform to the provisions of Section 94, Asphalt Emulsions, and Section 39-1.09C of the Caltrans Standard Specifications.
- 3. The area to which paint binder has been applied shall be closed to vehicular traffic. Care shall be taken to avoid tracking binder material onto existing pavement surfaces beyond the limits of construction

2.02 FOG SEAL

- A. A fog seal shall be applied to all surfaces of Types A and B asphalt concrete in conformance with the provisions in Section 37-1, and all applicable referenced sections of the CALTRANS Standard Specifications, where indicated on the drawings.

2.03 SLURRY SEAL

- A. Slurry seal, Type II, shall be applied in conformance with the provisions in Section 37-2, and all applicable referenced sections of the CALTRANS Standard Specifications, at the following locations, where indicated on the drawings.

2.04 AGGREGATE BASE COURSE

- A. Aggregate Base Course shall conform with requirements for Aggregate Base as described in Section 31 20 00 Earthwork, Part 2.02.C..
- B. Aggregate Base Course shall be placed at the following locations:
 - 1. At all locations indicted on the Drawings.
- C. Compacted thickness of Aggregate Base Course shall be as indicated on the Drawings.

2.05 EQUIPMENT

- A. Spreading and Compacting Equipment:
 - 1. Spreading equipment shall conform to Section 39-1.10 and all applicable referenced sections, of the CALTRANS Standard Specifications.
 - a. Only in areas inaccessible to the machine, by approval of the Engineer, will hand spreading be permitted.
 - 2. Compaction equipment shall conform to Section 39-1.10 and 2.04 and all applicable referenced sections, of the CALTRANS Standard Specifications.

2.06 SOURCES QUALITY CONTROL

- A. The Engineer will perform sampling and tests of materials in accordance with California Test Method Number 304 and California Test Method Number 362 or 379, as applicable. Samples will be taken from materials as delivered to the site.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verification of Conditions: Verify surfaces and site conditions are ready to receive work. If unsatisfactory conditions exist, do not commence installation until such conditions have been corrected. Beginning application means acceptance of existing conditions.

3.02 PROJECT CONDITIONS

- A. Environmental Requirements:
 - 1. Hot Mix Asphalt:
 - a. Placement of hot mix asphalt shall be performed only when surface is dry and when atmospheric temperature is above 50°F.
 - b. Do not place hot mix asphalt when weather is foggy or rainy nor when base on which material is to be placed is in wet or frozen conditions or when, in the opinion of the ENGINEER, weather conditions will prevent proper handling, finishing, compaction of the mixtures.

3.03 PREPARATION

- A. Protection:

1. Protect concrete pavements and walks, curbs and bases, and other improvements adjacent to the operations with suitable materials.
 2. Building and other surfaces shall be covered with paper or other protection, when required.
 3. Contractor shall be responsible for any damage caused by Contractor's employees. All damage caused by the Contractor's operations shall be repaired to the satisfaction of the Engineer at no additional cost to Owner.
- B. Subgrade Preparation:
1. Immediately prior to applying tack coat, or immediately prior to placing the Hot Mix Asphalt when tack coat is not required, the subgrade to receive Hot Mix Asphalt shall conform to the compaction requirement and elevation tolerances specified for the material involved and shall be cleaned to remove any loose or extraneous material.
 2. If the Hot Mix Asphalt is to be placed on an existing base or pavement which was not constructed as part of the contract, the Contractor shall clean the surface by sweeping, flushing or other means to remove all loose particles of paving, all dirt and all other extraneous material immediately before applying the tack coat.

3.04 TACK COAT

- A. Tack Coat:
1. A tack coat of asphaltic emulsion shall be applied to all vertical surfaces of existing pavement, curbs, gutters, and construction joints in the surfacing against which additional material is to be placed, or as otherwise specified herein.
 2. Tack coat shall be applied in one application at a rate of 0.1 gallons per square yard of surface covered.

3.05 HOT MIX ASPHALT

- A. Placing materials in a windrow, then picking it up and placing it in the asphalt paver with loading equipment will be permitted provided that:
1. The asphalt paver is of such design that the material will fall into a hopper which has a movable bottom conveyor to feed and screed.
 2. The loader is constructed and operated so that substantially all of the material deposited into windrows is picked up and deposited into the paving machine.
 3. The windrow is deposited only so far in advance of the paver to provide for continuous operation of the paver and not so far as to allow the temperature of the Hot Mix Asphalt in the windrow to fall below 260° F.
- B. Unless lower temperatures are directed by the Engineer, asphalt concrete shall be spread, and the first coverage of initial or breakdown compaction shall be performed when the temperature of the mixture is not less than 250° F, and all breakdown compaction shall be completed before the temperature of the mixture drops below 205° F.
- C. Hot Mix Asphalt shall be spread and compacted in the number of layers and of the thicknesses indicated in the following table:
1. A thickness tolerance of ± 0.1 inches is allowed for asphalt concrete.

2. A total thickness tolerance of ± 0.2 inches is allowed for asphalt concrete base.

Total Thickness Indicated on Drawings ^a	Number of Lifts	Top Layer Thickness		Next Lower Layer Thickness		All Other Lower Layer Thicknesses	
		Min	Max	Min	Max	Min	Max
< 2 3/4"	1	-----	-----	-----	-----	-----	-----
2 3/4" to 3"	2	1 1/4"	1 3/4"	1 1/4"	1 3/4"	-----	-----
>3" to 4 1/2"	2	1 1/4"	2 1/2"	1 1/4"	2 1/2"	-----	-----
>4 1/2"	^b	1 1/4"	2 1/2"	1 1/4"	3"	1 1/4"	5"

^a When pavement reinforcing fabric is shown to be placed between layers of Hot Mix Asphalt, the thickness of Hot Mix Asphalt above the pavement reinforcing fabric shall be considered to be the "Total Thickness Indicated on the Drawings" for the purpose of spreading and compacting the Hot Mix Asphalt above the pavement reinforcing fabric.

^b At least three layers shall be placed if the total thickness is more than 4 1/2", up to 10 1/2". At least four layers shall be placed if the total thickness is greater than 10 1/2".

- D. A layer shall not be placed over another layer which exceeds 3 inches in compacted thickness until the temperature of the layer which exceeds 3 inches in compacted thickness is less than 160° F at mid depth.
1. If the temperature of any layer drops below 140° F, or if directed by the Engineer, apply tack coat before placing next layer.
- E. Unless otherwise indicated on the Drawings, asphalt mixtures shall not be handled, spread or windrowed in a manner that will stain the finished surface of any pavement or other improvements.
- F. The completed mixture shall be deposited on the prepared subgrade at a uniform quantity per linear foot, as necessary to provide the required compacted thickness without resorting to spotting, picking-up or otherwise shifting the mixture.
- G. Spreading:
1. All layers of Hot Mix Asphalt shall be spread with an asphalt paver and shall conform to Section 39-1.11 and all applicable referenced sections of the CALTRANS Standard Specifications.
 2. At locations where the Hot Mix Asphalt is to be placed over areas inaccessible to spreading and rolling equipment, all layers of Hot Mix Asphalt shall be distributed directly out of the back of the dump truck and spread by hand.
 - a. Hot Mix Asphalt spread by hand shall be compacted thoroughly to the required lines, grades and cross-sections by means of pneumatic tampers, or by other methods that will produce the same degree of compaction as pneumatic tampers.
- H. Compaction:
1. Compaction of Hot Mix Asphalt shall conform to Section 39-1.11 and all applicable referenced sections of the CALTRANS Standard Specifications.
 2. Minimum required density for each layer of Hot Mix Asphalt shall be 95% of that obtained in the laboratory according to ASTM Test Method D-1561.

- I. Segregation shall be avoided and the surfacing shall be free of pockets of coarse or fine material. Hot Mix Asphalt containing hardened lumps shall not be used.
 - 1. In areas inaccessible to paving and compacting equipment where spreading is done by hand, minimize the amount of segregation.
- J. Location of longitudinal joints in the top layer will be determined by the Engineer and shall not adversely affect the quality of the finished product.
- K. At all locations, or as directed by the Engineer, the asphalt concrete shall be square and at least 1 inch thick when conforming to existing surfacing. Tapering or feathering is not allowed.

3.06 FIELD QUALITY CONTROL

- A. All Hot Mix Asphalt shall match the grades indicated on the Drawings and shall be completely free from unintended hollows and high spots.
- B. Engineer may perform in-place density and compaction tests of the completed pavement in accordance with California Test Method Number 375, to determine compliance with the specified requirements. Contractor shall pay for all retesting and coring on failed test.
- C. Cracks, settling of surface, improper drainage, improper compaction, and sloppy connection to previously laid surfaces will be construed as improper workmanship and will not be accepted.

3.07 MAINTENANCE OF PAVEMENT

- A. Upon completion of final rolling, traffic shall not be permitted on the finished pavement for at least 6 hours, or until the Hot Mix Asphalt has cooled sufficiently to withstand traffic without being deformed as determined by the Engineer.

3.08 WORKMANSHIP AND WARRANTY

- A. Contractor shall provide written warranty against defects in materials or workmanship for a period of not less than 1 year upon acceptance of Work.

DIVISION 33

**SECTION 33 12 13
WATER SERVICE CONNECTION**

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Water service connections from water mains up to the property line, including curb stop.
- B. Related Sections:
 - 1. 33 11 13 Water Distribution Piping
 - 2. 33 12 16 Water Valves
 - 3. 33 13 00 Pipeline Testing and Disinfection

1.02 REFERENCES

- A. American Water Works Association (AWWA)
 - 1. C800 Underground Service Line Valves and Fittings
 - 2. C901 Polyethylene Pressure Pipe and Tubing, ½” through 3” for Water Service
- B. American Society of Testing and Materials (ASTM)
 - 1. A536 Ductile Iron Castings
- C. American Society of Mechanical Engineers (ASME)
 - 1. ANSI-ASME B1.20.1 General Purpose Pipe Threads

PART 2 PRODUCTS

2.01 GENERAL

- A. All piping, valves and fittings used for service connections shall conform to the AWWA C800 standard for "Underground Service Line Valve and Fittings".
- B. All fittings for water service connections shall conform to ASME B1.20.1 having N.P.T. threads.
- C. In no case shall copper or copper alloy pipe or fittings be attached to steel pipe, except by means of dielectric coupling expressly made for this purpose and service. Tracer wire shall terminate at the meter, to provide a discontinuity between the private service line and the District's distribution system.
- D. All brass components used in the water distribution system shall be "lead-free" in compliance with California law (AB 1953).

2.02 SERVICE SADDLES

- A. Service saddles shall be installed per project details.
- B. Service saddles shall have a bearing area of sufficient width along the axis of the pipe so that the pipe will not be distorted when the saddle is made tight
- C. For PVC pipe, saddles shall be sized such that the upper end of the OD range is equal to the outside diameter of the pipe.

2.03 CURB AND CORPORATION STOPS

- A. Curb and corporation stops shall be as specified on drawings.

PART 3 EXECUTION

3.01 GENERAL

- A. All service connections which would require crossing existing sewer force mains shall be installed utilizing an open trench method. Additionally, any service connections not crossing existing sewer force mains shall be installed utilizing a trenchless method such as a mole. The Contractor shall submit a written proposal describing the method to be employed, which will be subject to the review and approval of the Engineer.
- B. The Contractor shall indicate sending and receiving pit locations in the field which must be approved by the Engineer. It is the intent of this specification that a majority of the length of all service connections be installed using the proposed trenchless method.
- C. All new service lines shall be installed, including new curb stops, to a point adjacent to existing services and shall be flushed, pressure tested and disinfected along with the new water main, per Section 33 13 00. The new curbstop can be used to facilitate flushing to expel trapped air and to insure adherence to the sterilization specifications. After all the lines have been successfully pressure tested and have passed the disinfection test, they shall be connected to existing service. A new service box shall be installed and brought to proper grade. The price for the new service box and installation shall be included in the unit price for each service.

3.02 SERVICE TAPS

- A. Contractor shall install service saddles at locations shown on the Contract Drawings
- B. An internal shell cutter shall be used to drill through the corporation stop to minimize shavings, retain the coupon, and reduce stress. Single fluted shell cutter or twist drills shall not be used. Cutting lubricant shall be used on the cutting and tapping edges of the tool.

3.03 HOT TAP

- A. All hot tapping of existing mains shall be performed by the District, as directed on the Contract Drawings.

END OF SECTION

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**SECTION 33 13 00
WATER PIPELINE TESTING AND DISINFECTION**

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: flushing, testing and disinfection of all pipelines and appurtenances for water.
- B. Related Sections:
 - 1. 33 11 13 Water Distribution Piping
 - 2. 33 12 16 Water Valves
 - 3. 33 12 13 Water Service Connections

1.02 REFERENCES

- A. American Water Works Association (AWWA)
 - 1. B300 Hypochlorites.
 - 2. C200 Steel Water Pipe 6" in Diameter and Larger
 - 3. C600 Installation of Ductile Iron Water Pipes and Their Appurtenances
 - 4. C651 Disinfecting Water Mains.(attached)
 - 5. C900 Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In.-12 In. for Water Transmission and Distribution
 - 6. C906 Polyethylene (PE) Pressure Pipe and Fittings, 4 In. (100 mm) through 63 in. (1,600 mm), for Water Distribution and Transmission.
- B. South Tahoe Public Utility District Standards
 - 1. Water System Connection Disinfection and Testing Guide (attached)

1.03 CONTRACTOR SUBMITTALS

- A. Submittals shall be made in accordance with Section 01 33 00 Submittals Process.
- B. The following submittals and specific information shall be provided.
 - 1. A detailed, project-specific testing procedure and schedule, including proposed plans for water conveyance, control, disposal, and disinfection, shall be submitted in writing for approval a minimum of 48 hours before testing is to start.

1.04 QUALITY ASSURANCE

- A. Comply with the Section 01 43 00 Quality Assurance.

PART 2 PRODUCTS

2.01 MATERIALS REQUIREMENTS

- A. All test equipment, chemicals for disinfection, temporary valves, bulkheads, or other water control equipment and materials shall be determined and furnished by the Contractor subject to the Engineer's approval. No materials shall be used which would be injurious to the construction or its future function.
- B. Chlorine for disinfection shall be in the form of sodium hypochlorite solution only. Sodium hypochlorite shall be in accordance with the requirements of AWWA B300.

PART 3 EXECUTION

3.01 GENERAL

- A. Testing and disinfection of waterlines shall conform to the requirements of this section and to the District's "Water System Connection Disinfection and Testing Guide", unless otherwise authorized in writing by the Engineer. Alternative testing and disinfection procedures shall be submitted by the Contractor for review and approval in conformance with Part 1.03.B.1, above.
- B. Unless otherwise provided herein, water for testing and disinfecting water pipelines will be furnished by STPUD; however, the Contractor shall make all necessary provisions for conveying the water from STPUD-designated source to the points of use.
- C. All pressure pipelines shall be tested. Disinfection shall be accomplished by chlorination and shall be completed by the contractor. All bacteriological testing operations shall be performed by District Laboratory Personnel in the presence of the Engineer and Contractor.
- D. Disinfection operations shall be scheduled by the Contractor as late as possible during the contract time period so as to assure the maximum degree of sterility of the facilities at the time the Work is accepted by the Engineer and the Inspector. Mains, services, and hydrants shall be tested at the same time. Bacteriological testing shall be performed by District Laboratory Personnel in the presence of the Engineer and Contractor.

3.02 HYDROSTATIC TESTING OF PIPELINES

- A. Pressure Test with Maximum Leakage Allowance for Steel, Ductile Iron, or PVC Pipe
 - 1. All PVC, Ductile Iron, and Steel pressure pipe shall be tested for leakage per AWWA C200, C600, or C900 depending on pipe type, for a minimum duration of 2 hours at 150 psi and measured at the lowest point in the line. Any sections of the pipelines indicating more than the allowable leakage shall be repaired and retested until the leakage is less than the allowable indicated below. The leakage test shall be made after backfilling. Any visible leaks shall also be repaired.

2. Do not test sections longer than 2,000 ft. in total pipe length without prior approval of the Engineer.
3. Pressure test piping after completion of visible leaks test during water absorption period.
4. Accurately measure the makeup water necessary to maintain the pressure in the piping section under test during the pressure test period.
5. Successful completion of the pressure test with maximum leakage allowance shall have been achieved when the observed leakage during the test period is equal or less than the allowable leakage and no damage to piping and appurtenances has occurred. Calculate the allowable leakage by the following formula:

$$L = \frac{(S * D * \sqrt{P})}{133,200}$$

Wherein the terms shall mean:

L = Allowable leakage in gallons per hour.

S = Length of the test section in feet.

D = Nominal diameter of the piping in inches.

P = Average observed test pressure in pounds per square inches, gauge, at the lowest point of the test section, corrected for elevation of the pressure gauge.

- B. Pressure Test with Maximum Leakage Allowance for HDPE Pipe
 1. All HDPE pressure pipe shall be tested for leakage per AWWA C906.

3.03 DISINFECTING PIPELINES

- A. New Mains
 1. General
 - a. All equipment and pipelines intended to carry potable water shall be sterilized before placing in service.
 - b. Disinfection and bacteriological testing of new mains shall be performed in accordance with the guidelines provided by AWWA C651, in addition to the standards written below.
 2. Flushing
 - a. Before disinfection, the Contractor shall ensure all foreign matter has been flushed from equipment and pipeline.
 - b. Contractor shall provide hoses and temporary pipes as required to dispose of flushing water without damage to adjacent properties.
 - c. Flushing velocities shall be at least 2.5 fps. For large diameter pipe here it is impractical or impossible to flush the pipe at 2.5 fps velocity, clean the pipeline in place from the inside by brushing and sweeping, then flush the line at a lower velocity.
 - d. **Water used for disinfection may be discharged into the District's sanitary sewer manhole at the project site with prior approval of the Engineer. During any discharge into the District's sewer system, the Contractor shall provide monitoring to assure against surcharging the system.**
 3. Additions to AWWA C651:
 - a. Strict adherence to all sections of AWWA standard C651 is required.

- b. Section 4.1 of AWWA C651 shall be followed as written except that sodium hypochlorite is the only form of chlorine to be used for disinfection.
 - c. Section 5.1.1 of AWWA C651 shall be followed as written except that at least two sample sets, obtained on successive days at a minimum of 24 hours apart, shall be collected from the new main and each branch.
 - 1) A sample set consists of three samples for every 1,200 foot section of pipelines: one at the each end and one in the middle. An extra sample is needed for each additional 600 feet of pipe.
 - 2) Water service lateral connections or dedicated sample ports should be used for sample taps. Samples must not be taken from fire hydrants, unless approved by the Engineer.
 - 3) The sample tap should be flushed enough to clear the sample line and ensure that the sample is from the main. Sample taps should be installed at least one (1) foot above grade to prevent contamination from soil.
 - d. A standard heterotrophic plate count (HPC) will be required. This sample will be drawn at the same time as the first sample set for coliforms. HPC must be less than 500 cfu per mL, in accordance with Section 5.1.4 of AWWA C651.
4. Disinfection and Testing Procedures:
- a. Charge and chlorinate the line in accordance with AWWA C651, as modified above. Record initial chlorine level in main.
 - b. The chlorinated water shall be retained in the pipeline for at least 24-hours. If water temperature is less than 5 degrees C, the time required for the chlorinated water to remain in the pipeline shall be no less than 48-hours.
 - c. All valves and hydrants in the treated section shall be operated during the 24-hour chlorination period to disinfect the appurtenances.
 - d. At the end of the 24-hour period (or 48-hour period as required in Part 3.03.A.4.a, above), the treated water in all portions of the main shall be tested by District laboratory personnel and found to have a residual of not less than 10 mg/L free chlorine.
 - e. Before the first bacteriological sample is taken, the main shall be flushed so that the total chlorine residual is no greater than that currently in the water distribution system.
 - f. Samples for bacteriological and HPC testing shall be collected by District laboratory personnel.
 - g. After the first sample for bacteriological testing is taken, the water will remain undisturbed in the main for 24 hours, after which, a second set of samples for bacteriological testing shall be collected by District laboratory personnel. In the event that at the time of the second bacteriological sampling the total chlorine residual is greater than that in the water distribution system, the water line will be flushed until the total chlorine residual is no greater than that of the water in the distribution system. It will be the Engineers discretion to decide whether or not water in the main must remain undisturbed for an additional 24 hours before the second bacteriological sample is taken.
5. The new main shall be approved as disinfected when all of the following have been achieved:
- a. All bacteriological tests on two successive days must be negative for total coliform organisms.

- b. HPC is found to be less than 500 cfu per mL, in accordance with Section 5.1.4.
- 6. Scheduling
 - a. The time required for completing the disinfection and bacteriological testing is at least 4 days and can require up to 6 days, even if test results are acceptable on the first try.
 - b. If the test results show the presence of coliform organisms, more time will be required for further disinfection and testing.
 - c. Flushing of the disinfected water main may take considerable time and should be considered in scheduling work.
 - d. The laboratory should be notified at least 24-hours prior to initial disinfection.
 - e. The Contractor shall provide personnel to assist the District lab personnel to obtain samples.
- B. Repaired Mains, including system interties: The disinfection and bacteriological testing of repaired water mains shall be performed in accordance with the guidelines provided by AWWA C651 and the additions that are written below.
 - 1. All repairs performed by the Contractor, shall be coordinated with the Engineer
 - 2. New pipe segments and fitting shall be swabbed with sodium hypochlorite, as well as the exposed ends of the repaired section.
 - 3. Schedule lab to take tests within 24 hours. Continue until two (2) consecutive negative samples are collected. Corrective action by the contractor may be required and could include flushing, charging, slug chlorination and/or additional repairs at the direction of the Engineer.

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**American Water Works
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ANSI/AWWA C651-14
(Revision of ANSI/AWWA C651-05)

AWWA Standard

Disinfecting Water Mains

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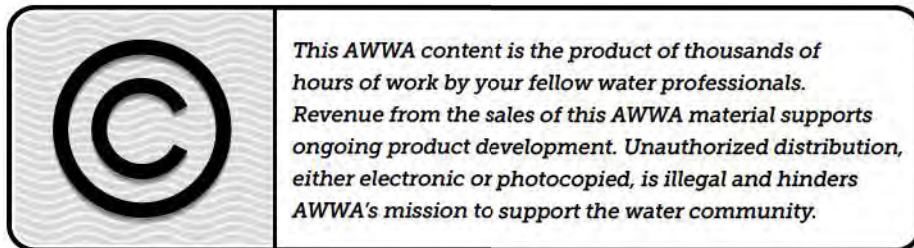
AWWA Standard

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Foreword

This foreword is for information only and is not a part of ANSI/AWWA C651.

I. Introduction.

I.A. *Background.* This standard describes methods of disinfecting newly constructed potable water mains; mains that have been removed from service for planned repairs or for maintenance that exposes them to contamination; mains that have undergone emergency repairs because of physical failure; and mains that, under normal operation, continue to show the presence of coliform organisms. The disinfecting agents discussed in this standard are chlorine solutions that may be derived from liquid chlorine (Cl_2), calcium hypochlorite ($\text{Ca}(\text{OCl})_2$), or sodium hypochlorite (NaOCl). Combinations of free chlorine residual and contact time are provided. Chlorine dosage reference tables are provided as appendix B of this standard.

I.B. *History.* This standard was first approved on Sept. 30, 1947, by the AWWA Board of Directors and published as 7D.2-1948, A Procedure for Disinfecting Water Mains. Revisions were approved on Sept. 14, 1948; Mar. 6, 1953; May 27, 1954; June 2, 1968; and June 7, 1981. All were done under the designation ANSI/AWWA C601, Standard for Disinfecting Water Mains. In 1986, the designation of the standard was changed to ANSI/AWWA C651, and the subsequent editions were approved on Jan. 26, 1986; June 18, 1992; June 20, 1999; and Jan. 16, 2005. This edition was approved on June 8, 2014.

I.C. *Acceptance.* In May 1985, the US Environmental Protection Agency (USEPA) entered into a cooperative agreement with a consortium led by NSF International (NSF) to develop voluntary third-party consensus standards and a certification program for direct and indirect drinking water additives. Other members of the original consortium included the Water Research Foundation (formerly AwwaRF) and the Conference of State Health and Environmental Managers (COSHEM). The American Water Works Association (AWWA) and the Association of State Drinking Water Administrators (ASDWA) joined later.

In the United States, authority to regulate products for use in, or in contact with, drinking water rests with individual states.[†] Local agencies may choose to impose requirements more stringent than those required by the state. To evaluate the health

* American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10036.

† Persons outside the United States should contact the appropriate authority having jurisdiction.

effects of products and drinking water additives from such products, state and local agencies may use various references, including

1. An advisory program formerly administered by USEPA, Office of Drinking Water, discontinued on Apr. 7, 1990.
2. Specific policies of the state or local agency.
3. Two standards developed under the direction of NSF*: NSF/ANSI 60, Drinking Water Treatment Chemicals—Health Effects, and NSF/ANSI 61, Drinking Water System Components—Health Effects.
4. Other references, including AWWA standards, *Food Chemicals Codex*, *Water Chemicals Codex*,[†] and other standards considered appropriate by the state or local agency.

Various certification organizations may be involved in certifying products in accordance with NSF/ANSI 60. Individual states or local agencies have authority to accept or accredit certification organizations within their jurisdictions. Accreditation of certification organizations may vary from jurisdiction to jurisdiction.

Annex A, “Toxicology Review and Evaluation Procedures,” to NSF/ANSI 60 does not stipulate a maximum allowable level (MAL) of a contaminant for substances not regulated by a USEPA final maximum contaminant level (MCL). The MALs of an unspecified list of “unregulated contaminants” are based on toxicity testing guidelines (noncarcinogens) and risk characterization methodology (carcinogens). Use of Annex A procedures may not always be identical, depending on the certifier.

ANSI/AWWA C651 does not address additives requirements. Thus, users of this standard should consult the appropriate state or local agency having jurisdiction in order to

1. Determine additives requirements including applicable standards.
2. Determine the status of certifications by parties offering to certify products for contact with, or treatment of, drinking water.
3. Determine current information on product certification.

II. Special Issues.

II.A. *Information on Application of This Standard.* Generally, it is easier to disinfect a new main than one that has had emergency repairs in terms of access, sanitary control, and the time available for disinfection, sampling, and testing.

* NSF International, 789 North Dixboro Road, Ann Arbor, MI 48105.

† Both publications available from National Academy of Sciences, 500 Fifth Street, NW, Washington, DC 20001.

For a new main, there is typically more time available for disinfection and testing since there is no immediate demand from customers. Given the often significant amount of time and materials involved in a new water main project, careful disinfection and testing of the main are reasonable and necessary to ensure public health protection.

Conditions for pipe repair projects vary tremendously in terms of the size of the repair, the sanitary conditions, and the time constraints resulting from immediate customer demands. It should be noted if the line is depressurized or opened to the environment prior to or during repair, the sanitary integrity of the pipe is compromised and it is critical to follow sanitary procedures throughout the repair—not just as it is being returned to service. Crews responsible for the repair of mains should be aware of the potential health hazards and be trained to carefully observe prescribed construction practices and disinfection procedures.

Because of the differences between initial installation and repair, the disinfection requirements for each situation are also different. The installation of new mains requires that two sets of samples for coliform analysis are collected at least 16 hr apart, or two sets collected 15 min apart after at least a 16-hr rest period. For repaired mains that are depressurized and/or wholly or partially dewatered, one set of samples may be required, and depending on the sanitary conditions, the line may be returned to service prior to the completion of bacteriological testing. For repaired mains that are maintained under pressurized conditions at all times, bacteriological testing is not required.

When required, samples are now specified to be collected at least 16 hr apart, or 15 min apart after a 16-hr rest period. The purpose of this change is to consider the balance between public health, improved test methods, and timely work completion. This timing is sufficient to allow bacterial regrowth within the line if there was a contamination problem and provides more flexibility in the scheduling of various work activities.

Bacteriological testing in accordance with Sec. 5.1 is used to verify the absence of coliform organisms and is generally accepted as verification that disinfection of the pipeline has been accomplished; and following sanitary practices for handling and installation of pipe, valves, fittings, and accessories, coupled with adequate flushing of the line before disinfection, is necessary to ensure the disinfected pipeline will be ready for connection to the water system. Failure to pass the bacteriological test requires that the flushing or disinfection process be repeated. It must be remembered that the final water quality test is not the primary means for certifying the sanitary condition of a main. The sanitary

handling of materials, the practices during construction, and the continual inspection of the work are the primary means for ensuring the sanitary condition of the water main.

Four methods of disinfecting newly constructed water mains are described in this standard: the tablet method, the continuous-feed method, the slug method, and the spray method. The utility should decide which of these methods is most suitable for a given situation. Factors to consider when choosing a method should include the length and diameter of the main, type of joints present, availability of materials, equipment required for disinfection, training of the personnel who will perform the disinfection, and safety concerns. For example, if gas chlorination is the chosen chemical when either continuous-feed or slug methods are being used, use only properly designed and constructed equipment; makeshift equipment is not acceptable when liquid chlorine (gas) cylinders are used.

Thorough consideration should be given to the impact of highly chlorinated water flushed into the environment. If there is any question that damage may be caused by chlorinated-waste discharge (to fish life, plant life, physical installations, or other downstream water uses of any type), then an adequate amount of reducing agent should be applied to water being disposed of in order to thoroughly neutralize the chlorine residual remaining in the water.

The tablet method cannot be used unless the main can be kept clean and dry. It cannot be used in large-diameter mains if it is necessary for a worker to enter the main to grout joints or perform inspection because the tablets may release toxic fumes after exposure to moist air. When using the tablet method, the chlorine concentration is not uniform throughout the main because the hypochlorite solution is dense and tends to concentrate at the bottom of the pipe. The use of the tablet method precludes preliminary flushing. The tablet method is convenient to use in mains having diameters up to 24 in. (600 mm), and it requires no special equipment.

The continuous-feed method is suitable for general application. Preliminary flushing removes light particulates from the main but not from the pipe-joint spaces. The chlorine concentration is uniform throughout the main.

The slug method is suitable for use in large-diameter mains where the volume of water makes the continuous-feed method impractical and difficult to achieve for short attachments. The slug method results in appreciable savings of chemicals used to disinfect long large-diameter mains. Also, this method reduces the volume of heavily chlorinated water to be flushed to waste.

The spray method is suitable for use in large-diameter transmission lines where spray equipment can be used to disinfect all surfaces of the pipe. This method reduces the volume of heavily chlorinated water to be flushed to waste.

The purpose of all four chlorination methods is to disinfect water lines, resulting in an absence of coliforms as confirmed by laboratory analysis. As noted above, the four methods attempt to provide flexibility in responding to specific situations. The tablet and continuous-feed methods both have initial chlorine concentrations of 25 mg/L and a minimum contact time of 24 hr. Because the tablet method cannot be flushed and cleaned prior to disinfection, the required free chlorine residual must be detectable (≥ 0.2 mg/L) after 24 hr. Because the continuous-feed method can be used to flush particles, a higher free chlorine residual of 10 mg/L is required after 24 hr. To meet the needs of situations requiring reduced contact times, the slug method allows only a 3-hr contact time but requires a 100-mg/L initial chlorine dosage. For larger transmission lines, spray disinfection using 200 mg/L free chlorine may be a suitable option, minimizing discharges of highly chlorinated water. While the contact times of the methods may not be identical, the end result, absence of coliforms, is the same for all four methods.

Disinfectants other than chlorine may be appropriate to use. Although this standard describes only the use of liquid chlorine (gas), sodium hypochlorite solutions, and calcium hypochlorite, the applicability of other disinfectants should be evaluated. Ozone and chemical cleaners have been used, and these warrant further investigation. Whichever disinfectant or method is selected, approval from the local regulatory agency may be required.

III. Use of This Standard. It is the responsibility of the user of an AWWA standard to determine that the products described in that standard are suitable for use in the particular application being considered.

III.A. Purchaser Options and Alternatives. This standard is written as though the disinfection work will be performed by the purchaser's personnel. Where the work is to be performed using a separate contract or as part of a contract for installing mains,* appropriate provisions should be included in the purchase documents to ensure that the constructor is specifically instructed as to its responsibilities. The following information should be provided by the purchaser.

* Refer to other AWWA standards and manuals for design criteria and installation procedures for various pipe materials.

1. Standard used— that is, ANSI/AWWA C651, Standard for Disinfection of Water Mains, of latest revision.
2. Approval requirements before use.
3. Those procedures included in the standard that are designated as optional, that are to be included in the purchase documents.
4. Whether compliance with NSF/ANSI 60, Drinking Water Chemicals—Health Effects, is required.
5. Whether compliance with NSF/ANSI 61, Drinking Water System Components—Health Effects, is required.
6. Details of other federal, state or provincial, and local requirements (Section 4).
7. Form of chlorine to be used (Sec. 4.1.1, 4.1.2, and 4.1.3).
8. Method of chlorination (Sec. 4.3, 4.4, 4.5, and 4.6).
9. Flushing locations, rates of flushing, and locations of drainage facilities (Sec. 4.4.2, 4.9.1, and 4.9.2).
10. Responsibility for tapping existing mains and connections to new mains (Sec. 4.4.3[1], 4.4.3[2], and 4.10).
11. The number and frequency of samples for bacteriological tests (Sec. 5.1.1, 5.1.2, and 5.2).
12. Method of taking samples (Sec. 5.1.3).

III.B. *Modification to Standard.* Any modification of the provisions, definitions, or terminology in this standard must be provided by the purchaser.

IV. Major Revisions. Major revisions made to the standard in this edition include the following:

1. Clarified differences in the requirements between new and repaired mains (foreword II.A, Sec. 1.1, and 4.11).
2. Changed the requirement for bacteriological sampling in new mains from two sets of samples 24 hr apart to add two options for two sets of samples: Option A samples are 16 hr apart, and Option B samples are 15 min apart after a 16-hr rest period (foreword II.A and Sec. 5.1).
3. The flushing rate of 2.5 ft/sec has been increased to 3.0 ft/sec for a scour flush based on testing performed under Water Research Foundation Project No. 4307, which indicates the threshold velocity of 2.5 to 3.0 ft/sec for successful flushing (2.5- to 3.0-log removal) of sand particles. Since this is a threshold velocity, 3.0 ft/sec was chosen for the standard (Sec. 4.4.2 and Table 3).
4. Added spray disinfection method for large transmission mains (Sec. 4.6).

5. Appendix C has been deleted, and instead, a reference to ANSI/AWWA C655 is made for dechlorination (Sec. 4.7 and 4.9.2).

6. Developed a rationale for evaluating risk during pipe repairs and the level of disinfection and sampling needed under those conditions (Sec. 4.11).

V. Comments. If you have any comments or questions about this standard, please call the AWWA Engineering and Technical Services at 303.794.7711, FAX at 303.795.7603; write to the group at 6666 West Quincy Avenue, Denver, CO 80235-3098; or email the group at standards@awwa.org.

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ANSI/AWWA C651-14
(Revision of ANSI/AWWA C651-05)

AWWA Standard

Disinfecting Water Mains

SECTION 1: GENERAL

Sec. 1.1 Scope

This standard describes essential procedures for the disinfection of new and repaired potable water mains. New water mains shall be disinfected before they are placed in service. Water mains taken out of service for inspection, repair, or other activities may or may not require disinfection and sampling, depending on the risk of contamination. This standard describes the process for evaluating the risk under different conditions.

Sec. 1.2 Purpose

The purpose of this standard is to define the minimum requirements for the disinfection of water mains, including the preparation of water mains, application of chlorine, and sampling and testing for the presence of coliform bacteria.

Sec. 1.3 Application

This standard can be referenced in the purchase documents for the disinfection of water mains and can be used as a guide for the preparation of water mains, application of chlorine, and sampling and testing for the presence of coliform bacteria. The stipulations of this standard apply when this document has been referenced and only to the disinfection of water mains.

SECTION 2: REFERENCES

This standard references the following documents. In their latest editions, they form a part of this standard to the extent specified within the standard. In any case of conflict, the requirements of this standard shall prevail.

ANSI*/AWWA B300—Hypochlorites.

ANSI/AWWA B301—Liquid Chlorine.

ANSI/AWWA C652—Disinfection of Water Storage Facilities.

ANSI/AWWA C655—Field Dechlorination.

APHA,[†] AWWA, and WEF.[‡] *Standard Methods for the Examination of Water and Wastewater.*

AWWA Manual M12, *Simplified Procedures for Water Examination.*

NSF/ANSI 61—Drinking Water System Components—Health Effects.

SECTION 3: DEFINITIONS

The following definitions shall apply in this standard:

1. *Available chlorine:* A measure of the amount of chlorine in chlorinated lime, hypochlorite compounds, chloramines, and other materials that are used for disinfection compared with the amount in elemental (liquid or gaseous) chlorine.

2. *Chlorine, combined:* The amount of chlorine combined with ammonia (NH₃) or other compounds in water.

3. *Chlorine, free:* Also called *free available chlorine*, the amount of chlorine available as dissolved gas (Cl₂), hypochlorous acid (HOCl), and hypochlorite (OCl⁻) that is not combined with ammonia (NH₃) or other compounds in water that is available for disinfection.

4. *Chlorine residual:* Concentration of chlorine species present in water after the oxidant demand has been satisfied.

5. *Chlorine, total:* A combination of free chlorine, combined chlorine, and organochlorine species.

6. *Constructor:* The party that provides the work and materials for placement or installation.

* American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10036.

† American Public Health Association, 800 I Street NW, Washington, DC 20001.

‡ Water Environment Federation, 601 Wythe Street, Alexandria, VA 22314.

7. *Liquid chlorine (gas)*: the commercially available form of liquefied elemental chlorine gas. (The term *liquid chlorine* is sometimes used to describe a hypochlorite solution. This use of the term is discouraged. See ANSI/AWWA B300, Hypochlorites.)

8. *Manufacturer*: The party that manufactures, fabricates, or produces materials or products.

9. *Purchaser*: The person, company, or organization that purchases any materials or work to be performed.

10. *Supplier*: The party that supplies material or services. A supplier may or may not be the manufacturer.

11. *Organochlorine*: Any organic compound containing chlorine as a constituent. Organochlorine compounds can form when chlorine reacts with organic substances.

SECTION 4: REQUIREMENTS

Materials shall comply with the requirements of the Safe Drinking Water Act and other federal regulations for potable water, wastewater, and reclaimed water systems as applicable.

Sec. 4.1 Forms of Chlorine for Disinfection

The forms of chlorine that may be used in the water main disinfection operations are liquid chlorine (gas), sodium hypochlorite solution, and calcium hypochlorite granules or tablets.

4.1.1 *Liquid chlorine (gas)*. Liquid chlorine (gas) conforming to ANSI/AWWA B301 contains 100 percent available chlorine and is packaged in steel containers usually of 100-lb, 150-lb, or 1-ton (45.4-kg, 68.0-kg, or 907.2-kg) net chlorine weight. Liquid chlorine (gas) shall be used only (1) in combination with appropriate gas-flow chlorinators and ejectors to provide a controlled high-concentration solution feed to the water to be chlorinated; (2) under the direct supervision of someone familiar with the biological, chemical, and physical properties of liquid chlorine (gas) and who is trained and equipped to handle any emergency that may arise; and (3) when appropriate safety practices are observed to protect working personnel and the public. Makeshift equipment is not acceptable when liquid chlorine (gas) cylinders are used.

4.1.2 *Sodium hypochlorite.* Sodium hypochlorite conforming to ANSI/AWWA B300 is available in liquid form in glass, rubber-lined, or plastic containers typically ranging in size from 1 qt (0.95 L) to 5 gal (18.92 L). Containers of 30 gal (113.6 L) or larger may be available in some areas. Sodium hypochlorite contains approximately 5 percent to 15 percent available chlorine, and the storage conditions and time must be controlled to minimize its deterioration. (Available chlorine is expressed as a percent of weight when the concentration is 5 percent or less, and usually as a percent of volume for higher concentrations. Percent \times 10 = grams of available chlorine per liter of hypochlorite.)

4.1.3 *Calcium hypochlorite.* Calcium hypochlorite conforming to ANSI/AWWA B300 is available in granular form or in 5-g tablets and must contain approximately 65 percent available chlorine by weight. The material should be stored in a cool, dry, and dark environment to minimize its deterioration.

CAUTION: Tablets dissolve in approximately 7 hr and must be given adequate contact time. Do not use calcium hypochlorite intended for swimming pool disinfection, as this material has been sequestered and is extremely difficult to eliminate from the pipe after the desired contact time has been achieved.

Sec. 4.2 General Considerations for All Methods of Chlorination

4.2.1 *General.* Four methods of chlorination are explained in this section: tablet, continuous feed, slug, and spray. The tablet method gives an initial chlorine dose of 25 mg/L; the continuous-feed method gives a 24-hr chlorine residual of not less than 10 mg/L; the slug method gives a 3-hr exposure of not less than 50 mg/L free chlorine; and the spray method gives a 30-min exposure of not less than 200 mg/L free chlorine. Caution should be used with highly chlorinated water when conducting hydrostatic pressure testing and with high-volume flushing of water.

4.2.2 *Flushing.* Potable water shall be used for disinfection, hydrostatic pressure testing, and flushing. Drainage should take place away from the construction or work area. Adequate drainage must be provided during flushing. If applicable, the valve(s) isolating the main from existing system should be locked out and tagged out to prevent unintentional release of the elevated chlorine residual water used for disinfection.

4.2.3 *Dechlorination.* When dechlorination is required, it is recommended that any high-velocity flushing be completed prior to disinfection. Dechlorination equipment may not be capable of handling high flows with high levels of chlorine.

Table 1 Weight of calcium hypochlorite granules to be placed at beginning of main and at each 500-ft (150-m) interval

Pipe Diameter (d)		Calcium Hypochlorite Granules	
<i>in.</i>	<i>(mm)</i>	<i>oz</i>	<i>(g)</i>
4	(100)	1.7	(48)
6	(150)	3.8	(108)
8	(200)	6.7	(190)
10	(250)	10.5	(298)
12	(300)	15.1	(428)
14 and larger	(350 and larger)	$D^2 \times 15.1$	$D^2 \times 428$

Where D is the inside pipe diameter, in feet $D = d/12$

Sec. 4.3 Tablet/Granule Method of Chlorination

4.3.1 *Tablet method.* The tablet method consists of placing calcium hypochlorite granules or tablets in the water main during installation and then filling the main with potable water to create a chlorine solution. This method may be used only if the pipes and appurtenances are kept clean and dry during construction.

WARNING: This procedure must not be used on solvent-welded plastic or on screwed-joint steel pipe because of the danger of fire or explosion from the reaction of the joint compounds with the calcium hypochlorite.

4.3.2 *Placement of calcium hypochlorite granules during construction.* Calcium hypochlorite granules shall be placed at the upstream end of the first section of pipe, at the upstream end of each branch main, and at 500-ft (150-m) intervals. The quantity of granules at each location shall be as shown in Table 1.

4.3.3 *Placement of calcium hypochlorite tablets during construction.* Calcium hypochlorite tablets (5-grams) shall be placed in the upstream end of each section of pipe to be disinfected, including branch lines. Also, at least one tablet shall be placed in each hydrant branch and in other appurtenances. The number of 5-g tablets required for each pipe section shall be $0.0012 d^2 L$ rounded to the next higher integer, where d is the inside pipe diameter, in inches, and L is the length of the pipe section, in feet. Table 2 shows the number of tablets required for commonly used sizes of pipe. Calcium hypochlorite tablets shall be attached by an adhesive meeting the requirements of NSF/ANSI 61. There shall be adhesive only on the broadside of the tablet attached to the surface of the pipe. Attach tablets inside and at the top of the main. If the tablets are attached before the pipe section is placed in

Table 2 Number of 5-g calcium hypochlorite tablets required for dose of 25 mg/L*

Pipe Diameter		Length of Pipe Section, <i>ft (m)</i>				
		13 (4.0) or less	18 (5.5)	20 (6.1)	30 (9.1)	40 (12.2)
<i>in.</i>	<i>(mm)</i>	Number of 5-g Calcium Hypochlorite Tablets				
4	(100)	1	1	1	1	1
6	(150)	1	1	1	2	2
8	(200)	1	2	2	3	4
10	(250)	2	3	3	4	5
12	(300)	3	4	4	6	7
16	(400)	4	6	7	10	13

*Based on 3.25-g available chlorine per tablet

the trench, their positions shall be marked on the pipe exterior to indicate that the pipe has been installed with the tablets at the top.

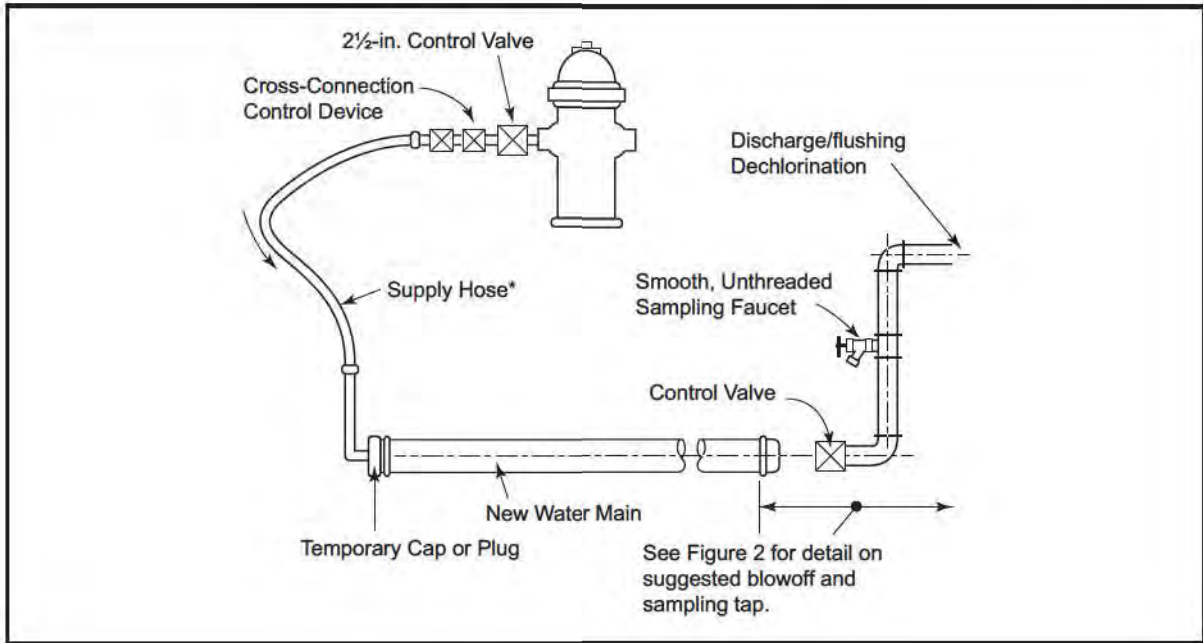
4.3.4 Filling and contact time. When installation has been completed, the main shall be filled with water such that the full pipe velocity is no greater than 1 ft/sec (0.3 m/sec). Fill rate must be carefully controlled to ensure tablets do not come loose from pipe. Precautions shall be taken to ensure that air pockets are eliminated. As an optional procedure, if required by the purchaser, water used to fill the new main shall be supplied through a temporary connection that shall include an appropriate cross-connection control device, consistent with the degree of hazard, for backflow protection of the active distribution system (see Figure 1).

The chlorinated water shall remain in the pipe for at least 24 hr. If the water temperature is less than 41°F (5°C), the water shall remain in the pipe for at least 48 hr. A detectable free chlorine residual (≥ 0.2 mg/L) shall be found at each sampling point after the 24- or 48-hr period.

Sec. 4.4 Continuous-Feed Method of Chlorination

4.4.1 Continuous-feed method. The continuous-feed method consists of completely filling the main with potable water, removing air pockets, then flushing the completed main to remove particulates, and refilling the main with potable water that has been chlorinated to 25 mg/L. After a 24-hr holding period in the main there shall be a free chlorine residual of not less than 10 mg/L.

4.4.2 Preliminary flushing. Before the main is chlorinated, it shall be filled with potable water to eliminate air pockets and flushed to remove particulates. The flushing velocity in the main shall not be less than 3.0 ft/sec (0.91 m/sec) unless



NOTE: Figure 1 applies to pipes with diameters 4 in. (100 mm) through 12 in. (300 mm). Larger sizes must be handled on a case-by-case basis.

*Clean potable-water hose only. Size and number of taps per Table 3. This hose must be removed during the hydrostatic pressure test.

Figure 1 Suggested temporary flushing/testing connection

Table 3 Required flow and openings (either taps or hydrants) to flush pipelines at 3.0 ft/sec (0.91 m/sec) (40 psi [276 kPa] residual pressure in water main)*

Pipe Diameter		Flow Required to Produce 3.0 ft/sec (approx.) Velocity in Main		Size of Tap Used, in. (mm)			Number of Hydrant Outlets	
				1 (25)	1½ (38)	2 (51)		
in.	(mm)	gpm	(L/sec)	Number of Taps Required on Pipe†			2½-in. (64-mm)	4½-in. (114 mm)
4	(100)	120	(7.4)	1	—	—	1	1
6	(150)	260	(16.7)	—	1	—	1	1
8	(200)	470	(29.7)	—	2	—	1	1
10	(250)	730	(46.3)	—	3	2	1	1
12	(300)	1,060	(66.7)	—	—	3	2	1
16	(400)	1,880	(118.6)	—	—	5	2	1

*With a 40-psi (276-kPa) pressure in the main with the hydrant flowing to atmosphere, a 2½-in. (64-mm) hydrant outlet will discharge approximately 1,000 gpm (63.1 L/sec); and a 4½-in. (114-mm) hydrant outlet will discharge approximately 2,500 gpm (160 L/sec).

†Number of taps on pipe based on 3.0-ft/sec discharge through 5 ft (1.5 m) of galvanized iron (GI) pipe with one 90° elbow.

the purchaser determines that conditions do not permit the required flow to be discharged to waste. Table 3 shows the rates of flow required to produce a velocity of 3.0 ft/sec (0.91 m/sec) in commonly used sizes of pipe. (NOTE: flushing is no substitute for preventive measures during construction. Certain contaminants, such as caked deposits, resist flushing at any feasible velocity, and pigging of the main, or other suitable method acceptable to the purchaser, may be required.) Where such flow rates are not possible, flushing at the maximum expected flow rate for the line for 2–3 volumes may be acceptable. For larger mains, pigging (or other suitable method acceptable to the purchaser) is an option in place of high velocity flushing.

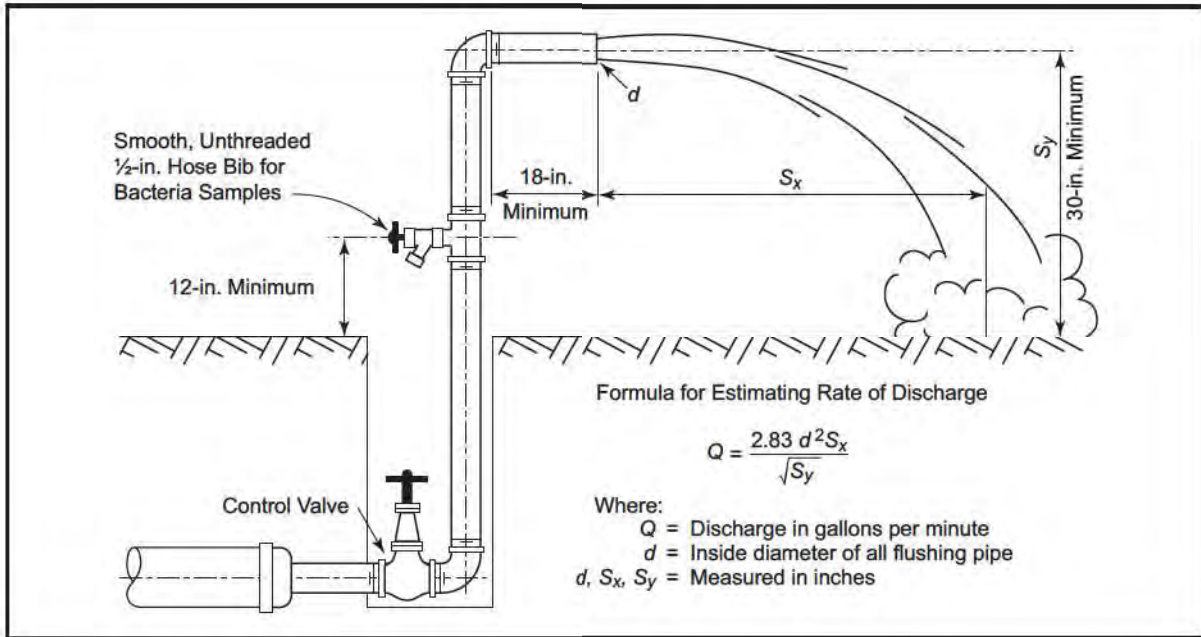
For 24-in. (600-mm) or larger diameter mains, an acceptable alternative to flushing is to broom-sweep the main, carefully removing sweepings prior to filling and chlorinating the main. **WARNING:** OSHA requirements for confined space need to be addressed before entering a pipeline.

4.4.3 Procedure for chlorinating the main.

1. Potable water may be supplied from a temporary backflow-protected connection to the existing distribution system or other supply source approved by the purchaser. The cross-connection control device shall be consistent with the degree of hazard for backflow protection of the active distribution system (see Figure 1). The flow shall be at a constant, measured rate into the newly installed water main. In the absence of a meter, the rate may be approximated using a Pitot gauge in the discharge, measuring the time to fill a container of known volume, or measuring the trajectory of the discharge and using the formula shown in Figure 2. The main should undergo hydrostatic testing prior to disinfection.

2. At a point not more than 10 ft (3 m) downstream from the beginning of the new main, water entering the new main shall receive a dose of chlorine fed at a constant rate such that the water will have not less than 25 mg/L free chlorine. To ensure that an appropriate concentration is achieved, the free chlorine concentration shall be measured at regular time intervals in accordance with the procedures described in *Standard Methods for the Examination of Water and Wastewater* or AWWA Manual M12, or using appropriate chlorine test kit (see appendix A).

Table 4 gives the amount of chlorine required for each 100 ft (30.5 m) of pipe for various pipe diameters. Solutions with a minimum 1 percent chlorine concentration may be prepared with sodium hypochlorite or calcium hypochlorite. The latter solution requires 1 lb (454 g) of calcium hypochlorite in 8 gal (30.3 L) of water.



NOTE: This figure applies to pipes up to and including 8-in. (200-mm) diameter.

Figure 2 Suggested combination blowoff and sampling tap

Table 4 Chlorine required to produce an initial 25-mg/L concentration in 100 ft (30.5 m) of pipe by diameter

Pipe Diameter		100% Chlorine		1% Chlorine Solution	
<i>in.</i>	<i>(mm)</i>	<i>lb</i>	<i>(g)</i>	<i>gal</i>	<i>(L)</i>
4	(100)	0.013	(5.9)	0.16	(0.6)
6	(150)	0.030	(13.6)	0.36	(1.4)
8	(200)	0.054	(24.5)	0.65	(2.5)
10	(250)	0.085	(38.6)	1.02	(3.9)
12	(300)	0.120	(54.4)	1.44	(5.4)
16	(400)	0.217	(98.4)	2.60	(9.8)

3. Chlorine application shall not cease until the entire main is filled with chlorinated water. The chlorinated water shall be retained in the main for at least 24 hr, during which time valves and hydrants in the treated section shall be operated to ensure disinfection of the appurtenances. At the end of this 24-hr period, the treated water in all portions of the main shall have a residual of not less than 10 mg/L of free chlorine.

4. Direct-feed chlorinators, which operate solely from gas pressure in a chlorine cylinder, shall not be used for the application of liquid chlorine (gas). (The

danger of using direct-feed chlorinators is that water pressure in the main can exceed gas pressure in the chlorine cylinder. This allows backflow of water into the cylinder, resulting in severe cylinder corrosion and the escape of chlorine gas.)

The preferred equipment for applying liquid chlorine (gas) is a solution-feed, vacuum-operated chlorinator and a booster pump. The vacuum-operated chlorinator mixes the chlorine gas in solution water; the booster pump then injects the chlorine solution into the main to be disinfected. Hypochlorite solutions may be applied to the water main with a chemical-feed pump designed for feeding chlorine solutions. Feed lines shall be made of material capable of withstanding the corrosion caused by the concentrated chlorine solutions and the maximum pressures that may be created by the pumps. All connections shall be checked for tightness before the solution is applied to the main.

Sec. 4.5 Slug Method of Chlorination

4.5.1 *Slug method.* The slug method consists of completely filling the main to eliminate air pockets; flushing the main to remove particulates; then slowly flowing through the main a slug of water dosed with chlorine to a concentration of 100 mg/L. The slow rate of flow ensures that all parts of the main and its appurtenances will be exposed to the highly chlorinated water for a period of not less than 3 hr.

4.5.2 *Preliminary flushing.* Same as Sec. 4.4.2.

4.5.3 *Procedure for chlorinating the main.*

1. Potable water may be supplied from a temporary backflow-protected connection to the existing distribution system or other supply source approved by the purchaser. The cross-connection control device shall be consistent with the degree of hazard for backflow protection of the active distribution system (see Figure 1). The flow shall be at a constant, measured rate into the newly installed water main. In the absence of a meter, the rate may be approximated using a Pitot gauge in the discharge, measuring the time to fill a container of known volume, or measuring the trajectory of the discharge and using the formula shown in Figure 2. The main should undergo hydrostatic testing prior to disinfection.

2. At a point not more than 10 ft (3 m) downstream from the beginning of the new main, water entering the new main shall receive a dose of chlorine fed at a constant rate such that the water will have not less than 100 mg/L free chlorine. To ensure that this concentration is achieved, the free chlorine concentration shall be measured at regular time intervals sufficient to guide the completion of the successful loading of the target chlorine concentration. The chlorine shall be applied

continuously and for a sufficient period to develop a solid column, or slug, of chlorinated water that will, as it moves through the main, expose all interior surfaces to a concentration of approximately 100 mg/L for at least 3 hr.

3. The free chlorine residual shall be measured in the slug as it moves through the main. If at any time it drops below 50 mg/L, the flow shall be stopped; chlorination equipment shall be relocated at the head of the slug; and, as flow resumes, chlorine shall be applied to restore the free chlorine in the slug to not less than 100 mg/L.

4. As chlorinated water flows past fittings and valves, related valves and hydrants shall be operated so as to disinfect appurtenances and pipe branches.

Sec. 4.6 Spray Disinfection for Large Transmission Lines

For very large transmission mains (where personnel or equipment may safely enter the pipe), spray disinfection may be an appropriate and efficient means of achieving disinfection. For this method, refer to ANSI/AWWA C652, Sec. 4.3.2 (Disinfection of Water Storage Facilities; Chlorination Method 2). In general, once pipe is cleaned, spray a 200-mg/L free chlorine solution on all surfaces. After 30 min, fill line and sample as described in Sec. 5.1.

Sec. 4.7 Basic Disinfection Procedure for New Mains

The basic disinfection procedure consists of

1. Inspecting materials to be used to ensure their integrity.
2. Preventing contaminating materials from entering the water main during storage, construction, or repair and noting potential contamination at the construction site.
3. Removing, by flushing or other means, those materials that may have entered the water main or appurtenances.
4. Preventing contamination of existing mains from cross-connection during flushing, pressure testing, and disinfection.
5. Pressure testing the water main to ensure the main meets the purchaser's allowable leakage rate. Hydrostatic pressure tests should be conducted with potable water.
6. Chlorinating and adequately documenting the process used for disinfection.
7. Flushing the chlorinated water from the main. Refer to ANSI/AWWA C655 Field Dechlorination for dechlorination procedures, if dechlorination is required.

8. Determining the bacteriological quality of water samples collected from the pipe by laboratory test after disinfection.

9. Final connecting of the newly disinfected water main to the active distribution system without sacrificing sanitary practices and conditions.

Sec. 4.8 Preventive and Corrective Measures During New Construction

4.8.1 *General.* Heavy particulates generally contain bacteria and prevent even very high chlorine concentrations from contacting and killing these organisms. Therefore, the procedures of this section must be observed to ensure that a water main and its appurtenances have been thoroughly cleaned for the final disinfection by chlorination. Also, any connection of a new water main to the active distribution system before the receipt of satisfactory bacteriological samples may constitute a cross-connection. Therefore, the new main must be isolated until bacteriological tests described in Section 5 of this standard are satisfactorily completed.

4.8.2 *Keeping pipe clean and dry.* The interiors of pipes, fittings, and valves shall be protected from contamination.

4.8.2.1 *Openings.* Openings in the pipeline shall be closed with watertight plugs when pipe laying is stopped at the close of the day's work or for other reasons, such as rest breaks or meal periods. Rodent-proof plugs may be used when watertight plugs are not practicable and when thorough cleaning will be performed by flushing or other means.

4.8.2.2 *Stringing pipe.* Pipe delivered for construction shall be strung to minimize the entrance of foreign material.

4.8.2.3 *Delays.* Delay in placement of delivered pipe invites contamination. The more closely the rate of delivery is correlated to the rate of pipe laying, the lower the risk of contamination.

4.8.3 *Joints.* Joints of pipe in the trench shall be completed before work is stopped. If water accumulates in the trench, the plugs shall remain in place until the trench is free of standing water and mud that may enter the pipe.

4.8.4 *Packing materials.* Yarning or packing material shall consist of molded or tubular rubber rings, rope of treated paper, or other approved materials. Materials such as jute or hemp shall not be used. Packing material shall be handled in a manner that avoids contamination.

4.8.5 *Sealing materials.* No contaminated material or any material capable of supporting growth of microorganisms shall be used for sealing joints. Sealing material or gaskets shall be handled in a manner that avoids contamination. The lubricant used in the installation of sealing gaskets shall be suitable for use in

potable water meeting the requirements of NSF/ANSI 61 and shall not contribute odors. It shall be delivered to the job in closed containers and shall be kept clean and applied with dedicated clean applicators.

4.8.6 *Cleaning and swabbing.* If dirt enters the pipe, it shall be removed and the interior pipe surface swabbed with a minimum 1 percent free chlorine disinfecting solution. If, in the opinion of the purchaser, the dirt remaining in the pipe will not be removed using the flushing operation, the interior of the pipe shall be cleaned using mechanical means, such as a hydraulically propelled foam pig (or other suitable device acceptable to the purchaser) in conjunction with the application of a minimum 1 percent free chlorine disinfecting solution. The cleaning method used shall not force mud or debris into the interior pipe-joint spaces and shall be acceptable to the purchaser.

4.8.7 *Wet-trench construction.* If it is not possible to keep the pipe and fittings dry during installation, a scour flush at 3.0 ft/sec (0.91 m/sec) or greater for a minimum of three pipe volumes (see Table 3) followed by slug or continuous-feed chlorination and bacteria testing before release is required. For larger mains, pigging or other suitable method acceptable to the purchaser is an option in place of high-velocity flushing.

4.8.8 *Flooding by storm or accident during construction.* If the main is flooded during construction, it shall be cleared of the floodwater by draining and flushing with potable water until the main is clean. The section exposed to the floodwater shall then be filled with a chlorinated potable water that, at the end of a 24-hr holding period, will have a free chlorine residual of not less than 25 mg/L. The chlorinated water may then be drained or flushed from the main. If chemical contamination occurs, such as a hydraulic oil leak or petroleum product spill, the pipe sections exposed to the contamination should be replaced and not reused for potable water applications. After construction is completed, the main shall be disinfected using the continuous-feed, slug, or spray methods.

4.8.9 *Backflow protection (optional).** As an optional procedure (if required by the purchaser), the new water main shall be kept isolated from the active distribution system using a physical separation (see Figure 1) until satisfactory bacteriological testing has been completed and the disinfection water flushed out.

Water required to fill the new main for hydrostatic pressure testing, disinfection, and flushing shall be supplied through a temporary connection between the

* Optional Sec. 4.8.9 is not included as part of the standard unless required by the purchaser.

distribution system and the new main or other supply source approved by the purchaser. The temporary connection shall include an appropriate cross-connection control device consistent with the degree of hazard (a double check valve assembly or a reduced pressure zone assembly) and shall be disconnected (physically separated) from the new main during the hydrostatic pressure test. It will be necessary to reestablish the temporary connection after completion of the hydrostatic pressure test to flush out the disinfectant water prior to final connection of the new main to the distribution system. NOTE: Exposure to high levels of chlorine or high pH can cause severe irritation to customers. Also, the chlorinated water can be high in disinfection by-products.

Sec. 4.9 Final Flushing for New Mains

4.9.1 *Clearing the main of heavily chlorinated water.* After the applicable retention period, heavily chlorinated water should not remain in prolonged contact with pipe. In order to prevent damage to the pipe lining or to prevent corrosion damage to the pipe itself, the heavily chlorinated water shall be flushed from the main fittings, valves, and branches until chlorine measurements show that the concentration in the water leaving the main is no higher than that generally prevailing in the distribution system or that is acceptable for domestic use.

4.9.2 *Disposing of heavily chlorinated water.* The environment to which the chlorinated water is to be discharged shall be inspected. If there is any possibility that the chlorinated discharge will cause damage to the environment, a neutralizing chemical shall be applied to the water to be wasted to thoroughly neutralize the residual chlorine (see ANSI/AWWA C655 for neutralizing chemicals). Where necessary, federal, state, local, or provincial regulatory agencies should be contacted to determine special provisions for the disposal of heavily chlorinated water.

Sec. 4.10 Final Connections to Existing Mains

Water mains and appurtenances must be completely installed, flushed, disinfected, and satisfactory bacteriological sample results received prior to permanent connections being made to the active distribution system. Sanitary construction practices must be followed during installation of the final connection so that there is no contamination of the new or existing water main with foreign material or groundwater.

4.10.1 *Connections equal to or less than one pipe length (generally ≤ 20 ft [6 m]).* The new pipe, fittings, and valve(s) required for the connection may be spray disinfected or swabbed with a minimum 1 percent solution of chlorine just

before being installed, if the total length of the connection from the end of a new main to the existing main is equal to or less than 20 ft (6 m).

4.10.2 *Connections greater than one pipe length (generally >20 ft [6 m]).* The pipe required for the connection must be set up aboveground, disinfected, and bacteriological samples taken, as described in Section 5, if the total length of the connection from the end of a new main to the existing main is greater than 20 ft (6 m). After satisfactory bacteriological sample results have been received for the pre-disinfected pipe, the pipe can be used in connecting the new main to the active distribution system. Between the time the satisfactory bacteriological sample results are received and the time that the connection piping is installed, the ends of the piping must be sealed with plastic wraps, watertight plugs, or caps.

Sec. 4.11 Disinfection Procedures When Cutting Into or Repairing Existing Pipe

4.11.1 *General.* The planned, unplanned, or emergency repair of a water main or appurtenance (e.g., valve) is time sensitive—an important goal is to minimize the disruption of water service to customers. Nonetheless, the repair work needs to be accomplished using sanitary and safe procedures by well-trained crews with proper supervision and guidance. Refer to preventive and corrective measures described previously in Sec. 4.8.2, 4.8.3, 4.8.4, and 4.8.5. Follow all personal protection precautions when working with chlorine solutions.

4.11.2 *Basic disinfection.* Work should follow basic disinfection and contamination prevention procedures:

1. Preventing contaminants from entering the existing pipe during the repair such as by maintaining positive pressure in the leaking pipe until the repair site on the pipe is fully exposed, by maintaining a dewatered trench, and by keeping all pipe materials being used in the repair in a clean and sanitary condition.

2. Inspecting and cleaning, followed by disinfection of spraying or swabbing with a minimum 1 percent chlorine solution:

- Exposed portions of existing pipe interior surfaces
- Pipe materials used in the repair
- Handheld materials and tools used to make the repair

3. As appropriate, advising affected customers to adequately flush their service lines upon return to service.

4.11.3 *Selection of disinfection procedure.* The disinfection procedure selected should be determined by the conditions and severity of the main break. Many leaks or breaks can be repaired under controlled conditions without depressurizing the water main, such as when applying a clamp to a small crack or hole,

thus preventing contaminants from entering the water system. In most other situations, the water main can be maintained pressurized until the break site is secured and the pipe is fully exposed. Some circumstances (e.g., severe erosion of the local environment or icing of the roadway) that impact public safety may require that water pressure be substantially reduced prior to exposing the pipe in the area of the leak. In some cases, situations become catastrophic where there is a pipe blow-out and a loss of water pressure prior to shutdown, requiring disinfection procedures equivalent to those of a new main installation. The procedures described in Sec. 4.11.3.1 through 4.11.3.3 describe the contamination risks and the associated disinfection and sampling requirements for different scenarios of pipeline repair. Specific situations not captured below need to be evaluated and the appropriate disinfection and sampling methods followed.

Note that the procedures explained in Sec. 4.11.3.1, 4.11.3.2, and 4.11.3.3 for distribution mains may need to be modified for large transmission mains. Large mains may need additional work (such as having a valve replaced or requiring a special order on a connection), may be out of service for more than a day, or may not be able to accommodate a scour flush. These modifications need to be made on a case-by-case basis but should still take into account the procedures outlined in ANSI/AWWA C651.

4.11.3.1 Controlled pipe repair without depressurization. In this situation, activities are well controlled and a full shutdown is not needed, thus maintaining positive pressure to the area of shutdown and around the break site at all times. The repair site is exposed and the trench is adequately dewatered so that the repair site can be cleaned and disinfected by spraying or swabbing with a minimum 1 percent chlorine solution. The water main is then returned to service with flushing to obtain three volumes of water turnover, making sure that the flushed water is visually clear. No bacteriological testing is necessary. It is advisable to check for a typical system chlorine residual, and if not found, to continue flushing until residuals are restored to levels maintained in the distribution system by the water utility—if the system operates with a disinfectant residual.

4.11.3.2 Controlled pipe repair with depressurization after shutdown. In this situation, after the repair site has been exposed and secured from trench soil/water contamination, the water main is depressurized by a shutdown to complete the repair. The repair site should be cleaned and disinfected by spraying or swabbing with a minimum 1 percent chlorine solution. The water main is then returned to service with flushing to scour the pipe and obtain three volumes of water turn-

over, making sure that the flushed water is visually clear. It is advisable to check for a typical system chlorine residual, and if not found, to continue flushing until residuals are restored to levels maintained in the distribution system by the water utility—if the system operates with a disinfectant residual.

When the existing pipe has to be opened and the interior surfaces of the water system exposed to the environment, additional procedures need to be followed. The existing pipe should be inspected and cleaned with the help of flushing water into the trench, where possible, until the flush water runs visually clear. The repair site should be accessible and the trench adequately dewatered so that the repair site can be cleaned and disinfected by spraying or swabbing with a minimum 1 percent chlorine solution. Additionally, any accessible upstream and downstream interior of the existing pipe should be disinfected by swabbing or spraying with a minimum 1 percent chlorine solution. If the repair requires a full pipe section replacement, the new pipe should be inspected, cleaned, and disinfected from both ends by swabbing with a minimum 1 percent chlorine solution. The water main may then be returned to service after flushing to scour the pipe and obtain three volumes of water turnover. The flushed water should run visually clear, have a measurable chlorine residual if the system operates with a residual, and be checked with bacteriological testing. The pipeline may be returned to service prior to obtaining bacteriological results.

4.11.3.3 Uncontrolled pipe break with a likelihood of water contamination or loss of sanitary conditions during repair. In situations in which the existing main to be repaired could not be protected and kept free of contamination and there are obvious signs of contamination (e.g., muddy trench water flowing into the broken pipe and a leaking sewer pipe in the trench, or catastrophic pipe failure where pipe is open and there is a likelihood that contamination was drawn into the active system) or when a controlled repair situation turns into a situation in which the internal pipe and water have become contaminated, the procedures outlined in Sec. 4.3, 4.4, 4.5, or 4.6 should be followed where practical. These methods specify chlorine doses of 25–300 mg/L; however, such levels may present greater harm if the line or services cannot be reliably isolated or shut down and exposure of customers to high concentrations of chlorine cannot be controlled. Free chlorine residuals up to 4 mg/L (based on annual averages) are allowed by federal drinking water regulations; therefore this level is suggested as a minimum to be maintained for at least 16 hr in conjunction with flushing, coliform sampling, and associated customer education. Such situations require careful review and need to balance the public health risks of the pipeline failure as well as the repair process.

Where practical and appropriate considering the risks of public exposure to high concentrations of chlorine, in addition to the procedures previously described in this standard, the section of pipe in which the break is located shall be isolated, all service connections shut off, and the section flushed and disinfected. If the slug chlorination method is employed, the dose may be increased to as much as 300 mg/L and the contact time reduced to as little as 15 min. After chlorination and repair, perform scour flushing at 3.0 ft/sec (0.91 m/sec) or greater for a minimum of three pipe volumes and continue until discolored water is not observed and the chlorine residual is restored to the levels maintained in the distribution system by the water utility.

For larger-diameter pipe (12 in. and greater), if a water velocity of 3.0 ft/sec (0.91 m/sec) cannot be achieved, it is desirable to flush at the maximum flow for the main until three pipe volumes have been displaced before returning the main to service. The flushed water should run visually clear, and have typical system chlorine residual (if the system operates with a disinfectant residual).

For very-large-diameter pipe (where personnel may safely enter the pipe), in lieu of flushing following disinfection, the interior of the pipe at the repair site may be cleaned by sweeping or high pressure wash using potable water before disinfection. Standing water and debris from the cleaning must be removed from the pipe prior to disinfection. The affected pipe shall be disinfected by swabbing or spraying with a minimum 1 percent chlorine solution.

After following the appropriate methods above, prior to returning the pipe to service, the efficacy of the disinfection procedure shall be verified by testing for the absence of coliform bacteria. If allowed by local regulations, the pipeline may be returned to limited service prior to obtaining bacteriological results with proper notification of the affected customers.

4.11.4 Temporary service lines. Temporary water service lines to customers during main repair activities shall be disinfected prior to use. Materials shall meet the NSF/ANSI 61 certification for potable water use. Disinfection should be accomplished by the procedures in Sec. 4.4 or 4.5 followed by scour flushing at 3.0 ft/sec (0.91 m/sec) or greater for a minimum of three pipe volumes (see Table 3), or until the water runs visually clear and preferably a measurable chlorine residual is restored.

SECTION 5: VERIFICATION

Sec. 5.1 Bacteriological Tests

5.1.1 *Standard conditions for new mains.* It should be recognized that the primary means of ensuring the sanitary integrity of a main are the sanitary handling of materials, the practices during construction, and continual inspection of work. After disinfection and final flushing such that typical system chlorine residuals are present, if the system operates with a residual, samples shall be collected as follows:

5.1.1.1 For new mains, the purchaser has two options for the bacteriological testing for total coliform analysis.

Option A: Before approving a main for release, take an initial set of samples and then resample again after a minimum of 16 hr using the sampling site procedures outlined. Both sets of samples must pass for the main to be approved for release.

Option B: Before approving a main for release, let it sit for a minimum of 16 hr without any water use. Then collect, using the sampling site procedures outlined and without flushing the main, two sets of samples a minimum of 15 min apart while the sampling taps are left running. Both sets of samples must pass for the main to be approved for release.

A set of samples includes all samples collected along the length of the pipeline, as described in Sec. 5.1.1.2.

5.1.1.2 For new mains, sets of samples shall be collected every 1,200 ft (370 m) of the new water main, plus one set from the end of the line and at least one from each branch greater than one pipe length.

5.1.1.3 If trench water has entered the new main during construction or if, in the opinion of the purchaser, excessive quantities of dirt or debris have entered the new main, bacteriological samples shall be taken at intervals of approximately 200 ft (61 m), and the sampling location shall be identified (see Sec. 5.1.3 for sampling location details). Samples shall be taken of water that has stood in the new main for at least 16 hr after final flushing has been completed.

5.1.1.4 A standard heterotrophic plate count (HPC) test may be required at the option of the purchaser because new mains do not typically contain coliform bacteria but often contain HPC bacteria. If sample results show HPC greater than 500 CFU/mL, flushing should resume and another set of HPC and coliform samples collected until no coliform are present and the HPC is less than 500 CFU/mL.

5.1.2 *Standard conditions for repaired mains.* It should be recognized that the primary means of ensuring the sanitary integrity of a main are the sanitary handling of materials, the practices during repair work, and continual inspection of work. After disinfection and final flushing, samples shall be collected as follows:

5.1.2.1 For repaired mains that were depressurized and/or wholly or partially dewatered, one set of samples may be required, and depending upon the sanitary conditions, the line may be reactivated prior to the completion of bacteriological testing. Samples shall be collected downstream of the repair site and at intervals of approximately 200 ft (61 m) within the length of pipe that was shut down. If direction of flow is not known, samples shall be collected on either side of the repair site. Refer to Sec. 4.11.

5.1.2.2 For repaired mains that were maintained under pressurized conditions at all times, disinfection and/or testing may not be required. Refer to Sec. 4.11.3.

5.1.2.3 However, under either main repair scenario, it is advisable where possible to provide a scour flush to clear before the release of the repaired section.

5.1.3 *Sampling procedure.* Samples for bacteriological analysis shall be collected in sterile bottles treated with sodium thiosulfate, in accordance with Section 9060—Samples of *Standard Methods for the Examination of Water and Wastewater*. Hoses and fire hydrants are not recommended for the collection of samples that will be used to make decisions on the bacteriological quality of drinking water. However, if no sampling port is available, cleaned fire hydrants that have been cleared of standing water and/or other sanitized sampling apparatus (i.e., sanitized tubing, hose, gooseneck, spigot) may be used with the understanding that they do not represent optimum access to the water main for bacteriological sampling. A suggested combination blowoff and sampling tap used for mains up to and including 8-in. (200-mm) diameter is shown in Figure 2. There should be no water in the trench up to the connection for sampling. The sampling pipe must be dedicated and clean and disinfected and flushed prior to sampling. A corporation cock may be installed in the main with a copper-tube gooseneck assembly. After samples have been collected, the gooseneck assembly may be removed and retained for future use and the corporation cock should be capped or taped for future reuse. If corporation cocks are placed at the 12 o'clock position, they may be struck more easily during future excavations.

5.1.4 *Sample results.* Samples shall be tested for bacteriological quality in accordance with *Standard Methods for the Examination of Water and Wastewater* and shall show the absence of coliform bacteria.

In addition, it is recommended that samples be tested for acceptable aesthetic quality (e.g., chlorine residual, pH, alkalinity, specific conductance, turbidity). Levels should be as expected or typical for the water system. For new mains, a standard heterotrophic plate count test may be required at the option of the purchaser because new mains do not typically contain coliform bacteria but often contain HPC bacteria. If sample results show HPC greater than 500 CFU/mL, flushing should resume and another set of HPC and coliform samples collected until no coliform are present and the HPC is less than 500 CFU/mL.

5.1.5 Record of compliance. The record of compliance shall be the bacteriological test results certifying that the water sampled is free of coliform bacteria contamination.

5.1.6 Redisinfection. If the initial disinfection fails to produce satisfactory bacteriological results, or if other results indicate unacceptable water quality, the main may be reflushed and shall be resampled. If check samples fail to produce acceptable results, the main shall be rechlorinated by the continuous-feed or slug method until satisfactory results are obtained—that being acceptable samples taken as described in Sec. 5.1.1.1.

NOTE: In the case of new mains, high velocities in the adjacent existing system, resulting from flushing the new main, may disturb sediment that has accumulated in the existing mains. When check samples are taken, it is advisable to sample water entering the new main to determine if excessive turbidity is present that could be interfering with results.

Sec. 5.2 Optional Sampling and Testing

If a pipeline is not promptly returned to service, the situation should be evaluated to determine if the water quality may have been impacted and if additional testing is warranted. Test results should confirm that the water quality is appropriate for distribution. Although this assessment is unique for each system, parameters considered for testing include disinfectant residual, total coliform bacteria, HPC, turbidity, pH, alkalinity, total chlorine, odor, and specific conductance.

SECTION 6: DELIVERY

This standard has no applicable information for this section.

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APPENDIX A

Chlorine Residual Testing

This appendix is for information only and is not a part of ANSI/AWWA C651.

SECTION A.1: DPD DROP DILUTION METHOD (FOR FIELD TEST)

The N, N-diethyl-p-phenylenediamine (DPD) drop dilution method of approximating total residual chlorine is suitable for concentrations above 10 mg/L, such as those applied in the disinfection of water mains or tanks.

Sec. A.1.1 Apparatus

1. A graduated cylinder for measuring distilled water.
2. An automatic or safety pipette.
3. Two dropping pipettes that deliver a 1-mL sample in 20 drops. One pipette is for dispensing the water sample, and the other is for dispensing the DPD and buffer solutions. The pipettes should not be interchanged.
4. A comparator kit containing a suitable range of standards.

Sec. A.1.2 Reagents

1. DPD indicator solution. Prepare as prescribed in *Standard Methods for the Examination of Water and Wastewater*.

Sec. A.1.3 Procedure

1. Add 10 drops of DPD solution and 10 drops of buffer solution (or 20 drops of combined DPD-buffer solution) to a comparator cell.
2. Fill the comparator cell to the 10-mL mark with distilled water.
3. With a dropping pipette, add the water sample one drop at a time; mix until a red color is formed that matches one of the color standards.
4. Record the total number of drops used and the final chlorine reading obtained (that is, the chlorine reading of the matched standard).
5. Calculate the milligrams per liter of free residual chlorine as follows:

$$\text{mg/L chlorine} = \frac{\text{reading} \times 200}{\text{drops of sample}}$$

SECTION A.2: HIGH-RANGE CHLORINE TEST KITS

Several manufacturers produce high-range chlorine test kits that are inexpensive, easy to use, and satisfactory for the precision required.

APPENDIX B

Chlorine Dosages

This appendix is for information only and is not a part of ANSI/AWWA C651.

Table B.1 Amounts of chemicals required to produce various chlorine concentrations in 100,000 gal (378.5 m³) of water*

Desired Chlorine Concentration in Water <i>mg/L</i>	Liquid Chlorine Required <i>lb (kg)</i>		Sodium Hypochlorite Required						Calcium Hypochlorite Required	
			5% Available Chlorine		10% Available Chlorine		15% Available Chlorine		65% Available Chlorine	
			<i>gal</i>	<i>(L)</i>	<i>gal</i>	<i>(L)</i>	<i>gal</i>	<i>(L)</i>	<i>lb</i>	<i>(kg)</i>
2	1.7	(0.77)	3.9	(14.7)	2.0	(7.6)	1.3	(4.9)	2.6	(1.18)
10	8.3	(3.76)	19.4	(73.4)	9.9	(37.5)	6.7	(25.4)	12.8	(5.81)
50	42.0	(19.05)	97.0	(367.2)	49.6	(187.8)	33.4	(126.4)	64.0	(29.03)

*Amounts of sodium hypochlorite are based on concentrations of available chlorine by volume. For either sodium hypochlorite or calcium hypochlorite, extended or improper storage of chemicals may have caused a loss of available chlorine.

Table B.2 Amounts of chemicals required to produce chlorine concentration of 200 mg/L in various volumes of water*

Volume of Water <i>gal L</i>		Liquid Chlorine Required <i>lb (g)</i>		Sodium Hypochlorite Required						Calcium Hypochlorite Required	
				5% Available Chlorine		10% Available Chlorine		15% Available Chlorine		65% Available Chlorine	
				<i>gal</i>	<i>(L)</i>	<i>gal</i>	<i>(L)</i>	<i>gal</i>	<i>(L)</i>	<i>lb</i>	<i>(g)</i>
10	(37.9)	0.02	(9.1)	0.04	(0.15)	0.02	(0.08)	0.02	(0.08)	0.03	(13.6)
50	(189.3)	0.10	(45.4)	0.20	(0.76)	0.10	(0.38)	0.07	(0.26)	0.15	(68.0)
100	(378.5)	0.20	(90.7)	0.40	(1.51)	0.20	(0.76)	0.15	(0.57)	0.30	(136.1)
200	(757.1)	0.40	(181.4)	0.80	(3.03)	0.40	(1.51)	0.30	(1.14)	0.60	(272.2)

*Amounts of sodium hypochlorite are based on concentrations of available chlorine by volume. For either sodium hypochlorite or calcium hypochlorite, extended or improper storage of chemicals may have caused a loss of available chlorine.



American Water Works Association

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Dedicated to the world's most important resource, AWWA sets the standard for water knowledge, management, and informed public policy. AWWA members provide solutions to improve public health, protect the environment, strengthen the economy, and enhance our quality of life.

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WATER SYSTEM CONNECTION DISINFECTION AND TESTING GUIDE



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Definitions

<i>District:</i>	South Tahoe Public Utility District
<i>Owner:</i>	The party (private or public) for which a Contractor is performing work on the District's water system
<i>Contractor:</i>	A Contractor licensed by the State of California to perform the type of work proposed on the District's water system on behalf of the Owner.
<i>Chlorine Residual:</i>	Concentration of chlorine species present in water after the oxidant demand has been satisfied.
<i>Sodium hypochlorite:</i>	Sodium hypochlorite contains approximately 5 percent to 15 percent available chlorine

I. Introduction

This Disinfection and Testing Guide has been developed to instruct Contractors in the minimum accepted methods by which new water connections to the existing public water system are tested and disinfected for acceptance. The methods that will be presented are from the latest edition of the American Water Works Association (A.W.W.A) Disinfection Procedures C651, and the District's Standard Specifications. The Contractor shall not deviate from any of the requirements of this Guide without written District consent. At no time shall a new portion of pipeline be connected to the District's existing Water System until the new pipeline has been properly disinfected and has passed all bacteriological tests.

II. Procedure

Prior to beginning work Owner or Contractor shall develop and provide to the District a written Disinfection Procedure incorporating the requirements below. Only liquid chlorine, Sodium Hypochlorite is allowed to be used for disinfection. Potable water may be supplied from a temporary backflow-protected connection to the existing distribution system or other supply source approved by the District. The backflow assembly shall be a District tested and Approved Reduced Pressure Principle backflow assembly (**see Figure 1**).

III. Initial Tie In Connection

Tie in to the existing District's Water System will be conducted by Hot Tap or Cut In method.

Cut-In Method

Cut In method may be performed by the Contractor, and must be closely coordinated with District Staff to notify affected Customers and to facilitate the shut-down of the District's Water System at the Tie in point. **At no time is the Contractor or any other non-District personnel allowed to operate existing valves on the District's Water System.** The installation work must be conducted in a safe and sanitary condition. The pipe trench shall be continuously dewatered to maintain the water level well below the open pipe ends. All new materials to be installed, tools, and all exposed surfaces of the existing pipe shall be kept clean and sanitary by spraying and swabbing with sodium hypochlorite.

Hot Tap Method

If a Hot Tap is selected, the work to tap the main will be performed by the District, with advance notice. The saddle and valve are to be provided and installed on the main by the Owner's Contractor. Scheduling with District for Hot Tap or Shut Down shall be in writing a minimum of 2 working days. Following the hot tap, disinfection and bacteriological tests will be conducted by trained District personnel from a nearby sampling location on the existing system.

IV. Leak Testing

Assembled piping and appurtenances from the point of tie in at the existing District Water System to the terminus point of the new pipeline (generally defined by a service valve or backflow protection device), shall be tested for leaks. The method of leak testing shall be determined based on the assembled length of the new piping and appurtenances (fittings and valves).

Assembled Length of 20 linear feet or less

Assembled piping of 20 linear feet (lf) or less shall be visually inspected for leaks by District personnel after it has been assembled, disinfected, installed, and charged. To facilitate inspection, the Contractor shall not backfill the trench until

after the new piping is charged to system pressure, and District personnel have completed the visual inspection. For safety, the Contractor is required to restrain and/or brace the exposed piping to District satisfaction before the line is charged by the District. **At no time is the Contractor or any other non-District personnel allowed to operate existing valves on the District's Water System.**

Assembled Length of greater than 20lf

Assembled piping of greater than 20lf shall be hydrostatically pressure-tested prior to being disinfected and connected to the District's Water System, for a minimum of 2 hours at the rated pressure for the assembled piping (typically 150 psi), as measured at the lowest point in the line. To test, accurately measure the makeup water necessary to maintain the pressure in the piping section under test during the pressure test period. Successful completion of the pressure test with maximum leakage allowance shall have been achieved when the observed leakage during the test period is equal or less than the allowable leakage and no damage to piping and appurtenances has occurred. Calculate the allowable leakage by the following formula.

$$L = \frac{(S * D * \sqrt{P})}{133,200}$$

Wherein the terms shall mean:

L = Allowable leakage in gallons per hour.

S = Length of the test section in feet.

D = Nominal diameter of the piping in inches.

P = Average observed test pressure in pounds per square inches, gauge, at the lowest point of the test section, corrected for elevation of the pressure gauge.

V. Disinfection

New tie-in fittings and valves shall not be connected to the District's Water System until they have been disinfected. New piping shall not be connected to the tie-in fittings and valves until it has been disinfected, flushed (if necessary) and tested. The method of disinfection shall be determined based on the assembled length of the new piping and appurtenances (fittings and valves), from the point of tie in at the existing District Water System to the terminus point of the new pipeline (generally defined by a service valve or backflow protection device).

Assembled Length of 20 linear feet or less

Pipeline installations of 20 linear feet (lf) or less shall be spray disinfected and swabbed with sodium hypochlorite immediately before being installed. Because the entire interior of the assembled piping is visible, it shall be inspected for particulate contamination and re-swabbed, if necessary, prior to installation; flushing is not required.

Assembled Length of greater than 20lf

Pipeline installations of greater than 20lf shall be protected from contaminating materials from entering the pipe and appurtenances during storage, construction, or repair and noting potential contamination at the construction site. Upon completion of installation and successful hydrostatic testing as required by District, remove particulate materials that may have entered the water main or appurtenances by flushing or other means, prior to proceeding with disinfection. The flushing velocity in the main shall not be less than 3.0 ft/sec. **Table 1** shows the rates of flow required to produce a velocity of 3.0ft/sec. in commonly used sizes of pipe. (NOTE: flushing is no substitute for preventive measures during construction. Certain contaminants, such as caked deposits, resist flushing at any feasible velocity, and

pigging of the main, or other suitable method acceptable to the District, may be required.) Where such flow rates are not possible, flushing at the maximum expected flow rate for the line for 2-3 volumes may be allowed with approval from the District.

To disinfect, at a point not more than 5 ft downstream from the beginning of the new main, water entering the new main shall receive a dose of chlorine fed at a constant rate such that the water will have not less than 25mg/L free chlorine. To ensure that an appropriate concentration is achieved, the free chlorine concentration shall be measured at regular time intervals in accordance with the procedures described. **Table 2** gives the amount of chlorine required for each 100 ft of pipe for various pipe diameters. Solutions with a minimum 1 percent chlorine concentration may be prepared with sodium hypochlorite. Chlorine application shall not cease until the entire main is filled with chlorinated water. The chlorinated water shall be retained in the main for at least 24 hr., during which time valves and hydrants in the treated section shall be operated to ensure disinfection of the appurtenances. At the end of this 24-hr period, the treated water in all portions of the main shall have a residual of not less than 10 mg/L of free chlorine as determined by District Lab personnel. After the applicable retention period, heavily chlorinated water should not remain in prolonged contact with pipe. In order to prevent damage to the pipe lining or to prevent corrosion damage to the pipe itself, the heavily chlorinated water shall be flushed from the main fittings, valves, and branches until chlorine measurements show that the concentration in the water leaving the main is no higher than that generally prevailing in the distribution system or that is acceptable for domestic use. Chlorinated water shall be disposed of appropriately, and shall not be discharged to the District's Sewer System without prior written consent. After disinfection, the chlorinated water in the new pipe shall be replaced with water at background chlorine level, prior to collecting samples for bacteriological testing.

VI. Bacteriological Testing

Bacteriological Testing will be performed on all assembled piping.

Assembled Length of 20 lf or less

Samples will be collected by District personnel from a nearby sampling port on the existing system after the new piping has been connected to the system.

Assembled Length of greater than 20lf

Prior to connection of the new piping to the existing system, District staff will collect samples for every 1,200ft of the new pipeline and appurtenances, plus one set from the end of the line and at least one from each branch greater than one pipe length, for a minimum of three test sites per 1200 feet of new assembled piping. The sample ports shall be installed by the Contractor (see **Figure 2**). The District has two options for the bacteriological testing for total coliform analysis.

Option A: Before approving a main for release, take an initial set of samples and then resample again after a minimum of 16 hr. using the sampling site procedures outlined. Both sets of samples must pass for the main to be approved by the District's lab for release.

Option B: Before approving a main for release, let it sit for a minimum of 16 hr. without any water use. Then collect, using the sampling site procedures outlined and without flushing the main, two sets of samples a minimum of 15 min apart while the sampling taps are left running. Both sets of samples must pass for the main to be approved for release. A standard Heterotrophic Plate Count (HPC) test may be required at the option of the District because new mains do not typically contain coliform bacteria but often contain HPC bacteria. If sample results show HPC greater than 500 CFU/mL,

flushing should resume and another set of HPC and coliform samples collected until no coliform are present and the HPC is less than 500 CFU/mL. If the initial disinfection fails to produce satisfactory bacteriological results, or if other results indicate unacceptable water quality, the main may be reflushed and shall be resampled. If check samples fail to produce acceptable results, the main shall be rechlorinated until satisfactory results are obtained.

VII. Final Connection

Assembled Length of greater than 20lf

Water mains and appurtenances must be completely assembled, flushed (when required), disinfected, and satisfactory bacteriological sample results received (when required) prior to permanent connections being made to the active distribution system. Sanitary construction practices must be followed during installation of the final connection so that there is no contamination of the new or existing water main with foreign material or groundwater.

Comments

If you have any questions about this Guide please call the South Tahoe public Utility District Engineering Department at 530.544.6474.

Figure 1
Suggested temporary flushing/testing connection

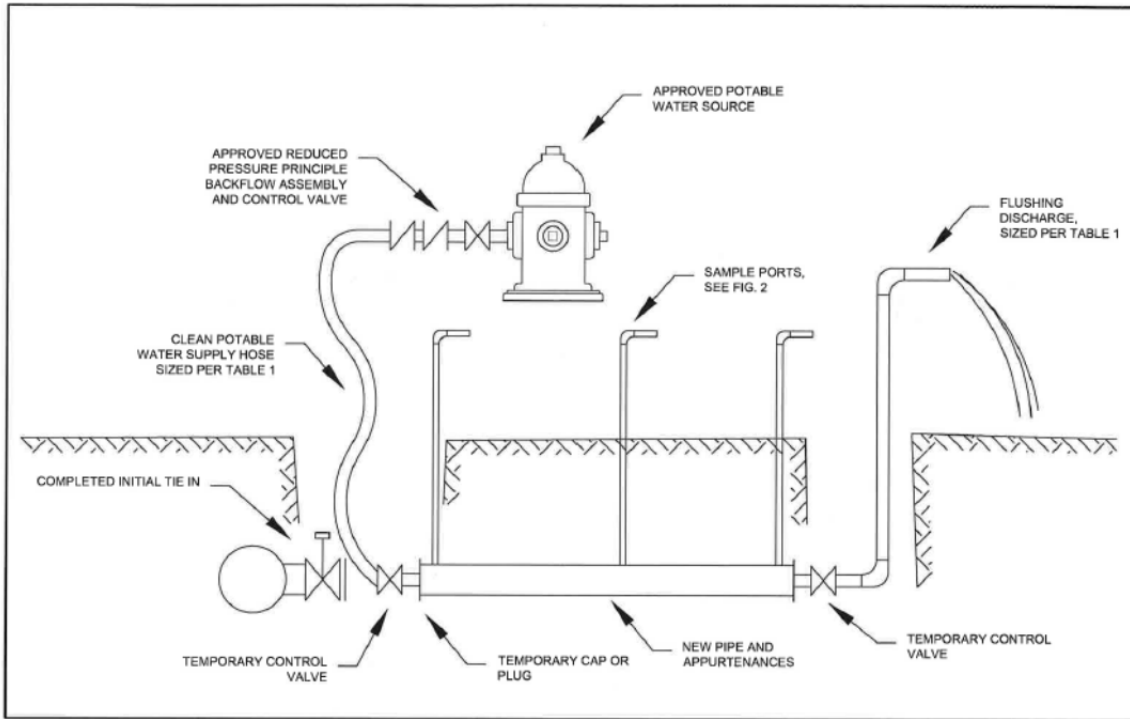


Figure 2
Typical Sample Port

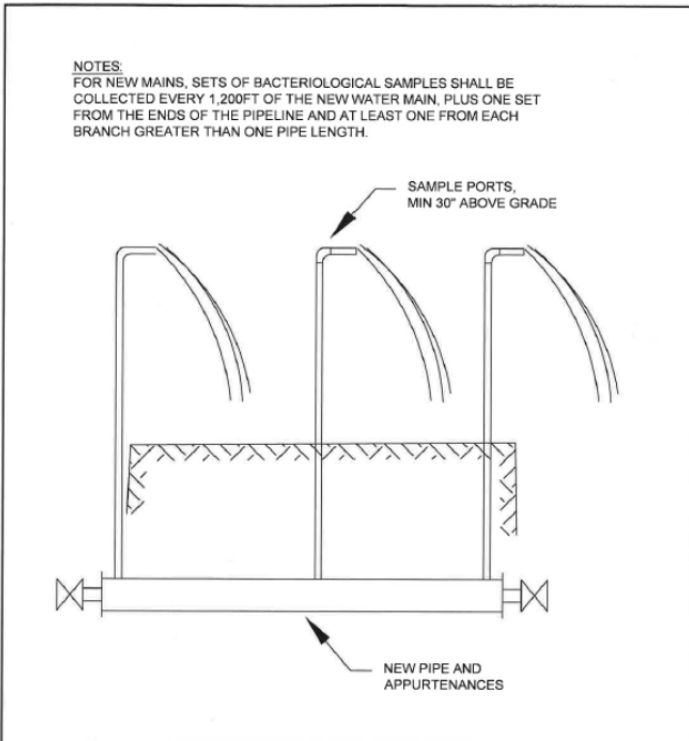


Table 1
South Tahoe Public Utility District
Disinfection and Testing Guide
Updated: July 2016 (V1-jhr)

Required flow and openings to flush pipelines at 3.0ft/sec

New Pipe Diameter	GPM Flow Required to Produce 3.0ft/sec.	Size of Supply	Size of FH Supply	Size of Discharge Flushing
4"	120	2"	2½"	2"
6"	260	2"	2½"	2"
8"	470	Two 2"	2½"	4"
10"	730	Two 2"	2½"	4"
12"	1,060	Three 2"	4½"	6"

Table 2

Chlorine required to produce an initial 25mg/L concentration in 100ft of pipe by diameter

New Pipe Diameter	100% Chlorine	1% Chlorine
4"	0.013lb	0.16gal
6"	0.030lb	0.36gal
8"	0.054lb	0.65gal
10"	0.085lb	1.02gal
12"	0.120lb	1.44gal

SECTION 33 14 13

WATER DISTRIBUTION PIPING

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: PVC pipe, ductile iron pipe, steel pipe and HDPE pipe for water distribution, including fittings and joints.
- B. Related Sections:
 - 1. 31 20 00 Earthwork
 - 2. 31 23 19 Dewatering
 - 3. 33 12 13 Water Service Connections
 - 4. 33 12 16 Water Distribution Valves
 - 5. 33 13 00 Water Pipeline Testing and Disinfection

1.02 REFERENCES

- A. American Water Works Association
 - 1. C110 Ductile-Iron and Gray-Iron Fittings, 3 In. Through 48 In.
 - 2. C111 Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
 - 3. C104 Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water
 - 4. C105 Polyethylene Encasement for Ductile-Iron Pipe Systems
 - 5. C115 Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges
 - 6. C150 Thickness Design of Ductile Iron Pipe
 - 7. C151 Ductile-Iron Pipe, Centrifugally Cast, for Water or Other Liquids
 - 8. C153 Ductile-Iron Compact Fittings for Water Service
 - 9. C200 Steel Water Pipe – 6 in. and Larger
 - 10. C206 Field Welding of Steel Water Pipe
 - 11. C207 Steel Pipe Flanges for Waterworks Service - Sizes 4 In. Through 144 In.
 - 12. C208 Dimensions for Fabricated Steel Water Pipe Fittings
 - 13. C600 Installation of Ductile-Iron Water Mains and their Appurtenances
 - 14. C606 Grooved and Shouldered Joints
 - 15. C900 PVC Pressure Pipe and Fabricated Fittings, 4 In. Through 12 In.
 - 16. C905 PVC Pressure Pipe and Fabricated Fittings, 14 In. Through 48 In.
 - 17. M11 Steel Pipe: A Guide for Design and Installation
 - 18. M23 PVC Pipe – Design and Installation
- B. American Society of Testing and Materials (ASTM)
 - 1. A36 Carbon Structural Steel
 - 2. A47 Ferritic Malleable Iron castings
 - 3. A139 Electric-Fusion (Arc)-Welded Steel Pipe (NPS 4 and Over)
 - 4. A183 Carbon Steel Track Bolts and Nuts
 - 5. A307 Carbon Steel Bolts and Studs
 - 6. A536 Ductile Iron Castings
 - 7. A572 High Strength Low Alloy Columbian-Vanadium Structural Steel

8. D638 Test Method for Tensile Properties of Plastics
 9. D790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
 10. D1248 Polyethylene Plastics Extrusion Materials For Wire and Cable
 11. D1505 Test Method for Density of Plastics by the Density-Gradient Technique
 12. D2240 Test Method for Rubber Property - Durometer Hardness
 13. D2241 PVC Pressure-Rated Pipe (SDR Series)
 14. D2837 Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products
 15. D3350 Polyethylene Plastics Pipe and Fittings Materials
 16. F894 Polyethylene (PE) Large Diameter Profile Wall Sewer and Drain Pipe
 17. F714 Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter
- C. American Society of Mechanical Engineers (ASME)
1. B16.1 Cast Iron Pipe Flanges and Flanged Fittings
- D. Underwriters Laboratory (UL)
1. 1285 Pipe and Couplings, Polyvinyl Chloride (PVC), and Oriented Polyvinyl Chloride (PVCO) for Underground Fire Service.

1.03 SUBMITTALS

- A. Shop Drawings:
- a. Indicate thickness of pipe wall, lining and coating, type of joint and joint restraint, if any.
 - b. Details of straight pipe, fittings, and specials, showing thickness and dimensions of plates, detail of welds, and materials; listing of proposed service and tabulated layout schedules.
- B. Project Redlines: The Contractor shall provide project redlines for all piping installed, including but not limited to valves locations, meter boxes, and hydrants, in accordance with Section 01 33 00 2.08.
- C. Test Results:
1. All pipe: All materials testing shall be based upon applicable ASTM Test Methods referenced herein for the materials specified. A report of the test results shall be furnished. All costs of such inspection and tests shall be borne by the Contractor.
 2. HDPE:
 - a. The pipe shall be tested for dimensions, ring stiffness constant (RSC), flattening, and joint tightness, in accordance with the requirements of ASTM F894. A report of the test results shall be furnished.
 - b. The stress regression testing shall have been done in accordance with ASTM D2837, and the manufacturer shall provide a product supplying a minimum Hydrostatic Design Basis (HDR) of 1,600 psi, as determined in accordance with ASTM D2837.
 3. Fusible PVC:
 - a. Submit manufacturer's specific technical data with complete information on physical properties of pipe and pipe dimensions pertinent to this job

- b. Complete calculations including lists of parameters, all formulas and all other data showing the design of the new pipe.
 - c. Qualification of fusion technicians shall be documented by the pipe supplier, and shall be current as of the date of the welding for the project.
 - d. Contractor shall register and/or record the parameters required by the pipe supplier and these Specifications, and provide them to the District as the Work proceeds.
- D. Certification:
- 1. All pipe:
 - a. Manufacturer's certificates of compliance shall be furnished by the Contractor.
 - b. A certificate of "Compliance with Specification" or suitable alternative shall be furnished for all materials to be supplied.
 - 2. HDPE:
 - a. The Contractor shall provide certification from the pipe manufacturer that stress regression testing has been performed on the specific product. The said certification shall include a stress life curve per ASTM D2837. The certification shall state that the pipe was manufactured from one specific resin in compliance with these specifications. The certificate shall state the specific resin used, its source, and list its compliance to these specifications.
 - b. Provide certification that the pipe conforms to dimensions and tolerances specified in Part 2.02 and that the pipe has been inspected and meets industry accepted manufacturer standards.

PART 2 PRODUCTS

2.01 GENERAL

- A. All pipe shall be new, not from manufacturer's inventory.
- B. Any pipe that does not meet specifications or has been rejected, shall be removed from the jobsite and disposed of by the Contractor at no extra cost to the Owner.
- C. Where new fittings are to be cut into or attached to existing piping or where connections are to be made to existing piping, the Contractor shall furnish and install the necessary sleeves, flanges, nipples, couplings, fittings, etc. needed to accomplish the cutting-in or connections, whether specifically indicated on the Plans or not.
- D. All Pipe must be NSF 61 compliant.

2.02 PIPE

- A. Ductile Iron Pipe
 - 1. Pipe shall have a minimum pressure rating of 150 psi conforming to AWWA C150 and C151.

2. Pipe with screw-on shall have a minimum pressure rating of 150 psi conforming to AWWA C115.
3. Ductile iron pipe shall be coated on the inside with cement mortar conforming to AWWA C104/ANSI A.21.4, and seal coated on the inside and outside with bituminous coating.
 - a. Coating shall be applied on clean bare metal surfaces.
 - b. Coating shall extended to the ends of spigots and shoulders of hubs.

B. Steel Pipe:

1. Steel shall conform to ASTM A36 or A572 Grade 42.
2. Pipe shall conform to AWWA C200 and ASTM A139 Grade B.
3. Size and wall thickness shall be as shown on the Plans and indicated in the Specifications.
4. Steel pipe shall be designed in accordance with AWWA Manual M11.
5. Steel pipe shall be coated inside and outside with a 100% solids, thermosetting, fusion bonded dry powder epoxy resin (Scotchkote No. 206-N as manufactured by 3M Company, or equal). Application shall be by the fluidized bed method. Coating thickness shall be at least 10 mils DFT. Surface preparation shall include grinding of all irregularities, welds, and weld splatter and blasting to a near white surface in accordance with Steel Structures Painting Council (SSPC) Guidelines (SP-10).

C. PVC Pipe:

1. NOMINAL DIAMETERS 6 TO 12 INCHES: Pipe shall meet the requirements of AWWA C900, with a minimum pressure rating of 235 psi. Pipe shall have outside diameters of ductile iron pipe sizes. Pipe shall also meet the requirements of ASTM D2241 and UL 1285. Each length of pipe shall be capable of withstanding without failure 600 psi hydrostatic pressure for a minimum of 5 seconds. The integral bell shall be tested with the pipe.
2. NOMINAL DIAMETERS 14 TO 18 INCHES: Pipe shall meet the requirements of AWWA C905, with a minimum pressure rating of 235 psi. Pipe shall have outside diameters of ductile iron pipe sizes as listed below. Pipe shall also meet the requirements of ASTM D2241 and UL 1285. Each length of pipe shall be capable of withstanding without failure 600 psi hydrostatic pressure for a minimum of 5 seconds. The integral bell shall be tested with the pipe.
3. Provisions shall be made for contraction and expansion at each joint with a rubber ring and integral thickened bell as part of each joint. The rubber ring shall meet the requirements of ASTM D 2241. The bell section shall be at least as strong as the pipe barrel.
4. At least 85 percent of the total footage of pipe installed shall be furnished in standard lengths of 20 feet. The remaining footage of pipe may be in random lengths of not less than 10 feet long.
5. Manufacturers: C900 or C905 "Big Blue" or "Blue Brute" pipe manufactured by J-M Manufacturing Company, Inc. and Formosa Plastics Corporation, U.S.A, MAY NOT be used.

D. HDPE Pipe:

1. Pipe shall be high density polyethylene pipe. Size and SDR rating of polyethylene pipe shall be as shown on the Plans and indicated in the Specifications.

2. Materials used for the manufacture of polyethylene pipe and fittings shall be extra high molecular weight, high density ethylene/hexene copolymer PE 3408 polyethylene resin meeting the below listed physical property and pipe performance requirements:

<u>Property</u>	<u>Specification</u>	<u>Units</u>	<u>Pipe</u>
Material Designation	PPI/ASTM	-	PE 3408
Material Classification	ASTM D1248	-	III C 5 P34
Cell Classification	ASTM D3350	-	345434C
Density	ASTM D1505	gm/cm ³	0.955
Flex Modulus	ASTM D790	psi	135,000
Tensile	ASTM D638	psi	3,200
Hardness	ASTM D2240	Shore "D"	65
Compressive Strength (Yield)	ASTM D638	psi	1,600
Tensile Strength @ Yield (Type IV Spec)	ASTM D638 (2"/min)	psi	3,200
Elongation @ Yield	ASTM D638	%	8 min.
Modulus of Elasticity	ASTM D638	psi	130,000
NSF Listing	Standard #14	-	"Listed"

3. Material shall conform to ASTM F714 and meet accepted manufacturer standards for:
- Diameter
 - Straightness
 - Wall Thickness
 - Ovality
 - Concentricity
 - Toe-in
 - Quick Burst
 - Overall Workmanship
 - Pressure and Ductility
 - Inspection ID and OD
 - Joint Length
 - Print Line
4. The pipe shall be extruded using a melt homogenizing/plasticating extruder and appropriate die. The extruder screw design should be customized for the HDPE being processed to minimize melt fracture of the molecular structure, thus reducing the molecular weight and changing some physical properties from resin to pipe. The resin should be processed at its appropriate melt temperature. The extruded tubular melt will be vacuum or pressure sized in downstream cooling tanks to form round pipe to specification diameter and wall thickness with a "matte-finish" surface.
5. The pipe shall contain no recycled compound except that generated in the manufacturer's own plant from resin of the same specification from the same raw material. The pipe shall be homogenous throughout and free of visible cracks, holes, voids, foreign inclusions, or other deleterious defects, and shall be identical in color, density, melt index and other physical properties throughout.
6. The pipe shall be extruded from resin meeting specifications of ASTM D-3350 with a cell classification of PE:345434C; and ASTM D-1248 pipe grade resin type III, Class C, Category 5, grade P34 polyethylene compound. The pipe shall

provide the long term endurance characteristics recognized by: a compressive pipe ring environmental stress crack resistance greater than 1,000 hours; a slow crack growth resistance greater than 32 days; an impact strength (toughness) greater than 48 in-lb/in notch; and rotary fatigue endurance at 1,600 psi bending stress with $F_o > 20,000$ cycles.

2.03 FITTINGS

A. General:

1. Fittings shall include all tees, crosses, reducers, and elbows as shown on the Contract Drawings and shall include all nuts, bolts and gaskets necessary for the installation requirements.

B. For Ductile Iron Pipe:

1. Fittings shall be as specified in ANSI A 21.10 or A 21.53 (AWWA C110 or C153), of the same pressure rating and same joint configuration as the pipe with which they are to be used.
2. All fittings shall be smooth cement-lined in accordance with ANSI A 21.4 (AWWA C104). Special attention shall be given to bare metal. All lining shall extend to the faces of flanges, to the end of spigots, or to the shoulder of hubs, as the case may be.
3. In addition, all fittings shall be coated inside and outside with bituminous material.

C. For Steel Pipe:

1. Fitting shall be steel and shall conform to ASTM A36 or A572 Grade 42.
2. Fittings shall conform to AWWA C200 and AWWA C208, except where specific dimensions are called out on the Plans.
3. Steel fittings shall be designed in accordance with AWWA Manual M11.
4. Fittings shall be heated and cured in accordance with the manufacturer's recommendation.
5. Fittings and headers fabricated from steel pipe require hydrostatic testing.

D. For PVC Pipe:

1. Fittings shall be ductile iron fittings as described in Part 2.03.B (above).
2. Fittings shall be properly sized for the dimensions of the pipe being used.

E. For HDPE Pipe:

1. Ductile Iron Fittings:
 - a. Fittings shall be ductile iron fittings as described in Part 2.03.B (above). Fittings shall be properly sized for the dimensions of the pipe being used.
 - b. Only flanged fittings shall be used when specified with high-density polyethylene piping systems. Mechanical joint fittings shall not be used.
 - c. The joining system between high-density polyethylene pipe and flange fittings shall be made by a method recommended by the pipe manufacturer or submitted by the Contractor and approved by the Engineer.
2. Standard HDPE fittings:
 - a. Standard commercial products manufactured by injection molding or by extrusion and machining, or fabricated from PE pipe conforming to this specification.

- b. The fittings shall be fully pressure rated by the manufacturer to provide a working pressure equal to the pipe for 50 years service at 73.4°F with an included 2:1 safety factor.
- c. The fittings shall be manufactured from the same resin type, grade, and cell classification as the pipe itself.
- d. The manufacture of the fittings shall be in accordance with good commercial practice to provide fittings homogeneous throughout and free from crack, holes, foreign inclusions, voids, or other defects. The fittings shall be as uniform as commercially practicable in color, opacity, density and other physical properties.
- e. The minimum "quick-burst" strength of the fittings shall not be less than that of the pipe with which the fitting is to be used.

2.04 PIPE JOINTS

A. General

- 1. All pipe which will operate under pressure shall be properly protected from the effects of thrust at all fittings where the pipeline changes direction, changes size, or ends, using concrete thrust blocks, or restrained joints where required.
 - a. Concrete thrust blocks shall be sized so as to give bearing against undisturbed vertical earth banks sufficient to absorb the thrust from line pressure, allowing an earth bearing of 200 pounds per square foot per foot of depth below natural grade to a maximum of 1,000 pounds per square foot. (Earth bearing value may be increased, if substantiated by soils analysis). The line pressure shall be the product of the nominal cross sectional area of the pipe and the test pressures as specified for each type of pipe. The concrete shall be placed, unless specifically indicated otherwise on the Plans, so that the pipe joints and fittings will be accessible. Concrete used for all thrust blocks shall be a Class C as identified Section 03 30 00 of these specifications.
- 2. Pipe joints shall be provided as specified or as indicated on the contract drawings.

B. For Ductile Iron Pipe:

- 1. Flanged Joints:
 - a. Flanges: Gaskets shall be synthetic rubber, either ring or full faced and a minimum of 1/8-inch thick for ductile iron pipe. Flanges shall be one of the following with diameter, thickness, drilling, and other characteristics in accordance with ANSI B16.1:
 - 1) Cast integrally with the pipe.
 - 2) Screw-on: Comply with the following:
 - a) Long hub, threaded, and specially designed for ductile iron pipe.
 - b) After attaching to pipe, machine flange face to make pipe end and flange even and perpendicular to the axis of the pipe.
 - b. Bolt Holes: Two-holed and aligned at both ends of pipe.
 - c. Cap Screw or Stud Bolt Holes: Tapped.
 - d. Bolts and Nuts:
 - 1) High strength low alloy hardware shall be used for all buried applications having the characteristics specified in AWWA C111 / ANSI A 21.11.

- 2) 316 Stainless Steel hardware with flouropolymer coating shall be used in all underwater or vault installations.
- e. Protective Coating: both the following.
 - 1) Petrolatum wrap tape consisting of plastic fiber felt saturated with petrolatums, plasticizers, and corrosion inhibitors.
 - a) Trenton No. 1 Wax Tape (Trenton Corporation)
 - b) Or equal.
 - 2) "Rock Shield" type material
 - a) Trenton Guard Wrap (Trenton Corporation)
 - b) Poly-ply (Trenton Corporation)
 - c) Or equal.
2. Mechanical Joints: AWWA C111/ANSI A 21.11
3. Push-On Rubber Gasket Joints: AWWA C111/ANSI A 21.11.
4. Plain-end Joints:
 - a. Flanged Coupling Adaptor
 - 1) Sleeve-type flanged coupling adaptors shall be:
 - a) Smith-Blair Type 913;
 - b) Dresser Style 128;
 - c) Or equal.
 - b. Flex Coupling Adaptor
 - 1) Sleeve-type mechanical couplings shall be:
 - a) Smith-Blair Type 411;
 - b) Dresser Style 38;
 - c) Or equal.
 - 2) Sleeve-type mechanical couplings shall have the stop removed from the middle ring.
 - c. Bolts and nuts for buried service shall be mad of non-corrosive high-strength, low-alloy steel having the characteristics specified in AWWA C111 / ANSI A 21.11, regardless of any other protective coating.
 - d. Where washers are required, they shall be of the same material as the associated bolts.
 - e. Where required for resistance to pressure, mechanical couplings shall be restrained in accordance with Chapter 13 of AWWA M11, including Tables 13-4, 13-5 and 13-5A, and Figure 13-20.
5. Restrained Joints:
 - a. Mechanical Joints:
 - 1) Megalug as manufactured by EBAA Iron Sales.
 - 2) MJ Field Lok Gasket and Gland as manufactured by United States Pipe and Foundry Company.
 - 3) Grip Ring Pipe Restrainer as manufactured by Romac Industries
 - 4) Or Approved Equal
 - b. Push-On Joints:
 - 1) Comprised of ductile iron locking segments inserted through slots in the bell face, providing positive axial lock between the bell interior surface and a retainer weldment on the spigot end of the pipe, or a retainer weldment through a boltless system, providing a positive restraint against joint separation; with a safety factor of 2 under a pressure equal to the specified test pressure; capable of easy disassembly without cutting or burning of the gasket; suitable for the following working pressures: For 4 through 24 inch Pipe: 350 pounds per square inch gauge.

- a) TR Flex as manufactured by United States Pipe and Foundry Company;
- b) or equal.

C. For Steel Pipe:

- 1. Flanged Joints:
 - a. As described in Part 2.04.B.1 (above).
 - b. Flanges for steel pipe and fittings shall be flat faced conforming to AWWA C207, Class D. Flange bolts and nuts shall conform to ASTM A307, Grade B. Flange gaskets shall be full faced, compressed non-asbestos 1/16-inch thick.
- 2. Mechanical Joints:
 - a. As described in Part 2.04.B.2 (above).
- 3. Push-on Rubber Gasket Joints:
 - a. As described in Part 2.04.B.3 (above).
- 4. Plain-End Joints:
 - a. As described in Part 2.04.B.4 (above).
 - b. Welded joints: field welding of steel pipe will not be allowed without the permission of the Engineer. Field welding, if allowed, shall conform to AWWA C206.
- 5. Restrained Joints:
 - a. As described in Part 2.04.B.5 (above).
- 6. Grooved Joints:
 - a. AWWA C606, as complemented and modified below, radius-cut type, with following components:
 - 1) Couplings: Rigid type, cast from ductile iron in accordance with ASTM A536, Grade 65-45-12 or malleable iron in accordance with ASTM A47, Grade 32510.
 - 2) Bolts and Nuts: ASTM A183, Grade 2.
 - 3) Gaskets: Capable of being applied on surface of piping with cavities to provide for an improved seal with the internal piping pressure; material for following services:
 - a) Halogenated butyl.
 - 4) Fittings: AWWA C 606, rigid radius-cut groove.
 - a) Center-to-Center Dimensions: AWWA C 110/ANSI A 21.10.
 - b) Wall Thickness and Other Characteristics: AWWA C153.
 - b. Flanged Unit Connections: Flanged to grooved joint adapters or a long enough spool with 1 end flanged and the other grooved to prevent interference with the operation of adjacent valves, pumps, or other items.

D. For PVC Pipe:

- 1. Mechanical Joints:
 - a. As described in Part 2.04.B.2 (above).
- 2. Push-on Rubber Gasket Joints:
 - a. As described in Part 2.04.B.3 (above).
- 3. Plain-End Joints:
 - a. As described in Part 2.04.B.4 (above).
 - b. Welded Joints
 - 1) Pipe to be welded shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe.

- 2) Connections to fused PVC pipe may be made using restrained, ductile iron fittings only.
- 4. Restrained Joints:
 - a. As described in Part 2.04.B.5 (above).
- E. For HDPE Pipe:
 - 1. Plain-End Joints:
 - a. As described in Part 2.04.B.4 (above).
 - b. Welded Joints
 - 1) Pipe to be welded shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe.

PART 3 EXECUTION

3.01 GENERAL

- A. All piping and appurtenances shall be installed in accordance with manufacturers recommendations.
- B. When pipe laying is interrupted, or stopped at the end of the work shift, the open ends of pipe shall be sealed with a watertight plug, or other means acceptable to the Engineer, to prevent water from entering the pipe.

3.02 MATERIAL DELIVERY, STORAGE, HANDLING AND PROTECTION

- A. All piping shall be delivered in a clean and undamaged condition.
- B. All piping materials, fittings, valves, and accessories shall be carefully handled during loading, unloading, and installation. All pipe, fittings, and related appurtenances shall be handled in a manner that will insure installation in sound, undamaged, like new condition. Pipe should be loaded, off-loaded, and otherwise handled in accordance with AWWA M23, and all of the manufacturer's guidelines should be followed.
- C. In shipping, material shall be blocked in such a manner as to prevent damage to castings or cement lining.
- D. All pipe shall be bundled or packaged in such a manner as to provide adequate protection of the ends during transportation to the site. Flanged pipe shall have the flange faces protected. Any pipe damaged in shipment shall be replaced as directed by the Engineer.
- E. Each pipe shipment should be inspected prior to unloading to see if the load has shifted or otherwise been damaged. Notify Engineer immediately if more than immaterial damage is found. Each pipe shipment should be checked for quantity and proper size, color and type.
- F. All material shall be carefully lowered to the ground by mechanical means. Pipe shall be handled and supported with the use of woven fiber pipe slings or approved

equal. Care shall be exercised when handling the pipe to not cut, gouge, scratch or otherwise abrade the piping in any way. Pipe and fittings with cement mortar or epoxy lining or special coatings shall be handled with rubber covered hooks, or other type of equipment to prevent damage. Off-loading devices such as chains, wire rope, chokers, or other pipe handling implements that may scratch, nick cut, or gouge the pipe are strictly prohibited.

- G. During removal and handling, be sure that the pipe does not strike anything. Significant impact could cause damage, particularly during cold weather.
- H. If appropriate unloading equipment is not available, pipe may be unloaded by removing individual pieces. Care should be taken to insure that pipe is not dropped or damaged. Pipe should be carefully lowered, not dropped from trucks.
- I. Storage:
 - 1. HDPE Pipe: Pipe lengths should be stored and placed on flat, level ground, with no rocks, timbers or other objects under the pipe. Pipe should be stored in the unit packaging provided by the Manufacturer until ready for use. Caution should be exercised to avoid compression, damage, or deformation to the ends of the pipe.
 - 2. All Other Pipe shall be stored off the ground in conformance with the Manufacturer's instructions.
- J. The interior of the pipe, as well as all end surfaces, should be kept free from dirt and foreign matter.
- K. If pipe is to be stored for periods of 1 year or longer, the pipe should be shaded or otherwise shielded from direct sunlight. Covering of the pipe which allows for temperature build-up is strictly prohibited. Pipe should be covered with an opaque material while permitting adequate air circulation above and around the pipe as required to prevent excess heat accumulation.
- L. Pipe shall be stored and stacked per the manufacturer's guidelines.
- M. Pipe, fittings and accessories shall be carefully inspected by the Contractor before and after installation, and those materials found defective shall be rejected.
- N. Any length of pipe showing a crack or blow that may have caused an incident fracture, even though no such fracture can be seen, shall be marked as rejected.
 - 1. For PVC and HDPE pipe, any scratch or gouge greater than 10% of the wall thickness will be significant and can be rejected unless determined acceptable by the Engineer.
- O. Pipe and fittings shall be free from fins and burrs.
- P. Pipe and fittings in which the lining or coating has been damaged shall be immediately removed from the job site and replaced with new materials.
 - 1. In instances where damage is minimal, the Contractor may, with approval from the Engineer, have the damage repaired by a qualified representative of the pipe manufacturer or fabricator.

- Q. Do not drop or pound pipe to fit grade.
- R. Before being placed in position, pipe, fittings and accessories shall be cleaned and shall be maintained in a clean condition.

3.03 ALIGNMENT

- A. All piping shall be installed to lines, grades, and elevations indicated on the contract drawings.
- B. All deviations from the line, grade, or elevation as indicated on the contract drawings shall be approved in writing by the Engineer.
- C. The Contractor is responsible for coordinating all other work to insure that piping is installed as indicated on the Contract Drawings.
- D. Piping intended to be straight shall be straight. Deflections from a straight line or grade shall be approved in writing by the Engineer and shall be accomplished by the use of approved fittings.

3.04 PIPE INSTALLATION

- A. General: All piping shall be installed as specified, as indicated on the contract drawings and in a manner acceptable to the Inspector.
- B. Special Instructions for Installation of Ductile Iron Pipe:
 - 1. Install ductile iron piping in accordance with AWWA C600
 - 2. Lay mechanical joint or bell and spigot pipe with 1/8 inch space between the spigot and shoulder of the pockets.
 - 3. Special Techniques:
 - a. Polyethylene Encasement: Wrap ductile iron pipe and fittings to be buried with minimum 8 mil thick polyethylene encasement. Repair tears and make joints with double plastic tape wrap.
 - 1) Polyethylene: AWWA C105.
 - 2) Plastic Tape Wrap: One of the following or equal:
 - a) Polyken Number 910 as manufactured by Polyken Pipeline Coatings.
 - b) Tapecoat CT as manufactured by The Tapecoat Company.

3.05 FIELD JOINING (FUSION WELDING)

- A. HDPE:
 - 1. Sections of polyethylene pipe shall be joined into continuous lengths on the project site. The joining method shall be the butt fusion method and shall be performed in strict accordance with the pipe manufacturer's recommendations. The butt fusion equipment used in the joining procedures shall be capable of meeting all conditions recommended by the pipe manufacturer, including, but not limited to, temperature requirements of 400°F, alignment, and interfacial fusion pressure as recommended by the pipe manufacturer.
 - 2. Butt fusion joining shall be 100% efficient offering a joint weld strength equal to or greater than the tensile strength of the pipe. Socket fusion shall not be used.

Extrusion welding or hot gas welding of HDPE shall not be used for pressure pipe applications nor in fabrications. Unions, grooved-couplers, transition fittings and mechanical couplers may not be used.

3. The pipe shall not be deflected either vertically or horizontally in excess of the recommendations of the manufacturer.

B. PVC

1. Lengths shall be assembled in the field with butt-fused joints. The Contractor shall follow the pipe supplier's guidelines for this procedure. All fusion joints shall be completed as described in this specification.
2. Fusible PVC pipe will be fused by qualified fusion technicians certified and experienced in the type and size of pipe being used.
3. Only appropriately sized and outfitted fusion machines that have been approved by the pipe supplier shall be used for the fusion process. Fusion machines must incorporate the following properties, including the following elements:
 - a. **HEAT PLATE** – Heat plates shall be in good condition with no deep gouges or scratches. Plates shall be clean and free of any debris or contamination. Heater controls shall function properly. Cord and plug shall be in good condition. The appropriately sized heat plate shall be capable of maintaining a uniform and consistent heat profile and temperature for the size of pipe being fused, per the pipe supplier's guidelines.
 - b. **CARRIAGE** – Carriage shall travel smoothly with not binding at less than 50 psi. Jaws shall be in good condition with proper inserts for the pipe size being fused. Inset pins shall be installed with no interference to carriage travel.
 - c. **MACHINE BODY** – Overview of machine body shall reveal no obvious defects, missing parts, or potential safety issues during fusion.
 - d. **DATA LOGGING DEVICE** – The current version of the pipe supplier's recommended and compatible software shall be used. Datalogging device operations and maintenance manual shall be with the unit at all times.
4. Pipe rollers shall be used to support pipe to either side of fusion machine.
5. Utilize a weather protection canopy in inclement or windy weather, to allow full machine motion of the heat plate, fusion assembly and carriage. If weather conditions persist such that the Contractor is unable to meet the parameters required by the pipe supplier and these Specifications, the fusion process shall cease until the inclement weather passes and the parameters can be achieved.
6. Use only facing blades specifically design for cutting fusible PVC pipe.

3.06 QUALITY ASSURANCE

- A. Pressure testing of all pipe installations shall be done in conformance with Section 33 13 00 Water Pipeline Testing and Disinfection of the specifications.
- B. Disinfection of piping and appurtenances, as applicable, shall be in conformance with Section 33 13 00 Water Pipeline Testing and Disinfection of the specifications.

END OF SECTION

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SECTION 33 14 16

WATER DISTRIBUTION VALVES

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: resilient-seat gate valves, butterfly valves and appurtenances.
- B. Related Sections:
 - 1. Section 33 11 13 Water Distribution Piping
 - 2. Section 33 12 13 Water Service Connections

1.02 REFERENCES

- A. American Water Works Association (AWWA)
 - 1. C504 Rubber Seated Butterfly Valves
 - 2. C509 Resilient-Seated Gate Valves for Water Supply Service
 - 3. C515 Reduced-Wall, Resilient-Seated Gate Valves for Water Supply Service
 - 4. C550 Protective Epoxy Interior Coatings for Valves and Hydrants
 - 5. C600 Installation of Ductile Iron Water Mains and Their Appurtenances
- B. American Society of Testing and Materials (ASTM)
 - 1. A48 Gray Iron Castings
 - 2. A126 Gray Iron Castings for Valves, Flanges and Pipe Fittings
 - 3. A276 Stainless Steel Bars and Shapes
 - 4. A536 Ductile Iron Castings
 - 5. D429 Rubber Property – Adhesion to Rigid Substrates

1.03 SUBMITTALS

- A. The Contractor shall submit the following information in accordance with Section 01 33 00 Submittals Process:
 - 1. Valve type, size, pressure rating and coating system.
 - 2. Complete information, including size, type and orientation.
 - 3. Assembly drawings showing part nomenclature, materials, dimension, weights and relationships of valve actuators.

PART 2 PRODUCTS

2.01 GENERAL

- A. All brass components used in the water distribution system shall be “lead-free” in compliance with California law (AB 1953).

- B. The Contractor shall furnish all labor, materials, and equipment necessary to install the valves complete in place at the locations indicated on the Plans in accordance with the details and these Specifications.
- C. The Contractor shall furnish all incidental materials necessary for installation of the valves such as flange gaskets, flange bolts and nuts, valve boxes and covers, and all other materials required for the complete installation.
- D. The Contractor shall provide the necessary concrete bases and blocking to support the valves.
- E. All buried valves shall have a concrete valve box with a cast iron cover marked *WATER*. The boxes shall be adjustable to grade.
 - 1. Christy G5
 - 2. Or approved equal.

2.02 GATE VALVES

- A. Gate valves for buried installation shall be iron body, resilient-seat, nonrising stem, conforming to AWWA C509 or C515.
 - 1. The stem, stem nuts, glands and bushings shall be of bronze with double O-ring stem seal.
 - 2. Valves shall open counter clockwise.
 - 3. Valve ends shall be flanged conforming to AWWA C509 Section 4.5.1 with 2" square operating nuts (except where a different operator is called for on the Plans).
 - 4. The valves shall be rated for a working pressure of 200 psig.
 - 5. The valve body, bonnet and disc shall be of cast iron or ductile iron and the disc or body shall be rubber-coated.
 - 6. For valves conforming to C509, the body and bonnet wall thickness shall be equal to or greater than the minimum wall thickness as listed in Table 2 of AWWA C509.
 - 7. For valves conforming to C515, the body and bonnet wall thickness shall be equal to or greater than the minimum wall thickness as listed in Table 1 of AWWA C515.

2.03 BUTTERFLY VALVES

- A. Butterfly Valves for Buried Installation: All butterfly valves shall be manufactured in accordance with the latest revision of AWWA C504 for Class 150B service and comply with the following details:
 - 1. Valve Bodies shall be constructed of cast iron ASTM A-126 Class B and conform to AWWA C504 in terms of laying lengths and minimum body shell thickness. End connections shall be as specified on the Plans.
 - 2. Valve Discs shall also be made from cast iron ASTM A-126 Class B or ASTM A-48 Class 40 in sizes 24" and smaller. Sizes 30" and larger shall be built from ductile iron in conformance to ASTM A-536. Discs shall be furnished with a nickel-chrome or stainless steel seating edge to mate with the rubber seat on the body.

3. Valve Seat shall be Buna-N rubber located on the valve body. In sizes 20" and smaller, valves shall have bonded seats that meet test procedures outlined in ASTM D-429 Method B. Sizes 24" and larger shall be retained in the valve body by mechanical means without use of metal retainers or other devices located in the flow stream.
4. Valve Shafts shall be 18-8 type 304 stainless steel conforming to ASTM A-276. Shaft seals shall be standard split V packing and be provided where the shaft projects through the valve body. Shaft seals shall be of a design allowing replacement without removing the valve shaft.
5. Valve Bearings shall be sleeve type that are corrosion resistant and self lubricating.
6. Valve Actuators shall be fully grease packed and have stops in the open/close position. The actuator shall have a mechanical stop which will withstand an input torque of 450 ft. lbs. against the stop. The traveling nut shall engage alignment grooves in the housing. The actuators shall have a built in packing leak bypass to eliminate possible packing leakage into the actuator housing with 2" square operating nut. Acceptable manufacturers: De Zurik, Henry Pratt Company or approved equal.
7. All internal and/or external surfaces shall be covered with a polyamide cured epoxy coating applied over a sand blasted "new white metal surface" per SSPC-SP10 to a minimum of 6 mils in compliance with AWWA C550.

PART 3 EXECUTION

3.01 GENERAL

- A. Valves, actuating units, stem extensions, valve boxes and accessories shall be installed in accordance with the Manufacturer's written instructions, AWWA C600 and these Specifications. Valves shall be laid in sequence with adjacent pipe and fittings, at the locations shown on the Contract Drawings.
- B. Valve boxes shall be installed perpendicularly, centered with a centering ring and covering the upper portions of the valve or valve operator in accordance with the Project Details. The box shall not be supported in any manner by the valve, valve operator, or the pipe. The top of each valve box shall be placed 1/4 to 1/2 inch below finish grade unless otherwise directed by the Engineer.

END OF SECTION

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DIVISION 35

SECTION 35 10 00

WATER METERS, LIDS AND FRAMES

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Water meters, lids and frames.

PART 2 PRODUCTS

2.01 GENERAL

- A. Displacement Type, 3/4" and 1" sizes.
- B. Cast Gray Iron, 15" and 18" nominal diameters.

2.02 METERS

- A. The Contractor shall provide all meters and meter transceiver units (MXUs) for complete installation by Contractor.
- B. Meters shall be Sensus iPERL as provided by the Contractor. The lay length shall be 7.5" for 3/4" meters and 10.75" for 1" meters. The radio-read MXU units shall be Sensus Smartread 520M, as provided by the Contractor.
- C. Contractor shall provide coordination with the District and supplier, unloading, storage, security, inventory control, handling, and all other related and necessary work from the time delivered to the Contractor's WWTP staging area to the time all meters are installed, in place, tested, in active operation, and until the installation is fully approved by the District for payment under the Contract Documents.
- D. The meters and MXUs shall be provided in a timely manner during the course of the project in the quantities necessary per the Contractor's construction schedule prepared in accordance with Section 01 32 00, Part 2.01.

2.03 METER PIT LIDS AND FRAMES

- A. The District shall provide all meter pit lids and frames for complete installation by Contractor.
- B. Meter lids and frames shall be a custom detail manufactured by Neenah Foundry as provided by the District. They will be manufactured in nominal diameters of 15" to be installed on meter pits for 3/4" meters and 18" to be installed on meter pits for 1" meters.

Frames (rings) will be provided for traffic-rated installations. See Plans, Sheet D-2, Details for detailed shop drawings of meter pit lids and frames. Meter pits shall be compatible with these meter pit lids and frames.

- C. The District shall provide for the delivery of the meter pit lids and frames to the Contractor's WWTP staging area as identified on the Plans, Sheet G-2, Staging Area.
- D. Contractor shall provide coordination with the District and supplier, unloading, storage, security, inventory control, handling, and all other related and necessary work from the time delivered to the Contractor's WWTP staging area to the time all meter pit lids and frames are installed, in place, in active operation, and until the installation is fully approved by the District for payment under the Contract Documents.
- E. The meter pit lids and frames shall be provided in a timely manner during the course of the project in the quantities necessary per the Contractor's construction schedule prepared in accordance with Section 01 32 00, Part 2.01.

END OF SECTION

APPENDICES

APPENDIX A

BABA WAIVER – AMI METERS

**DEPARTMENT OF THE INTERIOR
Bureau of Reclamation
and
The U.S. Environmental Protection Agency**

**General Applicability Non-Availability Waiver
Build America, Buy America Product Waiver: AMI Water Meters**

1. Summary

Agency: Department of the Interior (DOI/Department)'s Bureau of Reclamation (USBR) and the U.S. Environmental Protection Agency (EPA)

Final Waiver: The Department is joining the EPA to issue a partial general applicability/nonavailability waiver of the requirements of section 70914 of the Build America, Buy America Act included in the Infrastructure Investment and Jobs Act (Pub. L. No. 117-58) for Advanced Metering Infrastructure (AMI) water meters used in infrastructure projects funded through USBR and the EPA, while requiring certain components of the water meters to be manufactured in the United States according to the phased implementation schedule below. This waiver is in effect for three (3) years from the date of approval. DOI and the EPA are implementing a phased approach during the waiver period, whereby, for two years from the date of approval, purchases of AMI meters and all components (the entire "manufactured product") are waived. Two (2) years from the date of approval, AMI meter housings shall be domestically manufactured or produced and excluded from the waiver scope; all other components continue to be waived through the end of the three-year period. This waiver only applies to products purchased after the effective date of this waiver and may not be used for products purchased after the expiration date of the waiver. At the conclusion of the full three-year waiver period, DOI and the EPA expect AMI water meters to be manufactured in the United States and their total cost of components to be greater than 55 percent domestically manufactured or produced.

Waiver type: Nonavailability of domestic products

Waiver level: General Applicability, Product level waiver

Waiver justification summary: There are no AMI water meters manufactured in the United States meeting BABA's 55 percent total cost of components domestic content requirement.

Length of the waiver: This waiver is in effect for three (3) years from the date of approval. DOI and the EPA are implementing a phased approach during the waiver period, whereby, for two years from the date of approval, purchases of AMI meters and all components (the entire "manufactured product") are waived. Two (2) years from the date of approval, AMI meter housings shall be domestically manufactured or produced components and will be excluded from the waiver scope. This waiver only applies to products purchased after the effective date of this waiver and may not be used for products purchased after the expiration date of the waiver.

Summary of items covered in the waiver:

- AMI water meters.

NAICS: 334514
PSC: 6632

2. Background

The Buy America Preference set forth in section 70914 of the Build America, Buy America Act included in the Infrastructure Investment and Jobs Act (Pub. L. No. 117-58), requires all iron, steel, manufactured products, and construction materials used for infrastructure projects under Federal financial assistance awards be produced in the United States.

Under section 70914(b), a Federal agency may waive the application of the Buy America Preference, in any case in which it finds that: applying the domestic content procurement preference would be inconsistent with the public interest; types of iron, steel, manufactured products, or construction materials are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality; or the inclusion of iron, steel, manufactured products, or construction materials produced in the United States will increase the cost of the overall project by more than 25 percent. All waivers must have a written explanation for the proposed determination; provide a period of not less than 15 calendar days for public comment on the waiver; and submit the waiver to the Office of Management and Budget Made in America Office for review to determine if the waiver is consistent with policy.

3. Description of Covered Items

Manufactured products: AMI water meters collect water usage information. When used as a fixed network across a community, AMI water meters automatically collect and store consumption data, aiding in water conservation and water use efficiency, improved water management, and energy savings. Information provided helps identify high water usage that could indicate leaks, providing time sensitive leak detection alerts. AMI water meter networks reduce water demand by enhancing conservation, reduce energy use/operating costs, and reduce carbon emissions using remote/automated meter reads.

AMI water meters are composed of meter housings, end points/transmitters, printed circuit boards, meter electronics, batteries, base stations, repeaters and associated equipment. Based on market research completed within the last two years, some manufacturers source the materials for the meter housings domestically. A few manufacturers indicated that their meter housings are 100 percent manufactured or produced within the United States. However, the industry universally sources the end points/transmitters, printed circuit boards, meter electronics, and batteries internationally. As these components are the most expensive parts of the water meter, the meter system as a whole does not meet BABA's 55 percent of total cost of components domestic content requirement.

Based on the market research described below, there are currently no AMI water meters manufactured domestically that meet BABA requirements.

4. Waiver Justification

Based on cumulative and collaborative market research efforts, DOI and the EPA are issuing a three-year waiver split into two phases. In the first phase, a waiver shall be provided for two years from the date of approval to cover AMI meters and all their components. Two (2) years

from the date of approval, AMI meter housings shall be a domestically manufactured or produced component, but other AMI water meter components will continue to be waived. At the conclusion of the three-year waiver period, DOI and the EPA anticipate that AMI water meters (i.e., bundled with their component parts) will be available as a manufactured product with 55 percent or more of the components domestically manufactured or produced.

This waiver's purpose is to incentivize production of BABA compliant AMI water meters. Based on stakeholder feedback, DOI and the EPA have identified that significant challenges prevent AMI water meters from being BABA compliant. However, with appropriate market signals, AMI water meters could be BABA compliant by the expiration of the waiver. DOI and the EPA are seeking this waiver specifically to send the appropriate market signals to the AMI water meter manufacturing community. DOI and the EPA's expectation is that AMI water meters be BABA compliant. This waiver identifies a realistic phased pathway for domestic manufacture of these products, first by targeting the domestic manufacture of meter housings, with the second phase for the remaining components of an AMI water meter that are not currently available to be manufactured or produced within the United States. As an incentive, while this waiver is active, manufacturers may still receive the benefit of Federal funding by providing products to be used under Federal awards, with the phased approach rewarding those manufacturers that take advantage of the waiver period to transition to domestic content.

Anticipated impact if no waiver were issued: DOI's USBR provides annual funding for the competitive Water and Energy Efficiency Grant (WEEG) program, which regularly funds AMI water meter projects. As no BABA compliant AMI water meter is available, there is no alternative but for these projects to be covered by a product or project waiver. In FY23 alone, USBR's WEEG program competitively selected water meter grants totaling \$43 million Federal and \$90 million non-Federal funding. This \$134 million investment is expected to result in an annual water savings of over 20,000 acre-feet. Based on historical data, the EPA anticipates that at least 10 percent of all EPA funded water infrastructure projects will purchase and install AMI water meters. The majority of these will occur through the State Revolving Fund, the Water Infrastructure Finance and Innovation Act program, and other funding programs. As no BABA compliant AMI water meter is available, there is no alternative but for these projects to be covered by a product or project waiver.

In the absence of this waiver, DOI, the EPA, and the Federal grant-making community will miss an opportunity to clearly articulate expectations for creating a domestically manufactured or produced market to the AMI water meter manufacturing community. This could have the impact of slowing the long-term domestic sourcing transition, and curtailing Federal participation in AMI water meter projects, which would weaken support for communities throughout the West that are struggling to conserve their declining water supply.

Market Research to Justify Product Non-Availability Waiver: From 2022 through 2024, DOI, the EPA, and grant recipients conducted market research to assess the availability of domestically manufactured AMI water meters. As a result of this cumulative market research, there is no known manufacturer of AMI water meters, that meet BABA's domestic production requirements.

All manufacturers responsive to market research inquiries stated that they are in the process of evaluating the idea of moving manufacturing to the U.S., but have no immediate plans or timeframes identified. As there are upwards of fifty (50) components to an AMI water meter system, evaluating the domestic sourcing of the manufactured product as a whole through the component cost break down is a significant effort. Should key high-cost components of an AMI water meter be manufactured within the U.S. in the future, this could lead to a domestically produced manufactured product meeting the 55 percent BABA requirement.

DOI and the EPA considered whether an AMI water meter waiver could target certain components, such as the internal electronics and end points, rather than the AMI water meter as a whole. Transmitters, printed circuit boards, meter electronics, batteries, and end points used within AMI water meters were identified as the components most difficult to source domestically. Market research feedback has indicated that one component of the AMI meter -- the meter housings -- are manufactured domestically by several manufacturers. However, BABA-compliant water meter housings are not available immediately in sufficient quantities to meet demand, nor are they universally compatible. This waiver, through the phased approach, reflects market research and public comments confirming that water meter housing components can be manufactured domestically within two years. DOI and the EPA also considered whether this waiver could be targeted to AMI water meters below a size threshold but found no evidence to support targeting specific size thresholds.

To gain additional industry feedback on materials used in water infrastructure products, such as AMI water meters, the EPA published a Request for Information (RFI) *Request for Information Regarding Products and Categories of Products Used in Water Infrastructure Programs* in the Federal Register on November 20, 2023, which closed on December 20, 2023, EPA-HQ-OW-2023-0396-0001). The RFI requested feedback detailing domestic materials sourcing, market readiness, other product supply considerations, and whether water infrastructure products are manufactured in the U.S. The EPA and DOI examined the 12 comments that provided feedback on the domestic availability of water meters.

In general, commentors to the RFI noted that manufacturers need time to assess, design, develop, and test new lines of domestically produced products consistent with BABA requirements. Component changes on manufactured goods require re-evaluation periods to reduce major issues in manufacturing. This includes establishing new domestic production facilities, new BABA compliant lines of domestic products, and staffing for the new facilities. Commenters also reported significant concerns with stocking burdens, customer communication issues, and production capacity issues. Commenters noted that there are significant issues related to the domestic sourcing of electronics. Commenters note that there is no support to offset the foreign procurement of the electronics. One commentor shared that they were unlikely to meet the BABA domestic component sourcing requirements within five years, as the effort requires a significant time and funding investment.

Given that it is not possible for all future funded AMI water meter projects to source the meter housings from the few domestic sources, (for the above described compatibility and market lead times concerns), DOI and the EPA are issuing a time-limited three-year phased waiver, in which all components of the water meter product are waived in phase one. This initial, two-year phase

of the waiver covers all components of the AMI smart meter to provide an opportunity for manufacturers to assess the sourcing of their meter housings and transition to a domestic supply for that component. The second phase of this waiver, which begins two (2) years from the date of approval, extends waiver coverage to components of the AMI water meter except the meter housing, for the third of three years, whereby AMI water meter housings will be required to be domestically manufactured at that time.

DOI and the EPA consider this waiver to provide a significant market signal and time for manufacturers to analyze current issues and develop strategies to create domestically manufactured or produced products that are consistent with BABA requirements. This will also give time to assess, design, develop, and test new lines of the domestic products. Responses to the EPA's RFI were generally consistent with the feedback DOI had previously received.

DOI and the EPA consider this waiver's incentive-based approach to be appropriate and fair for both manufacturers that have manufactured or produced some of their AMI water meter components domestically and those that have not prioritized a domestic supply of components prior to the enactment of the Infrastructure Investment and Jobs Act, sometimes referred to the Bipartisan Infrastructure Law. Manufacturers not sourcing their components domestically will have sufficient and reasonable time to reassess, plan, and implement changes. Manufacturers currently sourcing some of their products domestically will have sufficient and reasonable time to source the high-cost components of AMI water meters domestically. While the industry as a whole manages this transition, DOI and the EPA may continue to fund projects to conserve and efficiently use water resources through the use of AMI water meters. An analysis will be required immediately prior to the conclusion of the waiver period to identify how the AMI water meter industry has shifted in response to changing market conditions.

Expectation for the agency, award recipients, and industry at the conclusion of the waiver: DOI and the EPA expect to continue to engage in conversations with grant recipients and other Federal agencies to encourage the AMI water meter manufacturing industry to meet the 55 percent of total cost domestic content requirement for BABA compliance.

DOI and the EPA will review this waiver annually to assess whether it remains necessary. DOI and the EPA may, based on the results of that review, terminate, or narrow the scope or duration of this waiver, or take such other action deemed as appropriate.

5. Assessment of Cost Advantage of a Foreign-Sourced Product

Under OMB Memorandum M-24-02, Federal agencies are expected to assess "whether a significant portion of any cost advantage of a foreign-sourced product is the result of the use of dumped steel, iron, or manufactured products or the use of injuriously subsidized steel, iron, or manufactured products" as appropriate before granting a public interest waiver. DOI and the EPA's analysis has concluded that this assessment is not applicable to this waiver as this waiver is not based on the cost of foreign-sourced products.

6. Summary of Public Comments

The waiver received sixteen (16) public comments over the thirty (30) day publication period from August 30, 2024 through September 28, 2024. Five (5) municipal water authorities, four (4) manufacturing entities, three (3) state revolving fund programs, two (2) water infrastructure associations, one (1) national manufacturing association, and one (1) consulting engineer submitted comments. None of the comments opposed the waiver, in general. Most comments included detailed information for consideration, all of which were substantive. While commenters expressed support for the waiver generally, many raised concerns with aspects of the waiver including the phasing and overall duration, component specificity, nomenclature, and scope.

Many commenters requested the waiver duration be extended beyond the three years proposed, noting that additional time appears necessary to scale up and build production for the potential demand cited in the proposal. DOI and the EPA considered the comments regarding waiver duration and determined that the points raised did not warrant extension beyond the proposed three-year duration. Market research for this waiver identified several domestic manufacturing entities that have made recent investments in domestic manufacturing, and comments to the waiver confirm that increasing domestic supply will be available nearing the end of the waiver period. Extension of the waiver beyond three years may disincentivize potential investment and expansion of the developing domestic sources. Before the conclusion of the waiver, DOI and the EPA will re-evaluate the conditions of supply chains for water meters. Should domestic availability continue to be a concern and the identified domestic manufacturing base is unable to ramp up production to meet expected demand, the expiring waiver will be re-considered.

Comments also asked for clarification on the timing of the waiver phases, noting that the language in the proposal caused some confusion about the sequence of the phases whereby some commenters interpreted the total waiver time period as five years, which was not the intent of the proposal. This final waiver includes adjusted language to clarify the phases of the waiver, as follows: The first phase, which is two (2) years in duration, covers AMI meters and all their components. Two (2) years from the date of approval, AMI meter housings shall be a domestically manufactured or produced component, but all other components continue to be waived for the final year of the waiver. The total duration of the waiver is three (3) years.

Several comments expressed concerns with terminology used in the waiver, including references to water meter "bodies" and "resins," in addition to requesting clarification regarding the components of a water meter manufactured product. The consensus of comments recommended changing "bodies" to "housings" to clarify and avoid confusion, a change which is reflected in the final waiver. Additionally, comments recommended striking "resins" from inclusion in the components list describing typical water meter products, noting that the resins are typically input materials that are used to produce components (such as meter housings), and therefore are not directly incorporated into the final manufactured product. The term "resins" has been removed from the final waiver. The final waiver does not, however, include any other changes in reference to the components of a water meter product. DOI and the EPA examined the comments and while the consensus of comments requests delineation of all known, specific components of a water meter product, or to refer to the products as "systems," the final waiver is unchanged from the proposal in this aspect. Several comments noted that the technologies can differ

significantly across brands and models, and that products are evolving rapidly. In order to avoid confusion and mischaracterization of product types, the final waiver retains the example list of water meter product components (such as meter housings, end points/transmitters, printed circuit boards, meter electronics, batteries, base stations, repeaters, and associated equipment), noting that components can differ depending on the water meter system in use or the needs of specific projects. DOI and the EPA view this list of components as a reasonable instructive example of what comprises a water meter manufactured product.

The waiver requested comments regarding the substitutability and compatibility of meter housings and meters from different manufacturers. Six (6) commenters responded that AMI water meters from different manufacturers are not compatible without loss of “AMI” features. One (1) commenter shared that intermingling components would likely void product warranties. DOI and EPA, therefore, consider it important to provide sufficient time and appropriate phasing of this waiver to encourage a market-wide domestic sourcing transition.

The waiver requested comments regarding a potential domestic assembly requirement, to which two (2) commenters responded substantively. One (1) commenter requested expanding the timeframe of the waiver significantly in order to include a domestic assembly requirement after four (4) years. Another commenter responded noting that they could presently domestically assemble a portion of the projected national supply for AMI water meters and could expand that domestic assembly capability to a larger portion (though far less than half of the total) of the demand with further investment, but the timing for the expansion was not provided. While DOI and the EPA appreciate the manufacturing entities' encouraging efforts toward domestic assembly, and strongly recommend recipients to utilize domestically assembled water meters when available, comments did not indicate market readiness for domestic assembly across the industry. The comments did not address or remove concerns that including a domestic assembly requirement within the three-year waiver period would alleviate existing supply chain issues. In light of many comments received emphasizing compatibility issues for municipal projects, the evidence for domestic assembly sourcing to supply the wide range and full projected needs of recipient projects does not warrant inclusion of an assembly requirement during the waiver period.

The waiver applies coverage at the point of purchase. Several comments requested that the final waiver include a change or further clarification to the applicability point for the acquisition of water meters. DOI and the EPA consider the purchase date stipulation to be a clear signal point of waiver applicability for manufacturers and a workable definition for recipients and oversight authorities. Other commenter suggested reference points could create confusion between manufacturers and recipients, ultimately undermining the waiver intent and potentially inviting noncompliance through misapplication of the waiver. The EPA has demonstrated success from past national waivers with the use of purchase date as the waiver applicability point, providing clarity for manufacturers, financial assistance recipients (including sub-recipients), and compliance oversight authorities.

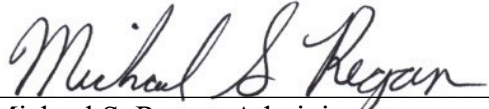
Several comments requested expansion of the waiver to include other types of flow meters beyond AMI water meters. DOI and the EPA are not expanding the waiver to include additional meter types at this time. Although the comments shared supply chain concerns for additional

meter types, the information available does not provide sufficient detail to support expansion of the waiver. DOI and the EPA will continue to evaluate supply chains for these products and may examine future waiver actions based on additional market research or project-specific waiver requests.

Multiple commenters requested the waiver apply to projects with AMI water meter projects already underway, noting that supply chain issues identified in the waiver apply to current activity equally as to future purchases. DOI and the EPA acknowledge that active water meter projects that have already received federal financial assistance for AMI smart water meters are not within the scope of this waiver, noting that extension of this waiver for these situations would "retroactively" apply the waiver, a policy prohibited through M-24-02. If a project has concerns or uncertainty about the status of their project relative to this waiver, DOI and the EPA recommend that projects contact the appropriate funding authority to discuss the specifics of ongoing projects.

For more information on the Buy America Preference, please reference www.doi.gov/grants/buyamerica or MadeinAmerica.gov and www.epa.gov/cwsrf/build-america-buy-america-baba.

The EPA hereby issues this general applicability/nonavailability waiver of the requirements of section 70914 of the Build America, Buy America Act included in the Infrastructure Investment and Jobs Act (Pub. L. No. 117-58) for AMI water meters used in infrastructure projects.

A handwritten signature in cursive script that reads "Michael S. Regan". The signature is written in black ink and is positioned above a horizontal line.

Michael S. Regan, Administrator
U.S. Environmental Protection Agency

APPENDIX B
TRPA ATTACHMENT Q



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HOURS
Mon. Wed. Thurs. Fri
9 am-12 pm/1 pm-4 pm
Closed Tuesday

New Applications Until 3:00
pm

ATTACHMENT Q

STANDARD CONDITIONS OF APPROVAL FOR GRADING PROJECTS

This handout on the standard conditions that must be met in all projects involving grading is divided into the following three sections:

- I. Pre-Grading Conditions (Pre-activity, where applicable)
- II. Construction/Grading Conditions
- III. General Conditions/Design Standards

Please read all of the conditions carefully to avoid any delays in construction of your project.

NOTE: Your plans have been reviewed and approved as required under Tahoe Regional Planning Agency (TRPA) Rules, Regulations and Ordinances only. TRPA has not reviewed and shall not be responsible for any elements contained in your plans, i.e., structural, electrical, mechanical, etc., which are not required for review under said Rules, Regulations and Ordinances.

I. PRE-GRADING/PRE-ACTIVITY CONDITIONS:

The following conditions must be completely complied with prior to any site disturbance or commencement of activity.

A. Final Construction Plans:

Final construction plans must be submitted to and reviewed by TRPA to determine conformance with the approval. Said plans shall clearly depict the following:

1. Slope stabilization methods to stabilize all existing and proposed cut and fill slopes.
2. Areas to be revegetated, including complete specifications for such revegetation.
3. Fencing for vegetation protection.
4. Temporary and permanent erosion control devices.
5. Utility trenches.
6. Dust control measures.
7. All water quality improvements (BMPs) required in the conditional approval. Drainage facilities shall be designed to be capable of retaining runoff water for a two (2) year, six (6) hour storm.
8. The final plans shall contain equipment specifications necessary to establish compliance with Standard Conditions III. A-F.

B. Securities:

A security shall be posted with the TRPA to insure compliance with all permit conditions. The security shall include an amount equal to 110 percent of the cost of the BMPs and other erosion control and water quality improvements required. For further information on the acceptable types of securities, see Attachment J.

C. Mitigation Fees:

All required air quality, water quality, and excess coverage and offsite coverage mitigation fees shall be paid to TRPA.

D. Temporary BMPs:

The following temporary BMPs are required to be installed onsite prior to any grading activity occurring:

1. Installation of temporary erosion controls.
2. Installation of vegetation protection measures.
3. Installation of construction site boundary fencing.

E. Required Inspection:

An onsite inspection by TRPA staff is required prior to any construction or grading activity occurring. TRPA staff shall determine if the onsite improvements required by Condition II (1), above, have been properly installed. No grading or construction shall be undertaken by the permittee until receipt of TRPA notification that the pre-grading/pre-activity conditions of approval have been satisfied.

F. Required Notices:

The following notices to the TRPA are required prior to any grading or construction occurring on the project site:

1. Notice for Pre-Grading Inspection: The permittee shall notify the TRPA when all onsite improvements required under Condition II(1), above, have been installed so that the required pre-grading inspection may be scheduled.
2. Notice of Commencement of Construction: The permittee shall notify the TRPA at least 48 hours prior to commencement of construction or grading on the project site. Said notice shall include the date when construction will commence.

II. CONSTRUCTION/GRADING CONDITIONS:

The following conditions shall be complied with during the grading and construction phase of the project.

- A. All construction shall be accomplished in strict compliance with the plans approved by TRPA.
- B. The TRPA permit and the final construction drawings bearing the TRPA stamp of approval shall be present on the construction site from the time construction commences to final TRPA site inspection. The permit and plans shall be available for inspection upon request by any TRPA employee. Failure to present the TRPA permit and approved plans may result in the issuance of a Cease and Desist Order by the TRPA.
- C. Whenever possible, utilities shall occupy common trenches to minimize site disturbance.
- D. There shall be no grading or land disturbance performed with respect to the project between October 15 and May 1, except as follows:
 1. The grading or land disturbance is for excavation and backfilling for a volume not in excess of three cubic yards.
 2. The activity is completed within a 48-hour period.
 3. The excavation site is stabilized to prevent erosion.
 4. The pregrade inspection is performed by TRPA staff, and the activity passes the inspection.

5. The grading/project does not represent or involve a series of excavations, which, when viewed as a whole, would exceed the provisions of this Standard Condition of Approval, and Subsection 2.3 of the TRPA Code of Ordinances.

Grading is prohibited any time of the year during periods of precipitation and for the resulting period of time when the site is covered with snow, or is in a saturated, muddy, or unstable condition (pursuant to Subsection 33.3.1.A of the TRPA Code of Ordinances.)

- E. All material obtained from any excavation work that is not contained within foundations, retaining walls, or by other methods approved by TRPA shall be removed from the subject parcel and disposed of at a site approved by TRPA.
- F. Replanting of all exposed surfaces, in accordance with the revegetation and slope stabilization plan, shall be accomplished within the first growing season following disturbance, unless an approved construction/inspection schedule establishes otherwise.
- G. All trees and natural vegetation to remain on the site shall be fenced for protection. Scarring of trees shall be avoided and, if scarred, damaged areas shall be repaired with tree seal.
 1. Fencing specified shall be at least 48 inches high and shall be constructed of metal posts and either orange construction fencing or metal mesh fencing also at least 48 inches high (Section 33.6.1). Job sites with violations of the fencing standards will be required to re-fence the job site with a high gauge metal fencing.
 2. No material or equipment shall enter or be placed in the areas protected by fencing or outside the construction areas without prior approval from TRPA. Fences shall not be moved without prior approval (Section 33.6).
 3. To reduce soil disturbance and damage to vegetation, the area of disturbance during the construction of a structure shall be limited to the area between the footprint of the building and the public road. For the remainder of the site the disturbance areas shall not exceed 12 feet from the footprint of the structure, parking area or cut/fill slope. The approved plans should show the fencing and approved exceptions (Section 36.2).
- H. Soil and construction material shall not be tracked off the construction site. Grading operations shall cease in the event that a danger of violating this condition exists. The site shall be cleaned up and road right-of-way swept clean when necessary.
- I. During grading and construction, environmental protection devices such as erosion control devices, dust control, and vegetation protection barriers shall be maintained.
- J. Loose soil mounds or surfaces shall be protected from wind or water erosion by being appropriately covered when construction is not in active progress or when required by TRPA.
- K. Excavated material shall be stored up grade from the excavated areas to the extent possible. No material shall be stored in any stream zone or wet areas.
- L. Only equipment of a size and type that, under prevailing site conditions, and considering the nature of the work to be performed, will do the least amount of damage to the environment shall be used.
- M. Limit idling time for diesel powered vehicles exceeding 10,000 GVW and self-propelled equipment exceeding 25 hp to no more than 15 minutes in Nevada and 5 minutes in California, or as otherwise required by state or local permits.
- N. Utilize existing power sources (e.g. power poles) or clean-fuel generators rather than temporary diesel power generators wherever feasible.
- O. No washing of vehicles or construction equipment, including cement mixers, shall be permitted anywhere on the subject property unless authorized by TRPA in writing.

- P. No vehicles or heavy equipment shall be allowed in any stream environment zone or wet areas, except as authorized by TRPA.
- Q. Locate construction staging areas as far as feasible from sensitive air pollution receptors (e.g. schools or hospitals).
- R. All construction sites shall be winterized by October 15 to reduce the water quality impacts associated with winter weather as follows:
 - 1. For the sites that will be inactive between October 15 and May 1:
 - (a) Temporary erosion controls shall be installed;
 - (b) Temporary vegetation protection fencing shall be installed;
 - (c) Disturbed areas shall be stabilized;
 - (d) Onsite construction slash and debris shall be cleaned up and removed;
 - (e) Where feasible, mechanical stabilization and drainage improvements shall be installed; and
 - (f) Spoil piles shall be removed from the site.
 - 2. For sites that will be active between October 15 and May 1, in addition to the above requirements:
 - (a) Permanent mechanical erosion control devices shall be installed, including paving of driveway and parking areas; and
 - (b) Parking of vehicles and storage of building materials shall be restricted to paved areas.

III. GENERAL CONDITIONS/DESIGN STANDARDS:

- A. Projects approved by TRPA shall be subject to inspections by TRPA at any reasonable time. The permittee shall be responsible for making the project area accessible for inspection purposes. TRPA shall not be liable for any expense incurred by the permittee as a result of TRPA inspections.
- B. Construction shall be completed in accordance with an approved construction schedule. An extension of a completion schedule for a project may be granted provided the request is made in writing prior to the expiration of the completion schedule, a security is posted to ensure completion or abatement of the project, and TRPA makes either of the following findings:
 - 1. The project was diligently pursued, as defined in Subparagraph 2.2.4.C of the Code of Ordinances, during each building season (May 1 - October 15) since commencement of construction.
 - 2. That events beyond the control of the permittee, which may include engineering problems, labor disputes, natural disasters, or weather problems, have prevented diligent pursuit of the project.
- C. Water conservation appliances and fixtures shall be installed in all new facilities or, when replaced, in existing facilities: low flow flush toilets; low flow showerheads (3 gpm rated maximum flow); faucet aerators; and water-efficient appliances (e.g., washing machines and dishwashers).
- D. Water heaters shall not emit nitrogen oxides greater than 40 nanograms of nitrogen oxide (NO₂) per joule of heat output.
- E. Space heaters shall not emit greater than 40 nanograms of nitrogen oxides (as NO₂) per joule of useful heat delivered to the heated space.

- F. Wood heaters to be installed in the Region shall meet the safety regulations established by applicable city, county, and state codes. Coal shall not be used as a fuel source.
1. Emission Standards: Wood heaters installed in the Region shall not cause emissions of more than 7.5 grams of particulates per hour for noncatalytic wood heaters or 4.1 grams per hour for catalytically equipped wood heaters.
 2. Limitations: Wood heaters shall be sized appropriately for the space they are designed to serve. Multi-residential projects of five or more units, tourist accommodations, commercial, recreation and public service projects shall be limited to one wood heater per project area.
 3. List of Approved Heaters: TRPA shall maintain a list of wood heaters which may be installed in the Region. The list shall include the brand names, model number, description of the model and the name and address of the manufacturer. Wood heaters certified for use in either Colorado or Oregon shall be considered in compliance with 6(a), above.
- G. Construction materials shall be secured to prevent them from rolling, washing, or blowing off the project site. Rehabilitation and clean-up of the site following construction must include removal of all construction waste and debris.
- H. Plant species on the TRPA Recommended Native and Adapted Plant List shall be used for lawns and landscaping.
- I. The following sizes and spacing shall be required for woody plant materials at time of planting:
1. Trees shall be a minimum six feet tall or 1-1/2 inch caliper size or diameter at breast height;
 2. Shrubs shall be a minimum three gallon pot size where upright shrubs have a minimum height of 18 inches and a minimum spread of 18 inches; and spreading shrubs have a minimum spread of 18-24 inches.
 3. Groundcovers shall be a minimum four inch pot size or one gallon container and shall be maximum 24 inches on center spacing.
- J. Plant species not found on the TRPA Recommended Native and Adapted Plant List may be used for landscaping as accent plantings but shall be limited to borders, entryways, flower-beds, and other similar locations to provide accent to the overall native or adapted landscape design.
- K. The following exterior lighting standards shall apply:
1. Exterior lights shall not blink, flash or change intensity. String lights, building or roofline tube lighting, reflective or luminescent wall surfaces are prohibited.
 2. Exterior lighting shall not be attached to trees except for Christmas season.
 3. Parking lot, walkway, and building lights shall be directed downward.
 4. Fixture mounting height shall be appropriate to the purpose. The height shall not exceed the limitations set forth in Chapter 37 of the Code.
 5. Outdoor lighting shall be used for purposes of illumination only, and shall not be designed for, or used as, an advertising display. Illumination for aesthetic or dramatic purposes of any building or surrounding landscape utilizing exterior light fixtures projected above the horizontal is prohibited.
 6. The commercial operation of searchlights for advertising or any other purpose is prohibited. Seasonal lighting displays and lighting for special events which conflict with other provisions of this section may be permitted on a temporary basis.

- L. Any normal construction activities creating noise in excess of the TRPA noise standards shall be considered exempt from said standards provided all such work is conducted between the hours of 8:00 a.m. and 6:30 p.m.
- M. Engine doors shall remain closed during periods of operation except during necessary engine maintenance.
- N. Stationary equipment (e.g. generators or pumps) shall be located as far as feasible from noise-sensitive receptors and residential areas. Stationary equipment near sensitive noise receptors or residential areas shall be equipped with temporary sound barriers.
- O. Sonic pile driving shall be utilized instead of impact pile driving, wherever feasible. Pile driving holes shall be predrilled to the extent feasible subject to design engineer's approval.
- P. Fertilizer use on this property shall be managed to include the appropriate type of fertilizer, rate, and frequency of application to avoid release of excess nutrients and minimize use of fertilizer.
- Q. No trees shall be removed or trimmed without prior TRPA written approval unless otherwise specifically exempted under Chapter 2 of the Code of Ordinances.
- R. The architectural design of this project shall include elements that screen from public view all external mechanical equipment, including refuse enclosures, satellite receiving disks, communication equipment, and utility hardware on roofs, buildings or the ground. Roofs, including mechanical equipment and skylights, shall be constructed of nonglare finishes that minimize reflectivity.
- S. The permittee is responsible for insuring that the project, as built, does not exceed the approved land coverage figures shown on the site plan. The approved land coverage figures shall supersede scaled drawings when discrepancies occur.
- T. The adequacy of all required BMPs as shown on the final construction plans shall be confirmed at the time of the TRPA pre-grading inspection. Any required modifications, as determined by TPRA, shall be incorporated into the project permit at that time.
- U. It is the permittee's obligation to locate all subsurface facilities and/or utilities prior to any grading, dredging or other subsurface activity. The permittee is responsible for contacting the Northern Underground Service Alert (USA, usually known as USA DIGS 1-800-227-2600) prior to commencement of any activity on the site.
- V. This approval is based on the permittee's representation that all plans and information contained in the subject application are true and correct. Should any information or representation submitted in connection with the project application be incorrect or untrue, TRPA may rescind this approval or take other appropriate action.

APPENDIX C

CITY OF SOUTH LAKE TAHOE ENCROACHMENT PERMIT EXAMPLE



CITY OF
SOUTH LAKE TAHOE
Public Works Department

Conditional Permit to Excavate within the City Right-of-Way

Permit Fees:

- \$ *TBD*
 Waived per Franchise Agreement

Date: *TBD*

Location: ***Various streets in the Neighborhood***

The City of South Lake Tahoe, having received a proper application and applicable fees, therefore authorizes the work with the following conditions to:

Contractor

For: *Project*

Do hereby extend to: *Contractor* (Permittee) and to all Contractor(s) and Sub Contractor(s) working for Permittee within the project scope identified above, the permission to encroach and/or excavate within the City of South Lake Tahoe Right of Way in compliance with the conditions specified herein, all engineering and public improvement standards, and all codes and ordinances of the City of South Lake Tahoe. This permit is to be strictly adhered to and no other work other than specifically detailed in the plans & specifications approved by the Public Works Department is hereby authorized.

1. Approval by the City of South Lake Tahoe Public Works Department for this Encroachment Permit does not constitute approval by any other agency, nor does this permit constitute approval of any work outside the City Right of Way. The Permittee shall be responsible for all approvals as required by any other agency or department having jurisdiction. **This permit is granted for the Plans dated *TBD*.** Any modification to the plans or locations shall be presented to the Department of Engineering for review and approval prior to commencing work.

Contractor shall contact Mark Frisina at (530) 307-9607 for inspection of traffic control, temporary BMP's, trench backfill, paving, and final restoration.

2. No work shall begin until the City has received the following:
 - Copy of Insurance certificate per this permit for the Contractor
 - Contractor and all sub-contractor proof of City business license has been submitted
 - A copy of a TRPA Grading Season Exception for work between October 16 and April 30.
3. All conditions of the City Code Chapter 7.05 Article II and Chapter 7.20 shall be met. Technical specifications shall meet current City design standards. Special attention shall be directed to Chapters 7.05.170 and 7.05.280 of the City Code.

Chapter 7.05.170 General requirements in performance of work

All work shall be performed in a neat and workmanlike manner in accordance with the standards of the city and any special requirements of the director, and shall be so performed in a manner as to cause the minimum of interference with traffic and inconvenience to the public. Free and unobstructed access shall be provided to all fire hydrants, water gates, valves, manholes, drainage structures and other public service structures and property as may be required for emergency use. Such public service structures or property shall not be removed or relocated without proper coordination with the properly constituted authorities charged with their control and maintenance. The working area shall be confined so as not to obstruct roadways and walks unnecessarily. Temporary roadways, driveways and walks for vehicles and pedestrians shall be constructed where required. Upon written application, streets, driveways or areas may be closed for limited periods where, in the opinion of the director, the public interests can best be served thereby. When required by the director, the contractor shall give notice to the owner or occupant of all property where access will be impaired. The work shall be coordinated with other agencies or persons working in the area to the satisfaction of the director. It is the duty of the contractor to inform himself of the existence and location of all underground facilities and to protect the same against damage. Utility companies shall remain responsible to adjust finished elevations of all manholes, water valves, pull boxes, etc., so that they do not become a hazard to traffic or snow removal equipment. Where the elevation of such structures is altered by maintenance or reconstruction work by the city, the utility company shall be responsible for the readjustment of such structures to the new finished grade. (Ord. 260 § 2. Code 1997 § 26-15)

Chapter 7.05.280 Use of area by city.

At all times during the performance of the work the city shall have the right to use the area occupied by the contractor. (Ord. 260 § 2. Code 1997 § 26-26)

4. Permittee must submit an application in writing to close streets to local traffic only if required, one work week prior to proposed closure. Application must include traffic control plan, schedule of work/closures, and streets affected. Contractor shall meet safety precautions per Chapter 7.05.180 of the City Encroachment Ordinance.

Chapter 7.05.180 Safety precautions.

A. Barricades and Warning Signs. During the performance of the work the contractor shall provide and maintain fences, barricades, warning and directional signs, flares, watchmen and flagmen as may be required by existing laws and regulations and as deemed necessary in the opinion of the director or his designated representatives, to insure full and complete safety to the general public. Barriers, warning signs, lights, etc., shall conform to the requirements of the director. The contractor shall provide flagmen for any encroachment which results in less than one through lane in each direction of traffic flow where required by the director.

B. Compliance with State Safety Orders and Applicable Laws. The contractor shall obey and enforce all safety orders, rules and regulations of the division of industrial safety of the state applicable to the work and shall comply with all applicable state and local laws, ordinances, codes and regulations and barricade requirements. Electric utilities shall be governed by applicable provisions of General Order 95 and General Order 128 of the Public Utility Commission of the state and subsequent revisions or additions. (Ord. 260 § 2. Code 1997 § 26-16)

5. Permittee shall submit proof of insurance for the General Contractor and all sub contractors for the project per the City's Insurance standards *prior* to any work commencing within the Public Right of Way.

Section § 26-28 Hold harmless agreement – Liability insurance.

The contractor shall execute a hold harmless agreement with the city for all liabilities imposed by law for personal injury or property damage proximately caused by the work herein permitted or caused by the contractor's failure to perform the obligations under the permit. The contractor shall take out and maintain during the life of the permit such public liability and property damage insurance as shall protect the city, its elective and appointive boards, officers, agents and employees and the contractor from claims for damages for personal injury, including death, as well as from claims for property damage which may arise from the contractor's or any subcontractor's operations under the permit whether such operations be by the contractor or by any subcontractor or by anyone directly or indirectly employed by either the contractor or any subcontractor, and the amounts of such insurance shall be as follows:

Public liability insurance in an amount not less than \$500,000 per person, \$1,000,000 per occurrence, bodily injury and death, and \$250,000 per occurrence, \$500,000 aggregate for property damage.

No policies of insurance carried by the contractor shall be subject to cancellation except after notice to the city attorney by registered mail at least 30 days prior to the date of cancellation. (Ord. 260 § 2; Ord. 318 § 1; Ord. 772 § 1. Code 1997 § 26-28)

6. Permittee shall abide by the temporary erosion control details indicated on the project plans, and according to local agency guidelines. **The City reserves the rights to have the permittee amend the best management practices as may be requested by the City resulting from field inspection. Offsite impacts of erosion and sedimentation from a**

construction site are prohibited and polluting substances such as construction materials and wastes shall be contained on the site where they cannot drain or be transported into a body of water, stream channel, water conveyance structure or storm drain. **Best Management Practices (BMP's) shall be implemented for all construction sites. All BMP's shall be in place or be capable of being in place within twenty-four (24) hours and must be in place prior to the onset of precipitation.**

7. The Contractor shall prevent the generation of dust due to his operations in the construction zones, along the haul routes, or equipment parking zones. Suppression may consist of water sprinkling, applying dust palliative or an equivalent service, provided it is not in conflict with requirements of any agency's water quality regulations having jurisdiction in that area. The Contractor shall obtain a use permit from the local Water Utility to use hydrants for supply. The contractor shall provide clean vehicle and pedestrian travel ways within the project area and haul zones at the end of each business day. Permittee shall not clean equipment within the Public Right of Way. Cleaning, de-greasing, maintenance, and or re-fueling of equipment shall occur at approved locations only.
8. Permittee shall not change or modify traffic signal operation in anyway without the consent of the City and Caltrans. Traffic signal detection loop identification and marking are the responsibility of the Contractor. The Contractor shall provide the City with 48 hour notice prior to modifying traffic signal operations.
9. **The Permittee shall provide at no cost to the City of South Lake Tahoe, third party engineering materials inspection including but not limited to; proctor curve, compaction testing, backscatter testing, density testing, and asphalt mix testing for conformance to City specifications.** Proposed materials testing contractor and laboratory must be approved by the City prior to work commencing. The Permittee shall provide material testing reports to the City's representative daily. No backfilling or covering of the material or utility shall occur until the City's representative has signed off on the report. **(Unless City inspector authorizes work to be completed without his presence.)**
10. This conditional permit has been issued with the understanding that the contractor will be using an open excavation **within the paved portion of the roadway.**

Restoration requirements are as follows:

1. **Project shall require full travel lane paving for all linear trenches located within the R/W greater than 250' in length (P.I.E.S. SD60-3).**
2. **City code requires a mill and overlay for each lane that has 4 or more trench cuts that cross it within 1 City block.**
3. **Items 1 & 2 will be waived if Permittee enters into a reimbursement agreement with the City.**
 - **All trench cuts shall be T-trench grind in accordance with the City Public Improvements and Engineering Standards Detail SD60-1, SD60-2 and SD60-3.**
 - **All cuts outside of the paved travel way shall be per Public Improvements and Engineering Standard Detail SD60-2.**

- **Cuts occurring in roadways that have been re-paved by the City in the last 5 years are prohibited. Permittee shall apply a crack seal at the new/existing patch and a fog seal for a minimum of 2' greater than the cut on all sides.**
 - **All tie-in paving shall conform to City standards and be a minimum of 3' in width.**
 - **Abandoned pipes 6" and greater in the ROW must be slurry filled.**
11. Excavated material shall be stockpiled in a manner which will not interfere with traffic or present a hazard but in no case shall be stored within the travel way. Excavated material not suitable for backfill shall be removed and disposed as required per local Agency guidelines. All stockpiled material shall be covered and protected to prevent wind transport or discharge from rain events. All imported material shall be subject to approval by the Public Works Department and Utilities.
 12. Trench excavation(s) shall be per Section 11-19 (3.01A) through Section 11-19 (3.25) of the City of South Lake Tahoe Public Improvement and Engineering Standards.
 13. The City Engineer or his representative may cause backfilling to be inspected to determine if all material is properly placed and compacted. Backfill not conforming to the standards of compaction specified above shall be removed and re-compacted by the Contractor.
 14. The Permittee shall be responsible for maintaining safe, level, and structurally sound road and pedestrian travel ways at all times.
 15. All signage removed for work or damaged by work shall be replaced to current City standards at no cost to the City.
 16. **Work hours shall be Monday through Friday from 8:00 AM to 6:30 PM unless otherwise approved.**
 17. **No work shall occur within the City right-of-way from Friday at 5:00 PM to 8:00 a.m. Monday, unless otherwise approved.**
 18. No open trenches or pits to remain open overnight without safety fencing or traffic plate plan approved by the Public Works Department. When steel trench plating is used, the pavement shall be cold planed to a depth equal to the thickness of the plate and to a width and length equal to dimensions of the plate. Steel trench plating shall meet Caltrans Standard Method 2. The Contractor shall be responsible for maintenance of the steel plates, shoring, fencing, signage, barriers, existing pavement, and any other work required or necessary.

The Contractor shall have in his possession, at all times, a current City encroachment permit, TRPA permit, Lahontan Permit, (if required) while performing any activity within the City right-of-way. Permittee is responsible for securing any other agency permits prior to commencing work.

Permittee/Contractor is responsible for all SWPPP/ECP maintenance during project construction.

To prevent "dig ups," call **Underground Service Alert**, 1(800) USA-DIGGS (or 811) prior to excavation.

All operations will be in accordance with applicable ordinances and laws pertaining thereto. The work shall proceed with due diligence. Failure to comply with the conditions of this permit may be cause for revocation of permit and forfeiture of all fees and deposits.

In the event future improvements of the right-of-way necessitate the relocation of any encroachment as a result of this project, the Permittee will relocate the same at their sole expense.

Expiration: This permit shall expire *TBD*. (An extension of time must be requested in writing and contain a TRPA grading extension.)

Public Works

By Signing below, the Permittee acknowledges this conditional permit and agrees to abide by the permit conditions, City Code and Ordinance, and City Standards.

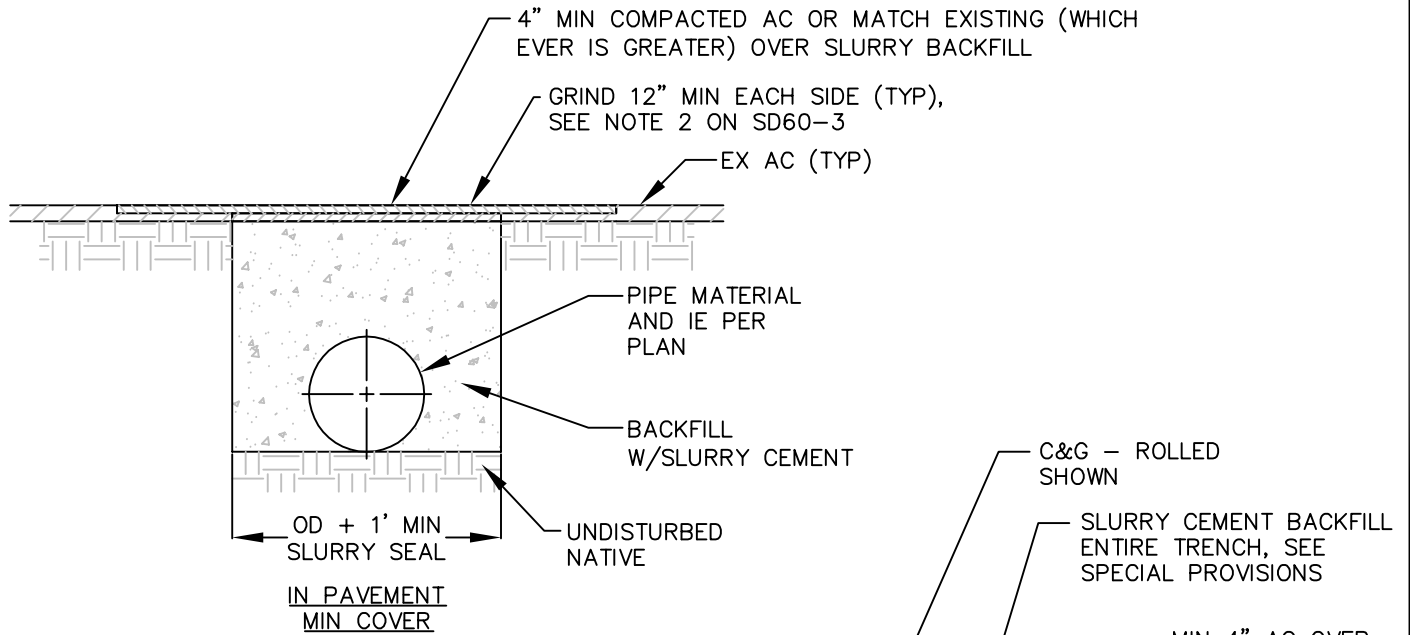
Permittee Signature

Date

Fees Due: Paid by STPUD

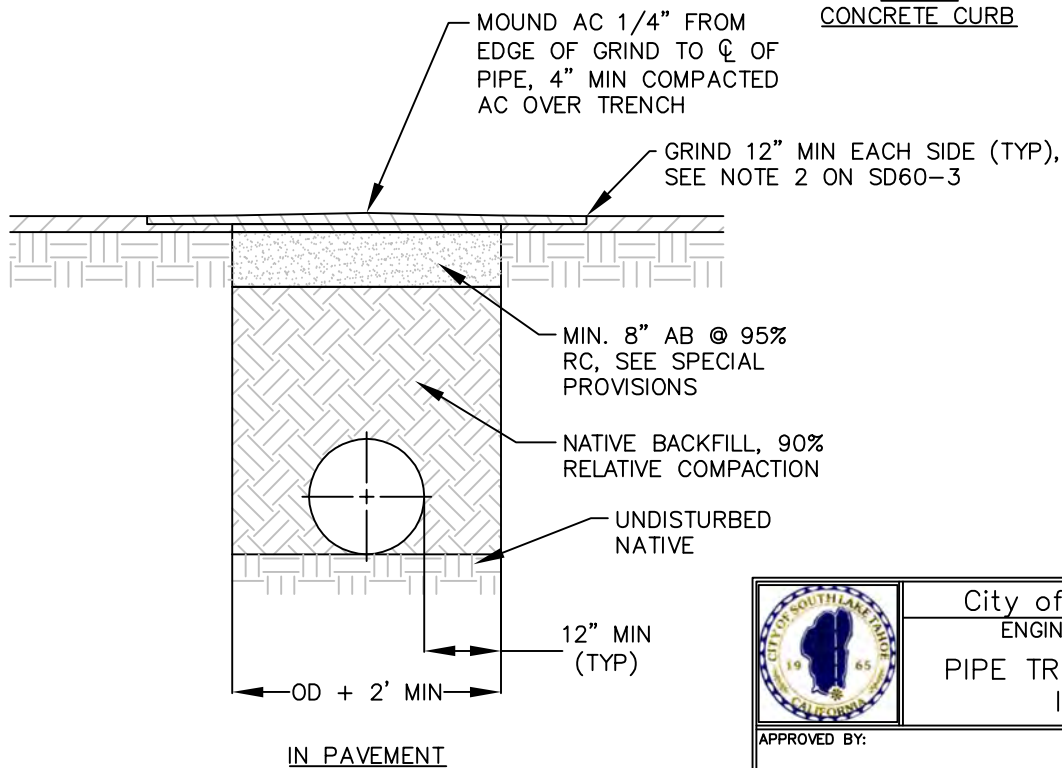
Receipt No.:

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IMPORTANT!
SEE SD60-3 FOR
PIPE TRENCH NOTES

UNDER
CONCRETE CURB

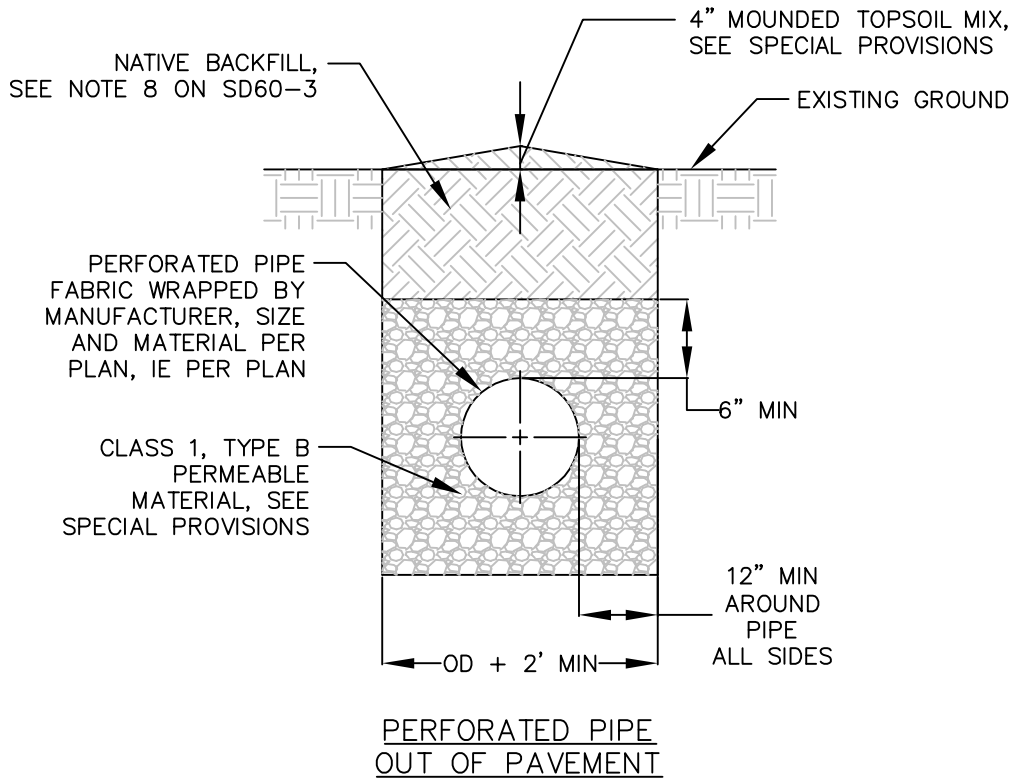
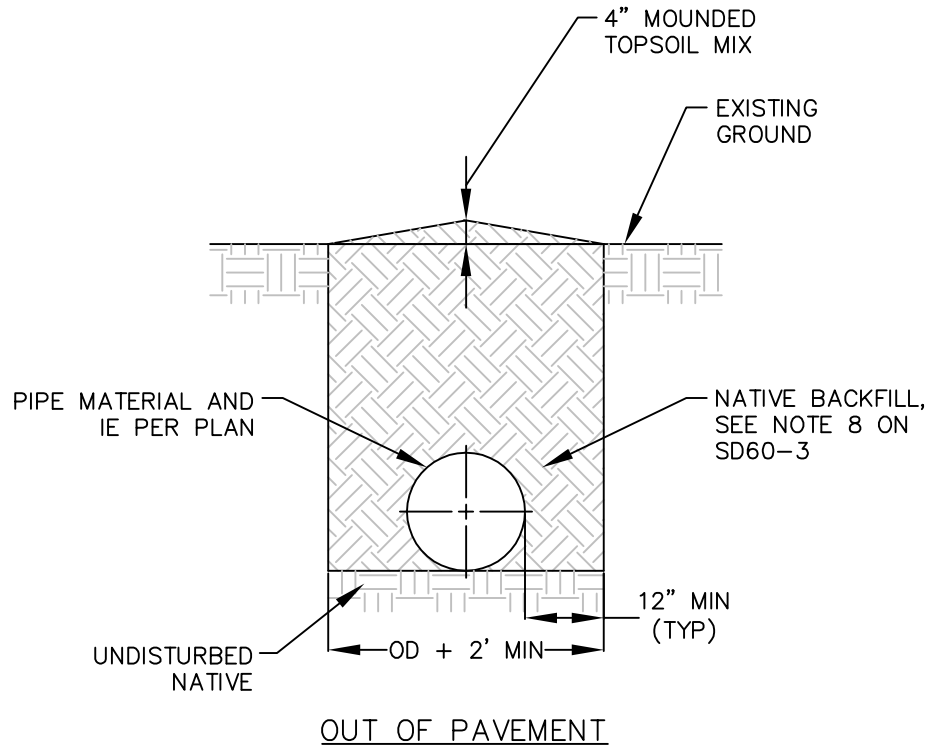


City of South Lake Tahoe
ENGINEERING DEPARTMENT
PIPE TRENCH - CONDITIONS
IN PAVEMENT

APPROVED BY:
05/01/09 CITY ENGINEER

NOT
TO
SCALE

STANDARD DRAWING
SD60-1



IMPORTANT!
SEE SD60-3 FOR
PIPE TRENCH NOTES



City of South Lake Tahoe
ENGINEERING DEPARTMENT
PIPE TRENCH - CONDITIONS
OUT OF PAVEMENT

APPROVED BY:
05/01/09 CITY ENGINEER

NOT TO SCALE

STANDARD DRAWING
SD60-2

NOTES:

1. MINIMUM COVER* FROM CROWN OF PIPE TO FINISH GRADE SHALL BE AS FOLLOWS:
 CULVERTS 18 INCHES
 STORM DRAINS 18 INCHES FOR RCP
 24 INCHES FOR HDPE
 *UNLESS OTHERWISE APPROVED. SEE ALSO SD64.
2. GRIND PAVEMENT A MINIMUM OF 1 FOOT BEYOND EACH SIDE OF THE LONGITUDINAL OR TRANSVERSE EXCAVATION AFTER TRENCH BACKFILL AND FIRST LIFT OF HOT MIX AC.
3. REPLACE PAVEMENT TO EDGE OF PAVEMENT (EP) IF THE EXCAVATION IS WITHIN 3 FEET OF THE EP.
4. IN WET OR ROCKY MATERIAL THE DEPTH OF THE TRENCH BEDDING SHALL BE INCREASED TO THE LARGER OF EITHER 6 IN. OR 1/4 DIA OF PIPE.
5. FOR CULVERTS/STORM DRAINS THE MINIMUM DISTANCE BETWEEN THE SIDE OF THE TRENCH AND THE SIDE OF THE PIPE SHALL BE 1/2 OD OR 12", WHICHEVER IS GREATER.
6. STORM DRAINS AND CULVERTS INSTALLED WITHIN FILL SHALL BE 95% RELATIVE COMPACTION UP TO A MINIMUM OF 12 INCHES ABOVE THE TOP OF PIPE.
7. IN AREAS WITH MINIMUM COVER, BACKFILL ABOVE BEDDING SHALL BE CLASS 2 AGGREGATE BASE UNLESS BACKFILLING WITH CEMENT SLURRY.
8. IN AREAS OF NATURAL VEGETATION OR LANDSCAPING, REMOVE TOP 12 INCHES OF MATERIAL, STOCKPILE & REPLACE ON TRENCH IN A MOUND. BACKFILL COMPACTED BETWEEN 80% AND 85% RELATIVE COMPACTION.
9. ALL LANDSCAPING CONDUITS WITHIN THE ROADWAY PRISM AND/OR TRAFFIC AREAS MUST HAVE MINIMUM OF 30 INCHES COVER.
10. AC PATCH SHALL BE HOTMIX ASPHALT A MINIMUM COMPACTED THICKNESS OF 4 INCHES AND PLACED IN A MINIMUM OF 2 LIFTS.
11. COLD MIX ASPHALT MAY BE PLACED TEMPORARILLY, BUT MUST BE COMPLETELY REMOVED BEFORE PLACING THE PERMANENT HOT MIX ASPHALT.
12. PLACE ASPHALT BASE (AB) AT THE TOP OF THE EXCAVATION WHERE THE EXCAVATION IS WITHIN 2' OF EP OR IF AB PRESENTLY EXISTS ABOVE THE EXCAVATION. IF THE EXCAVATION IS AT THE BOTTOM OF A ROADSIDE DITCH, BEYOND A ROADSIDE DITCH, OR BEHIND A CURB, THE REQUIREMENT FOR AB CAN BE WAIVED.
13. TRANSVERSE EXCAVATION ON ROADWAYS PAVED WITHIN 2 YEARS ARE NOT ALLOWED AND MUST BE BORED. LONGITUDINAL EXCAVATIONS ON ROADWAYS PAVED WITHIN 5 YEARS OR ON COLLECTOR ROADS WITH A HIGH QUALITY RIDING SURFACE REQUIRE A 2" OVERLAY WHICH CONFORMS OR A 2" GRIND AND OVERLAY OF THE TRAVEL LANE.
14. STORM DRAIN BACKFILL TO BE STRUCTURAL BACKFILL.
15. EXCESSIVE TRANSVERSE CUTS MAY REQUIRE A GRIND AND REPAVE OF ENTIRE TRAVEL LANE BETWEEN CUTS.
16. NO SAWCUTS WILL BE ALLOWED IN WHEEL PATHS. SAWCUT LINES SHALL BE PLACED AT ROAD CL, WITHIN SHOULDER OR MIDDLE OF TRAVEL LANE, AND OUTSIDE WHEEL PATHS.
17. MINIMUM PATCH WIDTH SHALL BE 3' WIDE.
18. PATCH WORK SHALL NOT RESULT IN "RIBBON" STRIPS OF PAVEMENT (LESS THAN 3 FEET WIDE). EXISTING PAVEMENT WIDTHS LESS THAN 3 FEET WIDE SHALL BE REMOVED AND PAVED WITH THE PATCH WORK.

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City of South Lake Tahoe
ENGINEERING DEPARTMENT
PIPE TRENCH – NOTES

APPROVED BY:
05/01/09 CITY ENGINEER

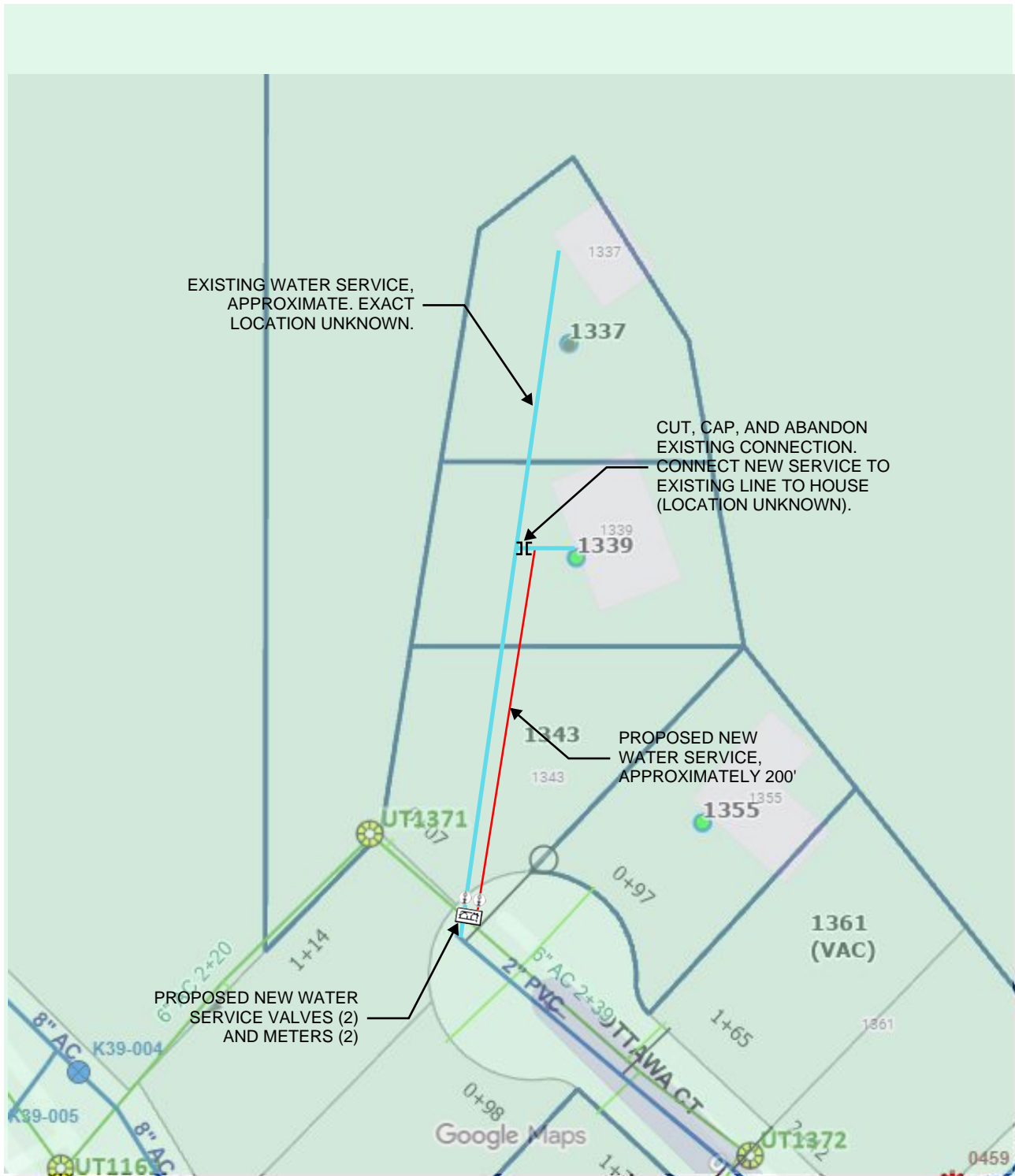
NOT TO SCALE

STANDARD DRAWING
SD60-3

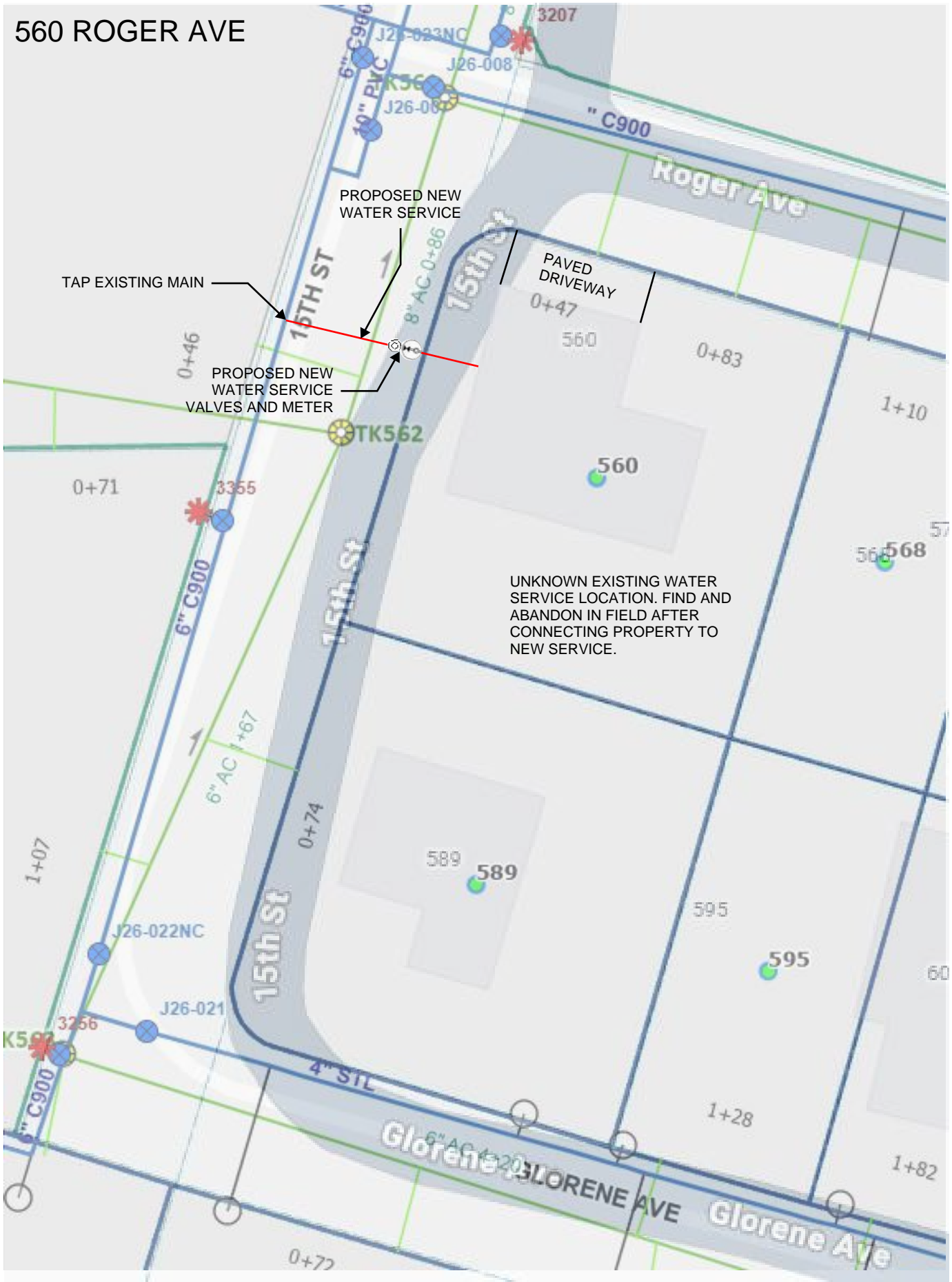
APPENDIX D

EXHIBITS SHOWING BACKYARD SERVICES AND UNKNOWN SERVICE LOCATIONS

1337 AND 1339 OTTAWA COURT



560 ROGER AVE



586 Roger Ave

Address: 586 Roger Ave

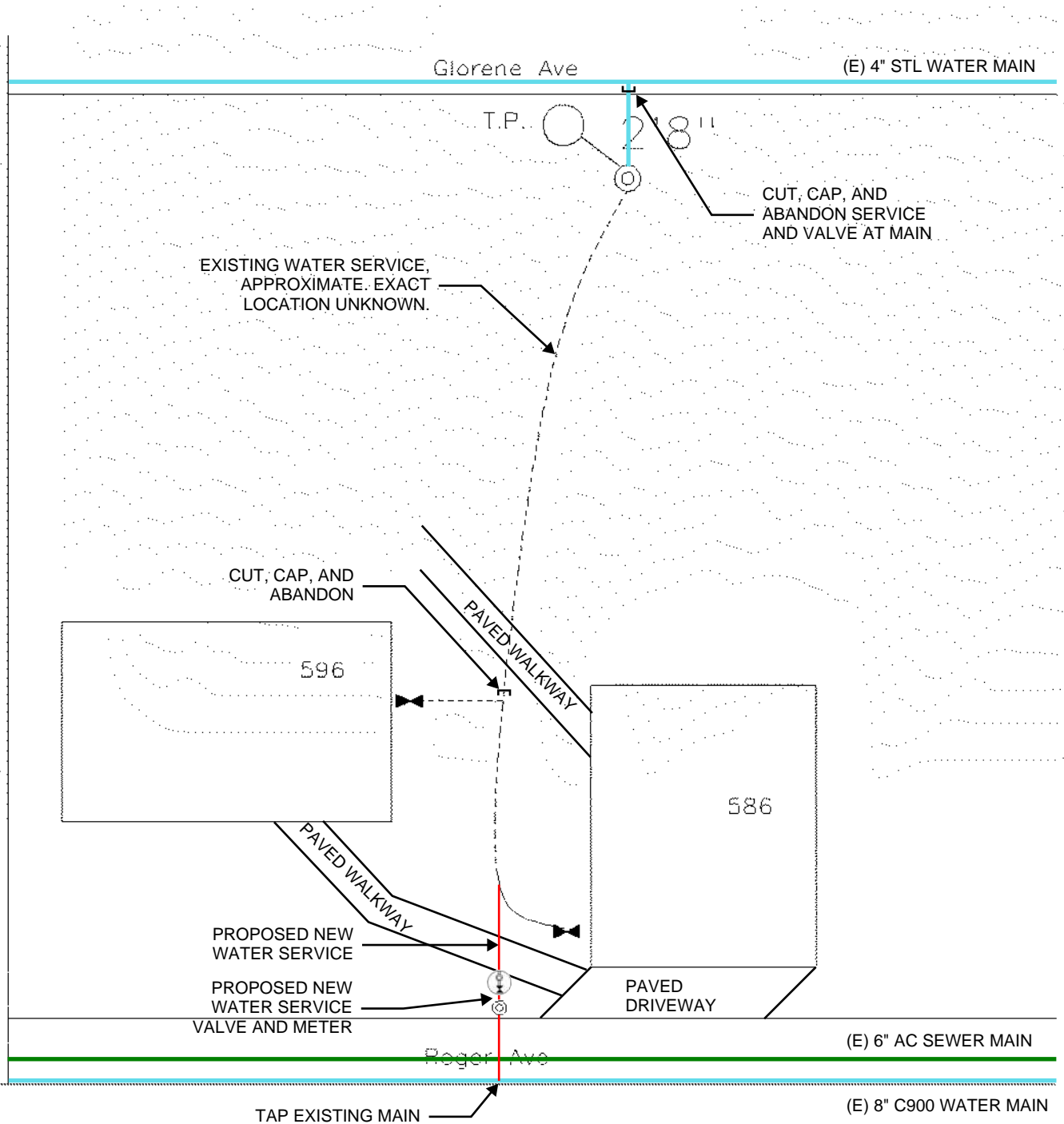
Acct #: 23-132-26

Permit #: 12120

Lot #:

Stop & Drain (Y/N): N

Meter (Y/N): N



Comments:

604 Roger Ave

Address: 604 Roger Ave

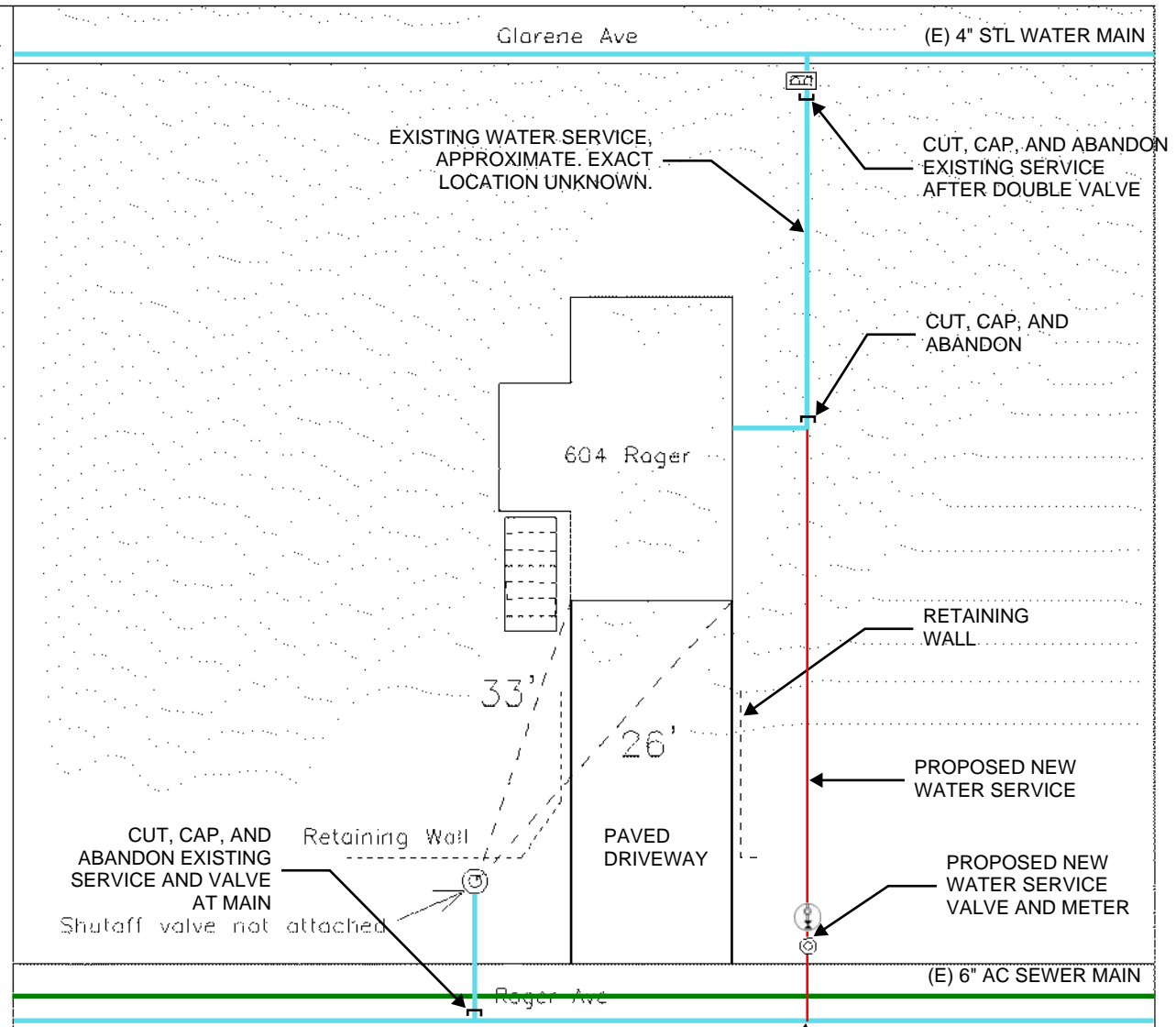
Acct #:

Permit #: 15443

Lot #:

Stop & Drain (Y/N):

Meter (Y/N): N



Comments: somewhere off of glarene should be the actual shutoff valve

TAP EXISTING MAIN

610 Roger Ave

Address: 610 Roger Ave

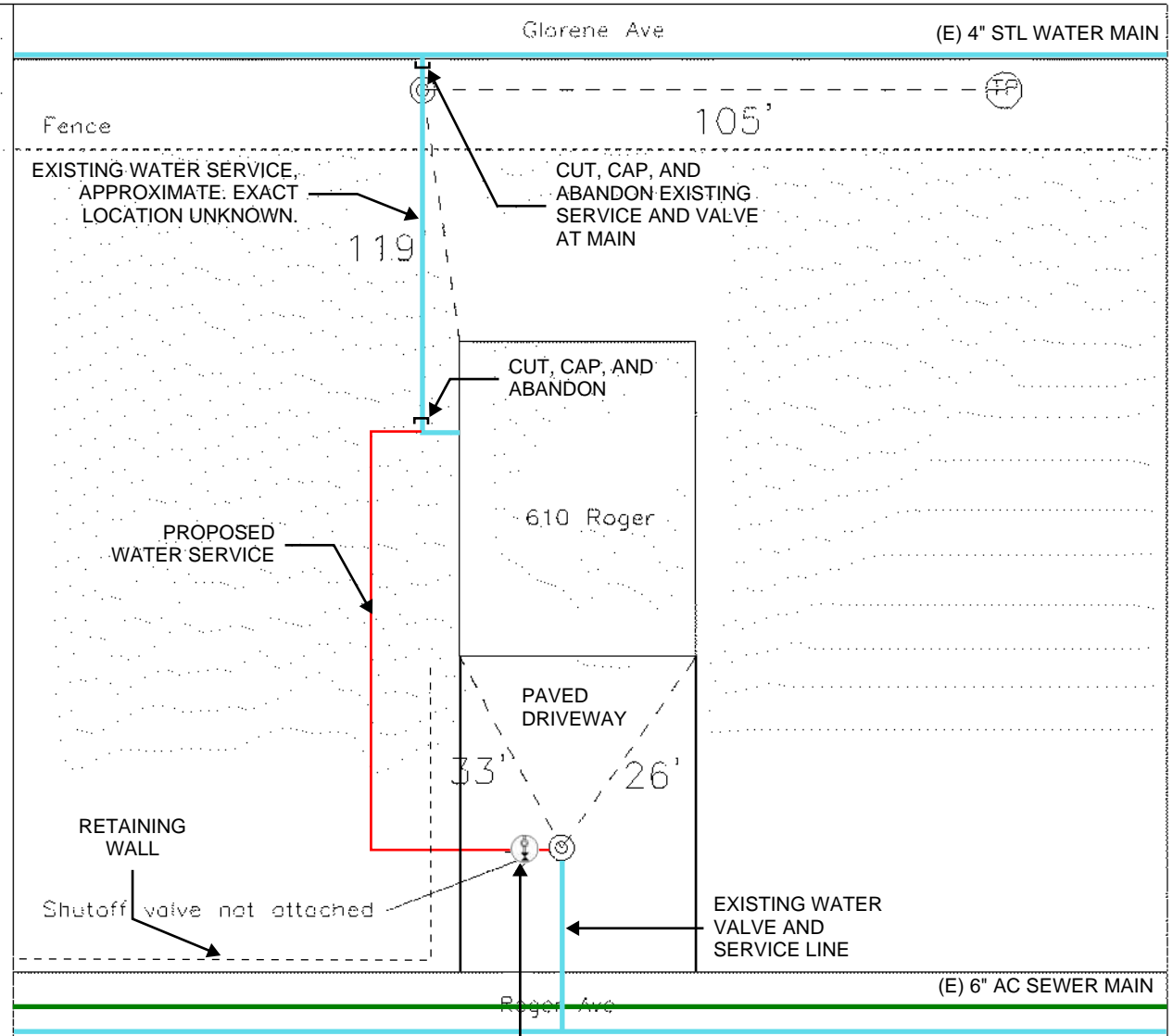
Acct #:

Permit #: 22750, 15046

Lot #:

Stop & Drain (Y/N):

Meter (Y/N): N



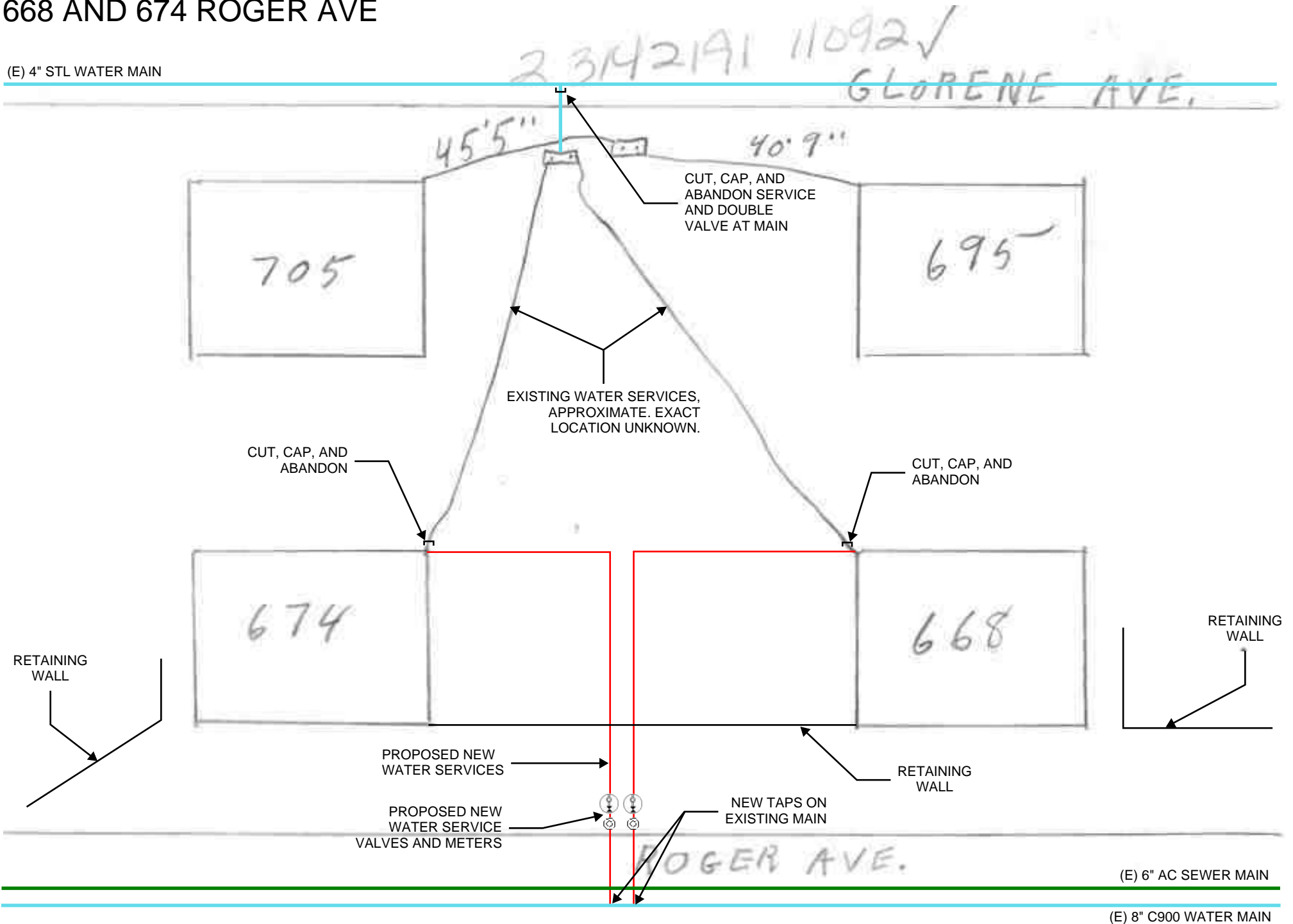
Comments:

PROPOSED
NEW METER

(E) 8" C900 WATER MAIN

668 AND 674 ROGER AVE

(E) 4" STL WATER MAIN



750 Roger Ave

Address: 750 Roger Ave

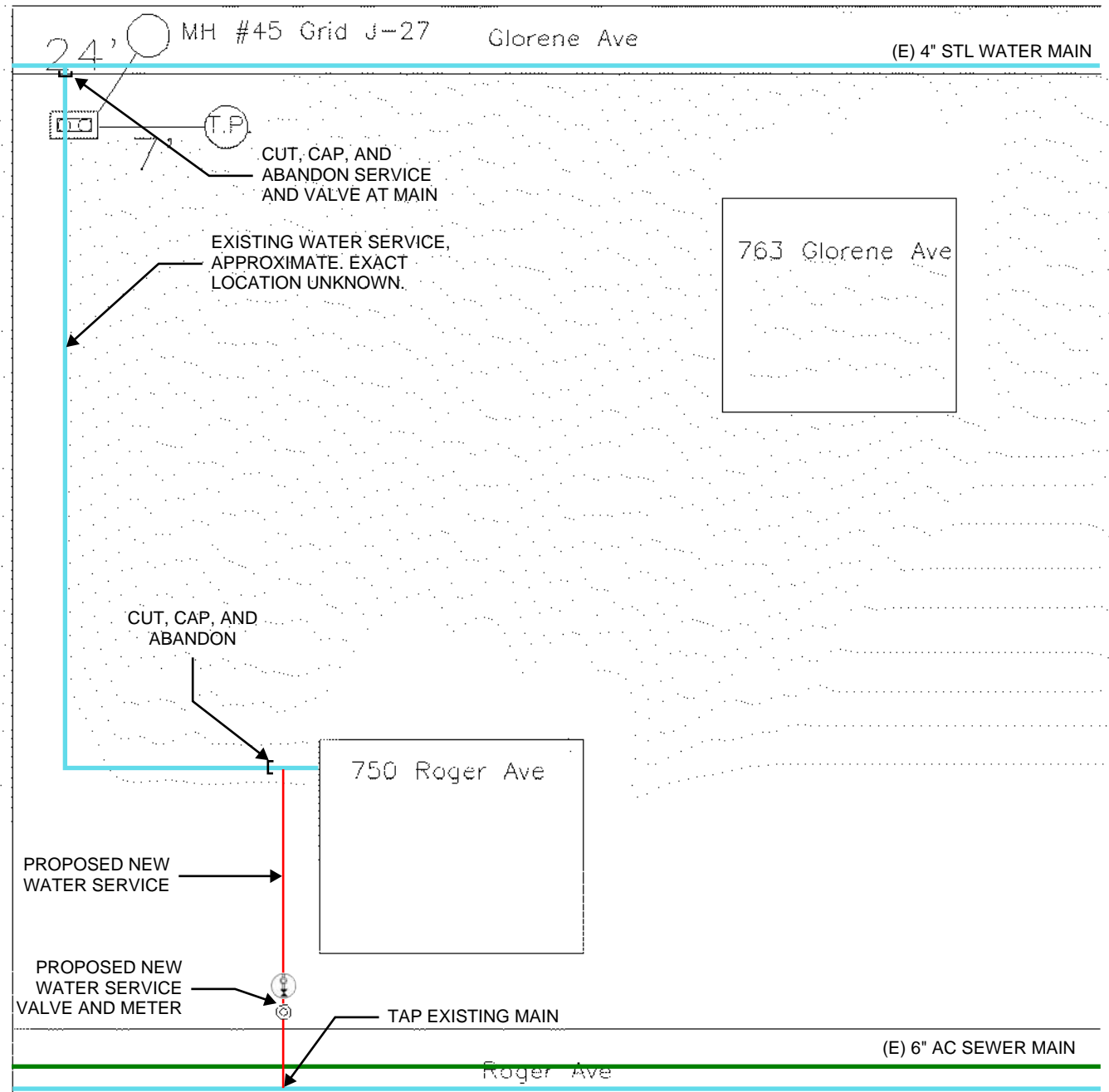
Acct #: 23-162-11

Permit #: 4505

Lot #:

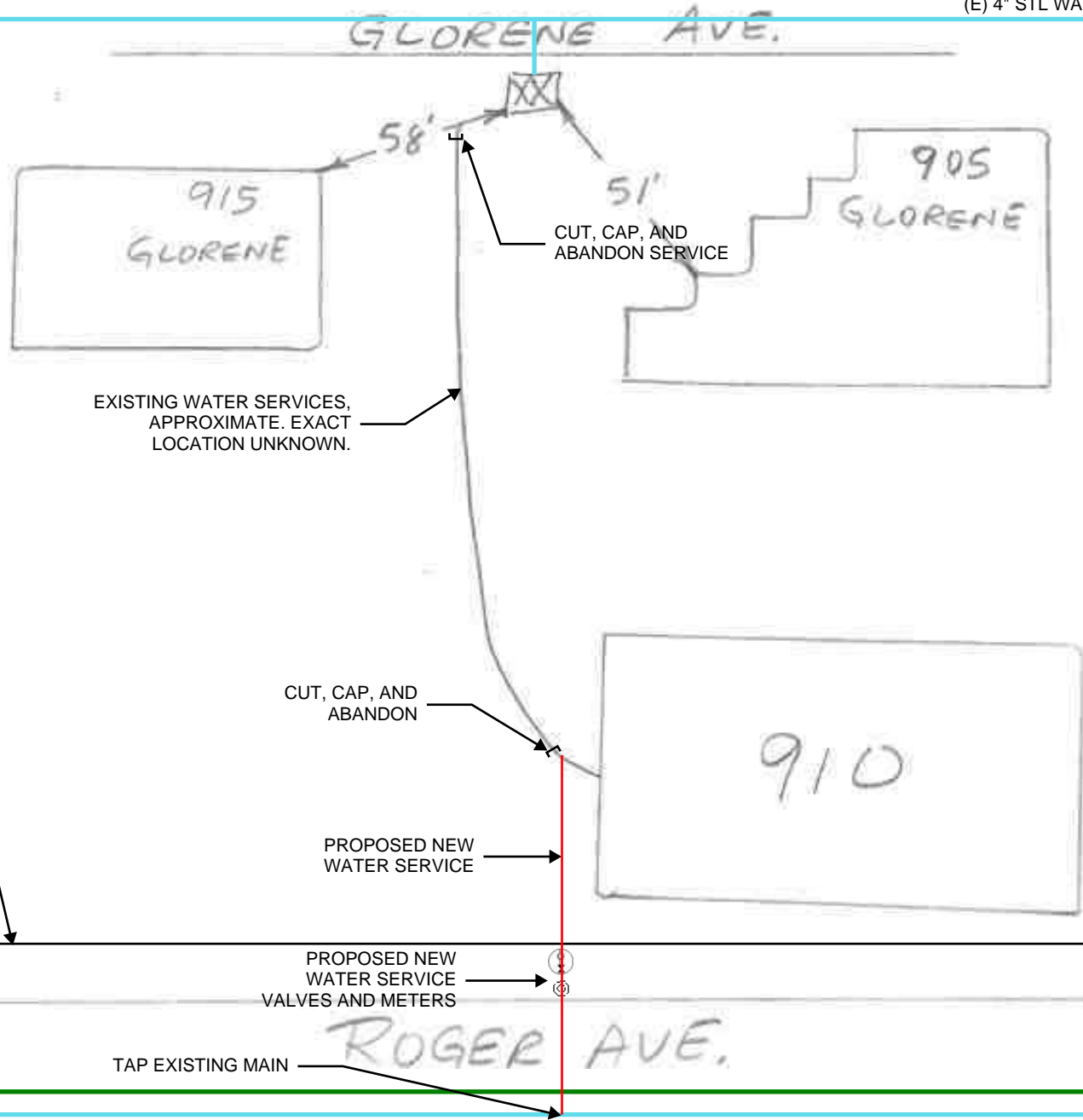
Stop & Drain (Y/N): N

Meter (Y/N): N



Comments: valve location for 750 Roger Ave is located on Glorene Ave.

(E) 8" C900 WATER MAIN



(E) 6" AC SEWER MAIN

(E) 8" C900 WATER MAIN

2209 Chiapa Dr



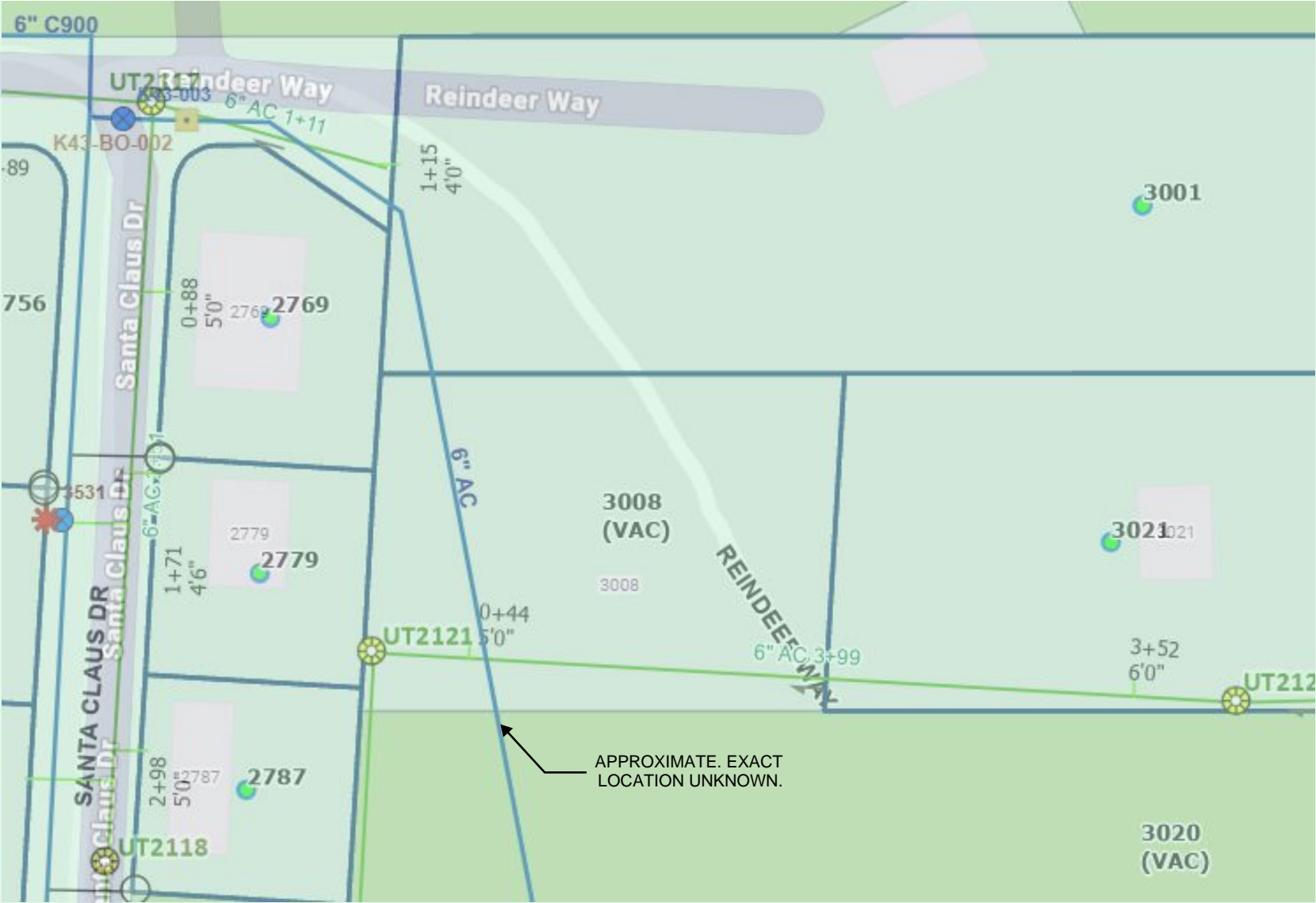
DISTRICT STAFF HAS BEEN UNABLE TO LOCATE THIS WATER SERVICE. ASSUME SERVICE IS NEAR POWER POLE ON NORTH SIDE, POTHOLE TO FIND AND INSTALL METER ON EXISTING SERVICE.

1685 Choctaw



DISTRICT STAFF HAS BEEN UNABLE TO LOCATE THIS WATER SERVICE.
ASSUME SERVICE IS NEAR POWER POLE, POT HOLE TO FIND AND INSTALL
METER ON EXISTING SERVICE.

3021 Reindeer Way



DISTRICT STAFF HAS BEEN UNABLE TO LOCATE THIS WATER SERVICE. POT HOLE TO FIND AND INSTALL METER ON EXISTING SERVICE.