

DOCUMENTS FOR THE CONSTRUCTION OF
PARADISE IRRIGATION DISTRICT

PHASE 1 MAINS REPLACEMENT

**VOLUME 1
TECHNICAL SPECIFICATIONS
(DIVISIONS 1-15)**



MAY 2023

BID SET

ENGINEER:



WATERWORKS
ENGINEERS

WATER WORKS ENGINEERS, LLC.

CONTACT:

Sami Kader, P.E.
(530) 243-2113

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APPENDIX A QUOTE FROM ZENNER USA

++ END OF SECTION ++

SECTION 00080

ADVERTISEMENT FOR BIDS

Sealed Bids for construction of the Phase 1 Main Replacement Project addressed to ATTN: Georgeanna Borrayo, Paradise Irrigation District, 6332 Clark Road, Paradise CA, 95969 will be received until 1:00 p.m., local time, on Wednesday, June 28, 2023.

Bids will be publicly opened, examined, and declared by Water Works Engineers (ENGINEER) on said day and hour, and will be referred to the Paradise Irrigation District (OWNER) for subsequent action. Any Bids received after the specified time and date will not be considered.

This is a public works project located throughout Paradise, CA in the Paradise Irrigation District's service area. The Project contemplated consists of the following major components:

- Sitework including clearing, and grubbing
- Installation of approximately 28,600 feet of C900 potable water mains ranging in diameter from 4 inches to 16 inches for 37 main segments and all corresponding tie-ins
- Abandonment of approximately 9,500 feet of existing water main ranging in diameter from 8 inches to 12 inches by sand blowing
- Abandonment of approximately 24,000 feet of existing water main ranging in diameter from 1.5 inches to 6 inches to be capped
- Installation of inline isolation valves, air release valves, and blow off valves as required
- Installation of forty-five (45) new or salvaged 6-inch hydrants
- Demolition of piping, valves, and hydrants as required
- Installation or reconnection of approximately 400 service laterals ranging in diameter from 1 to 2 inches
- Installation of 182 meters, ranging in diameter from ¾ inch to 2 inch, and meter boxes
- Installation or reconfiguring of 182 backflow prevention assemblies ranging in diameter from 1 inch to 2 inch
- Surface restoration for asphalt roads, concrete sidewalks, curbs, driveways, gravel areas, shoulders, drainage ditches, landscaped areas, and unpaved surfaces
- Public notification of water outages to affected addresses
 - Two weeks in advance of planned work in the area
 - 48 hours in advance of the interruption to service
 - Renotification for rescheduled work

The engineer's opinion of probable construction cost for this project is \$45,000,000. All Work shall be substantially complete in **400** working days. All work shall be completed within **420** working days from the date established in the Notice to Proceed. Refer to Section 01130, Special Project Constraints in the Technical Specifications for project constraints.

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A **mandatory** pre-bid meeting is scheduled between ENGINEER, OWNER and interested bidders on **Thursday, June 1st at 11:00 am**. Interested bidders should meet at the Paradise Irrigation District Board Room, located at 6332 Clark Rd, Paradise, CA 95969, at which time the project will be reviewed. It is a mandatory requirement that each prime contractor must have a representative at the pre-bid meeting to be allowed to submit a bid. Potential sub-contractors and suppliers are not required to attend the pre-bid meeting but are encouraged to attend.

The OWNER has made a determination that no substitutions will be considered and that the following listed materials must be furnished as designated below, in order to match others in use by the OWNER:

- CLOW Valve Company, Fire Hydrant Model 850 – Specification Section 15200
- CLOW Valve Company, Fire Hydrant Model 860 – Specification Section 15200

Bidding Documents include the following:

- Volume 1 – Bidding Requirements and Specifications
- Volume 2 - Drawings

Bidding Documents and addenda may be obtained on the PID website or CIPLIST.com at no charge. Bidding Documents are provided electronically and free of charge. It is the responsibility of each prospective bidder to verify the completeness of their printed Bidding Documents before submitting their Bid and accompanying completed forms. Users are cautioned that OWNER and ENGINEER do not assume any liability or responsibility based on any defective or incomplete copying, excerpting, scanning, faxing, downloading, or printing of the Bidding Documents.

The Bidding Documents shall supersede any information posted or transmitted by CIPLIST.com.

Be advised that the information contained on the PID website or CIPLIST.com may change and without notice to prospective bidders. It is the responsibility of each prospective bidder to check the PID website and/or CIPLIST.com on a daily basis through the close of bids for any applicable addenda or updates. CIPLIST.com sends email notifications to ONLY those registered for the project.

Submit all bidder's questions in writing to kristinaa@wwengineers.com. Last day to submit questions is June 14, 2023. All questions will be answered by June 21, 2023.

The Work under these Bidding Documents is funded by a combination of Federal Emergency Management Public Assistance Program Funds and the EPA's Drinking Water State Revolving Fund Program (DWSRF) which is administered by the California State Water Resources Control Board (SWRCB) Division of Drinking Water's (DDW). The general Federal prevailing rate of per diem wages, holidays, and overtime work for each craft, classification, or type of workmen needed to execute the contract are established by the Secretary of Labor in accordance with the Davis-Bacon Act and can be found online at <http://www.sam.gov>. Contractors shall not pay wages less often than once per week. The successful Bidder agrees upon execution of this Agreement to post a copy of the wage rates at the project site.

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Bidders shall provide a Good Faith Effort to include Disadvantaged Business Enterprises (DBE) in the Work, as described in the Section 00830, SWRCB State Revolving Fund Construction Contract Requirements.

This project is subject to "Use of American Iron and Steel" provisions of the "Consolidated Appropriations Act, 2014," H.R. 3547, Title IV.

Each Bid must be submitted on the prescribed Bid Form and accompanied by Bid security as prescribed in the Instructions to Bidders, payable to the OWNER in an amount not less than 10 percent of the amount Bid.

The Successful Bidder will be required to furnish the additional Bond(s) prescribed in the Bidding Documents.

In order to Bid and perform public work, the Bidder and Subcontractors shall hold or obtain such licenses as required by State Statutes, and federal and local Laws and Regulations. **Bids will be accepted only from Bidders holding a Class A California Contractors' License.**

For questions or information concerning the proposed Work, contact Kristina Alacon via email at kristinaa@wwengineers.com.

OWNER's right is reserved to reject all Bids or any Bid not conforming to the intent and purpose of the Bidding Documents.

Dated this _____ day of _____, 2023.

Paradise Irrigation District

By _____
Tom Lando, District Manager

++ END OF SECTION ++

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SECTION 00100

INSTRUCTIONS TO BIDDERS

PART 1 - DEFINED TERMS

Terms used in these Instructions to Bidders have the meanings assigned to them in the General Conditions.

Certain additional terms used in the Bidding Documents have the meanings indicated below which are applicable to both the singular and plural thereof.

1.1 *Bidder*—one who submits a Bid to OWNER as distinct from a subbidder, who submits a Bid to a Bidder.

1.2 *Apparent Low Bidder*—that Bidder whose Bids as offered in the Bid Form represents the lowest total as determined by the Base Bid.

1.3 *Base Bid*: — Offer of price for all Lump Sum and Unit Price Work.

1.4 *Successful Bidder*—lowest, responsible and responsive Bidder to whom OWNER (on the basis of OWNER's evaluation as hereinafter provided) makes an award.

PART 2 - BIDDING DOCUMENTS

2.1 The Bidding Documents consist of the following volumes:

- Volume 1 – Bid Requirements and Specifications
- Volume 2 - Drawings
 - General Sheets
 - Plan Sheets
 - Details Sheets

2.2 Complete sets of Bidding Documents obtained from CIPLIST.com must be used in preparing Bids. Neither OWNER nor ENGINEER assume any responsibility for errors or misinterpretations resulting from use of incomplete sets of Bidding Documents.

2.3 The Drawings included in the Bidding Document are half-size reductions of the original full-size drawings. The amount of reduction is indicated by a note or scale bar on the Drawings.

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2.4 Bidding Documents made available on the above terms are only for the purpose of obtaining Bids for the Work and shall not be used for any other purpose.

PART 3 - QUALIFICATIONS OF BIDDERS

3.1 To demonstrate qualifications to perform the Work, each Bidder must be prepared to submit within 5 days after Bid opening and upon OWNER's written request evidence, such as financial data, previous experience, present commitments, and other such data as may be called for below. Each Bid must contain evidence of Bidder's qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to contract award.

3.2 Nothing indicated herein will prejudice OWNER's right to seek additional pertinent information as is provided in Article AWARD OF CONTRACT.

PART 4 - LICENSE REQUIREMENTS

4.1 The classification of Contractor's License a Bidder must hold to be eligible for an award of a contract for the Work is listed in the Advertisement for Bids.

PART 5 - EXAMINATION OF CONTRACT DOCUMENTS AND SITE

5.1 It is each Bidder's responsibility, before submitting a Bid, to:

5.1.1 Examine thoroughly the Bidding Documents and other related data identified in the Bidding Documents (including "technical data" referred to below).

5.1.2 Inspect the sites to become familiar with and satisfy Bidder as to the general, local, and site conditions that may affect cost, progress, performance, or furnishing of the Work.

5.1.3 Consider federal, state, and local Laws and Regulations that may affect cost, progress, performance, or furnishing of the Work.

5.1.4 Study and carefully correlate Bidder's knowledge and observations with the Bidding Documents and such other related data.

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5.1.5 Promptly notify ENGINEER of all conflicts, errors, ambiguities, or discrepancies which Bidder has discovered in or between the Bidding Documents and such other related documents.

5.2 Reference is made to the Supplementary Conditions for identification of:

5.2.1 Those reports, if any, of explorations and tests of subsurface conditions at the site which have been utilized by ENGINEER in preparation of the Bidding Documents.

5.2.2 Those drawings, if any, of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities) which are at or contiguous to the site which have been utilized by ENGINEER in preparation of the Bidding Documents.

Copies of such reports and drawings that are not included with the Bidding Documents may be examined at the office of OWNER during regular business hours.

5.3 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders on subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Contract Documents due to differing or unanticipated conditions appear in paragraphs 4.02 and 4.03 of the General Conditions.

5.4 Before submitting a Bid, each Bidder will be responsible to make or obtain such additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the site or otherwise and which may affect cost, progress, performance, or furnishings of the Work and which Bidder deems necessary to determine its Bid.

5.5 On request, OWNER will evaluate each Bidder's request to access project sites to conduct such examinations, investigations, explorations, tests, and studies as each Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the site to its former condition upon completion of such explorations, investigations, tests, and studies.

5.6 Reference is made to the General Requirements for identification of the general nature of work that is to be performed at the site by OWNER or others and that relates to Work for which a Bid is to be submitted. On request, OWNER will provide to each Bidder, for examination, access to or copies of contract documents (other than portions thereof related to price) for such work by others.

5.7 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this article; that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying the specific means, methods, techniques, sequences, or procedures of construction (if any) that may be shown or indicated or expressly required by the Bidding Documents; that Bidder has given ENGINEER

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written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by ENGINEER is acceptable to Bidder; and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work and for preparing the Bid.

PART 6 - INTERPRETATIONS AND ADDENDA

6.1 All questions about the meaning or intent of the Bidding Documents are to be directed to ENGINEER in writing. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by the office issuing documents as having received the Bidding Documents. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

6.2 Addenda may also be issued to modify the Bidding Documents as deemed advisable by OWNER or ENGINEER.

PART 7 - BID SECURITY

7.1 Each Bid must be accompanied by Bid security made payable to OWNER in an amount of 10 percent of Bidder's maximum Bid price and in the form of a certified or cashier check or completed Section 00400, Bid Bond, issued by a surety meeting the requirements of paragraph 5.01 and 5.02 of the General Conditions.

7.2 Each bid must be accompanied by a power-of-attorney for the Surety's agent to execute the Bid Bond.

7.3 The Bid security of Successful Bidder will be retained until such Bidder has executed the Agreement, furnished the required Performance and Payment Bond(s), certificates of insurance, and met the other conditions of the Bidding Documents. If the Successful Bidder fails to sign and deliver the Agreement and furnish the required Bond(s) and certificates of insurance within the time period specified in Article EXECUTION OF AGREEMENT, OWNER may annul the award and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the earlier of the 10th day after the execution of the Agreement by the Successful Bidder or the rejection of all Bids by OWNER. Bid security submitted with Bids which are not competitive will be returned within 15 days after the Bid opening.

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PART 8 - CONTRACT TIMES

8.1 Contract Times are set forth in the Agreement Form Section 00500.

PART 9 - LIQUIDATED DAMAGES

9.1 Provisions for liquidated damages are set forth in the Agreement Form Section 00500.

PART 10 - SUBSTITUTE AND "OR EQUAL" ITEMS

10.1 The contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or "or-equal" items. Whenever it is specified or described in the Bidding Documents that a substitute or "or-equal" item of material or equipment may be furnished or used if acceptable to OWNER or ENGINEER, application for such acceptance will not be considered by OWNER or ENGINEER until after the Effective Date of the Agreement. The procedure for submission of any such application and consideration by ENGINEER is set forth in General Conditions paragraph 6.05 and may be supplemented in Section 01610, GENERAL PRODUCT REQUIREMENTS.

PART 11 - SUBCONTRACTORS, SUPPLIERS, AND OTHERS

11.1 Bidder shall submit with its Bid the names, business addresses, license number and associated work item of each proposed Subcontractor who will perform Work under these Bidding Documents in excess of 1/2 of 1 percent of the amount of the total Bid and shall list the portion of the Work (discipline and subcontract dollar amount) which will be done by such Subcontractor. If the Bidder fails to specify a Subcontractor for any portion of the Work to be performed under the Bidding Documents, the Bidder agrees to perform that portion of the Work itself, and further agrees that it is qualified to perform that portion of the Work.

11.2 Subcontractor information shall be provided on the form included in Section 00310, List of Subcontractors, which shall be submitted with each Bid. Failure to submit this List of Subcontractors will be grounds for rejection of the Bid.

11.3 Subletting and Subcontracting Fair Practices Act:

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Contractor shall comply with the requirements of the Subletting and Subcontracting Fair Practices Act, Chapter 4, Part 1, Division 2 of the Government Code, which include the following:

1. Contractor shall, in its bid or proposal, set forth:
 - a. The name, the location of the place of business, the California contractor license number, and public works contractor registration number issued pursuant to Section 1725.5 of the Labor Code of each subcontractor who will perform work or labor or render service to Contractor in or about the construction of the work or improvement, or a subcontractor licensed by the State of California who, under subcontract to Contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of 1 percent of Contractor's total bid or proposal.
 - b. The portion of the work that will be done by each subcontractor under this act. Contractor shall list only one subcontractor for each portion as is defined by the Contractor in its bid.
2. If Contractor fails to specify a subcontractor or specifies more than one subcontractor for the same portion of work to be performed under the Contract in excess of one-half of 1 percent of the Contractor's total bid, Contractor agrees that it is fully qualified to perform that portion itself, and that Contractor shall perform that portion itself.
3. Contractor may not substitute a person as subcontractor in place of the subcontractor listed in the original bid, except as provided in the Act.

PART 12 - AFFIRMATIVE ACTION REQUIREMENTS

12.1 Bidders, including prospective Subcontractors, are required to follow certain procedures to ensure compliance with the affirmative action requirements set forth in these Bidding Documents and are hereby advised to familiarize themselves with the requirements and to initiate the compliance procedures at the earliest time possible. State and federal regulations require that certain notices be given and procedures be completed within specific minimum periods of time; compliance with the affirmative action requirements might not be achievable if there is any delay in starting the compliance procedures.

PART 13 - WAGE RATES

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13.1 The Work under these Bidding Documents is to be paid for with a combination of State and Federal funds. Therefore, both State and Federal prevailing wage rates are applicable. Where a conflict occurs between the State and Federal prevailing wage rates for any job description, the higher rate shall be used.

13.2 Federal prevailing wage rates information is available at <http://www.sam.gov>. The successful Bidder agrees upon execution of this Agreement to post a copy at the site.

13.2 State of California prevailing wage rates information is available at <http://www.dir.ca.gov/OPRL/PWD/>. The successful Bidder agrees upon execution of this Agreement to post a copy at the site.

PART 14 - BID FORM

14.1 The Bid Form is included with the Bidding Documents. No substitution of the form will be allowed.

14.2 All blanks on the Bid Form must be completed by typing or printing with black ink. All price information shall be shown in both words and figures where required. No changes shall be made in the phraseology of the forms.

14.3 Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation must be shown above the signature.

14.4 Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear on the line below the signature.

14.5 All names must be typed or printed on the line with the signature.

14.6 The Bid shall contain an acknowledgement of receipt of all Addenda (the numbers of which must be filled in on the Bid Form).

14.7 The address and telephone number for communications regarding the Bid must be shown.

PART 15 - SUBMISSION OF BIDS

15.1 Bidders must bid on all schedules for their Bid to be considered responsive.

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15.2 Bid Form and other forms required to accompany Bids may be photocopied for submission of Bids.

15.3 Submit Bids not later than the time prescribed, at the place, and in the manner set forth in the Advertisement for Bids. Enclose Bids in an opaque sealed envelope, marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted) and name and address of Bidder and accompanied by the Bid security and other required documents. If the Bid is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face of it. Bids must be made on the prescribed Bid Form provided and submitted with the forms listed below.

15.4 Bidders shall complete and submit the following with its Bid:

- Bid Form
- PWC-100 Contractor DIR Registration Verification Form
- Contractor's License Number and Class
- Bid Bond Form
- Authority to sign bid if signature is by agent other than officer of corporation, partner, or owner
- List of Subcontractors
- DWSRF Required Forms:
 - Certification of Nonsegregated Facilities
 - Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
 - Nondiscrimination Clause
 - Non-Collusion Affidavit
 - Equal Employment Opportunity Certification
 - Lobbying Certification
 - Form 4500-3 DBE Subcontractor Participation Form
 - Form 4500-3 DBE Subcontractor Performance Form
 - Form 4500-4 DBE Subcontractor Utilization Form
 - Drug-Free Workplace Certification
- American Iron and Steel Acknowledgement
- Power of Attorney for Surety's Agent to execute Bidder's Bond

15.5 Only one Bid from any individual, firm, partnership, or corporation, under the same or different names, will be considered. Should it appear to OWNER that any Bidder is interested in more than one Bid for Work contemplated, all Bids in which such Bidder is interested will be rejected.

PART 16 - MODIFICATION AND WITHDRAWAL OF BIDS

16.1 Bids may be modified or withdrawn by an appropriate document duly executed (in the same manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.

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16.2 If, within 24 hours after Bids are opened, any Bidder files a duly signed, written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid and the Bid security will be returned. Thereafter, that Bidder will be disqualified from further consideration on the Work to be provided under the Contract Documents.

PART 17 - OPENING OF BIDS

17.1 Bids will be opened and (unless obviously nonresponsive) read aloud publicly. A summary of the amounts of the Base Bids will be made available to Bidders within 7 days after the date of Bid opening.

PART 18 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

18.1 All Bids will remain subject to acceptance for 90 days after the date of the Bid opening, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to that date.

18.2 NOTICE OF INTENT TO AWARD – The owner will submit a Notice of Intent to Award within seven days of the closing of the bidding period.

PART 19 - BASIS OF AWARD AND AWARD OF CONTRACT

19.1 If the contract is to be awarded, OWNER will give Successful Bidder a Notice of Award within 90 days after the day of the Bid opening.

19.2 OWNER reserves its right to reject any or all Bids, including without limitation the rights to reject any or all nonconforming, nonresponsive, unbalanced or conditional Bids, and to reject the Bid of any Bidder if OWNER believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by OWNER. OWNER also reserves the right to waive all informalities not involving price, time, or changes in the Work. Discrepancies in the quantity multiplied by unit price and the extended total amount will be resolved in favor of the quantity multiplied by unit price. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

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19.3 In evaluating Bids, OWNER will consider the qualifications of Bidders, whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award. OWNER shall have the right to accept alternates in any order or combination unless otherwise provided in the Bidding Documents.

19.4 OWNER may consider the qualifications and experience of Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the Work for which the identity was required. OWNER also may consider the operating costs, maintenance requirements, performance data, and guarantees of major items of materials and equipment proposed for incorporation in the Work when such data are required to be submitted prior to the Notice of Award.

19.5 OWNER may conduct such investigations as OWNER deems necessary to assist in Bid evaluation and to establish responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, and other persons and organizations to execute Work in accordance with the Bidding Documents to OWNER's satisfaction within the prescribed time.

19.6 If, at the time this contract is to be awarded, the total of the lowest acceptable Bid exceeds the funds then estimated by OWNER as available, OWNER may reject all Bids or take such other action as best serves OWNER's interests.

19.7 If the contract is to be awarded, it will be awarded to lowest Bidder whose evaluation by OWNER indicates to OWNER that the award will be in the best interests of OWNER.

19.8 In the event of failure of the Successful Bidder to sign the Agreement and provide an acceptable Performance and Payment Bond(s), insurance certificate(s), and other required documents, OWNER may award the contract to the next lowest responsive, responsible Bidder.

PART 20 - EXECUTION OF AGREEMENT

20.1 When OWNER gives a Notice of Award to Successful Bidder, it will be accompanied by unsigned copies of the Agreement and other appropriate documents. Within 15 days thereafter, CONTRACTOR shall sign and deliver the copies of the Agreement and attached documents to OWNER with the required Bonds. Within 10 days thereafter, OWNER shall deliver two fully executed copies to CONTRACTOR.

PART 21 - RETAINAGE

00100-10
Specification Name

PHASE 1 MAINS REPLACEMENT PROJECT
PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

21.1 Provisions concerning retainage and CONTRACTOR's rights to deposit securities in lieu of retainage are set forth in the Agreement.

PART 22 - SALES AND OTHER TAXES

22.1 All taxes, as required by the laws and statutes of the state and its political subdivisions, shall be paid by CONTRACTOR. Prices quoted in the Bid Form shall include all taxes.

PART 23 - PROTESTS

23.1 Any party with a direct financial interest adversely affected by any alleged bid irregularity at the Bid opening may file a protest with OWNER, where such protest is based on alleged violations of federal, state, or local law or ordinance, or alleged bid irregularity. A protest must:

- 23.1.1 be written
- 23.1.2 state the specific basis of the appeal.
- 23.1.3 request a determination of the protest issue, and
- 23.1.4 be filed no later than 72 hours before the scheduled Award of Contract by OWNER, as determined by the published agenda of the PARADISE IRRIGATION DISTRICT'S BOARD OF DIRECTORS. Any protest filed after this time will not be considered.

23.2 The party filing the protest must concurrently transmit a copy of all protest documents and any attachments to all other parties with a direct financial interest which may be adversely affected by the determination of the protest appeal.

23.3 OWNER will review the protest and make a determination.

PART 24 - PARADISE IRRIGATION DISTRICT'S PROCUREMENT POLICY

24.1 Refer to Paradise Irrigation District's Procurement Policy Chapter 12.1 for General Provisions and 12.3 for information pertaining to Construction and Capital Improvement Contracts (Link: <https://pidwater.com/docs/district-operations/policy-procedures-manual/405-chapter-12-procurement-policy-2017/file>)

++ END OF SECTION ++

00100-11

Specification Name

PHASE 1 MAINS REPLACEMENT PROJECT

PARADISE IRRIGATION DISTRICT

WWE PROJECT: 19-017

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BID SET

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00100-12
Specification Name

PHASE 1 MAINS REPLACEMENT PROJECT
PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

SECTION 00120

BIDDER'S CHECKLIST

This checklist has been prepared and furnished to aid Bidders in including all necessary supporting information with their bid. Bidders' submittals shall include, but are not limited to, the following:

| <u>Item</u> | <u>Checked</u> |
|---|----------------|
| Bid Form | _____ |
| PWC-100 Contractor DIR Registration Verification Form (Attachment A) | _____ |
| Contractor's License Number and Class Provided | _____ |
| Bid Bond Form | _____ |
| Authority to Sign Bid if Signature is by Agent Other Than Officer of Corporation, Partner, or Owner | _____ |
| List of Subcontractors | _____ |
| <u>DWSRF Required Forms:</u> | |
| Certification of Nonsegregated Facilities | _____ |
| Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion | _____ |
| Nondiscrimination Clause | _____ |
| Non-Collusion Affidavit | _____ |
| Equal Employment Opportunity Certification | _____ |
| Lobbying Certification | _____ |
| Form 4500-2 DBE Subcontractor Participation Form | _____ |
| Form 4500-3 DBE Subcontractor Performance Form | _____ |
| Form 4500-4 DBE Subcontractor Utilization Form | _____ |
| Drug-Free Workplace Certification | _____ |
| American Iron and Steel Acknowledgement | _____ |
| Power-of-Attorney for Surety's Agent to execute Bidder's Bond | _____ |
| Confirmed Bond and Insurance Companies Ratings are in accordance with Supplemental Conditions, Par. SC-5.02.A. | _____ |

00120-1
Specification Name

PHASE 1 MAINS REPLACEMENT PROJECT
PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

Attachment A – PWC 100 Contractor DIR Registration Verification Data Form

00120-2
Specification Name

PHASE 1 MAINS REPLACEMENT PROJECT
PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET



PARADISE IRRIGATION DISTRICT

6332 Clark Road, Paradise CA 95969 | Phone (530)877-4971 | Fax (530)876-0483

PWC-100 Contractor DIR Registration Verification Data Form

Important Notice: Beginning January 1, 2015: (a) No contractor or subcontractor may be listed on a bid proposal for a public works project (submitted on or after March 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5; (b) No contractor or subcontractor may be awarded a contract for public work on a public works project (awarded on or after April 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5; and (c) All projects are subject to compliance monitoring and enforcement by the Department of Industrial Relations.

All contractors and subcontractors who bid on work on a public works project must register and pay an annual fee to DIR. Contractors may register at: <https://efiling.dir.ca.gov/PWCR/ActionServlet?action=displayPWVRegistrationForm>

This form serves as your verification that you have met the above requirement and are able to bid on public works projects with Paradise Irrigation District. Failure to provide this form will result in discontinuation of services with your company.

Please type or print legibly

Please type or print legibly

***All fields must be filled out by Contractors**

*Company Name: _____ *Contact Name: _____

*Address: _____ *City: _____ *State _____ *Zip: _____

*Phone No. () _____ *Fax No. () _____

*Contractor's Lic. No.: _____ *Class Type: _____ *DIR Registration No.: _____

*E-mail address: _____ (must be the same account your company submitted to

DIR registration)

* DIR Classification of workers to be utilized: _____

***Will Sub-Contractors be utilized? Yes ☐ No ☐ (if so, include work classifications on page 2. Attach sub-contractor business information.)**

Prevailing wage applies on projects that meet or exceed \$1,000. Proof of valid Contractor/Specialty license, DIR Registration, workers compensation and insurance are required before work starts.

*****Please mail original form back to the Paradise Irrigation District, Attn: Georgeanna Borrayo at 6332 Clark Rd, Paradise, CA 95969 or email to gborrayo@paradiseirrigation.com**



PARADISE IRRIGATION DISTRICT

6332 Clark Road, Paradise CA 95969 | Phone (530)877-4971 | Fax (530)876-0483

*DIR Classification(s) of workers to be utilized:

Check all that apply

- | | | | |
|---|---|--|---|
| <input type="checkbox"/> Asbestos | <input type="checkbox"/> Bricklayers | <input type="checkbox"/> Carpenters | <input type="checkbox"/> Carpet/Linoleum |
| <input type="checkbox"/> Cement Masons | <input type="checkbox"/> Drywall Finisher | <input type="checkbox"/> Drywall Lather | <input type="checkbox"/> Electrician |
| <input type="checkbox"/> Elevator Mechanic | <input type="checkbox"/> Glazier | <input type="checkbox"/> Iron Worker | <input type="checkbox"/> Laborer |
| <input type="checkbox"/> Landscape Maint. | <input type="checkbox"/> Operating Engineer | <input type="checkbox"/> Modular furn. Installer | <input type="checkbox"/> Painter |
| <input type="checkbox"/> Pipe Trade/Plumber | <input type="checkbox"/> Plaster | <input type="checkbox"/> Roofers | <input type="checkbox"/> Sheet metal/HVAC |
| <input type="checkbox"/> Sound/Communications | <input type="checkbox"/> Surveyors | <input type="checkbox"/> Teamster | <input type="checkbox"/> Telecom Technician |
| <input type="checkbox"/> Tile Workers | | | |

Classifications can be found at: <http://www.dir.ca.gov/oprt/PWD/index.htm> DIR Prevailing Wage Hot Line (415) 703-4774

*Signature of Authorized Person: (must be blue ink)

*Title

*Print Name:

*Date:

**Completion of this form does not constitute a binding contract to provide work and/or equipment listed above.

++ END OF SECTION ++

00120-5
Specification Name

PHASE 1 MAINS REPLACEMENT PROJECT
PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

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NOTE TO BIDDER: Use typewriter or black or blue ink for completing this Bid Form.

SECTION 00300

BID FORM

To: Paradise Irrigation District
Bid Delivery Address: 6332 Clark Road,
Paradise CA
Project Identification: Main Replacement Project

1. BIDDER'S DECLARATION AND UNDERSTANDING

1.1 This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm, or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm, or corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

1.2 In submitting this Bid, Bidder acknowledges and accepts CONTRACTOR's representations as more fully set forth in the Agreement Form.

1.3 In submitting this Bid, Bidder certifies Bidder is qualified to do business in the state where the Project is located as required by laws, rules, and regulations or, if allowed by statute, covenants to obtain such qualification prior to contract award.

2. CONTRACT EXECUTION AND BONDS

2.1 The undersigned Bidder agrees, if this Bid is accepted, to enter into an Agreement with OWNER on the form included in the Bidding Documents to perform and furnish Work as specified or indicated in the Bidding Documents for the Contract Price derived from the Bid and within the Contract Times indicated in the Agreement and in accordance with the other terms and conditions of the Bidding Documents.

2.2 Bidder accepts the terms and conditions of the Bidding Documents.

3. INSURANCE

3.1 Bidder further agrees that the Bid amount(s) stated herein includes specific consideration for the specified insurance coverages.

4. CONTRACT TIMES

00300-1
Specification Name

PHASE 1 MAINS REPLACEMENT PROJECT
PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

MAY 2023
BID SET

| Bid Schedule | | | | | |
|--------------|--------------------------------------|------|----------|------------|-----------------------|
| Item No. | Description | Unit | Quantity | Unit Price | Extended Total Amount |
| 1 | Town of Paradise Encroachment Permit | LS | 1 | \$ | \$ |
| 2 | Traffic Control | LS | 1 | \$ | \$ |
| 3 | Mobilization and Demobilization | LS | 1 | \$ | \$ |
| 4 | Clearing and Grubbing | LS | 1 | \$ | \$ |
| 5a | Abandon Water Main <8" Diameter | LF | 24,000 | \$ | \$ |
| 5b | Abandon 8" Water Main | LF | 2,500 | \$ | \$ |
| 5c | Abandon 10" Water Main | LF | 2,500 | \$ | \$ |
| 5d | Abandon 12" Water Main | LF | 3,200 | \$ | \$ |
| 5e | Abandon 14" Water Main | LF | 1,250 | \$ | \$ |
| 6a | Install 4" C900 PVC Water Main | LF | 850 | \$ | \$ |
| 6b | Install 6" C900 PVC Water Main | LF | 19,500 | \$ | \$ |
| 6c | Install 8" C900 PVC Water Main | LF | 500 | \$ | \$ |
| 6d | Install 10" C900 PVC Water Main | LF | 4,000 | \$ | \$ |
| 6e | Install 12" C900 PVC Water Main | LF | 3,700 | \$ | \$ |
| 6f | Install 16" C900 PVC Water Main | LF | 70 | \$ | \$ |
| 7a | Install 4" Gate Valve | EA | 1 | \$ | \$ |
| 7b | Install 6" Gate Valve | EA | 14 | \$ | \$ |
| 7c | Install 8" Gate Valve | EA | 1 | \$ | \$ |
| 7d | Install 10" Gate Valve | EA | 3 | \$ | \$ |
| 7e | Install 12" Gate Valve | EA | 1 | \$ | \$ |

00300-3
Specification Name

PHASE 1 MAINS REPLACEMENT PROJECT
PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

| | | | | | |
|-----|--|----|-------|----|----|
| 8 | Install Blow Off Assembly | EA | 21 | \$ | \$ |
| 9 | Install Air Release and Vacuum Relief Valve Assembly | EA | 13 | \$ | \$ |
| 10a | Install 1" HDPE Service Lateral | LF | 6,000 | \$ | \$ |
| 10b | Install 1.5" HDPE Service Lateral | LF | 150 | \$ | \$ |
| 10c | Install 2" HDPE Service Lateral | LF | 1,500 | \$ | \$ |
| 11a | Reconnect 3/4" and 1" Service Lateral | EA | 210 | \$ | \$ |
| 11b | Reconnect 1.5" Service Lateral | EA | 2 | \$ | \$ |
| 11c | Reconnect 2" Service Lateral | EA | 1 | \$ | \$ |
| 12a | Furnish and Install ¾" - 1" Meter Box | EA | 176 | \$ | \$ |
| 12b | Furnish and Install 1.5" - 2" Meter Box | EA | 6 | \$ | \$ |
| 13a | Furnish and Install 3/4" Meter and MIU | EA | 159 | \$ | \$ |
| 13b | Furnish and Install 1" Meter and MIU | EA | 17 | \$ | \$ |
| 13c | Furnish and Install 1.5" Meter and MIU | EA | 4 | \$ | \$ |
| 13d | Furnish and Install 2" Meter and MIU | EA | 2 | \$ | \$ |
| 14a | Reset ¾" - 1" Meter and Meter Box | EA | 40 | \$ | \$ |
| 14b | Reset 1.5" – 2" Meter Box | EA | 1 | \$ | \$ |
| 15a | Furnish and Install 1" Backflow Preventer | EA | 165 | \$ | \$ |
| 15b | Furnish and Install 1.5" Backflow Preventer | EA | 4 | \$ | \$ |
| 15c | Furnish and Install 2" Backflow Preventer | EA | 2 | \$ | \$ |
| 16a | Reconfigure 1" Backflow Preventer | EA | 7 | \$ | \$ |
| 16b | Reconfigure 1.5" Backflow Preventer | EA | 2 | \$ | \$ |

00300-4
Specification Name

PHASE 1 MAINS REPLACEMENT PROJECT
PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

| | | | | | |
|-----|---|----|---------|----|----|
| 16c | Reconfigure 2" Backflow Preventer | EA | 2 | \$ | \$ |
| 17 | Test Backflow Preventer | EA | 325 | \$ | \$ |
| 18 | Reconnect Customer Plumbing | LF | 910 | \$ | \$ |
| 19 | Repair Backflow Preventer | EA | 25 | \$ | \$ |
| 20a | Excavation and Backfill <5ft Depth | LF | 34,200 | \$ | \$ |
| 20b | Excavation and Backfill >5ft Depth, Shoring Required | LF | 1,700 | \$ | \$ |
| 21 | Asphalt Restoration - General | SF | 205,000 | \$ | \$ |
| 22 | Concrete Restoration - General | SF | 2,500 | \$ | \$ |
| 23 | Unpaved Restoration - General | SF | 26,000 | \$ | \$ |
| 24 | Remove and Demolish Fire Hydrant | EA | 37 | \$ | \$ |
| 25 | Install New Fire Hydrant Assembly | EA | 25 | \$ | \$ |
| 26 | Install Hydrant Assembly with Salvaged Hydrant Head | EA | 20 | \$ | \$ |
| 27 | Furnish Hydrant Breakaway Valve | EA | 10 | \$ | \$ |
| 28 | Excavation and Backfill - Hydrant Assemblies | LF | 800 | \$ | \$ |
| 29 | Asphalt Restoration for Hydrant Assemblies | SF | 2,500 | \$ | \$ |
| 30 | Concrete Restoration - Hydrant Assemblies | SF | 200 | \$ | \$ |
| 31 | Unpaved Restoration - Hydrant Assemblies | SF | 600 | \$ | \$ |
| 32a | Construct and Install Tie-In - Xeno DTL 4 | EA | 1 | \$ | \$ |
| 32b | Construct and Install Tie-In - Judy DTL 2 | EA | 1 | \$ | \$ |
| 32c | Construct and Install Tie-In - Gracephil DTL 5 | EA | 1 | \$ | \$ |
| 32d | Construct and Install Tie-In - Scandia DTL 6 | EA | 1 | \$ | \$ |

00300-5
Specification Name

PHASE 1 MAINS REPLACEMENT PROJECT
PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

| | | | | | |
|-----|--|----|---|----|----|
| 32e | Construct and Install Tie-In - Farber DTL 7 | EA | 1 | \$ | \$ |
| 32f | Construct and Install Tie-In - Linry DTL 8 | EA | 1 | \$ | \$ |
| 32g | Construct and Install Tie-In - Cypress DTL 2 | EA | 1 | \$ | \$ |
| 32h | Construct and Install Tie -In - Clark/ Cabernet DTL 9 | EA | 1 | \$ | \$ |
| 32i | Construct and Install Tie-In - Gate/ Pentz DTL 10 | EA | 1 | \$ | \$ |
| 32j | Construct and Install Tie-In - Honeysuckle DTL 11 | EA | 1 | \$ | \$ |
| 32k | Construct and Install Tie-In - Pentz/Grand DTL 3 | EA | 1 | \$ | \$ |
| 32l | Construct and Install Tie-In - Pentz/ ZATM DTL 12 | EA | 1 | \$ | \$ |
| 32m | Construct and Install Tie-In - Skyway/ A-Tank DTL 13 | EA | 1 | \$ | \$ |
| 32n | Construct and Install Tie-In - Skyway/ Bader Mine North DTL 3 | EA | 1 | \$ | \$ |
| 32o | Construct and Install Tie-In - Skyway/ Bader Mine South DTL 14 | EA | 1 | \$ | \$ |
| 32p | Construct and Install Tie-In - Clark-A1 DTL 15 | EA | 1 | \$ | \$ |
| 32q | Construct and Install Tie-In - Clark/ Walnut DTL 3 | EA | 1 | \$ | \$ |
| 32r | Construct and Install Tie-In - Clark/ Raylinn DTL 3 | EA | 1 | \$ | \$ |
| 32s | Construct and Install Tie-In - Clark/ Wee Dell DTL 3 | EA | 1 | \$ | \$ |
| 32t | Construct and Install Tie-In - Clark-A2 DTL 16 | EA | 1 | \$ | \$ |
| 32u | Construct and Install Tie-In - Crandall North DTL 17 | EA | 1 | \$ | \$ |
| 32v | Construct and Install Tie-In - Crandall South DTL 18 | EA | 1 | \$ | \$ |
| 32w | Construct and Install Tie-In - Deodara DTL 19 | EA | 1 | \$ | \$ |
| 32x | Construct and Install Tie-In - Himmel South DTL 20 | EA | 1 | \$ | \$ |
| 32y | Construct and Install Tie-In - Himmel North DTL 21 | EA | 1 | \$ | \$ |

00300-6
Specification Name

PHASE 1 MAINS REPLACEMENT PROJECT
PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

| | | | | | |
|------|--|----|---|----|----|
| 32z | Construct and Install Tie-In - Forest DTL 22 | EA | 1 | \$ | \$ |
| 32aa | Construct and Install Tie-In - York Towne DTL 37 | EA | 1 | \$ | \$ |
| 32ab | Construct and Install Tie-In - Paradise Ave DTL 23 | EA | 1 | \$ | \$ |
| 32ac | Construct and Install Tie-In - Moon-Hazel DTL 24 | EA | 1 | \$ | \$ |
| 32ad | Construct and Install Tie-In - Fawndale DTL 2 | EA | 1 | \$ | \$ |
| 32ae | Construct and Install Tie-In - Sawmill DTL 25 | EA | 1 | \$ | \$ |
| 32af | Construct and Install Tie-In - Feather River DTL 26 | EA | 1 | \$ | \$ |
| 32ag | Construct and Install Tie-In - Skyway-1 DTL 27 | EA | 1 | \$ | \$ |
| 32ah | Construct and Install Tie-In - Skyway/Coldren DTL 3 | EA | 1 | \$ | \$ |
| 32ai | Construct and Install Tie-In - Skyway-2 DTL 28 | EA | 1 | \$ | \$ |
| 32aj | Construct and Install Tie-In - Clark/Elliott DTL 29 | EA | 1 | \$ | \$ |
| 32ak | Construct and Install Tie-In - Clark/Shadowbrook DTL 30 | EA | 1 | \$ | \$ |
| 32al | Construct and Install Tie-In - Pacific/Princeton DTL 31 | EA | 1 | \$ | \$ |
| 32am | Construct and Install Tie-In - Orchard/Foothill DTL 32 | EA | 1 | \$ | \$ |
| 32an | Construct and Install Tie-In - Pacific DTL 33 | EA | 1 | \$ | \$ |
| 32ao | Construct and Install Tie-In - Coral Ave DTL 2 | EA | 1 | \$ | \$ |
| 32ap | Construct and Install Tie-In - Coral Cir DTL 2 | EA | 1 | \$ | \$ |
| 32aq | Construct and Install Tie-In - Paloma/Bella Vista DTL 34 | EA | 1 | \$ | \$ |
| 32ar | Construct and Install Tie-In - Del Monte/ Buschmann DTL 35 | EA | 1 | \$ | \$ |
| 32as | Construct and Install Tie-In - Aspen DTL 1 | EA | 1 | \$ | \$ |
| 32at | Construct and Install Tie-In Lowry DTL 2 | EA | 1 | \$ | \$ |

00300-7
Specification Name

PHASE 1 MAINS REPLACEMENT PROJECT
PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

| | | | | | |
|--|--|----|----|----|----|
| 32au | Construct and Install Tie-In - Graystone DTL 36 | EA | 1 | \$ | \$ |
| 32av | Construct and Install Tie-In Kemlyn DTL 2 | EA | 1 | \$ | \$ |
| 32aw | Construct and Install Tie-In Woodsdale DTL 38 | EA | 1 | S | S |
| Bid Schedule Total | | | | | |
| Total Cost (Combine Items 1-32aw) | | | \$ | | |

00300-8
Specification Name

PHASE 1 MAINS REPLACEMENT PROJECT
PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

10. SURETY

10.1 If Bidder is awarded a construction contract from this Bid, the surety who provides the Performance and Payment Bond(s) shall be:

Whose address is

Street City State Zip

11. LICENSE

11.1 Class _____, California Contractor License No.: _____.

12. BIDDER

An Individual

By _____
(Individual's name and signature)

A Partnership

By _____
(Partnership name)

By _____
(Name and signature of general partner)

(Title)

00300-9
Specification Name

PHASE 1 MAINS REPLACEMENT PROJECT
PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

A Corporation

By _____
(Corporation name)

(State of incorporation)

By _____
(Name and signature of person authorized to sign)

(Title)

(Corporate Seal)

00300-10
Specification Name

PHASE 1 MAINS REPLACEMENT PROJECT
PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

A Joint Venture

By _____
(Business name)

By _____
(Name and signature of person authorized to sign)

By _____
(Business name)

By _____
(Name and signature of person authorized to sign)

(Each joint venturer must sign. The manner of signing each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

Name, Phone Number, and Address for receipt of official communications and for additional information on this Bid:

SUBMITTED ON _____, 2023.

++ END OF SECTION ++

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00300-12
Specification Name

PHASE 1 MAINS REPLACEMENT PROJECT
PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

SECTION 00310
(Required to Accompany Bid)

LIST OF SUBCONTRACTORS

PART 1 - GENERAL

1.1 SUBLETTING AND SUBCONTRACTING FAIR PRACTICES ACT

- A. Contractor shall comply with the requirements of the Subletting and Subcontracting Fair Practices Act, Chapter 4, Part 1, Division 2 of the Government Code, which include the following:
1. Contractor shall, in its bid or proposal, set forth:
 - a. The name, the location of the place of business, the California contractor license number, and public works contractor registration number issued pursuant to Section 1725.5 of the Labor Code of each subcontractor who will perform work or labor or render service to Contractor in or about the construction of the work or improvement, or a subcontractor licensed by the State of California who, under subcontract to Contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of 1 percent of Contractor's total bid or proposal.
 - b. The portion of the work that will be done by each subcontractor under this act. Contractor shall list only one subcontractor for each portion as is defined by the Contractor in its bid.
 2. If Contractor fails to specify a subcontractor or specifies more than one subcontractor for the same portion of work to be performed under the Contract in excess of one-half of 1 percent of the Contractor's total bid, Contractor agrees that it is fully qualified to perform that portion itself, and that Contractor shall perform that portion itself.
 3. Contractor may not substitute a person as subcontractor in place of the subcontractor listed in the original bid, except as provided in the Act.

00310-1
Specification Name

PHASE 1 MAINS REPLACEMENT PROJECT
PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

(Required to Accompany Bid)

California State Water Resources Control Board Division of Drinking Water-Safe Drinking Water State Revolving Fund

PROJECT INFORMATION

Water System Name: Paradise Irrigation District

Project Name: Phase 1 Mains Replacement Project

Project Number: N/A

Data Universal Numbering System (DUNS) Number: N/A

Principal Contact: Water Works Engineers / Colleen Boak /Senior Project Engineer

Firm Name / Contact Name / Title

760 Cypress Avenue, Suite 201, Redding, CA 96001 / (530)-243-2113 / colleenb@wwengineers.com

Firm Address/ Phone Number / Email Address

CERTIFICATION OF NONSEGREGATED FACILITIES

[Note: This certification is required by 41 CFR 60-1.8 (b) and/or as required by the May 9, 1967 Order (32 F.R. 7439, May 19, 1967) and is applicable to all California SDWSRF assisted construction contracts and subcontracts with a price exceeding \$10,000 which are not exempt from the Equal Opportunity Clause.]

The federally assisted construction contractor certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause in this contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise.

The federally assisted construction contractor agrees that (except where he has obtained identical certifications from proposed subcontractors for specified time period) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause, and that he will retain such certifications in his files.

Signature of Authorized Representative

Date

Name and Title of Authorized representative (Print or Type)

Name of Prospective Construction Contractor or Subcontractor (Print or Type)

Address and Telephone Number of Prospective Construction Contractor or Subcontractor

Employer Identification Number of Prospective Construction Contractor or Subcontractor

Note: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001

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(Required to Accompany Bid)

California State Water Resources Control Board Division of Drinking Water-Safe Drinking Water State Revolving Fund

PROJECT INFORMATION

Water System Name: Paradise Irrigation District

Project Name: Phase 1 Mains Replacement Project

Project Number: N/A

Data Universal Numbering System (DUNS) Number: N/A

Principal Contact: Water Works Engineers / Colleen Boak / Senior Project Engineer

Firm Name / Contact Name / Title

760 Cypress Avenue, Suite 201, Redding, CA 96001 / (530)-243-2113 / colleenb@wwengineers.com

Firm Address/ Phone Number / Email Address

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion

-Prime Contractors and Subcontractors-

(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.

I, the official named below, hereby swear that I am duly authorized to legally bind the prospective contractor to the above described certification. I am fully aware that this certification is made under penalty of perjury under the laws of the State of California.

Signature/Authorized Certifying Official

Typed Name and Title

Prospective Contractor/Organization

Date Signed

State Contractor License No. (if any)

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(Required to Accompany Bid)

California State Water Resources Control Board Division of Drinking Water-Safe Drinking Water State Revolving Fund

PROJECT INFORMATION

Water System Name: Paradise Irrigation District

Project Name: Water Storage Improvements Project

Project Number: N/A

Data Universal Numbering System (DUNS) Number: N/A

Principal Contact: Water Works Engineers / Colleen Boak Senior Project Engineer

Firm Name / Contact Name / Title

760 Cypress Avenue, Suite 201, Redding, CA 96001 / (530)-243-2113 / colleenb@wwengineers.com

Firm Address/ Phone Number / Email Address

NONDISCRIMINATION CLAUSE

1. During the performance of this contract, contractor and its subcontractors shall not unlawfully discriminate against any employee or applicant for employment because of race, religion, color, national origin, ancestry, physical handicap, medical condition, marital status, age (over 40) or sex. Contractors and subcontractors shall insure that the evaluation and treatment of their employees and applicants for employment are free of such discrimination. Contractors and subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code Section 12900 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, 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. This contractor shall include the nondiscrimination and compliance provisions of this clause in all subcontracts to perform work under the contract.

THE UNDERSIGNED CERTIFIES THAT THE CONTRACTOR WILL COMPLY WITH THE ABOVE REQUIREMENTS.

CONTRACTOR OR

SUBCONTRACTOR NAME: _____

CERTIFIED BY:

NAME: _____ TITLE: _____

SIGNATURE: _____ DATE: _____

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(Required to Accompany Bid)

California State Water Resources Control Board Division of Drinking Water-Safe Drinking Water State Revolving Fund

PROJECT INFORMATION

Water System Name: Paradise Irrigation District

Project Name: Phase 1 Mains Replacement Project

Project Number: N/A

Data Universal Numbering System (DUNS) Number: N/A

Principal Contact: Water Works Engineers / Colleen Boak / Senior Project Engineer

Firm Name / Contact Name / Title

760 Cypress Avenue, Suite 201, Redding, CA 96001 / (530)-243-2113 / colleenb@wwengineers.com

Firm Address/ Phone Number / Email Address

NON-COLLUSION AFFIDAVIT*

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

State of California

County of _____,

_____ ; being first duly sworn, deposes and says that he or she is

_____ of _____ the party making the foregoing bid, that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference, with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof the effectuate a collusive or sham bid.

By _____

Subscribed and sworn to before me on _____

(Notary Public)

*Note: Public Contracts Code 7106 requires this noncollusion affidavit be submitted with a bid for any public works contract of a public entity.

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(Required to Accompany Bid)

California State Water Resources Control Board Division of Drinking Water-Safe Drinking Water State Revolving Fund

PROJECT INFORMATION

Water System Name: Paradise Irrigation District

Project Name: Phase 1 Mains Replacement Project

Project Number: N/A

Data Universal Numbering System (DUNS) Number: N/A

Principal Contact: Water Works Engineers / Colleen Boak / Senior Project Engineer

Firm Name / Contact Name / Title

760 Cypress Avenue, Suite 201, Redding, CA 96001 / (530)-243-2113 / colleenb@wwengineers.com

Firm Address/ Phone Number / Email Address

(THE BIDDER'S EXECUTION ON THE SIGNATURE PORTION OF THIS PROPOSAL
SHALL ALSO CONSTITUTE AN ENDORSEMENT AND EXECUTION OF THOSE
CERTIFICATIONS WHICH ARE A PART OF THIS PROPOSAL)

Equal Employment Opportunity Certification

(The Bidder must fill-in and check the appropriate blank space)

The bidder _____ (Name), proposed
subcontractor _____ (Name), hereby certifies that he/she has _____,
has not _____, participated in a previous contract or subcontract subject to the equal opportunity clauses, as required by
executive order 10925, 11114, or 11246, and that, where required, he has filed with the Joint reporting Committee, the Director of
the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's
Committee on Equal Opportunity, all reports due under applicable filing requirements.

Note:

The above certification is required by the Equal Employment Opportunity regulations of the Secretary of Labor (42 CFR 60-1.7(b) (1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally, only contracts or subcontracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EE)-1 is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b) (1) prevents the awards of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the director, Office of Federal Contract Compliance, U.S. Department of Labor.

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(Required to Accompany Bid)

California State Water Resources Control Board Division of Drinking Water-Safe Drinking Water State Revolving Fund

PROJECT INFORMATION

Water System Name: Paradise Irrigation District

Project Name: Phase 1 Mains Replacement Project

Project Number: N/A

Data Universal Numbering System (DUNS) Number: N/A

Principal Contact: Water Works Engineers / Colleen Boak / Senior Project Engineer

Firm Name / Contact Name / Title

760 Cypress Avenue, Suite 201, Redding, CA 96001 / (530)-243-2113 / colleenb@wwengineers.com

Firm Address/ Phone Number / Email Address

LOBBYING CERTIFICATION

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 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 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.
- (3) The undersigned shall require that the language of this certification 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.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, of the U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

TYPED NAME & TITLE OF AUTHORIZED REPRESENTATIVE

SIGNATURE OF AUTHORIZED REPRESENTATIVE

DATE

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SECTION 00321.10

AMERICAN IRON AND STEEL ACKNOWLEDGEMENT

The Contractor acknowledges to and for the benefit of the District and the State of California (the "State") that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund that have statutory requirements commonly known as "American Iron and Steel;" that requires all of the iron and steel products used in the project to be produced in the United States ("American Iron and Steel Requirement") including iron and steel products provided by the Contractor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the District and the State that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the District or the State. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the District or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the District or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the District). While the Contractor has no direct contractual privity with the State, as a lender to the District for the funding of its project, the District and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.

Signed this _____ day of _____, 20____.

Name of Bidder

Contractor's License No.

Expiration Date

Signature of Bidder

Title of Signatory

00321.10-1
Specification Name

PHASE 1 MAINS REPLACEMENT PROJECT

PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

++ END O`F SECTION ++

00321.10-2
Specification Name

PHASE 1 MAINS REPLACEMENT PROJECT
PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

SECTION 00400

BID BOND FORM

BOND NO. _____

KNOW ALL MEN BY THESE PRESENTS, that _____

hereinafter called the PRINCIPAL, and _____

a corporation duly organized under the laws of the State of _____

having its principal place of business at _____

_____ in the State of _____

and authorized to do business in the State of California, as SURETY,

are held and firmly bound unto _____,

as OWNER, hereinafter called the OBLIGEE, in the sum of _____

_____ DOLLARS (\$ _____)

for the payment for which we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS BOND IS SUCH THAT:

WHEREAS, the PRINCIPAL is herewith submitting his or its Bid for _____

said Bid, by reference thereto, being hereby made a part hereof.

NOW, THEREFORE, if said Proposal shall be rejected, or in the alternate, if said Proposal shall be accepted and the PRINCIPAL shall sign and deliver a Contract to OBLIGEE, in the form of Contract attached hereto and shall execute and deliver Performance and Payment Bonds in the forms attached hereto (all completed in accordance with said Proposal) to OBLIGEE, and shall in all other respects perform the agreement created by the acceptance of said Proposal;

Then, this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the SURETY for any and all default of the PRINCIPAL hereunder shall be the amount of this obligation as herein stated.

The SURETY, for value received, hereby stipulates and agrees that the obligations of said SURETY and its bond shall be in no way impaired or affected by any extension of the time

00400-1
Bid Bond Form

PHASE 1 MAINS REPLACEMENT PROJECT

PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

within which the Owner may accept such Proposal, and said SURETY does hereby waive notice of any such extension.

IN WITNESS THEREOF, the above-bounded parties have executed this instrument under their several seals, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Signed and sealed this _____ day of _____, 2023.

PRINCIPAL

By _____

SURETY

By _____
Attorney-In-Fact

The rate of premium on this bond is _____ per thousand.

Total amount of premium charged \$ _____.

++ END OF SECTION ++

00400-2
Bid Bond Form

PHASE 1 MAINS REPLACEMENT PROJECT
PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

SECTION 00500

AGREEMENT FORM

This Agreement is by and between **Paradise Irrigation District** ("Owner") and _____ ("Contractor").

Terms used in this Agreement have the meanings stated in the General Conditions and the Supplementary Conditions.

Owner and Contractor hereby agree as follows:

ARTICLE 1—WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

- Mobilization and Demobilization to the various sites throughout the Paradise Irrigation District distribution area, including all temporary construction facilities.
- Trenching, sheeting, shoring, and bracing as required by Section 6707 of the California Labor Code.
- Traffic control measures which meet all local, state, and federal requirements and as required by the Town of Paradise Encroachment Permit provisions.
- Installation of approximately 28,000 LF of pipe ranging in diameter from 4 inches to 16 inches including all necessary appurtenances per drawings and details.
- Leak testing, flushing, and disinfection of all new pipelines and appurtenances as well as pipelines and appurtenances impacted by work.
- Reconnection of existing service laterals to the new main or installation of new service laterals, as stated in Section 01110 Summary of Work.
- Reconnection of angle stops to meters, as stated in Section 01110 Summary of Work.
- Installation of meters or meters and backflow prevention devices, as stated in Section 01110 Summary of Work. Including installation of meter interface units and testing of backflow prevention devices by certified CA-NV AWWA tester.
- Abandonment of existing water mains, including installation of blind flanges at previous connection points to distribution system, capping and filling of water mains greater than 8" in diameter with blown sand, and capping of water mains smaller than 8" in diameter.
- Trench backfill and asphalt restoration per Town of Paradise standard details included in the project documents.
- Restoration of curbs, gutters, and sidewalks per Butte County standard details included in the project documents.
- Surface restoration of gravel areas, landscaped areas, driveways, and unpaved areas.

00500 -1
Agreement Form

Error! Reference source not found
PHASE 1 MAINS REPLACEMENT PROJECT

PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

ARTICLE 2—THE PROJECT

- 2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: **Phase 1 Mains Replacement Project**

ARTICLE 3—ENGINEER

- 3.01 The Owner has retained **Water Works Engineers** ("Engineer") to act as Owner's representative, assume all duties and responsibilities of Engineer, and have the rights and authority assigned to Engineer in the Contract.
- 3.02 The part of the Project that pertains to the Work has been designed by **Water Works Engineers**.

ARTICLE 4—CONTRACT TIMES

4.01 *Contract Times: Working Days*

- A. The Work will be substantially complete within **400** working days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within **420** working days after the date when the Contract Times commence to run.
- B. Contractor's working hours are restricted to 7:00am-4:00pm Monday through Friday, unless prior written consent is given by OWNER.

4.02 *Liquidated Damages*

- A. Contractor and Owner recognize that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the Contract Times, as duly modified. The parties also recognize the delays, expense, and difficulties involved in proving, in a legal or arbitration proceeding, the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
1. *Substantial Completion:* Contractor shall pay Owner **\$1,500** for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for Substantial Completion, until the Work is substantially complete.
- B. If Owner recovers liquidated damages for a delay in completion by Contractor, then such liquidated damages are Owner's sole and exclusive remedy for such delay, and Owner is precluded from recovering any other damages, whether actual, direct, excess, or consequential, for such delay.

ARTICLE 5—CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents, the amounts that follow, subject to adjustment under the Contract:

A. For all Work other than Unit Price Work, a lump sum of \$_____.

All specific cash allowances are included in the above price in accordance with Paragraph 13.02 of the General Conditions.

| B. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item).Unit Price Work | | | | | |
|--|--------------------|-------------|---------------------------|-------------------|-----------------------|
| Item No. | Description | Unit | Estimated Quantity | Unit Price | Extended Price |
| | | | | \$ | \$ |
| | | | | \$ | \$ |
| | | | | \$ | \$ |
| | | | | \$ | \$ |
| | | | | \$ | \$ |
| Total of all Extended Prices for Unit Price Work (subject to final adjustment based on actual quantities) | | | | | \$ |

The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

C. Total of Lump Sum Amount and Unit Price Work (subject to final Unit Price adjustment) \$_____.

D. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

ARTICLE 6—PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on the basis of Contractor's Applications for Payment on or about the 10th day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.
- a. 95 percent of the value of the Work completed (with the balance being retainage).
- 1) If 50 percent or more of the Work has been completed, as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
- b. 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work, Owner shall pay the remainder of the Contract Price in accordance with Paragraph 15.06 of the General Conditions.

6.04 *Consent of Surety*

- A. Owner will not make final payment or return or release retainage at Substantial Completion or any other time, unless Contractor submits written consent of the surety to such payment, return, or release.

ARTICLE 7—CONTRACT DOCUMENTS

7.01 *Contents*

- A. The Contract Documents consist of all of the following:
- Volume 1 – Bid Requirements and Specifications

Volume 2 – Drawings

- B. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
 - e. Warranty Bond, if any.
- C. The Contract Documents listed in Paragraph 7.01.A are attached to this Agreement (except as expressly noted otherwise above).
- D. There are no Contract Documents other than those listed above in this Article 7.
- E. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract.

ARTICLE 8—REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS

8.01 Contractor's Representations

- A. In order to induce Owner to enter into this Contract, Contractor makes the following representations:
 - 1. Contractor has examined and carefully studied the Contract Documents, including Addenda.
 - 2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - 3. Contractor is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
 - 4. Contractor has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
 - 5. Contractor has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.

6. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (c) Contractor's safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
9. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

8.02 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.02:
 1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

8.03 *Standard General Conditions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are EJCDC® C-700, Standard General Conditions for the Construction Contract (2018), published by the Engineers Joint Contract Documents Committee, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on _____ (which is the Effective Date of the Contract).

Owner:

Contractor:

(typed or printed name of organization)

(typed or printed name of organization)

By: _____
(individual's signature)

By: _____
(individual's signature)

Date: _____
(date signed)

Date: _____
(date signed)

Name: _____
(typed or printed)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Title: _____
(typed or printed)

(If **[Type of Entity]** is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____
(individual's signature)

Attest: _____
(individual's signature)

Title: _____
(typed or printed)

Title: _____
(typed or printed)

Address for giving notices:

Address for giving notices:

00500 -8
Agreement Form

PHASE 1 MAINS REPLACEMENT PROJECT

PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

Designated Representative:

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Address: _____

Phone: _____

Email: _____

*(If **[Type of Entity]** is a corporation, attach evidence of authority to sign. If **[Type of Entity]** is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)*

Designated Representative:

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Address: _____

Phone: _____

Email: _____

License No.: _____
(where applicable)

State: _____

++ END OF SECTION ++

00500 -10
Agreement Form

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PHASE 1 MAINS REPLACEMENT PROJECT

PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

SECTION 00600

PERFORMANCE BOND FORM

KNOW ALL MEN BY THESE PRESENTS: That

WHEREAS, the Paradise Irrigation District, hereinafter designated as the "Owner" has awarded to _____ as the "Principal," a contract for the construction of _____ for the Owner; and

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

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 for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if said Principal, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in said contract and any alteration therefore made as therein provided, on his or their part, to be kept and performed at the time and in the manner therein specified and in all respects according to their true intent and meaning; shall guarantee and shall repair and replace defective materials and workmanship therein, for all work required under the said contract and shall indemnify and save harmless the Owner, their officers and agents as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and virtue.

Neither the Owner's acceptance of any work by, or on behalf of, Principal, nor the Owner or its agents' repair of any defects arising in the work, shall be deemed a waiver of any Owner's rights under this bond, where defects, whether resulting from defective materials or defective workmanship, are discovered after the Owner's issuance of its Notice of Completion. Principal and Surety shall remain jointly and severally liable for such defects for the period of time set forth in the Code of Civil Procedure Sections 337 and 337.15, or any successor statute or amendment thereto.

And the Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the Specifications accompanying the same shall in any way affect its obligations on this bond and it does hereby waive notice of any such change, extension

00600-1
Performance Bond Form

PHASE 1 MAINS REPLACEMENT PROJECT

PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

of time, alteration or addition to the terms of the contract or to the work or to the Specifications.

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

Principal

By: _____

Surety

By: _____
(Attach Acknowledgment)

NOTE: The principal amount of this bond shall not be less than 100% of the total contract price.

00600-2
Performance Bond Form

PHASE 1 MAINS REPLACEMENT PROJECT

PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

SECTION 00 61 06

PAYMENT BOND FORM

KNOW ALL MEN BY THESE PRESENTS: That we (1) _____

_____ a (2) _____

hereinafter called "Principal" and (3) _____

of _____ State of _____ hereinafter called the
"Surety," are held and firmly bound unto Paradise Irrigation District, hereinafter called
"Owner," in the penal sum of _____ dollars (\$ _____) in
lawful money of the United States, for the payment of which sum well and truly to be made,
we bind ourselves, our heirs, executors, administrators and successors, jointly and severally,
firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that WHEREAS, the Principal entered into a
certain Contract with the Owner, dated the _____ day of _____, 20____, a
copy of which is hereto attached and made a part hereof for the construction of the

_____, including

all appurtenances thereto, all as set forth in the Contract Documents entitled, " _____

_____ PROJECT".

NOW, THEREFORE, if the Principal, or a Subcontractor, fails to pay (1) persons or entities
authorized to make claims under Civil Code Section 9100, (2) amounts due under the
Unemployment Insurance Code with respect to work or labor performed under Contract, or (3)
for any amounts required to be deducted, withheld, and paid over to the Employment
Development Department from the wages of employees of the Contractor and Subcontractors
pursuant to §13020 of the Unemployment Insurance Code with respect to the work and labor,
then surety will pay for the same, and also, in case suit is brought upon this bond, a
reasonable attorney's fee, to be fixed by the Court,

PROVIDED, FURTHER, Surety's obligation hereunder shall inure to the benefit of any of the
persons or entities authorized to make claims under Civil Code § 9100 so as to give a right of
action to those persons or entities or their assigns in any suit brought upon this bond, and

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

00605-1

Payment Bond Form

PHASE 1 MAINS REPLACEMENT PROJECT

PARADISE IRRIGATION DISTRICT

WWE PROJECT: 19-017

MAY 2023

BID SET

IN WITNESS WHEREOF, this instrument is executed in two (2) counter-parts, each one of which shall be deemed an original, this the _____ day of _____, 20____.

ATTEST:

| | | |
|--------------------------------|--------------------|---|
| _____ (Principal) Secretary | _____ Principal | , |
| (Seal) | By _____ | , |

| | | |
|------------------------------------|-------|---|
| _____ (Witness as to Principal) | _____ | , |
|------------------------------------|-------|---|

| | | |
|--------------------|--------------------|---|
| _____ (Address) | _____ (Address) | , |
|--------------------|--------------------|---|

ATTEST:

| | | |
|-----------------------------|-----------------|---|
| _____ (Surety) Secretary | _____ Surety | , |
| (Seal) | | |

| | | |
|---------------------------------|------------------------------|---|
| _____ (Witness as to Surety) | By _____ Attorney-in-Fact | , |
|---------------------------------|------------------------------|---|

| | | |
|--------------------|--------------------|---|
| _____ (Address) | _____ (Address) | , |
|--------------------|--------------------|---|

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

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

++ END OF SECTION ++

00605-2
Payment Bond Form

PHASE 1 MAINS REPLACEMENT PROJECT
PARADISE IRRIGATION DISTRICT
WWE PROJECT: 19-017

MAY 2023
BID SET

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared By



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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*
 - a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by Engineer concerning the

- requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.
- b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.
 - c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.
 - d. A demand for money or services by a third party is not a Claim.
11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
 12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.
 13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
 14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.
 15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
 16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
 17. *Cost of the Work*—See Paragraph 13.01 for definition.
 18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
 19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
 20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
 21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the

recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.
23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
 - a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
 - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
 - c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.
28. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
29. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.
32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.
34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals.
36. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
38. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by Owner which are designated for the use of Contractor.
39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
40. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers’ instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
42. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion of such Work.

43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.
44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
45. *Supplier*—A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
46. *Technical Data*
- a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.
 - b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.
 - c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.
47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.
48. *Unit Price Work*—Work to be paid for on the basis of unit prices.
49. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:* The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:* The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:* The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - 1. does not conform to the Contract Documents;
 - 2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - 3. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).
- E. *Furnish, Install, Perform, Provide*
 - 1. The word “furnish,” when used in connection with services, materials, or equipment, means to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 - 2. The word “install,” when used in connection with services, materials, or equipment, means to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
 - 3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, means to furnish and install said services, materials, or equipment complete and ready for intended use.
 - 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

- F. *Contract Price or Contract Times*: References to a change in “Contract Price or Contract Times” or “Contract Times or Contract Price” or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term “or both” is not expressed.
- G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Performance and Payment Bonds; Evidence of Insurance*

- A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.
- C. *Evidence of Owner’s Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), Contractor shall submit to Engineer for timely review:
 - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
 - 2. a preliminary Schedule of Submittals; and
 - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work

into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work, and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will be made to Contractor until acceptable schedules are submitted to Engineer.
 - 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
 - 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 - 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.
 - 4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.
- G. Nothing in the Contract Documents creates:
 - 1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
 - 2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

3.02 *Reference Standards*

- A. *Standards Specifications, Codes, Laws and Regulations*
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 - 2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility

inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
 - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
 - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work may be done at the Site prior to such date.

4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the

established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
 - 1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 - 2. Abnormal weather conditions;
 - 3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
 - 4. Acts of war or terrorism.

- D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
 2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
 3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.
- E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
 2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
 3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
 4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
 5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.
- Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.
- F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.
- G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor in writing of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will conform to applicable Laws and Regulations.
 - C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment

and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;
2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and
3. Technical Data contained in such reports and drawings.

- B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

- C. *Reliance by Contractor on Technical Data:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.

- D. *Limitations of Other Data and Documents:* Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;
3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;
 2. is of such a nature as to require a change in the Drawings or Specifications;
 3. differs materially from that shown or indicated in the Contract Documents; or
 4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- E. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in

Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
 - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
 - c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise;
 - b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice required by Paragraph 5.04.A.
 3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
 4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.
- F. *Underground Facilities; Hazardous Environmental Conditions:* Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:
1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 2. complying with applicable state and local utility damage prevention Laws and Regulations;

3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
 4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.
- C. *Engineer's Review:* Engineer will:
1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;
 2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
 3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and
 4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- F. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown

or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
 - b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
 - c. Contractor gave the notice required in Paragraph 5.05.B.
2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.
 4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 *Hazardous Environmental Conditions at Site*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures

- of construction to be employed by Contractor, and safety precautions and programs incident thereto;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.
- H. If, after receipt of such written notice, Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special

conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.
- B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.
- C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or

Regulations, and must be issued and signed by a surety named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

- D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.
- E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.
- F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner’s termination rights under Article 16.
- G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Alternative forms of insurance coverage, including but not limited to self-insurance and “Occupational Accident and Excess Employer’s Indemnity Policies,” are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.
- D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by

Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.

- E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.
- F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.
- H. Contractor shall require:
 - 1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and
 - 2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.
- I. If either party does not purchase or maintain the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.
- K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.

- L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.
- M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.
- N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.03 *Contractor's Insurance*

- A. *Required Insurance:* Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.
- B. *General Provisions:* The policies of insurance required by this Paragraph 6.03 as supplemented must:
 - 1. include at least the specific coverages required;
 - 2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;
 - 3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;
 - 4. apply with respect to the performance of the Work, whether such performance is by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable; and
 - 5. include all necessary endorsements to support the stated requirements.
- C. *Additional Insureds:* The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:
 - 1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;
 - 2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;
 - 3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);

4. not seek contribution from insurance maintained by the additional insured; and
5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

6.04 *Builder's Risk and Other Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.
- B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.
- C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.
- D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.
- E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

6.05 *Property Losses; Subrogation*

- A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against

Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils, risks, or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.
 2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.
1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.
- C. The waivers in this Paragraph 6.05 include the waiver of rights due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other insured peril, risk, or cause of loss.
- D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

6.06 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.01 *Contractor's Means and Methods of Construction*

- A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall maintain good discipline and order at the Site.

- B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.
- C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.04 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment must be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.05 *"Or Equals"*

- A. *Contractor's Request; Governing Criteria:* Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that the proposed item:
 - 1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

- 2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) has a proven record of performance and availability of responsive service; and
 - 4) is not objectionable to Owner.
- b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.
- E. *Treatment as a Substitution Request*: If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.06 Substitutes

- A. *Contractor's Request; Governing Criteria*: Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.
1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.
 2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:
 - a. will certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design;
 - 2) be similar in substance to the item specified; and
 - 3) be suited to the same use as the item specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from the item specified; and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

- E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.
- B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.
- E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.
- F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

- H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.
- J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.
- K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.
- L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.
- M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If an invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.09 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.11 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.
- C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.
- B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.
- C. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.
- F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
- H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

- I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as material safety data sheets) or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

- 1. Before submitting a Shop Drawing or Sample, Contractor shall:
 - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determine and verify:
 - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;
 - 2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - 3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;
 - c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
- 2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.

3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.
1. *Shop Drawings*
 - a. Contractor shall submit the number of copies required in the Specifications.
 - b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.C.
 2. *Samples*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.
 3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Engineer's Review of Shop Drawings and Samples*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, comply with the requirements of the Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will

document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

D. Resubmittal Procedures for Shop Drawings and Samples

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.
2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

E. Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:
 - a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.
 - b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.
 - c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.

- d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.
- 2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03, 2.04, and 2.05.
- F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 Contractor's General Warranty and Guarantee

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor's warranty and guarantee.
- B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:
 - 1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and
 - 2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.
- C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 - 1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 - 2. normal wear and tear under normal usage.
- D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:
 - 1. Observations by Engineer;
 - 2. Recommendation by Engineer or payment by Owner of any progress or final payment;
 - 3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 - 4. Use or occupancy of the Work or any part thereof by Owner;
 - 5. Any review and approval of a Shop Drawing or Sample submittal;
 - 6. The issuance of a notice of acceptability by Engineer;
 - 7. The end of the correction period established in Paragraph 15.08;
 - 8. Any inspection, test, or approval by others; or

9. Any correction of defective Work by Owner.
- E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 Indemnification

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.19 Delegation of Professional Design Services

- A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.
- B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.
- C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.

- D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.
- E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:
 - 1. Checking for conformance with the requirements of this Paragraph 7.19;
 - 2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and
 - 3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.
- F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.
- G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

ARTICLE 8—OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.
- D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

- E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.
- F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. An itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. The extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.
 - 1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.
 - 2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.
- C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9—OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

9.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Resident Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.
- B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 *Engineer's Authority*

- A. Engineer has the authority to reject Work in accordance with Article 14.
- B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.
- C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.
- D. Engineer's authority as to changes in the Work is set forth in Article 11.

E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.06 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

10.08 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.

ARTICLE 11—CHANGES TO THE CONTRACT

11.01 *Amending and Supplementing the Contract*

- A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
- B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.
- C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.02 *Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
 - 1. Changes in Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 - 2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 - 3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and
 - 4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Work Change Directives*

- A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.

- B. If Owner has issued a Work Change Directive and:
 - 1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.
 - 2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.04 *Field Orders*

- A. Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.
- B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.05 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.
- C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.06 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

11.07 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:

1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);
 2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or
 3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit will be determined as follows:
1. A mutually acceptable fixed fee; or
 2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. For costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;
 - b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 percent;
 - c. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;
 - d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
 - e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and
 - f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

11.08 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.
- B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 *Change Proposals*

- A. *Purpose and Content:* Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

- B. *Change Proposal Procedures*

- 1. *Submittal:* Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.
- 2. *Supporting Data:* The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.
 - a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
 - b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

- 3. *Engineer's Initial Review:* Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.
- 4. *Engineer's Full Review and Action on the Change Proposal:* Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change

Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.
- D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

11.10 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12—CLAIMS

12.01 *Claims*

- A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:
 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;
 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and
 4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.
- B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge

and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

- C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation*
 - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.
 - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.
 - 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
 - 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will be included in the above to the extent authorized by Owner.
 2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will accrue to Owner, and Contractor shall make provisions so that they may be obtained.
 3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, which will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
 4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.
 5. Other costs consisting of the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, which are

consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

- 1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

c. *Construction Equipment Rental*

- 1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.
 - 2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.
 - 3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.
- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
- e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
- f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of builder's risk or other property insurance established in accordance with Paragraph 6.04), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
 - h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
 - i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.
- C. *Costs Excluded:* The term Cost of the Work does not include any of the following items:
 - 1. Payroll costs and other compensation of Contractor's officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
 - 2. The cost of purchasing, renting, or furnishing small tools and hand tools.
 - 3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
 - 4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
 - 5. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
 - 6. Expenses incurred in preparing and advancing Claims.
 - 7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.
- D. *Contractor's Fee*
 - 1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:
 - a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.
 - b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:
 - 1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.
 - 2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.
 - 2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change

Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

- E. *Documentation and Audit:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances:* Contractor agrees that:
1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment for any of the foregoing will be valid.
- C. *Owner's Contingency Allowance:* Contractor agrees that an Owner's contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

13.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision

thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
 - a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
 - b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
3. Adjusted unit prices will apply to all units of that item.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply with such procedures and programs as applicable.

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 3. by manufacturers of equipment furnished under the Contract Documents;
 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs,

losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
 - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work,

or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work will not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 Owner May Correct Defective Work

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments*
 - 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.
 - 2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation

establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. Review of Applications

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work;
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
 5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
 6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
 - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.
- D. *Payment Becomes Due*
1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.
- E. *Reductions in Payment by Owner*
1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

- b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. The Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. The Contract Price has been reduced by Change Orders;
 - i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;
 - j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens; or
 - l. Other items entitle Owner to a set-off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
 3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time

submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without

significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.
2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.
2. The final Application for Payment must be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

- d. a list of all duly pending Change Proposals and Claims; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
- 3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.
- B. *Engineer's Review of Final Application and Recommendation of Payment:* If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.
- C. *Notice of Acceptability:* In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.
- D. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.
- E. *Final Payment Becomes Due:* Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

15.07 *Waiver of Claims*

- A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim,

appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such adjacent areas;
 - 2. correct such defective Work;
 - 3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.
- B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.
- C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.
- D. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

- F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
 - 1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and
 - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,

attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate for Convenience*

- A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
 - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The

provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17—FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this article:
 - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and
 - 2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this article, Owner or Contractor may:
 - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;
 - 2. agree with the other party to submit the dispute to another dispute resolution process; or
 - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18—MISCELLANEOUS

18.01 *Giving Notice*

- A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:
 - 1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
 - 2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
 - 3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

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

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract.

18.09 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

18.10 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

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SECTION 00825

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement EJCDC® C-700, Standard General Conditions of the Construction Contract (2018). The General Conditions remain in full force and effect except as amended.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, "Paragraph SC-4.05."

ARTICLE 1— DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

SC-1.01.10.A. Delete 10.A in its entirety.

SC-1.01.10.B Amend the section 10.B to read as follows:

A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address, or contesting Owner's determination to reject Engineer's decision.

SC-1.01.10.C. Delete 10.C in its entirety.

SC-1.01.50 Amend the section 50 to read as follows:

Work Change Directive—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner, ordering an addition, deletion, or revision in the Work.

ARTICLE 2— PRELIMINARY MATTERS

2.02 Copies of Documents

SC-2.02 Amend the first sentence of Paragraph 2.02.A. to read as follows:

Owner shall furnish to Contractor one electronic portable document format (PDF) of the Contract Documents (including one fully signed counterpart of the Agreement).

ARTICLE 3— CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.04 Requirements of Contract Documents

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SC-3.04.A Amend the section to read as follows:

During the performance of the Work and until final payment, Contractor shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

SC-3.04.B Amend the section to read as follows:

Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal.

SC-3.04.C Amend the section to read as follows:

If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. Contractor may pursue resolution as provided in Article 12.

ARTICLE 4— COMMENCEMENT AND PROGRESS OF THE WORK

No suggested Supplementary Conditions in this Article.

ARTICLE 5— SITE, SUBSURFACE AND PHYSICAL CONDITIONS, HAZARDOUS ENVIRONMENTAL CONDITIONS

5.03 *Subsurface and Physical Conditions*

SC-5.03 Add the following new paragraphs immediately after Paragraph 5.03.D:

- E. The following table lists the reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data, and specifically identifies the Technical Data in the report upon which Contractor may rely:

| Report Title | Date of Report | Technical Data |
|---------------|----------------|----------------|
| None provided | | |

- F. The following table lists the drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain

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Technical Data, and specifically identifies the Technical Data upon which Contractor may rely:

| Drawings Title | Date of Drawings | Technical Data |
|-----------------------|-------------------------|-----------------------|
| None provided | | |

- G. Contractor may examine copies of reports and drawings identified in SC-5.03.E and SC-5.03.F that were not included with the Bidding Documents at 6332 Clark Road, Paradise, CA during regular business hours or may request copies from Engineer.

5.05 *Underground Utilities*

SC-5.05.G Amend the section to read as follows:

1. Notwithstanding the foregoing, and pursuant to Government Code section 4215, Owner shall assume the responsibility, between the parties to the Contract, for the timely removal, relocation, or protection of existing utilities located on the site of the Project that is a subject of the Contract, if such utilities are not identified by Owner in the Contract. Contractor shall be compensated for the costs of locating, repairing damage not due to the failure of Contractor to exercise reasonable care, and removing or relocating such utility facilities not indicated in the Contract with reasonable accuracy, and for equipment necessarily idled during such work. Contractor shall not be assessed liquidated damages for delay in completion of the work, when such delay was caused by the failure of Owner or the owner of the utility to provide for removal or relocation of such utility facilities.
2. Nothing herein shall be deemed to require Owner to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities on the site of the work can be inferred from the presence of other visible facilities, such as buildings, meter and junction boxes, on or adjacent to the site of the construction; provided, however, nothing herein shall relieve Owner from identifying main or trunk lines in the Contract.
3. If Contractor, while performing the Contract, discovers utility facilities not identified by Owner in the Contract Documents, it shall immediately notify Owner and the utility in writing.
4. This section does not relieve Contractor of its obligations under the Regional Notification Center System, Section 4216 et seq., of the California Government Code.

5.06 *Hazardous Environmental Conditions*

SC-5.06 Add the following new paragraphs immediately after Paragraph 5.06.A.3:

4. The following table lists the reports known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and the Technical Data

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(if any) upon which Contractor may rely: **[If there are no such reports, so indicate in the table]**

| Report Title | Date of Report | Technical Data |
|---------------|----------------|----------------|
| None provided | | |

5. The following table lists the drawings known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and Technical Data (if any) contained in such Drawings upon which Contractor may rely: **[If there are no such drawings, so indicate in the table]**

| Drawings Title | Date of Drawings | Technical Data |
|----------------|------------------|----------------|
| None provided | | |

ARTICLE 6— BONDS AND INSURANCE

6.01 Performance, Payment, and Other Bonds

6.03 Contractor's Insurance

SC-6.03 Supplement Paragraph 6.03 with the following provisions after Paragraph 6.03.C:

- E. *Workers' Compensation and Employer's Liability:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance, including, as applicable, United States Longshoreman and Harbor Workers' Compensation Act, Jones Act, stop-gap employer's liability coverage for monopolistic states, and foreign voluntary workers' compensation (from available sources, notwithstanding the jurisdictional requirement of Paragraph 6.02.B of the General Conditions).

| Workers' Compensation and Related Policies | Policy limits of not less than: |
|---|---------------------------------|
| Workers' Compensation | |
| State | Statutory |
| Applicable Federal (e.g., Longshoreman's) | Statutory |
| Foreign voluntary workers' compensation (employer's responsibility coverage), if applicable | Statutory |
| Jones Act (if applicable) | |
| Bodily injury by accident—each accident | \$1,000,000 |
| Bodily injury by disease—aggregate | \$1,000,000 |
| Employer's Liability | |
| Each accident | \$1,000,000 |
| Each employee | \$1,000,000 |
| Policy limit | \$1,000,000 |

- F. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against claims for:

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1. damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees,
 2. damages insured by reasonably available personal injury liability coverage, and
 3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- G. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage.
 - a. Such insurance must be maintained for three years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
 2. Blanket contractual liability coverage, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 3. Severability of interests and no insured-versus-insured or cross-liability exclusions.
 4. Underground, explosion, and collapse coverage.
 5. Personal injury coverage.
 6. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
 7. For design professional additional insureds, ISO Endorsement CG 20 32 07 04 "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- H. *Commercial General Liability—Excluded Content:* The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:
1. Any modification of the standard definition of "insured contract" (except to delete the railroad protective liability exclusion if Contractor is required to indemnify a railroad or others with respect to Work within 50 feet of railroad property).
 2. Any exclusion for water intrusion or water damage.
 3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.

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4. Any exclusion of coverage relating to earth subsidence or movement.
5. Any exclusion for the insured's vicarious liability, strict liability, or statutory liability (other than worker's compensation).
6. Any limitation or exclusion based on the nature of Contractor's work.
7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.

I. *Commercial General Liability—Minimum Policy Limits*

| Commercial General Liability | Policy limits of not less than: |
|---|--|
| General Aggregate | \$10,000,000 |
| Products—Completed Operations Aggregate | \$5,000,000 |
| Personal and Advertising Injury | \$5,000,000 |
| Bodily Injury and Property Damage—Each Occurrence | \$5,000,000 |

- J. *Automobile Liability:* Contractor shall purchase and maintain automobile liability insurance for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy must be written on an occurrence basis.

| Automobile Liability | Policy limits of not less than: |
|-----------------------------|--|
| Bodily Injury | |
| Each Person | \$1,000,000 |
| Each Accident | \$1,000,000 |
| Property Damage | |
| Each Accident | \$1,000,000 |

- M. *Contractor's Pollution Liability Insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage, including cleanup costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance must be maintained for no less than three years after final completion.

| Contractor's Pollution Liability | Policy limits of not less than: |
|---|--|
| Each Occurrence/Claim | \$5,000,000 |
| General Aggregate | \$10,000,000 |

- P. *Unmanned Aerial Vehicle Liability Insurance:* If Contractor uses unmanned aerial vehicles (UAV—commonly *referred* to as drones) at the Site or in support of any aspect of the Work, Contractor shall obtain UAV liability insurance in the amounts stated; name Owner, Engineer, and all individuals and entities identified in the Supplementary Conditions as additional insureds; and provide a certificate to Owner confirming Contractor's compliance with this requirement. Such insurance will provide coverage for property damage, bodily injury or death, and invasion of privacy.

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| Unmanned Aerial Vehicle Liability Insurance | Policy limits of not less than: |
|--|--|
| Each Claim | \$1,000,000 |
| General Aggregate | \$1,000,000 |

6.04 *Builder's Risk and Other Property Insurance*

SC-6.04 Supplement Paragraph 6.04 of the General Conditions with the following provisions:

F. *Builder's Risk Requirements:* The builder's risk insurance must:

1. be written on a builder's risk "all risk" policy form that at a minimum includes insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment stored and in transit, and must not exclude the coverage of the following risks: fire; windstorm; hail; flood; earthquake, volcanic activity, and other earth movement; lightning; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; and water damage (other than that caused by flood).
 - a. Such policy will include an exception that results in coverage for ensuing losses from physical damage or loss with respect to any defective workmanship, methods, design, or materials exclusions.
 - b. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake, volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance will be provided through other insurance policies acceptable to Owner and Contractor.
2. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
3. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of contractors, engineers, and architects).
4. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier). If this coverage is

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subject to a sublimit, such sublimit will be a minimum of the contractor's bid price.

5. extend to cover damage or loss to insured property while in transit. If this coverage is subject to a sublimit, such sublimit will be a minimum of the contractor's bid price.
6. allow for the waiver of the insurer's subrogation rights, as set forth in this Contract.
7. allow for partial occupancy or use by Owner by endorsement, and without cancellation or lapse of coverage.
8. include performance/hot testing and start-up, if applicable.
9. be maintained in effect until the Work is complete, as set forth in Paragraph 15.06.D of the General Conditions, or until written confirmation of Owner's procurement of property insurance following Substantial Completion, whichever occurs first.
10. include as named insureds the Owner, Contractor, Subcontractors (of every tier), and any other individuals or entities required by this Contract to be insured under such builder's risk policy. For purposes of Paragraphs 6.04, 6.05, and 6.06 of the General Conditions, and this and all other corresponding Supplementary Conditions, the parties required to be insured will be referred to collectively as "insureds." In addition to Owner, Contractor, and Subcontractors of every tier, include as insureds the following:
 - a. None
11. include, in addition to the Contract Price amount, the value of the following equipment and materials to be installed by the Contractor but furnished by the Owner or third parties:
 - a. None.
12. If debris removal in connection with repair or replacement of insured property is subject to a coverage sublimit, such sublimit will be a minimum of 25 percent of the builder's risk insurance amount.
13. In addition to the coverage sublimits stated above, the following coverages are also subject to sublimits, as follows:
 - a. None
14. Minimum builder's risk amount shall be the value of the bid plus 10%.

SC-6.04 Supplement Paragraph 6.04 of the General Conditions with the following provisions:

- H. *Builder's Risk and Other Property Insurance Deductibles:* The purchaser of any required builder's risk, installation floater, or other property insurance will be responsible for costs not covered because of the application of a policy deductible.
 1. The builder's risk policy (or if applicable the installation floater) will be subject to a deductible amount of no more than **\$50,000** for direct physical loss in any one occurrence.

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ARTICLE 7— CONTRACTOR’S RESPONSIBILITIES

7.03 Labor; Working Hours

SC-7.03 Amend the first and second sentences of Paragraph 7.03.C to state “...all Work at the Site must be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday.”

7.17 Contractor’s General Warranty and Guarantee

SC-7.17.B Replace the section with:

Owner’s rights under this warranty and guarantee are in addition to, and are not limited by, Owner’s rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights.

7.20 Compliance with Requirements for Public Works

SC-7.20 Insert the following section:

- A. This is a public work. Contractor and any subcontractors are subject to the requirements of Chapter 1, Part 7 of the Labor Code, commencing with section 1720, pertaining to public works, and they are responsible for ascertaining and applying those requirements. Any person who willfully violates Article 2 of Chapter 1 is guilty of a misdemeanor. (Labor Code§ 1777). All contractors and subcontractors working on the Contract work must keep certified payroll records in accordance with Labor Code section 1776.
- B. At the time of the award, and at all times while performing the work, Contractor and any subcontractors shall be, and shall remain, registered and qualified to perform public work, pursuant to Labor Code sections 1725.5and 1771.1. This Agreement is subject to cancellation by District, and Contractor is subject to an assessment of penalties under section 1771.1, upon determination that Contractor or any subcontractor is not in compliance with the provisions of those sections.
- C. This Contract is subject to compliance monitoring and enforcement by the Department of Industrial Relations, as required by Labor Code section 1771.4. Contractor shall post job site notices, as prescribed by regulation. Contractor shall furnish the records specified in Labor Code section 1776 directly to the Labor Commissioner.
- D. Not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the work is performed, and not less than the general prevailing rate of per diem wages for holiday and overtime work fixed as provided in Chapter 1, Part 7 of the Labor Code, shall be paid for each craft, classification, or type of worker needed to execute the Contract work.
- E. Copies of the prevailing rates of per diem wages are on file at the District’s office and shall be made available on request. Alternatively, said rates are accessible on the INTERNET under the heading “General Prevailing Wage Determination made by the Director of Industrial Relations pursuant to California Labor Code Part 7,

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Chapter 1, Article 2, Sections 1770, 1773 and 1773.1". The Internet address is <http://www.dir.ca.gov/>.

- F. A copy of the prevailing rate of per diem wages shall be posted at the worksite. Contractor, and any subcontractor under it, shall pay not less than the prevailing rates of wages to all workers employed in the execution of the Contract work. Contractor, and any subcontractor under it, shall be subject to penalties under Labor Code section 1775 for paying less than the prevailing wage rates.
- G. Contractor and any subcontractors shall keep accurate payroll records showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by it in connection with the Project work, and shall certify and make those records available for inspection and otherwise comply with the provisions of Labor Code sections 1776 and 1812. Contractor's failure to comply is a misdemeanor, as provided in Labor Code section 1777.
- H. Contractor shall be subject to the provisions of Labor Code section 1777.5 pertaining to the employment of apprentices. Contractor shall pay every apprentice employed in the execution of the Contract work the prevailing rate of per diem wages for apprentices in the trade to which he or she is registered and shall otherwise comply with the provisions of that section.
- I. Contractor warrants that neither it nor any of its subcontractors is ineligible to work on public works projects pursuant to Section 1777.1 or 1777.7 of the Labor Code. Contractor is prohibited from performing the Contract work with an ineligible subcontractor.
- J. The time of service of any worker employed in the execution of the Contract work is limited and restricted to eight (8) hours during any one (1) calendar day, and forty (40) hours during any one calendar week, except that work performed by Contractor's or subcontractor's employees in excess of eight (8) hours per day, and forty (40) hours during any one week, shall be permitted upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half (1 ½) times the basic rate of pay, or at any higher rate of overtime pay that may be required pursuant to a Department of Industrial Relations prevailing wage determination. Contractor, or any subcontractor working under it, shall be subject to penalties under Labor Code section 1813 for violations of these limitations.
- K. Contractor and its subcontractors shall not discriminate in the employment of persons upon public works on any basis listed in subdivision (a) of Section 12940 of the Government Code, as those bases are defined in Sections 12926 and 12926.1 of the Government Code, except as otherwise provided in Section 12940 of the Government Code. Every contractor for public works who violates this section is subject to all the penalties imposed for a violation of this chapter.
- L. Contractor shall secure the payment of worker's compensation to its employees performing the work, in accordance with the provisions of Sections 1860 and 3700

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of the Labor Code and, in case any such work is sublet, the Contractor shall require its subcontractors similarly to comply with those provisions.

7.21 *Trenching Plan*

SC-7.21 Add the following section:

- A. Pursuant to Labor Code Section 6705, Contractor shall submit, in advance of excavation of any trench or trenches five feet or more in depth, a detailed plan showing the design of shoring, bracing, or sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches, acceptable to Owner. If such plan varies from the shoring system standards, the plan shall be prepared by a registered civil or structural engineer.
- B. Pursuant to Labor Code section 6707, for trenches or other excavations which are five feet or deeper, Contractor's bid shall contain adequate sheeting, shoring, and bracing or equivalent method for the protection of life or limb, which shall conform to applicable safety orders.

ARTICLE 8— OTHER WORK AT THE SITE

No suggested Supplementary Conditions in this Article.

ARTICLE 9— OWNER'S RESPONSIBILITIES

9.02 *Replacement of Engineer*

SC-9.02.A Replace the section with:

Owner may at its discretion appoint an engineer to replace Engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

9.11 *Evidence of Financial Arrangements*

SC-9.11 Delete this section in its entirety.

ARTICLE 10— ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

SC-10.01.A Amend section to read as follows:

Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract, and by separate written agreement between Engineer and Owner.

10.03 *Resident Project Representative*

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SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.B:

- C. The Resident Project Representative (RPR) will be Engineer's representative at the Site. RPR's dealings in matters pertaining to the Work in general will be with Engineer and Contractor. RPR's dealings with Subcontractors will only be through or with the full knowledge or approval of Contractor. The RPR will:
1. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings (but not including Contractor's safety meetings), and as appropriate prepare and circulate copies of minutes thereof.
 2. *Safety Compliance:* Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR's own personal safety while at the Site.
 3. *Liaison*
 - a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
 - b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
 - c. Assist in obtaining from Owner additional details or information, when required for Contractor's proper execution of the Work.
 4. *Review of Work; Defective Work*
 - a. Conduct on-Site observations of the Work to assist Engineer in determining, to the extent set forth in Paragraph 10.02, if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Observe whether any Work in place appears to be defective.
 - c. Observe whether any Work in place should be uncovered for observation, or requires special testing, inspection or approval.
 5. *Inspections and Tests*
 - a. Observe Contractor-arranged inspections required by Laws and Regulations, including but not limited to those performed by public or other agencies having jurisdiction over the Work.
 - b. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work.
 6. *Payment Requests:* Review Applications for Payment with Contractor.
 7. *Completion*
 - a. Participate in Engineer's visits regarding Substantial Completion.
 - b. Assist in the preparation of a punch list of items to be completed or corrected.

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- c. Participate in Engineer's visit to the Site in the company of Owner and Contractor regarding completion of the Work, and prepare a final punch list of items to be completed or corrected by Contractor.
- d. Observe whether items on the final punch list have been completed or corrected.

D. The RPR will not:

- 1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
- 2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
- 3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
- 4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction.
- 5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
- 6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
- 7. Authorize Owner to occupy the Project in whole or in part.

10.06 *Decisions on Requirements of Contract Documents and Acceptability of Work*

SC-10.06.A Replace the section with:

Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 *Limitations on Engineer's Authority and Responsibilities*

SC-10.07.A Replace the section with:

Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, or to any surety for or employee or agent of any of them.

SC-10.07.B Replace the section with:

Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or

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procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents, except as provided by separate written agreement between Engineer and Owner.

ARTICLE 11— CHANGES TO THE CONTRACT

11.02 Change Orders

SC-11.02A Amend the section to read:

A Change Order, to be effective, must be written and signed by Contractor and Owner.

11.03 Work Change Directives

SC-11.03.B.2 Amend the section to read:

If Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall, after negotiations by the parties, notify Contractor of such an adjustment. Contractor may appeal Owner's determination under Article 12.

11.09 Change Proposals

SC-11.09.B.4 Amend the section to read:

Engineer's Full Review and Action on the Change Proposal: Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then Contractor may at any time thereafter submit a letter to Owner indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

SC-11.09.B.5 Amend the section to read:

Binding Decision: Engineer's decision is final and binding upon Contractor, unless Contractor appeals the decision by filing a Claim under Article 12.

ARTICLE 12— CLAIMS

SC-12.0 Replace the section in its entirety with:

12.0 Resolution of Construction Claims

- A. Contractor claims shall be governed by Public Contract Code section 9204. Key provisions of that section are summarized below:

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1. "Claim" means a separate demand by Contractor sent by registered mail or certified mail with return receipt requested, for one or more of the following:
 - a. A time extension, including, without limitation, for relief from damages or penalties for delay assessed by District under this Contract.
 - b. Payment by District of money or damages arising from work done by, or on behalf of, Contractor pursuant to this Contract and payment for which is not otherwise expressly provided or to which the Contractor is not otherwise entitled.
 - c. Payment of an amount that is disputed by District.
2. Upon receipt of a claim pursuant to this section, District shall conduct a reasonable review of the claim and, within a period not to exceed 45 days, shall provide Contractor a written statement identifying what portion of the claim is disputed and what portion is undisputed. Upon receipt of a claim, District and a Contractor may, by mutual agreement, extend the time period provided in this subdivision.
3. Contractor shall furnish reasonable documentation to support the claim.
4. Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after Owner issues its written statement.
5. If Contractor disputes Owner's written response, or if Owner fails to respond to a claim, Contractor may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, Owner shall schedule a meet and confer conference within 30 days for settlement of the dispute.
6. 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, Owner shall provide 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 Owner issues its written statement.
7. Any disputed portion of the claim, as identified by Contractor in writing, shall be submitted to nonbinding mediation, with Owner and Contractor sharing the associated costs equally. If the mediation is unsuccessful, the parts of the claim remaining in dispute shall be subject to sections 12 B and 12 C, below.
8. Failure by Owner to respond to a claim from Contractor within the time periods described herein or to otherwise meet the time requirements of this section shall result in the claim being deemed rejected in its entirety.
9. Amounts not paid in a timely manner as required by this section shall bear interest at 7 percent per annum.
10. Contractor may present to Owner a claim on behalf of a subcontractor or lower tier subcontractor. A subcontractor may request in writing, either on his or her own behalf or on behalf of a lower tier subcontractor, that Contractor present a claim for work which was performed by the subcontractor or by a

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lower tier subcontractor on behalf of the subcontractor. The subcontractor requesting that the claim be presented to Owner shall furnish reasonable documentation to support the claim. Within 45 days of receipt of this written request, Contractor shall notify the subcontractor in writing as to whether Contractor presented the claim to the Owner and, if Contractor did not present the claim, provide the subcontractor with a statement of the reasons for not having done so.

- a. Nothing in this section creates or acknowledges a contractual or other legal relationship between Owner and any subcontractor.
 - b. Nothing in this section creates or acknowledges in a subcontractor a direct claim or cause or right of action against Owner.
 - c. Nothing in this section imposes on Owner an obligation to review claims presented directly by a subcontractor or, with regard to claims made by Contractor on behalf of a subcontractor, to issue written statements to the subcontractor, or to meet and confer with the subcontractor, or to mediate claims with the subcontractor, or to make payments to the subcontractor.
11. Except as provided herein, this section does not alter extra work, change order, claim, or dispute resolution procedures and requirements set forth in this Contract.
- B. Following the mediation, if the claim or any portion remains in dispute, Contractor may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time Contractor submits his or her written claim until the conclusion of mediation.
- C. The following procedures are established for all civil actions filed to resolve claims subject to Article 12:
1. Within 60 days, but no earlier than 30 days, following the filing or responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within 15 days by both parties of a disinterested third person as mediator, shall be commenced within 30 days of the submittal, and shall be concluded within 15 days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.
 2. If the matter remains in dispute after mediation, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act (Title 4 (commencing with Section 2016.010) 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.

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- a. Notwithstanding any other provision of law, upon stipulation of the parties, arbitrators shall be experienced in construction law, and, upon stipulation of the parties, mediators and arbitrators shall be paid necessary and reasonable hourly rates of pay not to exceed their customary rate, and such fees and expenses shall be paid equally by the parties, except in the case of arbitration where the arbitrator, for good cause, determines a different division. In no event shall these fees or expenses be paid by state or county funds.
- b. In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, any party who after receiving an arbitration award requests a trial de novo but does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, pay the attorney's fees of the other party arising out of the trial de novo.
- c. The court may, upon request by any party, order any witnesses to participate in the mediation or arbitration process.

ARTICLE 13— COST OF WORK; ALLOWANCES, UNIT PRICE WORK

13.03 Unit Price Work

SC-13.03 Delete Paragraph 13.03.E in its entirety and insert the following in its place:

E. Adjustments in Unit Price

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
 - a. the extended price of a particular item of Unit Price Work amounts to **10** percent or more of the Contract Price (based on estimated quantities at the time of Contract formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than **25** percent from the estimated quantity of such item indicated in the Agreement; and
 - b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
3. Adjusted unit prices will apply to all units of that item.

ARTICLE 14— TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

No suggested Supplementary Conditions in this Article.

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ARTICLE 15— PAYMENTS TO CONTRACTOR, SET OFFS; COMPLETIONS; CORRECTION PERIOD

15.01 Progress Payments

SC-15.01 Replace section 15.01.B.4. with the following:

- a. Owner shall retain five percent (5%) of all progress payments as part security for fulfillment of the Contract. In any contract between Contractor and a subcontractor the percentage of the retention proceeds withheld may not exceed the percentage specified in this contract between Owner and Contractor. This section shall not be construed to limit the ability of Owner to withhold one hundred fifty percent (150%) of the value of any disputed amount of Work from the final payment, as provided for in subdivision (c) of section 7107 of the Public Contract Code. Nothing in this section shall be construed to require Owner to pay for work that is not approved or accepted in accordance with the Contract.
- b. Contractor may substitute securities for any moneys withheld by Owner to ensure performance under the Contract or Contractor may request and Owner shall make payment of retentions earned directly to the escrow agent at the expense of the Contractor, as provided in Public Contract Code section 22300.
- c. Within sixty (60) days after the date of completion of the Work, the retention withheld by the Owner shall be released. In the event of a dispute between Owner and Contractor, Owner may withhold from the final payment an amount not to exceed 150 percent of the disputed amount. For purposes of this requirement, "completion" means any of the following:
 - 1) The occupation, beneficial use, and enjoyment of a work of improvement, excluding any operation only for testing, startup, or commissioning, by Owner, or its agent, accompanied by cessation of labor on the work of improvement.
 - 2) The acceptance by Owner, or its agent, of the work of improvement.
 - 3) After the commencement of a work of improvement, a cessation of labor on the work of improvement for a continuous period of 100 days or more, due to factors beyond the control of Contractor.
 - 4) After the commencement of a work of improvement, a cessation of labor on the work of improvement for a continuous period of thirty (30) days or more, if Owner files for record a notice of cessation or a notice of completion.
2. Except as provided below, within seven (7) 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 specifically designated for a particular subcontractor, payment of the retention to the designated subcontractor, if the payment is consistent with the terms of the subcontract.

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3. Contractor may withhold from a subcontractor its portion of the retention proceeds if a bona fide dispute exists between the subcontractor and Contractor. The amount withheld from the retention payment shall not exceed 150 percent of the estimated value of the disputed amount.
4. In the event that retention payments are not made within the time periods required by this section, Owner or Contractor withholding the unpaid amounts 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 attorney's fees and costs.
5. Release of retentions under this section shall not be construed as acceptance of defective or improper work or materials.

SC-15.01.C Replace section 15.01.C.1 with the following:

Engineer will, within seven days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

SC-15.01.D Replace section 15.01.D.1 with the following:

B. Payment Becomes Due

1. Payment will be made within 30 days after receipt of an undisputed and properly submitted payment application from Contractor with Engineer's recommendation for payment. The 30-day period will be reduced by the number of days by which Engineer exceeds the seven-(7) day return requirement. Progress payments made after the required time period will include interest equivalent to the legal rate set forth in subdivision (a) of section 685.010 of the Code of Civil Procedure.

15.03 *Substantial Completion*

SC-15.03 Add the following new subparagraph to Paragraph 15.03.B:

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, will be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under this Article 15.

15.06 *Final Payment*

SC-15.06 Replace section 15.06.D with:

D. Payment Becomes Due

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1. Payment will be made within 30 days after receipt of an undisputed and properly submitted payment application from Contractor with Engineer's recommendation for payment. The 30-day period will be reduced by the number of days by which Engineer exceeds the seven-(7) day return requirement. Progress payments made after the required time period will include interest equivalent to the legal rate set forth in subdivision (a) of section 685.010 of the Code of Civil Procedure.

SC-15.06 Replace section 15.06E with:

Final Payment Becomes Due: Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall also withhold for stop payment notices presented under Chapter 4, Title 3, Part 6, Division 4 of the Civil Code, commencing with section 9350. Owner shall pay the resulting balance due to Contractor within 60 days of Owner's receipt of the final Application for Payment from Engineer.

ARTICLE 16— SUSPENSION OF WORK AND TERMINATION

16.02 Owner May Terminate for Cause

SC-16.02.E Replace 16.02.E with:

If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

16.04 Contractor May Stop Work or Terminate

SC-16.04.A Replace section 16.04.A with:

If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

SC-16.04B Replace section 16.04.B with:

If Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and

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Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17— FINAL RESOLUTIONS OF DISPUTES

17.01 Methods and Procedures

SC-17.01 Delete this section in its entirety.

ARTICLE 18— MISCELLANEOUS

No suggested Supplementary Conditions in this Article.

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**EXHIBIT C—GEOTECHNICAL BASELINE REPORT SUPPLEMENT TO THE
SUPPLEMENTARY CONDITIONS**

1.01 *Definitions*

SC-1.01 Add to the list of definitions in Paragraph 1.01.A by inserting the following as numbered items in their proper alphabetical positions:

1. *Geotechnical Baseline Report (GBR)*—The interpretive report prepared by or for Owner regarding subsurface conditions at the Site, and containing specific baseline geotechnical conditions that may be anticipated or relied upon for bidding and contract administration purposes, subject to the controlling provisions of the Contract, including the GBR's own terms. The GBR is a Contract Document.
2. *Geotechnical Data Report (GDR)*—The factual report that collects and presents data regarding actual subsurface conditions at or adjacent to the Site, including Technical Data and other geotechnical data, prepared by or for Owner in support of the Geotechnical Baseline Report. The GDR's content may include logs of borings, trenches, and other site investigations, recorded measurements of subsurface water levels, the results of field and laboratory testing, and descriptions of the investigative and testing programs. The GDR does not include an interpretation of the data. If opinions, or interpretive or speculative non-factual comments or statements appear in a document that is labeled a GDR, such opinions, comments, or statements are not operative parts of the GDR and do not have contractual standing. Subject to that exception, the GDR is a Contract Document.

5.03 *Subsurface and Physical Conditions*

SC-5.03 Delete Paragraph 5.03 in its entirety and replace with the following:

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions hereby identify:
 1. those reports of explorations and tests of subsurface conditions at or adjacent to the Site (other than any Geotechnical Data Report or Geotechnical Baseline Report) that contain Technical Data. Such reports are as follows:
 - a. *none provided*
 2. Contractor may examine copies of reports identified immediately above that were not included with the Bidding Documents at 6332 Clark Road, Paradise, CA during regular business hours, or may request copies from Engineer, at the cost of reproduction.
- B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph SC-5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

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- C. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.
- D. *Limitations of Other Data and Documents:* Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
 4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.
- E. *Geotechnical Data Report*
1. This Contract may contain a Geotechnical Data Report ("GDR"), identified as follows: *none provided*
 2. The GDR, if provided, is incorporated as Contract Documents. The GDR is to be used in conjunction with other Contract Documents, including the Drawings and Specifications.
 3. The GDR, if provided, describes certain select subsurface conditions that are anticipated to be encountered by Contractor during construction in specified locations (referred to here in the Supplementary Conditions as "Baseline Conditions"). These may include ground, geological, groundwater, and other subsurface geotechnical conditions, and baselines of anticipated Underground Facilities or subsurface structures.
 4. The Baseline Conditions will be used to assist in the administration of the Contract's differing site conditions clause at locations where subsurface conditions have been baselined. If a condition is baselined in the GDR, then only the pertinent Baseline Conditions will be used to determine whether there is a differing site condition; and no other indication of that condition in the Contract Documents or Technical Data, or of a condition that describes, quantifies, or measures a similar characteristic of the subsurface, will be used for the differing site condition determination.
 5. The Baseline Conditions will not be used to make differing site conditions determinations at locations that have not been baselined in the GDR, or at

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any location with respect to subsurface conditions that the Baseline Conditions do not address. If Underground Facilities or Hazardous Environmental Conditions are expressly addressed in the Baseline Conditions, then comparison to such Baseline Conditions will be the primary means of determining (a) whether an Underground Facility was shown or indicated with reasonable accuracy, as provided in Paragraph 5.05 of the General Conditions, or (b) whether a Hazardous Environmental Condition was shown or indicated in the Contract Documents as indicated in Paragraph 5.06.H of the General Conditions. As indicated in Paragraph SC-5.04 below, the GDR will be the primary resource for differing site conditions determinations.

6. The descriptions of subsurface conditions provided in the GDR are based on geotechnical investigations, laboratory tests, interpretation, interpolation, extrapolation, and analyses. Neither Owner, Engineer, nor any geotechnical or other consultant warrants or guarantees that actual subsurface conditions will be as described in the GDR, nor is the GDR intended to warrant or guarantee the use of specific means or methods of construction.
7. The behavior of the ground during construction depends substantially upon the Contractor's selected means, methods, techniques, sequences, and procedures of construction. If ground behavior conditions are baselined in the GDR, they are based on stated assumptions regarding construction means and methods.
8. The GDR, if provided, will not reduce or relieve Contractor of its responsibility for the planning, selection, and implementation of safety precautions and programs incident to Contractor's means, methods, techniques, sequences, and procedures of construction, or to the Work.

5.04 *Differing Subsurface or Physical Conditions*

SC-5.04 Delete Paragraph 5.04 in its entirety and replace with the following:

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice:* If Contractor believes that any subsurface condition that is uncovered or revealed at the Site:
 1. differs materially from conditions shown or indicated in the GDR, if provided; or
 2. differs materially from conditions shown or indicated in Contract Documents other than the GDR, if provided, to the extent the GDR is inapplicable; or
 4. to the extent the GDR is inapplicable, is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
 5. to the extent the GDR is inapplicable, is of such a nature as to require a change in the Drawings or Specifications; or
 6. to the extent the GDR is inapplicable, is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

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then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph SC-5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption or continuation of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption or continuation of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- E. *Possible Price and Times Adjustments*
 - 1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must fall within any one or more of the categories described in Paragraph SC-5.04.A;
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03 of the General Conditions; and
 - c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

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2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
 - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph SC-5.04.A.
 3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment must be set forth in a Change Order.
 4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.
- F. *Underground Facilities; Hazardous Environmental Conditions:* Paragraph 5.05 of the General Conditions governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 of the General Conditions governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs SC-5.03 and SC-5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

+ + END OF SECTION + +

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SECTION 00830

DWSRF CONSTRUCTION CONTRACT REQUIREMENTS

1.1 GENERAL

- A. Funding for this project has been provided in full or in part through an agreement with the State Water Resources Control Board. California's Drinking Water State Revolving Fund (DWSRF) is capitalized through a variety of funding sources, including grants from the United States Environmental Protection Agency and state bond proceeds. The contents of this document do not necessarily reflect the views and policies of the foregoing, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.
- B. This Section includes the DWSRF construction requirements and related boilerplate specifications.
- C. When general or supplementary conditions conflict with requirements contained herein, these DWSRF requirements take precedence.

1.2 CERTIFICATION OF NONSEGREGATED FACILITIES (41 CFR 60-1.8)

- A. General:
 - 1. All federally assisted construction contractors must comply with all appropriate Equal Employment Opportunity requirements.
- B. Contract Provisions:
 - 1. The federally assisted construction contractor certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause in this contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise.
 - 2. The federally assisted construction contractor agrees that (except where he has obtained identical certifications from proposed subcontractors for specified time period) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause, and that he will retain such certifications in his files.

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- C. The Certification of Nonsegregated Facilities form shall be completed by all bidding contractors and submitted with bids.

1.3 DISADVANTAGED BUSINESS ENTERPRISES PROVISIONS (EXECUTIVE ORDERS 11625, 121138, AND 12432)

A. General:

1. This project is funded in whole or part with federal loan or grant funds through the California Safe Drinking Water State Revolving Fund, and, therefore, federal Disadvantaged Business Enterprise (DBE) regulations apply to this project. (Reference 40 Code of Federal Regulations Part 33 – Participation by Disadvantaged Business Enterprises in U.S. Environmental Protection Agency Programs).
2. The Disadvantaged Business Enterprise Program is an outreach, education, and objectives program designed to increase the participation of DBEs in the Clean Water State Revolving Fund (CWSRF) and Drinking Water State Revolving Fund (DWSRF) Programs.
3. Recipients of CWSRF/DWSRF financing that are subject to the DBE requirements (recipients) are required to seek, and are encouraged to use, DBEs for their procurement needs. Recipients should award a "fair share" of sub-agreements to DBEs. This applies to all sub-agreements for equipment, supplies, construction, and services.
4. The key functional components of the DBE Program are as follows:
 - a. Fair Share Objectives
 - b. DBE Certification
 - c. Six Good Faith Efforts
 - d. Contract Administration Requirements
 - e. DBE Reporting
5. Disadvantaged Business Enterprises are defined as follows:
 - a. Entities owned and/or controlled by socially and economically disadvantaged individuals as described by Title X of the Clean Air Act Amendments of 1990 (42 U.S.C. 7601 note) (10% statute), and Public Law 102-389 (42 U.S.C. 4370d) (8% statute), respectively;
 - b. Minority Business Enterprise (MBE) - entities that are at least 51% owned and/or controlled by a socially and economically disadvantaged individual as described by Title X of the Clean Air Act Amendments of 1990 (42 U.S.C. 7601 note), and Public Law 102-389 (42 U.S.C. 4370d), respectively;
 - c. Women Business Enterprise (WBE) - entities that are at least 51% owned and/or controlled by women;
 - d. Small Business Enterprise (SBE);
 - e. Small Business in a Rural Area (SBRA);
 - f. Labor Surplus Area Firm (LSAF); or
 - g. Historically Underutilized Business (HUB) Zone Small Business Concern or a concern under a successor program.
6. Certifying DBE Firms:
 - a. Under the DBE Program, entities can no longer self-certify and contractors and sub-contractors must be certified at bid opening. Contractors and sub-contractors must provide to the CASRF recipient proof of DBE certification. Certifications will be accepted from the following:
 - 1) The U.S. Environmental Protection Agency (USEPA)
 - 2) The Small Business Administration (SBA)

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- 3) The Department of Transportation's State implemented DBE Certification Program (with U.S. citizenship)
- 4) Tribal, State and Local governments
- 5) Independent private organization certifications
- b. If an entity holds one of these certifications, it is considered acceptable for establishing status under the DBE Program.

B. Contract Provisions:

1. Compliance with the requirements of this document and completion of the GFE forms included in these Bidding Documents satisfies the DBE requirements for this construction contract. Failure to take the six (6) affirmative steps listed under Good Faith Effort Requirements **prior** to bid opening and to submit the necessary forms with the bid package shall cause the bid to be rejected as a non-responsive bid.
2. The DBE rule requires that responsive bid shall conform with "Good Faith Efforts" (GFE) to increase DBE awareness of procurement opportunities through race/gender neutral efforts. Race/gender neutral efforts are ones which increase awareness of contracting opportunities in general, including outreach, recruitment and technical assistance. Bidder agrees that it will cooperate with and assist the OWNER in fulfilling the DBE Good Faith Effort Requirement achieving "fair share objectives" and will exercise Good Faith Efforts to achieve such minimum participation of small, minority and women owned businesses. In particular, in submitting a bid, the bidder shall, in the selection of any and all contractors, subcontractors, and vendors for the procurement of equipment, supplies, construction, and services related to the project, at a minimum, undertake the following affirmative "Good Faith Effort" steps:
3. Good Faith Effort Requirements:
 - a. All CWSRF/DWSRF financing recipients are required to complete and ensure that the prime contractor complies with the GFE below to ensure that DBEs have the opportunity to compete for financial assistance dollars.
 - 1) Ensure DBEs are made aware of contracting opportunities to the fullest extent practical through outreach and recruitment activities. For Tribal, State and Local Government Recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
 - 2) Make information on forthcoming opportunities available to DBEs. Posting solicitations for bids or proposals for a minimum of 30 calendar days in a local newspaper, before the bid opening date.
 - 3) Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs.
 - 4) Encourage contracting with a group of DBEs when a contract is too large for one firm to handle individually.
 - 5) Use the services of the SBA and/or Minority Business Development Agency (MBDA) of the US Department of Commerce.
 - 6) If the prime contractor awards subcontracts, require the prime contractor to take the above steps.
 - b. The form listed below and included as an attachment to this Section shall be provided to awarded CONTRACTOR's DBE subcontractors for their use as needed at an time during the project period of performance:
 - 1) **Form 4500-2 DBE Subcontractor Participation Form:**
 - a) This form gives a DBE subcontractor the opportunity to describe the work the DBE subcontractor received from the prime contractor, how much

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the DBE subcontractor was paid and any other concerns the DBE subcontractor might have. DBE subcontractors can submit this Form 6100-2 directly to the Region 9 DBE Coordinator listed below at any time:

Joseph Ochab, DBE Coordinator
USEPA Region 9 (MTS-4)
75 Hawthorne Street,
San Francisco, CA 94105

- a. The following forms must be completed and submitted with each Bid:
 - 1) **Form 4500-3 DBE Subcontractor Performance Form:**
 - a) This form captures an intended subcontractor's description of work to be performed for the prime contractor and the price of the work submitted to the prime contractor. Prime contractor bidder must submit Form 4500-3 [completed by the DBE subcontractor] to the Water System as part of the bid submission.
 - 2) **Form 4500-4 DBE Subcontractor Utilization Form:**
 - a) This form captures the prime contractor's intended use of an identified DBE subcontractor, and the estimated dollar amount of the subcontract. Prime contractor bidder must submit Form 4500-4 to the Water System as part of their bid submission.
- b. **The completed forms must be submitted with each Bid.** The OWNER will review the bidder's documents closely to determine that the GFE was performed prior to bid or proposal opening date. Failure to complete the GFE and to substantiate completion of the GFE before the bid opening date could jeopardize DWSRF financing for the project. The following situations and circumstances require action as indicated below:
 - 1) If the apparent successful low bidder was rejected, a complete explanation must be provided.
 - 2) Failure of the apparent low bidder to **perform** the GFE **prior** to bid opening constitutes a non-responsive bid. The construction contract may then be awarded to the next low, responsive, and responsible bidder that meets the requirements or the OWNER may re-advertise the project.
 - 3) If there is a bid dispute, all disputes shall be settled **prior** to submission of the Final Budget Approval Form.
- c. Fair Share Objectives:
 - 1) Interested bidders are advised that the following fair share objectives have been established for this project. Fulfillment of the Disadvantaged Business Enterprise requirement is based on documented completion of the Good Faith Effort Requirements, not level of Disadvantaged Business Enterprise participation proposed/achieved.

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| | Minority Business Enterprise | Women's Business Enterprise |
|---------------------|-------------------------------------|------------------------------------|
| Construction | 11% | 4% |
| Supplies | 2% | 1% |
| Services | 4% | 2% |
| Equipment | 2% | 2% |

4. Administration Requirements:

- CONTRACTOR shall pay their subcontractors for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the OWNER.
- CONTRACTOR shall notify OWNER in writing prior to any termination of a DBE subcontractor by the CONTRACTOR.
- If a DBE subcontractor fails to complete work under the subcontract for any reason, the CONTRACTOR shall employ the six GFEs if soliciting a replacement subcontractor.
- CONTRACTOR shall employ the six GFEs even if CONTRACTOR has achieved their fair share objectives.

5. Contact for more information:

- SWRCB: Barbara August (916) 341-6952 barbara.august@waterboards.ca.gov
- US EPA, Region 9: Joe Ochab (415) 972-3761 ochab.joe@epa.gov

C. The following attachment shall be provided to CONTRACTOR's DBE subcontractors for their use as needed at any time during the project period of performance:

- Attachment A –Form 4500-2 DBE Subcontractor Participation Form

D. The following forms shall be completed by all bidding contractors and submitted with bids:

- DBE Subcontractor Performance Form
- DBE Subcontractor Utilization Form

1.4 DEBARMENT, SUSPENSION, INELIGIBILITY, AND VOLUNTARY EXCLUSION (EXECUTIVE ORDER 12549)

A. General:

- All prime contractors and subcontractors must meet debarment, suspension, ineligibility, and voluntary exclusion requirements pursuant to Executive Order 12549.
- A list of excluded parties may be found at <https://www.epls.gov/>

B. Contract Provisions:

- The bidding contractor certifies, by submission of their Bid, that it and its principals:
 - Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any Federal agencies;
 - 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

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- 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 bidding contractor is unable to certify to any of the statements in this certification, such contractor shall attach an explanation to their bid.
- C. The Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion form shall be completed by all bidding contractors and submitted with bids.

1.5 NONDISCRIMINATION CLAUSE (FAIR EMPLOYMENT AND HOUSING ACT, GOVERNMENT CODE 12900)

- A. General:
1. All prime contractors and subcontractors contracted to perform work on DWSRF funded projects must comply with California State nondiscrimination requirements.
- B. Contract Provisions:
1. During the performance of this contract, CONTRACTOR, its contractors and subcontractors, shall not deny the Agreement's benefits to any person on the basis of religion, color, ethnic group identification, sex, age, physical or mental disability, nor shall they discriminate unlawfully against any employee or applicant for employment because of race, religion, color, national origin, ancestry, physical handicap, mental disability, medical condition, marital status, age, or sex. CONTRACTOR, its contractors and subcontractors shall ensure that the evaluation and treatment of employees and applicants for employment are free of such discrimination.
 2. CONTRACTOR, its contractors and subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code, Section 12900 et seq.), the regulations promulgated thereunder (California Code of Regulations, Title 2, Section 7285.0 et seq.), the provisions of Article 9.5, Chapter 1, Part 1, Division 3, Title 2 of the Government Code (Government Code, Sections 11135 11139.5) and the regulations or standards adopted by the awarding State Agency to implement such article.
 3. By signing the Agreement, CONTRACTOR assures State that it shall comply with the requirements of the Americans with Disabilities Act (ADA) of 1990, (42 U.S.C. 12101 et seq.), which prohibits discrimination on the basis of disability, as well as all applicable regulations and guidelines issued pursuant to the ADA; the Civil Rights Act of 1964, as amended, 42 U.S.C. 2000d (1988) et seq.; Section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. 794 (1989); Federal Water Pollution Control Act Amendments of 1972, Pub.L. No. 92-500, 86 Stat 816; and the Age Discrimination Act of 1975, as amended, 42 U.S.C. 6102 (1994); together with all applicable regulations and guidelines adopted to implement same. Said group of laws and requirements are collectively referred to in the Agreement as the "anti-discrimination laws".
 4. CONTRACTOR agrees to collect and maintain information to show compliance with the "anti-discrimination laws" including a list of discrimination complaints, reports

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of any compliance reviews conducted by other agencies descriptions of any pending discrimination-based lawsuits and data on the racial, ethnic, national origin, sex and handicap characteristics of the population it serves.

5. CONTRACTOR, its contractors and subcontractors shall give written notice of their obligations under this Article to labor organizations with which they have a collective bargaining or other agreement.
6. CONTRACTOR's signature on the Agreement shall constitute a certification under penalty of perjury under the laws of the State of California that CONTRACTOR has, unless exempted, complied with the nondiscrimination program requirements of Government Code, Section 12990, and Title 2, California Code of Regulations, Section 8103.
7. CONTRACTOR shall include the nondiscrimination and compliance provisions of this Article A-15 in all contracts and subcontracts to perform work on the Project.

- C. The Nondiscrimination Clause certification form shall be completed by all bidding contractors and submitted with bids.

1.6 NON-COLLUSION AFFIDAVIT (CALIFORNIA PUBLIC CONTRACT CODE, SECTION 7106)

- A. General:
 1. Any public works contract of a supplier shall include a non-collusion affidavit.
- B. The Non-Collusion Affidavit form shall be completed by all bidding contractors and submitted with bids.

1.7 EEO AFFIRMITIVE ACTION PROVISIONS AND CLAUSES (EXECUTIVE ORDER 11246 AND 11375: 41 CFR PART 60-4)

- A. General:
 1. All prime contractors and subcontractors contracted to perform work on a DWSRF funded project must comply with all appropriate Equal Employment Opportunity and Affirmative Action requirements.
- B. Contract Provisions:
 1. During the performance of this contract, the CONTRACTOR agrees as follows:
 - a. The CONTRACTOR will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The CONTRACTOR will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex 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.
 - b. The CONTRACTOR will, in all solicitations or advertisements for employees placed by or on behalf of the CONTRACTOR, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

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- c. The CONTRACTOR will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the CONTRACTOR's legal duty to furnish information.
- d. 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.
- e. 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.
- f. 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.
- g. 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.
- h. The CONTRACTOR shall include the provisions of paragraphs (a) through (h) 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 September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The CONTRACTOR will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor 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, the CONTRACTOR may request the United States to enter into such litigation to protect the interests of the United States.

C. The following attachment shall be posted in a conspicuous place at the project site by the CONTRACTOR:

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1. Attachment D – Equal Employment Opportunity Notice
- D. The Equal Employment Opportunity Certification form be completed by all bidding contractors and submitted with bids.

1.8 RESTRICTIONS ON LOBBYING (31 USC 1352)

- A. General:
 1. As part of the for the DWSRF federal crosscutter requirements, water systems must include the following Lobbying Certification form in its contract documents, and certify that it has complied with Title 31, Section 1352, of the U.S. Code.
 2. Certification forms submitted by contractors and subcontractors who are awarded the construction contract should be retained by the water system for audit purposes.
- B. The Lobbying Certification form shall be completed by all bidding contractors and submitted with bids.

1.9 DRUG-FREE WORKPLACE CERTIFICATION

- A. General:
 1. By signing the Agreement, the CONTRACTOR hereby certifies under penalty of perjury under the laws of the State of California that CONTRACTOR will comply with the requirements of the Drug-Free Workplace Act of 1990 (Government Code Section 8350 et seq.) and will provide a drug-free workplace by taking the following actions:
 - a. 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.
 - b. Establish a Drug-Free Awareness program to inform employees about all of the following:
 - 1) The dangers of drug abuse in the workplace;
 - 2) The person's or organization's policy of maintaining a drug-free workplace;
 - 3) Any available counseling, rehabilitation and employee assistance programs;
 - 4) Penalties that may be imposed upon employees for drug abuse violations.
 - c. Every employee who works on the Project:
 - 1) Shall be issued a copy of CONTRACTOR's drug-free policy statement;
 - 2) Shall agree to abide by terms of CONTRACTOR's statement as a condition of employment on the Project.
 2. The Agreement may be subject to suspension of payments or termination, or both, and CONTRACTOR may be subject to debarment if State determines that: (1) CONTRACTOR has made a false certification, or (2) CONTRACTOR has violated the certification by failing to carry out the requirements of this Article.
- B. The Drug-Free Workplace Certification form shall be completed by all bidding contractors and submitted with bids.

1.10 PREVAILING WAGES

- A. The CONTRACTOR agrees to be bound by all applicable provisions of State Labor Code regarding prevailing wages. The OWNER will monitor all agreements subject to

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reimbursement from this Agreement to ensure that the prevailing wage provisions of the State Labor Code are being met.

- B. In addition, the CONTRACTOR agrees to comply with the Davis-Bacon provisions incorporated herein.

1.11 DAVIS-BACON ACT PROVISIONS (29 CFR 5.5)

A. General:

1. All DWSRF funded projects must comply with the Davis-Bacon Act.
2. CONTRACTOR shall post information regarding the Davis Bacon Act requirements at the jobsite.

B. Contract Provisions:

(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 Davis-Bacon 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 Davis- Bacon 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 the U.S. Department of Labor's web site, <https://beta.sam.gov/>.

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(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 the report, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The 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), the award official shall refer the request, and the local wage determination, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA Regional Coordinator concurrently. The 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

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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 Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets 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 Department of Labor, 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 Davis-Bacon 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 (Agency) 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 Davis-Bacon 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 Davis-Bacon 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

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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 Web site 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 Department of Labor 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

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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 Department of Labor, 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 Federal agency 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 U.S. Department of Labor, 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

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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 subcontractors 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 U.S. Department of Labor, 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

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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 Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon 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 Department of Labor 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, the U.S. Department of Labor, or the employees or their representatives

(10) Certification of eligibility.

(i) 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 Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) 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 Davis-Bacon Act or 29 CFR 5.12(a)(1).

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

Contract Provision for Contracts in Excess of \$100,000.

(a) Contract Work Hours and Safety Standards Act. The sub recipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in 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. These clauses

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shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. 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 (b)(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 (b)(1) of this section, in the sum of \$25 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 (b)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The sub recipient shall upon the request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (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) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Sub recipient shall insert a clause requiring that 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

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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 (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

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- C. The following attachment (or most recent version provided by addendum) shall be posted in a conspicuous place at the project site by the CONTRACTOR:
1. Attachment C – Davis Bacon Wage Determinations

1.12 CULTURAL RESOURCES PRESERVATION

- A. Should a potential tribal cultural resource and/or archaeological or historical resource be discovered during construction or Project implementation, the CONTRACTOR shall cease all work in the area of the find until a qualified archaeologist has evaluated the situation and made recommendations regarding preservation of the resource, and the Division of Drinking Water has determined what actions should be taken to protect and preserve the resource. The CONTRACTOR must implement appropriate actions as directed by the Division of Drinking Water.

1.13 ATTACHMENTS

- A. The following attachments are included as part of this Section.
1. Attachment A – Form 4500-2 DBE Subcontractor Participation Form
 2. Attachment B – Form 4500-3 DBE Subcontractor Performance Form
 3. Attachment C – Form 4500-4 DBE Subcontractor Utilization Form
 4. Attachment D – Equal Employment Opportunity Certification
 5. Attachment E – Davis Bacon Wage Act Determinations

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Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Participation Form

A Financial Assistance Agreement Recipient must require its prime contractors to provide this form to its DBE subcontractors. This form gives a DBE¹ subcontractor² the opportunity to describe work received and/or report any concerns regarding the funded project (e.g., in areas such as termination by prime contractor, late payments, etc.). The DBE subcontractor can, as an option, complete and submit this form to the DBE Coordinator at any time during the project period of performance.

| | | | |
|-----------------------|--|------------------------|--|
| Subcontractor Name | | Project Name | |
| Bid / Proposal No. | Assistance Agreement ID No. (if known) | Point of Contact | |
| Address | | | |
| Telephone No. | | Email Address | |
| Prime Contractor Name | | Issuing/Funding Entity | |

| Contract Item Number | Description of Work Received from the Prime Contractor Involving Construction, Services, Equipment or Supplies | Amount Received by Prime Contractor |
|----------------------|--|-------------------------------------|
| | | |

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.2015 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an award of financial assistance.

Please use the space below to report any concerns regarding the above funded project:

| Subcontractor Signature | Print Name |
|-------------------------|------------|
| | |
| Title | Date |
| | |

The public reporting and record keeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Do not send the completed form to this address.

Send completed Form 4500-2 to:

Mr. Joe Ochab, DBE Coordinator
US EPA, Region 9
75 Hawthorne Street
San Francisco, CA 94105

FORM 4500-2 (DBE Subcontractor Participation Form)



Disadvantaged Business Enterprise (DBE) Program

DBE Subcontractor Performance Form

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. A Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractor's bid or proposal package.

| | | | |
|-----------------------|--|------------------------|------------------|
| Subcontractor Name | | Project Name | |
| Bid / Proposal No. | Assistance Agreement ID No. (if known) | | Point of Contact |
| Address | | | |
| Telephone No. | | Email Address | |
| Prime Contractor Name | | Issuing/Funding Entity | |

| Contract Item Number | Description of Work Submitted from the Prime Contractor Involving Construction, Services, Equipment or Supplies | Price of Work Submitted to the Prime Contractor |
|----------------------|---|---|
| | | |

| | |
|--|---|
| DBE Certified By: <input type="checkbox"/> DOT <input type="checkbox"/> SBA <input type="checkbox"/> Other: _____ | Meets/exceeds EPA certification standards? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Unknown |
|--|---|

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.2015 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an award of financial assistance.

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

| Prime Contractor Signature | Print Name |
|----------------------------|------------|
| | |
| Title | Date |
| | |

| Subcontractor Signature | Print Name |
|-------------------------|------------|
| | |
| Title | Date |
| | |

The public reporting and record keeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Do not send the completed form to this address.



Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Utilization Form

This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE¹ subcontractor's² and the estimated dollar amount of each subcontract. A Financial Assistance Agreement Recipient must require its prime contractors to complete this form and include it in the bid or proposal package. Prime contractors should also maintain a copy of this form on file.

| | | | |
|------------------------|--|------------------|--|
| Prime Contractor Name | | Project Name | |
| Bid / Proposal No. | Assistance Agreement ID No. (if known) | Point of Contact | |
| Address | | | |
| Telephone No. | | Email Address | |
| Issuing/Funding Entity | | | |

| <p>I have identified potential DBE certified subcontractors. <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>If yes, please complete the table below. If <i>no</i>, please explain:</p> | | | |
|---|---------------------------------|----------------------------|--------------------------------|
| | | | |
| Subcontractor Name/ Company Name | Company Address / Phone / Email | Estimated Dollar Amount | Currently DBE Certified? |
| | | | |
| | | | |
| | | | |

--Continue on back if needed--

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.2015 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an award of financial assistance.

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

| Prime Contractor Signature | Print Name |
|----------------------------|------------|
| | |
| Title | Date |
| | |

The public reporting and record keeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Do not send the completed form to this address.

NOTICE TO BE POSTED

EQUAL EMPLOYMENT OPPORTUNITY IS THE LAW – DISCRIMINATION IS PROHIBITED BY THE CIVIL RIGHTS ACT OF 1964 AND BY EXECUTIVE ORDER NO. 11246

Title VII of the Civil Rights Act of 1964 – Administered by:

THE EQUAL EMPLOYMENT OPPORTUNITY COMMISSION

Prohibits discrimination because of Race, Color, Religion, Sex, or National Origin by Employers with 75 or more employees, by Labor Organizations with a hiring hall of 75 or more members, by Employment Agencies, and by Joint Labor-Management Committees for Apprenticeship or Training. After July 1, 1967, employers and labor organizations with 50 or more employees or members will be covered; after July 1, 1968, those with 25 or more will be covered.

ANY PERSON

Who believes he or she has been discriminated against

SHOULD CONTACT

THE EQUAL EMPLOYMENT OPPORTUNITY COMMISSION

2401 E Street NW, Washington, D.C. 20506

Executive Order No. 11246 – Administered by:

THE OFFICE OF FEDERAL CONTRACT COMPLIANCE PROGRAMS

Prohibits discrimination because of Race, Color, Religion, Sex, or National Origin, and requires affirmative action to ensure equality of opportunity in all aspects of employment.

By all Federal Government Contractors and Subcontractors, and by Contractors Performing Work Under a Federally Assisted Construction Contract, regardless of the number of employees in either case.

ANY PERSON

Who believes he or she has been discriminated against

SHOULD CONTACT

THE OFFICE OF FEDERAL CONTRACT COMPLIANCE PROGRAMS

U. S. Department of Labor, Washington, D.C. 20210

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"General Decision Number: CA20230007 04/28/2023

Superseded General Decision Number: CA20220007

State: California

Construction Types: Building, Heavy (Heavy and Dredging) and Highway

Counties: Alpine, Amador, Butte, Colusa, El Dorado, Glenn, Lassen, Marin, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Siskiyou, Solano, Sonoma, Sutter, Tehama, Trinity, Yolo and Yuba Counties in California.

BUILDING CONSTRUCTION PROJECTS (excluding Amador County only);
DREDGING CONSTRUCTION PROJECTS (does not include hopper dredge work); HEAVY CONSTRUCTION PROJECTS (does not include water well drilling); AND HIGHWAY CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

| | |
|---|--|
| If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022: | <ul style="list-style-type: none">. Executive Order 14026 generally applies to the contract.. The contractor must pay all covered workers at least \$16.20 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 2023. |
| If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022: | <ul style="list-style-type: none">. Executive Order 13658 generally applies to the contract.. The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023. |

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

| Modification Number | Publication Date |
|---------------------|------------------|
| 0 | 01/06/2023 |
| 1 | 01/13/2023 |
| 2 | 01/20/2023 |
| 3 | 02/03/2023 |
| 4 | 03/03/2023 |
| 5 | 03/10/2023 |
| 6 | 03/17/2023 |
| 7 | 03/31/2023 |
| 8 | 04/07/2023 |
| 9 | 04/14/2023 |
| 10 | 04/21/2023 |
| 11 | 04/28/2023 |

ASBE0016-001 02/01/2023

AREA 1: MARIN, NAPA, SAN BENITO, SAN FRANCISCO, SOLANO, & SONOMA COUNTIES

AREA 2: ALPINE, AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, MODOC, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SISKIYOU, SUTTER, TEHEMA, TRINITY, 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..... | \$ 80.91 | 23.82 |
| Area 2..... | \$ 62.26 | 23.82 |
| ----- | | |
| ASBE0016-007 01/01/2021 | | |

AREA 1 : ALPINE, AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SISKIYOU, SOLANO, SONOMA, SUTTER, TEHAMA, TRINITY, YOLO & YUBA COUNTIES

AREA 2: MARIN & NAPA 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..... | \$ 30.45 | 10.60 |
| AREA 2..... | \$ 36.53 | 9.27 |
| ----- | | |

BOIL0549-002 01/01/2021

| | Rates | Fringes |
|------------------------------|----------|---------|
| BOILERMAKER | | |
| (1) Marin & Solano Counties. | \$ 49.62 | 41.27 |
| (2) Remaining Counties..... | \$ 45.60 | 38.99 |

BRCA0003-001 08/01/2022

| | Rates | Fringes |
|----------------------|----------|---------|
| MARBLE FINISHER..... | \$ 39.20 | 18.31 |

BRCA0003-004 05/01/2022

AREA 1: ALPINE, AMADOR, BUTTE, COLUSA, EL DORADO, GLENN,
LASSEN, MODOC, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA,
SIERRA, SUTTER, TEHAMA, YOLO AND YUBA COUNTIES

AREA 2: MARIN, NAPA, SISKIYOU, SOLANO, SONOMA AND TRINITY
COUNTIES

| | Rates | Fringes |
|-------------|----------|---------|
| BRICKLAYER | | |
| AREA 1..... | \$ 49.32 | 22.65 |
| AREA 2..... | \$ 53.69 | 26.03 |

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.

BRCA0003-008 07/01/2022

| | Rates | Fringes |
|-----------------------------|----------|---------|
| TERRAZZO FINISHER..... | \$ 41.93 | 18.98 |
| TERRAZZO WORKER/SETTER..... | \$ 56.84 | 27.53 |

BRCA0003-010 04/01/2022

| | Rates | Fringes |
|---------------|----------|---------|
| TILE FINISHER | | |
| Area 1..... | \$ 31.12 | 16.11 |
| Area 2..... | \$ 30.90 | 17.87 |
| Area 3..... | \$ 33.86 | 17.74 |
| Area 4..... | \$ 31.89 | 17.18 |
| Tile Layer | | |
| Area 1..... | \$ 51.02 | 19.35 |
| Area 2..... | \$ 50.66 | 20.77 |
| Area 3..... | \$ 55.41 | 20.87 |
| Area 4..... | \$ 52.28 | 20.79 |

AREA 1: Butte, Colusa, El Dorado, Glenn, Lassen, Modoc,

Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Sutter,
Tehama, Yolo, Yuba
AREA 2: Alpine, Amador
AREA 3: Marin, Napa, Solano, Siskiyou
AREA 4: Sonoma

BRCA0003-014 08/01/2022

| | Rates | Fringes |
|-------------------|----------|---------|
| MARBLE MASON..... | \$ 56.98 | 28.54 |

CARP0034-001 07/01/2021

| | Rates | Fringes |
|---------------------------------------|-----------|---------|
| Diver | | |
| Assistant Tender, ROV | | |
| Tender/Technician..... | \$ 54.10 | 34.69 |
| Diver standby..... | \$ 60.51 | 34.69 |
| Diver Tender..... | \$ 59.51 | 34.69 |
| Diver wet..... | \$ 103.62 | 34.69 |
| Manifold Operator (mixed gas)..... | \$ 64.51 | 34.69 |
| Manifold Operator (Standby). | \$ 59.51 | 34.69 |

DEPTH PAY (Surface Diving):

050 to 100 ft \$2.00 per foot
101 to 150 ft \$3.00 per foot
151 to 220 ft \$4.00 per foot
221 ft.-deeper \$5.00 per foot

SATURATION DIVING:

The standby rate shall apply until saturation starts. The saturation diving rate applies when divers are under pressure continuously until work task and decompression are complete. The diver rate shall be paid for all saturation hours.

DIVING IN ENCLOSURES:

Where it is necessary for Divers to enter pipes or tunnels, or other enclosures where there is no vertical ascent, the following premium shall be paid: Distance traveled from entrance 26 feet to 300 feet: \$1.00 per foot. When it is necessary for a diver to enter any pipe, tunnel or other enclosure less than 48" in height, the premium will be \$1.00 per foot.

WORK IN COMBINATION OF CLASSIFICATIONS:

Employees working in any combination of classifications within the diving crew (except dive supervisor) in a shift are paid in the classification with the highest rate for that shift.

CARP0034-003 07/01/2021

| | Rates | Fringes |
|-----------------|----------|---------|
| Piledriver..... | \$ 54.10 | 34.69 |

CARP0035-001 08/01/2020

AREA 1: MARIN, NAPA, SOLANO & SONOMA

AREA 3: SACRAMENTO, WESTERN EL DORADO (Territory west of an including highway 49 and the territory inside the city limits of Placerville), WESTERN PLACER (Territory west of and including highway 49), & YOLO

AREA 4: ALPINE, BUTTE, COLUSA, EASTERN EL DORADO, GLENN, LASSEN, MODOC, NEVADA, EASTERN PLACER, PLUMAS, SHASTA, SIERRA, SISKIYOU, SUTTER, TEHAMA, TRINITY, & YUBA

| | Rates | Fringes |
|-----------------------------|----------|---------|
| Drywall Installers/Lathers: | | |
| Area 1..... | \$ 52.65 | 31.26 |
| Area 3..... | \$ 47.27 | 31.26 |
| Area 4..... | \$ 45.92 | 31.26 |
| Drywall Stocker/Scraper | | |
| Area 1..... | \$ 26.33 | 18.22 |
| Area 3..... | \$ 23.64 | 18.22 |
| Area 4..... | \$ 22.97 | 18.22 |
| ----- | | |
| 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 |
| ----- | | |
| CARP0035-010 07/01/2020 | | |

AREA 1: Marin, Napa, Solano & Sonoma Counties

AREA 2: Monterey, San Benito and Santa Cruz

AREA 3: Alpine, Butte, Colusa, El Dorado, Glenn, Lassen, Modoc, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Siskiyou, Sutter, Tehama, Trinity, Yolo & Yuba counties

| | Rates | Fringes |
|-----------------------------|----------|---------|
| Modular Furniture Installer | | |
| Area 1 | | |
| Installer..... | \$ 28.76 | 22.53 |
| Lead Installer..... | \$ 32.21 | 23.03 |
| Master Installer..... | \$ 36.43 | 23.03 |
| Area 2 | | |
| Installer..... | \$ 26.11 | 22.53 |
| Lead Installer..... | \$ 29.08 | 23.03 |
| Master Installer..... | \$ 32.71 | 23.03 |
| Area 3 | | |
| Installer..... | \$ 25.16 | 22.53 |
| Lead Installer..... | \$ 27.96 | 23.03 |
| Master Installer..... | \$ 31.38 | 23.03 |

CARP0046-001 07/01/2021

El Dorado (West), Placer (West), Sacramento and Yolo 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..... | \$ 49.12 | 31.49 |
| Journeyman Carpenter..... | \$ 48.97 | 31.49 |
| Millwright..... | \$ 51.47 | 33.08 |

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.

CARP0046-002 07/01/2021

Alpine, Colusa, El Dorado (East), Nevada, Placer (East),
Sierra, Sutter and Yuba 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..... | \$ 47.77 | 31.49 |
| Journeyman Carpenter..... | \$ 47.62 | 31.49 |
| Millwright..... | \$ 50.12 | 33.08 |

CARP0152-003 07/01/2020

Amador 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..... | \$ 45.57 | 30.82 |
| Journeyman Carpenter..... | \$ 45.42 | 30.82 |
| Millwright..... | \$ 47.92 | 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 |

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 |

CARP1599-001 07/01/2020

Butte, Glenn, Lassen, Modoc, Plumas, Shasta, Siskiyou, Tehama
and Trinity Counties

Rates Fringes

Carpenters

| | | |
|---|----------|-------|
| Bridge Builder/Highway Carpenter..... | \$ 52.65 | 30.82 |
| Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer..... | \$ 45.57 | 30.82 |
| Journeyman Carpenter..... | \$ 45.42 | 30.82 |
| Millwright..... | \$ 47.92 | 32.41 |

ELEC0180-001 06/01/2021

NAPA AND SOLANO COUNTIES

Rates Fringes

| | | |
|--------------------|----------|----------|
| CABLE SPLICER..... | \$ 59.69 | 3%+24.38 |
| ELECTRICIAN..... | \$ 53.06 | 3%+24.38 |

ELEC0180-003 12/01/2022

NAPA AND SOLANO COUNTIES

Rates Fringes

Sound & Communications

| | | |
|----------------|----------|-------|
| Installer..... | \$ 46.64 | 25.30 |
|----------------|----------|-------|

Technician.....\$ 53.64 25.51

SCOPE OF WORK INCLUDES-

SOUND & VOICE TRANSMISSION (Music, Intercom, Nurse Call, Telephone); FIRE ALARM SYSTEMS [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], TELEVISION & VIDEO SYSTEMS, SECURITY SYSTEMS, COMMUNICATIONS SYSTEMS that transmit or receive information and/or control systems that are intrinsic to the above.

EXCLUDES-

Excludes all other data systems or multiple systems which include control function or power supply; excludes 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); excludes energy management systems.

ELEC0340-002 02/01/2018

ALPINE, AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, NEVADA, PLACER, PLUMAS, SACRAMENTO, TRINITY, YOLO, YUBA COUNTIES

| | Rates | Fringes |
|-------------------------|----------|---------|
| Communications System | | |
| Sound & Communications | | |
| Installer.....\$ 29.35 | 3%+15.35 | |
| Sound & Communications | | |
| Technician.....\$ 33.75 | 3%+15.35 | |

SCOPE OF WORK

Includes the installation testing, service and maintenance, of the following systems which utilize the transmission and/or transference of voice, sound, vision and digital for commercial, education, security and entertainment purposes for the following TV monitoring and surveillance, background-foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call system, radio page, school intercom and sound, burglar alarms, and low voltage master clock systems.

A. SOUND AND VOICE TRANSMISSION/TRANSFERENCE SYSTEMS

Background foreground music Intercom and telephone interconnect systems, Telephone systems, Nurse call systems, Radio page systems, School intercom and sound systems, Burglar alarm systems, Low voltage master clock systems, Multi-media/multiplex systems, Sound and musical entertainment systems, RF systems, Antennas and Wave Guide.

B. FIRE ALARM SYSTEMS

Installation, wire pulling and testing

C. TELEVISION AND VIDEO SYSTEMS Television monitoring and surveillance systems, Video security systems, Video entertainment systems, Video educational systems, Microwave transmission systems, CATV and CCTV

D. SECURITY SYSTEMS Perimeter security systems
Vibration sensor systems Card access systems Access
control systems Sonar/infrared monitoring equipment

E. COMMUNICATIONS SYSTEMS THAT TRANSMIT OR RECEIVE
INFORMATION AND/OR CONTROL SYSTEMS THAT ARE INTRINSIC TO
THE ABOVE LISTED SYSTEMS SCADA (Supervisory Control and
Data Acquisition) PCM (Pulse Code Modulation)
Inventory Control Systems Digital Data Systems
Broadband and Baseband and Carriers Point of Sale
Systems VSAT Data Systems Data Communication
Systems RF and Remote Control Systems Fiber Optic
Data Systems WORK EXCLUDED Raceway systems are not covered
(excluding Ladder-Rack for the purpose of the above listed
systems). Chases and/or nipples (not to exceed 10 feet)
may be installed on open wiring systems. Energy management
systems. SCADA (Supervisory Control and Data Acquisition)
when not intrinsic to the above listed systems (in the
scope). Fire alarm systems when installed in raceways
(including wire and cable pulling) shall be performed at
the electrician wage rate, when either of the following two
(2) conditions apply:
1. The project involves new or major remodel building trades
construction.
2. The conductors for the fire alarm system are installed in
conduit.

ELEC0340-003 08/01/2022

ALPINE (West of Sierra Mt. Watershed), AMADOR, BUTTE, COLUSA,
EL DORADO (West of Sierra Mt. Watershed), GLENN, LASSEN, NEVADA
(West of Sierra Mt. Watershed), PLACER, PLUMAS, SACRAMENTO,
SHASTA, SIERRA (West of Sierra Mt. Watershed), SUTTER, TEHAMA,
TRINITY, YOLO & YUBA COUNTIES

| | Rates | Fringes |
|------------------------------|----------|---------|
| ELECTRICIAN | | |
| Remaining area..... | \$ 45.06 | 34.09 |
| Sierra Army Depot, Herlong.. | \$ 48.83 | 18.54 |
| Tunnel work..... | \$ 41.01 | 18.54 |

CABLE SPLICER: Receives 110% of the Electrician basic hourly
rate.

ELEC0401-005 01/01/2022

ALPINE (east of the main watershed divide), EL DORADO (east of
the main watershed divide), NEVADA (east of the main
watershed), PLACER (east of the main watershed divide) and
SIERRA (east of the main watershed divide) COUNTIES:

| | Rates | Fringes |
|------------------|----------|---------|
| ELECTRICIAN..... | \$ 42.50 | 20.95 |

ZONE RATE:

70-90 miles - \$8.00 per hour
91+ miles - \$10.00 per hour

ELEC0551-004 06/01/2022

MARIN AND SONOMA COUNTIES

| | Rates | Fringes |
|------------------|----------|---------|
| ELECTRICIAN..... | \$ 55.60 | 28.06 |

ELEC0551-005 12/01/2022

MARIN & SONOMA COUNTIES

| | Rates | Fringes |
|------------------------|----------|---------|
| Sound & Communications | | |
| Installer..... | \$ 46.64 | 25.30 |
| Technician..... | \$ 53.64 | 25.65 |

SCOPE OF WORK INCLUDES-

SOUND & VOICE TRANSMISSION (Music, Intercom, Nurse Call, Telephone); FIRE ALARM SYSTEMS [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], TELEVISION & VIDEO SYSTEMS, SECURITY SYSTEMS, COMMUNICATIONS SYSTEMS that transmit or receive information and/or control systems that are intrinsic to the above.

EXCLUDES-

Excludes all other data systems or multiple systems which include control function or power supply; excludes 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); excludes energy management systems.

ELEC0659-006 01/01/2023

DEL NORTE, MODOC and SISKIYOU COUNTIES

| | Rates | Fringes |
|------------------|----------|---------|
| ELECTRICIAN..... | \$ 43.97 | 19.26 |

ELEC0659-008 02/01/2023

DEL NORTE, MODOC & SISKIYOU COUNTIES

| | Rates | Fringes |
|------------------------------|----------|------------|
| Line Construction | | |
| (1) Cable Splicer..... | \$ 67.80 | 4.5%+22.15 |
| (2) Lineman, Pole Sprayer, | | |
| Heavy Line Equipment Man.... | \$ 60.54 | 4.5%+22.15 |
| (3) Tree Trimmer..... | \$ 37.84 | 4.5%+14.30 |
| (4) Line Equipment Man..... | \$ 53.82 | 4.5%+19.40 |
| (5) Powdermen, | | |
| Jackhammermen..... | \$ 40.37 | 4.5%+14.30 |
| (6) Groundman..... | \$ 33.37 | 4.5%+14.30 |

ELEC1245-004 06/01/2022

ALL COUNTIES EXCEPT DEL NORTE, MODOC & SISKIYOU

| | Rates | Fringes |
|--|-------|---------|
| LINE CONSTRUCTION | | |
| (1) Lineman; Cable splicer..\$ 64.40 | | 22.58 |
| (2) Equipment specialist (operates crawler tractors, commercial motor vehicles, backhoes, trenchers, cranes (50 tons and below), overhead & underground distribution line equipment).....\$ 50.00 | | 21.30 |
| (3) Groundman.....\$ 38.23 | | 20.89 |
| (4) Powderman.....\$ 51.87 | | 18.79 |

HOLIDAYS: New Year's Day, M.L. King Day, Memorial Day,
Independence Day, Labor Day, Veterans Day, Thanksgiving Day
and day after Thanksgiving, Christmas Day

ELEV0008-001 01/01/2023

| | Rates | Fringes |
|--------------------------------|-------|------------|
| ELEVATOR MECHANIC.....\$ 77.61 | | 37.335+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.

ENGI0003-008 08/01/2022

| | Rates | Fringes |
|---|-------|---------|
| Dredging: (DREDGING: CLAMSHELL & DIPPER DREDGING; HYDRAULIC SUCTION DREDGING:) | | |
| AREA 1: | | |
| (1) Leverman.....\$ 55.15 | | 35.46 |
| (2) Dredge Dozer; Heavy duty repairman.....\$ 50.19 | | 35.46 |
| (3) Booster Pump Operator; Deck Engineer; Deck mate; Dredge Tender; Winch Operator.....\$ 49.07 | | 35.46 |
| (4) Bargeman; Deckhand; Fireman; Leveehand; Oiler..\$ 45.77 | | 35.46 |
| AREA 2: | | |
| (1) Leverman.....\$ 57.15 | | 35.46 |
| (2) Dredge Dozer; Heavy duty repairman.....\$ 52.19 | | 35.46 |
| (3) Booster Pump Operator; Deck Engineer; Deck mate; Dredge Tender; Winch Operator.....\$ 51.07 | | 35.46 |
| (4) Bargeman; Deckhand; | | |

AREA DESCRIPTIONS

AREA 1: ALAMEDA,BUTTE, CONTRA COSTA, KINGS, MARIN, MERCED,
NAPA, SACRAMENTO, SAN BENITO, SAN FRANCISCO, SAN JOAQUIN,
SAN MATEO, SANTA CLARA, SANTA CRUZ, SOLANO, STANISLAUS,
SUTTER, YOLO, AND YUBA COUNTIES

AREA 2: MODOC COUNTY

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

ALPINE COUNTY:

Area 1: Northernmost part

Area 2: Remainder

CALAVERAS COUNTY:

Area 1: Remainder

Area 2: Eastern part

COLUSA COUNTY:

Area 1: Eastern part

Area 2: Remainder

ELDORADO COUNTY:

Area 1: North Central part

Area 2: Remainder

FRESNO COUNTY:

Area 1: Remainder

Area 2: Eastern part

GLENN COUNTY:

Area 1: Eastern part

Area 2: Remainder

LASSEN COUNTY:

Area 1: Western part along the Southern portion of border
with Shasta County

Area 2: Remainder

MADERA COUNTY:

Area 1: Except Eastern part

Area 2: Eastern part

MARIPOSA COUNTY

Area 1: Except Eastern part

Area 2: Eastern part

MONTERREY COUNTY

Area 1: Except Southwestern part

Area 2: Southwestern part

NEVADA COUNTY:

Area 1: All but the Northern portion along the border of
Sierra County

Area 2: Remainder

PLACER COUNTY:

Area 1: Al 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 Northeastern border with
Shasta County
Area 2: Remainder

TUOLUMNE COUNTY:

Area 1: Except Eastern part
Area 2: Eastern part

ENGI0003-019 06/29/2020

SEE AREA DESCRIPTIONS BELOW

| | Rates | Fringes |
|--|----------|---------|
| OPERATOR: Power Equipment (LANDSCAPE WORK ONLY) | | |
| GROUP 1 | | |
| AREA 1..... | \$ 39.95 | 30.28 |
| AREA 2..... | \$ 41.95 | 30.28 |
| GROUP 2 | | |
| AREA 1..... | \$ 36.35 | 30.28 |
| AREA 2..... | \$ 38.35 | 30.28 |
| GROUP 3 | | |
| AREA 1..... | \$ 31.74 | 30.28 |
| AREA 2..... | \$ 33.74 | 30.28 |

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, BUTTE, CONTRA COSTA, KINGS, MARIN, MERCED, NAPA, SACRAMENTO, SAN BENITO, SAN FRANCISCO, SAN JOAQUIN, SAN MATEO, SANTA CLARA, SANTA CRUZ, SOLANO, STANISLAUS, SUTTER, YOLO, AND YUBA COUNTIES

AREA 2 - MODOC COUNTY

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

ALPINE COUNTY:

Area 1: Northernmost part

Area 2: Remainder

CALAVERAS COUNTY:

Area 1: Except Eastern part

Area 2: Eastern part

COLUSA COUNTY:

Area 1: Eastern part

Area 2: Remainder

DEL NORTE COUNTY:

Area 1: Extreme Southwestern corner

Area 2: Remainder

ELDORADO COUNTY:

Area 1: North Central part

Area 2: Remainder

FRESNO COUNTY

Area 1: Except Eastern part

Area 2: Eastern part

GLENN COUNTY:

Area 1: Eastern part

Area 2: Remainder

HUMBOLDT COUNTY:

Area 1: Except Eastern and Southwestern parts

Area 2: Remainder

LAKE COUNTY:

Area 1: Southern part

Area 2: Remainder

LASSEN COUNTY:

Area 1: Western part along the Southern portion of border with Shasta County

Area 2: Remainder

MADERA COUNTY

Area 1: Remainder

Area 2: Eastern part

MARIPOSA COUNTY

Area 1: Remainder

Area 2: Eastern part

MENDOCINO COUNTY:

Area 1: Central and Southeastern parts

Area 2: Remainder

MONTEREY COUNTY

Area 1: Remainder

Area 2: Southwestern part

NEVADA COUNTY:

Area 1: All but the Northern portion along the border of
Sierra County

Area 2: Remainder

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: Reaminder

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

TUOLUMNE COUNTY:

Area 1: Remainder

Area 2: Eastern Part

ENGI0003-038 06/29/2020

""AREA 1"" WAGE RATES ARE LISTED BELOW

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

SEE AREA DEFINITIONS BELOW

| | Rates | Fringes |
|--|----------|---------|
| OPERATOR: Power Equipment (AREA 1:) | | |
| GROUP 1..... | \$ 51.42 | 31.15 |
| GROUP 2..... | \$ 49.89 | 31.15 |
| GROUP 3..... | \$ 48.41 | 31.15 |
| GROUP 4..... | \$ 47.03 | 31.15 |
| GROUP 5..... | \$ 45.76 | 31.15 |
| GROUP 6..... | \$ 44.44 | 31.15 |
| GROUP 7..... | \$ 43.30 | 31.15 |
| GROUP 8..... | \$ 42.16 | 31.15 |
| GROUP 8-A..... | \$ 39.95 | 31.15 |
| OPERATOR: Power Equipment (Cranes and Attachments - AREA 1:) | | |
| GROUP 1 | | |
| Cranes..... | \$ 52.30 | 31.15 |
| Oiler..... | \$ 43.79 | 31.15 |
| Truck crane oiler..... | \$ 46.08 | 31.15 |
| GROUP 2 | | |
| Cranes..... | \$ 50.54 | 31.15 |
| Oiler..... | \$ 42.83 | 31.15 |
| Truck crane oiler..... | \$ 45.07 | 31.15 |
| GROUP 3 | | |
| Cranes..... | \$ 48.80 | 31.15 |
| Hydraulic..... | \$ 44.44 | 31.15 |
| Oiler..... | \$ 42.55 | 31.15 |
| Truck crane oiler..... | \$ 44.83 | 31.15 |
| GROUP 4 | | |
| Cranes..... | \$ 45.76 | 31.15 |
| OPERATOR: Power Equipment (Piledriving - AREA 1:) | | |
| GROUP 1 | | |
| Lifting devices..... | \$ 52.64 | 31.15 |
| Oiler..... | \$ 43.38 | 31.15 |
| Truck Crane Oiler..... | \$ 45.66 | 31.15 |
| GROUP 2 | | |
| Lifting devices..... | \$ 50.82 | 31.15 |
| Oiler..... | \$ 43.11 | 31.15 |
| Truck Crane Oiler..... | \$ 45.41 | 31.15 |
| GROUP 3 | | |
| Lifting devices..... | \$ 49.14 | 31.15 |
| Oiler..... | \$ 42.89 | 31.15 |
| Truck Crane Oiler..... | \$ 45.12 | 31.15 |
| GROUP 4 | | |
| Lifting devices..... | \$ 47.37 | 31.15 |
| GROUP 5 | | |
| Lifting devices..... | \$ 44.73 | 31.15 |
| GROUP 6 | | |
| Lifting devices..... | \$ 42.50 | 31.15 |
| OPERATOR: Power Equipment (Steel Erection - AREA 1:) | | |
| GROUP 1 | | |
| Cranes..... | \$ 53.27 | 31.15 |
| Oiler..... | \$ 43.72 | 31.15 |
| Truck Crane Oiler..... | \$ 45.95 | 31.15 |
| GROUP 2 | | |
| Cranes..... | \$ 51.50 | 31.15 |
| Oiler..... | \$ 43.45 | 31.15 |
| Truck Crane Oiler..... | \$ 45.73 | 31.15 |
| GROUP 3 | | |

| | | |
|------------------------------|----------|-------|
| Cranes..... | \$ 50.02 | 31.15 |
| Hydraulic..... | \$ 45.07 | 31.15 |
| Oiler..... | \$ 43.23 | 31.15 |
| Truck Crane Oiler..... | \$ 45.46 | 31.15 |
| GROUP 4 | | |
| Cranes..... | \$ 48.00 | 31.15 |
| GROUP 5 | | |
| Cranes..... | \$ 46.70 | 31.15 |
| OPERATOR: Power Equipment | | |
| (Tunnel and Underground Work | | |
| - AREA 1:) | | |
| SHAFTS, STOPES, RAISES: | | |
| GROUP 1..... | \$ 47.52 | 31.15 |
| GROUP 1-A..... | \$ 49.99 | 31.15 |
| GROUP 2..... | \$ 46.26 | 31.15 |
| GROUP 3..... | \$ 44.93 | 31.15 |
| GROUP 4..... | \$ 43.79 | 31.15 |
| GROUP 5..... | \$ 42.65 | 31.15 |
| UNDERGROUND: | | |
| GROUP 1..... | \$ 47.42 | 31.15 |
| GROUP 1-A..... | \$ 49.89 | 31.15 |
| GROUP 2..... | \$ 46.16 | 31.15 |
| GROUP 3..... | \$ 44.83 | 31.15 |
| GROUP 4..... | \$ 43.69 | 31.15 |
| GROUP 5..... | \$ 42.55 | 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; Cargy 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 signaller; 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); Signaller; 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;

PILEDRIERS

GROUP 1: Derrick barge pedestal mounted over 100 tons; Clamshell over 7 cu. yds.; Self-propelled boom-type lifting device over 100 tons; Truck crane or crawler, land or barge mounted over 100 tons

GROUP 2: Derrick barge pedestal mounted 45 tons to and including 100 tons; Clamshell up to and including 7 cu. yds.; Self-propelled boom-type lifting device over 45 tons; Truck crane or crawler, land or barge mounted, over 45 tons up to and including 100 tons; Fundex F-12 hydraulic pile rig

GROUP 3: Derrick barge pedestal mounted under 45 tons; Self-propelled boom-type lifting device 45 tons and under;

Skid/scow piledriver, any tonnage; Truck crane or crawler,
land or barge mounted 45 tons and under

GROUP 4: Assistant operator in lieu of assistant to engineer;
Forklift, 10 tons and over; Heavy-duty repairperson/welder

GROUP 5: Deck engineer

GROUP 6: Deckhand; Fire tender

STEEL ERECTORS

GROUP 1: Crane over 100 tons; Derrick over 100 tons; Self-
propelled boom-type lifting device over 100 tons

GROUP 2: Crane over 45 tons to 100 tons; Derrick under 100
tons; Self-propelled boom-type lifting device over 45 tons
to 100 tons; Tower crane

GROUP 3: Crane, 45 tons and under; Self-propelled boom-type
lifting device, 45 tons and under

GROUP 4: Chicago boom; Forklift, 10 tons and over; Heavy-duty
repair person/welder

GROUP 5: Boom cat

TUNNEL AND UNDERGROUND WORK

GROUP 1-A: Tunnel bore machine operator, 20' diameter or more

GROUP 1: Heading shield operator; Heavy-duty repairperson;
Mucking machine (rubber tired, rail or track type); Raised
bore operator (tunnels); Tunnel mole bore operator

GROUP 2: Combination slusher and motor operator; Concrete
pump or pumpcrete gun; Power jumbo operator

GROUP 3: Drill doctor; Mine or shaft hoist

GROUP 4: Combination slurry mixer cleaner; Grouting Machine
operator; Motorman

GROUP 5: Bit Sharpener; Brakeman; Combination mixer and
compressor (gunite); Compressor operator; Oiler; Pump
operator; Slusher operator

AREA DESCRIPTIONS:

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

AREA 1: DEL NORTE, HUMBOLDT, LAKE, MENDOCINO

AREA 2 -NOTED BELOW

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

DEL NORTE COUNTY:

Area 1: Extreme Southwest corner

Area 2: Remainder

HUMBOLDT COUNTY:

Area 1: Except Eastern and Southwestern parts

Area 2: Remainder

LAKE COUNTY:

Area 1: Southern part

Area 2: Remainder

MENDOCINO COUNTY:

Area 1: Central and Southeastern Parts

Area 2: Remainder

IRON0118-012 01/01/2023

ALPINE, LASSEN, MODOC, SISKIYOU and TRINITY COUNTIES

| | Rates | Fringes |
|-----------------|----------|---------|
| IRONWORKER..... | \$ 41.00 | 33.70 |

IRON0118-013 01/01/2023

AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, MARIN, NAPA, NEVADA,
PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SOLANO, SONOMA,
SUTTER, TEHAMA, YOLO and YUBA COUNTIES

| | Rates | Fringes |
|-----------------|----------|---------|
| IRONWORKER..... | \$ 46.20 | 34.30 |

LAB00067-003 03/04/2023

AREA ""1"" - MARIN and NAPA COUNTIES

AREA ""2"" - ALPINE, AMADOR, BUTTE COLUSA EL DORADO, GLENN,
LASSEN, MODOC, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA,
SIERRA, SISKIYOU, SOLANO, SONOMA, SUTTER, TEHAMA, TRINITY,
YOLO, AND YUBA COUNTIES

| | Rates | Fringes |
|---|----------|---------|
| LABORER (ASBESTOS/MOLD/LEAD LABORER) | | |
| Marin and Napa Counties..... | \$ 35.25 | 27.09 |
| Remaining Counties..... | \$ 34.25 | 27.09 |

* LAB00067-005 06/27/2022

AREA ""A"" - ALAMEDA, CONTRA COSTA, SAN FRANCISCO, SAN MATEO AND
SANTA CLARA COUNTIES

AREA ""B"" - ALPINE, AMADOR, BUTTE, CALAVERAS, COLUSA, DEL
NORTE, EL DORADO, FRESNO, GLENN, HUMBOLDT, KINGS, LAKE, LASSEN,
MADERA, MARIPOSA, MENDOCINO, MERCED, MODOC, MONTEREY, NEVADA,
PLACER, PLUMAS, SACRAMENTO, SAN BENITO, SAN JOAQUIN, SANTA
CRUZ, SIERRA, SHASTA, SISKIYOU, STANISLAUS, TEHAMA, TRINITY,
TULARE, TUOLUMNE, YOLO AND YUBA COUNTIES

| | Rates | Fringes |
|--|----------|---------|
| LABORER (TRAFFIC CONTROL/LANE CLOSURE) | | |
| Escort Driver, Flag Person | | |
| Area A..... | \$ 36.01 | 27.01 |
| Area B..... | \$ 35.01 | 27.01 |
| Traffic Control Person I | | |
| Area A..... | \$ 36.31 | 27.01 |
| Area B..... | \$ 35.31 | 27.01 |
| Traffic Control Person II | | |
| Area A..... | \$ 33.81 | 27.01 |
| Area B..... | \$ 32.81 | 27.01 |

TRAFFIC CONTROL PERSON I: Layout of traffic control, crash cushions, construction area and roadside signage.

TRAFFIC CONTROL PERSON II: Installation and removal of temporary/permanent signs, markers, delineators and crash cushions.

LAB00185-002 07/01/2022

ALPINE, AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SISKIYOU, SUTTER, TEHAMA, TRINITY, YOLO AND YUBA COUNTIES

| | Rates | Fringes |
|-------------------------|----------|---------|
| LABORER | | |
| Mason Tender-Brick..... | \$ 35.29 | 25.21 |

LAB00185-005 07/01/2021

ALPINE, AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SISKIYOU, SUTTER, TEHAMA, TRINITY, YOLO AND YUBA COUNTIES

| | Rates | Fringes |
|----------------------------|----------|---------|
| Tunnel and Shaft Laborers: | | |
| GROUP 1..... | \$ 42.00 | 25.71 |
| GROUP 2..... | \$ 41.77 | 25.71 |
| GROUP 3..... | \$ 41.52 | 25.71 |
| GROUP 4..... | \$ 41.07 | 25.71 |
| GROUP 5..... | \$ 40.53 | 25.71 |
| Shotcrete Specialist..... | \$ 42.52 | 25.71 |

TUNNEL AND SHAFT CLASSIFICATIONS

GROUP 1: Diamond driller; Groundmen; Gunite and shotcrete nozzle men

GROUP 2: Rodmen; Shaft work & raise (below actual or excavated ground level)

GROUP 3: Bit grinder; Blaster, driller, powdermen, heading; Cherry pickermen - where car is lifted; Concrete finisher in tunnel; Concrete screedman; Grout pumpman and potman; Gunite & shotcrete gunman & potman; Headermen; High

pressure nozzleman; Miner - tunnel, including top and bottom man on shaft and raise work; Nipper; Nozzleman on slick line; Sandblaster - potman, Robotic Shotcrete Placer, Segment Erector, Tunnel Muck Hauler, Steel Form raiser and setter; Timberman, retimberman (wood or steel or substitute materials therefore); Tugger (for tunnel laborer work); Cable tender; Chuck tender; Powderman - primer house

GROUP 4: Vibrator operator, pavement breaker; Bull gang - muckers, trackmen; Concrete crew - includes rodding and spreading, Dumpmen (any method)

GROUP 5: Grout crew; Reboundman; Swamper/ Brakeman

LABO0185-006 06/25/2018

ALPINE, AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHIASTA, SIERRA, SISKIYOU, SUTTER, TEHAMA, TRINITY, YOLO, YUBA COUNTIES

| | Rates | Fringes |
|---|----------|---------|
| LABORER (CONSTRUCTION CRAFT | | |
| LABORERS - AREA B:) | | |
| Construction Specialist | | |
| Group..... | \$ 30.49 | 23.20 |
| GROUP 1..... | \$ 29.79 | 23.20 |
| GROUP 1-a..... | \$ 30.01 | 23.20 |
| GROUP 1-c..... | \$ 30.01 | 23.20 |
| GROUP 1-e..... | \$ 30.34 | 23.20 |
| GROUP 1-f..... | \$ 30.37 | 23.20 |
| GROUP 2..... | \$ 29.64 | 23.20 |
| GROUP 3..... | \$ 29.54 | 23.20 |
| GROUP 4..... | \$ 23.23 | 23.20 |
| See groups 1-b and 1-d under laborer classifications. | | |
| LABORER (GARDENERS, | | |
| HORTICULTURAL & LANDSCAPE | | |
| LABORERS - AREA B:) | | |
| (1) New Construction..... | \$ 29.54 | 23.20 |
| (2) Establishment Warranty | | |
| Period..... | \$ 23.23 | 23.20 |
| LABORER (GUNITE - AREA B:) | | |
| GROUP 1..... | \$ 29.75 | 22.31 |
| GROUP 2..... | \$ 29.25 | 22.31 |
| GROUP 3..... | \$ 28.66 | 22.31 |
| GROUP 4..... | \$ 28.54 | 22.31 |
| LABORER (WRECKING - AREA B:) | | |
| GROUP 1..... | \$ 29.79 | 23.20 |
| GROUP 2..... | \$ 29.64 | 23.20 |

FOOTNOTES:
Laborers working off or with or from bos'n chairs, swinging scaffolds, belts shall receive \$0.25 per hour above the applicable wage rate. This shall not apply to workers entitled to receive the wage rate set forth in Group 1-a below.

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 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. 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: Final 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 CLASSIFICATIONS

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)

LAB00185-008 07/01/2022

| | Rates | Fringes |
|-----------------------|----------|---------|
| Plasterer tender..... | \$ 38.02 | 28.25 |

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

LAB00261-002 06/28/2021

MARIN COUNTY

| | Rates | Fringes |
|--|----------|---------|
| LABORER (TRAFFIC CONTROL/LANE CLOSURE) | | |
| Escort Driver, Flag Person.. | \$ 34.48 | 26.21 |
| Traffic Control Person I.... | \$ 34.78 | 26.21 |
| Traffic Control Person II... | \$ 32.28 | 26.21 |

TRAFFIC CONTROL PERSON I: Layout of traffic control, crash cushions, construction area and roadside signage.

TRAFFIC CONTROL PERSON II: Installation and removal of temporary/permanent signs, markers, delineators and crash cushions.

LAB00261-004 07/01/2021

MARIN COUNTY

| | Rates | Fringes |
|----------------------------|----------|---------|
| Tunnel and Shaft Laborers: | | |
| GROUP 1..... | \$ 42.00 | 25.71 |
| GROUP 2..... | \$ 41.77 | 25.71 |
| GROUP 3..... | \$ 41.52 | 25.71 |
| GROUP 4..... | \$ 41.07 | 25.71 |
| GROUP 5..... | \$ 40.53 | 25.71 |
| Shotcrete Specialist..... | \$ 42.52 | 25.71 |

TUNNEL AND SHAFT CLASSIFICATIONS

GROUP 1: Diamond driller; Groundmen; Gunite and shotcrete nozzlemen

GROUP 2: Rodmen; Shaft work & raise (below actual or excavated ground level)

GROUP 3: Bit grinder; Blaster, driller, powdermen, heading;

Cherry pickermen - where car is lifted; Concrete finisher in tunnel; Concrete screedman; Grout pumpman and potman; Gunite & shotcrete gunman & potman; Headermen; High pressure nozzleman; Miner - tunnel, including top and bottom man on shaft and raise work; Nipper; Nozzleman on slick line; Sandblaster - potman, Robotic Shotcrete Placer, Segment Erector, Tunnel Muck Hauler, Steel Form raiser and setter; Timberman, retimberman (wood or steel or substitute materials therefore); Tugger (for tunnel laborer work); Cable tender; Chuck tender; Powderman - primer house

GROUP 4: Vibrator operator, pavement breaker; Bull gang - muckers, trackmen; Concrete crew - includes rodding and spreading, Dumpmen (any method)

GROUP 5: Grout crew; Reboundman; Swamper/ Brakeman

LAB00261-007 07/01/2022

MARIN COUNTY

| | Rates | Fringes |
|-------------------------|----------|---------|
| LABORER | | |
| Mason Tender-Brick..... | \$ 36.54 | 25.21 |

LAB00261-010 06/25/2018

MARIN COUNTY

| | Rates | Fringes |
|-----------------------------|----------|---------|
| LABORER (CONSTRUCTION CRAFT | | |
| LABORERS - AREA A:) | | |
| Construction Specialist | | |
| Group..... | \$ 31.49 | 23.20 |
| GROUP 1..... | \$ 30.79 | 23.20 |
| GROUP 1-a..... | \$ 31.01 | 23.20 |
| GROUP 1-c..... | \$ 30.84 | 23.20 |
| GROUP 1-e..... | \$ 31.34 | 23.20 |
| GROUP 1-f..... | \$ 31.37 | 23.20 |
| GROUP 2..... | \$ 30.64 | 23.20 |
| GROUP 3..... | \$ 30.54 | 23.20 |
| GROUP 4..... | \$ 24.23 | 23.20 |

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

| | | |
|----------------------------|----------|-------|
| LABORER (GARDENERS, | | |
| HORTICULTURAL & LANDSCAPE | | |
| LABORERS - AREA A:) | | |
| (1) New Construction..... | \$ 30.54 | 23.20 |
| (2) Establishment Warranty | | |
| Period..... | \$ 24.23 | 23.20 |

| | | |
|----------------------------|----------|-------|
| LABORER (GUNITE - AREA A:) | | |
| GROUP 1..... | \$ 30.75 | 22.31 |
| GROUP 2..... | \$ 30.25 | 22.31 |
| GROUP 3..... | \$ 29.66 | 22.31 |
| GROUP 4..... | \$ 29.54 | 22.31 |

| | | |
|------------------------------|----------|-------|
| LABORER (WRECKING - AREA A:) | | |
| GROUP 1..... | \$ 30.79 | 23.20 |
| GROUP 2..... | \$ 30.64 | 23.20 |

FOOTNOTES:

Laborers working off or with or from bos'n chairs, swinging scaffolds, belts shall receive \$0.25 per hour above the applicable wage rate. This shall not apply to workers

entitled to receive the wage rate set forth in Group 1-a below.

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 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. 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: Final 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 CLASSIFICATIONS

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)

LAB00261-015 07/01/2022

| | Rates | Fringes |
|-----------------------|----------|---------|
| Plasterer tender..... | \$ 38.02 | 28.25 |

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

LAB00324-004 06/28/2021

NAPA, SOLANO, AND SONOMA, COUNTIES

| | Rates | Fringes |
|--|----------|---------|
| LABORER (TRAFFIC CONTROL/LANE CLOSURE) | | |
| Escort Driver, Flag Person.. | \$ 33.48 | 26.21 |
| Traffic Control Person I.... | \$ 33.78 | 26.21 |
| Traffic Control Person II... | \$ 31.28 | 26.21 |

TRAFFIC CONTROL PERSON I: Layout of traffic control, crash cushions, construction area and roadside signage.

TRAFFIC CONTROL PERSON II: Installation and removal of temporary/permanent signs, markers, delineators and crash cushions.

LAB00324-008 06/25/2018

NAPA, SOLANO, AND SONOMA COUNTIES

| | Rates | Fringes |
|----------------------------|----------|---------|
| Tunnel and Shaft Laborers: | | |
| GROUP 1..... | \$ 37.82 | 24.11 |
| GROUP 2..... | \$ 37.59 | 24.11 |
| GROUP 3..... | \$ 37.34 | 24.11 |
| GROUP 4..... | \$ 36.89 | 24.11 |
| GROUP 5..... | \$ 36.35 | 24.11 |
| Shotcrete Specialist..... | \$ 38.34 | 24.11 |

TUNNEL AND SHAFT CLASSIFICATIONS

GROUP 1: Diamond driller; Groundmen; Guniting and shotcrete nozzlemen

GROUP 2: Rodmen; Shaft work & raise (below actual or excavated ground level)

GROUP 3: Bit grinder; Blaster, driller, powdermen, heading; Cherry pickers - where car is lifted; Concrete finisher in tunnel; Concrete screedman; Grout pumpman and potman; Guniting & shotcrete gunman & potman; Headermen; High pressure nozzleman; Miner - tunnel, including top and bottom man on shaft and raise work; Nipper; Nozzleman on slick line; Sandblaster - potman, Robotic Shotcrete Placer, Segment Erector, Tunnel Muck Hauler, Steel Form raiser and setter; Timberman, retimberman (wood or steel or substitute materials therefore); Tugger (for tunnel laborer work); Cable tender; Chuck tender; Powderman - primer house

GROUP 4: Vibrator operator, pavement breaker; Bull gang - muckers, trackmen; Concrete crew - includes rodding and spreading, Dumpmen (any method)

GROUP 5: Grout crew; Reboundman; Swamper/ Brakeman

LAB00324-010 07/01/2022

SOLANO AND SONOMA COUNTIES

| | Rates | Fringes |
|-------------------------|----------|---------|
| LABORER | | |
| Mason Tender-Brick..... | \$ 35.84 | 25.91 |

LAB00324-013 06/25/2018

NAPA, SOLANO, AND SONOMA COUNTIES

| | Rates | Fringes |
|-----------------------------|----------|---------|
| LABORER (CONSTRUCTION CRAFT | | |
| LABORERS - AREA B:) | | |
| Construction Specialist | | |
| Group..... | \$ 30.49 | 23.20 |
| GROUP 1..... | \$ 29.79 | 23.20 |
| GROUP 1-a..... | \$ 30.01 | 23.20 |
| GROUP 1-c..... | \$ 29.84 | 23.20 |
| GROUP 1-e..... | \$ 30.34 | 23.20 |
| GROUP 1-f..... | \$ 29.37 | 23.20 |
| GROUP 2..... | \$ 29.64 | 23.20 |
| GROUP 3..... | \$ 29.54 | 23.20 |
| GROUP 4..... | \$ 23.23 | 23.20 |

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

LABORER (GARDENERS, HORTICULTURAL & LANDSCAPE

| | | |
|----------------------------|----------|-------|
| LABORERS - AREA B:) | | |
| (1) New Construction..... | \$ 29.54 | 23.20 |
| (2) Establishment Warranty | | |
| Period..... | \$ 23.23 | 23.20 |

| | | |
|------------------------------|----------|-------|
| LABORER (GUNITING - AREA B:) | | |
| GROUP 1..... | \$ 29.75 | 22.31 |
| GROUP 2..... | \$ 29.25 | 22.31 |
| GROUP 3..... | \$ 28.66 | 22.31 |

| | | |
|------------------------------|----------|-------|
| GROUP 4..... | \$ 28.54 | 22.31 |
| LABORER (WRECKING - AREA B:) | | |
| GROUP 1..... | \$ 29.79 | 23.20 |
| GROUP 2..... | \$ 29.64 | 23.20 |

FOOTNOTES:

Laborers working off or with or from bos'n chairs, swinging scaffolds, belts shall receive \$0.25 per hour above the applicable wage rate. This shall not apply to workers entitled to receive the wage rate set forth in Group 1-a below.

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 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. 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 shotcrete

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: Final 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 CLASSIFICATIONS

GROUP 1: Structural Nozzleman

GROUP 2: Nozzleman, Gunman, Potman, Groundman

GROUP 3: Reboundman

GROUP 4: Guniting 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)

LAB00324-019 07/01/2022

| | Rates | Fringes |
|-----------------------|----------|---------|
| Plasterer tender..... | \$ 38.02 | 28.25 |

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

PAIN0016-004 01/01/2023

MARIN, NAPA, SOLANO & SONOMA COUNTIES

| | Rates | Fringes |
|----------------|----------|---------|
| Painters:..... | \$ 47.42 | 27.28 |

PREMIUMS:

EXOTIC MATERIALS - \$1.25 additional per hour.

SPRAY WORK: - \$0.50 additional per hour.

INDUSTRIAL PAINTING - \$0.25 additional per hour

[Work on industrial buildings used for the manufacture and processing of goods for sale or service; steel construction (bridges), stacks, towers, tanks, and similar structures]

HIGH WORK:

over 50 feet - \$2.00 per hour additional

100 to 180 feet - \$4.00 per hour additional

Over 180 feet - \$6.00 per hour additional

PAIN0016-005 01/01/2023

ALPINE, BUTTE, COLUSA, EL DORADO (west of the Sierra Nevada)

Mountains), GLENN, LASSEN (west of Hwy. 395, excluding Honey Lake); MARIN, MODOC, NAPA, NEVADA (west of the Sierra Nevada Mountains), PLACER (west of the Sierra Nevada Mountains), PLUMAS, SACRAMENTO, SHASTA, SIERRA (west of the Sierra Nevada Mountains), SISKIYOU, SOLANO, SONOMA, SUTTER, TEHAMA, TRINITY, YOLO AND YUBA COUNTIES

| | Rates | Fringes |
|-----------------------------|----------|---------|
| DRYWALL FINISHER/TAPER..... | \$ 53.03 | 28.84 |
| ----- | | |
| PAIN0016-007 01/01/2023 | | |

ALPINE, AMADOR, BUTTE, COLUSA. EL DORADO (west of the Sierra Nevada Mountains), GLENN, LASSEN (west of Highway 395, excluding Honey Lake), MODOC, NEVADA (west of the Sierra Nevada Mountains), PLACER (west of the Sierra Nevada Mountains), PLUMAS, SACRAMENTO, SHASTA, SIERRA (west of the Sierra Nevada Mountains), SISKIYOU, SUTTER, TEHAMA, TRINITY, YOLO & YUBA COUNTIES

| | Rates | Fringes |
|---|----------|---------|
| Painters:..... | \$ 38.23 | 22.05 |
| 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. | | |
| ----- | | |
| PAIN0016-008 01/01/2023 | | |

MARIN, NAPA, SOLANO AND SONOMA COUNTIES

| | Rates | Fringes |
|-------------------------|----------|---------|
| SOFT FLOOR LAYER..... | \$ 55.25 | 32.63 |
| ----- | | |
| PAIN0169-004 01/01/2023 | | |

MARIN , NAPA & SONOMA COUNTIES; 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..... | \$ 55.77 | 32.45 |
| ----- | | |
| * PAIN0567-001 07/01/2022 | | |

EL DORADO COUNTY (east of the Sierra Nevada Mountains); LASSEN COUNTY (east of Highway 395, beginning at Stacey and including Honey Lake); NEVADA COUNTY (east of the Sierra Nevada Mountains); PLACER COUNTY (east of the Sierra Nevada Mountains); AND SIERRA COUNTY (east of the Sierra Nevada Mountains)

| | Rates | Fringes |
|-------------------------------|----------|---------|
| Painters: | | |
| Brush and Roller..... | \$ 33.15 | 14.29 |
| Spray Painter & Paperhanger.. | \$ 34.81 | 14.29 |

PREMIUMS:

Special Coatings (Brush), and Sandblasting = \$0.50/hr

Special Coatings (Spray), and Steeplejack = \$1.00/hr

Special Coating Spray Steel = \$1.25/hr

Swing Stage = \$2.00/hr

*A special coating is a coating that requires the mixing of 2 or more products.

PAIN0567-007 07/01/2022

EL DORADO COUNTY (east of the Sierra Nevada Mountains); LASSEN COUNTY (east of Highway 395, beginning at Stacey and including Honey Lake); NEVADA COUNTY (east of the Sierra Nevada Mountains); PLACER COUNTY (east of the Sierra Nevada Mountains) AND SIERRA COUNTY (east of the Sierra Nevada Mountains)

| | Rates | Fringes |
|-----------------------|----------|---------|
| SOFT FLOOR LAYER..... | \$ 34.27 | 16.47 |

PAIN0567-010 07/01/2022

EL DORADO COUNTY (east of the Sierra Nevada Mountains); LASSEN COUNTY (east of Highway 395, beginning at Stacey and including Honey Lake); NEVADA COUNTY (east of the Sierra Nevada Mountains); PLACER COUNTY (east of the Sierra Nevada Mountains); AND SIERRA COUNTY (east of the Sierra Nevada Mountains)

| | Rates | Fringes |
|--|----------|---------|
| Drywall | | |
| (1) Taper..... | \$ 38.92 | 14.99 |
| (2) Steeplejack - Taper, over 40 ft with open space below..... | \$ 40.42 | 14.99 |

PAIN0767-004 01/01/2023

ALPINE, AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SISKIYOU, SOLANO (Remainder), SUTTER, TEHAMA, TRINITY, YOLO, YUBA

| | Rates | Fringes |
|--------------|----------|---------|
| GLAZIER..... | \$ 43.15 | 33.72 |

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.

Employee required to wear a body harness shall receive \$1.50

per hour 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

PAIN1237-001 01/01/2023

ALPINE; COLUSA; EL DORADO (west of the Sierra Nevada Mountains); GLENN; LASSEN (west of Highway 395, beginning at Stacey and including Honey Lake); MODOC; NEVADA (west of the Sierra Nevada Mountains); PLACER (west of the Sierra Nevada Mountains); PLUMAS; SACRAMENTO; SHASTA; SIERRA (west of the Sierra Nevada Mountains); SISKIYOU; SUTTER; TEHAMA; TRINITY; YOLO AND YUBA COUNTIES

| | Rates | Fringes |
|-----------------------|----------|---------|
| SOFT FLOOR LAYER..... | \$ 46.24 | 25.96 |

PLAS0300-003 07/01/2018

| | Rates | Fringes |
|--|----------|---------|
| PLASTERER | | |
| AREA 295: Alpine, Amador, Butte, Colusa, El Dorado, Glenn, Lassen, Modoc, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Siskiyou, Solano, Sutter, Tehema, Trinity, Yolo & Yuba Counties..... | \$ 32.70 | 31.68 |
| AREA 355: Marin..... | \$ 36.73 | 31.68 |
| AREA 355: Napa & Sonoma Counties..... | \$ 32.70 | 31.68 |

PLAS0300-005 07/01/2016

| | Rates | Fringes |
|-----------------------------------|----------|---------|
| CEMENT MASON/CONCRETE FINISHER... | \$ 32.15 | 23.27 |

PLUM0038-002 07/01/2022

MARIN AND SONOMA COUNTIES

| | Rates | Fringes |
|--|----------|---------|
| PLUMBER (Plumber, Steamfitter, Refrigeration Fitter) | | |
| (1) Work on wooden frame structures 5 stories or less excluding high-rise buildings and commercial work such as hospitals, prisons, hotels, schools, casinos, wastewater treatment plants, and research facilities as well as refrigeration pipefitting, service and repair work - MARKET RECOVERY RATE..... | \$ 69.70 | 46.38 |
| (2) All other work - NEW CONSTRUCTION RATE..... | \$ 82.00 | 48.18 |

PLUM0038-006 07/01/2022

MARIN & SONOMA COUNTIES

| | Rates | Fringes |
|--|----------|---------|
| Landscape/Irrigation Fitter (Underground/Utility Fitter)..... | \$ 69.70 | 33.15 |

PLUM0228-001 01/01/2023BUTTE, COLUSA, GLENN, LASSEN, MODOC, PLUMAS, SHASTA, SIERRA,
SISKIYOU, SUTTER, TEHAMA, TRINITY & YUBA COUNTIES

| | Rates | Fringes |
|--------------|----------|---------|
| PLUMBER..... | \$ 44.75 | 37.89 |

PLUM0343-001 07/01/2022

NAPA AND SOLANO COUNTIES

| | Rates | Fringes |
|-----------------------|----------|---------|
| PLUMBER/PIPEFITTER | | |
| Light Commercial..... | \$ 30.85 | 20.40 |
| All Other Work..... | \$ 58.00 | 40.48 |

DEFINITION OF LIGHT COMMERCIAL:

Work shall include strip shopping centers, office buildings, schools and other commercial structures which the total plumbing bid does not exceed Two Hundred and Fifty Thousand (\$250,000) and the total heating and cooling does not exceed Two Hundred Fifty Thousand (\$250,000); or Any projects bid in phases shall not qualify unless the total project is less than Two Hundred Fifty Thousand (\$250,000) for the plumbing bid; and Two Hundred Fifty Thousand (\$250,000) for the heating and cooling bid. Excluded are hospitals, jails, institutions and industrial projects, regardless size of the project

FOOTNOTES: While fitting galvanized material: \$.75 per hour additional. 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.

PLUM0350-001 08/01/2021

EL DORADO COUNTY (Lake Tahoe area only); NEVADA COUNTY (Lake Tahoe area only); AND PLACER COUNTY (Lake Tahoe area only)

| | Rates | Fringes |
|-------------------------|----------|---------|
| PLUMBER/PIPEFITTER..... | \$ 47.54 | 17.11 |

PLUM0355-001 07/01/2022

ALPINE, AMADOR, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC, NAPA, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SISKIYOU, SOLANO, SUTTER, TEHAMA, TRINITY, YOLO, AND YUBA COUNTIES

| | Rates | Fringes |
|--|----------|---------|
| Underground Utility Worker /Landscape Fitter..... | \$ 32.22 | 17.55 |

PLUM0442-003 01/01/2023

AMADOR (South of San Joaquin River) and ALPINE COUNTIES

| | Rates | Fringes |
|--------------|----------|---------|
| PLUMBER..... | \$ 50.75 | 35.14 |

PLUM0447-001 07/01/2022

AMADOR (north of San Joaquin River), EL DORADO (excluding Lake Tahoe area), NEVADA (excluding Lake Tahoe area); PLACER (excluding Lake Tahoe area), SACRAMENTO AND YOLO COUNTIES

| | Rates | Fringes |
|----------------------------|----------|---------|
| PLUMBER/PIPEFITTER | | |
| Journeyman..... | \$ 58.37 | 28.00 |
| Light Commercial Work..... | \$ 36.23 | 17.72 |

ROOF0081-006 08/01/2022

MARIN, NAPA, SOLANO AND SONOMA COUNTIES

| | Rates | Fringes |
|-------------|----------|---------|
| Roofer..... | \$ 50.27 | 20.66 |

ROOF0081-007 08/01/2022

ALPINE, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC, NEVADA, PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SISKIYOU, SUTTER, TEHAMA, TRINITY, YOLO, AND YUBA COUNTIES

| | Rates | Fringes |
|-------------------------|----------|---------|
| Roofer..... | \$ 43.13 | 19.71 |
| ----- | | |
| SFCA0483-003 01/01/2023 | | |

MARIN, NAPA, SOLANO AND SONOMA COUNTIES

| | Rates | Fringes |
|--|----------|---------|
| SPRINKLER FITTER (Fire Sprinklers)..... | \$ 72.59 | 36.95 |
| ----- | | |
| SFCA0669-003 04/01/2023 | | |

ALPINE, BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC, NEVADA,
PLACER, PLUMAS, SACRAMENTO, SHASTA, SIERRA, SISKIYOU, SUTTER,
TEHAMA, TRINITY, YOLO AND YUBA COUNTIES

| | Rates | Fringes |
|-------------------------|----------|---------|
| SPRINKLER FITTER..... | \$ 46.46 | 27.39 |
| ----- | | |
| SHEE0104-006 06/29/2020 | | |

MARIN, NAPA, SOLANO SONOMA & TRINITY COUNTIES

| | Rates | Fringes |
|--|----------|---------|
| Sheet Metal Worker Mechanical Contracts \$200,000 or less..... | \$ 55.92 | 45.29 |
| All other work..... | \$ 64.06 | 46.83 |
| ----- | | |
| SHEE0104-009 07/01/2021 | | |

AMADOR, COLUSA, EL DORADO, NEVADA, PLACER, SACRAMENTO, SUTTER,
YOLO AND YUBA COUNTIES

| | Rates | Fringes |
|-------------------------|----------|---------|
| SHEET METAL WORKER..... | \$ 47.85 | 41.90 |
| ----- | | |
| SHEE0104-010 07/01/2020 | | |

ALPINE COUNTY

| | Rates | Fringes |
|-------------------------|----------|---------|
| SHEET METAL WORKER..... | \$ 43.50 | 37.42 |
| ----- | | |
| SHEE0104-011 07/01/2020 | | |

BUTTE, COLUSA, EL DORADO, GLENN, LASSEN, MODOC, NEVADA, PLACER,
PLUMAS, SACRAMENTO, SHASTA, SIERRA, SISKIYOU, SUTTER, TEHAMA,
YOLO AND YUBA COUNTIES

| | Rates | Fringes |
|---------------------------|-------|---------|
| Sheet Metal Worker (Metal | | |

| | |
|---------------------------------------|-------|
| decking and siding only).....\$ 44.45 | 35.55 |
|---------------------------------------|-------|

SHEE0104-014 07/01/2020

MARIN, NAPA, SOLANO, SONOMA AND TRINITY COUNTIES

| | |
|-------|---------|
| Rates | Fringes |
|-------|---------|

| | |
|--|-------|
| SHEET METAL WORKER (Metal Decking and Siding only).....\$ 44.45 | 35.55 |
|--|-------|

SHEE0104-019 07/01/2020

BUTTE, GLENN, LASSEN, MODOC, PLUMAS, SHASTA, SIERRA, SISKIYOU
AND TEHAMA COUNTIES

| | |
|-------|---------|
| Rates | Fringes |
|-------|---------|

| | |
|---|-------|
| SHEET METAL WORKER Mechanical Jobs \$200,000 & under.....\$ 35.16 | 35.88 |
| Mechanical Jobs over \$200,000.....\$ 46.60 | 40.21 |

TEAM0094-001 07/01/2022

| | |
|-------|---------|
| Rates | Fringes |
|-------|---------|

Truck drivers:

| | |
|----------------------|-------|
| GROUP 1.....\$ 36.95 | 31.14 |
| GROUP 2.....\$ 37.25 | 31.14 |
| GROUP 3.....\$ 37.55 | 31.14 |
| GROUP 4.....\$ 37.90 | 31.14 |
| GROUP 5.....\$ 38.25 | 31.14 |

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); Lowbed 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>.

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) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which 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. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of 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. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write 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 the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write 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 by 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

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"

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SECTION 01110

SUMMARY OF WORK

PART 1 - GENERAL

1.1 LOCATION AND DESCRIPTION OF WORK

- A. The Work covers the installation of approximately 5.2 miles of water main, abandonment of existing water mains scheduled for replacement, replacement of damaged service laterals, reconnection of acceptable service laterals, installation of water meters, installation and testing of backflow prevention devices, reconnection to customer plumbing, installation of fire hydrants, site/surface restoration, and all related required work as shown on these Drawings and Specifications. The Work is further defined as follows:
1. CONTRACTOR shall install C900 PVC pressure pipe water mains ranging in diameter from 4-inches to 16-inches, as shown on drawings. CONTRACTOR shall install all necessary fittings and thrust blocks per standard details. Installation of valves on the water main shall be per valve schedule and as shown on drawings. New water mains are to be installed with a 3–5-foot offset from the existing water main, unless otherwise indicated on drawings or directed by OWNER or ENGINEER. Location, material, and size of PID's existing infrastructure shown on drawings are approximate and based on available mapping records from OWNER that were produced prior to the 2018 Camp Fire. These records may not reflect current conditions. CONTRACTOR shall be responsible for determining actual location and configuration of existing PID water infrastructure, including the demarcation and management of all Underground Service Alerts (USAs).
 2. CONTRACTOR shall construct all tie-ins per the drawings. CONTRACTOR shall be responsible for potholing tie-in locations in advance of work and notifying ENGINEER of any conditions varying from what is shown on drawings. In advance of performing any work for installation of tie-ins or water mains, CONTRACTOR shall coordinate with the ENGINEER regarding the associated shut off of existing water mains. OWNER shall be responsible for operating valves to facilitate the shut off during the tie-in. CONTRACTOR shall be responsible for flushing all water mains that were shut off during the outage. Further requirements pertaining to scheduling are described in 01130 Special Project Constraints and 01320 Progress Schedule.
 3. CONTRACTOR shall install all necessary fittings, valves, and hydrants as shown on drawings, listed in the Valve Schedule and Hydrant Schedule, or as field conditions require.
 4. CONTRACTOR shall install new service laterals for parcels where structures were destroyed during the 2018 Camp Fire and where potable service has not yet been restored. A list of these addresses and associated assigned service lateral replacement information will be provided to CONTRACTOR by ENGINEER at time of construction. Service laterals will range in size from 1-inch to 2-inches and shall be high density polyethylene (HDPE) pipe (See Specification Section 15100 PSDS HDPE). Installation of new service laterals will include installation of a service saddle and

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Summary of Work

PHASE 1 MAINS REPLACEMENT PROJECT

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corporation stop at the new water main as well as installation of an angle stop. The angle stop is to be installed in the same location as the pre-fire angle stop, unless otherwise shown on drawings or directed by OWNER or ENGINEER in field. The existing angle stop should be removed or buried following the abandonment of the existing water main, such that it is not installed within the new meter box of the new service lateral.

5. CONTRACTOR shall reconnect service laterals for services where potability has been restored following the 2018 Camp Fire, this includes locations where the service lateral has previously been replaced by others or where the service lateral was sampled and was found to meet water quality criteria. Reconnecting service laterals shall consist of installation of a service saddle and corporation stop on the new main, cutting the existing service from the water main and connecting the pipe directly to the corporation stop, where possible, or extending the service lateral with a coupling. Service laterals that were replaced following the Camp Fire, are all of HDPE material and range in size from 1-inch to 2-inches. For services where potability was restored through sampling, the service lateral material is unknown but may be copper, PVC, HDPE, polybutylene, steel, and other materials. A list of addresses that are to be reconnected will be provided to CONTRACTOR by ENGINEER at time of construction, including if the service was already replaced and known to be of HDPE material.
6. Work performed under this contract requires that service laterals and water mains be installed with a minimum 36-inches of cover. However, in many instances existing water mains do not meet this criterion, resultingly, some service laterals installed pre-fire and post-fire are at a depth less than 36-inches. An exception to the 36-inch minimum depth of cover requirement will be granted only for services that are to be reconnected and have at least 30-inches of cover. Those service laterals identified for reconnection which are between 30 and 36-inches of cover can be reconnected with up to a 6" exception for depth of cover. Where existing service laterals are encountered that are assigned to be reconnected and do not have a minimum cover of 30-inches, CONTRACTOR shall instead proceed with installing a new service lateral. CONTRACTOR shall coordinate with INSPECTOR to confirm in each instance cover requirements and INSPECTOR shall bear witness to measurements and related determinations in the field. Where a service lateral of steel material is encountered CONTRACTOR shall not reconnect the service and shall instead proceed with installing a new service lateral, regardless of existing depth of cover. The exact number of services assigned as a reconnection but requiring a new installation to meet cover requirements is unknown, however, ENGINEER estimates this may be as many as 50%.
7. The project features installation of Zenner USA water meters and meter interface units (MIUs) as well as synchronization of water meters with the OWNER's automatic meter reading system. The CONTRACTOR shall engage with Zenner USA for necessary staff training in addition to the procurement of Meters, MIUs, and associated components necessary for installation of metered service connections. CONTRACTOR shall be responsible for having all personnel engaged in the installation of meters and MIUs trained by Zenner USA, documentation of this training shall be provided to the ENGINEER. A quotation for unit prices provided by Zenner USA has been included for reference and use.

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PHASE 1 MAINS REPLACEMENT PROJECT

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8. CONTRACTOR shall install water meters and meter boxes where permanent metered service has not yet been restored for active accounts following the 2018 Camp Fire. Meter sizes will range in diameter from $\frac{3}{4}$ -inches to 2-inches. Where new brass meters have not yet been installed, CONTRACTOR may find the pre-fire metering equipment of a plastic meter, MIU, and meter box. It shall be CONTRACTOR's responsibility to remove and demolish all pre-fire metering equipment. For inactive accounts identified by the ENGINEER, CONTRACTOR shall not install meters or MIUs; CONTRACTOR shall install a meter box and bullet at the angle stop to lock the valve. ENGINEER to provide CONTRACTOR a list of all assigned meter installation locations and inactive accounts where only a meter box, and bulleted angle stop will be installed. ENGINEER/OWNER reserves the right to update this information as account status may change during the course of work.
9. CONTRACTOR shall furnish and install reduced pressure principle backflow prevention assemblies where assigned by the ENGINEER. Backflow prevention devices will range in size from 1-inch to 2-inches. ENGINEER to provide CONTRACTOR a list of all addresses where CONTRACTOR is to install backflow prevention devices. New backflow prevention assemblies provided and installed by the CONTRACTOR which are found upon installation to require repair shall be the responsibility of the CONTRACTOR at no additional cost to the OWNER.
10. All backflow preventer assemblies installed by the CONTRACTOR either new or reconfigured shall be installed with a new frost protection bag, secured with a zip tie or similar fastener as approved by the ENGINEER. If there is an existing backflow preventer assembly frost protection bag in place that is in functional condition, as determined by INSPECTOR in the field, it shall be salvaged and returned to the OWNER's Corporation Yard at 6344 Clark Rd, Paradise, CA 95969.
11. In several locations backflow prevention devices and meters have already been installed in a temporary configuration to support the Interim Water Service (IWS) program following the 2018 Camp Fire. Where identified and assigned by the ENGINEER, the CONTRACTOR shall reset meter and meter box and/ or reconfigure the backflow prevention assembly to meet the OWNER's standard details included in these documents.
 - a. Resetting a meter may require CONTRACTOR to furnish a meter box if one is not already present on site and determined to be in useable condition by the INSPECTOR in the field. CONTRACTOR shall reuse the meter and MIU, and complete the reconnection to customer plumbing or a backflow preventer, as appropriate. Customer reconnections are further described herein.
 - b. Reconfiguring the assembly will include reusing the backflow prevention body and replacing all other pipe and fittings from the meter to the customer connection point shown on drawings with brass materials. CONTRACTOR shall salvage galvanized pipe and fittings from the IWS backflow prevention assemblies and return them to the OWNER's Corporation Yard.
12. CONTRACTOR shall be responsible for testing all backflow prevention devices for services where CONTRACTOR installed a new service lateral or reconnected a service lateral and the backflow preventer is maintained by the OWNER. A list of these devices is to be provided by the ENGINEER at time of construction. Once final

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Summary of Work

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connections are made and all plumbing components are installed, CONTRACTOR shall perform standard backflow prevention device test by end of workday to return the customer to active potable service. Testing must be performed by a CA NV AWWA Certified Backflow Tester.

13. Upon completion of testing, pressurize the backflow device by slowly opening the first valve downstream of the meter. Any component of the backflow prevention assembly damaged in the course of reconfiguring or testing shall be repaired/replaced and tested again at no additional cost to the OWNER. If a backflow prevention device fails that has been furnished and installed new by the CONTRACTOR. CONTRACTOR shall make necessary repairs or install a new device that is operable and compliant at no additional cost to the OWNER.
14. It shall be CONTRACTOR's responsibility to document passing results of the backflow test on a blue tag affixed to the backflow device (see Specification Section 15200). Additionally CONTRACTOR shall be responsible for maintaining Microsoft Excel-Based records of all backflow prevention tests and to convey all electronic records to ENGINEER on a weekly basis. If backflow prevention device test records are found to be incomplete or ENGINEER or OWNER determine that there is reason to question validity of results the CONTRACTOR shall again test the device(s) at no additional cost to OWNER. Each backflow test record must include the following information at minimum:
 - a. Address/ Location of assembly
 - b. Date and Time
 - c. Name of CA-NV AWWA Certified tester
 - d. Serial number of backflow assembly device
 - e. Size of backflow assembly device
 - f. Result of test
 - g. Retest results, if necessary
15. All Backflow prevention assemblies installed by the CONTRACTOR, either new or reconfigured shall be installed with a new frost protection bag, secured with a zip tie or similar fastener as approved by ENGINEER. If there is an existing backflow preventer frost protection bag in place that is in functional condition as determined by the INSPECTOR, it shall be salvaged and returned to the DISTRICT. If an existing frost protection bag is in deteriorated condition, as determined by the INSPECTOR, it shall be disposed of by the CONTRACTOR.
16. If CONTRACTOR is assigned a backflow device reconfiguration for an existing IWS device and finds that the backflow assembly requires repair, CONTRACTOR shall make necessary repairs in the field and retest the backflow, returning it to active and operable service and recording all test information as otherwise outlined in these project documents. Said repair shall take place same day in order to minimize outages to customers.
17. For any site which space or other physical constraints prevent the installation of the backflow according to the configuration shown in the Standard Details, consult the ENGINEER for direction and preferred configuration/ location of the backflow. For any site where the CONTRACTOR has been assigned new service lateral installation and new meter installation or resetting of a meter and meter box, CONTRACTOR must

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take into account and plan for the complete space requirements and configuration of work through the reconnection to customer plumbing.

18. CONTRACTOR shall be responsible for establishing a reconnection to customer plumbing to restore water service following installation of meters or backflow prevention devices. CONTRACTOR shall be responsible for documenting, with photos, the condition of the customer's plumbing above grade and below grade prior to the connection being made and after the connection has been made. Reconnection to customer side plumbing will be variable in size and material and dependent on what the customer's plumbing consists of. CONTRACTOR should exercise care when modifying the customer's plumbing and should aim to keep modification to less than 5 feet downstream of PID's ownership unless otherwise directed by OWNER or ENGINEER. The use of Sch 40 MIP x Slip fittings shall not be allowed, Sch 80 MIP x SLIP fittings or other fittings as acceptable by OWNER shall be used.
- a. Reconnection to customer plumbing may occur downstream of the backflow prevention device where CONTRACTOR is assigned to install or reconfigure a backflow prevention device.
 - b. Reconnection to customer plumbing may occur after the meter where CONTRACTOR was not assigned to install or reconfigure a backflow prevention device and may either be to a backflow preventer already on-site or to other preexisting customer plumbing.
 - c. Reconnection to customer plumbing may not be required if the customer was not tied into active water service at the start of CONTRACTOR's work.
 - d. CONTRACTOR shall not be responsible for reconnecting to above-grade customer plumbing or hoses; however, if this situation is encountered, ENGINEER and INSPECTOR should be informed immediately. CONTRACTOR shall install assigned work items with a brass cap.
 - e. For conditions where a meter or backflow preventer were required to be left in the closed position, CONTRACTOR shall leave a door-hanger style notice, provided by OWNER, on or around the backflow preventer or meter box. This notice shall provide information to the customer about returning their service to water.
 - f. CONTRACTOR may be required to move customer owned backflow preventer assemblies back and adjust associated plumbing in order to install the meter within the allowable space at the site in compliance with the OWNER's standards. Trenching, pipe, and fittings required to accomplish this adjustment shall be considered in the unit price and shall not result in extra cost.
 - g. CONTRACTOR may be required to pipe back to a customer's plumbing to make a connection if the site constraints required resetting the meter and/ or adjusting the backflow preventer from preexisting location. Trenching, pipe, and fittings required to accomplish this reconnection shall be considered in the unit price and shall not result in extra cost.

CONTRACTOR shall consult INSPECTOR or ENGINEER for any circumstance where CONTRACTOR is uncertain of appropriate action regarding the customer reconnection.

Following the reconnection, if a leak is later identified by OWNER and determined to have been caused by CONTRACTOR's installation, at the discretion of OWNER or

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PHASE 1 MAINS REPLACEMENT PROJECT

PARADISE IRRIGATION DISTRICT
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ENGINEER, the CONTRACTOR shall be responsible for making that repair as timely as possible and no later than end of working day. CONTRACTOR shall also be responsible for retesting of the backflow prevention device if pressure to the device was lost during a repair. In the event that PID Standby is notified of the leak outside of CONTRACTOR's working hours, PID will make the repair or temporary repair as they are able, and CONTRACTOR shall be responsible for completing any remaining work at the site. Any costs resulting from the leak and repair shall be at CONTRACTOR'S expense and at no additional cost to OWNER. Additionally, OWNER reserves the right to pursue recuperation of costs for any work or materials performed or used by OWNER to address the leak.

19. CONTRACTOR shall abandon water mains as shown on Drawings only after the new main has been installed and services reconnected, unless otherwise directed by ENGINEER. Abandoning existing water mains 6-inches or less in diameter shall consist of cutting water mains or valves from existing distribution network, as shown on Drawings, and capping ends. Abandoning existing water mains greater than 6-inches in diameter will consist of cutting water mains or valves from existing distribution network, as shown on drawings, and capping and filling with clean dry sand free of organic materials using pneumatic methods. The existing main can be demolished, as needed, to accomplish the necessary tie-in or pipe abandonment. CONTRACTOR shall be responsible for disposal of all demolished materials; this includes demolition of asbestos cement pipe. Demolished materials shall be disposed of in accordance with applicable federal, state, and local regulations. CONTRACTOR is responsible for determining these regulations and shall bear cost associated with disposal of the materials.
- B. CONTRACTOR shall be responsible for notifying customers of water outages two weeks and 48-hours in advance of work.
1. Two-week advanced notification requires a phone call/ message for each assigned address using OWNER provided contact information AND a door hanger (or printed notice attached to a stake if no structure is present on site). The phone call/ message and printed notice shall indicate planned work with a minimum of 2 weeks between the time notice is given and the time work takes place. Such notice must not be less specific than a one-week period in which the work is planned.
 2. 48-Hour advanced notification requires a phone call/ message for each assigned address using OWNER provided contact information AND a door hanger (or printed notice attached to a stake if no structure is present on site). The phone call/ message and printed notice shall indicate planned work with a minimum of 48 hours and maximum of 72 hours between the time notice is given and specific date in which the work will take place.
 3. The content of printed materials shall be provided by the OWNER in PDF format with fillable fields for dates/times to be used by the CONTRACTOR. OWNER reserves the right to update contact information and/ or public messaging information intermittently.
 4. CONTRACTOR shall maintain a detailed log of all public notifications. Data shall be broken down by address, date/time, notification type, success of any phone contact/messages left, type of printed notice left on site, and any other pertinent data. This shall be updated daily and maintained on a Microsoft SharePoint or other similar OWNER approved document sharing tool for regular viewing access by the ENGINEER and/ or OWNER staff.

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5. CONTRACTOR shall renotify customers using the 2-week and 48-hour notification methods as necessary to accommodate changes in planned construction, which may include but is not limited to unexpected field conditions, construction schedule delays, and customer issues.
- C. The Work is located throughout the Paradise Irrigation District's distribution system located in Paradise CA. The Work is spread throughout Paradise in various locations along roads owned and maintained by the Town of Paradise and roads privately owned by residents, where the OWNER has easement to maintain their infrastructure. The Work is generally to be performed within 3-5 feet of the existing infrastructure, to the extent possible. Installation of meters and backflows will require that work be performed at the edge of the public utility easement or public right of way.
- D. The CONTRACTOR shall be responsible for the execution of traffic control as necessary, in order to complete the Work safely, in compliance with all local, State, and Federal regulations, Traffic control may be inspected at any time by the Town of Paradise, PID, or others.
- E. The CONTRACTOR shall be responsible for obtaining and operating within a project specific encroachment permit with the Town of Paradise.
- F. The CONTRACTOR shall staff the project at a level to support all Work being completed within the Contract Time.
- G. The Work will be constructed under one contract. The Contract Documents include the following:
 1. Volume 1 – Bid Documents and Specifications.
 2. Volume 2 – Drawings

1.2 COORDINATION

- A. The CONTRACTOR shall be solely responsible for coordination of all of the Work of this Contract.
- B. The CONTRACTOR shall supervise, direct and cooperate fully with all Subcontractors, manufacturers, fabricators, suppliers, distributors, installers, testing agencies and all others whose services, materials or equipment are required to ensure completion of the Work within the Contract Time.
- C. Work of Others:
 1. The CONTRACTOR shall cooperate with and coordinate CONTRACTOR's Work with the work of any other contractor, utility service companies, or OWNER's employees performing work at the site.
 2. The CONTRACTOR shall also coordinate their Work with the work of others to assure compliance with schedules.
 3. The CONTRACTOR shall attend and participate in all project coordination or progress meetings and report on the progress of all Work and compliance with schedules.
 4. If any part of the work depends upon the work of others for proper execution or results, the CONTRACTOR shall inspect and promptly report to the ENGINEER any

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apparent discrepancies or defects in such work of others that render it unsuitable for such proper execution and results.

5. Failure of the CONTRACTOR to so inspect and report shall constitute an acceptance of the work of others as fit and proper except as to defects which may develop in the work of others after execution of the work by the CONTRACTOR.

D. Interference with work on utilities:

1. The CONTRACTOR shall cooperate fully with all utility forces of the OWNER or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities which interfere with the progress of the work.
2. The CONTRACTOR shall schedule the work to minimize interference with said relocation, altering, or other rearranging of facilities.

E. Responsibility for Damage:

1. The CONTRACTOR shall not be responsible for damage done by CONTRACTORS not under their jurisdiction.
2. The CONTRACTOR will not be liable for any such loss or damage, unless it is through the negligence of the CONTRACTOR.

1.3 WORK BY OTHERS

A. OWNER will perform the following work:

1. Operation of all existing system valves, unless specified otherwise.

B. Other contracts as follows:

1. The Zone A Pump Station and Transmission Main Project will be underway at the time that this project commences. Two of the tie-ins, for which details are provided in the drawings, will connect to the 16-inch Zone A Transmission Main (ZATM), which will not yet be constructed at the time of bid. The OWNER and ENGINEER will be responsible for facilitating necessary coordination for construction of both projects. CONTRACTOR is required to participate in special project meetings regarding coordination and timing of both projects.

1.4 SITE CONDITIONS

A. Site Investigation and Representation

1. The CONTRACTOR acknowledges that it has satisfied itself as to the nature and location of the work, the general and local conditions, particularly those bearing upon availability of transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads, and uncertainties of weather, tide stages, or similar physical conditions at the site, the conformation and conditions of the ground, the character of equipment and facilities needed preliminary to and during the prosecution of the work and all other matters which can in any way affect the work or the cost thereof under this Contract.
2. The CONTRACTOR further acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials to be encountered from inspecting the site and from evaluating information derived from exploratory work that may have been done by the OWNER or included in these Contract Documents. Any failure by the CONTRACTOR to become acquainted with all

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the available information will not relieve the CONTRACTOR from responsibility for properly estimating the difficulty or cost of successfully performing the work.

3. Field Verification:

- a. Before undertaking each part of the work, the CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements.
- b. As the work proceeds, the CONTRACTOR shall field verify the depth and location of all buried utilities, and existing systems, and location of hazardous waste and contaminants.
- c. The CONTRACTOR shall promptly report in writing to the ENGINEER any conflict, error, or discrepancy which the CONTRACTOR may discover and shall obtain a written interpretation or clarification from the ENGINEER before proceeding with any work affected thereby.

B. Existing Utilities and Improvements

1. Location of Underground Utilities:

- a. It shall be the responsibility of the CONTRACTOR to determine the exact location of all utilities and their service connections in addition to the demarcation and management of all Underground Service Alerts (USAs).
- b. All potholing or other procedures for verifying utility location shall be performed by the CONTRACTOR as necessary to prepare for excavation at least 4 working days in advance of scheduled excavation.
- c. The CONTRACTOR shall immediately notify the ENGINEER as to any utility located by him which has been incorrectly shown or omitted from the drawings.
- d. If the CONTRACTOR cannot locate an underground utility whose presence is indicated on the Drawings, the ENGINEER shall be notified in writing.
- e. The CONTRACTOR shall ascertain the exact locations of underground utilities whose presence is indicated on the Drawings, the locations of their service laterals work and of service laterals or appurtenances of any other underground utilities which can be inferred from the presence of visible facilities such as buildings, meters and junction boxes prior to doing work that may damage such utilities or interfere with their service.
- f. Utilities Not Shown on Drawings:
 - 1) Attention is directed to the possible existence of underground utilities not indicated on the Drawings and to the possibility that underground utilities may be in a location different from that indicated on the Drawings.
 - 2) If the ENGINEER determines that the underground utility for which such notice has been given interferes with the design as depicted on the drawings the additional cost incurred in locating the utility will be paid for as extra work as provided in the General Conditions.
 - 3) If the CONTRACTOR discovers an underground utility not indicated on the Drawings, the CONTRACTOR shall immediately give the ENGINEER and the Utility Company written notification of the existence of such utility.
 - 4) Such utilities shall be located and protected from damages as directed by the ENGINEER.

2. Utility Coordination:

- a. The CONTRACTOR shall notify USA NORTH 811, a minimum of 4 days prior to excavation or earlier, as needed to support CONTRACTOR's underground utility research.

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- b. The CONTRACTOR shall also contact all utility owners not registered with USA but known to have utilities in the project area to field locate underground utilities at least 4 days prior to excavation.
 - c. The CONTRACTOR shall notify all owners of utilities when the Work is in progress and shall make arrangements as are necessary to make any emergency repairs.
 - d. Existing utilities that are shown or that are made known and located to the CONTRACTOR prior to excavation, and that are to be retained; and all utilities that are constructed during excavation operations shall be properly supported and protected from damage during the progress of the work.
3. Utility Protection and Damage:
- a. Existing utilities that are shown or that are made known and located to the CONTRACTOR prior to excavation, and that are to be retained, and all utilities that are constructed during excavation operations shall be properly supported and protected from damage during the progress of the work.
 - b. Should any damage to a utility occur during the progress of the work, the CONTRACTOR shall notify the OWNER or the utility at once and render all assistance possible to repair the damage and restore the service.
 - c. No extra compensation will be made for the repair of any services or utility damaged by the CONTRACTOR nor for any damage incurred through neglect or failure to provide adequate protection to existing utilities.
 - d. The provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.
 - e. Damaged water pipelines will be repaired by the OWNER at the CONTRACTOR's expense. If the CONTRACTOR fails to pay the cost of repairs to water pipelines within thirty days of receipt of the invoice, the OWNER reserves the right to withhold the amount owed from the CONTRACTOR's Progress Payment.
 - f. Damage Report:
 - 1) In the event that the CONTRACTOR damages any underground utilities not identified by the USA process and not shown on the Drawings with reasonable accuracy (within 5 feet of actual location) or any lateral service the location of which could not be inferred by the CONTRACTOR, a written report thereof shall be made immediately to the ENGINEER.
 - 2) The CONTRACTOR's report shall also advise the ENGINEER of any schedule delays. Compensation for such delays will be determined in accordance with the General Conditions. The CONTRACTOR shall be entitled to no other compensation for any such damage.
4. All utilities encountered along the line of the work shall remain continuously in service during all work under the Contract, unless otherwise shown on the drawings, or unless other arrangements satisfactory to the ENGINEER are made with the owner of said utilities.
- C. CONTRACTOR's Responsibility for Utility Facilities and Service
- 1. Where the CONTRACTOR's operations could cause damage or inconvenience to railway, telephone, television, power, oil, gas, water, sewer, or irrigation systems, the CONTRACTOR shall make all arrangements necessary for the protection of these utilities and services and shall notify ENGINEER at least 24 hours in advance.
 - 2. The CONTRACTOR shall be solely and directly responsible to the owner and operators of such properties for any damage, injury, expense, loss, inconvenience, delay, suits,

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actions, or claims of any character brought because of any injuries or damage which may result from the construction operations under this Contract.

3. Neither the OWNER nor its officers or agents shall be responsible to the CONTRACTOR for damages as a result of the CONTRACTOR's failure to protect utilities encountered in the work.
4. In no event shall interruption of any utility service be allowed outside working hours unless granted by the owner of the utility.
5. No sand, mud, rocks or other construction debris shall be disposed of in the sanitary sewers or storm sewers.
6. The CONTRACTOR shall replace, at its own expense, any and all existing utilities or structures removed or damaged during construction, to their existing condition unless otherwise provided for in these Contract Documents.
7. The CONTRACTOR shall repair or replace, at its own expense, all pavement damaged during the construction, to its existing condition unless otherwise provided for in these Contract Documents.

D. Names of Known Utilities Serving the Area

1. The following is a list of the known public utilities serving the area:
 - a. Paradise Irrigation District (530) 877-4971
 - b. Town of Paradise (530) 872-6291
 - c. Comcast – (323) 342-5552
 - d. PG&E – (877) 743-7782
 - e. Pacific Bell – (510) 645-2929

E. Railroads

1. The CONTRACTOR shall not perform work or occupy any part of railroad property without a permit authorizing the same.

F. Interfering Structures

1. The CONTRACTOR shall take necessary precautions to prevent damage to existing structures whether on the surface, aboveground, or underground. An attempt has been made to show major structures on the Drawings.
2. The CONTRACTOR shall protect all existing structures, trees, shrubs, and other items on the project site that are to be preserved, by substantial barricades or other devices commensurate with the hazard, from injury or destruction by vehicles, equipment, workmen, or other agents.
3. Where existing fences, gates, buildings, or any other structure must be removed to properly carry out the work, or are damaged during the work, they shall be restored at the CONTRACTOR's expense to their original condition or better.
4. Without additional compensation, the CONTRACTOR may remove and replace in a condition as good as or better than original, any small structures such as fences, and signposts that interfere with the CONTRACTOR's operations. All removal and replacement of small structures, included but not limited to fences and signposts, will first be approved by ENGINEER.

G. Field Relocation

1. During the progress of construction, it is expected that minor relocations of the work will be necessary.
2. Such relocations shall be made only by direction of the ENGINEER.

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3. If existing structures are encountered that will prevent construction as shown, notify the ENGINEER before continuing with the work in order that the ENGINEER may make such field revisions as necessary to avoid conflict with the existing structures.
4. If the CONTRACTOR shall fail to notify the ENGINEER when an existing structure is encountered, and shall proceed with the work despite this interference, CONTRACTOR shall do so at their own risk.
5. Any CONTRACTOR request(s) for additional compensation or contract time resulting from necessary field relocations will be considered as set forth in the General Conditions.
6. If the CONTRACTOR fails to notify the ENGINEER when a structure which interferes with construction is encountered, and proceeds with the work despite this obstruction, the CONTRACTOR shall do so at their own risk and at no additional cost to the OWNER.

1.5 SEQUENCE AND PROGRESS OF WORK

- A. The CONTRACTOR shall submit a Construction Schedule covering the entire Work in accordance with Section 01320, Progress Schedule.
- B. The CONTRACTOR shall incorporate the requirements of Section 01130, Special Project Constraints, into the Construction Schedule.
- C. Alternate Sequence:
 1. The CONTRACTOR's schedule may use a different sequence from that shown or specified, if techniques and methods known to the CONTRACTOR will result in cost and time savings to the OWNER, still achieve the required objective and maintain the same objective.
 2. The ENGINEER's determination on the acceptability of any alternative sequence from that shown or specified shall be final.

1.6 CONTRACTOR'S USE OF WORK AND/OR STORAGE AREAS

- A. The CONTRACTOR shall be solely responsible for obtaining and paying all costs in connection with any additional work area, storage sites, access to the site or temporary right-of-way, which may be required for proper completion of the Work.
- B. Limitations on Use of Work Area:
 1. It shall be understood that responsibility for protection and safe-keeping of equipment and materials on or near the site will be entirely that of the CONTRACTOR and that no claim shall be made against the OWNER or their authorized representatives by reason of any act.
 2. It shall be further understood that should any occasion arise necessitating access to the sites occupied by these stored materials or equipment, the ENGINEER shall direct the CONTRACTOR owning or responsible for the stored materials and equipment to immediately move the same.
 3. No materials or equipment may be placed upon the property of the OWNER, other than in the designated areas as shown on the Drawings, unless the ENGINEER has agreed to the location contemplated by the CONTRACTOR to be used for storage.
 4. No materials or equipment shall be placed or staged on private property, unless CONTRACTOR has made prior arrangements with the property owner, CONTRACTOR

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shall do so solely at their own risk. This includes using driveways for parking or turning CONTRACTOR's vehicles around.

5. All stored materials shall be labeled according to the appropriate contractor or Subcontractor with the manufacturer's label as well.
 6. Appropriate material safety data sheets (e.g., MSDS) shall be provided.
- C. The CONTRACTOR shall be required to share use of the premises with other Contractors whose services the OWNER has obtained or will obtain for construction of other facilities on the site.

1.7 USE OF OWNER'S FACILITIES

- A. The CONTRACTOR may use existing facilities or equipment in the Work for construction purposes, only if the OWNER's written permission is obtained.
- B. Restore existing facilities and equipment used for temporary purposes to original condition in a manner satisfactory to OWNER.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

++ END OF SECTION ++

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SECTION 01130

SPECIAL PROJECT CONSTRAINTS

PART 1 - GENERAL

1.1 LIMIT OF CONSTRUCTION ACTIVITIES ON WORK SITE

A. Traffic Control:

1. CONTRACTOR shall be responsible for traffic control as necessary to safely accomplish the Work. At no point may both lanes of a roadway be closed to traffic without an approved detour plan coordinated and reviewed by the Town of Paradise. If a single lane is closed or traffic interrupted, CONTRACTOR must maintain flaggers in accordance with federal, state, and local safety standards.
2. During non-work hours, the CONTRACTOR shall keep all lanes of traffic open and clear. All trenches shall be backfilled or covered with suitable steel plates and open to traffic. All plates shall be pinned and secured with cutback to prevent movement of plates under local traffic and roadway conditions. Local traffic may include atypical hauling, heavy trucking, and heavy equipment due to recovery operations.
3. Any cost for emergency response required by the Town of Paradise Public Works crew in off-work hours to address the movement of plates or insufficiency of roadway patching such that a hazardous condition is created will be the sole responsibility of the CONTRACTOR.
4. No equipment, construction material or excavated material that will interfere with traffic shall be stored on streets, shoulders, roadways, or private driveways at any time.
5. CONTRACTOR shall work with OWNER, ENGINEER, Butte County, and the Town of Paradise as needed to make accommodations for Butte Regional Transit and minimize impacts to any Butte Regional Transit stops.

1.2 SEQUENCE OF WORK

A. General:

1. The CONTRACTOR shall schedule and sequence their work in order to complete the Work by the specified completion date.
2. The OWNER's water distribution system must remain operational at all times including water mains, service laterals, fire hydrants, and tanks, except where shutdowns of facilities are coordinated in advance with OWNER and ENGINEER to facilitate tie-ins.
3. CONTRACTOR shall coordinate with ENGINEER and OPERATIONS regarding determination of how CONTRACTOR will phase their work of water mains, service laterals, meters, and backflow preventers to minimize water service interruptions.
4. CONTRACTOR shall replace water mains, valves, and hydrants as shown on Drawings and as stated in the valve and hydrant schedule. The order in which the individual water main segments are to be replaced is to be in accordance with the priority group of each main segment, as provided herein. CONTRACTOR shall not perform work out of priority order unless permissible by OWNER and ENGINEER.
5. ENGINEER will provide CONTRACTOR a list where service laterals are to be replaced or reconnected and what the scope of the CONTRACTOR's work will include at each address pertaining to meters and backflow preventers. This list may be provided in

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full at the start of the Work but may be modified throughout the contract, to incorporate any changes in account status that occur. Changes may include but are not limited to increase or decrease in the size of service laterals, meters, and backflows; change in ownership for backflow prevention devices; permanent disconnection of account from District, and request for meter relocation.

6. CONTRACTOR shall perform pressure testing and bacteriological testing per Sections 15990 and 15995, respectively, before putting new water main or services into commission.
7. Abandoning or decommissioning of water mains shall not take place until such time that the new water main and services are in a state that CONTRACTOR can reasonably ensure that water interruptions would not last longer than one full workday (7:00am-4:00pm).
8. CONTRACTOR shall not be allowed to mobilize or begin work on a new main segment until work at the current construction site is completed and the site has been restored to equal or better conditions as determined by the ENGINEER.
9. Re-vegetation of graded areas shall take place as quickly as possible as weather permits.

1.3 PROJECT CONSTRAINTS

A. Maintenance of OWNER's Operations:

1. Constraints listed herein involve limits on activities during construction. These limits relate to the critical nature of the existing water system.
2. Continuous operation of OWNER's facilities is of critical importance. Schedule and conduct activities to enable existing facilities to operate continuously, unless otherwise specified.
3. Work Plan for Water Outages:
 - a. The CONTRACTOR shall submit a detailed Work Plan and time schedule for all construction activities that will make it necessary to remove a tank, pipeline, equipment, structure, road, or other facilities from service, including the critical outages identified herein.
 - b. The Work Plan shall, at a minimum, identify:
 - 1) the date and time when each activity will occur;
 - 2) the anticipated duration of work, shall not exceed 7:00am-4:00pm, except where nightwork is required by Contract Documents;
 - 3) what equipment will be present including standby equipment;
 - 4) what assistance will be required by OWNER's operating personnel;
 - 5) an emergency backup plan identifying what action(s) will be taken if Work cannot be completed within the allotted time including, accommodating overtime; and
 - 6) what individual will be in charge of the activity.
 - c. Submit Work Plan to ENGINEER for Water Outages 3 weeks prior to the scheduled activity and an additional confirmation that CONTRACTOR is on target to complete work for the shutdown at the expected date and one week in advance.
 - 1) If CONTRACTOR's work becomes delayed, such that the shutdown cannot occur at the prior agreed upon time, CONTRACTOR shall be responsible for notifying ENGINEER and shall submit a new date and time no less than 5 working days in advance of the shutdown.
 - 2) Any delay to CONTRACTOR's Work Plan resulting from a lack of preparatory work on the CONTRACTOR's behalf, including but not limited to potholing and

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- exploratory excavations, procuring all necessary equipment and materials, and adhering to scheduling and notification protocols shall be at no additional cost to OWNER; this shall include but not be limited to instances where the delay results in shorter workdays or non-working days for CONTRACTOR's crews.
- d. Perform Work continuously during critical connections and changeovers, and as required to prevent interruption of OWNER's operations.
 - e. Under no circumstances shall the CONTRACTOR cease Work at the end of a normal working day or at the end of a working week if such actions may inadvertently cause a cessation of any facility operating process or extended outage of water service, in which case, remain onsite until necessary repairs are complete.
4. Do not close lines, open valves or gates, shut down equipment, or take other action which would affect the operation of existing systems, except as specifically required by the Contract Documents and after approval of OWNER.
 - a. Do not proceed with Work affecting a facility's operation without obtaining OWNER's advance approval of the need for and duration of such Work.
 - b. CONTRACTOR shall be responsible for notifying customers of water outages for all addresses where new service laterals are to be installed or reconnected. Refer to Specification Section 01110 Summary of Work for the 2-weeks and 48-hour advance notification parameters.
 5. The tie-ins for the Clark-B main segment must be completed as night work between the hours of 7:00pm-5:00am. All other Work for the installation of the water main, service laterals, and hydrants may be completed during regular construction hours. The CONTRACTOR must submit a Work Plan for Water Outage, as required above for nightwork.
 6. Water outages for installation of service laterals, meters, and/or backflows of all non-residential accounts must first be coordinated with OWNER and ENGINEER in advance of work and shall not exceed 4 hours.
- B. Relocation of Existing Facilities:
1. During construction, it is expected that minor relocations of Work will be necessary.
 2. Provide complete relocation of existing structures and Underground Facilities, including piping, utilities, equipment, structures, and other necessary items.
 3. Use only new materials for relocated facility. Match materials of existing facility, unless otherwise shown or specified.
 4. Perform relocations to minimize downtime of existing facilities.
 5. Install new portions of existing facilities in their relocated position prior to removal of existing facilities, unless otherwise accepted by OWNER.
- C. Overtime:
1. Conduct Work outside regular working hours on prior written consent of OWNER to meet Project schedule and avoid undesirable conditions.
 2. All overtime Work by the CONTRACTOR necessary to conform to the requirements of this Section and related Sections shall be performed by the CONTRACTOR, at no cost to the OWNER and shall be performed in accordance with the General Conditions. The CONTRACTOR shall make no claims for extra compensation as a result thereof.

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Special Project Constraints

1.4 CONSTRUCTION SEQUENCING CONSTRAINTS

- A. OWNER has identified priority groups A-J and assigned each of the main segments to a priority group. Priority has been determined in coordination with planned paving projects in the Town of Paradise, work taking place by others on OWNER's facilities, and needs of the community. OWNER reserved the right to amend this priority order if necessary.
- B. CONTRACTOR shall complete all work in a priority group before moving to the next priority group, unless otherwise permissible by ENGINEER.
- C. CONTRACTOR must also complete all work in an individual main segment before moving to the next main segment, excepting the following main segments. CONTRACTOR shall however sequence construction activities in a manner that minimizes impacts to streets, roadways, sidewalks, shoulders, and bike paths.
 - 1. A-Zone 1, A-Zone 2, A-Zone 3, A-Zone 4, A-Zone 5, and A-Zone 6 can be completed in coordination with one another, as approved by OWNER and ENGINEER.
 - 2. Clark A-1 and Clark A-2 can be completed in coordination with one another, as approved by OWNER and ENGINEER.
 - 3. Skyway-1 and Skyway-2 can be completed in coordination with one another, as approved by OWNER and ENGINEER.
- D. The priority groups are as follow in Table 01130-A.

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**TABLE 01130-A
MAIN REPLACEMENT PRIORITY ORDER**

| PRIORITY GROUP | MAIN SEGMENT | DRAWING SHEET NUMBER | FINAL COMPLETION |
|-----------------------|-----------------------|-----------------------------|-------------------------|
| Priority A | Xeno | C-1 | By September 1, 2023 |
| Priority B | Judy | C-2 | By November 1, 2023 |
| Priority B | Gracephil | C-3 | By November 1, 2023 |
| Priority B | Scandia | C-4 | By November 1, 2023 |
| Priority B | Farber | C-5 | By November 1, 2023 |
| Priority B | Linry | C-6 | By November 1, 2023 |
| Priority C | Cypress | C-7 | By November 15, 2023 |
| Priority D | A-Zone 1 | C-9 | By February 1, 2024 |
| Priority D | A-Zone 2 | C-10 | By February 1, 2024 |
| Priority D | A-Zone 3 | C-11 | By February 1, 2024 |
| Priority D | A-Zone 4 | C-12 | By February 1, 2024 |
| Priority D | A-Zone 5 | C-13 | By February 1, 2024 |
| Priority D | A-Zone 6 | C-14 | By February 1, 2024 |
| Priority E | Clark A-1 | C-15 | By March 1, 2024 |
| Priority E | Clark A-2 | C-16 | By March 1, 2024 |
| Priority F | Crandall | C-17 | By August 1, 2024 |
| Priority F | Deodara | C-18 | By August 1, 2024 |
| Priority F | Himmel | C-19 | By August 1, 2024 |
| Priority F | Forest | C-20 | By August 1, 2024 |
| Priority F | York Towne | C-21 | By August 1, 2024 |
| Priority F | Paradise Ave | C-22 | By August 1, 2024 |
| Priority F | Moon-Hazel | C-23 | By August 1, 2024 |
| Priority F | Fawndale | C-24 | By August 1, 2024 |
| Priority F | Sawmill | C-25 | By August 1, 2024 |
| Priority G | Feather River | C-26 | By September 1, 2024 |
| Priority H | Skyway-1 | C-27 | By October 1, 2024 |
| Priority H | Skyway-2 | C-28 | By October 1, 2024 |
| Priority H | Clark-B | C-29 | By October 1, 2024 |
| Priority I | Pacific-Orchard | C-30 | By December 1, 2024 |
| Priority I | Coral Ave | C-31 | By December 1, 2024 |
| Priority I | Coral Cir | C-32 | By December 1, 2024 |
| Priority I | Bella Vista-Del Monte | C-33 | By December 1, 2024 |
| Priority J | Aspen | C-34 | By February 1, 2025 |
| Priority J | Lowry | C-35 | By February 1, 2025 |
| Priority J | Graystone | C-36 | By February 1, 2025 |
| Priority J | Kemlyn | C-37 | By February 1, 2025 |
| Priority J | Woodsdale | C-38 | By February 1, 2025 |

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Special Project Constraints

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PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

++ END OF SECTION ++

SECTION 01200

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 GENERAL

- A. Payment will be made at the price bid for each item listed on the bidding form or as extra work as provided in the General Conditions.
- B. No initial progress payment (other than a single mobilization payment as described in Article 1.3 below) will be made prior to acceptance by the ENGINEER of the CPM Construction Schedule, the associated Schedule of Costs, and the list of anticipated submittals.
- C. No subsequent progress payment will be made prior to receipt by the ENGINEER of the monthly update of the Construction Progress Schedule, as specified in Sections 01310, Project Meetings and 01320, Progress Schedule.
- D. No subsequent progress payment will be made prior to receipt by the ENGINEER of Certified Payroll for the previous month.

1.2 SCHEDULE OF COSTS FOR PAYMENTS

- A. Submit to the ENGINEER, within 5 days of acceptance of the Construction Schedule, five (5) copies of a Schedule of Costs. The Schedule of Costs shall be a form showing a detailed breakdown of quantities and prices of work and materials required to perform and complete the contract.
- B. The Schedule of Costs shall provide a cost breakdown for each element detailed in the approved Construction Schedule. The total of the price breakdown must agree with the lump-sum price bid. The elements listed and price breakdown shall not be front end loaded or unbalanced, shall be subject to adjustment between the ENGINEER and the CONTRACTOR, and will be used as a basis for progress payments.
- C. The Schedule of Costs will be used as a basis for determining the amount of the monthly progress payments.
- D. Acceptance of the Schedule of Costs by the ENGINEER shall not relieve the CONTRACTOR of the responsibility of performing all the work needed to complete the project at the lump-sum price bid.

1.3 DESCRIPTION OF UNIT PRICE BID ITEM – SCHEDULE A

- A. Item 1, Town of Paradise Encroachment Permit:
This item shall cover costs for CONTRACTOR to obtain an encroachment permit from the Town of Paradise. CONTRACTOR shall be responsible for all direct coordination with the Town of Paradise pertaining to the encroachment permit and CONTRACTOR's construction activities. CONTRACTOR shall be responsible for understanding and

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following all requirements and conditions of the encroachment permit. If the CONTRACTOR is found to be in violation of any condition of the encroachment permit, CONTRACTOR shall be responsible for corrective actions or fines at no additional cost to OWNER. This item shall be paid as a percentage of overall project completion, which will be calculated based on percentage of linear footage of water mains installed.

B. Item 2, Traffic Control:

This item shall cover traffic control costs for the entire project scope. It shall include labor, materials, equipment, and supplies necessary to properly execute Traffic Control as needed at each project site, in accordance with all local, state, and federal regulations and safety standards. Conditions at each location will vary, requiring Traffic Control measures to be adjusted appropriately. CONTRACTOR's pricing shall consider construction activities required to be completed as night work, per Section 01130, as well as potential impacts from other recovery-related operations taking place throughout the Town of Paradise. CONTRACTOR shall not impede such activities and shall take extra precautions to plan Traffic Control to accommodate such activities. This item shall be paid as a percentage of overall project completion. If at any point the ENGINEER determines that Traffic control is not being implemented in accordance with the Contract Documents, payment for this item may be withheld until such time as corrections in methods and executions are made.

C. Item 3, Mobilization and Demobilization:

Mobilization for the project shall include administrative project management as described in 01505 Mobilization, labor materials, and equipment necessary to assemble in the vicinity of the project, and stage said labor and equipment in order to make ready to perform the work. Mobilization shall also include erecting the required State Revolving Fund project sign. Demobilization for the project shall include removal of the same once work has been completed in addition to provision of final correct and complete Inspection Record, accepted by the ENGINEER. This item assumes the total project work includes 37 different main segments, the locations of which are spread throughout Paradise, CA. Demobilization shall include submission of record drawings and complete and correct Inspection Records to the OWNER. If ENGINEER determines that condition of site is left in an unacceptable condition following Demobilization, payment for this item may be withheld until such time that corrections are made. CONTRACTOR may also be prohibited to proceed with Mobilization at a subsequent main segment until such time that corrections are made. This item shall be paid as a percentage of overall completion with a split between mobilization and demobilization of 60%/40%, respectively. Percentage of overall completion shall be calculated based on time elapsed from total allowable contract time.

D. Item 4, Clearing and Grubbing:

This item shall cover labor, equipment, and materials needed to prepare the project site as described in 02200 Site Preparation. Work under this item includes but is not limited to, removal of interfering or objectionable material lying on or protruding above ground surface and removal of vegetation and other organic matter including rocks, stumps, logs, and roots. CONTRACTOR shall be responsible for familiarizing themselves with the project sites for the 37 main segments in preparing the bid. This item shall be paid as a percentage of overall project completion.

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- E. Item 5a, Abandon Water Main less than 8-Inches in diameter:
This item shall cover the labor, equipment, and materials for abandoning water mains and associated valves less than 8 inches in diameter as shown on the Drawings. Work includes cutting water mains or valves from the existing distribution network such that they are no longer pressurized or can be pressurized. Ends of abandoned water mains shall be capped to prevent water or soil from entering the abandoned pipe. The existing water main is to be abandoned in place where possible but can be demolished as needed. Valves that are located at the ends of pipe segments and no longer connected to the distribution network shall be removed. Valve boxes for all abandoned valves shall be demolished and the surface restored as appropriate. CONTRACTOR shall be responsible for disposal of all demolished materials, including asbestos cement pipe, in accordance with federal, state, and local regulations. This item shall be paid at the unit price included in the Bid Form in accordance with quantities verified in the field by the ENGINEER or INSPECTOR.
- F. Item 5b, Abandon 8-Inch Water Main:
This item shall cover the labor, equipment, and materials for abandoning water mains and associated valves 8-inches in diameter as shown on the Drawings. Work includes cutting water mains or valves from the existing distribution network such that they are no longer pressurized or can be pressurized. Pipes shall be capped and filled with clean, dry sand, free of organic material using pneumatic methods. CONTRACTOR shall submit installed volume calculations for each filled abandoned pipe section to verify that the sections are completely filled. The existing water main is to be abandoned in place where possible but can be demolished as needed. Valves that are located at the ends of pipe segments and no longer connected to the distribution network shall be removed. Valve boxes and valve stems for all abandoned valves shall be demolished and the surface restored as appropriate. CONTRACTOR shall be responsible for disposal of all demolished materials, including asbestos cement pipe, in accordance with federal, state, and local regulations. This item shall be paid at the unit price included in the Bid Form in accordance with quantities verified in the field by the ENGINEER or INSPECTOR.
- G. Item 5c, Abandon 10-Inch Water Main:
This item shall cover the labor, equipment, and materials for abandoning water mains and associated valves 10-inches in diameter as shown on the Drawings. Work includes cutting water mains or valves from the existing distribution network such that they are no longer pressurized or can be pressurized. Pipes shall be capped and filled with clean, dry sand free of organic material using pneumatic methods. CONTRACTOR shall submit installed volume calculations for each filled abandoned pipe section to verify that the sections are completely filled. The existing water main is to be abandoned in place where possible but can be demolished as needed. Valves that are located at the ends of pipe segments and no longer connected to the distribution network shall be removed. Valve boxes and valve stems for all abandoned valves shall be demolished and the surface restored as appropriate. CONTRACTOR shall be responsible for disposal of all demolished materials, including asbestos cement pipe, in accordance with federal, state, and local regulations. This item shall be paid at the unit price included in the Bid Form in accordance with quantities verified in the field by the ENGINEER or INSPECTOR.
- H. Item 5d, Abandon 12-Inch Water Main:
This item shall cover the labor, equipment, and materials for abandoning water mains and associated valves 12-inches in diameter as shown on the Drawings. Work includes cutting water mains or valves from the existing distribution network such that they are

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no longer pressurized or can be pressurized. Pipes shall be capped and filled with clean, dry sand free of organic material using pneumatic methods. CONTRACTOR shall submit installed volume calculations for each filled abandoned pipe section to verify that the sections are completely filled. The existing water main is to be abandoned in place where possible but can be demolished as needed. Valves that are located at the ends of pipe segments and no longer connected to the distribution network shall be removed. Valve boxes and valve stems for all abandoned valves shall be demolished and the surface restored as appropriate. CONTRACTOR shall be responsible for disposal of all demolished materials, including asbestos cement pipe, in accordance with federal, state, and local regulations. This item shall be paid at the unit price included in the Bid Form in accordance with quantities verified in the field by the ENGINEER or INSPECTOR.

I. Item 5e, Abandon 14-Inch Water Main:

This item shall cover the labor, equipment, and materials for abandoning water mains and associated valves 14-inches in diameter as shown on the Drawings. Work includes cutting water mains or valves from the existing distribution network such that they are no longer pressurized or can be pressurized. Pipes shall be capped and filled with clean, dry sand free of organic material using pneumatic methods. CONTRACTOR shall submit installed volume calculations for each filled abandoned pipe section to verify that the sections are completely filled. The existing water main is to be abandoned in place where possible but can be demolished as needed. Valves that are located at the ends of pipe segments and no longer connected to the distribution network shall be removed. Valve boxes and valve stems for all abandoned valves shall be demolished and the surface restored as appropriate. CONTRACTOR shall be responsible for disposal of all demolished materials, including asbestos cement pipe, in accordance with federal, state, and local regulations. This item shall be paid at the unit price included in the Bid Form in accordance with quantities verified in the field by the ENGINEER or INSPECTOR.

J. Item 6a, Install 4-Inch C900 PVC Water Main:

This item shall cover the labor, equipment, materials for installation of 4-inch C900 PVC pressure pipe water mains including all necessary fittings and thrust blocks, as shown on the Drawings and required by these specifications. Necessary fittings for vertical and horizontal changes not shown on the drawings but encountered in the field shall also be included in this item. Disinfection and pressure testing of the water main shall be as described in Section 15995 Disinfection of Potable Water Systems and Section 15990 Testing of Pressure Piping Systems, respectively. Where the newly installed pipe fails to meet any of the criteria as described in either of those sections the CONTRACTOR shall, at no additional cost to the OWNER, make any necessary corrections until all criteria are met and witnessed by ENGINEER. This item shall be paid at the unit price included in the Bid Form in accordance with quantities verified in the field by the ENGINEER or INSPECTOR.

K. Item 6b, Install 6-Inch C900 PVC Water Main:

This item shall cover the labor, equipment, and materials for installation of 6-inch C900 PVC pressure pipe water mains including all necessary fittings and thrust blocks, as shown on the Drawings and required by these specifications. Necessary fittings for vertical and horizontal changes not shown on the drawings but encountered in the field shall also be included in this item. Disinfection and pressure testing of the water main shall be as described in Section 15995 Disinfection of Potable Water Systems and Section 15990 Testing of Pressure Piping Systems, respectively. Where the newly installed pipe fails to meet any of the criteria as described in either of those sections

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the CONTRACTOR shall, at no additional cost to the OWNER, make any necessary corrections until all criteria are met and witnessed by ENGINEER. This item shall be paid at the unit price included in the Bid Form in accordance with quantities verified in the field by the ENGINEER or INSPECTOR.

L. Item 6c, Install 8-Inch C900 PVC Water Main:

This item shall cover the labor, equipment, and materials for installation of 8-inch C900 PVC pressure pipe water mains including all necessary fittings and thrust blocks, as shown on the Drawings and required by these specifications. Necessary fittings for vertical and horizontal changes not shown on the drawings but encountered in the field shall also be included in this item. Disinfection and pressure testing of the water main shall be as described in Section 15995 Disinfection of Potable Water Systems and Section 15990 Testing of Pressure Piping Systems, respectively. Where the newly installed pipe fails to meet any of the criteria as described in either of those sections the CONTRACTOR shall, at no additional cost to the OWNER, make any necessary corrections until all criteria are met and witnessed by ENGINEER. This item shall be paid at the unit price included in the Bid Form in accordance with quantities verified in the field by the ENGINEER or INSPECTOR.

M. Item 6d, Install 10-Inch C900 PVC Water Main:

This item shall cover the labor, equipment, and materials for installation of 10-inch C900 PVC pressure pipe water mains including all necessary fittings and thrust blocks, as shown on the Drawings and required by these specifications. Necessary fittings for vertical and horizontal changes not shown on the drawings but encountered in the field shall also be included in this item. Disinfection and pressure testing of the water main shall be as described in Section 15995 Disinfection of Potable Water Systems and Section 15990 Testing of Pressure Piping Systems, respectively. Where the newly installed pipe fails to meet any of the criteria as described in either of those sections the CONTRACTOR shall, at no additional cost to the OWNER, make any necessary corrections until all criteria are met and witnessed by ENGINEER. This item shall be paid at the unit price included in the Bid Form in accordance with quantities verified in the field by the ENGINEER or INSPECTOR.

N. Item 6e, Install 12-Inch C900 PVC Water Main:

This item shall cover the labor, equipment, and materials for installation of 12-inch C900 PVC pressure pipe water mains including all necessary fittings and thrust blocks, as shown on the Drawings and required by these specifications. Necessary fittings for vertical and horizontal changes not shown on the drawings but encountered in the field shall also be included in this item. Disinfection and pressure testing of the water main shall be as described in Section 15995 Disinfection of Potable Water Systems and Section 15990 Testing of Pressure Piping Systems, respectively. Where the newly installed pipe fails to meet any of the criteria as described in either of those sections the CONTRACTOR shall, at no additional cost to the OWNER, make any necessary corrections until all criteria are met and witnessed by ENGINEER. This item shall be paid at the unit price included in the Bid Form in accordance with quantities verified in the field by the ENGINEER or INSPECTOR.

O. Item 6f, Install 16-Inch C900 PVC Water Main:

This item shall cover the labor, equipment, and materials for installation of 16-inch C900 PVC pressure pipe water mains including all necessary fittings and thrust blocks, as shown on the Drawings and required by these specifications. Necessary fittings for

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vertical and horizontal changes not shown on the drawings but encountered in the field shall also be included in this item. Disinfection and pressure testing of the water main shall be as described in Section 15995 Disinfection of Potable Water Systems and Section 15990 Testing of Pressure Piping Systems, respectively. Where the newly installed pipe fails to meet any of the criteria as described in either of those sections the CONTRACTOR shall, at no additional cost to the OWNER, make any necessary corrections until all criteria are met and witnessed by ENGINEER. This item shall be paid at the unit price included in the Bid Form in accordance with quantities verified in the field by the ENGINEER or INSPECTOR.

P. Item 7a, Install 4-Inch Gate Valve:

This item shall cover the labor, equipment, and materials for installation of 4-inch gate valves and valve boxes along the pipe alignment. A list of all gate valves is provided in Section 15200 VS Valve Schedule. This item excludes valves installed as part of any tie-ins, listed in the subsequent bid items and shown on tie-in details in the Drawings. This item shall be paid at the unit price included in the Bid Form for each valve installed.

Q. Item 7b, Install 6-Inch Gate Valve:

This item shall cover the labor, equipment, and materials for installation of 6-inch gate valves and valve boxes along the pipe alignment. A list of all gate valves is provided in Section 15200 VS Valve Schedule. This item excludes valves installed as part of any tie-ins, listed in the subsequent bid items and shown on tie-in details in the Drawings. This item shall be paid at the unit price included in the Bid Form for each valve installed.

R. Item 7c, Install 8-Inch Gate Valve:

This item shall cover the labor, equipment, and materials for installation of 8-inch gate valves and valve boxes along the pipe alignment. A list of all gate valves is provided in Section 15200 VS Valve Schedule. This item excludes valves installed as part of any tie-ins, listed in the subsequent bid items and shown on tie-in details in the Drawings. This item shall be paid at the unit price included in the Bid Form for each valve installed.

S. Item 7d, Install 10-Inch Gate Valve:

This item shall cover the labor, equipment, and materials for installation of 10-inch gate valves and valve boxes along the pipe alignment. A list of all gate valves is provided in Section 15200 VS Valve Schedule. This item excludes valves installed as part of any tie-ins, listed in the subsequent bid items and shown on tie-in details in the Drawings. This item shall be paid at the unit price included in the Bid Form for each valve installed.

T. Item 7e, Install 12-Inch Gate Valve:

This item shall cover the labor, equipment, and materials for installation of 12-inch gate valves and valve boxes along the pipe alignment. A list of all gate valves is provided in Section 15200 VS Valve Schedule. This item excludes valves installed as part of any tie-ins, listed in the subsequent bid items and shown on tie-in details in the Drawings. This item shall be paid at the unit price included in the Bid Form for each valve installed.

U. Item 8, Install Blow Off Assembly:

This item shall cover the labor, equipment, and materials for installation of 2-inch blow off valve assemblies, in accordance with Standard Details PID-02 and WWE-5000 included in the Drawings. Valves for each of the blow off assemblies are also listed in

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Section 15200 VS Valve Schedule. This item shall be paid at the unit price included in the Bid Form for each assembly installed.

V. Item 9, Install Air Release & Vacuum Relief Valve Assembly:

This item shall cover the labor, equipment, and materials for installation of 2-inch air release & vacuum relief valve (ARV) assemblies, in accordance with Standard Detail PID-10 included in the Drawings. Valves for each of the ARV assemblies is listed in Section 15200 VS Valve Schedule. Where new ARV assemblies are replacing existing ARV assemblies or dunker valves, as shown on the Drawings, this item shall also include demolition of the existing above grade infrastructure, removal of valve box, and surface restoration as applicable. This item shall be paid at the unit price included in the Bid Form for each assembly installed.

W. Item 10a, Install 1-Inch HDPE Service Lateral:

This item shall cover the labor, equipment, and materials for installation of 1-inch service laterals of high-density polyethylene pipe, per Standard Detail PID-05, included in the Drawings. Labor and materials for installation of service saddle, corporation stop valve, angle stop valve, tracer wire, disinfection, and pressure testing shall be included in this item. This item shall be paid at the unit price included in the Bid Form, per linear foot of pipe installed as verified in the field by the ENGINEER or INSPECTOR.

X. Item 10b, Install 1.5-Inch HDPE Service Lateral:

This item shall cover the labor, equipment, and materials for installation of 1.5-inch service laterals of high-density polyethylene pipe, per Standard Detail PID-05, included in the Drawings. Labor and materials for installation of service saddle, corporation stop valve, angle stop valve, tracer wire, disinfection, and pressure testing shall be included in this item. This item shall be paid at the unit price included in the Bid Form, per linear foot of pipe installed as verified in the field by the ENGINEER or INSPECTOR.

Y. Item 10c, Install 2-Inch HDPE Service Lateral:

This item shall cover the labor, equipment, and materials for installation of 2-inch service laterals of high-density polyethylene pipe, per Standard Detail PID-05, included in the Drawings. Labor and materials for installation of service saddle, corporation stop valve, angle stop valve, tracer wire, disinfection, and pressure testing shall be included in this item. This item shall also cover installation of banked services from the saddle through the wye, additional linear feet of pipe installed at a lesser diameter shall be billed as Item 10a or 10b. Item 10c shall be paid at the unit price included in the Bid Form, per linear foot of pipe installed as verified in the field by the ENGINEER or INSPECTOR.

Z. Item 11a, Reconnect $\frac{3}{4}$ and 1-Inch Service Lateral:

This item shall cover the labor, equipment, and materials for reconnection of an existing $\frac{3}{4}$ -inch service to the new water main. Materials are to include service saddle, 1-inch corporation stop valve, 1-inch HDPE pipe to extend service as needed, tracer wire connection to the new main, and coupling to connect the 1-inch HDPE pipe or corporation stop valve to the existing $\frac{3}{4}$ -inch service lateral pipe. Disinfection and pressure testing shall also be included in this item. This item shall be paid at the unit price included in the Bid Form for each reconnection that is made to the new water main.

AA. Item 11b, Reconnect 1.5-Inch Service Lateral:

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This item shall cover the labor, equipment, and materials for reconnection of an existing 1.5-inch service lateral pipe to the new water main. Materials are to include service saddle, 1.5-inch corporation stop valve, 1.5-inch HDPE pipe to extend service as needed, tracer wire connection to the new main, and coupling to connect the 1-inch HDPE pipe or corporation stop valve to the existing 1.5-inch service lateral pipe. Disinfection and pressure testing shall also be included in this item. This item shall be paid at the unit price included in the Bid Form for each reconnection that is made to the new water main.

BB. Item 11c, Reconnect 2-Inch Service Lateral:

This item shall cover the labor, equipment, and materials for reconnection of an existing 2-inch service lateral pipe to the new water main. Materials are to include service saddle, 2-inch corporation stop valve, 2-inch HDPE pipe to extend service as needed, tracer wire connection to the new main, and coupling to connect the 2-inch HDPE pipe or corporation stop valve to the existing 2-inch service lateral pipe. Disinfection and pressure testing shall also be included in this item. This item shall be paid at the unit price included in the Bid Form for each reconnection that is made to the new water main.

CC. Item 12a, Furnish and Install ¾" – 1" Meter Box:

This item shall cover the labor, equipment, and materials for the installation of concrete water meter boxes where one is not already present or not in operable condition, as determined by INSPECTOR. See Section 03400, Precast Concrete for product requirements.

DD. Item 12b, Furnish and Install 1.5" – 2" Meter Box:

This item shall cover the labor, equipment, and materials for the installation of concrete water meter boxes where one is not already present or not in operable condition, as determined by INSPECTOR. See Section 03400, Precast Concrete for product requirements.

EE. Item 13a, Furnish and Install ¾-Inch Meter and MIU:

This item shall cover the labor, equipment, and materials for installation of ¾-inch meters and MIUs, per Standard Detail PID-05, included in the Drawings. CONTRACTOR shall be responsible for furnishing all materials and equipment per PID-05. CONTRACTOR shall be responsible for having personnel trained by meter manufacturer, Zenner USA, to install and synchronize MIUs with OWNER's automatic meter reading system. CONTRACTOR shall also be responsible for purchasing any necessary equipment to perform synchronization. This item shall be paid at the unit price included in the Bid Form for each full meter assembly installed.

FF. Item 13b, Furnish and Install 1-Inch Meter and MIU:

This item shall cover the labor, equipment, and materials for installation of 1-inch meters and MIUs, per Standard Detail PID-05, included in the Drawings. CONTRACTOR shall be responsible for furnishing all materials and equipment per PID-05. CONTRACTOR shall be responsible for having personnel trained by meter manufacturer, Zenner USA, to install and synchronize MIUs with OWNER's automatic meter reading system. CONTRACTOR shall also be responsible for purchasing any necessary equipment to perform synchronization. This item shall be paid at the unit price included in the Bid Form for each full meter assembly installed.

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GG. Item 13c, Furnish and Install 1.5-Inch Meter and MIU:

This item shall cover the labor, equipment, and materials for installation of 1.5-inch meters and MIUs, per Standard Detail PID-05, included in the Drawings. CONTRACTOR shall be responsible for furnishing all materials and equipment per PID-05. CONTRACTOR shall be responsible for having personnel trained by meter manufacturer, Zenner USA, to install and synchronize MIUs with OWNER's automatic meter reading system. CONTRACTOR shall also be responsible for purchasing any necessary equipment to perform synchronization. This item shall be paid at the unit price included in the Bid Form for each full meter assembly installed.

HH. Item 13d, Furnish and Install 2-Inch Meter and MIU:

This item shall cover the labor, equipment, and materials for installation of 1.5-inch meters and MIUs, per Standard Detail PID-05, included in the Drawings. CONTRACTOR shall be responsible for furnishing all materials and equipment per PID-05. CONTRACTOR shall be responsible for having personnel trained by meter manufacturer, Zenner USA, to install and synchronize MIUs with OWNER's automatic meter reading system. CONTRACTOR shall also be responsible for purchasing any necessary equipment to perform synchronization. This item shall be paid at the unit price included in the Bid Form for each meter assembly installed.

II. Item 14a, Reset $\frac{3}{4}$ " – 1" Meter and Meter Box:

This item shall cover the labor, equipment, and materials necessary for resetting the OWNER-furnished meters and/ or meter boxes ranging in size from $\frac{3}{4}$ " to 1". The meter, MIU, and concrete meter box may already be installed and will be present on site but may be installed in a manner that does not meet the requirements set forth in Standard detail PID-05 or needs to be relocated. CONTRACTOR shall be responsible for installing all components of the meter, meter box, and MIU assembly to meet Standard Detail PID-05 and disposing of demolished materials. This item shall be paid at the unit price included in the Bid Form for each meter/ meter box assembly reset.

JJ. Item 14b, Reset 1.5" – 2" Meter and Meter Box:

This item shall cover the labor, equipment, and materials necessary for resetting the OWNER-furnished meters and/ or meter boxes ranging in size from 1.5" to 2". The meter, MIU, and concrete meter box may already be installed and will be present on site but may be installed in a manner that does not meet the requirements set forth in Standard detail PID-05 or needs to be relocated. CONTRACTOR shall be responsible for installing all components of the meter, meter box, and MIU assembly to meet Standard Detail PID-05 and disposing of demolished materials. This item shall be paid at the unit price included in the Bid Form for each meter/ meter box assembly reset.

KK. Item 15a, Furnish and Install 1-Inch Backflow Preventer:

This item shall cover labor, equipment, and materials for installation of a new 1-inch reduced pressure principle backflow prevention assembly and frost protection bag, per Standard Detail PID 15, included in the Drawings. Any backflow preventer furnished by CONTRACTOR which fails necessary testing (see Item 17) shall be repaired or replaced until a passing test result is achieved, at no additional cost to the OWNER. This item shall be paid at the unit price included in the Bid Form for each backflow preventer assembly installed.

LL. Item 15b, Furnish and Install 1.5-Inch Backflow Preventer:

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This item shall cover labor, equipment, and materials for installation of a new 1.5-inch reduced pressure principle backflow prevention assembly and frost protection bag, per Standard Detail PID 15, included in the Drawings. Any backflow preventer furnished by CONTRACTOR which fails necessary testing (see Item 17) shall be repaired or replaced until a passing test result is achieved, at no additional cost to the OWNER. This item shall be paid at the unit price included in the Bid Form for each backflow preventer assembly installed.

MM. Item 15c, Furnish and Install 2-Inch Backflow Preventer:

This item shall cover labor, equipment, and materials for installation of a new 2-inch reduced pressure principle backflow prevention assembly and frost protection bag, per Standard Detail PID 15, included in the Drawings. Any backflow preventer furnished by CONTRACTOR which fails necessary testing (see Item 17) shall be repaired or replaced until a passing test result is achieved, at no additional cost to the OWNER. This item shall be paid at the unit price included in the Bid Form for each backflow preventer assembly installed.

NN. Item 16a, Reconfigure 1-Inch Backflow Preventer:

This item shall cover labor, equipment, and materials needed to salvage a 1-inch reduced pressure principle backflow body and reconfigure the assembly to meet the installation requirements of Standard Detail PID-15. CONTRACTOR will find these assemblies located at the corresponding address installed in a temporary configuration that does not meet the permanent installation requirements. It shall be CONTRACTOR's responsibility to reconfigure the connection from the meter through the below grade connection to the customer side plumbing. CONTRACTOR shall furnish a new frost protection bag. CONTRACTOR shall salvage galvanized steel pipe, fittings, and functional frost protection bags and return to OWNER's Corporation Yard. This item shall be paid at the unit price included in the Bid form for each backflow prevention assembly reconfigured.

OO. Item 16b, Reconfigure 1.5-Inch Backflow Preventer:

This item shall cover labor, equipment, and materials needed to salvage a 1.5-inch reduced pressure principle backflow body and reconfigure the assembly to meet the installation requirements of Standard Detail PID-15. CONTRACTOR will find these assemblies located at the corresponding address installed in a temporary configuration that does not meet the permanent installation requirements. It shall be CONTRACTOR's responsibility to reconfigure the connection from the meter through the below grade connection to the customer side plumbing. CONTRACTOR shall furnish a new frost protection bag. CONTRACTOR shall salvage galvanized steel pipe, fittings, and functional frost protection bags and return to OWNER's Corporation Yard. This item shall be paid at the unit price included in the Bid form for each backflow prevention assembly reconfigured.

PP. Item 16c, Reconfigure 2-Inch Backflow Preventer:

This item shall cover labor, equipment, and materials needed to salvage a 2-inch reduced pressure principle backflow body and reconfigure the assembly to meet the installation requirements of Standard Detail PID-15. CONTRACTOR will find these assemblies located at the corresponding address installed in a temporary configuration that does not meet the permanent installation requirements. It shall be CONTRACTOR's responsibility to reconfigure the connection from the meter through the below grade connection to the customer side plumbing. CONTRACTOR shall furnish a new frost

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protection bag. CONTRACTOR shall salvage galvanized steel pipe, fittings, and functional frost protection bags and return to OWNER's Corporation Yard. This item shall be paid at the unit price included in the Bid form for each backflow prevention assembly reconfigured.

QQ. Item 17, Test Backflow Preventer:

This item shall cover all labor, equipment, and materials necessary for testing of backflow prevention devices by a CA-NV/AWWA certified backflow prevention assembly tester. CONTRACTOR shall provide a blue tag reflecting a passing test result and maintain a record of test results per the requirements set forth in Section 15200, Valves. Re-tests for new backflow preventers and reconfigured backflow preventers shall be performed at no additional cost to OWNER, except where a repair to a reconfigured backflow preventer (see Item 19) was required to achieve a passing test result. This item shall be paid at the unit price included in the Bid Form.

RR. Item 18, Reconnect Customer Plumbing:

This item shall cover labor, equipment, and materials necessary for establishing a connection to customer plumbing to restore water service following installation of meters or backflow prevention devices. Reconnection to customer side plumbing will be variable in size and material and dependent on what the customer's plumbing consists of. CONTRACTOR should exercise care when modifying the customer's plumbing and should aim to keep modification to less than 5 feet downstream of PID's ownership unless otherwise directed by OWNER or ENGINEER. The use of Sch 40 MIP x Slip fittings shall not be allowed, Sch 80 MIP x Slip fittings, flex couplers, or other fittings as acceptable by OWNER shall instead be used. Any damage or leaks caused by CONTRACTOR's installation, as determined by OWNER or ENGINEER, shall be repaired by CONTRACTOR as soon as possible at no additional cost to OWNER. This item shall be paid at the unit price included in the Bid Form for each linear foot of pipe or fittings installed by CONTRACTOR. If OWNER must make emergency repairs to customer connection payment for this item may be withheld or CONTRACTOR may be responsible for reimbursing costs of OWNER's labor and materials.

SS. Item 19, Repair Backflow Preventer:

This item shall cover labor, equipment, and materials necessary for repairing any backflow prevention devices assigned to CONTRACTOR as a reconfigure but found to be in a condition requiring repair/ replacement, whether for internal or external components. CONTRACTOR shall furnish and install any repair/replacement components to ensure backflow prevention device is operable. This item shall be paid at the unit price included in the Bid Form.

TT. Item 20a, Excavation and Backfill Less than 5-Ft Depth:

This item shall include all labor, equipment, and materials required to excavate and backfill at a depth less than 5-feet (60-inches), not related to installation of hydrants. Trenching and backfill shall be per Town of Paradise Standard Detail TB1 and Standard Detail 2055, included in the Drawings. This item shall be paid at the unit price included in the Bid Form for each linear foot excavated and backfilled, measurement will be taken parallel to the water main or service lateral being installed. Measurements shall be documented and agreed to in the field between the CONTRACTOR and ENGINEER.

UU. Item 20b, Excavation and Backfill Greater than 5-Ft Depth, Shoring Required:

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This item shall include all labor, equipment, and materials required to excavate, backfill, and shore at a depth greater than or equal to 5-feet (60-inches), not related to installation of hydrant assemblies. Trenching and backfill shall be per Town of Paradise Standard Detail TB1 and Standard Detail 2055, included in the Drawings. Shoring shall be in accordance with all local, State, and Federal safety standards; it shall be CONTRACTOR's responsibility to determine and enforce these standards with their crews. Where CONTRACTOR identifies soil conditions in the field that necessitate shoring for excavations at a depth less than 5-feet CONTRACTOR shall install shoring equipment and use Item 16b for billing of excavation and backfill. This item shall be paid at the unit price included in the Bid Form for each linear foot excavated and backfilled, measurement will be taken parallel to the water main or service lateral being installed. Measurements shall be documented and agreed to in the field between the CONTRACTOR and ENGINEER. If at any point ENGINEER documents that CONTRACTOR has excavated to a depth greater than or equal to 5-feet and not installed shoring, payment for this item may be withheld until such time that corrections in methods and executions are made.

VV. Item 21, Asphalt Restoration – General:

This item shall include all labor, materials, equipment, and supplies necessary to restore or replace asphalt removed or damaged during execution of Work, not related to installation of hydrants. Asphalt shall be restored per Town of Paradise Standard Detail TB1 and TB2. A temporary cold patch may be made and maintained, to be replaced with a full hot-mix asphalt (HMA) patch at the earliest opportunity. CONTRACTOR shall also replace striping, as encountered, with like material. This item shall be paid at the unit price included in the Bid Form for each 3-inch square foot lift. Measurements shall be documented and agreed to in the field between the CONTRACTOR and ENGINEER. Asphalt damaged by CONTRACTOR's activities not necessary to execution of the Work shall be restored by CONTRACTOR, at no additional cost to OWNER.

WW. Item 22, Concrete Restoration – General:

This item shall include all labor, equipment, and materials necessary to restore or replace concrete damaged or removed during execution of Work, not related to installation of hydrants. This shall include the restoration of concrete per Section 03300 Cast-In-Place Concrete and Standard Details included in Drawings. This item shall be paid at the unit price included in the Bid Form for each square foot. Measurements shall be documented and agreed to in the field between the CONTRACTOR and ENGINEER. Concrete damaged by CONTRACTOR's activities not necessary to execution of the Work shall be restored by CONTRACTOR, at no additional cost to OWNER.

XX. Item 23, Unpaved Restoration – General:

This item shall include all labor, materials, and equipment necessary to restore surface conditions where excavation during execution of Work took place, not related to installation of hydrants. Surface restoration may be for gravel restoration, landscape restoration, non-vegetated dirt restoration, or other as encountered. In all cases CONTRACTOR shall restore conditions to same as or better than they were upon mobilization. This item shall be paid at the unit price included in the Bid Form for each square foot. Measurements shall be documented and agreed to in the field between the CONTRACTOR and ENGINEER. Unpaved surfaces damaged by CONTRACTOR's activities not necessary to execution of the Work shall be restored by CONTRACTOR, at no additional cost to OWNER.

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YY. Item 24, Remove and Demolish Fire Hydrant:

This item shall include all labor, materials, and equipment necessary to demolish existing fire hydrant assemblies. Components of existing hydrant assemblies that are to be demolished include hydrant heads, valve boxes, concrete pads, and breakaway valves as directed by OWNER. As necessary, CONTRACTOR may also demolish pipes and fittings of hydrant lateral to accommodate for installation of a new hydrant. All demolished material shall be safely disposed of by CONTRACTOR. This item shall be paid at the unit price included in the Bid Form for each hydrant demolished.

ZZ. Item 25, Install New Fire Hydrant Assembly:

This item shall include all labor, materials, and equipment necessary to install a new fire hydrant assembly per Standard Detail PID-03. All hydrant valves immediately downstream of the tee are to be 6" gate valves (MJ x MJ) and hydrant laterals are to be of 6" C900 PVC pressure pipe. Hydrant heads are to be CLOW 850 or CLOW 860 per Hydrant Schedule. CONTRACTOR shall not include any component of this installation in Bid Item 6b. This item shall be paid at the unit price included in the Bid Form for each hydrant installed.

AAA. Item 26, Install Hydrant Assembly with Salvaged Hydrant Head:

This item shall include all labor and equipment necessary to install a fire hydrant assembly per Standard Detail 4000. This item shall include furnishing of all materials downstream of the tee, excepting the hydrant head and breakaway valve. All hydrant valves immediately downstream of the tee are to be 6" gate valves (MJ x MJ) and hydrant laterals are to be of 6" C900 PVC pressure pipe. The hydrant head is to be salvaged and reused per the Hydrant Schedule. Determination for reusing a breakaway valve shall be made by OWNER in field. Furnishing of breakaway valves, is included in Item 24. CONTRACTOR shall not include any component of this installation in Item 6b or Item 22. This item shall be paid at the unit price included in the Bid Form for each hydrant installed.

BBB. Item 27, Furnish Hydrant Breakaway Valve:

This item shall include only the cost of furnishing Breakaway Valve CLOW Model LBI 400A. Labor costs related to installation shall not be included in Item 24 and shall instead be included in Item 23. This item shall be paid at the unit price included in the Bid Form for each breakaway valve furnished.

CCC. Item 28, Excavation and Backfill – Hydrant Assemblies:

This item shall include all labor, materials, equipment, and supplies required to excavate and backfill for hydrant assembly installations. Trenching and backfill shall be per Town of Paradise Standard Detail TB1, Standard Detail 2055, and PID 03, included in the Drawings. This item shall be paid at the unit price included in the Bid Form for each linear foot excavated and backfilled, measurement will be taken parallel to the hydrant lateral being installed. Measurements shall be documented and agreed to in the field between the CONTRACTOR and ENGINEER.

DDD. Item 29, Asphalt Restoration – Hydrant Assemblies:

This item shall include all labor, materials, equipment, and supplies necessary to restore or replace asphalt removed or damaged during execution of Work for Item 25. Asphalt shall be restored per Town of Paradise Standard Detail TB1 and TB2. A temporary cold patch may be made and maintained, to be replaced with a full hot-mix asphalt (HMA) patch at the earliest opportunity. CONTRACTOR shall also replace

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striping with like materials, as needed. This item shall be paid at the unit price included in the Bid Form for each 3-inch square foot lift. Measurements shall be documented and agreed to in the field between the CONTRACTOR and ENGINEER. Asphalt damaged by CONTRACTOR's activities not necessary to execution of the Work shall be restored by CONTRACTOR, at no additional cost to OWNER.

EEE. Item 30, Concrete Restoration – Hydrant Assemblies:

This item shall include all labor, materials, equipment, and supplies necessary to restore or install concrete, per Standard Detail 4000 and PID-03. This shall also include the restoration of concrete per Section 03300 Cast-In-Place Concrete. This item shall be paid at the unit price included in the Bid Form for each square foot. Measurements shall be documented and agreed to in the field between the CONTRACTOR and ENGINEER. Concrete damaged by CONTRACTOR's activities not necessary to execution of the Work shall be restored by CONTRACTOR, at no additional cost to OWNER.

FFF. Item 31, Unpaved Surface Restoration – Hydrant Assemblies:

This item shall include all labor, materials, equipment and supplies necessary to restore surface conditions where excavation took place during execution of Work for Item 25. Surface restoration may be for gravel restoration, landscape restoration, non-vegetated dirt restoration, or other as encountered. In all cases CONTRACTOR shall restore conditions to same as or better than they were upon mobilization. This item shall be paid at the unit price included in the Bid Form for each square foot. Measurements shall be documented and agreed to in the field between the CONTRACTOR and ENGINEER. Unpaved surfaces damaged by CONTRACTOR's activities not necessary to execution of the Work shall be restored by CONTRACTOR, at no additional cost to OWNER.

GGG. Item 32, Construct and Install Tie-Ins:

CONTRACTOR shall construct and install tie-ins for each of the tie-in details listed below and included in the Drawings. Each separate tie-in is an individual bid item. Each item shall include all required labor equipment and material costs for excavation; furnishing of materials shown on the details; necessary labor equipment and materials to complete tie-ins within the agreed upon time, not to exceed the hours of one working day; notification requirements; and flushing of all existing water mains that were shut down for the tie-in, not just the new main installed. This item shall not include costs of furnishing or installing C900 pipe under Items 6a-6f or gate valves under items 7a-7e.

Item 32a: Construct and Install Tie-In for Xeno, per Tie-In Detail 4.

Item 32b: Construct and Install Tie-In for Judy, per Tie-In detail 2.

Item 32c: Construct and Install Tie-In for Gracephil, per Tie-In Detail 5.

Item 32d: Construct and Install Tie-In for Scandia, per Tie-In Detail 6.

Item 32e: Construct and Install Tie-In for Farber, per Tie-In Detail 7.

Item 32f: Construct and Install Tie-In for Linry, per Tie-In Detail 8.

Item 32g: Construct and Install Tie-In for Cypress, per Tie-In Detail 2.

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Item 32h: Construct and Install Tie-In for Clark/ Cabernet, per Tie-In Detail 9.

Item 32i: Construct and Install Tie-In for Gate/ Pentz, per Tie-In Detail 10.

Item 32j: Construct and Install Tie-In for Honeysuckle, per Tie-In Detail 11.

Item 32k: Construct and Install Tie-In for Pentz/ Grand, per Tie-In Detail 3.

Item 32l: Construct and Install Tie-In for Pentz/ ZATM, per Tie-In Detail 12.

Item 32m: Construct and Install Tie-In for Skyway/ A-Tank, per Tie-In Detail 13.

Item 32n: Construct and Install Tie-In for Skyway/ Badermine North, per Tie-In Detail 3.

Item 32o: Construct and Install Tie-In for Skway/ Badermine South, per Tie-In Detail 14.

Item 32p: Construct and Install Tie-In for Clark-A1, per Tie-In Detail 15.

Item 32q: Construct and Install Tie-In for Clark/ Walnut, per Tie-In Detail 3.

Item 32r: Construct and Install Tie-In for Clark/ Raylinn, per Tie-In Detail 3.

Item 32s: Construct and Install Tie-In for Clark/ Wee Dell, per Tie In Detail 3.

Item 32t: Construct and Install Tie-In for Clark A-2, per Tie-In Detail 16.

Item 32u: Construct and Install Tie-In for Crandall North, per Tie-In Detail 17.

Item 32v: Construct and Install Tie-In for Crandall South, per Tie-In Detail 18.

Item 32w: Construct and Install Tie-In for Deodara, per Tie-In Detail 19.

Item 32x: Construct and Install Tie-In for Himmel South, per Tie-In Detail 20.

Item 32y: Construct and Install Tie-In for Himmel North, per Tie-In Detail 21.

Item 32z: Construct and Install Tie-In for Forest, per Tie-In Detail 22.

Item 32aa: Construct and Install Tie-In for York Towne, per Tie-In Detail 37.

Item 32ab: Construct and Install Tie-In for Paradise Ave, per Tie In Detail 23.

Item 32ac: Construct and Install Tie-In for Moon-Hazel, per Tie-In Detail 24.

Item 32ad: Construct and Install Tie-In for Fawndale, per Tie-In Detail 2.

Item 32ae: Construct and Install Tie-In for Sawmill, per Tie-In Detail 24.

Item 32af: Construct and Install Tie-In for Feather River, per Tie-In Detail 26.

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Item 32ag: Construct and Install Tie-In for Skyway-1, per Tie-In Detail 27.

Item 32ah: Construct and Install Tie-In for Skyway/ Coldren, per Tie-In Detail 3.

Item 32ai: Construct and Install Tie-In for Skyway-2, per Tie-In Detail 28.

Item 32aj: Construct and Install Tie-In for Clark/ Elliott, per Tie-In Detail 29.

Item 32ak: Construct and Install Tie-In for Clark Shadowbrook, per Tie-In Detail 30.

Item 32al: Construct and Install Tie-In for Pacific/ Princeton per, Tie-In Detail 31.

Item 32am: Construct and Install Tie-In for Orchard/ Foothill, per Tie-In Detail 32.

Item 32an: Construct and Install Tie-In for Pacific, per Tie-In Detail 33.

Item 32ao: Construct and Install Tie-In for Coral Ave, per Tie-In Detail 2.

Item 32ap: Construct and Install Tie In-for Coral Cir, per Tie-In Detail 2.

Item 32aq: Construct and Install Tie-In for Paloma/ Bella Vista, per Tie-In Detail 34.

Item 32ar: Construct and Install Tie-In for Del Monte/ Buschmann, per Tie-In Detail 35.

Item 32as: Construct and Install Tie-In for Aspen, per Tie-In Detail 1.

Item 32at: Construct and Install Tie-In for Lowry, per Tie-In Detail 2.

Item 32au: Construct and Install Tie-In for Graystone, per Tie-In Detail 36.

Item 32av: Construct and Install Tie-In for Kemlyn, per Tie-In Detail 2.

Item 32aw: Construct and Install Tie-In for Woodsdale, per Tie-In Detail 38.

1.4 PROGRESS PAYMENTS

- A. Progress Payment Request Submittal:
 - 1. Unless otherwise mutually agreed, by the 25th of each month, the CONTRACTOR shall prepare and submit monthly progress payment requests for work completed through the 25th day of the month.
 - 2. Said payment request shall be based on the breakdown of activities as specified in the Schedule of Costs described in Paragraph 1.2 above.
 - 3. The monthly schedule update shall be submitted as part of the monthly progress payment report.
- B. The ENGINEER will review progress payment requests and make a determination of the percent completion of all activities (rounded to the nearest whole percent) based on an approximate measurement of all materials supplied and work performed. Where ENGINEER finds discrepancies between CONTRACTOR's installation records and

ENGINEER's inspection records, CONTRACTOR shall work with ENGINEER to correct records or provide necessary documentation to verify installation records.

- C. In the event that the CONTRACTOR fails to provide the OWNER with an acceptable Monthly Contract Record Drawing Submittal in accordance with Section 01330, Submittal Procedures the OWNER shall deduct compensation for such monthly submittal as provided in Section 01320, Simplified Project Schedule. Said deduction shall become the sole property of the OWNER.
- D. Retention:
1. From the amount thus determined, five percent thereof will be deducted as retention by OWNER for performance security.
 2. Acceptance of separate components shall not operate to release performance retention.
 3. The amount of all payments previously made to the CONTRACTOR and any amounts due the OWNER from the CONTRACTOR for supplies, materials, services, damages, or otherwise deductible under the terms of the contract will be deducted from the remainder.
 4. The remaining amount will be paid as a progress payment by the OWNER to the CONTRACTOR on the third Friday of the succeeding month or as soon thereafter as is practical.
- E. In addition to the retention under Paragraph D above, the whole or part of any payment of the estimated amount due the CONTRACTOR may be withheld as an additional retention if such course be deemed necessary to protect the OWNER from loss due to the CONTRACTOR's failure to perform any of the following: (1) meet CONTRACTOR's payment obligations; (2) execute the work; (3) correct defective work; (4) settle damages as provided; or (5) produce substantial evidence that no stop notices will or have been filed, and/or if it has been determined that unpaid balances may be insufficient to complete the work.
- F. All material and work covered by progress payments thereupon become the sole property of the OWNER, but this provision shall not be construed as relieving the CONTRACTOR from sole responsibility for all materials and work upon which payments have been made or the restoration of any damaged work or as a waiver of the OWNER's right to require fulfillment of all of the contract terms. Said CONTRACTOR's obligation extends through the close of the warranty period.
- G. Payment for Materials:
1. At their sole discretion, the ENGINEER, will approve items for which partial payment is to be made.
 2. Proper storage and protection of materials shall be provided by the CONTRACTOR. Final payment shall be made only for materials actually incorporated in the work and, upon acceptance of the work, all materials remaining for which advance payments had been made shall revert to the CONTRACTOR, unless otherwise agreed, and partial payments made for these items shall be deducted from the final payment for the work.

1.5 FINAL PAYMENT AND RELEASE OF CLAIMS

1. Upon the completion of the work as determined by the ENGINEER, a Notice of Acceptance will be issued and recorded with the County.

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2. The OWNER will pay to the CONTRACTOR within 35 days after filing of the Notice of Acceptance, or as soon thereafter as practicable, the remaining amount due the CONTRACTOR including retainage, less all prior payments and advances whatsoever to or for the account of the CONTRACTOR for supplies, materials, services, damages, stop notices, or otherwise deductible under the terms of the contract.
3. All prior estimates and payments including those relating to extra work shall be subject to correction by this payment, which throughout this contract is called "Final Payment".

1.6 RELEASE OF CLAIMS:

- A. Neither the final payment nor any part of the retained percentage shall become due until the CONTRACTOR shall have delivered to the OWNER a complete release of all claims against the OWNER arising under and by virtue of this contract and related to undisputed amounts, including claims of Subcontractors and suppliers of either materials or labor.
- B. If disputed contract claims in stated amounts are unresolved 35 days after issuance of the Notice of Acceptance, a progress payment of undisputed amounts and retained funds will be made by OWNER upon receipt of a release specifically excluding the disputed contract claims.
- C. Claims by the OWNER against the CONTRACTOR for liquidated damages or actual damages or other causes will be a valid basis for withholding of funds by the OWNER.
- D. Upon resolution of disputed claims the CONTRACTOR shall execute a supplemental release and, upon delivery the OWNER will make final payment.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

++ END OF SECTION ++

SECTION 01310

PROJECT MEETINGS

PART 1 - GENERAL

1.1 PRE-CONSTRUCTION CONFERENCE

- A. Upon receipt of the Notice to Proceed, or at an earlier time if mutually agreeable, the ENGINEER will arrange a preconstruction conference to be attended by the CONTRACTOR's superintendent or other project representative authorized to commit on the behalf of the CONTRACTOR and to direct the performance of the work by others, the OWNER, the ENGINEER or ENGINEER's representative, and representatives of utilities, major subcontractors, and others involved in the execution of the work.
- B. The purpose of this conference will be to establish a working relationship and understanding between the parties and to discuss subjects as may be pertinent for the execution of the work.
- C. CONTRACTOR shall be prepared to discuss the following subjects, as a minimum:
 - 1. Overall Project Schedule
 - 2. Priority Schedule
 - 3. Status of Bonds and insurance
 - 4. Sequencing of critical path work items
 - 5. Weekly progress meetings
 - 6. CONTRACTOR work times and schedule
 - 7. Progress payment procedures
 - 8. Project changes and clarification procedures
 - 9. Use of site, access, office and storage areas, security and temporary facilities
 - 10. Major product delivery and priorities
 - 11. CONTRACTOR's safety plan and representative
 - 12. Special project constraints
 - 13. Planning and sequencing of work
 - 14. Public notification
 - 15. Data collection and record drawings
 - 16. Description of any subcontractors and their work
 - 17. Plan sheets and details sheets
 - 18. Town of Paradise road and sidewalk improvements
 - 19. Hydrostatic pressure and bacteriological testing

1.2 PROGRESS MEETINGS

- A. The ENGINEER will arrange and conduct weekly progress meetings. These may be held remotely. The ENGINEER will prepare and circulate a standing agenda for project meetings that can be customized each week as necessary. The CONTRACTOR may request to add items, as appropriate, to the agenda.
- B. Progress meetings will be conducted on a regular basis, at such frequency as the OWNER and CONTRACTOR may mutually agree. Progress meetings shall be attended by the ENGINEER, OWNER Operations personnel, CONTRACTOR's superintendent or other

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project representative, and representatives of all subcontractors involved in the work at the time of the meeting, required by the CONTRACTOR, or requested by the OWNER. Town of Paradise representatives may or may not participate in these meetings as needs or requests arise.

- C. The purpose of the meetings will be to facilitate the work of the CONTRACTOR and any subcontractor or other organization that is not up to schedule, resolve conflicts, identify and resolve any potential delays or necessary changes in the work and in general, coordinate and facilitate the execution of the work.
- D. The agenda of progress meetings shall include but not be limited to:
 - 1. Review of overall work progress
 - 2. Latest Construction Schedule submittal (weekly)
 - 3. Potential project delays
 - 4. Status of key submittal reviews
 - 5. Materials
 - 6. Information requests
 - 7. Safety concerns
 - 8. Workmanship concerns
 - 9. Record drawings
 - 10. Extra work items
 - 11. Public notification for water outages
 - 12. Traffic control plan
 - 13. Coordination with OWNER's operation personnel for tie-ins
 - 14. Inspection coordination
 - 15. Claims received by OWNER

1.3 CONSTRUCTION SCHEDULE REVIEW

- A. The Construction Schedule will be reviewed weekly during an agreed upon progress meeting to verify at a minimum:
 - 1. Actual start and finish dates of completed activities since the last progress meeting.
 - 2. Durations and progress of all activities not completed.
 - 3. Critical submittals/materials delivery problems.
 - 4. Potential project delays.
 - 5. Any activity behind schedule and CONTRACTOR's plan to bring it back on schedule.
 - 6. Coordination with OWNER's operation personnel for water outages.
 - 7. Expected water outages.
 - 8. Reason, logic, time, and cost data for Change Order work that is to be incorporated into the Construction Schedule or payment request form.
 - 9. Payment due to the CONTRACTOR based on percentage complete of items in the submittal payment request form.
- B. At the progress meeting, the CONTRACTOR shall provide an update of the Construction Schedule as described in Section 01320, Progress Schedule.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

++ END OF SECTION ++

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SECTION 01320
PROGRESS SCHEDULE

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. The work specified in this Section includes the CONTRACTOR's preparation, submittal, maintenance and use of a computerized Critical Path Method (CPM) Construction Schedule to plan and monitor construction progress for the project.
- B. The computerized CPM schedule shall be completed using Microsoft Project for Windows or another software package acceptable to the ENGINEER.
- C. The requirements specified under Section 01330, Submittal Procedures, also apply to the Construction Schedule initial submittal(s) and subsequent updates and revisions.

1.2 PREPARATION AND SUBMITTAL PROCEDURE

- A. Schedule Preparation and Submittal:
 - 1. The CONTRACTOR's on-site construction supervisor (superintendent, project manager, etc.) shall be directly involved in preparation of the Construction Schedule.
 - 2. The Construction Schedule shall be completed and submitted to the ENGINEER within 30 days after Notice to Proceed.
 - a. By preparing and submitting the Construction Schedule the CONTRACTOR represents that the CONTRACTOR can and intends to execute the work and portions thereof within the specified times and constraints and that the CONTRACTOR's bid covers the costs associated with the execution of work in accordance with the Construction Schedule.
 - 3. At the time of submittal of the Construction Schedule, CONTRACTOR's on-site construction supervisor shall review the schedule with ENGINEER's construction project representative.
 - 4. ENGINEER will review Construction Schedule and determine whether it meets all overall project goals, including but not limited to efforts related to minimizing impacts to the community from water outages and duration of construction activities.
 - 5. If the initial Construction Schedule submittal is not acceptable to the ENGINEER, it shall be revised in coordination with observations and comments from the ENGINEER and resubmitted within 7 days of the return of the schedule to the CONTRACTOR.

1.3 CONSTRUCTION SCHEDULE CONTENT

- A. The Construction Schedule shall be calendar-based, time-scaled, and show the durations of and relationships between the various work activities.
- B. Construction schedule shall include all projected work activities for the following 4-week period.
- C. Work activities shall be selected which reflect actual work to be performed for this specific project. No generic work activities shall be allowed.

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1. Work activities shall include non-construction activities such as submittal preparation and review, notifications, manufacturing, equipment delivery, mobilization, preparation of Contract Record Drawings, etc. for a complete picture of the CONTRACTOR's plan for project execution.
 2. Information on each activity shall include:
 - a. Concise description of the activity.
 - b. Sequence of work pertaining to water main installation, water main pressurization, water main sampling, construction and installation of tie-ins, service lateral installations and reconnections, meter and backflow installations, asphalt and concrete restoration, demobilization from project site.
 - c. Duration in working days.
 - d. The dates for the beginning and completion of each activity.
 - e. The relationship of each activity to other activities.
 - f. CONTRACTOR's traffic control plan.
 3. No work activity shall be longer than 5 working days.
 - a. Work tasks which will take longer than 5 working days shall be broken down into several work activities which are no longer than 5 working days.
 - b. Each work activity must be defined clearly and measurable. For example, a series of work activities such as "A-Zone 1, water main installation from valve V812 through V816; A-Zone 1, water main installation from valve V816 through V818; A-Zone 2, water main installation from valve V818 through V824", each with a duration less than 5 days would be acceptable. A series of work activities all labeled "A-Zone 1 water main installation", even if each had a duration less than 5 days, would not be acceptable because the tasks are not defined clearly or measurable.
 4. PDF map of areas that contractor will be performing work activities for the following 3-weeks. Work activities shall be distinguishable on map such that OWNER's operation personnel and customer service team can determine which areas will be impacted.
 5. Construction Schedule shall include projected dates and times that OWNER would be needed on-site to facilitate shut down of water mains or operation of valves.
 6. Construction Schedule shall conform with all notification requirements for informing PID customers of water outages.
 7. Provide a monthly activity for preparation of Contract Record Drawings, in accordance with Section 01330, Submittal Procedures with a minimum monthly cost of \$2,500.
- D. The schedule shall be referenced to calendar dates, and the beginning of the contract time shall be the date of receipt of the Notice to Proceed.
- E. Failure to include an activity required for the execution of the work shall not excuse the CONTRACTOR from completing the work and portions thereof within the specified times and at the price specified in the Agreement, and from meeting the constraints specified for sequence of work and control dates.

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Project Schedule

PHASE 1 MAINS REPLACEMENT PROJECT

1.4 UPDATING THE CONSTRUCTION SCHEDULE

- A. The CONTRACTOR shall review and discuss the project progress relative to the most up to date Construction Schedule (updated weekly) at the weekly progress meetings, as specified in Section 01310, Project Meetings.
 - 1. CONTRACTOR shall be prepared to provide and discuss:
 - a. Concise areas where CONTRACTOR will be performing work for the week.
 - b. Any potential constraints or limitations that the CONTRACTOR anticipates based on site reconnaissance.
 - c. Plans and sequence of work for tie-ins and water main shutdowns, including coordinating with ENGINEER and PID operations personnel.
- B. The schedule update shall reflect progress to date. The schedule update shall incorporate all revisions to logic and duration.
- C. Weekly updates to the Construction Schedule shall include any necessary detailed updates to Work Activities for the following 4-weeks.
- D. Weekly updates to the Construction Schedule shall include confirmation that CONTRACTOR is on track to complete work for each of the 37 main segments per the priority scheduled provided in Section 01130.
- E. Any variance to the priority schedule shall be submitted in writing to ENGINEER with supporting documentation as to why CONTRACTOR is unable to meet the priority schedule. Potential acceptable reasons causing a change in schedule may include delay in materials beyond CONTRACTOR's control or work being performed by Town of Paradise or other utilities interfering with CONTRACTOR's work.
- F. ENGINEER/OWNER reserves the right to update Priority Schedule as more information is made available from the Town of Paradise regarding their upcoming improvement projects and dependent on customer needs.

1.5 ADJUSTMENT OF THE CONTRACT TIME AND CHANGE ORDERS

- A. Adjustments of the contract time due to delays, additional work, or any other cause will only be issued through a contract change order in accordance with the General Conditions.
 - 1. The CONTRACTOR shall include, as part of each change order proposal for which the CONTRACTOR is requesting an adjustment in the contract duration, a proposed revised Construction Schedule.
 - 2. The proposed revised Construction Schedule shall be compared to the most recent Construction Schedule to assess overall schedule impact.
 - 3. If a Change Order is issued by the OWNER, the CONTRACTOR shall incorporate the Change Order into the Construction Schedule.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

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Project Schedule

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SECTION 01330
SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 GENERAL

- A. General:
1. This Section outlines in general the items that the CONTRACTOR must prepare or assemble for submittal during the progress of the work.
 2. There is no attempt herein to state in detail all of the procedures and requirements for each submittal.
 3. The CONTRACTOR's attention is directed to the individual Specification Sections in these Contract Documents, which may contain additional and special submittal requirements.
 4. The OWNER reserves the right to direct and modify the procedures and requirements for submittals as necessary to accomplish the specific purpose of each submittal.
 5. The CONTRACTOR shall anticipate resubmitting submittals for major materials, pieces of equipment and for control systems.
 6. Should the CONTRACTOR be in doubt as to the procedure, purpose, or extent of any submittal, inquiries shall be directed to the ENGINEER.
- B. Schedule of Submittals:
1. Within 15 days of the Notice to Proceed, the CONTRACTOR shall submit a complete list of anticipated submittals, including specification/drawing references.
 2. This list shall be updated with "late start" submittal dates within 15 days of submittal of the CONTRACTOR's Construction Schedule.
 3. The submittal dates shall be updated upon approval of the Construction Schedule and periodically thereafter.
 4. Any additional submittals shall also be included in updates.

1.2 ADMINISTRATIVE SUBMITTALS

- A. The CONTRACTOR is reminded of their obligation as required by law to make required submittals promptly to the applicable federal, state, or local agency. Failure to comply with this requirement may result in the withholding of progress payments and make the CONTRACTOR liable for other prescribed action and sanctions.
- B. The CONTRACTOR shall submit to the ENGINEER a copy of all letters relative to the Contract, transmitting notifications, reports, certifications, certified payrolls, and the like, that the CONTRACTOR submits directly to a federal, state, or other governing agency.
- C. During the performance of the Contract, the CONTRACTOR shall maintain on a daily basis, and submit to the ENGINEER as requested, full and correct information as to the number of persons employed in connection with each subdivision of the work, the classification, rate of pay, citizenship status, and address of each person, and the cost, source, and amount of each class of materials delivered, equipment received, and major construction equipment used in each subdivision of the work.

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D. Certified Payroll:

1. No later than the 25th day of each month, the CONTRACTOR shall submit to the ENGINEER a copy of the CONTRACTOR's certified payroll for the previous month, and if requested, copies of certified payrolls for Subcontractors.
2. The payrolls shall include for each employee the full name, address and social security number; the correct classification and rate of pay (including rates of contributions for, or costs assumed to provide various fringe benefits); daily and weekly hours worked; itemized deductions and actual wages paid.
3. The certified payrolls shall be on State of California forms.

1.3 TECHNICAL SUBMITTALS

A. General:

1. Requirements in this Section are in addition to any specific requirements for submittals specified in other divisions and Sections of these Contract Documents.
2. Submittal Contents and Numbering:
 - a. Each submittal shall contain material pertaining to no more than one equipment or material item and shall have the specification Section and applicable paragraph number clearly identified on the front of the submittal transmittal form.
 - b. Each submittal shall be sequentially numbered starting with the first one delivered.
 - c. Resubmittals shall include the number of the original submittal plus the suffix "01" for the first resubmittal, "02" for the second resubmittal, etc. (e.g. submittal 1-01, 1-02, etc.).
 - d. Submittals not conforming to these requirements will be rejected.
3. Submitted data shall be fully sufficient in detail for determination of compliance with the provisions and intent of the Contract Documents.
4. Coordination Responsibilities:
 - a. Shop drawing submittal and coordination are the responsibility of the CONTRACTOR; this responsibility shall not be delegated in whole or in part to Subcontractors or suppliers.
 - b. Designation of work "by others," if shown on shop drawings, shall mean that the work will be the responsibility of the CONTRACTOR rather than the Subcontractor or supplier who has prepared the shop drawings.
5. No equipment or material for which listings, drawings, or descriptive material is required shall be fabricated, purchased, or installed until the ENGINEER has reviewed and accepted such lists, final shop drawings, or other descriptive material. Installation of such equipment or material without accepted submittals will be considered defective work.
6. Submittal Review Time:
 - a. Submittals will be acted upon by the ENGINEER as promptly as possible, and returned to the CONTRACTOR.
 - b. The CONTRACTOR shall provide in their Construction Schedule the time for OWNER review of each submittal (and resubmittal for major equipment and control systems) in accordance with the allowable time specified herein and in Section 01320, Progress Schedule.
 - c. This required time for OWNER review shall not be a cause for delay in contract completion nor shall it be a reason for an extension of contract time.
 - d. If the CONTRACTOR is required by the OWNER to resubmit data, then neither the time required for the CONTRACTOR to prepare and resubmit such data, nor the

- required time for OWNER review, shall be a cause for delay in contract completion or for an extension of contract time.
- e. Responsibility for time required for preparing and submitting required data shall be assigned solely to the CONTRACTOR.
7. Excessive Submittal Review:
- a. It is considered reasonable that the CONTRACTOR shall make a complete and acceptable submittal to the ENGINEER by the second submission of a submittal item.
 - b. Additional costs of the ENGINEER's review beyond the second submission shall be the responsibility of the CONTRACTOR and may be deducted from the monthly progress payments.
 - c. This applies to all submittals including shop drawings.
8. Changes After Review:
- a. After a submittal has been reviewed and accepted, no changes or substitutions in that submittal will be allowed without the ENGINEER's approval.
 - b. If allowed, the CONTRACTOR will be responsible for the additional costs for engineering, administrative, clerical or other work required for additional review.
9. Intent of Review:
- a. Shop drawings will be reviewed for general conformance with the drawings and specifications.
 - b. The intent of the review is to determine if the CONTRACTOR is submitting materials and equipment which are in general conformance with the Contract Documents.
 - c. Detailed review of dimensions, sizes, space requirements, coordination with other equipment, and other construction details is not performed.
 - d. Additional work and costs, resulting from errors in the shop drawings shall be the CONTRACTOR's responsibility and liability.
 - e. Accuracy, coordination, and completeness of shop drawings shall be the sole responsibility of the CONTRACTOR, including responsibility to backcheck comments, corrections, and modifications from the ENGINEER's review before fabrication.
10. The CONTRACTOR shall indicate on the submittal transmittal form if and how the submittal deviates from the contract requirements.
11. Rebar Shop Drawings:
- a. The CONTRACTOR shall supply the ENGINEER with a copy of all reinforcing steel detail drawings.
 - b. Changes to the Contract Documents made by the CONTRACTOR in reinforcing steel shop drawings shall be called out in the letter of submittal.
 - c. Such changes will not be acceptable unless the ENGINEER has expressed consent to such changes in writing.
12. Shop drawings, layout diagrams, catalog cuts and data, test reports, and information in sufficient detail to show complete compliance with all specified requirements shall be furnished to the ENGINEER, covering but not limited to the following items:
- Aggregate Base Course
 - Asphalt mixes
 - Backflow preventer assemblies
 - Backflow preventer test procedures
 - Calculations for sand installed for pipe abandonment
 - Concrete mixes
 - Construction schedule and work sequence, including plan for water outages

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Demolition plan
Disinfection test results
Engineered fill
Gravel bedding
Encroachment permit granted by Town of Paradise
Equipment provided by the CONTRACTOR
Documentation for training by meter manufacturer installation of meters
Fences and barricades
Fire hydrants
Flushing plan
Frost protection bags
Hydrostatic testing procedure
Hydrostatic test results
Meter Interface Units and accessory components
Miscellaneous fabricated metals
Pipe bedding material (sand)
Pipe, fittings and specials
Pipe supports and anchors
Plumbing fixtures
Pneumatic sand blowing procedure
Pressure gauges
Reinforcing steel and layout drawings
Roofing and waterproofing
Sand for pipe abandonment
Sheet pile, shoring, and bracing
Signs and traffic control devices
Structural steel
Tapping machine
Temporary bypasses
Thrust block calculations
Certified tests
Traffic control plan
Valve and gate operators and controllers
Valves and gates
Water meters
Water meter boxes and lids
Welder certification

B. Submittal Procedure:

1. The CONTRACTOR shall submit to the ENGINEER for review one (1) electronic PDF copy of each submittal via email (shop drawings, electrical diagrams, and catalog cuts for fabricated items and manufactured items furnished under this Contract, etc.). The ENGINEER's response shall be similarly electronically transmitted via PDF in email.
2. Material submittals shall be submitted in sufficient time to allow the ENGINEER not less than ten (10) working days for review.
3. Shop drawings shall be submitted in sufficient time to allow the ENGINEER not less than twenty (20) working days for examining the shop drawings except for designs

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for turnkey items for which thirty (30) working days will be allowed, and substitutions for which (40) working days will be allowed.

4. Shop drawings shall be accurate, distinct, and complete, and shall contain all required information, including satisfactory identification of items, units, and assemblies in relation to the Contract Drawings and Specifications.
5. CONTRACTOR Certification:
 - a. Shop drawings shall be submitted only by the CONTRACTOR, who shall indicate by a signed stamp on the shop drawings, or other approved means, that the CONTRACTOR has checked and approved the shop drawings, and that the work shown is in accordance with Contract requirements and has been checked for dimensions and relationship with work of all other trades involved.
 - b. Submitting incomplete or unchecked shop drawings for the ENGINEER to correct or finish will not be acceptable, and shop drawings that, in the opinion of the ENGINEER, indicate that they have not been checked by the CONTRACTOR will be rejected and returned to the CONTRACTOR for resubmission in the proper form.
6. Return of Reviewed Submittals:
 - a. When the shop drawings have been reviewed by the ENGINEER, the appropriate number of submittals will be returned to the CONTRACTOR appropriately stamped.
 - b. If major changes or corrections are necessary, the shop drawing will be rejected and returned to the CONTRACTOR with the need for such changes or corrections indicated.
 - c. The CONTRACTOR shall correct and resubmit rejected shop drawings in the same manner and quantity as specified for the original submittal.
 - d. If changes are made by the CONTRACTOR (in addition to those requested by the ENGINEER) on the resubmitted shop drawings, such changes shall be clearly explained in a transmittal letter accompanying the resubmitted shop drawings.
7. The review of such shop drawings and catalog cuts by the ENGINEER shall not relieve the CONTRACTOR from responsibility for correctness of dimensions, fabrication details, coordination with other work, and space requirements, or for deviations from the Contract Drawings or Specifications, unless the CONTRACTOR has called attention to such deviations in writing by a letter accompanying the shop drawings and the ENGINEER approves the change or deviation in writing at the time of submission; nor shall review by the ENGINEER relieve the CONTRACTOR from the responsibility for errors in the shop drawings.
8. The CONTRACTOR agrees that shop drawing submittals processed by the ENGINEER do not become Contract Documents and are not Change Orders; that the purpose of the shop drawing review is to establish a reporting procedure and to permit the ENGINEER to monitor the CONTRACTOR's progress and understanding of the design.

C. Record Drawings

1. The CONTRACTOR shall deliver to the OWNER one complete set of final Record Drawings for OWNER records before the contract will be accepted by the OWNER. The Record Drawings will consist of a set of reproducible drawings. Record drawings shall also consist of detailed database (Excel or other ENGINEER approved file type) of work items completed, delineated by address and account number, including size and quantity of materials installed, and any serial numbers and/ or test results.
 - a. Drawings shall be provided in electronic pdf form.
 - b. The overall dimensions of each drawing submitted to the ENGINEER shall be equal to one of the OWNER's standard sheet sizes. The title block area in the

lower right hand corner of each drawing shall be clear of all linework, dimensions, details, and notes, except for the CONTRACTOR's title block. The dimensions of the title block area are minimum and are measured from the edges of the drawing sheet.

| DRAWING FORMAT | |
|-------------------------------|------------------------------------|
| Sheet Sizes Height x Width | Title Block Area Height x Width |
| 11" x 8-1/2" | 2-1/2" x 3-3/4" |
| 11" x 17" | 3" x 4" |
| 22" x 34" | 3-1/2" x 8" |

2. Contract Record Drawings
 - a. The CONTRACTOR shall keep an up-to-date set of marked-up Contract Drawings.
 - b. During the progress of the work, the CONTRACTOR shall record on the Contract Record Drawings any changes from or additions to the work described in the Plans and Specifications.
 - c. All information recorded on the Contract Record Drawings shall be clearly legible.
 - d. Information to be recorded on the Contract Record Drawings shall include, but not be limited to, the following:
 - 1) Actual location of valve boxes.
 - 2) Actual alignment of all installed pipe.
 - 3) Specific details of pipe connections, and tie-ins.
 - 4) Field dimensions.
 - 5) Additions to and/or deletions from the work, including all contract change orders.
 - 6) Other details showing as-built conditions, which are shown differently or only in general on the Drawings.
 - 7) Addenda.
 - 8) Location of buried features located during construction.
 - e. It is the CONTRACTOR's responsibility to ensure that any changes, deletions, specific construction details, etc., performed by a Subcontractor are recorded on the Contract Record Drawings.
 - f. Location Survey:
 - 1) The CONTRACTOR shall professionally survey the lateral and vertical position of anything buried underground as part of this Contract to within one inch accuracy.
 - 2) The survey information shall be included on the record drawings and the CONTRACTOR shall not be allowed to cover the buried materials until after the OWNER's inspector has verified the information as accurate and complete, and is shown on the record drawings.
 - g. Once every month, starting from the completion of mobilization as defined in Section 01505, Mobilization, the CONTRACTOR shall provide the OWNER with a copy of the then up-to-date set of marked-up Contract Record Drawings in

accordance with the provisions under Section 01200, Measurement and Payment, and Section 01320, Progress Schedule.

- h. At the end of the work, prior to Project Closeout, the CONTRACTOR shall provide the OWNER with the Contract Record Drawings, showing all "as-built" conditions.
- i. See also Section 01800, Operational Completion and Project Closeout.

D. Samples and test specimens:

- 1. Where required in the Specifications, and as determined necessary by the ENGINEER, test specimens or samples of materials, appliances, and fittings to be used or offered for use in connection with the work shall be submitted to the ENGINEER at the CONTRACTOR's expense, with information as to their sources, with all cartage charges prepaid, and in such quantities and sizes as may be required for proper examination and tests to establish the quality or equality thereof, as applicable.
- 2. All samples and test specimens shall be submitted in ample time to enable the ENGINEER to make any tests or examinations necessary, without delay to the work. The CONTRACTOR will be held responsible for any loss of time due to their neglect or failure to deliver the required samples to the ENGINEER, as specified.
- 3. The CONTRACTOR shall submit additional samples as required by the ENGINEER to ensure equality with the original approved sample and/or for determination of Specification compliance.
- 4. Laboratory tests and examinations that the OWNER elects to make in its own laboratory will be made at no cost to the CONTRACTOR, except that, if a sample of any material or equipment proposed for use by the CONTRACTOR fails to meet the Specifications, the cost of testing subsequent samples shall be borne by the CONTRACTOR.
- 5. All tests required by the Specifications to be performed by an independent laboratory shall be made by a laboratory approved by the ENGINEER. Certified test results of all specified tests shall be submitted in duplicate to the ENGINEER. The samples furnished and the cost for the laboratory services shall be at the expense of the CONTRACTOR and included in the prices bid for the associated work.
- 6. Approved sample items (fixtures, hardware, etc.) may be incorporated into the work upon approval, and when no longer needed by the ENGINEER for reference.

E. Certificates of Compliance:

- 1. A Certificate of Compliance shall be furnished for materials specified to a recognized standard or code prior to the use of any such materials in the work.
- 2. The ENGINEER may permit the use of certain materials or assemblies prior to sampling and testing if accompanied by a Certificate of Compliance.
- 3. The certificate shall be signed by the manufacturer of the material or the manufacturer of assembled materials and shall state that the materials involved comply in all respects with the requirements of the Specifications.
- 4. A Certificate of Compliance shall be furnished with each lot of material delivered to the work and the lot so certified shall be clearly identified in the certificate.

F. Quality Assurance

- 1. Source limitations: To the greatest extent possible for each unit of work, the CONTRACTOR shall provide products, materials, or equipment of a singular generic kind from a single source.
- 2. Compatibility of options:
 - a. Where more than one choice is available as options for CONTRACTOR's selection of a product, material, or equipment, the CONTRACTOR shall select an option

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which is compatible with other products, materials, or equipment already selected.

- b. Compatibility is a basic general requirement of product/material selections.

G. Review by ENGINEER

1. After review by the ENGINEER of each of the CONTRACTOR's submissions, the material will be returned to the CONTRACTOR with actions defined as follows:
 - a. NO EXCEPTIONS TAKEN: Accepted subject to its compatibility with further submittals and additional partial submittals for portions of the work not covered in this submittal. Does not constitute approval or deletion of specified or required items not shown in the partial submittal.
 - b. MAKE CORRECTIONS NOTED: Same as 1.a., except that minor corrections as noted shall be made by the CONTRACTOR.
 - c. REVISE AND RESUBMIT: Rejected because of major inconsistencies or errors which shall be resolved or corrected by the CONTRACTOR prior to subsequent review by the ENGINEER.
 - d. REJECTED - RESUBMIT: Submitted material does not conform to Plans and Specifications in major respect, e.g., wrong item, wrong size, model, capacity, or material.
2. Review actions (a) and (b) above constitute acceptance by the ENGINEER of the submittal.

H. Requests for Information

1. Requests for Information about the Contract Documents shall be directed by the CONTRACTOR to the ENGINEER using a Request for Information (RFI) form as agreed to by the OWNER and the ENGINEER. Such requests shall not be transmitted directly to the ENGINEER from a Subcontractor or Supplier.
2. A separate form shall be used for each specific item for which information is required. Requests for Information for more than one item using a single RFI form will be permitted only when the items are so functionally related that expediency indicates review of the group of items as a whole.
3. The ENGINEER will reply to the CONTRACTOR's Request for Information as soon thereafter as practicable.

I. Construction Photographs

1. Provide photographs showing the preconstruction site, construction progress, and the post-construction site for each main segment, and address/ project site location of services, hydrants, and above grade valve assemblies.
2. Format: Photographs shall be digital format
 - a. Digital Format:
 - 1) Digital photos shall be taken with a minimum 3.5 mega pixel density and provided in JPG format.
 - 2) Digital photo files shall be provide on a USB flash drive accompanied by a text description that lists the file name, date photo was taken, and brief description of the photograph and location where the photograph was taken.
3. Take a minimum of 3 preconstruction, construction progress, postconstruction photos each for every 50 LF of water main installed and abandoned.
4. For services, hydrants and above grade valve assemblies:
 - a. Take a minimum of 3 photos of the preconstruction site at each location including any customer landscaping or installations which will be removed or affected by

- the work to be conducted. Special care shall be taken to document any property markers or other survey markers encountered in the course of work.
- b. Take a minimum of 3 photos showing the progress of construction at each location, including underground plumbing, staging of CONTRACTOR's equipment and vehicles, and properties adjacent to the perimeter of the project site.
 - c. Take a minimum of 3 photos of the post-construction site and properties adjacent to the perimeter of the project site.
5. CONTRACTOR's failure to provide adequate documentation of project site or impacted areas prior to, during, or after their work may result in CONTRACTOR being held financially responsible for any damage claims received by OWNER; claims may be assessed by OWNER's management, engineering department, attorneys, or any combination thereof.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

++ END OF SECTION ++

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SECTION 01400

QUALITY CONTROL

PART 1 - GENERAL

1.1 OBSERVATION AND SUPERVISION

- A. The ENGINEER or ENGINEER's appointed representative will review the Work and the CONTRACTOR shall provide facilities and access to the Work at all times as required to facilitate this review.
- B. Responsibility:
 - 1. The CONTRACTOR shall be solely responsible to supervise and direct the entire Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to complete the Work in accordance with the Contract Documents.
 - 2. The CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, quality control, and procedures of construction and safety precautions and programs incidental thereto.
 - 3. The foregoing includes work performed by the CONTRACTOR's Subcontractors.
 - 4. The CONTRACTOR shall be responsible to see that the finished Work complies accurately with the Contract Documents.
- C. Superintendent:
 - 1. The CONTRACTOR shall designate in writing and keep on the work site at all times during its progress a technically qualified, English-speaking superintendent, who shall not be replaced without written acceptance of the ENGINEER.
 - 2. The superintendent shall be the CONTRACTOR's representative at the job site and shall have authority to act on behalf of the CONTRACTOR.
 - 3. All communications given to the superintendent shall be as binding as if given to the CONTRACTOR.
 - 4. The CONTRACTOR's superintendent shall be present at the site of the Work at all times while work is in progress. Failure to observe this requirement shall be considered as suspension of the Work by the CONTRACTOR until such time as such superintendent is again present at the site.

1.2 RESPONSIBILITY

- A. The CONTRACTOR is responsible for conducting all testing and inspection specifically required by the Specifications and otherwise necessary to ensure compliance with the Contract Documents.
 - 1. Approval of Testing Laboratories:
 - a. All laboratory work under this contract shall be performed by a laboratory approved by the ENGINEER, whether the laboratory is employed by the CONTRACTOR, or is owned and operated by the CONTRACTOR.
 - b. The basis of approval includes the following:
 - 1) Testing laboratories performing work in connection with concrete, steel, and bituminous materials shall comply with ASTM E 329 and ASTM D 3666, respectively.

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- 2) Testing laboratories performing work not in connection with concrete, steel, bituminous materials, soils and non-destructive testing shall comply with ASTM E 548.
- B. The ENGINEER may conduct periodic independent testing and inspection to verify compliance with the Contract Documents.
- C. Retesting:
 1. The OWNER reserves the right to back-charge the CONTRACTOR for retesting of deficient or defective work or products upon written notification.
 2. Compensation for retesting on behalf of the OWNER will be made through deductions from the Progress Payments.
- D. The CONTRACTOR is responsible for correcting all defective work discovered prior to final acceptance of the Contract, despite the failure of the Inspector(s) to discover it.

1.3 TESTS AND INSPECTIONS

- A. The CONTRACTOR shall be responsible for scheduling all inspections and tests required.
 1. The ENGINEER shall be given a minimum 48 business hours' notice prior to any inspections or tests.
- B. The CONTRACTOR shall be responsible for all hydrostatic pressure testing, in accordance with methods described in Section 15990.
- C. The CONTRACTOR shall be responsible for bacteriological testing of all new water mains installed, in accordance with methods described in Section 15995.
- D. CONTRACTOR shall not be responsible for initial bacteriological sampling of other preexisting water mains that were depressurized by OWNER to facilitate tie-ins, OWNER's personnel shall be responsible for collecting sample and test fee. If initial bacteriological test results are not passing, OWNER reserves the right to recuparate cost for additional flushing and sampling needed to obtain passing bacteriological results.
- E. The CONTRACTOR shall pay for all tests including, but not limited to:
 1. Inspections and tests necessary to comply with laws, ordinances, rules, regulations and orders of public authorities pursuant to General Conditions.
 2. Tests of materials, inspections, and certifications required by the Specifications.
 3. Testing, adjusting, and balancing of equipment and systems required by the Specifications.
 4. Any testing performed by the CONTRACTOR for their own quality control (e.g., compaction tests).
 5. Retests or re-inspections by the OWNER, if required, and tests or inspections required due to CONTRACTOR error or lack of required identifications of material.
 6. Any and all water used by the CONTRACTOR in any testing.
- F. Two copies of the agency or laboratory report of each test or inspection shall be provided to the ENGINEER. All tests of materials shall be made in accordance with the commonly recognized standards of national technical organizations, and such other special methods and tests as are prescribed in the Contract Documents.

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G. Purchase Orders:

1. One copy of each of the CONTRACTOR's purchase orders for materials forming a portion of the work shall be furnished to the ENGINEER, if requested.
2. Each such purchase order shall contain a statement that the materials included in the order are subject to inspection by the OWNER.
3. Materials purchased locally may be inspected at the point of manufacture or supply or at the job site, and materials supplied from points more than 50 miles from the job site will be inspected upon arrival at the job, except when other inspection requirements are provided for specific materials in other Sections of this Specification.

H. Samples:

1. The CONTRACTOR shall furnish samples of materials as are required by the ENGINEER, without charge.
2. No material shall be used until the ENGINEER has had the opportunity to test or examine such materials.
3. Samples will be secured and tested whenever necessary to determine the quality of the material.
4. Samples and test specimens prepared at the job site, such as concrete test cylinders, shall be taken or prepared by the ENGINEER in the presence and with the assistance of the CONTRACTOR.

1.4 AUTHORITY AND DUTIES OF INSPECTORS

A. INSPECTORS employed by the OWNER shall be authorized to inspect all work done and materials and equipment furnished.

1. Such inspection may extend to all or any part of the work, and to the preparation, fabrication, or manufacture of the materials and equipment to be used.
2. The INSPECTOR will not alter or waive the provisions of the Contract Documents.
3. The INSPECTOR will keep the ENGINEER informed as to the progress of the work and the manner in which it is being done.
4. The INSPECTOR will call the CONTRACTOR's attention to nonconformance with the Contract Documents that the Inspector may have observed.
5. The INSPECTOR will not be responsible for the adequacy or correctness of the CONTRACTOR's means, methods, techniques, sequences, or procedures for construction.
6. The Inspector will not approve or accept any portion of the work, issue instructions contrary to the Contract Documents, or act as foreman for the CONTRACTOR.
7. The Inspector may reject defective materials, equipment, or work when it is not in compliance with the Contract Documents.
8. The Inspector will not be responsible for:
 - a. The CONTRACTOR's quality control program.
 - b. The CONTRACTOR's safety program.
 - c. Coordinating the work or activities of the CONTRACTOR or their Subcontractor.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

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Quality Control

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++ END OF SECTION ++

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Quality Control

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SECTION 01420

REFERENCE STANDARDS AND ABBREVIATIONS

PART 1 - GENERAL

1.1 REFERENCE STANDARDS

- A. The standards referred to, except as modified, shall have full force and effect as though printed in this Specification, and shall be the latest edition or revision thereof in effect on the bid opening date, unless a particular edition or issue is indicated. Copies of these standards are not available from the OWNER.
- B. The ENGINEER will furnish, upon request, information as to how copies may be obtained.
- C. Abbreviations and terms, or pronouns in place of them, shall be interpreted as follows:

| | |
|---------|---|
| AAMA: | Architectural Aluminum Manufacturer's Association |
| AAN: | American Association of Nurserymen |
| AAR: | Association of American Railroads |
| AASHTO: | American Association of State Highway and Transportation Officials, Standard Specifications |
| AATCC: | American Association of Textile Chemists and Colorists |
| ACI: | American Concrete Institute, Standards |
| AFBMA: | Anti-Friction Bearing Manufacturer's Association, Inc. |
| AGA: | American Gas Association |
| AGC: | Associated General Contractors |
| AGMA: | American Gear Manufacturer's Association |
| AHAM: | Association of Home Appliance Manufacturer's |
| AI: | The Asphalt Institute |
| AIA: | American Institute of Architects |
| AISC: | American Institute of Steel Construction, Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings, and the AISC Code of Standard Practice |
| AISI: | American Iron and Steel Institute |
| AITC: | American Institute of Timber Construction |
| AMCA: | Air Moving and Conditioning Association, Standards |
| ANS: | American Nuclear Society |
| ANSI: | American National Standards Institute |
| APA: | American Plywood Association |
| API: | American Petroleum Institute |
| APWA: | American Public Works Association, Standard Specifications for Public Works Construction |
| ASA: | Acoustical Society of America |
| ASAE: | American Society of Agriculture Engineers |
| ASCE: | American Society of Civil Engineers |
| ASHRAE: | American Society of Heating, Refrigeration and Air Conditioning Engineers |

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| | |
|-----------|---|
| ASLE: | American Society of Lubricating Engineers |
| ASME: | American Society of Mechanical Engineers |
| ASQC: | American Society of Quality Control |
| | |
| ASSE: | American Society of Sanitary Engineers |
| ASTM: | American Society for Testing and Materials, Standards |
| AWG: | American Wire Gauge |
| AWPA: | American Wood-Preservers' Association, Standards |
| AWPI: | American Wood Preservers Institute |
| AWS: | American Welding Society |
| AWWA: | American Water Works Association, Standards |
| BBC: | Basic Building Code, Building Officials and Code Administrators International |
| BHMA: | Builders Hardware Manufacturer's Association |
| CAL/OSHA: | California/Occupational Safety and Health Administration, Standards |
| CBM: | Certified Ballast Manufacturer's |
| CCR: | California Code of Regulations |
| CEMA: | Conveyors Equipment Manufacturer's Association |
| CGA: | Compressed Gas Association |
| CISPI: | Cast Iron Soil Pipe Institute, Standards |
| CLPCA: | California Lathing and Plastering Contractors Association |
| CLFMI: | Chain Link Fence Manufacturer's Institute |
| CMAA: | Crane Manufacturers' Association of America |
| CMA: | Concrete Masonry Association |
| CRSI: | Concrete Reinforcing Steel Institute, Standards |
| CSS: | CalTrans Standard Specifications, State of California, Department of Transportation |
| DCDMA: | Diamond Core Drill Manufacturer's Association |
| DOSH: | Division of Occupational Safety and Health, State of California, Department of Industrial Relations |
| EIA: | Electronic Industries Association |
| ETL: | Electrical Test Laboratories |
| FED/OSHA: | Federal Occupational Safety and Health Administration, Standards |
| FM: | Factory Mutual |
| IBC: | International Building Code |
| ICBO: | International Conference of Building Officials |
| ICEA: | Insulated Cable Engineers Association |
| IEEE: | Institute of Electrical and Electronic Engineers |
| IES: | Illuminating Engineering Society |
| IME: | Institute of Makers of Explosives |
| IP: | Institute of Petroleum (London) |
| IPC: | Institute of Printed Circuits |
| IPCEA: | Insulated Power Cable Engineers Association |
| ISA: | Instrument Society of America |
| ISO: | International Organization of Standardization |
| ITE: | Institute of Traffic Engineers |
| MBMA: | Metal Building Manufacturer's Association |
| MPTA: | Mechanical Power Transmission of Association |
| MTI: | Marine Testing Institute |

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| | |
|---------|---|
| MSS: | Manufacturers Standardization Society |
| NAAM: | National Association of Architectural Metal Manufacturers |
| NACE: | National Association of Corrosion Engineers, Standards |
| NBS: | National Bureau of Standards |
| NCCLS: | National Committee for Clinical Laboratory Standards |
| NEC: | National Electric Code |
| NEMA: | National Electrical Manufacturers' Association, Standards |
| NFPA: | National Fire Protection Association |
| NFPA: | National Forest Products Association |
| NGLI: | National Lubricating Grease Institute |
| NMA: | National Microfilm Association |
| NWMA: | National Woodwork Manufacturers Association |
| OSHA: | Occupational Safety and Health Administration |
| PCA: | Portland Cement Association |
| PCI: | Prestressed Concrete Institute |
| RIS: | Redwood Inspection Service, Standard Specifications |
| RVIA: | Recreational Vehicle Industry Association |
| RWMA: | Resistance Welder Manufacturer's Association |
| SAE: | Society of Automotive Engineers |
| SAMA: | Scientific Apparatus Makers Association |
| SDI: | Steel Door Institute |
| SIS: | Swedish Standards Association |
| SMA: | Screen Manufacturer's Association |
| SMACNA: | Sheet Metal and Air Conditioning Contractors National Association |
| SPR: | Simplified Practice Recommendation |
| SSBC: | Southern Standard Building Code, Southern Building Code Congress |
| SSPC: | Steel Structures Painting Council, Specifications |
| SSPWC: | Standard Specifications for Public Works Construction |
| TAPPI: | Technical Association of the Pulp and Paper Industry |
| TFI: | The Fertilizer Institute |
| UBC: | Uniform Building Code of the International Conference of Building Officials |
| UPC: | Uniform Plumbing Code |
| UL: | Underwriters Laboratories |
| WCLA: | West Coast Lumbermen's Association, Standard Grading and Dressing Rules |
| WCLIB: | West Coast Lumber Inspection Bureau |
| WCRSI: | Western Concrete Reinforcing Steel Institute |
| WIC: | Woodwork Institute of California |
| WRI: | Wire Reinforcement Institute, Inc. |
| WWPA: | Western Wood Products Association |

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1.2 OTHER ABBREVIATIONS

A. Other common abbreviations that may be found in the Specifications are, but may not be limited to:

| | | | |
|---------------------------------|----------------------------|---|--------------|
| acrylonitrile butadiene styrene | ABS | plastic | Fig. |
| alternating current | a-c, AC | figure | flg |
| American wire gauge | AWG | flange | ft-lb |
| ante meridiem | am | foot-pound | |
| ampere | A, amp | | |
| average | avg | gallon | gal |
| | | gallons per hour | gph, gal/hr |
| | | gallons per minute | gpm, gal/min |
| | | gallons per second | gps, gal/s |
| biochemical oxygen demand | BOD | gram | g |
| brake horsepower | bhp | ground fault current interrupter | GFCI |
| British thermal unit | Btu | | |
| | | hand/off/automatic heating, ventilating, and air conditioning | HOA HVAC |
| Centigrade | C | Hertz | Hz |
| chlorinated polyvinyl chloride | CPVC | hour | hr |
| company | Co | horsepower | hp |
| cubic inch | cu in, in ³ | | |
| cubic foot | cu ft, CF, ft ³ | | |
| cubic yard | cu yd, CY, yd ³ | inch | in |
| cubic feet per minute | cfm, ft ³ /min | inch-pound | in-lb |
| cubic feet per second | cfs, ft ³ /s | input/output | I/O |
| | | inside diameter | ID |
| decibel | dB | instrumentation and control | I&C |
| decibels, A-weighted | dBA | | |
| degree Centigrade (Celsius) | °C, C | kilovolt | kV |
| degree Fahrenheit | °F, F | kilovolt-ampere | kVA |
| diameter | diam, ø | kilowatt | kW |
| direct current | d-c, DC | kilowatt-hour | kWhr |
| dollars | \$ | | |
| ductile iron | DI | length | L |
| | | length to least radius of gyration | L/r |
| each | ea, @ | light emitting diode | LED |
| efficiency | eff | linear | lin |
| elevation | El., Elev | linear foot | LF, lin ft |
| ethylene propylene rubber | EPDM | liter | l |
| exhaust fan | EF | | |
| | | manhole | MH |
| Fahrenheit | F | maximum | max |
| feet | ft | mean sea level | MSL |
| feet per hour | fph, ft/h | megawatt | MW |
| feet per minute | fpm, ft/min | mercury | Hg |
| feet per second | fps, ft/s | | |
| fiberglass reinforced | FRP | | |

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| | | | |
|-----------------------------|-------------------------|----------------------------------|----------------------------|
| miles per hour | mph | Diagrams | P&ID |
| milli-amp | mA | | |
| milliampere DC | mAdc | random access memory | RAM |
| milligram | mg | reinforced concrete pipe | RCP |
| milligrams per liter | mg/l | reinforced concrete cylinder | |
| milliliter | ml | pipe | RCCP |
| millimeter | mm | relative humidity | RH |
| million gallon | MG, mil | revolutions per minute | rpm |
| million gallons per day | mgd | | |
| minimum | min | second | sec, s |
| motor control center | MCC | specific gravity | sp gr |
| | | square foot | sq ft, SF, ft ² |
| net positive suction | | square inch | sq in, in ² |
| head available | NPSHA | square yard | sq yd, SY, yd ² |
| net positive suction | | stainless steel | SS |
| head required | NPSHR | standard | std |
| number | No., # | standard cubic feet | |
| National Pipe Thread | NPT | per minute | scfm |
| | | symmetrical | sym. |
| Operation and Maintenance | O&M | | |
| ounce | oz | total dynamic head | tdh |
| outside diameter | OD | totally-enclosed, fan-cooled | TEFC |
| | | totally-enclosed, non-ventilated | TENV |
| parts per million | ppm | twisted shielded | TWSH |
| post meridiem | pm | | |
| plus or minus | +/-, ± | ultraviolet | UV |
| polytetrafluorethylene | PTFE | United States | US, USA |
| polyvinyl chloride | PVC | | |
| pound | lb | | |
| pound-force | lbf | | |
| pounds per square foot | psf, lb/ft ² | variable frequency drive | VFD, AFD |
| pounds per square inch | psi, lb/in ² | volt | V |
| pounds per square inch | | volts alternating current | VAC |
| absolute | psia | volts direct current | VDC |
| pounds per square inch | | | |
| gage | psig | water to cement | W/C, wc |
| Process and Instrumentation | | water column | W.C. |

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

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Reference Standards and Abbreviations

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SECTION 01500

TEMPORARY CONSTRUCTION FACILITIES AND UTILITIES

PART 1 - GENERAL

1.1 CONTRACTOR'S STAGING AREA AND WORK ACCESS PLAN

- A. The CONTRACTOR shall make their own arrangements for space that may be required and shall bear all associated costs.
- B. The CONTRACTOR shall obtain any necessary local use permits required to accomplish the above.
- C. On-Site Project Office:
 - 1. The CONTRACTOR shall maintain near the work in progress a suitable office or other protected area in which shall be kept project copies of the Contract Documents, project progress records, project schedule, shop drawings and other relevant documents which shall be accessible to the OWNER and ENGINEER during normal working hours.
 - 2. The CONTRACTOR shall make their own arrangements for additional space that may be required and bear all associated costs.

1.2 STORAGE - GENERAL

- A. The CONTRACTOR shall provide any temporary storage required for the protection of equipment and materials as recommended by manufacturers of such materials.

1.3 STORAGE YARDS

- A. CONTRACTOR shall be responsible for any temporary use permit required by the Town of Paradise.
- B. The CONTRACTOR shall provide temporary storage yards as required for the storage of materials that are not subject to damage by weather conditions.
- C. Materials such as pipe, reinforcing and structural steel, shall be stored on pallets or racks, off the ground, and stored in a manner to allow ready access for inspection and inventory.
- D. Materials such as sand, base rock, or similar shall be stored in such a manner that complies with the Best Management Practices for the prevention of stormwater pollution prevention.
- E. Materials such as meter and backflow prevention assemblies shall be stored in such a manner that the materials are not subject to damage by weather conditions, are in accordance with manufacturer's recommendations, and do not compromise the function or warranty.

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- F. CONTRACTOR shall be responsible for storing any salvaged owner-furnished materials in the same manner as above and shall be responsible for replacing or repairing any owner-furnished materials if damaged while in CONTRACTOR's possession.
- G. Temporary gravel surfacing of the storage yards shall meet with the approval of the ENGINEER.

1.4 PARKING AREAS

- A. Control vehicular parking to preclude interference with public traffic or parking, access by emergency vehicles, OWNER's operations, or construction operations.

1.5 VEHICULAR TRAFFIC

- A. Comply with Laws and Regulations regarding closing or restricting use of public streets or highways. No public road, private road, or driveway shall be blocked or closed. In no case shall both lanes of the roadway be closed without an approved and established detour. Traffic control plans shall be subject to review, approval and encroachment conditions imposed by the Town of Paradise for public roads and by the OWNER for private roads.
- B. Conduct the Work to interfere as little as possible with public travel, whether vehicular or pedestrian.
- C. Whenever it is necessary to cross, close, or obstruct roads, driveways, and walks, whether public or private, provide and maintain suitable and safe bridges, detours, or other temporary expedients for accommodation of public and private travel.
- D. CONTRACTOR shall always maintain access for emergency vehicles and public transit.
- E. "Red Flag" weather days or Evacuation warnings as issued by the State or local government agency may require adjustments to the CONTRACTOR's normal traffic control operations.

1.6 DELIVERY-STORAGE-HANDLING

- A. General:
 - 1. The CONTRACTOR shall deliver, handle, and store materials and equipment in accordance with supplier's written recommendations and by methods and means which will prevent damage, deterioration, and loss including theft.
 - 2. Delivery schedules shall be controlled to minimize long-term storage at the site and overcrowding of construction spaces.
 - 3. In particular, the CONTRACTOR shall provide delivery/ installation coordination to ensure minimum holding or storage for material or equipment recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other sources of loss.
- B. Transportation and Handling:
 - 1. Materials and equipment shall be transported by methods to avoid damage and shall be delivered in dry, undamaged condition in supplier's unopened containers or packaging.

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2. The CONTRACTOR shall provide equipment and personnel to handle the materials, and equipment by methods that will prevent soiling and damage.
 3. The CONTRACTOR shall provide additional protection during handling to prevent marring and otherwise damaging packaging, and surrounding surfaces.
- C. Storage and Protection:
1. Materials and equipment shall be stored in accordance with supplier's written instructions, with seals and labels intact and legible. Exposed metal surfaces of valves, fittings and similar materials shall be coated with grease in accordance with manufacturer's recommendations to prevent corrosion. Sensitive materials and equipment shall be stored in weather-tight enclosures and temperature and humidity ranges shall be maintained within tolerances required by supplier's written instructions.
 2. For exterior storage of fabricated materials, they shall be placed on sloped support above ground. Materials or equipment subject to deterioration shall be covered with impervious sheet covering; ventilation shall be provided to avoid condensation.
 3. Loose granular materials shall be stored on solid surfaces in a well-drained area and shall be prevented from mixing with foreign matter.
 4. Inspection:
 - a. Storage shall be arranged to provide access for inspection.
 - b. The CONTRACTOR shall periodically inspect to assure materials and equipment are undamaged and are maintained under required conditions.
 5. Storage shall be arranged in a manner to provide access for maintenance of stored items.

1.7 PROJECT SECURITY

- A. The CONTRACTOR shall make adequate provision for the protection of the work area against fire, theft and vandalism, and for the protection of the public and OWNER personnel against exposure to injury, and for the security of any off-site storage areas.
- B. All costs for this protection shall be included within the CONTRACTOR's bid.

1.8 TEMPORARY UTILITIES

- A. The CONTRACTOR shall provide and pay for all necessary temporary telephones, fuel, power, potable water, sanitary, and proper toilet accommodations. CONTRACTOR shall not use OWNER-owned utilities.
- B. The temporary facilities to be provided by the CONTRACTOR as described above shall conform to all requirements in regard to operation, safety, and fire hazards of State and local authorities and of Underwriters.
- C. CONTRACTOR shall return the site and facilities to their original "as-found" condition, unless otherwise specified in the Contract Documents, at the completion of the project.

1.9 SOUND CONTROL

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

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- B. Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer, so as to produce a maximum noise level of 85 dBA at 5 feet.
- C. No internal combustion engine shall be operated on the project without said muffler.
- D. Special Precautions for Inhabited Areas:
 - 1. In inhabited areas, particularly residential, operations shall be performed in a manner to minimize unnecessary noise generation.
 - 2. In residential areas, special measures shall be taken to suppress noise generated by repair and service activities during the night hours.

1.10 DUST/AIR POLLUTION CONTROL

- A. The CONTRACTOR shall take whatever steps, procedures, or means as are required to prevent dust conditions being caused by operations in connection with the execution of the Work; and on any road which the CONTRACTOR or any of their Subcontractors are using, excavation or fill areas, demolition operations, or other activities.
- B. Control shall be by sprinkling, use of dust palliatives, modification of operations, or any other means acceptable to agencies having jurisdiction.
- C. Damage to personal property, etc., resulting from the CONTRACTOR's construction operations shall be borne by the CONTRACTOR at no cost to the OWNER.
- D. The CONTRACTOR shall keep the streets and work area clean at all times by means of mechanical sweepers or hand sweeping. Water will be used for dust control only, and not for cleaning streets.
- E. Burning of waste, rubbish, or other debris will not be permitted on or adjacent to site.

1.11 WASTE DISPOSAL

- A. The CONTRACTOR shall dispose of surplus materials, waste products, and debris and shall make necessary arrangements for such disposal from each project site by the end of each working day. The CONTRACTOR shall obtain written permission from property owner prior to disposing surplus materials, waste products, or debris on private property. Said written permission shall be provided to OWNER, as requested.
- B. All waste disposal shall be done in accordance with applicable laws and regulations.
- C. Landfill Disposal:
 - 1. If the CONTRACTOR proposes to dispose of construction debris, trench spoils, excavation spoils, etc., at a landfill, the CONTRACTOR shall be responsible to provide and pay for all permits and analyses required by the landfill.
 - 2. CONTRACTOR shall expect that asbestos cement pipe will be encountered in the project Work and has been identified in the drawings where it is known to be present by OWNER. CONTRACTOR shall be responsible for the appropriate disposal of said material at no additional cost to OWNER.

3. CONTRACTOR shall expect that pre-fire meter interface units containing batteries will be encountered in the project Work and it shall be CONTRACTOR's responsibility to properly dispose of said materials at no additional cost to OWNER.
 4. If the analyses determine that materials other than those listed above are hazardous, then an equitable adjustment of the Contract for the cost of hazardous waste disposal will be made in accordance with the General Conditions, and the following:
 - a. Time extension or contract costs will not be granted for delays that could have been avoided by the CONTRACTOR redirecting their forces and equipment to perform other work on the contract.
- D. Ditches, washes, or drainageways shall not be filled.
- E. Disposal operations shall not create unsightly or unsanitary nuisances.
- F. The CONTRACTOR shall maintain the disposal site in a condition of good appearance and safety during the construction period.
- G. Prior to final acceptance of the work, the CONTRACTOR shall have completed the leveling and cleanup of the disposal site.
- H. CONTRACTOR shall not store spoils on private property without prior written permission by property owner. All spoils resulting from excavation shall be removed upon completion of site restoration and grading.

1.12 CLEAN UP

- A. Throughout the period of construction, the CONTRACTOR shall keep the work site free and clean of all rubbish and debris, and shall promptly remove from the site, or from property adjacent to the site of the work, all unused and rejected materials, surplus earth, concrete, sand, base rock, spoils, slurry plaster, and debris.
- B. Containment measures shall be used or installed beneath material stockpiles to prevent the remainder of unused materials from being left as debris when the site work is complete. Under no circumstances, absent prior written permission from a property owner, shall remaining spoils or unused backfill materials be spread out on the ground surface of an adjacent property as a manner of disposal.
- C. Upon completion of the work, and prior to final acceptance, the CONTRACTOR shall remove from the vicinity of the work all plant, surplus material, and equipment belonging to the CONTRACTOR or used under their direction during construction.

1.13 TEMPORARY ENCLOSURES

- A. When sandblasting, spray painting, spraying of insulation, or other activities inconveniencing or dangerous to property or the health of employees, the public or construction workers, are in progress, the area of activity shall be enclosed adequately to contain the dust, over spray, or other hazard.
- B. In the event there are no permanent enclosures of the area, or such enclosures are incomplete or inadequate, the CONTRACTOR shall provide suitable temporary enclosures as required by the ENGINEER to meet field conditions in accordance with the

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recommendations of the owner-furnished equipment supplier (if applicable) and the CONTRACTOR's equipment supplier requirements.

- C. Said temporary or permanent enclosures shall be adequately ventilated to ensure the safety of the workers.

1.14 DRAINAGE

- A. The CONTRACTOR shall take all necessary actions as required to meet discharge requirements of the California State Water Program (California State Water Resources Control Board) and other pertinent local ordinances and regulations pertaining to dewatering and/or site drainage discharged into storm drains and creeks. This may include, but may not be limited to, the use of retention basins and silt basins to settle most of the solids prior to discharge.
- B. In excavation, fill, and grading operations, care shall be taken to disturb the pre-existing drainage pattern as little as possible.
- C. Particular care shall be taken not to direct drainage water onto private property or into streets or drainageways inadequate for the increased flow.
- D. Drainage means shall be provided to protect the work.

1.15 TEMPORARY LIGHTING

- A. The CONTRACTOR shall provide temporary lighting in all work areas sufficient to maintain a lighting level during working hours not less than the lighting level required by OSHA standards.

1.16 CONSTRUCTION FACILITIES

- A. Construction hoists, elevators, scaffolds, stages, shoring, and similar temporary facilities shall be of ample size and capacity to adequately support and move the loads to which they will be subjected. Railings, enclosures, safety devices, and controls required by law or for adequate protection of life and property shall be provided.
- B. Temporary supports shall be designed with an adequate safety factor to assure adequate load bearing capability. Whenever required by safety regulations, the CONTRACTOR shall submit design calculations for staging and shoring prior to application of loads.

1.17 REMOVAL OF TEMPORARY FACILITIES AND UTILITIES

- A. At such time or times as any temporary construction facilities and utilities are no longer required for the work, the CONTRACTOR shall notify the ENGINEER of their intent and schedule for removal of the temporary facilities and utilities, and obtain the ENGINEER's approval before removing the same.
- B. As approved, the CONTRACTOR shall remove the temporary facilities and utilities from the site as CONTRACTOR's property and leave the site in such condition as specified, as directed by the ENGINEER, and/or as shown on the Drawings.

- C. In unfinished areas, such as planted medians, the condition of the site shall be left in a condition that will restore original drainage, evenly graded, seeded or planted as necessary, and left with an appearance equal to, or better than original.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

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SECTION 01505

MOBILIZATION

PART 1 - GENERAL

1.1 GENERAL

- A. Mobilization shall include the obtaining of all bonds, insurance, and licenses; moving onto the site of all plant and equipment; furnishing and erecting plants, temporary buildings, and other construction facilities; all as required for the proper performance and completion of the work.
- B. Mobilization shall include but not be limited to the following principal items:
 - 1. Moving on to the site of all CONTRACTOR's equipment.
 - 2. Assembling all required staff, equipment, and materials at each assigned project site. Demobilizing all of the same and removing all debris or leftover materials at the conclusion of work.
 - 3. Developing construction water supply, coordinated with PID operations and/or PID customer service. Cost for construction water shall be the responsibility of the CONTRACTOR.
 - 4. Providing all on-site CONTRACTOR communication facilities, including telephones, and radio pagers and any radio communications facilities required for the CONTRACTOR to coordinate their forces.
 - 5. Installing temporary construction power, wiring, and lighting facilities, as needed.
 - 6. Providing on-site sanitary facilities and potable water facilities as specified in Section 01500, Temporary Construction Facilities and Utilities.
 - 7. Arranging for and erection of the CONTRACTOR's work and storage yard, including site security. No project space or storage shall be provided by the DISTRICT.
 - 8. Posting all EPA and OSHA required notices and establishment of safety programs.
 - 9. Post all required labor and EEOE notices.
 - 10. Have the CONTRACTOR's superintendent at the job site full time.
 - 11. Submittal and OWNER acceptance of the Construction Schedule.
 - 12. Establishing site security, lighting, fencing, and signing.
 - 13. Obtaining all bonds, insurance and licenses.
 - 14. Providing an organization chart of the project and for the CONTRACTOR's firm. The project chart shall include the name, title and responsibilities of each position which is involved in the work.
 - 15. Other mobilization items approved by the ENGINEER required to support the complete work (e.g., Health and Safety Plans for Hazardous Waste).

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

++ END OF SECTION ++

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Mobilization

PHASE 1 MAINS REPLACEMENT PROJECT

PARADISE IRRIGATION DISTRICT
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Mobilization

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SECTION 01610

GENERAL PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SCOPE

- A. All products furnished and installed under this contract shall conform to the general stipulations set forth in this Section except as otherwise specified in other Sections.

1.2 COORDINATION

- A. The CONTRACTOR shall coordinate all details of the work.

1.3 ENVIRONMENTAL REQUIREMENTS

- A. Altitude: Provide materials and equipment suitable for installation and operation under rated conditions at 2,300 feet above sea level.
- B. Provide equipment and devices installed outdoors or in unheated enclosures capable of continuous operation within an ambient temperature range of -10 degrees F to 120 degrees F.

1.4 WORKMANSHIP AND MATERIALS

- A. Materials shall be suitable for service conditions.
- B. All materials shall be designed, fabricated, and assembled in accordance with recognized and acceptable engineering and shop practice. Individual parts shall be manufactured to standard sizes and gages so that repair parts, furnished at any time, can be installed in the field. Like parts of duplicate units shall be interchangeable. Equipment shall not have been in service at any time prior to delivery, except as required by tests.
- C. Except where otherwise specified, all metal which will be exposed to weather, submerged or otherwise exposed to moisture shall be either non-ferrous or stainless steel, as the application may require.

1.5 STORAGE

- A. Upon delivery, all equipment and material shall immediately be stored and protected until installed in the work.
- B. Equipment and materials shall not show any pitting, rust, decay, or other deleterious effects of storage when installed in the work.

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General Product Requirements

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1.6 INSTALLATION AND OPERATION

- A. Materials shall not be installed except by, or with the guidance of, qualified personnel having the knowledge and experience necessary for proper results. When so specified, or when employees of the CONTRACTOR or their subcontractors are not qualified, such personnel shall be field representatives of the manufacturer of the equipment or materials being installed.
- B. Metering equipment shall only be installed by CONTRACTOR employees having completed required training by Zenner USA to install said equipment. Proof of such training for each individual responsible for installing meters or meter interface units shall be provided to the ENGINEER.
- C. Acceptance of work in connection with the installation of equipment furnished by others will be subject to approval of the field representative of the ENGINEER or OWNER. The CONTRACTOR shall be responsible for planning, supervising, and executing the installation of work, and the approval or acceptance of ENGINEER or the field representative will not relieve the CONTRACTOR of responsibility for defective work.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

++ END OF SECTION ++

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General Product Requirements

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SECTION 01630

OWNER-FURNISHED MATERIALS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The work specified in this Section includes the unloading, handling, installation, connection, and testing of OWNER-furnished materials as indicated on the Plans and as specified herein.
- B. OWNER-furnished materials are considered to be those materials that CONTRACTOR will encounter in the field and is assigned to modify. Examples of such materials and corresponding bid items are listed below:
 - 1. Wilkins 975XL2 backflow preventers and frost bags – Bid Items 16a, 16b, and 16c
 - 2. Hydrants (owned by Town of Paradise) various models listed in Section 15200 HS Hydrant Schedule and hydrant break away valves Schedule – Bid Item 26
- C. Definitions: As used in this Section, the following terms have the meaning indicated:
 - 1. Manufacturer:
 - a. The Company with whom the OWNER has a contract to procure the materials.
 - 2. Defective:
 - a. An adjective which when modifying the word "materials" refers to OWNER-furnished materials and indicates that such materials are unsatisfactory, faulty or deficient; that such materials do not conform to the provisions of the Specifications; that such materials do not meet the requirements of any inspection, test, or approval referred to in the Specifications; or that such materials are damaged.
 - 3. Approved shop drawings:
 - a. The drawings and data supplied by Manufacturer for OWNER-furnished materials, as approved by the ENGINEER or OWNER.

1.2 QUALITY ASSURANCE

- A. Materials specifications and approved shop drawings:
 - 1. The CONTRACTOR will be presumed cognizant, prior to entering into the Contract, of the provisions of the Specifications and approved Shop Drawings.
 - 2. Shop drawings may be requested from ENGINEER by the CONTRACTOR to whom the Contract is awarded.
- B. Installation:
 - 1. OWNER-furnished materials shall be installed as specified in Paragraph 3.1.
- C. Operation:
 - 1. OWNER-furnished materials shall be operated in accordance with the written instructions furnished with the materials, and with the instructions issued by representatives of manufacturers.

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Owner-Furnished Materials

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1.3 STORAGE AND HANDLING

- A. CONTRACTOR shall document condition of all owner-furnished materials prior to beginning their work.
- B. CONTRACTOR shall make INSPECTOR aware of any materials found to be deficient prior to proceeding with their work.
- C. Any materials deemed deficient by INSPECTOR in field that were assigned to be salvaged, reset, reconfigured, or reused shall be returned to OWNER's corporation yard at 6344 Clark Rd, Paradise, CA 95969.
- D. Any owner-furnished materials found to be in good or operational condition, prior to CONTRACTOR's work, and damaged by CONTRACTOR shall be replaced by CONTRACTOR at no additional cost to OWNER.
- E. The CONTRACTOR shall be responsible for storage and handling of owner-furnished materials that are removed until such time that materials are re-installed or returned to OWNER's corporation yard.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 INSTALLATION

- A. The CONTRACTOR shall install OWNER-furnished materials in accordance with the instructions and recommendations furnished with the materials, approved shop drawings, instructions of the representatives of materials manufacturers and installation manuals, and as indicated on the Plans.
- B. The CONTRACTOR shall be responsible to include in their bid all labor, materials, and equipment required to install the OWNER-furnished materials and make the complete installation operate satisfactorily.
- C. Materials shall not be installed or operated except by, or with the guidance of, qualified personnel having the knowledge and experience necessary to obtain proper results.
- D. CONTRACTOR shall be responsible for engaging any other manufacturer of owner-furnished materials for appropriate training, as may be necessary.

3.2 FIELD FINISHING

- A. Touch up or repair damage to coatings resulting from unloading, storage, installation, testing, and startup.
- B. If finish coats are damaged extensively after installation, completely repaint.

- C. Touch up, repair, or complete repainting shall match color of original paint, and shall be fully compatible with applied primers and finish.

3.3 FIELD TESTING

- A. Field Testing shall consist of Functional Testing performed by the CONTRACTOR or CONTRACTOR's certified personnel.
- B. The CONTRACTOR shall repair, replace or correct to the satisfaction of the ENGINEER all defective items caused by the CONTRACTOR's improper placement and handling of OWNER-furnished materials.
- C. After testing, the CONTRACTOR shall repair, replace, or correct faulty work.

3.4 SERVICES OF MANUFACTURER'S REPRESENTATIVES

- A. The CONTRACTOR and their employees shall fully cooperate with the manufacturer's representatives.
- B. The CONTRACTOR shall notify the ENGINEER in writing 15 calendar days before the manufacturer's representative needs to be present at the site.

++ END OF SECTION ++

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Owner-Furnished Materials

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SECTION 01660

PRODUCT STORAGE HANDLING AND DELIVERY

PART 1 - PART 1 - GENERAL

1.1 DESCRIPTION

- A. Description of Work
 - 1. CONTRACTOR shall protect goods in accordance with manufacturer recommendations and the requirements of the Contract Documents.
 - 2. CONTRACTOR shall make all arrangements and provisions necessary for the protection of goods during delivery to the Point of Destination.
 - 3. Manufacturer containers may be opened for inspection and verification of the goods in accordance with Article 8 of the General Conditions. Upon completion of inspection, the goods shall be repackaged and remain unopened until the time of installation, unless recommended by the manufacturer or otherwise specified.
 - 4. CONTRACTOR shall require SUPPLIER to provide a list of goods that are to be delivered prior to shipment.
- B. Coordination: CONTRACTOR shall require SUPPLIER to coordinate with CONTRACTOR for goods that require special protection, storage or handling

1.2 SUBMITTALS

- A. Provide submittals required by this section, at least 30 days prior to delivery of the goods.
- B. SUPPLIER shall provide CONTRACTOR with a list of equipment and all other goods and devices subject to damage or useful life decrease due to:
 - 1. Temperatures below 40 degrees F or above 120 degrees F
 - 2. Relative humidity above ninety (90) percent
 - 3. Or exposure to rain
- C. Fully Protected Storage
 - 1. SUPPLIER shall provide CONTRACTOR with a list of goods which could be damaged by low or high temperature and require temperature-controlled storage space.
 - 2. SUPPLIER shall provide CONTRACTOR a list of goods that require protection from contamination by dust, dirt, and moisture.
 - 3. SUPPLIER shall provide CONTRACTOR with a list of goods that require storage at specific humidity levels as recommended by manufacturer.
- D. SUPPLIER Storage and Handling Instructions

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Product Storage Handling and Delivery

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1. SUPPLIER shall provide specific storage and handling instruction for each loose-shipped item of equipment, instrumentation, materials and crates provided by the System SUPPLIER.

1.3 PRODUCT STORAGE AND HANDLING

- A. Goods shall be boxed, crated, or otherwise completely enclosed and protected during shipment, handling, and storage. Each container shall be clearly marked with SUPPLIER's name, project name, and location. Goods shall be protected from exposure to the elements and shall be kept thoroughly dry at all times.
- B. Goods shall be protected against impact, abrasion, discoloration, and other damage.
- C. All goods shall be protectively wrapped and/or packaged, using materials commensurate with the weight and configuration of the part, the method of handling, and the method of transportation.
- D. Contact or pressure points shall be sufficiently protected when using steel or elastic banding.
- E. Goods too heavy to be handled or transported by one man shall be adapted for handling with pallet trucks and/or forklifts
- F. Packages shall be clearly marked with product numbers, sizes, materials, quantities, etc.
- G. Notice of Enclosed Instructions: All delivered packages containing goods shall have notices clearly visible on the exterior of the package indicating that maintenance instructions are enclosed.
- H. In the event that partial payment is to be made for materials prior to their installation, CONTRACTOR shall make materials and storage facility available to ENGINEER for inspection.

PART 2 - PART 2 - PRODUCTS (NOT USED)

PART 3 - PART 3 - EXECUTION (NOT USED)

+ + END OF SECTION + +

SECTION 01800

OPERATIONAL COMPLETION AND PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 GENERAL

- A. The Work will be considered operationally complete when all technical and administrative submittals, testing, training and startup are completed satisfactorily in accordance with the Contract Documents.
- B. Operational completion shall apply to the project in its entirety.

1.2 CERTIFICATION OF OPERATIONAL COMPLETION

- A. Prior to requesting the ENGINEER's inspection for certification of each phase as operationally complete, the CONTRACTOR shall certify in writing that each phase of the Work is operationally complete and shall submit a list of known items still to be completed or corrected (punchlist) prior to Contract Completion.
- B. The following items shall be completed:
 - 1. OWNER has been advised of any pending insurance changeover requirements.
 - 2. Specific warranties, maintenance agreements, final certifications and similar documents have been submitted.
 - 3. All tools, spare parts, extra stocks of materials, and similar physical items have been delivered to OWNER.
 - 4. Instruction of OWNER's operation/maintenance personnel and start up testing has been completed and documentation turned over and approved by the ENGINEER.
 - 5. Submittal and acceptance of all O&M manuals.
 - 6. Submittal of Contract Record Drawings
 - 7. Changeover of locks to OWNER's cores/keys.
- C. Punchlist:
 - 1. When the CONTRACTOR considers that the Work, or a portion or phase thereof which the OWNER agrees to accept separately, is operationally complete, the CONTRACTOR shall certify in writing that the work is operationally complete and shall prepare and submit to the ENGINEER a comprehensive list of items to be completed or corrected prior to Contract Completion (punchlist).
 - 2. The ENGINEER may add additional work items to the punchlist.
 - 3. Failure to include an item on the punchlist does not alter the responsibility of the CONTRACTOR to complete all Work in accordance with the Contract Documents.
 - 4. Upon receipt of the CONTRACTOR's punchlist, the ENGINEER will make an inspection to determine whether the Work or designated portion thereof is operationally complete.
 - 5. If the ENGINEER's inspection discloses any item, whether included on the CONTRACTOR's list, that is not in accordance with the requirements of the Contract Documents, the CONTRACTOR shall, upon notification by the ENGINEER and before an issuance of the Certificate of Operational Completion is provided, complete or correct such item.

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Operational Completion and Project Closeout

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6. The CONTRACTOR shall then submit a request for another inspection by the ENGINEER.
7. When the Work or designated portion thereof is accepted by the ENGINEER to be operationally complete, the ENGINEER will prepare a Certificate of Operational Completion.
8. The date of Operational Completion shall be the date of the ENGINEER's inspection and acceptance.

1.3 DESCRIPTION OF PROJECT CLOSEOUT

- A. Closeout is hereby defined to include general requirements near the end of the Contract Time, in preparation for Final Acceptance, Final Payment, normal termination of Contract, occupancy by OWNER and similar actions evidencing completion of the Work.
- B. Specific requirements for individual units of Work are specified in Sections of Divisions 2 through 15.

1.4 FINAL CLEANUP

- A. At completion, leave project clean and ready for use.
 1. Legally dispose of waste materials, debris and rubbish off the site.
 2. Remove grease, dust, dirt, stains, labels, fingerprints and other foreign materials from exposed and enclosed surfaces.
 3. Repair, patch and touch up all affected finished and unfinished surfaces, curbs, gutters, sidewalks, landscaping, and fencing to match adjacent surfaces.
 4. Broom clean paved surfaces, rake clean other surfaces of grounds. Vacuum clean all interior surfaces, rake clean other surfaces of grounds.

1.5 RECORD DRAWINGS

- A. The CONTRACTOR shall prepare and submit Contract Record Drawings for the OWNER.
 1. The CONTRACTOR shall make a record of changes during construction on prints of the Drawings provided by the OWNER for this purpose (Contract Record Drawings) as described in Section 01330, Submittal Procedures.
 2. The reproducible drawings on which changed conditions are recorded shall be returned to the ENGINEER prior to project completion.

1.6 GUARANTEES

- A. The General Conditions cover the CONTRACTOR's responsibility to remedy defects due to faulty workmanship and materials which appear within one year from the date of Final Acceptance.
- B. Special guarantees are required by various Sections of the Specifications. Assemble written guarantees, label and submit to the ENGINEER.
 1. Provide the "Warranty Form" included in the General Conditions.
 2. Equipment guarantees shall be written in the manufacturer's standard form and shall be countersigned by the Subcontractor or supplier and the CONTRACTOR.
 3. All other guarantees shall be written on the Subcontractor's or supplier's letterhead and shall be countersigned by the CONTRACTOR.

1.7 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Spare parts and maintenance materials are required by various Sections of the Specifications.
 - 1. Parts and materials shall be packaged so as to preclude damage in normal handling and storage.
 - 2. Packages shall be labeled with full description of contents and project name and clearly identified as to which item of equipment they belong to. CONTRACTOR shall maintain a spare parts inventory list which shall be provided to the OWNER prior to Final Acceptance.
 - 3. Submit packaged parts and materials to ENGINEER.
 - 4. Submit the value of all spare parts.

1.8 FINAL INSPECTION

- A. Prior to requesting ENGINEER's final inspection for certification of Final Acceptance and Final Payment, complete the following and list known exceptions (if any):
 - 1. Submit Final Payment request with final releases and supporting documentation not previously submitted and accepted.
 - 2. Submit copy of final punchlist of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, endorsed and dated by ENGINEER.
 - 3. Submit Consent of Surety.
 - 4. Revise and submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Certify in writing that the work has been completed in accordance with the Contract Documents, and request ENGINEER's final inspection.
- C. Reinspection:
 - 1. Within seven (7) days after receipt of the CONTRACTOR's notice that the work has been completed, including punchlist items resulting from earlier inspections, and excepting incomplete items delayed because of acceptable circumstance, the ENGINEER will reinspect the work.
 - 2. Upon completion of reinspection, ENGINEER will either prepare a certificate of Final Acceptance or advise the CONTRACTOR of work not complete or obligations not fulfilled as required for Final Acceptance.
 - 3. If necessary, inspection procedure will be repeated.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

++ END OF SECTION ++

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Operational Completion and Project Closeout

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SECTION 01810

CLEANING

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. This Section covers the work necessary for cleaning during construction and final cleaning on completion of the Work.

1.2 GENERAL

- A. At all times maintain areas covered by the Contract and public properties free from accumulations of waste, debris, and rubbish caused by construction operations.
- B. Pollution Control:
 - 1. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
 - 2. Do not burn or bury rubbish and waste materials on project site.
 - 3. Volatile wastes shall be properly stored in covered metal containers and removed daily.
 - 4. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
 - 5. Do not dispose of wastes into streams or waterways.
- C. Construction materials such as concrete forms and scaffolding shall be neatly stacked by the CONTRACTOR when not in use. The CONTRACTOR shall promptly remove splattered concrete, asphalt, oil, paint, corrosive liquids, and cleaning solutions from surfaces to prevent marring or other damage.
- D. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
- E. Use cleaning materials only on surfaces recommended by cleaning material manufacturers.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 CLEANING DURING CONSTRUCTION

- A. During execution of Work, clean site and public properties and dispose of waste materials, debris, excess staged materials, and rubbish to assure that buildings, grounds, and public properties are maintained free from accumulations of waste materials and rubbish.
- B. Wet down dry materials and rubbish to lay dust and prevent blowing dust.

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Cleaning

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- C. Provide approved containers for collection and disposal of waste materials, debris, and rubbish. Empty containers within one day after they are full.
- D. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from exposed and semi-exposed surfaces.
- E. Repair, patch, and touch up marred surfaces to specified finish to match adjacent surfaces.
- F. Vacuum clean all interior spaces, including inside cabinets. Broom clean paved surfaces, rake clean other surfaces of grounds.
- G. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.
- H. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.
- I. Vacuum clean interior building areas when ready to receive finish painting and continue vacuum cleaning on an as-needed basis until building is ready for substantial completion or occupancy.

3.2 FINAL CLEANING

- A. See Section 01800, Operational Completion and Project Closeout, for additional requirements.
- B. At the completion of Work on all Contracts and immediately prior to final inspection, cleaning of the entire Project will be accomplished according to the following provisions:
 - 1. The CONTRACTOR shall thoroughly clean, sweep, wash, and polish all work and equipment, including finishes. The cleaning shall leave the structures and site in a complete and finished condition to the satisfaction of the ENGINEER.
 - 2. Should the CONTRACTOR not remove rubbish or debris or not clean the site as specified above, the OWNER reserves the right to have the cleaning done at the expense of the CONTRACTOR.
 - 3. In preparation for substantial completion, conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces.
 - 4. Remove grease, dust, dirt, stains, labels, and other foreign materials from sight-exposed interior and exterior finished surfaces; polish surfaces so designated to shine finish.
 - 5. Repair, patch, and touch up marred surfaces to specified finish, to match adjacent surfaces.
 - 6. Broom clean paved surfaces; rake clean other surfaces of grounds.
 - 7. Remove from the OWNER's property all temporary structures and all materials, equipment, and appurtenances not required as a part of, or appurtenant to, the completed work. See Section 01500 Temporary Construction Facilities and Utilities.

++ END OF SECTION ++

01810-2
Cleaning

SECTION 02200
SITE PREPARATION

PART 1 - GENERAL

1.1 DEFINITIONS

- A. Interfering or Objectionable Material: Trash, rubbish, and junk; vegetation and other organic matter, whether alive, dead, or decaying; topsoil.
- B. Clearing: Removal of interfering or objectionable material lying on or protruding above ground surface.
- C. Grubbing: Removal of vegetation and other organic matter including stumps, buried logs, and roots greater than 0.5 inch caliper to a depth of 6 inches below subgrade.
- D. Stripping: Removal of topsoil remaining after applicable scalping is completed.
- E. Project Limits: Areas, as specified or shown on drawings, within which work of installing new water mains, service laterals, meters, meter boxes, backflow prevention devices, hydrant assemblies, reconnection to customer plumbing and abandonment or demolition of all such existing facilities is to be performed.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 GENERAL

- A. Clear, grub, and strip areas only as needed for demolition and installation of new piping and appurtenances, but no further. Leave adjacent landscaping or vegetation in good shape, avoid damage or removal. Where damage to surface treatments or landscaping is incurred outside of the necessary work area as determined by the ENGINEER, CONTRACTOR shall repair or replace materials.
- B. Do not injure or deface vegetation that is beyond the edge of the meter box or backflow preventer assembly vertical area without approval of ENGINEER. In such instances where ENGINEER approves, collect photo documentation before and after the installation. Do not injure or deface vegetation that is not designated for removal.
- C. Do not stage vehicles, equipment, or tools on private property or where they may interfere with traffic or driveways.
- D. Do not stage vehicles, equipment, or tools where they may cause damage to landscape.
- E. Do not remove mailboxes, bollards, decorative lawn ornaments, planters, firewood, or any other belongings from the premises of the work site.

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Site Preparation

3.2 INITIAL SITE INSPECTION

- A. CONTRACTOR shall ensure that they are at the correct site and verify that there is an operational water service before proceeding with installation work. Verification shall include the following:
 - 1. Identification may be made according to data provided by the ENGINEER which may consist of an address, location of a GPS point, use of a existing service valve Identification number, use of a Service Lateral Identification number or SLR, or by the Location ID tag number affixed to a meter.
 - 2. CONTRACTOR shall also use service maps, GIS based maps, and field assessments to ensure that the correct service and address is identified.
- B. If CONTRACTOR believes there to be a discrepancy between the address, GPS coordinates, SLR ID or Location ID provided for any particular address CONTRACTOR shall notify ENGINEER and shall not proceed with installation at the site in question until ENGINEER resolves discrepancy.
- C. Contractor shall inspect the existing service and shall not proceed without approval the ENGINEER or INSPECTOR if conditions are such that damage to the existing piping would result from process of tapping into the existing main.
- D. If a water meter box is flooded so that the angle stop valve, temporary jumper connection, or customer side valve is fully or partially submerged, bail or pump out water before disconnecting any portion of the service. Dispose of the water in a safe and proper manner as to not cause harm to surroundings or others. If water is not found to be due to a leak, then work can proceed. Ensure that standing water in the meter box does not come into contact with any internal portion of the angle stop, service lateral, meter, backflow prevention device, customer side valve, or customer side plumbing.
- E. If a water meter box is filled with dirt, remove the dirt to a minimum of 2" below the angle stop, temporary jumper connection, or customer side valve, whichever results in the greatest depth.
- F. Upon encountering a site where an old meter remains installed in line with the service Lateral, where no service lateral replacement is scheduled, do not proceed with installation at that site without approval from ENGINEER or INSPECTOR.
- G. If the service lateral is leaking upstream of the angle stop valve notify the ENGINEER or INSPECTOR and do not proceed with installation of that site without approval.
- H. If a leak is identified on the customer side plumbing notify the ENGINEER or INSPECTOR and do not proceed with installation at that site without approval.

3.3 LIMITS

- A. As follows, but not to extend beyond Project limits.
 - 1. Trench Excavation: 4 feet from trench centerline, regardless of actual trench width.
 - 2. Waste Disposal:
 - a. Clearing: Maximum of 36 inches beyond meter box. Minimum of 24 inches beyond meter box but no less, where possible.

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- b. Grubbing: Maximum of 36 inches beyond meter box and as necessary to establish neat, finished appearances. Minimum of 24 inches beyond meter box but no less, where possible.
- 3. Structures: 5 feet outside of new structures.
- 4. Overhead Utilities:
 - a. Clearing and Grubbing: entire width of easement and right-of-way.
 - b. Scalping and Stripping: whenever grading is required.

B. Remove rubbish, trash, and junk from entire area within Project limits.

3.4 CLEARING

- A. Clear areas within limits shown or specified.
- B. Cut off shrubs, brush, weeds, and grasses to within 2 inches of ground surface.

3.5 GRUBBING

- A. Grub areas within limits shown or specified.

3.6 STRIPPING

- A. Do not remove topsoil until after scalping is completed.
- B. Strip areas within limits to minimum depths shown or specified. Do not remove subsoil with topsoil.

3.7 DISPOSAL

- A. Clearing and Grubbing Debris: Dispose of debris offsite.
- B. Strippings:
 - 1. Dispose of strippings that are unsuitable for topsoil or that exceed quantity required for topsoil offsite or approved by ENGINEER.
 - 2. Stockpile topsoil in sufficient quantity to meet Project needs. Dispose of excess strippings as specified for clearing and grubbing.

++ END OF SECTION ++

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Site Preparation

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Site Preparation

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SECTION 02220

DEMOLITION

PART 1 - GENERAL

1.1 DEFINITIONS

- A. "Demolish": CONTRACTOR shall remove from the site as property of CONTRACTOR. Demolition includes disconnecting, removal, loading, repairs, cleanup, transportation, unloading, disposal permits and fees, disposal, and all other items required to remove the material from the site.
- B. "Salvage": CONTRACTOR shall remove from area of Work and place in location designated by ENGINEER. Equipment is property of OWNER. Salvage includes disconnecting, removal, repairs, cleanup, loading, transportation, unloading, and all other items required to remove and relocate the material.
- C.
- D. "Relocate": CONTRACTOR shall relocate material shown to new locations shown on Drawings or stated herein. Relocation includes disconnecting, removal, reconnecting, attaching, repairs, and all other items required to relocate material to new location.
- E. "Abandon": CONTRACTOR shall disconnect and leave in place as specified.
- F. "Materials": Any and all items and objects that are scheduled, specified, or shown to be demolished, salvaged, removed, relocated, or abandoned.

1.2 SUBMITTALS

- A. Action Submittals:
 - 1. Product Information: Grout, sealants, and bonding agents to be used for patching.
- B. Informational Submittals:
 - 1. Plan and schedule phased demolition, including limits of demolition, as part of and consistent with the Progress schedule specified in Section 01320, Construction Progress Schedule.
 - 2. Methods of demolition and equipment proposed to demolish materials.
 - 3. Copies of any authorizations and permits required to perform Work.
 - 4. Copies of Hazardous Materials Inspection Reports.
 - 5. Repair procedures for demolition of materials beyond limits shown on Drawings.

02220-1
Demolition

PART 2 - PRODUCTS

2.1 GENERAL

- A. CONTRACTOR shall provide all materials and equipment in suitable and adequate quantity as required to accomplish the Work shown, specified, and as required to complete the project.

PART 3 - EXECUTION

3.1 GENERAL

- A. Drawings are based on available information. The Work may differ from what is shown or specified. CONTRACTOR shall be responsible for determining the work required by inspecting each site.

3.2 SAFETY REQUIREMENTS

- A. All Work shall be done in conformance with all applicable rules and regulations pertaining to safety.
- B. Hazardous Materials:
 - 1. See General Conditions.
 - 2. Existing facilities, or portions thereof, to be demolished may contain hazardous materials such as asbestos cement piping, residual chemicals in existing or abandoned piping, lead-based paint, mercury seals, or other unknown hazardous materials.

3.3 SEQUENCE

- A. Contractor to be responsible for the sequence of Work or coordinating with ENGINEER and OWNER the sequence of work pertaining to demolition of existing utilities and associated water outages
- B. Conform to 01130 Special Project Constraints as applicable.

3.4 COORDINATION

- A. Coordination with ENGINEER:
 - 1. Only materials specified herein, shown on the Demolition Drawings, or approved by ENGINEER in the field shall be demolished, salvaged, removed, relocated, or abandoned.
 - 2. Verify materials scheduled to be demolished, salvaged, removed, relocated, or abandoned with ENGINEER prior to performing Work.
 - 3. Do not remove materials without prior approval of ENGINEER.
 - 4. Provide at least 3 full working days' notice to ENGINEER prior to start of Work.
 - 5. CONTRACTOR shall be responsible for providing schedule notifying ENGINEER to turn off affected services or facilities a minimum of 3 working days before starting Work.
 - 6. Provide temporary services during interruptions to affected services or facilities as acceptable to ENGINEER.

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7. ENGINEER will indicate limits of Work if not clearly shown on drawings.
- B. Coordination with Other Utility Owners not PID:
 1. Notify utility owners to turn off affected services or facilities before starting Work.
 2. Provide not less than 72 hours' notice to utility owners prior to shutdown, unless otherwise directed by utility owners.
 3. Provide temporary services during interruptions to affected services or facilities as acceptable to utility owners.
 4. Inform ENGINEER of scheduled shutdown of other utilities.

3.5 LIMITS

- A. Drawings define minimum portions of materials to be demolished. Unless otherwise shown, rough cuts or breaks may be made to limits of demolition shown. If rough cuts or breaks are made exceeding limits shown, CONTRACTOR shall repair the cuts or breaks back to the dimensions shown on Drawings at CONTRACTOR's expense.
- B. If limits are not clear on the Drawings or Demolition Photographs, limits shall be as directed by ENGINEER.
- C. All areas not within the limits of demolition Work shown on the Drawings, or as specified herein, shall be left undisturbed, unless necessary for demolition of materials.

3.6 DEMOLITION

- A. General:
 1. Inspect condition of materials to be demolished prior to bidding to assess potential for salvage value.
 2. Remove all materials associated with existing equipment that is to be demolished.
 3. Materials within limits of demolition will become the property of CONTRACTOR.
 4. All materials from the demolition process shall be removed safely from the project site same day of demolition and shall not be left on private property. They shall be disposed of in accordance with applicable federal, state, and city regulations. CONTRACTOR is responsible for determining these regulations and shall bear all costs associated with disposal of the materials.
- B. Pavement and Curbs:
 1. Provide saw cut at all concrete and pavement surfaces and curb removal limits and where neat connection lines are required.
 2. Surfaces exposed by demolition activities shall be repaired and finished to provide a uniform, smooth, level transition between adjacent surfaces. If surfaces are left disturbed beyond a single workday, they shall be temporarily patched, secured, or cordoned off to allow for safe resumption of vehicular or foot traffic, as applicable.
- C. Concrete:
 1. Damaged concrete shall be removed to solid concrete. Damaged concrete shall include concrete that is soft, spalled, cracked, or otherwise damaged as determined by ENGINEER.
 2. Depth of removal shall be as determined by ENGINEER unless otherwise shown or specified.

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3. Reinforcing shall be cut and removed unless otherwise shown or instructed by ENGINEER.
4. Spalled edges may be required to be resawn at the discretion of the ENGINEER.
5. Protect adjacent structures and equipment from damage during Work.
6. Exposed surfaces following demolition activities shall be repaired and finished to provide a uniform, smooth, and level transition between adjacent surfaces.
7. Remove and repair designated cracked and damaged concrete areas shown in accordance with this section, Section 03900 Concrete Restoration, and Section 03 30 03, Cast-in Place Concrete.

D. Water Service Laterals:

1. Support and protect all utility lines exposed by Work.
2. Existing water service laterals being replaced are to be abandoned, except where they present a conflict for other construction activities they can be demolished. Demolition of water service laterals shall include a leakproof closure at the water main; existing corporation stop valves, welded valves, or other valves on the water main may be used if operational.

E. Meters and Meter Boxes:

1. Demolish existing water meter box, water meter, and meter interface unit where a new one is being installed.
2. Metering infrastructure is commonly located on the boundary of the public utility easement and private property. CONTRACTOR shall take necessary steps to protect any private property affected during demolition of metering infrastructure.

F. Water Mains

1. Support and protect all utility lines exposed by Work.
2. Demolish existing water main to the extent needed to furnish and install blind flange on existing main.
3. Demolition and shut off of the existing water main shall be completed in accordance with the notification requirements of this section, Section 01130 Special Project Constraints, and Section 01 11 00 Summary of Work.

G. Water Valves

1. Support and protect all utility lines exposed by work.
2. Existing water valves are to be abandoned, except where shown on drawings or where they present a conflict for other construction activities they can be demolished. Demolition of existing water valves not shown on drawing shall not take place without prior approval by ENGINEER.
3. Existing water valve lids shall be demolished, and the surface restored to adjacent conditions.

4.

3.7 SALVAGE

A. General:

1. Salvage materials for OWNER's own use where shown.
2. Remove materials with extreme care so as not to damage.
3. Materials shall be removed from Work area same day and shall not be left on site or on private property.

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4. Store materials in location designated by ENGINEER.
 5. Clean and protect materials from dust, dirt, natural elements, and store as directed.
- B. Backflow Prevention Devices
1. CONTRACTOR shall salvage backflow prevention devices as directed by the ENGINEER.
 2. CONTRACTOR shall transport and unload all salvaged backflow prevention devices to the Paradise Irrigation District Corporation Yard weekly, at a date and time agreed upon by CONTRACTOR and OWNER.
 3. CONTRACTOR shall keep a record of all backflow prevention devices salvaged and shall provide record to ENGINEER at the completion of each main segment.
 4. Record of salvaged backflow prevention devices shall include the serial number, size, and condition.

3.8 RELOCATION

- A. ENGINEER will determine condition of materials prior to removal.
- B. Remove all materials associated with items to be relocated.
- C. Existing materials shall not be damaged during removal.
- D. Properly store and maintain materials in same condition as when removed.
- E. Clean and protect materials from dust, dirt, natural elements, and store as directed.
- F. Hydrants
1. CONTRACTOR shall reuse existing water hydrant heads, per Hydrant Schedule. Hydrants heads are to be relocated only as directed by OWNER, in field. Hydrants are property of the Town of Paradise and not Paradise Irrigation District.
 2. Hydrants are property of the Town of Paradise and not Paradise Irrigation District. However, the full hydrant assembly is maintained by Paradise Irrigation District.

3.9 ABANDONMENT

- A. Structures: Break holes into or core drill below-grade concrete structures to be abandoned in place to allow water to freely migrate through.
- B. Water Service Laterals:
1. Install restrained caps or plugs at demolished end in a manner that will prevent entrance of soil, groundwater, or moisture.
- C. Water Mains:
1. General:
 - a. The sequence of abandoning water mains is to be done in accordance with Section 01130 Special Project Constraints. CONTRACTOR shall notify ENGINEER a minimum of 3 full working days before beginning abandonment of water mains.
 - b. CONTRACTOR shall pothole at ends of pipe section to be abandoned as shown on drawings. CONTRACTOR shall cut existing pipe from distribution network.
 - 1) Install blind flange on existing valves as shown on drawings, or as directed by OWNER.

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- 2) Remove existing valves as shown on drawings, or as directed by OWNER.
- 3) For water mains 6 inches or small in diameter, cap demolished ends with a watertight plug to prevent entrance of soil, moisture, or groundwater.
- 4) For water mains greater than 6 inches in diameter, pipes shall be filled with blown sand and demolished ends shall be capped. CONTRACTOR shall provide material submittal for sand and procedural submittal, including method of drying pipe. CONTRACTOR shall also submit installed volume calculations for each filled abandoned pipe section to verify that the sections are completely filled.
 - a) Sand must be dry, clean, and free of organic material.

D. Piping and Conduits:

1. General: Piping and conduits to be abandoned shall be capped with a watertight plug at demolished end in a manner that will prevent entrance of soil, groundwater, or moisture.
2. Pressurized Services: Install restrained caps or plugs at the demolished ends, unless otherwise shown.

3.10 REPAIR AND REPLACEMENT

- A. Any damaged materials scheduled to be salvaged or relocated shall be repaired by the CONTRACTOR to the satisfaction of ENGINEER or replaced at the CONTRACTOR's expense.
- B. Any damage to areas not within the limits of demolition Work shown on the Drawings, or as specified herein shall be repaired or replaced to original precontract conditions at the CONTRACTOR's sole expense. This includes but is not limited to property owner's fencing, landscaping, lawn ornaments, mailboxes, and driveways. CONTRACTOR shall be responsible for documenting condition of areas to be affected by work prior to construction.

3.11 DISPOSAL

- A. Dispose of materials offsite in licensed landfills and in accordance with all local, state, and federal regulations. CONTRACTOR is responsible for obtaining any and all necessary permits for disposal.

++ END OF SECTION ++

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SECTION 02300

EARTHWORK

PART 1 - GENERAL

1.1 COORDINATION

- A. Prior to excavation, CONTRACTOR shall provide normal notice to Underground Service Alert (USA North 811) at 1-800-624-2444.

1.2 DESCRIPTION

- A. Section includes: All excavating, backfilling, filling, grading, subgrade preparation and disposing of earth materials as required. It also includes all temporary means needed to prevent discharge of sediment to watercourses from dewatering systems or erosion.

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM)
 - 1. ASTM C33, Standard Specification for Aggregate Material.
 - 2. ASTM D422, Method for Particle-Size Analysis of Soils.
 - 3. ASTM D423, Liquid Limit of Soils.
 - 4. ASTM D427, Shrinkage Factors of Soils.
 - 5. ASTM D698, Test Method for Laboratory Compaction Characteristics of Soil.
 - 6. ASTM D1556, Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
 - 7. ASTM D2922, Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 8. ASTM D2166, unconfined compressive strength of soils.
- B. Occupational Safety and Health Administration (OSHA)
 - 1. Title 29, Code of Federal Regulations, Part 1926

1.4 SYSTEM DESCRIPTION

- A. Permits and Regulations:
 - 1. Perform excavation Work in compliance with applicable requirements of governing authorities having jurisdiction.
 - 2. Obtain all necessary permits for Work in roads, rights-of-way, railroads, etc. Also, obtain permits as required by local, state and federal agencies for discharging water from excavations, for erosion control, and for prevention of air and water pollution.

1.5 SUBMITTALS

- A. Test Reports - Borrow, Backfill, and Grading: Testing laboratory shall submit copies of the following reports directly to ENGINEER:
 - 1. Tests on borrow material.
 - 2. Tests on footing subgrade.
 - 3. Field density tests.

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4. Optimum moisture - maximum density curve for each soil used for backfill.
 5. Reports of observations for conformance of borrow material to the Project Geotechnical Report.
 6. Quality Control Plan: Names and phone numbers of independent testing companies that will be used to perform soil and asphalt concrete testing, qualifications, and proposed procedures for performing tests and providing test results to ENGINEER.
- B. Submit to the ENGINEER samples of all materials, including select backfill, general backfill, bedding, crushed stone, sand and topsoil. Submit samples of the proposed material at least seven days in advance of its anticipated use.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General:
1. All material may be tested by the laboratory and approved by the ENGINEER.
 2. No material shall be placed without the approval of the OWNER.
- B. Pipe Locating Wire:
1. Pipe locating wire shall be AWG No. 12, solid copper wire with type UF insulation, attached to the pipe at a minimum 3 ft interval with a minimum of one full wrap of duct tape.
 2. Provide at least 6-mil PVC electrical tape insulation around wire where adjacent to metal pipe, valves, and in all valve boxes.
- C. Fill Material:
1. Classification:
 - a. Fill adjacent to structures to a distance measured horizontally from the structure that is equal to the depth from the finished grade is classified as Select Fill.
 - b. Outside these limits, the fill is classified as Common Fill, unless otherwise specified.
 2. Common Fill:
 - a. Common Fill materials shall consist of soils obtained from on-site excavations or off-site sources that are uniformly mixed, contain no organic material, and have been passed through a 3-inch screen.
 - b. The maximum expansion of off-site materials shall be 1.5% as performed on a sample remolded to approximately 9% of the maximum dry density as determined in accordance with ASTM D 698 at 2% below optimum moisture content under a 100 psf surcharge pressure.
 - c. If on-site material is unsuitable as determined by the ENGINEER in the field, imported fill shall be used.
 3. Select Fill:
 - a. Select fill or backfill is material selected by the ENGINEER from the excavation.
 - b. Select material shall be free of organic or other unsuitable materials and shall not contain rocks, or unbroken masses of soil larger than 4 inches in greatest dimension.
- D. Aggregate Base:

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1. Class 2, $\frac{3}{4}$ inch maximum conforming to Section 26 of the Caltrans Standard Specifications. Aggregate bedding shall be placed in six (6) inch layers and compacted.
- E. Granular Bedding:
1. Well-graded sand and gravel materials.
 2. Unfrozen, friable, and no clay balls, roots, or other organic material.
 3. Clean or gravelly sand with less than 5% passing No. 200 sieve, as determined in accordance with ASTM D1140, or gravel or crushed rock within maximum particle size and other requirements as follows unless otherwise specified.
 4. $\frac{3}{4}$ -inch maximum particle size, except $\frac{1}{4}$ inch for stainless steel pipe, copper pipe, tubing, and plastic pipe under 3-inch diameter.
 5. Conduit and Direct-Buried Cable:
 - a. Sand, clean or clean to silty, less than 12% passing No. 200 sieve.
 - b. Individual Particles: Free of sharp edges.
 - c. Maximum Size Particle: Pass a No. 4 sieve.
 - d. If more than 5% passes No. 200 sieve, the fraction that passes No. 40 sieve shall be non-plastic as determined in accordance with ASTM D4318.
- F. Sand:
1. Natural or manufactured granular material, containing no organic material.
 2. Sand Bedding shall be $\frac{1}{4}$ " minus in size, free of clay and organic material and of such size that 100% will pass through a #4 sieve and not more than 5% would pass through a #200 sieve. Material must meet the approval of the OWNER and shall be placed to a depth of four (4) inches below the grade of the bottom of the pipe. When rocky trenching conditions are encountered, over-excavation and over-sanding in compacted layers, as specified by the ENGINEER, may be required.
- G. Gravel Surfacing
1. Gravel Surfacing will be crushed rock, angular, and well-graded.
 2. Maximum size of $\frac{3}{4}$ inch, at least 50% passing the No 4. screen, between 10 and 30% passing the No. 10 screen and no more than 15% passing the No. 40 screen.
 3. Color to be selected by OWNER.
- H. Controlled Low Strength Material (CLSM):
1. Select and proportion ingredients to obtain compressive strength between 50 and 150 psi at 7 days in accordance with ASTM D4832. Sufficient cement shall be added to meet the strength and material requirements given below and as required to provide sufficient strength for compacting overlying trench backfill. Provide certified mix design and test results in accordance with submittal requirements.
 2. Materials:
 - a. Cement: ASTM C150, Type I or II, two sacks minimum per cubic yard.
 - b. Aggregate: ASTM C33, maximum Size 7. The amount of material passing a No. 200 sieve shall not exceed 12%. The above No. 200 sieve material shall be well graded so as to avoid segregation. The minus #200 sieve fraction shall be nonplastic.
 - c. Fly Ash (if used): ASTM C618, Class C or F.
 - d. Water: Clean, potable, containing less than 500 ppm of chlorides.
 3. Mix Design:
 - a. The CONTRACTOR and its suppliers shall determine the materials and proportions used to meet the requirements of these Specifications. Make daily checks of the

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aggregate gradation and adjust the mix design as required. Modify the CLSM mix as necessary to meet the flowability, pumpability, and set time requirements for each individual pour.

- b. At least 30 days before placing CLSM, submit to the ENGINEER a mix design for each CLSM to be used. The mix design shall include trial lab and field data, with pairs of 6-inch by 12-inch cylinder breaks performed at 7, 14, and 28 days. Molds shall be plastic or waxed cardboard. The mix design shall be performed by an independent laboratory under the direction of an engineer licensed in California.
- c. No CLSM shall be placed until the ENGINEER has approved the mix design. The ENGINEER's approval of the mix design shall be understood to indicate conditional acceptance. Final acceptance will be based on tests conducted on field samples and conformance with these Specifications.

PART 3 - EXECUTION

3.1 PREPARATION

A. Inspection:

- 1. Provide ENGINEER with sufficient notice and with means to examine the areas and conditions under which excavating, filling, and grading are to be performed.
- 2. CONTRACTOR will notify ENGINEER if conditions are found that may be detrimental to the proper and timely completion of the Work.
- 3. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to ENGINEER.

B. "Pot-holing":

- 1. Excavate and backfill, in advance of the construction, test pits to determine conditions or location of the existing utilities and structures.
- 2. Identify the location of each existing facility involved within the area of excavation for Work under this Contract and notify ENGINEER of any utility conflicts in advance of anticipated work.
- 3. Where conflicts are identified with other existing utilities, except storm drains, CONTRACTOR shall cross over or under the existing utility while maintaining a minimum 36 inches of cover from top of pipe.
- 4. Where CONTRACTOR identifies a conflict with existing storm drain utility CONTRACTOR shall notify ENGINEER before proceeding with work.
- 5. Exercise care during such location work to avoid damaging and/or disrupting the affected facility.
- 6. CONTRACTOR is responsible for repairing, at his expense, damage to any structure, piping, or utility caused by his Work.

C. Temporary Fencing:

- 1. Furnish and install a temporary fence surrounding excavations and work area, including the stockpile and storage areas.
- 2. Provide fence openings only at vehicular, equipment and worker access points.

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3.2 EROSION CONTROL

- A. General: Implement the construction procedures outlined herein to assure minimum damage to the environment during construction. Take all additional measures required to conform to the requirements of applicable codes and regulations.
 - 1. Whenever possible, locate and construct access and temporary roads to avoid environmental damage. Make provisions to regulate drainage, avoid erosion and minimize damage to vegetation.
 - 2. Where areas must be cleared for storage of materials or temporary structures, provisions will be made for regulating drainage and controlling erosion, subject to the ENGINEER'S approval.
 - 3. Remove only those shrubs and grasses that must be removed for construction. Protect the remainder to preserve their erosion-control value.
- B. Control Measures: Apply measures to control erosion and to minimize the siltation of the existing waterways, and natural ponding areas. Such measures include, but are not limited to, the use of berms, baled straw silt barriers, gravel or crushed stone, mulch, slope drains and other methods.
 - 1. Install erosion and sediment control practices where shown and according to applicable standards, codes and specifications. The practices will be maintained in effective working condition during construction and until the drainage area has been permanently stabilized.
 - 2. Temporary measures will be coordinated with the construction of permanent drainage facilities and other Work to the extent practicable to assure economical, effective, and continuous erosion and siltation control.
 - 3. CONTRACTOR will provide special care in areas with steep slopes. Disturbance of vegetation will be kept to a minimum to maintain stability.
 - 4. After stabilization, remove all straw bale dikes, debris, etc., from the site.
- C. Dust Control:
 - 1. Prevent blowing and movement of dust from exposed soil surfaces and access roads to reduce on- and off-site damage and health hazards.
 - 2. Control may be achieved by irrigation in which the site is sprinkled with water until the surface is moist.
 - 3. Repeat the process as needed.
- D. Failure to Comply: In the event CONTRACTOR repeatedly fails to satisfactorily control erosion and siltation, the OWNER reserves the right to employ outside assistance or to use its own forces to provide the corrective measures indicated. The cost of such work, plus engineering costs, will be deducted from monies due CONTRACTOR.

3.3 DEWATERING

- A. General:
 - 1. Continuously control all water during the course of construction, including surface water and ground water, to prevent any damage to any excavation or to the construction activities occurring within those excavations.
 - 2. Maintain all dewatering systems full time (24-hours/day) during the entire time the excavation is open. Do not shut down dewatering systems at night, on weekends or on holidays, or any other time the excavation is open.

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3. Each excavation will be kept dry during subgrade preparation and continually thereafter until the structure to be built, or the pipe to be installed therein is inspected by the ENGINEER and backfill operations have been completed.
 4. Provide adequate alarm, monitoring and back-up systems for all dewatering systems to maintain control of all water during all times any excavation is open.
- B. Surface Water:
1. Provide and maintain adequate drainage and dewatering system to prevent surface water from entering excavations and to remove and dispose of all rainwater entering excavations, trenches, or other parts of the Work.
 2. Keep the different working areas on the site free of surface water at all times. Special care will be taken to eliminate depressions that could serve as mosquito pools.
 3. The diversion and removal of surface water will be performed in a manner that will prevent the accumulation of water behind temporary structures or at any other locations within the construction area where it may be detrimental.
- C. Ground Water:
1. Provide, operate and maintain dewatering system to permit excavation and subsequent construction activities in a dry, safe environment.
 2. System shall be of sufficient size and capacity to maintain groundwater level a minimum of 2 feet below the lowest point of excavation.
 3. Contractor shall make an assessment of the potential for dewatering induced settlement of surrounding soils and structures. Contractor shall provide all necessary equipment and facilities, including re-injection wells, cutoff walls, infiltration trenches, etc, to prevent damage to adjacent structures.
- D. Disposal of water:
1. Disposal of discharge water shall conform to any and all applicable permit requirements.

3.4 EXCAVATION SUPPORT SYSTEMS

- A. Trench Support
1. Provide, install and maintain trench shields for all trench excavations for which trench shields are required (at a minimum, as required by OSHA).
 2. Follow all OSHA guidelines and other applicable laws and ordinances.
 3. Elevation of Bottom:
 - a. Excavation of earth material below the bottom of a shield will not exceed the limits established by ordinances, codes, laws and regulations.
 - b. When using a shield for pipe installation, the bottom of the shield will not extend below the mid-diameter of installed pipe at any time.
 - c. When using a shield for the installation of structures, the bottom of the shield shall not extend below the top of the bedding for the structures.
 4. Moving Shield: When a shield is removed or moved ahead, extreme care will be taken to prevent the movement of pipe or structures or the disturbance of the bedding for pipe or structures. Pipe or structures that are disturbed are to be removed and reinstalled as specified.
- B. Removal of Excavation Support

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1. Completely remove all excavation support unless ENGINEER specifically allows requested excavation support to remain in place after backfill.
2. Remove all excavation support in a manner that will maintain support as excavation is backfilled and will not leave voids in the backfill.

3.5 EXCAVATION

A. General:

1. Material removed: Excavations include earth, sand, clay, gravel, hardpan, boulders, rock, pavements, rubbish and all other materials within the excavation limits.
2. Excavations for structures and pipelines will be open excavations. Provide excavation protection system(s) required by ordinances, codes, law and regulations to prevent injury to workmen and to prevent damage to new and existing structures or pipelines. Unless shown or specified otherwise, protection system(s) will be utilized under the following conditions.
 - a. Excavation Less Than 5 feet deep: Excavations in stable rock or in soil conditions where there is no potential for a cave-in may be made with vertical sides. Under all other conditions, excavations will be sloped and benched, shielded, or shored and braced.
 - b. Excavations More Than 5 feet deep: Excavations will be sloped and benched, shielded or shored and braced according to OSHA standards or as designed and stamped by a registered professional geotechnical engineer.
 - c. Excavation protection system(s) will be installed and maintained in accordance with the excavation plan submitted.

B. Pipe Trench Excavation:

1. Trenches shall have a minimum width equal to the outside diameter of the pipe plus twelve (12) inches. A maximum of 100 linear feet of trench may be opened in advance of pipe laying.
2. Trench depth shall be sufficient to provide a minimum of 36 inches of cover from top of pipe to existing grade and 4 inches below the bottom of pipe. Minimize trench width to the greatest extent practical, but conform to the following:
 - a. Sufficient to provide room for installing, jointing and inspecting piping.
 - b. Enlargements at pipe joints may be made, if required, and approved by ENGINEER.
 - c. Sufficient for shoring and bracing or shielding and dewatering.
 - d. Sufficient to allow thorough compaction of backfill adjacent to bottom half of pipe.

C. Subgrades:

1. Subgrades for roadways, structures and trench bottoms shall be firm, dense, and thoroughly compacted and consolidated; free from mud, muck, and other soft or unsuitable materials; and remain firm and intact under all construction operations.
2. Subgrades that are otherwise solid, but which become soft or mucky on top due to construction operations, shall be reinforced with select fill.
3. The finished elevation of stabilized subgrades shall not be above subgrade elevations shown.

D. Material Storage:

1. Stockpiles of materials shall not be located on private property without CONTRACTOR receiving prior authorization from property owner.

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2. Materials shall not be stored overnight in project site vicinity, except where CONTRACTOR has received prior authorization from property owner and shall be at CONTRACTOR's risk.
3. Place, grade and shape stockpiles for proper drainage.
4. Locate and retain soil materials away from edge of excavations.
5. Dispose of excess soil material and waste materials as specified hereinafter.

E. Unauthorized Excavation:

1. All excavation outside the lines and grades shown, and which is not approved by ENGINEER, together with the removal and disposal of the associated material is at the CONTRACTOR'S expense.
2. Unauthorized excavations shall be filled and compacted with select fill by the CONTRACTOR at his expense.

3.6 PLACEMENT OF FILL AND BACKFILL

A. General:

1. Backfill excavations as promptly as Work permits, but not until completion of the following:
 - a. Notifying ENGINEER that work installed facilities are complete and ready for inspection.
 - b. Acceptance by the ENGINEER of construction below finish grade.
 - c. Inspection, testing, approval, and recording of locations of underground piping and ductwork.
 - d. Removal of concrete formwork.
 - e. Removal of shoring and bracing, and backfilling of voids with satisfactory materials.
 - f. Removal of trash and debris.
2. Remove and replace with approved fill material, as specified, fill containing organic materials or other unacceptable material.
3. Compact all fill and backfill as specified in Subsection 3.7.

B. Backfill in Pipe Trenches:

1. Pipeline trenches may be backfilled prior to pressure testing, but no structure shall be constructed over any pipeline until it has been tested.
2. Unless otherwise directed by the ENGINEER, place all pipe on a minimum 4" thick layer of ENGINEER approved Sand bedding. The compacted sand bedding shall extend 12" minimum above the top of the pipe.
3. Install bedding as follows:
 - a. Spread bedding and grade to provide a uniform and continuous support beneath the pipe at all points between bell holes or pipe joints.
 - b. After each pipe section is placed, deposit and compact sufficient bedding material under and around each side of the pipe to hold the pipe in proper position and to maintain alignment during subsequent pipe jointing and bedding operations.
 - c. Bedding material shall be deposited and compacted uniformly and simultaneously on each side of the pipe to prevent lateral displacement. Then place and compact the bedding material to an elevation 12 inches above the top of pipe.
4. Above the level of bedding, place Aggregate Base Rock or other fill as reviewed and approved by the DISTRICT. If aggregate Base Rock is used, compact in no more than 12" lifts.

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C. Marking Tape:

1. Continuously install marking tape along centerline of all buried piping, on top of last lift of pipe zone material unless otherwise shown. Coordinate with piping installation drawings. Install in accordance with manufacturer's recommendations.
 - a. Metallic Marking Tape: Install with nonmetallic piping and waterlines. Join ends with clips provided by the manufacturer.

D. Pipe-Locating Wire:

1. Pipe-locating wire shall be provided for the entire length of all nonmetallic pipelines and shall be continuous around restrained joint sections.
2. Install pipe locating wire by strapping to the top of the pipe with PVC tape, polyethylene-backed tape, or tie locks. Test pipe locating wire with pipe locator equipment prior to final acceptance.
3. For service laterals, stub the pipe-locating wire up inside each meter box and wrap around angle stop so that it does not get buried.
4. For valves on water mains, install the pipe locating wire on the outside of can stock and drill a hole 4 inches below top of can stock to insert tracer pipe locating wire.
5. Sufficient excess length shall be provided at terminal connections to allow continuation of the pipe-locating wire to the terminal connection.
6. Wire splices shall be made with compression fittings or soldering; wrapped with Tac-Tape, Aqua-Seal, or equal, and wrapped with electrical tape. Prevent bare copper wire from contacting metallic appurtenances including, but not limited to, pipe, buried valves, or fittings.

E. Resume backfilling operations using the techniques described above to complete the pipe zone backfill. ENGINEER will approve the pipe zone backfill prior to initiating the trench zone backfill.

F. Replacement of Unacceptable Excavated Materials: In cases where over-excavation for the replacement of unacceptable soil materials is required, backfill the excavation to the required subgrade with select backfill material and thoroughly compacted.

3.7 COMPACTION

A. General:

1. Compaction by inundation with water will not be permitted. "Jetting" of any backfill material or process is prohibited.
2. Provide equipment capable of discing, aerating, and mixing the soil to ensure reasonable uniformity of moisture content throughout the material and to reduce the moisture content by air drying, if necessary.

Perform compaction with equipment suitable for the type of fill material being placed. Select equipment that is capable of providing the minimum density required by these Specifications. Use hand-operated compacting equipment within a distance of 3 feet from the wall of any completed below grade structure. Between 3 feet and 12 feet adjacent to below grade structures, compaction may be completed with lightweight compaction equipment weighing less than 15,000 pounds. Beyond 12 feet adjacent to below grade structures, there are no equipment weight restrictions. Provide equipment that is capable of compacting in restricted areas next to structures and around piping.

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- B. Compaction Density Requirements: The degree of compaction required for several types of fill is listed below. Moistened or aerated material as necessary to provide the moisture content specified, or if not specified, that will facilitate obtaining the specified compaction.

| MATERIAL | Required Minimum Density (ASTM D 1557) | Maximum Uncompacted Lift* |
|---|--|---------------------------|
| Common Fill/Prepared Subgrade: | 90% | 8 inches |
| Select Fill/Trench Backfill above pipe: | | |
| More than 2 feet below final grade | 90% | 8 inches |
| Less than 2 feet below final grade | 95% | 8 inches |
| Aggregate Base: | 95% | 8 inches |
| Granular Bedding | 90% | 6 inches |
| Sand | 90% | 6 inches |
| Gravel Surfacing | 95% | 6 inches |

*Where large areas of backfill allow for use of large, heavy equipment, ENGINEER may, at their option, allow uncompacted lifts up to 12 inches.

- C. Moisture Content: All fill and backfill shall be prepared and thoroughly mixed to achieve optimum moisture content, $\pm 3\%$, with the following exception: On site clayey soils optimum to $+3\%$.
- D. Testing: Testing will be as specified under Paragraph 3.10, "Field Quality Control".

3.8 GRADING

- A. General:
1. Uniformly grade areas within limits of grading under this Section, including adjacent transition areas.
 2. Smooth subgrade surfaces within specified tolerances, and compact with uniform levels or slopes between points where elevations are shown or between such points and existing grades.
- B. Adjacent to Structures: Grade areas adjacent to structures to drain away from structures (including masonry fences) and to prevent ponding.
- C. Pavements: Shape surface of areas under pavement to line, and grade and cross-section with finish surface not more than $\frac{1}{2}$ inch above or below the required subgrade elevation.
- D. Compaction: After grading, compact subgrade surfaces to the depth and percentage of maximum density for each area classification.

| Area | Required Minimum Density (ASTM D 1557) |
|------------------|--|
| Beneath Pavement | 90% |

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| | |
|----------------------------|-----|
| Landscaped and other areas | 85% |
|----------------------------|-----|

3.9 PAVEMENT BASE COURSE

- A. Shoulders:
 - 1. Place shoulders along edges of base course to prevent lateral movement.
 - 2. Construct shoulders of acceptable soil materials, placed in such quantity to compact to thickness of each base course layer.
 - 3. Compact and roll at least a 12-inch width of shoulder simultaneously with compacting and rolling of each layer of base course.
- B. Placing:
 - 1. Place base course material on prepared subgrade in layers of uniform thickness conforming to indicated cross-section and thickness.
 - 2. Maintain optimum moisture content for compacting base material during placement operations.

3.10 FIELD QUALITY CONTROL:

- A. General: Testing of materials by an ENGINEER approved test laboratory, testing for moisture content during placement and compaction of fill materials, and of compaction requirements for compliance with technical requirements of the Specifications.
- B. The CONTRACTOR shall retain one or more independent testing agencies to perform all quality control testing required for all materials except portland cement concrete. The required testing is for soil, aggregates, imported gravel, aggregate base, asphalt concrete, and CLSM. Each independent testing agency shall perform the testing under the supervision of an engineer registered in California. Technicians performing the testing shall be certified to operate the equipment and have at least 1 full year of experience in the type of tests being performed.
- C. A Quality Control Plan shall be submitted by the CONTRACTOR to the ENGINEER at least 30 days before field testing is required. It shall include the names, addresses, and phone number of the companies, the major personnel that will be involved, and resumes of the individuals that will be supervising and performing the tests. Copies of certificates held by the companies and the testing personnel shall be included.
- D. CONTRACTOR's independent testing agency shall perform all field and laboratory testing as described in these Specifications. Test shall include specific gravity, sand equivalent, durability, abrasion resistance, soundness, gradation, compaction curves, lab and field moisture contents, compressive strength, and field density. Other tests shall be performed by the CONTRACTOR's independent testing agency as may be required to meet the Specifications. Mix design testing for portland cement concrete, CLSM, and asphalt concrete shall also be performed by the CONTRACTOR. Field testing for portland cement concrete will be performed by the ENGINEER.
- E. CONTRACTOR shall schedule all lab testing so that materials arriving at the site have been approved by the ENGINEER for use on the Project.

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- F. All lab tests shall be performed on Samples obtained from the source of actual material that will be used on the Project. No test results more than 90 days old shall be submitted for review.
- G. The location of field density tests shall be determined by the ENGINEER.
- H. Frequency of tests: Frequency will be not less than as follows:
 - 1. For trenches:
 - a. In open fields: 2 locations every 1,000 linear feet, for each layer
 - b. Along dirt, gravel, or paved roads or off traveled right-of-way: 2 locations every 500 linear feet, for each layer
 - c. Crossing roads: 2 locations along each crossing, for each layer
 - 2. For structural backfill: 1 every 50 cubic yards.
 - 3. In embankment or fill: 1 every 200 cubic yards.
 - 4. Base material: 1 every 50 cubic yards.
 - 5. Paved Areas and Building Slab Subgrade: 1 every 500 square feet, but in no case less than 3 tests, for each layer.
- I. The ENGINEER may modify the frequency or spacing of tests to provide for testing at specific structures or locations where the ENGINEER deems additional testing is required. The CONTRACTOR shall perform such additional testing up to 10% above the frequency and total number of tests specified at no additional cost to the OWNER.
- J. Verbal and hand-written test results shall be provided to the ENGINEER and CONTRACTOR immediately following the field testing. Written test data sheets shall be provided to the ENGINEER not more than 12 hours following completion of the field test. Typed lab test results shall be provided to the ENGINEER not more than 7 calendar days following completion of the tests; however, the results must be reviewed and approved by the ENGINEER prior to placing the material in the trenches or incorporating it in the Work.
- K. Any location where a failing test occurs shall be recompacted and retested until a passing test is obtained. Specified testing values are minimums and no tests shall be accepted below the specified minimums. No material shall be placed over the failing test area until the failing material is recompacted and a passing test is obtained, and the area is approved by the ENGINEER. The limits of the failing test shall be assumed to be halfway between the failing location and the nearest passing location. Additional tests may be taken to determine the limits of unsatisfactory compaction.
- L. At the first of each month, the CONTRACTOR shall provide to the ENGINEER a typed summary of all tests performed for the previous month including test location by station, depth below finished grade, material tested, wet density, moisture content, dry density, maximum density curve used, and percent relative compaction. Lab test results shall also be included in the monthly report with clear description of material tested, intended use on the Project, and a statement of compliance or noncompliance with the Project Specifications.
- M. Any material which does not meet the Specifications shall be removed from the site and replaced with material in compliance.

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- N. Material which has been softened or modified prior to placing the overlying lift shall be removed down to material which is in compliance.

3.11 DISPOSAL OF EXCAVATED MATERIALS

- A. Material removed from the excavations that does not conform to the requirements for fill or is in excess of that required for backfill shall be hauled away from the Work site and disposed of by CONTRACTOR in compliance with ordinances, codes, laws and regulations at no additional cost to the OWNER.
- B. CONTRACTOR is responsible for disposal of excess material, disposal location will not be provided or arranged by PID.

++ END OF SECTION ++

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SECTION 02770

ASPHALT CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes asphalt concrete paving patchwork in areas where execution of contract work causes damage to or requires the removal and replacement of existing asphalt paving. Cold patch asphalt patchwork may be used to temporarily restore asphalt until such time as a permanent hot-mix asphalt (HMA) repair may be made.

1.2 SUBMITTALS

- A. Information Submittals:
 - 1. Asphalt Concrete Mix Formula:
 - a. Submit minimum of 15 days prior to start of production.
 - b. Submittal to include the following information:
 - 1) Gradation and portion for each aggregate constituent used in mixture to produce a single gradation of aggregate within specified limits.
 - 2) Bulk specific gravity for each aggregate constituent.
 - 3) Measured maximum specific gravity of mix at optimum asphalt content determined in accordance with ASTM D2041.
 - 4) Percent of asphalt lost due to absorption by aggregate.
 - 5) Percentage of asphalt cement, to nearest 0.1 percent, to be added to mixture.
 - 6) Optimum mixing temperature.
 - 7) Optimum compaction temperature.
 - 8) Temperature-viscosity curve of asphalt cement to be used.
 - 2. Test Report for Asphalt Cement:
 - a. Submit minimum 10 days prior to start of production.
 - b. Show appropriate test method(s) for each material and the test results.
 - 3. Statement of qualification for independent testing laboratory.
 - 4. Test Results:
 - a. Mix design.
 - b. Asphalt concrete core.
 - c. Gradation and asphalt content of uncompacted mix.

1.3 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Independent Testing Laboratory: In accordance with ASTM E329.
 - 2. Asphalt concrete mix formula shall be prepared by approved certified independent laboratory under the supervision of a certified asphalt technician.
- B. Asphalt paving shall be placed according to Town of Paradise standards and shall be subject to Town of Paradise Public Works inspection as applicable.

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Asphalt Concrete Pavement

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1.4 ENVIRONMENTAL REQUIREMENTS

- A. Temperature: Do not apply asphalt materials or place asphalt mixes when ground temperature is lower than 10 degrees C (50 degrees F) or air temperature is lower than 4 degrees C (40 degrees F). Measure ground and air temperature in shaded areas away from heat sources or wet surfaces.
- B. Moisture: Do not apply asphalt materials or place asphalt mixes when application surface is wet.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Asphalt Material: Conform to the following specification:
 - 1. Asphalt Material shall be a hot mix asphalt concrete, consisting of a mixture of mineral aggregate and paving asphalt conforming to Section 92 of the Caltrans Standard Specifications,
 - a. PG 64-16 for Low Mountain Caltrans Pavement Climate Region.
- B. Seal Coat: Conform to the following specification:
 - 1. Seal coat material shall be conforming to Section 37 of the Caltrans Standard Specifications.

PART 3 - EXECUTION

3.1 GENERAL

- A. Traffic Control:
 - 1. In accordance with all applicable specification sections and laws.
 - 2. In accordance with Town of Paradise Standards and subject to Town of Paradise inspection.
 - 3. Minimize inconvenience to traffic but keep vehicles off freshly treated or paved surfaces to avoid pickup and tracking of asphalt.
- B. Driveways: Repave driveways from which pavement was removed. Leave driveways in as good or better condition than before start of construction. CONTRACTOR shall be responsible for taking photos to document condition of driveway before and after construction.

3.2 LINE AND GRADE

- A. Provide and maintain intermediate control of line and grade, independent of underlying base, to meet finish surface grades and minimum thickness.
- B. Shoulders: Construct to line, grade, and cross-section shown.

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Asphalt Concrete Pavement

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3.3 PREPARATION

- A. Prepare subgrade as specified.
- B. Thoroughly coat edges of contact surfaces with emulsified asphalt or asphalt cement prior to laying new pavement. Prevent staining of adjacent surfaces.

3.4 PAVEMENT APPLICATION

- A. General: Place asphalt concrete mixture on approved, prepared base in conformance with this section.
- B. Pavement Mix:
 - 1. Prior to Paving:
 - a. Sweep primed surface free of dirt, dust, or other foreign matter prior to application of tack coat.
 - b. Patch holes in primed surface with asphalt concrete pavement mix.
 - 2. Place asphalt concrete pavement mix in one single lift, unless otherwise required and approved by ENGINEER.
 - 3. Total Compacted Thickness, single lift: 3 inches. Arterial roadways within the Town of Paradise may require more than one 3 inch lift, at the Town of Paradise's discretion.
 - 4. Apply such that meet lines are straight and edges are vertical.
 - 5. Collect and dispose of segregated aggregate from raking process. Do not scatter material over finished surface.
 - 6. After placement of pavement, seal meet line by painting a minimum of 150 millimeters (6 inches) on each side of joint with cut-back or emulsified asphalt. Cover immediately with sand.
- C. Compaction: Roll until roller marks are eliminated and density of 92 percent of measured maximum density determined in accordance with ASTM D2041.
- D. Tolerances:
 - 1. General: Conduct measurements for conformity with crown and grade immediately after initial compression. Correct variations immediately by removal or addition of materials and by continuous rolling.
 - 2. Completed Surface or Wearing Layer Smoothness:
 - a. Uniform texture, smooth, and uniform to crown and grade.
 - b. Maximum Deviation: 1/8 inch from lower edge of a 3.6-meter (12-foot) straightedge, measured continuously parallel and at right angle to centerline.
 - c. If surface of completed pavement deviates by more than twice specified tolerances, remove and replace wearing surface.
 - 3. Transverse Slope Maximum Deviation: 1/4 inch.
- E. Seal Coat:
 - 1. General: Apply seal coat of paving grade or emulsified asphalt to finished surface at longitudinal and transverse joints, joints at abutting pavements, areas where asphalt concrete was placed by hand, patched surfaces, and other areas as directed by ENGINEER.
 - 2. Preparation:
 - a. Surfaces that are to be sealed shall be maintained free of holes, dry, and clean of dust and loose material.

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Asphalt Concrete Pavement

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- b. Seal in dry weather and when temperature is above 35 degrees F.
- 3. Application:
 - a. Fill cracks over 1.5 millimeters (1/16 inch) in width with asphalt-sand slurry or approved crack sealer prior to sealing.
 - b. When sealing patched surfaces and joints with existing pavements, extend minimum 150 millimeters (6 inches) beyond edges of patches.

++ END OF SECTION ++

SECTION 03300
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes: Place, finish, cure, strip, and repair concrete.

1.2 REFERENCES

- A. American Concrete Institute (ACI)
1. ACI 211.1, Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass Concrete.
 2. ACI 214, Recommended Practice for Evaluation of Strength Test Results of Concrete.
 3. ACI 301, Specifications for Structural Concrete for Buildings, (includes ASTM Standards referred to herein).
 4. ACI 304, Guide for Measuring, Mixing, Transporting and Placing Concrete.
 5. ACI 305, Hot Weather Concreting.
 6. ACI 306, Cold Weather Concreting.
 7. ACI 309, Guide for Consolidation of Concrete.
 8. ACI 311, Guide for Concrete Inspection.
 9. ACI 318, Building Code Requirements for Reinforced Concrete.
 10. ACI 347, Guide to Formwork for Concrete
 11. ACI 350, Environmental Engineering Concrete Structures.

1.3 SYSTEM DESCRIPTION

- A. Class A Concrete shall be steel reinforced and includes:
1. Foundations.
 2. Walls.
 3. Slabs.
 4. Beams.
 5. Girders.
 6. Columns.
 7. Equipment bases.
 8. Pipe supports.
- B. Class B Concrete shall be placed without forms or with simple forms, with little or no reinforcing, and includes:
1. Concrete fill.
 2. Curbs and gutters.
 3. Sidewalks.
 4. Thrust blocks.
 5. Encasements.

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Cast-in-Place Concrete

1.4 SUBMITTALS

- A. Samples: Submit samples of materials as specified and as otherwise may be requested by ENGINEER, including names, sources and descriptions.
- B. Product Data: Submit for approval the following:
 - 1. Manufacturer's specifications with application and installation instructions for proprietary materials and items, including admixtures and bonding agents.
 - 2. List of concrete materials and concrete mix designs proposed for use. Include the results of all tests performed to qualify the materials and to establish the mix designs.
- C. Laboratory Test Reports: Submit copies of laboratory test reports for materials and mix design tests
- D. Delivery Tickets: Furnish to ENGINEER copies of all weighmaster certificate delivery tickets for each load of concrete delivered to the site. Provide items of information as specified in ASTM C94, Section 16. Delivery tickets shall be signed by a Certified Weighmaster.

1.5 QUALITY ASSURANCE

- A. Tests for Concrete Materials: Submit written reports to ENGINEER, for each material sampled and tested, prior to the start of Work. Provide the Project identification name and number, date of report, name of CONTRACTOR, name of concrete testing service, source of concrete aggregates, material manufacturer and brand name for manufactured materials, values specified in the referenced specification for each material, and test results. Indicate whether or not material is acceptable for intended use.
- B. If the concrete mix designs specified herein have not been used previously by the ready-mix supplier, mix proportions and concrete strength curves for regular cylinder tests shall be established by an approved ready-mix supplier or an independent testing laboratory based on the relationship of 7, 14 and 28 day strengths versus slump values of 2, 4 and 6 inches, all conforming to these Specifications. A laboratory, independent of the ready-mix supplier, shall be required to prepare and test all concrete cylinders. The costs for preparation of mix designs, not previously used by the ready-mix supplier, and testing of concrete and materials shall be borne by CONTRACTOR.

PART 2 - PRODUCTS

2.1 CONCRETE MATERIALS

- A. Cement:
 - 1. Portland cement, ASTM C150, Type II; or blended hydraulic cement, ASTM C595, Type 1P (MS).
 - 2. Do not use cement which has deteriorated because of improper storage or handling.
- B. Aggregates: ASTM C33 and as herein specified.

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1. Do not use aggregates containing soluble salts, substances such as iron sulfides, pyrite, marcasite, ochre, or other materials that can cause stains on exposed concrete surfaces.
 2. Fine Aggregate: Provide clean, sharp, natural sand free from loam, clay, lumps or other deleterious substances.
 3. Coarse Aggregate: Provide clean, uncoated, processed aggregate containing no clay, mud, loam, or foreign matter, as follows:
 - a. Crushed stone, processed from natural rock or stone.
 - b. Coarse Aggregate Size: Size to be ASTM C33, Nos. 57 or 67, except that No. 467 may be used for footings, foundation mats and walls 16 inches or greater in thickness.
- C. Water: Clean, free from injurious amounts of oils, acids, alkalis, organic materials or other substances that may be deleterious to concrete or steel.

2.2 CONCRETE ADMIXTURES

- A. Provide admixtures produced by established reputable manufacturers, and use in compliance with the manufacturer's printed instruction. Do not use admixtures that have not been incorporated and tested in the accepted mixes, unless otherwise authorized in writing by ENGINEER.
- B. Air-Entraining Admixtures: ASTM C260.
1. Product and Manufacturer: Provide one of the following:
 - a. SIK AER, as manufactured by Sika Corporation.
 - b. MasterAir AE 200, as manufactured by BASF.
 - c. Daravair, as manufactured by W.R. Grace & Conn.
 - d. Or approved equal.
- C. High-Range Water-Reducing Admixture ("Superplasticizer"): ASTM C494, Type F/G.
1. Superplasticizer shall be used in all Class A Concrete. Do not use high range water-reducing admixture containing more chloride ions than are contained in municipal drinking water. Add only at the job site to concrete in compliance with the manufacturer's printed instruction.
 2. Product and Manufacturer: Provide one of the following:
 - a. Sikament 320, as manufactured by Sika Corporation.
 - b. MasterGlenium, as manufactured by BASF.
 - c. Daracem-100, as manufactured by W.R. Grace & Conn.
 - d. Or approved equal.
- D. Water-Reducing Admixture: ASTM C 494, Type A.
1. A water-reducing, aqueous solution of a modification of the salt of polyhydroxylated organic acids. Do not use admixture containing any lignin, nitrates or chlorides added during manufacture.
 2. Product and Manufacturer: Provide one of the following:
 - a. Eucon WR-75, as manufactured by The Euclid Chemical Company.
 - b. MasterPozzoloth, as manufactured by BASF.
 - c. WRDA series, as manufactured by W.R. Grace & Conn.
 - d. Or approved equal.

- E. Pozzolanic Admixtures:

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1. Pozzolanic admixtures shall not be used in structures with concrete in contact with potable water, but may be used in other concrete.
 2. Provide Mineral admixtures, when used, meeting the requirements of ASTM C618 Class F.
 3. A substitution by weight, of the portland cement by pozzolan, so that the total tricalcium aluminate content of the resulting cement plus pozzolan is not greater than 8%, will be considered. However, the pozzolan shall not exceed 20% by weight of the cement plus pozzolan.
- F. Set-Control Admixtures: ASTM C494, as follows:
1. Type B, Retarding.
 2. Type C, Accelerating.
 3. Type D, Water-reducing and Retarding.
 4. Type E, Water-reducing and Accelerating.
 5. Type F, Water-reducing, high range admixtures.
 6. Type G, Water-reducing, high range, and retarding admixtures.
- G. Color Pigments:
1. Color pigments for colored concrete must be of iron oxides complying with ASTM C979.
- H. Calcium Chloride: Do not use calcium chloride in concrete, unless otherwise authorized in writing by ENGINEER. Do not use admixtures containing calcium chloride where concrete is placed against galvanized steel.

2.3 PROPORTIONING AND DESIGN OF MIXES

- A. Prepare design mixes of concrete. Mixes subject to the following limitations:
1. Class B Concrete
 - a. Specified 28-day Compressive Strength: 2,500 psi.
 - b. Maximum Water-Cement Ratio by Weight: 0.49.
 - c. Slump: 3-inch Minimum, 5-inch Maximum.
- B. Use an independent testing facility acceptable to ENGINEER for preparing and reporting proposed mix designs.
- C. Admixtures:
1. Use air-entraining admixture in all concrete, except interior slabs subject to abrasion, unless otherwise shown or specified. Add air-entraining admixture at the manufacturer's prescribed rate to result in concrete at the point of placement having air content within the prescribed limits.
 2. Use amounts of admixtures as recommended by the manufacturer for climatic conditions prevailing at the time of placing. Adjust quantities and types of admixtures as required to maintain quality control.
- D. Colored Concrete:
1. The dosage of colored pigments for colored concrete must not exceed 10 percent by weight of cementitious materials in the concrete mix design.
 2. When test panels are specified, cementitious materials and aggregates from the same sources used in the authorized test panel must be used for the colored concrete in the completed work.

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2.4 EPOXY BONDING AGENT

- A. For use in all dry-packed holes, concrete repair and for unplanned cold-joints.
- B. Provide an epoxy-resin bonding agent, two component, polysulfide type.
- C. Product and Manufacturer: Provide one of the following:
 - 1. Sikadur 32, Hi-Mod LPL, as manufactured by Sika Corporation.
 - 2. Eucopoxy LPL, as manufactured by the Euclid Chemical Company.
 - 3. Or approved equal.

2.5 CONCRETE CURING MATERIALS

- A. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 10 ounces per square yard and complying with AASHTO M182, Class 3.
- B. Moisture-Retaining Cover: One of the following, complying with ASTM C171.
 - 1. Waterproof paper.
 - 2. Polyethylene film.
 - 3. White burlap-polyethylene sheet.
- C. Curing Compound: ASTM C309 Type 1-D (water retention requirements):
 - 1. Product and Manufacturer: Provide one of the following:
 - a. Super Aqua Cure VOX, as manufactured by The Euclid Chemical Company.
 - b. Sealtight 1100, as manufactured by W.R. Meadows, Incorporated.
 - c. Or approved equal.
- D. Concrete Densifier and Chemical Hardener (Surface Applied)
 - 1. Product and Manufacturer: Provide one of the following:
 - a. LS, as manufactured by Consolideck.
 - b. Liqui-Hard, as manufactured by W. R. Meadows.
 - c. Duro-Nox LS, as manufactured by Nox-Crete.
 - d. Or approved equal.

PART 3 - EXECUTION

3.1 CONCRETE MIXING

- A. Provide concrete produced by the ready-mixed process.
- B. Comply with the requirements of ASTM C 94, and as herein specified. Proposed changes in mixing procedures, other than herein specified, must be accepted by ENGINEER before implementation.
 - 1. Plant equipment and facilities: Conform to National Ready- Mix Concrete Association "Plant and Delivery Equipment Specification."
 - 2. Mix concrete in revolving type truck mixers that are in good condition and which produce thoroughly mixed concrete of the specified consistency and strength.
 - 3. Do not exceed the proper capacity of the mixer.
 - 4. Mix concrete for a minimum of two minutes after arrival at the job site, or as recommended by the mixer manufacturer.

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5. Mix concrete during transit only as recommended by the mixer manufacturer.
6. Mix at proper speed until concrete is discharged.
7. Maintain adequate facilities at the job site for continuous delivery of concrete at the required rates.
8. Provide access to the mixing plant for ENGINEER at all times.

3.2 TRANSPORTING CONCRETE

- A. Transport and place concrete not more than 90 minutes after water has been added to the dry ingredients or before 250 revolutions of the drum or blades, whichever occurs first.
- B. If an admixture is used to retard the set time and the concrete temperature does not exceed 85 degrees F, the travel and placing time may be extended to 120 minutes or 300 revolutions of the drum or blades, whichever occurs first.
- C. Take care to avoid spilling and separation of the mixture during transportation.
- D. Do not place concrete in which the ingredients have been separated.
- E. Do not retemper partially set concrete.
- F. Use suitable and approved equipment for transporting concrete from mixer to forms.

3.3 CONCRETE PLACEMENT

- A. General: Place concrete continuously so that no concrete will be placed on concrete, which has hardened sufficiently to cause the formation of seams or planes of weakness within the section. Deposit concrete as nearly as practical in its final location to avoid segregation due to rehandling or flowing. Do not subject concrete to any procedure that will cause segregation.
 1. Screed concrete that is to receive other construction to the proper level to avoid excessive skimming or grouting.
 2. Do not use concrete which becomes non-plastic and unworkable, or does not meet the required quality control limits, or which has been contaminated by foreign materials. Do not use retempered concrete. Remove rejected concrete from the job site and dispose of it in an acceptable location.
 3. Do not place concrete until all forms, bracing, reinforcement, and embedded items are in final and secure position.
 4. Do not place in cold weather, unless adequate precautions are taken against frost action.
 5. Do not place footings, piers or pile caps on frozen soil.
 6. Unless otherwise approved, place concrete only when ENGINEER is present.
 7. Allow a minimum of 3 days of curing before placing new concrete against a slab or wall already in place.
- B. Concrete Conveying:
 1. Handle concrete from the point of delivery and transfer to the concrete conveying equipment and to the locations of final deposit as rapidly as practical by methods that will prevent segregation and loss of concrete mix materials.

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2. Provide mechanical equipment for conveying concrete to ensure a continuous flow of concrete at the delivery end. Provide runways for wheeled concrete conveying equipment from the concrete delivery point to the locations of final deposit. Keep interior surfaces of conveying equipment, including chutes, free of hardened concrete, debris, water, ice and other deleterious materials.
 3. Pumping concrete is permitted, however do not use aluminum pipe for conveying.
- C. Placing Concrete into Forms:
1. Deposit concrete in forms in horizontal layers not deeper than 24 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers, place concrete at such a rate that concrete that is being integrated with fresh concrete is still plastic.
 2. Do not permit concrete to free fall within the form from a distance exceeding 8 feet. Use "elephant trunks" or "wall pipes" to prevent free fall and excessive splashing on forms and reinforcement.
 3. Remove temporary spreaders in forms when concrete placing has reached the elevation of such spreaders.
 4. Consolidate concrete placed in forms by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping. Use equipment and procedures for consolidation of concrete in accordance with the applicable recommended practices of ACI 309. Vibration of forms and reinforcing will not be permitted.
 5. Vibrators shall have a frequency of at least 8,000 vpm, with amplitude required to consolidate the concrete in the section being placed. At least one stand-by vibrator in operable condition shall be at the placement site prior to initiating placement of the concrete.
 6. Do not use vibrators to transport concrete inside of forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than the visible effectiveness of the machine. Place vibrators to rapidly penetrate the layer of concrete and at least 6 inches into the preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit the duration of vibration to the time necessary to consolidate the concrete and complete embedment of reinforcement and other embedded items without causing segregation of the mix.
 7. The forms shall contain sufficient windows or be limited in height to allow visual observation of the concrete and the vibrator operators shall be required to see the concrete being consolidated to ensure good quality workmanship or the CONTRACTOR shall have a person who is actually observing the vibration of the concrete at all times and advising the vibrator operators of any changes needed to assure complete consolidation.
 8. Do not place concrete in beam and slab forms until the concrete previously placed in columns and walls is no longer plastic.
 9. Force concrete under pipes, sleeves, openings and inserts from one side until visible from the other side to prevent voids.
- D. Placing Concrete Slabs and Footings:
1. Deposit and consolidate concrete in a continuous operation, within the limits of construction joints, until the placing of a panel or section is completed.

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2. Consolidate concrete during placing operations using mechanical vibrating equipment, so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 3. Consolidate concrete placed in beams and girders of supported slabs, and against bulkheads of slabs on ground, as specified for formed concrete structures.
 4. Bring surfaces to the correct level. Smooth the surface, leaving it free of humps or hollows. Do not sprinkle water on the plastic surface. Do not disturb the surfaces prior to beginning finishing operations.
- E. Quality of Concrete Work:
1. Make all concrete solid, compact and smooth, and free of laitance, cracks and cold joints.
 2. All concrete for liquid retaining structures, and all concrete in contact with earth, water, or exposed directly to the elements shall be watertight.
 3. Cut out and properly replace to the extent ordered by ENGINEER, or repair to the satisfaction of ENGINEER, surfaces which contain cracks or voids, are unduly rough, or are in any way defective. Thin patches or plastering will not be acceptable.
 4. Repair all leaks through concrete, and cracks, holes or other defective concrete in areas of potential leakage and make watertight.
 5. Repair, remove, and replace defective concrete as ordered by ENGINEER at no additional cost to OWNER.
- F. Cold Weather Placing:
1. Protect all concrete Work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures, in compliance with the requirements of ACI 306 and as herein specified.
 2. When the air temperature has fallen to or may be expected to fall below 40°F, provide adequate means to maintain the temperature, in the area where concrete is being placed, at between 50°F and 70°F for at least seven days after placing. Provide temporary housings or coverings including tarpaulins or plastic film. Maintain the heat and protection, if necessary, to ensure that the ambient temperature does not fall more than 30°F in the 24 hours following the seven-day period. Avoid rapid dry-out of concrete due to overheating, and avoid thermal shock due to sudden cooling or heating.
 3. When air temperature has fallen to or is expected to fall below 40°F, uniformly heat all water and aggregates before mixing as required to obtain a concrete mixture temperature of not less than 55°F and not more than 85°F at point of placement.
 4. Do not use frozen materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials. Ascertain that forms, reinforcing steel, and adjacent concrete surfaces are entirely free of frost and ice before placing concrete.
 5. When temperatures are expected to be below 32°F the night before the concrete is placed, then all reinforcing steel, forms and the ground shall be preheated, for a minimum of 12 hours, under a minimum temperature of 50°F.
 6. Do not use salt and other materials containing antifreeze agents or chemical accelerators, or set-control admixtures, unless approved by ENGINEER, in mix designs.
 7. Weather predictions made by the nearest NOAA station, and corrected for the local elevation and environmental conditions, may be used to determine whether cold weather protection shall be required. Thermometers will be used by ENGINEER and

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these readings shall determine whether cold weather protection shall be required and whether cold weather protection is adequate.

G. Hot Weather Placing:

1. When hot weather conditions exist as any combination of high air temperature, low relative humidity and wind velocity that would seriously impair the quality and strength of concrete, place concrete as recommended by ACI 305 and as herein specified.
2. Cool ingredients before mixing to maintain concrete temperature at time of placement below 85°F. No concrete shall be placed if its temperature exceeds 90°F. Mixing water may be chilled, or chopped ice may be used, or liquid nitrogen may be added. Ice, when introduced into the mixer shall be in such form that it will be completely melted and dispersed throughout the mix at the completion of the mixing time. The addition of ice shall not increase the specified water to cement ratio.
3. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that the steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.
4. Thoroughly wet forms before placing concrete. Forms shall be free of standing water when concrete is placed.
5. Do not use set-control admixtures, unless approved by ENGINEER in mix designs.
6. Fog spray shall be used during finishing operations whenever necessary to avoid surface plastic shrinkage cracking. Fog spray shall also be used after finishing and before the specified curing is commenced to avoid surface plastic shrinkage cracking.
7. Obtain ENGINEER'S approval of other methods and materials proposed for use.

H. Removal of Forms:

1. The CONTRACTOR shall be responsible for all damage resulting from improper and premature removal of forms. Satisfy all applicable OSHA requirements with regard to safety of personnel and property.

I. Patching:

1. Patching of concrete shall provide an acceptable and structurally sound surface finish uniform in appearance or the CONTRACTOR shall upgrade the finish by other means at no additional cost.
2. Tie Holes: All tie holes, except where sealant is indicated, shall be filled with dry pack nonshrink grout. White cement shall be added as needed so the color of grout after curing matches the color of adjacent concrete. Tie holes shall be thoroughly sandblasted or roughened. Flush the patch area with water and allow to dry. Coat the surface of the existing concrete with an approved bonding agent prior to filling with nonshrink grout. Complete the repair in the time duration specified by the bonding agent manufacturer. The grout shall be rammed into place in thin layers and leveled to the plane of the surrounding concrete. Cure in accordance with the manufacturer's recommendations.
3. Defective Areas: Remove all defective concrete such as honeycombed areas and rock pockets out to sound concrete. Small shallow holes caused by air entrapment at the surface of the forms shall not be considered defects unless the amount is so great as to be considered not the standard of the industry and due primarily of poor workmanship. If chipping is required, the edges shall be perpendicular to the surface. Feather edges shall not be permitted. The defective area shall be filled

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with a nonshrink, nonmetallic, grout. Use an approved bonding agent on horizontal patches prior to placing nonmetallic, non shrink grout. Since some bonding agents may not be compatible for some vertical surface patching techniques, demonstrate all methods for repair of vertical surfaces using the actual materials, methods, and curing procedures required by the manufactures of the materials on the project site. The CONTRACTOR shall consult with representatives of the bonding agent manufacturer and the nonshrink grout manufacturer, and these representatives shall be onsite and assist in the demonstration.

4. Blockouts at Pipes or Other Penetrations: Conform to details shown or submit proposed blockouts for review. Use nonshrink, nonmetallic grout.

3.4 CONCRETE CURING AND PROTECTION

A. General:

1. Protect freshly placed concrete from premature drying and excessive cold or hot temperature, and maintain without drying at a relatively constant temperature for the period of time necessary for hydration of the cement and proper hardening of the concrete.
2. Start initial curing after placing and finishing concrete as soon as free moisture and bleed water sheen has disappeared from the concrete surface. Keep concrete continuously moist during initial curing.
3. Begin final curing procedures immediately following initial curing and before the concrete has dried. The total curing duration shall not be less than ten (10) days. For concrete sections over 30-inch thick, continue curing for an additional seven (7) days, minimum. Avoid rapid drying at the end of the final curing period.

B. Use one of the following methods as approved by ENGINEER:

1. Walls:
 - a. Method 1: Leave concrete forms in place and keep entire surfaces of forms and exposed concrete surfaces wet for the entire curing duration. If forms are loosened and the contact between the concrete surface and forms is broken then the entire wall shall be wet cured.
 - b. Method 2: Continuously sprinkle or fog with water 100 percent of the exposed surfaces for the curing duration immediately after removal of forms.
 - c. Method 3: When approved by ENGINEER and as noted below, apply curing compound immediately after removal of forms.
2. Slab and Curbs:
 - a. Method 1: Protect surface by water ponding for the entire curing duration.
 - b. Method 2: Cover concrete surfaces and exposed edges with the specified absorptive cover, thoroughly saturating the cover with water, and keeping the absorptive cover continuously wet with sprinklers or porous hoses during the curing duration. Lap adjacent absorptive cover sections 3-inches minimum.
 - c. Method 3: Cover the concrete surfaces and exposed edges with the specified moisture-retaining cover during the curing duration. Seal edges and seams with waterproof tape, adhesive or sand berm. Water must be introduced between the moisture-retaining cover and the concrete surface whenever moist drops cannot be detected on the concrete side of the cover or the concrete surface is noticeably dry.
 - d. Method 4: Cover all exposed surfaces with 1-inch minimum layer of wet sand, earth, or sawdust and keep continuously wet for the curing duration.
 - e. Method 5: Continuously sprinkle or fog exposed surfaces for the curing duration.

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- f. Method 6: When approved by ENGINEER and as noted below, apply liquid curing compound immediately after final finishing when surface will no longer be damaged by traffic necessary to apply curing compound.

C. Liquid curing compound:

- 1. Apply the specified curing compound to concrete surfaces when permitted by ENGINEER. Slabs to receive terrazzo floors, concrete/grout topping or ceramic tile, concrete of water bearing structures, and concrete that will receive coatings shall not be cured with liquid curing compound. The compounds shall be applied by power spray equipment in accordance with the manufacturer's directions. Recoat areas, which are subjected to heavy rainfall within 3 hours after initial application. Maintain the continuity of the coating and repair damage to the coat during the entire curing period. Remove curing compound from exposed surfaces at the end of the curing duration. For concrete surfaces, which will be in contact with potable water, the manufacturer shall certify that the curing compound used is NSF 61 approved.

D. Temperature of Concrete During Curing:

- 1. When the nighttime low temperature may drop to 40°F or below, maintain the concrete temperature between 50°F and 70°F continuously throughout the curing period, by heating, covering, insulation or housing as required.
- 2. When the daytime high temperature may rise to 90°F or above, maintain the concrete temperature at a minimum and reduce temperature variations by providing moist curing continuously for the concrete curing period.
- 3. During either of the conditions specified above, the minimum curing time shall be 10 days (240 hours), after which coverings, housings, and insulation shall remain on the work for an additional 3 days, to allow gradual temperature equalization with the atmosphere.

- E. Protection from Mechanical Injury: During the curing period, protect concrete from damaging mechanical disturbances including load stresses, heavy shock, excessive vibration, and from damage caused by rain or flowing water. Protect all finished concrete surfaces from damage by subsequent construction operations.

3.5 FIELD QUALITY CONTROL

- A. The CONTRACTOR will employ a testing laboratory to perform field quality control testing. ENGINEER will direct the number of tests and cylinders required. Furnish all necessary assistance required by ENGINEER.

B. Quality Control Testing During Construction:

- 1. Perform sampling and testing for field quality control during the placement of concrete, as follows:
 - a. Sampling Fresh Concrete: ASTM C172.
 - b. Slump: ASTM C143; one test for each concrete load at point of discharge; and one for each set of compressive strength test specimens.
 - c. Air Content: ASTM C231; one for the first concrete load, and one for every two concrete loads thereafter, or when required by an indication of change. Adjust mix if test results are unsatisfactory and resubmit for ENGINEER'S approval.
 - d. Compressive Strength Tests: ASTM C39; one set of 4 standard compression cylinders for each 100 cubic yards or fraction thereof, of each mix design placed

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in any one day; 1 specimen tested at 7 days, and 2 specimens tested at 28 days, 1 held. Cast, store and cure specimens as specified in ASTM C31.

- 1) Adjust mix if test results are unsatisfactory and resubmit for ENGINEER'S approval.
- 2) Concrete that does not meet the strength requirements is subject to rejection and removal from the Work, or to other such corrective measures as directed by ENGINEER, at the expense of CONTRACTOR.
- e. Concrete Temperature: Test each time a slump test is made.
2. Where questionable field conditions may exist during placing concrete or immediately thereafter, strength tests of specimens cured under field conditions will be required by ENGINEER to check the adequacy of curing and protecting of the concrete placed. Specimens shall be molded at the same time and from the same samples as the laboratory cured specimens.
 - a. Provide improved means and procedures for protecting concrete when the 28-day compressive strength of field-cured cylinders is less than 85% of companion laboratory-cured cylinders.
 - b. When laboratory-cured cylinder strengths are appreciably higher than the minimum required compressive strength, field-cured cylinder strengths need not exceed the minimum required compressive strength by more than 500 psi even though the 85 percent criterion is not met.
3. The testing laboratory shall submit certified copies of test results directly to ENGINEER and CONTRACTOR after tests are made.

C. Evaluation of Quality Control Tests:

1. Do not use concrete delivered to the final point of placement that has slump or temperature outside the specified values, nor that which is older than specified in section 3.2.
2. Compressive strength tests for laboratory-cured cylinders will be considered satisfactory if the averages of all sets of three consecutive compressive strength tests results equal or exceed the 28 day design compressive strength of the type or class of concrete; and, no individual strength test falls below the required compressive strength by more than 500 psi.
3. If the compressive strength tests fail to meet the minimum requirements specified, the concrete represented by such tests will be considered deficient in strength and subject to replacement, reconstruction or to other action approved by ENGINEER.

D. Testing Concrete Structure for Strength:

1. When there is evidence that the strength of the in-place concrete does not meet specification requirements, provide the services of a concrete testing service to take cores drilled from hardened concrete for compressive strength determination at no additional expense to OWNER. Provide tests complying with ASTM C42 and the following:
 - a. Take at least three (3) representative cores from each member or suspect area at locations directed by ENGINEER.
 - b. Strength of concrete for each series of cores will be considered satisfactory if their average compressive strength is at least 85% and no single core is less than 75% of the 28 day required compressive strength.
 - c. Report test results, in writing, to ENGINEER on the same day that tests are made. Include in test reports the Project identification name and number, date, name of CONTRACTOR, name of concrete testing service, location of test core

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- in the structure, type or class of concrete represented by core sample, nominal maximum size aggregate, design compressive strength, compression breaking strength and type of break (corrected for length-diameter ratio), direction of applied load to core with respect to horizontal plane of the concrete as placed, and the moisture condition of the core at time of testing.
2. Fill core holes solid with non-shrink, high strength grout, and finish to match adjacent concrete surfaces.

3.6 MISCELLANEOUS CONCRETE ITEMS

- A. Filling-In: Fill-in holes and openings left in concrete structures for the passage of work by other contractors, unless otherwise shown or directed, after the work of other contractors is in place. Mix, place and cure concrete as herein specified, to blend with in-place construction. Provide all other miscellaneous concrete filling shown or required to complete the Work.
- B. Curbs:
 1. Provide monolithic finish to interior curbs by stripping forms while concrete is still green and steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.
 2. Exterior curbs shall have rubbed finish for vertical surfaces and a broomed finish for top surfaces.
- C. Equipment Bases:
 1. Unless specifically shown otherwise, provide concrete bases for all pumps and other equipment. Construct bases to the dimensions shown, or as required to meet manufacturers' requirements and drawing elevations. Where no specific elevations are shown, bases shall be 6-inches thick and extend 3-inches outside the metal equipment base or supports. Bases to have smooth trowel finish, unless a special finish such as terrazzo, ceramic tile or heavy duty concrete topping is required. In those cases, provide appropriate concrete finish.
 2. Include all concrete equipment base work not specifically included under other Sections.
 3. In general, place bases up to 1-inch below the metal base. Properly shim equipment to grade and fill 1-inch void with non-shrink grout.
- D. Installation of embedded items
 1. Install all embedded items prior to concrete placement, or, if necessary, as soon after concrete placement as possible, before concrete is set.
 2. Use temporary support and bracing to keep embedded items in place while concrete cures.
 3. Protect all embedded items from damage during concrete installation.

3.7 CONCRETE REPAIRS

- A. Repair of Formed surfaces:
 1. Repair exposed-to-view formed concrete surfaces that contain defects which adversely affect the appearance of the finish. Surface defects that require repair include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, and holes left by the rods and bolts; fins and other projections on the surface; and stains and other discolorations that cannot be removed by cleaning.

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2. Repair concealed formed concrete surfaces that may contain defects that adversely affect the durability of the concrete. Surface defects that require repair include cracks in excess of 0.01-inch wide, cracks of any width and other surface deficiencies which penetrate to the reinforcement or completely through non-reinforced sections, honeycomb, rock pockets, holes left by tie rods and bolts, and spalls except minor breakage at corner.
 3. Repair structural cracks and cracks in water-holding structures.
- B. Method of Repair of Formed Surfaces:
1. Repair and patch defective areas with cement mortar immediately after removal of forms and as directed by ENGINEER.
 2. Cut out honeycomb, rock pockets, voids over ½-inch diameter, and holes left by tie rods and bolts, down to solid concrete but, in no case, to a depth of less than 1-inch. Make edges of cuts perpendicular to the concrete surface. Before placing the cement mortar, thoroughly clean, dampen with water, and brush-coat the area to be patched with the specified bonding agent.
 - a. For exposed-to-view surfaces, blend white portland cement and standard portland cement so that, when dry, the patching mortar color will match the color of the surrounding concrete. CONTRACTOR shall impart texture to repaired surfaces to match texture of existing adjacent surfaces. Provide test areas at inconspicuous locations to verify mixture, texture and color match before proceeding with the patching. Compact mortar in place and strike off slightly higher than the surrounding surface.
 3. Cracks which require repair shall be pressure grouted, epoxy injected, using one of the following. Apply in accordance with the manufacturer's directions and recommendations.
 - a. Sikadur 35, Hi-Mod L.V. and Sikadur 31, Hi-Mod Gel, as manufactured by Sika Corporation Company.
 - b. Euco Epoxy #452 Epoxy System, as manufactured by The Euclid Chemical Company.
 - c. Or approved equal.
 4. Fill holes extending through concrete by means of a plunger- type gun or other suitable device from the least exposed face, using a flush stop held at the exposed face to ensure completely filling.
 5. Sandblast exposed-to-view surfaces that require removal of stains, grout accumulations, sealing compounds, and other substances marring the surfaces. Use sand finer than No. 30 and air pressure from 15 to 25 psi.
- C. Repair of Unformed Surfaces:
1. Test unformed surfaces, such as monolithic slabs, for smoothness and to verify surface plane to the tolerances specified for each surface and finish. Correct low and high areas as herein specified.
 2. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness, using a template having the required slope. Correct high and low areas as herein specified.
 3. Repair finish of unformed surfaces that contain defects which adversely affect the durability of the concrete. Surface defects, as such, include crazing, cracks in excess of 0.01-inch wide or which penetrate to the reinforcement or completely through non-reinforced sections regardless of width, spalling, popouts, honeycomb, rock pockets, and other objectionable conditions.

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4. Repair structural cracks and cracks in water-holding structures.

D. Methods of Repair of Unformed Surfaces:

1. Correct high areas in unformed surfaces by grinding, after the concrete has cured sufficiently so that repairs can be made without damage to adjacent areas.
2. Correct low areas in unformed surfaces during, or immediately after completion of surface finishing operations by cutting out the low areas and replacing with fresh concrete. Finish repaired areas to blend into adjacent concrete. Use one of the following. Apply in accordance with the manufacturer's directions and recommendations.
 - a. Euco Poly-Patch, as manufactured by The Euclid Chemical Company.
 - b. Sikatop 122, as manufactured by Sika Corporation.
 - c. Or approved equal.
3. Repair defective areas, except random cracks and single holes not exceeding 2-inch diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts, and expose reinforcing steel with at least $\frac{3}{4}$ -inch clearance all around. Dampen all concrete surfaces in contact with patching concrete and brush with the specified bonding agent. Place patching concrete before grout takes its initial set. Mix patching concrete of the same materials and proportions to provide concrete of the same type or class as the original adjacent concrete. Place, compact and finish as required to blend with adjacent finished concrete. Cure in the same manner as adjacent concrete.
4. Repair isolated random cracks, as approved by ENGINEER, and single holes not over 2-inch diameter, by the dry-pack method. Groove the top of cracks, and cut out holes to sound concrete and clean of dust, dirt and loose particles. Dampen all cleaned concrete surfaces and brush with the specified bonding agent. Place dry-pack before the cement grout takes its initial set. Mix dry-pack, consisting of 1 part portland cement to 2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched areas continuously moist for not less than 72 hours.
5. Cracks which extend through the full member section, or any cracks determined by ENGINEER to require pressure grouting repair, shall be pressure grouted, epoxy injected, using one of the following. Apply in accordance with the manufacturer's directions and recommendations.
 - a. Sikadur 35, Hi-Mod L.V. and Sikadur 31, Hi-Mod Gel, as manufactured by Sika Corporation.
 - b. Euco Epoxy #452 Epoxy System, as manufactured by The Euclid Chemical Company.
 - c. Or approved equal.
6. Assure that surface is acceptable for flooring material to be installed in accordance with manufacturer's recommendations.

E. Other Methods of Repair:

1. Repair methods not specified above may be used if approved by ENGINEER.

++ END OF SECTION ++

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SECTION 03400

PRECAST CONCRETE

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Section includes all plant-precast products, including, but not limited to, wet wells, catch basins, manholes, vaults, and valve boxes.

1.2 SYSTEM DESCRIPTION

- A. Precast products shall be designed for the indicated service, the loadings specified in the Contract Documents, and all transportation, handling, and erection loads, in accordance with requirements and recommendations of the references.
 - 1. Precast products not subjected to traffic loads shall be designed to meet and exceed the requirements of ACI 318-14.
 - 2. Precast products subjected to traffic loads shall be designed to meet and exceed the requirements of the current AASHTO LRFD Bridge Design Specifications.
 - 3. Liquid containing precast products shall be designed for the additional requirements of ACI 350-06.
- B. If precast products are proposed as substitutes for cast-in-place designed structures, such precast products shall meet the above requirements and any other requirements for which the cast-in-place structures were designed by the ENGINEER. Such products shall be designed by an engineer licensed to practice in the State of California.
- C. Items located in or adjacent to traffic areas shall be designed to resist AASHTO HL93 loading, unless otherwise indicated.
- D. Lifting inserts shall have a minimum safety factor of 4.

1.3 QUALIFICATIONS

- A. Manufacturer:
 - 1. Manufacturer shall have at least 5 years experience in the design and manufacture of precast concrete products substantially similar to those required for this project.
- B. Installer:
 - 1. Precast Items shall be installed by the Manufacturer or by an installer regularly engaged for at least 5 years in erection of precast products similar to those required on this project.

1.4 SUBMITTALS

- A. Shop Drawings:
 - 1. Submit to the ENGINEER for review, shop drawings of the proposed details, and design calculations; all calculations and shop drawings shall be stamped and signed by a Civil or Structural Engineer registered in the State of California.

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2. Material specifications.
 3. All dead, live and other applicable loads used in the design.
 4. Applicable standards (from "References") met by the item(s).
 5. Setting plans locating and designating all items furnished by the manufacturer, with all major openings shown and located.
 6. Details to indicate quantities, location and type of reinforcing and prestressing steel.
 7. Sections and details showing connections, edge conditions, support conditions, and connections of the items.
 8. Description of all embeds, including stripping, lifting and erection inserts, with piece mark and location, including those cast into products or sent loose to the job site.
 9. Description and drawings of all frames and covers.
 10. Dimensions and special finishes.
- B. Mix Designs: Submit all precast mix designs for approval. Mix designs shall be prepared by an independent testing facility or qualified employee of the Precast Manufacturer.
- C. Design Modifications:
1. Submit design modifications necessary to meet performance requirements and field conditions.
 2. Variations in details or materials shall not adversely affect the appearance, durability or strength of products.
 3. Maintain general design concept without altering size of members, profiles and alignment unless otherwise approved by the Architect/Engineer.

1.5 QUALITY ASSURANCE

- A. In-Plant Quality Control
1. The Manufacturer shall have an established PCI quality control program in effect prior to bidding. If requested, a copy of this program shall be submitted to the ENGINEER.
 2. Testing of materials and inspection of production techniques shall be the responsibility of the Manufacturer's Quality Control Department.
 3. Keep quality control records available for two years after final acceptance.
 4. Keep certificates of compliance available for five (5) years after final acceptance.
- B. All other testing and inspection, if any, to be provided by OWNER.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Handle and transport products in a position consistent with their shape and design in order to avoid excessive stresses or damage.
- B. Lift or support products only at the points shown on the Shop Drawings.
- C. Installer shall be responsible for the repair of damage to items except that caused by others.
- D. After items are installed in their final positions, the CONTRACTOR shall be responsible for their protection. The CONTRACTOR shall be responsible for the repair of any damage to the items caused by someone other than the Manufacturer/Installer.

PART 2 - PRODUCTS

2.1 CONCRETE MATERIALS

- A. Portland Cement ASTM C150 Type I, II or III cement.
- B. Aggregates:
 - 1. Fine and coarse aggregate for mix shall conform to ASTM C33 or C330.
 - 2. Aggregates shall be clean, hard, strong, durable, inert, and free of staining and deleterious materials.
- C. Water Potable, free from deleterious material.
- D. Admixtures:
 - 1. Conforming to ASTM C260 and/or ASTM C494.
 - 2. Calcium chloride or admixtures containing chlorides shall not be used.
- E. Concrete Strength: Concrete strength shall be determined by design with a minimum 28 day design strength of 4,000 psi.

2.2 STEEL MATERIALS

- A. Products:
 - 1. Structural Shapes, Bars & Plates (1.6mm and thicker): ASTM A36
 - 2. Pipe: ASTM A53 Grades A or B
 - 3. Tube Steel: ASTM A500 Grades A or B
 - 4. Reinforcing Steel: ASTM A615 Grades 300 & 420 or ASTM A706
 - 5. Prestressing Strand: ASTM A416 Grade 270, low relaxation
 - 6. Deformed Steel Bar Mats: ASTM A184
 - 7. Deformed Bar Anchors: ASTM A496
 - 8. Deformed Welded Wire Fabric: ASTM A497
 - 9. Plain Welded Wire Fabric: ASTM A185
 - 10. Welded Headed Studs: AWS D1.1 Type B
 - 11. Standard Machine Bolts: ASTM A307 Grade A or SAE J429 Grade 2
 - 12. Standard Studs/Threaded Round Stock: ASTM A307 Grade C, ASTM A572 Grade 345
 - 13. Nuts for Standard Machine Bolts and Threaded Studs: ASTM A563 Grade A Hex Nuts
 - 14. High Strength Bolts: ASTM A325 Type 1, ASTM A449 Type 1, or SAE J429 Grade 5
 - 15. Nuts for High-Strength Bolts and Threaded Studs: ASTM A563 Grade DH Heavy Hex Nuts
 - 16. Coil Rods and Bolts: ASTM A108 - SAE 1016 to 1026, $F_u/F_y = 480/380$ MPa minimum
 - 17. Coil Nuts for Coil Rods and Bolts: Nuts passing a proof load stress of 80 ksi, based on the tensile stress area of the matching coil rods and bolts.
 - 18. Carbon Steel Castings: ASTM A27 Grade 415-205
- B. Protective Coatings:
 - 1. All connection hardware permanently exposed to weather after completion shall be protected. All connection hardware not exposed to weather after completion may be uncoated, except as otherwise explicitly required by the contract drawings. Fasteners can have either an electroplated zinc or cadmium coating.
 - 2. Alkyd Rust Inhibitive Primers (shop primers such as red iron oxide) :
 - a. Tnemec Series FD88 Azerox Primer

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- b. Ameron 5105
 - c. Weld-Thru Primer, Red, 2-0101 & Gray, 2-0102
- 3. Zinc Coatings:
 - a. Hot-Dip Galvanizing: ASTM A123, or ASTM A153
 - b. Electroplated Zinc for Steel Products and Steel Hardware: ASTM B633
 - c. Zinc Rich Paints: DOD-P-21035
- 4. Cadmium Coatings:
 - a. Electrodeposited Coatings of Cadmium: ASTM B766

2.3 MISCELLANEOUS PRODUCTS

- A. Grout:
 - 1. Cement Grout: Portland cement, sand and water sufficient for placement and hydration.
 - 2. Non-Shrink Grout: Premixed, packaged non-ferrous aggregate shrink resistant.
 - 3. Epoxy Resin Grout: Two-component mineral-filled resin: ASTM C881.
- B. Joint Sealing Compound: The joint sealing compound shall be a permanently flexible plastic material complying in every detail to Federal Specification SS S-00210 (GSA-FSS) dated July 26, 1965. "Quickseal", or approved equal.
- C. Frames and Covers:
 - 1. All frames and covers shall not be located in the path of traffic unless approved by PID.
 - 2. Vaults shall be provided with fabricated steel frames and covers as specified and shall be built up so that the cover is flush with the surrounding surface unless otherwise specified.
 - 3. Non-Traffic Rated Meter Box and Cover:
 - a. $\frac{3}{4}$ " to 1" Meters
 - 1) Jensen Precast HN1222 meter box and HPC1222-L01 lid with AMR opening
 - 2) Or other PID approved meter box and cover
 - b. 1-1/2" to 2" Meters
 - 1) Jensen Precast HPC1730 meter box and HPC1730-T22 L02 lid with AMR opening
 - 2) Or other PID approved meter box and cover
 - 4. Traffic Rated Meter Box and Cover:
 - a. $\frac{3}{4}$ " to 1" Meters
 - 1) Christy B1017 and steel cover with AMR opening
 - 2) Jensen Precast HT1324 meter box and HT1321-L01 lid with AMR opening
 - 3) Or other PID approved traffic rated meter box and cover
 - b. 1-1/2" to 2" Meters
 - 1) Christy B1730 and steel cover with AMR opening
 - 2) Jensen Precast HT1730 meter box and HT1730-L01 lid with AMR opening
 - 3) Or other PID approved traffic rated meter box and cover

2.4 FABRICATION

- A. Unless otherwise noted, precast concrete structure dimensions called out on the Drawings are interior dimensions.
- B. Manufacturing procedures shall be in general compliance with PCI MNL-116.

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- C. Manufacturer shall provide for those openings 10 inch or larger, round or square as shown on the drawings. Other openings shall be located and field drilled or cut by the trade requiring them after the units have been erected. Openings and/or cutting of prestressing strand shall be approved by ENGINEER and manufacturer before drilling or cutting.
- D. Forms:
 - 1. Forms for precast products shall be rigid and constructed of materials that will result in finished products conforming to the profiles, dimensions and tolerances indicated by this Section, the Contract Documents and the reviewed Shop Drawings.
 - 2. Construct forms to withstand vibration method selected.
 - 3. Release agents shall be applied and used according to manufacturer's instructions.
- E. Concreting:
 - 1. Batching of Concrete shall be in accordance with approved Mix Design(s).
 - 2. Convey concrete by methods which will prevent separation, segregation or loss of material.
 - 3. Consolidate all concrete in the form to minimize honeycombing or entrapped air.
- F. Curing: Procedures sufficient to insure specified concrete strength of all products must be employed. Stripping of a panel shall not occur until concrete strength is sufficient to prevent cracking or damage of the panel.
- G. Manufacturing Tolerances:
 - 1. Cross Sectional Dimensions:
 - a. Less than 24 inches: $\pm 1/4$ inch"
 - b. 24 to 36 inches: $\pm 3/8$ "
 - c. Over 36 inches: $\pm 1/2$ "
 - 2. Length:
 - a. Less than 25 ft: $\pm 1/2$ "
 - b. 25 to 50 ft: $\pm 3/4$ "
 - c. Over 50 ft: ± 1 "
 - 3. Variation from square or designed skew (difference in length of two diagonal measurements): Max. $\pm 3/4$ "
- H. Identification: Mark each precast item to correspond to identification mark on Shop Drawings for product location, and with casting date.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Access: Clear unloading areas and access roadways to point of component placement shall be provided and maintained by the CONTRACTOR. The CONTRACTOR shall provide all required traffic controls, barricades, warning lights and/or signs to insure a safe installation.
- B. Sitework: The CONTRACTOR shall excavate and prepare the subgrade, including 2 inches of clean sand, graded level and to the proper elevation.

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- C. Installer Responsibility: Prior to installation of the precast products, notify the CONTRACTOR of any discrepancies discovered which affect the work under this contract.

3.2 INSTALLATION

- A. General: Precast products shall be lifted with suitable lifting devices at points provided by the Manufacturer to prevent excessive stresses or damage to the products. Brace and secure items before unhooking.
- B. Sitework:
1. Openings or "knockouts" shall be located as shown on the drawings and shall be sized sufficiently to permit passage of the largest dimension of pipe and/or coupling flange. Upon completion of installation, all voids or openings in the vault walls around pipes shall be filled with 4,000-psi concrete or mortar, using an approved epoxy for bonding concrete surfaces.
 2. All joints between precast sections shall be made watertight using preformed mastic material. The sealing compound shall be installed according to the manufacturer's recommendations to provide a watertight joint which remains impermeable throughout the design life of the structure. All joints shall be filled with dry-pack non-shrink grout. If plastic liner system is used, after the joint has been made and is cured, install plastic liner weld strip at all joints and seams.
 3. Frames and covers shall be built up so that the cover is flush with the surrounding surface unless otherwise specified.
 - a. The CONTRACTOR is responsible for placing the cover at the proper elevation where paving is to be installed and shall make all necessary adjustments so that the cover meets these requirements.
 - b. Valve or meter boxes installed in unpaved areas shall be installed at an elevation matching the surrounding surface. Mounding of soil or gravel around the valve or meter box shall not exceed a 2% slope.
 4. After the structure and all appurtenances are in place and approved, and after any required disinfection or testing, backfill shall be placed to the original ground line or to the limits designated on the plans.

3.3 FIELD QUALITY CONTROL

- A. CONTRACTOR shall be responsible for ensuring that all precast concrete products installed are in a condition consistent with shop drawings. Lids or covers that do not sit flush with meter boxes or valve boxes will not be accepted and CONTRACTOR shall be responsible for furnishing and installing a replacement.
- B. Precast concrete products damaged in field during installation including widening of "knockouts" on meter boxes will not be accepted and CONTRACTOR shall be responsible for furnishing and installing a replacement.

3.4 PATCHES AND REPAIRS:

- A. Patching of products, when required, shall be performed to industry standards for structural concrete. Repairs shall be sound, permanent and flush with adjacent surface.

3.5 WARRANTY:

- A. All labor and materials under the Precast Manufacturers contract shall be warranted by the Precast Manufacturer for a period of one (1) year after substantial completion.

++ END OF SECTION ++

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SECTION 15100
PIPE AND FITTINGS

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Shop Drawings:
 - 1. Product data sheets for each piping system.
 - a. Include information on pipe, fittings, and joint systems.
 - 2. Complete catalog information, descriptive literature, specifications, and identification of materials of construction.
 - 3. Complete descriptions and data for all coatings and linings.
 - 4. Tests and inspection data for pipe and coatings/linings.
 - 5. Qualifications for welders and/or technicians performing joining processes that requires specialized equipment to perform the work or as specifically identified herein.
- B. Operation and Maintenance Data as specified in 13333 Submittal Procedures section of these specifications.

1.2 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. In accordance with manufacturer's directions.

PART 2 - PRODUCTS

2.1 PIPING SYSTEM DATA SHEETS

- A. Piping system data sheets (PSDS) have been attached to this Specification and are incorporated herein by reference. Provide piping systems in accordance with piping system data sheets.

2.2 THRUST RESTRAINT

- A. Provide rigid or restrained joints and fittings for all piping systems specified with a test pressure in the Pipe Schedule.
- B. Unless otherwise specified in the Pipe Schedule or shown on the Drawings, thrust blocks shall not be used.

PART 3 - EXECUTION

3.1 PIPE SCHEDULE

- A. A Pipe Schedule is included in the Specifications and is incorporated herein by reference. Install piping systems in accordance with Pipe Schedule.

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Pipe and Fittings

- B. For pipe which is shown on the Drawings, but not referenced in the Pipe Schedule, CONTRACTOR to provide pipe material and fittings which are appropriate for the intended service and acceptable to the ENGINEER.

3.2 PREPARATION

- A. Inspect pipe and fittings before installation, clean ends thoroughly, and remove foreign matter and dirt from inside.
- B. Repair any coatings or linings which were damaged during shipping and handling using manufacturer-approved coating and lining repair materials in accordance with manufacturer's instructions.

3.3 INSTALLATION

- A. General:
 - 1. Join pipe and fittings in accordance with manufacturer's instructions, unless otherwise shown or specified.
- B. Joint Assembly:
 - 1. Flanged Joints (FLG):
 - a. Bolt Holes: Straddle vertical centerlines, aligned with connecting equipment flanges or as shown.
 - b. Follow a bolt tightening pattern which produces uniform bearing pressure.
 - c. Do not over-tighten bolts. Follow manufacturer's recommendation for bolt torque.
 - d. Provide gasket at every flanged joint.
 - e. Provide insulating flange kit where indicated on Drawings and required in this Specification.
 - 2. Threaded and Coupled Joints (THR):
 - a. Conform to ANSI B1.20.1.
 - b. Produce sufficient thread length to ensure full engagement when screwed home in fittings.
 - c. Ream pipe ends and clean chips and burrs after threading.
 - d. Make connections with not more than three threads exposed.
 - e. Lubricate male threads only with thread lubricant or tape as specified on Piping Data Sheets.
 - f. PVC Threaded Joints:
 - 1) Provide Schedule 80 threaded nipple where necessary to connect to threaded valve or fitting.
 - 2) Use strap wrench for tightening threaded plastic joints. Do not overtighten fittings.
 - g. HDPE Threaded Joints:
 - 1) Joining HDPE pipe with threaded connections is not allowed unless specifically approved by the ENGINEER
 - h. Provide dielectric union or insulating coupling where indicated on Drawings and required in this Specification.
 - 3. Grooved-End Joints (GRV):
 - a. Type: Rigid, except where joints are used to correct misalignment, to provide flexibility and where shown otherwise, in which case provide flexible type.
 - b. Grooved end joints are not allowed for plastic pipes unless approved by the ENGINEER.

4. Soldered Joints (SLD):
 - a. Before soldering, remove stems and washers from solder joint valves.
 - b. Use only solder specified for particular service.
 - c. Cut pipe ends square and remove fins and burrs.
 - d. Protect adjacent surfaces from damage during soldering.
 - 1) Protect from high temperatures due to flame
 - 2) Protect from damage due to dripping flux or solder
 - e. After thoroughly cleaning pipe and fitting of oil and grease using solvent and emery cloth, apply noncorrosive flux to the male end only.
 - f. Solder Joint
 - g. Wipe excess solder from exterior of joint before hardened.
 5. Solvent Welded Joints (SLV):
 - a. Use only solvent cement which is rated for use in the service intended. Check compatibility of solvent cement with service, especially in pipelines which carry chemicals.
 - b. Observe all manufacturer's requirements for environmental conditions for use of solvent cement.
 - c. Cut pipe ends square and remove fins and burrs.
 - d. Apply appropriate primer.
 - e. Apply solvent cement and assemble joint.
 - 1) Hold in place long enough for solvent cement to set-up and hold joint, as assembled, until solvent cement has cured.
 - f. Wipe excess solvent cement from exterior of joint before hardened.
 6. Proprietary Restrained Mechanical Joints (PRJ):
 - a. PRJ piping shall be furnished with factory-fabricated retainer weldment on spigot end.
 - b. If PRJ piping is field cut, the pipe joint shall be restrained using Restrained Mechanical Joint (RMJ) Glands. Field welding of retainer weldment will not be allowed.
 7. Insulating Flanges, Couplings, and Dielectric Unions:
 - a. Applications: Provide insulating flange, coupling or di-electric union for all joints at the following locations:
 - 1) Dissimilar metal piping connections.
 - 2) Cathodically protected piping penetration to buildings.
 - 3) Submerged to unsubmerged metallic piping connections.
 - 4) Where required for electrically insulated connection.
 - b. Installation:
 - 1) Insulating joints connecting immersed piping to non-immersed piping shall be installed above maximum water surface elevation.
 - 2) Align and install insulating joints according to manufacturer's recommendations to avoid damaging insulating materials.
- C. Exposed Piping Installation:
1. Piping Runs:
 - a. Parallel to building or column lines and perpendicular to floor, unless shown otherwise.
 - b. Piping upstream and downstream of flow measuring devices shall provide straight lengths as required for accurate flow measurement.
 2. Supports: As specified in Piping Support Systems section of these specifications.

3. Group piping wherever practical at common elevations; install to conserve building space and not interfere with use of space and other work.
4. Provide unions or flanges at each piping connection to equipment or instrumentation on equipment side of each block valve to facilitate installation and removal.
5. Install piping so that no load or movement in excess of that stipulated by equipment manufacturer will be imposed upon equipment connection.
6. Install piping to allow for contraction and expansion without stressing pipe, joints, or connected equipment.
7. Piping clearance, unless otherwise shown:
 - a. Over Walkway and Stairs: Minimum of 7 feet 6 inches, measured from walking surface or stair tread to lowest extremity of piping system including flanges, valve bodies or mechanisms, insulation, or hanger/support systems.
 - b. Between Equipment or Equipment Piping and Adjacent Piping: Minimum 3 feet 0 inch, measured from equipment extremity and extremity of piping system including flanges, valve bodies or mechanisms, insulation, or hanger/support systems.
 - c. From Adjacent Work: Minimum 1 inch from nearest extremity of completed piping system including flanges, valve bodies or mechanisms, insulation, or hanger/support systems.
 - d. Do not route piping in front of or to interfere with access ways, ladders, stairs, platforms, walkways, openings, doors, or windows.
 - e. Headroom in front of openings, doors, and windows shall not be less than the top of the opening.
 - f. Do not install piping containing liquids or liquid vapors in transformer vaults or electrical equipment rooms.
 - g. Do not route piping over, around, in front of, in back of, or below electrical equipment including controls, panels, switches, terminals, boxes, or other similar electrical work.

D. Buried Pipe Installation:

1. Pipe Placement:

- a. Keep trench dry until pipe laying and joining are completed.
- b. Exercise care when lowering pipe into trench to prevent twisting or damage to pipe.
- c. Prevent foreign material from entering pipe during placement.
 - 1) Close and block open end of last laid pipe section when placement operations are not in progress and at close of day's work.
- d. Lay pipe upgrade with bell ends pointing in direction of laying.
- e. Deflect pipe at joints for pipelines laid on a curve using unsymmetrical closure of spigot into bell. Utilize a maximum of 75 percent of manufacturer's recommended allowable joint deflection.
 - 1) If joint deflection of standard pipe lengths will not accommodate horizontal or vertical curves in alignment, provide:
 - a) Shorter pipe lengths.
 - b) Fittings/bends.
- f. Secure pipe which has been placed from movement or damage while placing the next section of pipe.
- g. Prevent uplift and floating of pipe prior to backfilling.

E. Locating wire

1. AC pipelines, Plastic pipelines, and all service lateral piping shall be provided with 12 AWG solid copper wire with Type UF insulation laid along the top of the pipe following the installation of pipe and fittings and prior to the installation of haunching and backfill sand.
2. The wire shall be affixed to the top centerline of the pipe at a minimum of every 3 feet and in contact with the full length of the pipe but shall not impede the operation of the corporation stop or other operating valves.
3. Wires are to be used for locating pipes in the future.
4. Wires are to carry a continuous circuit from all extremities of the pipelines.
5. Ends of wire shall be terminated by connecting to existing locator wires or existing metal pipes. Portions of the wire that have been exposed, for whatever reason, shall be protected by wrapping with electrical tape before placement of backfill. Minimum three full wraps covering all exposed bare copper.
6. Connectivity of the tracer wire shall be tested by the CONTRACTOR, and a passing result documented before placement of backfill. Failure to provide proof of a passing test result will result in the need to retest.

F. Cleaning:

1. Following assembly and testing, and prior to disinfection and final acceptance, flush pipelines with water at 2.5 fps minimum flushing velocity until foreign matter is removed. At a minimum, flush for a period of time which will flush the entire pipeline volume three times.
 - a. If impractical to flush large diameter pipe at 2.5 fps, clean in-place from inside by brushing and sweeping, then flush line at lower velocity. If lower velocity is used, flush the entire pipeline volume five times.
2. Provide temporary means of removing flushing water from pipeline during flushing.
3. Provide means for removal/screening of debris from the flushing water, disposal of debris and disposal of flushing water.

3.4 TESTING

- A. Pressure test piping in accordance with the Pipe Schedule, Testing of Pressure Piping Systems section of these specifications.

3.5 SUPPLEMENTS

- A. The following supplements are attached to this Specification section and incorporated herein by reference:
1. 15100 PSDS COP - Copper Pipe and Tubing (COP)
 2. 15100 PSDS DIP- Ductile Iron Process Pipe (DIP)
 3. 15100 PSDS PVC2- PVC Pressure Pipe (PVC2)
 4. 15100 PSDS HDPE2 - Piping System Data Sheet - HDPE Pressure Pipe (HDPE2)

++ END OF SECTION ++

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Pipe and Fittings

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Pipe and Fittings

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SECTION 15100 PS

PIPE SCHEDULE

1.1 DESCRIPTION

A. General:

1. This schedule is provided for the convenience of the CONTRACTOR. Some flow streams may be shown on the drawings, but not listed here.

B. Pipe Materials:

1. Copper Pipe and Tubing (COP)
2. Ductile Iron Process Pipe (DIP)
3. PVC Pressure Pipe (C900)
4. HDPE Pressure Pipe (HDPE)

C. Joint Types:

1. FLG – Flanged
2. GRV – Grooved End
3. MJ – Mechanical Joint
4. PF – Push Fit
5. PO – Push On
6. PRJ – Proprietary Restrained Mechanical Joint
7. RMJ – Restrained Mechanical Joint
8. S – Swagelok stainless steel compression type
9. SLV – Solvent Welded Socket
10. SLD – Soldered Socket
11. THR – Threaded
12. WLD – Butt Welded

D. Lining Systems:

1. CM – Cement Mortar

E. Coating Systems:

1. AS – Asphaltic
2. CM – Cement Mortar
3. FBE – Fusion Epoxy

15100 PS-1
Pipe Schedule

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1.2 PIPE SCHEDULE

Contractor shall install piping systems in accordance with the following pipe schedule:

Contractor shall install piping systems in accordance with the following pipe schedule:

| DESCRIPTION | EXPOSURE | SIZE RANGE | MATERIAL | JOINT TYPE | TEST PRESSURE | LINING | COATING SYSTEM/ COLOR | NOTES |
|------------------|----------|------------|----------|-------------|---------------|--------|--------------------------|-----------|
| Water Main | Buried | 4"-16" | C900 | PO | 165 psi | None | Blue | DR25 |
| Fittings | Buried | ¾"-12" | DIP | FLG/ RMJ | 165 psi | CM | AS | Class 350 |
| Fittings | Buried | 16" | DIP | FLG/ RMJ | 165 psi | CM | AS | Class 250 |
| Service Laterals | Buried | 1"-2" | HDPE | THR | 165 psi | None | None | None |
| Finished Water | Buried | >3" | COP | SLD | NONE | NONE | NONE | LEAD FREE |

++ END OF SECTION ++

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SECTION 15100 PSDS C900

PIPING SYSTEM DATA SHEET – POLYVINYL CHLORIDE PRESSURE PIPE (C900)

| ITEM | DESCRIPTION |
|-----------------|--|
| Pipe | Conform to the requirements of AWWA C900-16 (4-inch to 60-inch) for PVC water transmission pipe, pressure class as shown in pipe schedule. If no pressure class is shown in pipe schedule, provide pressure class adequate to accommodate test pressure shown in pipe schedule. JMEagle products may not be provided. |
| Fittings | Ductile Iron per Section 40 05 19, Ductile Iron Pipe. Transition fittings necessary for the proper connection shall be the standard of, and provided by, the manufacturer of the fittings. |
| Joints | Rubber-gasketed bell and spigot or rubber-gasketed couplings. No restrained joint PVC piping shall be allowed. In sections where joint restraint is required, transition piping to Ductile Iron Pipe with restrained joint fittings or as shown on the drawings. |
| Gaskets | Conforming to the requirements of ASTM F477. |
| Joint Lubricant | Manufacturer's standard. |

++ END OF SECTION ++

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SECTION 15100 PSDS COP

PIPING SYSTEM DATA SHEET – COPPER PIPE (COP)

| ITEM | DESCRIPTION |
|-----------------|--|
| Tubing | Seamless, conforming to ASTM B88 as follows: Potable water (buried)Type K, soft or hard temper |
| Fittings | Commercially pure wrought copper, socket joint, conforming to ASTM B75, dimensions conforming to ANSI B16.22. |
| Threaded Joints | Threaded joints in piping systems shall be made up with polytetrafluoroethylene (such as Teflon®) tape or other thread sealants meeting NSF61. |
| Flanges | Commercially pure wrought copper, socket joint, conforming to ASTM B75, faced and drilled 150-pound ANSI B16.24 standard. |
| Bolting | ASTM A307, carbon steel, Grade A hex head bolts, and ASTM A563 Grade A hex head nuts. |
| Gaskets | 1/16-inch thick non-asbestos compression type, full face, Cranite, John Manville. |
| Solder | Joints 2-1/2 Inch and Smaller: Wire solder (95 percent tin), conforming to ASTM B32 Alloy Grade Sn95. Do not use cored solder. Joints Larger Than 2-1/2 Inch: Wire solder, melt range approximately 440 degrees F to 660 degrees F, conforming to ASTM B32 Alloy Grade HB or HN. Do not use cored solder. |

++ END OF SECTION ++

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Piping System Data Sheet - Copper Pipe (COP)

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SECTION 15100 PSDS DIP**PIPING SYSTEM DATA SHEET – DUCTILE IRON PIPE (DIP)**

| ITEM | DESCRIPTION |
|----------|--|
| Pipe | <p>Buried Piping: Pressure class as indicated in the pipe schedule. If not indicated:</p> <ul style="list-style-type: none">• All pipe 12" diameter and smaller shall be pressure class 350.• All pipe 14" through 20" shall be pressure class 250.• All pipe larger than 20" shall be pressure class 200. <p>Flanged Piping: Special Thickness Class 53 Pressure class shall be per AWWA C150/A21.50 and AWWA C151/A21.51</p> |
| Lining | <p>Water: Cement-Mortar: AWWA C104/A21.4.</p> |
| Coating | <p>Unless otherwise specified in the Pipe Schedule, piping shall be coated as follows:</p> <p>Buried Piping:</p> <ul style="list-style-type: none">• AWWA C151/A21.51: Minimum 1-mil asphaltic coating.• AWWA C105/A21.5: Polyethylene encasement, 4-mil high-density cross laminated or 8-mil linear-low density, color as required by local/state regulations. <p>Exposed/Immersed Piping:</p> <ul style="list-style-type: none">• Primer Coating: Where shop primer is applied to protect pipe during shipping, storage and handling. |
| Fittings | <p>Lined and coated same as pipe.</p> <p>Push-On (PO): AWWA C110/A21.10 and C111/A21.11, gray or ductile iron, 250 psi minimum working pressure. American Cast Iron Pipe Co., Fastite Joint; U.S. Pipe and Foundry, Tyton Joint.</p> <p>Mechanical Joint (MJ): AWWA C110/A21.10, C111/A21.11, and C153/A21.53 gray or ductile iron, 250 psi minimum working pressure. Follower glands shall be ductile iron.</p> <p>Restrained Mechanical Joint (RMJ): Standard MJ Fittings with RMJ Gland conforming to requirements of Section 40 05 06, Piping Specialties.</p> <p>Proprietary Restrained (PRJ): AWWA C111/A21.11 and C153/A21.53, ductile iron, 250 psi minimum working pressure. Clow Corp., Super-Lock Joint; American Cast Iron Pipe Co., Flex-Ring or Lok-Ring Joint; U.S. Pipe, TR Flex</p> <p>Grooved End (GRV): AWWA C606 and C110/A21.10, ductile iron, 250 psi minimum working pressure. Victaulic.</p> <p>Flange (FLG): AWWA C110/A21.10 ductile iron, faced and drilled, 125-pound flat face. Gray cast iron will not be allowed.</p> |
| Joints | <p>Push-On (PO): 250 psi minimum working pressure,</p> |

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Piping System Data Sheet – Ductile Iron Pipe (DIP)

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| ITEM | DESCRIPTION |
|-----------------|--|
| | <p>AWWA C110/A21.10 and C111/A21.11. American Cast Iron Pipe Co., Fastite Joint; U.S. Pipe and Foundry, Tyton Joint.</p> <p>Mechanical Joint (MJ): 250 psi minimum working pressure.</p> <p>Restrained Mechanical Joint (RMJ): Standard MJ Joint with RMJ gland conforming to requirements of Section 15120, PIPING SPECIALTIES.</p> <p>Proprietary Restrained (PRJ): 150 psi minimum working pressure. Clow Corp., Super-Lock; American Cast Iron Pipe Co., Flex-Ring or Lok-Ring; U.S. Pipe, TR Flex.</p> <p>Grooved End (GRV): Rigid type radius cut conforming to AWWA C606, 250 psi minimum working pressure. Victaulic.</p> <p>Flange (FLG): 125-pound flat face, ductile iron, threaded conforming to AWWA C115/A21.15. Gray cast iron will not be allowed.</p> <p>Branch connections 3 inches and smaller, shall be made with service saddles as specified in Section 40 05 06, Piping Specialties.</p> |
| Couplings | <p>Grooved End: 250 psi minimum working pressure, malleable iron per ASTM A47 or ductile iron per ASTM A536. Victaulic.</p> <p>Grooved End Adapter Flanges: 250 psi minimum working pressure, malleable iron per ASTM A47 or ductile iron per ASTM A536. Victaulic.</p> |
| Bolting | <p>T-Bolts and other specialty bolts: Manufacturer's standard.</p> <p>Hex Bolts: ASTM A307, Grade B carbon steel hex head bolts</p> <p>Nuts: ASTM A563, Grade A carbon steel hex head nuts.</p> |
| Gaskets | <p>Push-On, Mechanical, and Proprietary Restrained Joints: Red Rubber (SBR) conforming to ANSI/AWWA C111/A21.11.</p> <p>Grooved End Joints: Halogenated butyl conforming to ASTM D2000 and AWWA C606.</p> |
| Joint Lubricant | Manufacturer's standard. |

++ END OF SECTION ++

SECTION 15100 PSDS HDPE

PIPING SYSTEM DATA SHEET – HDPE SERVICE LATERALS

1.0 Installation Standards

- 1.01 Material and Fittings. Copper Tubing Size (CTS) High-density Polyethylene (HDPE) will be allowed for services up to and including 2" in diameter (meter service connections larger than 2" diameter shall not be constructed as part of this contract.)
- 1.02 High Density Polyethylene Pipe (HDPE) shall be manufactured in accordance with ASTM D2737. Resin used in the manufacture of the pipe shall be listed as meeting the requirements of National Sanitation Foundation (NSF) 61.
- 1.03 HDPE pipe shall be rated for 200 psi, SDR 9.
- 1.04 Size appropriate Stainless Steel stiffening inserts shall be used wherever compression fittings are used.
- 1.05 Unless otherwise specified or approved by the District, compression fittings (Ford Meter Box Company or PID approved equal) are to be used for connecting HDPE tubing to other appurtenances. Pack joint fittings are not allowed.
- 1.06 An approved tubing cutter shall be used to prepare HDPE tubing for fitting attachment. Any other cutting method, such as knife and hacksaw cuts, will not be allowed. Ream pipe ends and ensure cut ends are free of chips and burrs.
- 1.07 All material is to be stored in a clean, dry location, away from contaminants or corrosive materials.

2.0 Installation

- 2.01 New hot-tapped connections to water mains are to be done only at the direction of the ENGINEER where existing corporation stop valves cannot be reused. Connections must be 2 inches and smaller and placed horizontally at 0° with spring line of water main in accordance with Details PID-05 through PID-15.
- 2.02 Unless otherwise specified by the ENGINEER, the order of connections shall be followed as shown in Standard Details PID-05 through PID-15.
- 2.03 Clean, select backfill is to be used, free from rocks and roots or any object that may cause a puncture or deformation in the tubing. Single sack slurry mix may be used as an alternate method of backfill, with a strength of no greater than 100 psi.
- 2.04 Service lines shall be laid at right angles to the water main and run directly to the termination point selected in the field by PID. Deviations from this orientation must be approved by the ENGINEER.

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Piping System Data Sheet – HDPE Pressure Pipe

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- 2.05 Service lines shall be installed in a manner that does not exert stress on pipe or fittings.
- 2.06 A 12 AWG solid copper tracer wire with type UF insulation shall be installed per Standard Details PID-05 through PID-15 and Specification Section 15100.
- 2.07 Following installation and before backfill is placed, CONTRACTOR shall pressurize service lateral with water and wait 5 minutes then inspect all fittings and pipe for any visible signs of leakage. This shall be observed by the ENGINEER and its completion documented.

3.0 Cleaning and Disinfection

- 3.01 Before disinfecting, clean all foreign matter from pipe.
- 3.02 Disinfecting Procedure: Prior to installation spray or swab interior of pipe and fittings with disinfecting solution ensuring all wetted area have been disinfected.
- 3.03 Following the disinfection process, flush pipelines with potable water for long enough to ensure 3 times the volume of the pipe has passed through the pipe. Provide hoses, temporary pipes, ditches, and other conduits as needed to dispose of flushing water without damage to adjacent properties.
- 3.04 Disinfecting Solutions: Minimum free chlorine concentration of 100 ppm.

4.0 Parts Specifications

PIPE: Copper Tubing Size (CTS) HDPE pipe, CenFlo (or District approved comparable) meeting ASTM D2737 CTS, rated for 200 psi, SDR 9, size-appropriate stainless-steel inserts.

FITTINGS:

Note: All fittings must meet lead-free requirements.

Ford Meter Box Company or District approved equivalent

Curb Stop: FIP X FIP

- 1" B11-444
- 1.5" B11-666
- 2" B11-777

Corporation Stop: MIP x COMP

- 1" FB1100-4-Q
- 1.5" FB1100-6-Q
- 2" FB1100-7-Q

Adaptor: MIP X COMP

- .75" C14-33-Q
- 1" C14-44-Q
- 1.5" C14-66-Q
- 2" C14-77-Q

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Piping System Data Sheet – HDPE Pressure Pipe

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Reducer Coupling: FIP

- .75" X 1" C11-43

Coupling: FC x FIP

- .75" X 1" C01-34

Romac Industries

Service Saddle Style 202S

Tap Clamp Style CL1

Brass MIP plugs .75", 1", 1.5" and 2"

PVC MIP plugs .75", 1", 1.5" and 2"

All pipe and fittings are Copper Tubing Size

Stainless steel insert stiffeners shall be approved by PID

See Section 15100 for additional allowable fittings as approved by the ENGINEER.

+ + END OF SECTION + +

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SECTION 15120
PIPING SPECIALTIES

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Shop Drawings:
1. Manufacturer's data on materials, construction, end connections, ratings, overall lengths, etc.

PART 2 - PRODUCTS

2.1 FLEXIBLE COUPLINGS (FC)

- A. Flexible Couplings (FC)
1. Features:
 - a. Description: Sleeve-type flexible couplings.
 - b. Pressure and Service: Same as connected piping.
 - c. Sleeve material: Carbon steel for carbon steel and ductile iron piping systems, or stainless steel for stainless steel piping systems.
 - d. Coating and Lining: All cast and carbon steel components shall be epoxy lined and coated, minimum 16 mils thickness. For potable water service, lining shall be NSF-61 certified.
 - e. Gasket: EPDM
 - f. Bolts and Nuts: Alloy steel, corrosion-resistant, prime coated. Buried couplings shall have Type 316 stainless steel bolts and nuts.
 2. Manufacturers and Products:
 - a. Less than or equal to 2" – Romac 511
 - b. Greater than or equal to 4" – Romac 501
 - c. Or DISTRICT approved equal
- B. Flanged Coupling Adapters (FCA)
1. Features:
 - a. Description: Sleeve-type flexible couplings with flange on one end.
 - b. Pressure and Service: Same as connected piping.
 - c. Adapter body material: Ductile iron or steel.
 - d. Coating and Lining: End and center rings shall be epoxy lined and coated, minimum 16 mils thickness. For potable water service, lining shall be NSF-61 certified.
 - e. Gasket: EPDM
 - f. Bolts and Nuts: Alloy steel, corrosion-resistant, prime coated. Buried couplings shall have Type 316 stainless steel bolts and nuts.
 2. Manufacturers and Products:
 - a. Romac;
 - 1) Style FCA 501 (3-inch through 16-inch)
 - b. Dresser Piping Specialties; Style 227.

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Piping Specialties

- c. Smith-Blair, Inc.; Style 127.
- d. Or District Approved Equal.

C. Transition Coupling

1. Features:
 - a. Applicability: Couple pipes with differing outer diameters. Where thrust restraint is required, use thrust restraint method as shown on the Drawings.
 - b. Description: ductile iron coupling with segmented end rings
 - c. Pressure and Service: Same as connected piping.
 - d. Castings: end rings, center ring, and bolt cams are ductile iron, meeting or exceeding the requirements of ASTM A 536
 - e. Gaskets: EPDM, NSF-61 approved
 - f. Bolts and Nuts: 304 SS
 - g. Coatings: Fusion bonded epoxy, NSF-61 approved where in contact with potable water
2. Manufacturers and Products:
 - a. Ductile Iron Pipe:
 - 1) Romac, Macro HP
 - 2) Or Equal

D. Solid Sleeve Coupling (Mechanical Joint Sleeve)

1. Features:
 - a. Applicability: Couple ductile iron and/or C900 pipes. Where thrust restraint is required, use RMJ glands as shown on the Drawings.
 - b. Description: ductile iron coupling with mechanical joint ends
 - c. Pressure and Service: same as connected piping.
 - d. Bolts and Nuts: 304 SS
 - e. Coatings: same as connecting piping
 - f. Lining: NSF 61 approved
2. Manufacturers and Products:
 - a. Clow
 - b. Or Equal

2.2

2.2 RESTRAINED COUPLINGS

A. Restrained Mechanical Joining Glands (RMJ)

1. Pressure Rating:
 - a. Minimum Working Pressure Rating: Not less than 150 psi.
 - b. Safety Factor: Not less than two times working pressure and shall be supported by manufacturer's proof testing.
2. RMJ gland shall be designed for use with standard mechanical joint pipe. Pipe restraint products designed for use with push-on joints will not be acceptable.
3. Thrust Restraint:
 - a. Provide hardened steel wedges that bear against and engage outer pipe surface and allow articulation of pipe joint after assembly while wedges remain in their original setting position on pipe surface.
 - b. Products employing set screws that bear directly on pipe will not be acceptable.
4. Manufacturers and Products:
 - a. Ductile Iron Pipe Only
 - 1) EBAA Iron Sales Co.; Megalug.

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Piping Specialties

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- 2) Romac Industries Inc.: RomaGrip
- 3) Or District Approved Equal.

2.3 MODULAR MECHANICAL SEALS

- A. Type: Interconnecting synthetic rubber links shaped and sized to continuously fill annular space between pipe and sleeve, blockout, or core-drilled opening in concrete slabs or walls.
- B. Features:
 1. Links: EPDM
 2. Bolts and nuts: Type 316 stainless steel
 3. Pressure plates: composite
 4. Temperature range: -40 to 250 degrees Fahrenheit
 5. Pressure rating: guaranteed by the manufacturer to provide a water-tight seal with a differential hydrostatic head of 40-feet of water
- C. Manufacturers and Products:
 1. PSI-Thunderline; Link-seal, Type S-316
 2. Or District Approved Equal

2.4 SERVICE SADDLES

- A. Double-Strap Iron:
 1. Pressure Rating: Capable of withstanding 150 psi internal pressure without leakage or over stressing.
 2. Run Diameter: Compatible with outside diameter of pipe on which saddle is installed.
 3. Taps: Iron pipe threads.
 4. Materials:
 - a. Body: Malleable or ductile iron.
 - b. Straps: Galvanized steel.
 - c. Hex Nuts and Washers: Steel.
 - d. Seal: Rubber.
 5. Manufacturers and Products:
 - a. Romac 202-S.
 - b. Or District approved equal

PART 3 -

PART 3 -

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General
 1. Follow all manufacturer's directions
- B. Thrust Restraint for Unrestrained Couplings:
 1. Provide thrust restraint for the following coupling types, as shown on the Drawings.

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Piping Specialties

- a. Flexible couplings
 - b. Flanged coupling adapters
 - 2. If no thrust restraint is shown on the Drawings, but pipe schedule indicates a test pressure greater than zero, notify ENGINEER to request appropriate thrust restraint detail.
- C. Flexible Couplings
- 1. Follow all manufacturer's directions
 - 2. No more than 1-inch gap between pipe ends
 - 3. Center flexible coupling in joint
 - 4. Tighten bolts in an alternating pattern to provide even tension around the coupling
 - 5. Tighten bolts to specified torque
 - 6. In buried installations, wrap coupling with plastic fastened to pipe to protect bolts and coupling from backfill material
- D. Flanged Coupling Adapters
- 1. Follow all manufacturer's directions
 - 2. No more than 1-inch gap between pipe plain end and flange face
 - 3. Tighten flange bolts prior to tightening coupling bolts
 - 4. Tighten bolts in an alternating pattern to provide even tension around the coupling
 - 5. Tighten bolts to specified torque
 - 6. In buried installations, wrap coupling with plastic fastened to pipe to protect bolts and coupling from backfill material
- E. Restrained Mechanical Joint Glands
- 1. Follow all manufacturer's directions
 - 2. Tighten mechanical joint gland bolts before tightening restraint lugs
 - 3. Tighten restraint lugs until torque head breaks off
 - 4. In buried installations, wrap joint with plastic fastened to pipe to protect bolts and coupling from backfill material

++ END OF SECTION ++

SECTION 15200

VALVES

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Shop Drawings:
 - 1. Product data sheets for make and model.
 - 2. Complete catalog information, descriptive literature, specifications, and identification of materials of construction.
 - 3. Certificate of Compliance for: Butterfly valves; full compliance with AWWA C504.
- B. Tests and inspection data.

1.2 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. In accordance with manufacturer's directions.

1.3 TRADE NAME ABBREVIATIONS

- A. FKM: Fluorocarbon (FPM or Viton®)
- B. PTFE: Polytetrafluoroethylene (Teflon®)

PART 2 - PRODUCTS

2.1 GENERAL

- A. All valves shall be the same size as the pipe in which they are installed, unless specifically noted otherwise on the Drawings.
- B. All valves shall include all appurtenant parts (operators, chainwheels, handwheels, valve stems, floor stands, gear boxes, operating nut, etc.) for a complete operating valve.
 - 1. Valve shall be, as much as practical, fully factory assembled.
- C. All valves shall open by turning counter-clockwise. Maximum force required for operation shall be 80 lbs.
- D. All valves shall be installed in place with sufficient clearance to be easily operable in the future, considering any required tool or access requirements.
- E. All materials used in construction, modification, or repair of Paradise Irrigation District water supply facilities shall be NSF 61 certified. No chemical, material, lubricant, or product may be used in the production, treatment, or distribution of drinking water that will result in contact with the drinking water, including process media, protective, materials, joining and sealing materials, pipes, and related products, and mechanical

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Valves

devices used in treatment/ transmission/ distribution systems, that has not been tested and certified as meeting the specifications of NSF International/ American National Standard Institute (MSF/ ANSI)61-02005 / Addendum 1.0-2005 (Drinking Water System Components – Health Effects).

- F. All materials used in construction, modification, or repair of Paradise Irrigation District water supply facilities shall comply with the requirements set forth in California Assembly Bill 1953 (AB 1953). AB 1953 prohibits the introduction of any pipe, plumbing fitting, or fixture that is not lead free into a public water system, or any plumbing in a facility providing water for human consumption.
- G. Where Lead-Free Bronze or Brass is specified, materials shall be in compliance with California Health & Safety Code Section 116875. Not more than a weighted average of 0.25 percent of the wetted surface of the valve shall be lead. Valve shall be provided with a “hang tag” or other marking that easily identifies the valve as Lead-Free.
- H. Coatings and Linings:
 - 1. Provide factory-applied coatings as described herein.
 - 2. Where liquid epoxy coatings are specified, coatings shall conform to AWWA C550.
 - 3. Field coat the exterior of all valve bodies with the same coating as is required for the adjacent pipe unless otherwise specified.
- I. Nuts, Bolts and Washers
 - 1. Hex Bolts: ASTM A320/A320M, Type 304 stainless steel, [Grade B8, Class 2](#)
 - 2. Nuts: ASTM F594, Type 304 stainless steel, [Grade B8, Class 2](#)
 - 3. Washers: Type 304 stainless steel

2.2 AIR RELEASE VALVES

2.3 COMBINATION AIR VALVES

- A. **CARV-01:** Clean Water Combination Air Valve (1” through 8”)
 - 1. Service: Potable water, raw water or reclaimed water
 - 2. Features:
 - a. Combines the operating features of both an air vacuum valve and air release valve, allowing to vent or re-enter system freely in either direction
 - b. Once air has been exhausted, uses water pressure to close valve. In CLOSED position, seat against resilient seat to prevent water leakage
 - c. Single-body type
 - d. Rated 150 psi working pressure, orifice size by manufacturer (minimum orifice size 3/32-inch)
 - e. Cast iron, ductile iron, or semi-steel body, cover with stainless steel float and trim
 - f. Provide No. 16 Mesh 316SS screen on inlets and outlets.
 - g. Provide vent hose or piping and route discharge line to nearest drain/structure.
 - h. End Connections:
 - 1) 1” through 4”: threaded
 - 2) 6” and 8”: flanged
 - i. Model determined by size indicated in Valve Schedule or on Drawings
 - j. Coatings and Linings:
 - 1) Liquid epoxy, 12 mil minimum, for valve interior and exterior.

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Valves

- 2) For potable water applications, epoxy lining shall be NSF 61 approved.
- 3. Manufacturers and Products:
 - a. Crispen Series UL
 - b. Or District Approved Equal

2.4 BACKFLOW PREVENTERS

- A. **BFP-01:** Reduced-Pressure Principle Backflow Prevention Assembly (3/4" through 2")
 - 1. Service: Water
 - 2. Features:
 - a. Two check valves with an independent relief valve between the valves,
 - b. Two resilient-seated isolation gate valves or ball valves
 - c. Test cocks, in accordance with AWWA C511
 - d. Rated 175 psi maximum working pressure,
 - e. Meets requirements of USC Foundation for Cross-Connection Control and Hydraulic Research.
 - f. Body: lead-free bronze materials or epoxy-coated cast/ductile iron.
 - g. Test cocks: lead-free bronze
 - h. Ball valves: lead-free bronze
 - i. Ends: as required for installation as shown on Drawings
 - j. Coatings and Linings (steel and cast iron):
 - 1) Liquid epoxy, 12 mil minimum, for valve interior and exterior.
 - 2) For potable water applications, epoxy lining shall be NSF 61 approved.
 - 3. Manufacturers and Products:
 - a. Wilkins 975XL2 (1"-2")

2.5 BALL VALVES

- A. **BAV-01LF:** Lead-Free Bronze Ball Valve (3" and Smaller)
 - 1. Service: Potable Water
 - 2. Features:
 - a. Two-piece, end-entry type
 - b. Lead-Free Brass & Bronze Materials in compliance with California Health & Safety Code Section 116875. Not more than a weighted average of 0.25 percent of the wetted surface of the valve shall be lead. Valve shall be provided with a "hang tag" or other marking that easily identifies the valve as Lead-Free.
 - c. Lead-Free Bronze (Alloy C89836, C89833 or C69300) body
 - d. Chrome-plated lead-free brass (Alloy C27450 or C69300) ball
 - e. RTFE or PTFE seats and packing
 - f. Zinc-coated steel hand lever operator with vinyl grip
 - g. Rated 600-psig WOG, 150-psig SWP.
 - 3. Manufacturers and Products:
 - a. Threaded:
 - 1) Apollo; 70LF100 Series
 - 2) Milwaukee; UPBA100
 - 3) Nibco; T-685-80-LF
 - 4) Or District Approved Equal
 - b. Soldered:
 - 1) Apollo; 70LF200 Series
 - 2) Milwaukee; UPBA150
 - 3) Nibco; S-685-80-LF

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Valves

4) Or District Approved Equal

B. **BAV-03:** Ball Corporation Valve (2" and Smaller)

1. Service: Water
2. Features:
 - a. Rated 300 psi at 73 degrees F
 - b. Brass alloys C89520 or C89833 with a maximum lead content of 0.25% by weight. Brass alloys shall meet AWWA C800, paragraph 4.1.2.
 - c. Full round-port ball valve, no reduced port permitted
 - d. Ends as required
 - e. Double O-ring stem seals
 - f. Key operator
3. Manufacturers and Products:
 - a. Mueller Company; 300 Series Ball Corporation Valves
 - b. Ford Meter Box Company; FB-NL Series Ballcorp Ball Corporation Valves
 - c. Or District Approved Equal

C. **CURB-01LF:** Ball Curb Valve (2" and smaller)

1. Service: Water
2. Features:
 - a. Rated 300 psi
 - b. Brass alloys with a maximum lead content of 0.25% by weight. Brass alloys shall meet AWWA C800, paragraph 4.1.2.
 - c. Ends as required
 - d. Padlock wing for locking valve in closed position.
3. Manufacturers and Products:
 - a. Ford Meter Box Company: Brass Ball Curb Valve
 - b. Or District Approved Equal

D. **CKV-01:** Hydrant Break Off Check Valve

1. Service: Water
2. Features:
 - a.
 - b. Body: ductile iron
 - c. Two-piece design
 - d. Extension: Cast Iron
 - e. Stainless steel break off bar
 - f. Rubber gasket
3. Manufacturers and Products:
 - a. CLOW Valve Company: Model LBI 400A

E. **CKV-20:** Duckbill Check Valve

1. Service: Water.
2. Features:
 - a. All-elastomer check valve
 - 1) Designed to allow flow in only one direction
 - 2) One-piece reinforced elastomeric construction
 - 3) Valve sleeve contours to "duckbill" shape when closed
 - 4) For Flanged-End Application:

- a) Bottom of valve sleeve will be flat, perpendicular to flange, and provide for flow continuing along the same invert as the pipe to which the valve is attached if the valve were attached horizontally and upright.
 - b) Top of valve sleeve will flare away from valve centerline.
 - 5) For In-Line Flanged Applications:
 - a) Valve sleeve will fit entirely into adjacent piping.
 - 6) The "duckbill" portion of the valve sleeve will be thinner and more flexible than the valve body
 - b. Elastomeric material: FKM
 - c. Flanged connection:
 - 1) Elastomeric, integral to valve body
 - 2) Compatible with ANSI B16.5 class 150# flanges.
 - 3. Manufacturers and Products:
 - a. Flanged-End Application:
 - 1) Tide-Flex Series 35-1
 - 2) Or District Approved Equal
 - b. Pipe-Inserted In-Line Flanged Application
 - 1) Tide-Flex Series 37
 - 2) Or District Approved Equal
 - c. Flanged-End In-Line Flanged Application
 - 1) Tide-Flex Series 33 (1" to 3"); Series 39 (4" to 24"); Series 39F (30" to 84")
 - d. Or District Approved Equal
- F. **CKV-21:** Flap Gate (4" through 60")
- 1. Service: Water
 - 2. Features:
 - a. Cast iron construction
 - b. Automatic operation
 - c. Fully adjustable linkage
 - d. Stainless steel studs, bolts and pins
 - e. Bronze bushings
 - f. Minimum 5-degree seating angle
 - g. 125 lb ANSI flange drilling
 - h. Cast iron seat
 - i. Coatings and Linings:
 - 1) Liquid epoxy, 12 mil minimum, for valve interior and exterior
 - 2) For potable water applications, epoxy lining shall be NSF 61 approved
 - 3. Manufacturers and Products:
 - a. Waterman; F-25 Drainage Gate
 - b. HydroGate; Model 10C
 - c. Or District Approved Equal

2.6 FIRE HYDRANTS

- A. **FH-02:** Wet-Barrel Fire Hydrant (6")
- 1. Service: Water
 - 2. Features:
 - a. Hydrant shall be manufactured in accordance with AWWA Standard C-503
 - b. Hydrant head shall be made of gray cast iron, meeting ASTM A126 Class B specifications. It shall be capable of withstanding a hydrostatic test pressure of

- 4 (four) times the working water pressure without stressing the material beyond its yield point per Section 4.6.3.2 of AWWA C503.
- c. Valved Ports:
 - 1) Wet-barrel fire hydrants shall feature independently-valved ports. The working parts shall be engineered to function as a unit and to give trouble-free service over 200 pounds working pressure and tested to 400 pounds hydrostatic pressure.
 - d. All hydrants shall be permanently marked to identify the model number of the hydrant, the manufacturer and the year in which the hydrant was manufactured.
 - e. Hose and pumper nozzle threads shall be in conformance with the standard for fire hose connections, NFPA 1963, unless otherwise specified.
 - f. Protector caps shall be grey cast iron unless otherwise specified by the purchaser. They shall be securely chained to the hydrant barrel and furnished an inner gasket.
 - g. Standard nut size of valve/stem and protector caps shall be of pentagonal shape and furnished with a nut of 1 1/8" measured from point to flat of the pentagon.
 - h. Coatings and Linings:
 - 1) Liquid epoxy lining, 12 mil minimum, for fire hydrant interior.
 - 2) For potable water applications, epoxy lining shall be NSF 61 approved.
 - 3) Exterior of hydrants shall receive a primer coat and be furnished with a traffic yellow enamel finish coat for potable water, or a purple enamel finish coat for recycled water.
3. Manufacturers and Products
- a. Clow Valve Company, Model 850 or Model 860

2.7 GATE VALVES

- A. **GAV-10:** Resilient-Seated Gate Valve (4" through 12")
- 1. Service: Water
 - 2. Features:
 - a. Conforms to AWWA C509 (2" and 3") or AWWA C515 (4" through 54")
 - b. Iron body
 - c. Resilient seat, bronze mounted
 - d. Full port
 - e. Valve Ends:
 - 1) Mechanical joint ends for buried service, unless shown otherwise on drawings or Valve Schedule
 - 2) Flanged ends for exposed service, unless shown otherwise shown on drawings or Valve Schedule
 - f. Non-rising stem
 - g. Operator for Buried Service:
 - 1) Stem extension, as required, to bring operating nut to within 12" of ground surface
 - 2) 2-inch operating nut
 - h. Spur gear for valves 20" and larger installed vertically
 - i. Bevel gear for valves 20" and larger installed horizontally
 - j. Design working water pressure: 250 psig
 - k. Lead free
 - l. Coatings and Linings:
 - 1) Liquid epoxy, 12 mil minimum, for valve interior and exterior.

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Valves

- 2) For potable water applications, epoxy lining shall be NSF 61 approved.
3. Manufacturers and Products:
 - a. Mueller; Model A-2361 (4" through 12")
 - b. M&H Valve
 - c. Or District Approved Equal

2.8 OPERATORS

- A. General:
 1. Operator force not to exceed 40 pounds under any operating condition, including initial breakaway. Gear reduction operator when force exceeds 40 pounds.
 2. Operator self-locking type or equipped with self-locking device.
 3. Provide position indicator on all valves.
 4. Worm and gear operators one-piece design worm-gears of gear bronze material. Worm hardened alloy steel with thread ground and polished. Traveling nut type operators threaded steel reach rods with internally threaded bronze or ductile iron nut.
 5. Valve handles, wheels, etc. to be designed to accommodate a padlock.
- B. Manual Operator:
 1. Galvanized and painted handwheels.
 2. Lever operators allowed on quarter-turn valves 8 inches and smaller.
 3. Cranks on gear type operators.
 4. For all valves above 5'-0" above adjacent working surface (finished floor or finished grade), provide chain wheel operator with tiebacks
 5. For all exposed valves below adjacent working surface (finished floor or walkway), provide extension stem, floor stands, and other accessories to permit operation from 2'-6" above adjacent working surface.
 6. For all buried valves 3" and larger, provide stem extension, valve bonnet, valve box and 2" AWWA operating nut such that operating nut is within 12" of adjacent finished grade.
 - a. For small-diameter buried valves, provide cross-shaped handle for operating with forked key.

2.9 ACCESSORIES

- A. T-Handled Operating Wrench:
 1. One each galvanized operating wrench, 4 feet long.
 2. Manufacturers and Products:
 - a. Mueller; No. A-24610.
 - b. Clow No.; F-2520.
 - c. Or District Approved Equal
- B. Cast Iron Valve Box: Designed for traffic loads, sliding type, with minimum of 6-inch ID shaft.
 1. Box: Cast iron with minimum depth of 9 inches.
 2. Lid: Cast iron, minimum depth 3 inches, marked WATER.
 3. Extensions: Cast iron.

PART 3 - EXECUTION

3.1 VALVE SCHEDULE

- A. A Valve Schedule has been attached to this Specification and is incorporated herein by reference. Provide valves in accordance with Valve Schedule.
- B. For valves that are not referenced in Valve Schedule, provide the valve type called for on the Drawings.

3.2 PREPARATION

- A. Cleaning:
 - 1. Clean all mating faces of valve (threads, flange faces, etc.) prior to assembly.
 - 2. Remove all debris from valve body prior to assembly.
 - 3. Take extra care to clean mating faces of existing pipe and fittings which may have corrosion, dirt, debris and mineral build-up which should be removed for a proper fit.
- B. Apply joint compound, lubricant, etc. as recommended by valve manufacturer for proper installation prior to installation.
- C. Install valves in accordance with the following schedule and as noted on the Drawings:

3.3 INSTALLATION

- A. Install valves per manufacturer's recommendations.
- B. Install valves so handles operate from fully open to fully closed without encountering obstructions.
- C. Install valves in location and orientation for easy access for routine operation and maintenance. Access should be such that an operator can operate the valve by reaching a handle, chain, etc. at a height between 2'-6" and 5'-0" above adjacent work surface (for buried valves, this is accomplished with a t-handle wrench and the operating nut being within 12" of finished grade).
- D. Install plug valves with the seat side as indicated on the Drawings. If manufacturer's recommendations differ from indicated seat direction on the drawings, or if no seat side is indicated, install plug valves with seat side as recommended by the manufacturer after obtaining approval from the ENGINEER.
- E. For installation of services or meters that are to be installed with a locked angle stop or curb stop, the valve shall be turned to the closed position with a bullet to lock the valve.
- F. For backflow preventer installation the device shall be a minimum of 12 inches (12") above grade and not more than fifteen inches (15") above grade measured from the bottom of the device with a minimum of twelve inches (12") side clearance. The grade beneath the backflow preventer shall be compacted and level in measuring this clearance.

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Valves

3.4 TESTS AND INSPECTION

- A. Valve may be either tested while testing pipelines, or as a separate step.
- B. Test that valves open and close smoothly under operating pressure conditions. Test that two-way valves open and close smoothly under operating pressure conditions from both directions.
- C. Inspect air release and vacuum valves as pipe is being filled to verify venting and seating is fully functional.
- D. Count and record number of turns to open and close valve; account for any discrepancies with manufacturer's data.
- E. Set, verify, and record set pressures for all relief and regulating valves.
- F. Automatic valves to be tested in conjunction with control system testing. Set all opening and closing speeds, limit switches, as required or recommended by the ENGINEER.
- G. For all newly installed backflow prevention devices or devices which assembly was modified the device shall be tested by a certified CA-NV AWWA Backflow Prevention Assembly Tester, to ensure that the backflow prevention device is functioning properly prior to the activation of service.
 - 1. The results of each individual test shall be documented including but not limited to the following information:
 - a. Address/ Location of assembly
 - b. Date and Time
 - c. Name of CA-NV AWWA Certified tester
 - d. Serial number of backflow assembly device
 - e. Size of backflow assembly device
 - f. Result of test
 - g. Retest results, if necessary
 - 2. All such test records shall be provided to the ENGINEER for conveyance to Paradise Irrigation District. Test records for backflow devices shall be provided to the ENGINEER weekly.
 - 3. If a backflow preventer device fails the required testing, it must either be repaired or replaced and retested until a passing result is certified and recorded.
 - 4. CONTRACTOR shall install on each backflow device a backflow inspection tag meeting the following requirements and must be approved by the ENGINEER:
 - a. Light blue in color or as approved by the ENGINEER
 - b. 15 PT Vinyl Plastic with 1/4" brass metal eyelet
 - c. 26 gauge galvanized wire attachment
 - d. 2-5/8" x 5-1/4" dimensions
 - e. The following minimum information, pertaining to the backflow prevention device, shall be recorded on the tag:
 - 1) Make
 - 2) Model
 - 3) Size
 - 4) Serial Number
 - 5) Expiration Date
 - 6) Tester Signature

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Valves

- 7) State Certification number
- 8) Passed or Failed Determination
- 9) Notes

3.5 SUPPLEMENTS

- A. The following supplements are attached to this Specification section and incorporated herein by reference:
 - 1. 15200 VS – Valve Schedule
 - 2. 15200 HS – Hydrant Schedule

++ END OF SECTION ++

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Valves

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SECTION 15200 VS

VALVE SCHEDULE

1.1 DESCRIPTION

A. General:

1. This schedule is provided for the convenience of the CONTRACTOR. Some valves may be shown on the drawings, but not listed here if they are not expected to be furnished by CONTRACTOR
2. Valves indicated as tie-in valves on the below table are to be incorporated into unit price for the respective tie-in bid item.
3. Valve specifications are given in Section 15200, Valves.

B. Valve Tag Number:

1. Tag numbers are as noted in the Drawings.

C. Valve Type:

1. Valve types are as described in Section 15200, Valves.
2. Valve Ends:
3. FLG – Flanged
4. GRV – Grooved End
5. LUG - Lugged
6. MJ – Mechanical Joint
 - a. Where the surrounding piping system is installed with restrained joints, MJ valves shall be installed using RMJ (restrained mechanical joint) glands per 15120, Piping Specialties.
7. SLV – Solvent Welded Socket
8. SLD – Soldered Socket
9. THR – Threaded
10. W – Wafer

D. Installation Codes

1. Ex – Exposed
2. Un – Underground

E. Valve Actuators, as described in Section 15200, Valves.

1. HW – Handwheel
2. L – Lever
3. N – 2" Nut
4. N/A – Not Applicable

1.2 VALVE SCHEDULE

| VALVE NUMBER | DIAMETER | VALVE TYPE | PLAN SHEET NAME | TIE IN VALVE? | ENDS | INSTALLATION | ACTUATOR |
|--------------|----------|------------|-----------------|---------------|----------|--------------|----------|
| V800 | 4" | GAV-10 | XENO | YES | FLG X MJ | UN | N |

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Valve Schedule

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| | | | | | | | |
|------|-----|-----------|-----------|-----|-----------|----|-----|
| V801 | 2" | BAV-01LF | XENO | NO | THR | UN | L |
| V802 | 6" | GAV-10 | JUDY | YES | FLG X MJ | UN | N |
| V803 | 2" | BAV-01LF | JUDY | NO | THR | UN | L |
| V804 | 2" | BAV-01LF | SCANDIA | NO | THR | UN | L |
| V805 | 6" | GAV-10 | FARBER | YES | FLG X MJ | UN | N |
| V806 | 6" | GAV-10 | LINRY | YES | FLG X MJ | UN | N |
| V807 | 4" | GAV-10 | LINRY | YES | FLG X MJ | UN | N |
| V808 | 2" | CURB-01LF | LINRY | NO | THR | UN | N |
| V809 | 2" | CARV-02 | LINRY | NO | THR | EX | N/A |
| V810 | 2" | CURB-01LF | LINRY | NO | THR | UN | N |
| V811 | 2" | CARV-02 | LINRY | NO | THR | EX | N/A |
| V812 | 6" | GAV-10 | A-ZONE-1 | YES | FLG X MJ | UN | N |
| V813 | 2" | CURB-01LF | A-ZONE-1 | NO | THR | UN | N |
| V814 | 2" | CARV-02 | A-ZONE-1 | NO | THR | EX | N/A |
| V815 | 6" | GAV-10 | A-ZONE-1 | NO | FLG X FLG | UN | N |
| V816 | 6" | GAV-10 | A-ZONE-1 | NO | FLG X FLG | UN | N |
| V817 | 2" | BAV-01LF | A-ZONE-1 | NO | THR | UN | L |
| V818 | 6" | GAV-10 | A-ZONE-1 | NO | FLG X FLG | UN | N |
| V819 | 2" | CURB-01LF | A-ZONE-2 | NO | THR | UN | N |
| V820 | 2" | CARV-02 | A-ZONE-2 | NO | THR | EX | N/A |
| V821 | 6" | GAV-10 | A-ZONE-2 | NO | FLG X FLG | UN | N |
| V822 | 4" | GAV-10 | A-ZONE-2 | NO | FLG X FLG | UN | N |
| V823 | 2" | BAV-01LF | A-ZONE-2 | NO | THR | UN | L |
| V824 | 6" | GAV-10 | A-ZONE-2 | YES | FLG X MJ | UN | N |
| V825 | 10" | GAV-10 | A-ZONE-3 | YES | FLG X FLG | UN | N |
| V826 | 10" | GAV-10 | A-ZONE-3 | YES | FLG X FLG | UN | N |
| V827 | 6" | GAV-10 | A-ZONE-3 | YES | FLG X MJ | UN | N |
| V828 | 6" | GAV-10 | A-ZONE-3 | YES | FLG X MJ | UN | N |
| V832 | 2" | CURB-01LF | A-ZONE-3 | NO | THR | UN | N |
| V833 | 2" | CARV-02 | A-ZONE-3 | NO | THR | EX | N/A |
| V829 | 2" | BAV-01LF | A-ZONE-4 | NO | THR | UN | L |
| V830 | 6" | GAV-10 | A-ZONE-4 | NO | FLG X FLG | UN | N |
| V831 | 2" | BAV-01LF | A-ZONE-4 | NO | THR | UN | L |
| V920 | 12" | GAV-10 | A-ZONE-6 | NO | FLG X FLG | UN | N |
| V835 | 12" | GAV-10 | CLARK-A-1 | YES | FLG X MJ | UN | N |
| V912 | 2" | BAV-01LF | CLARK-A-1 | NO | THR | UN | L |
| V913 | 6" | GAV-10 | CLARK-A-1 | YES | FLG X MJ | UN | N |
| V836 | 12" | GAV-10 | CLARK-A-1 | NO | FLG X FLG | UN | N |
| V837 | 4" | GAV-10 | CLARK-A-2 | YES | FLG X MJ | UN | N |

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Valve Schedule

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| | | | | | | | |
|------|-----|-----------|---------------|-----|-----------|----|-----|
| V838 | 2" | CURB-01LF | CLARK-A-2 | NO | THR | UN | N |
| V839 | 2" | CARV-02 | CLARK-A-2 | NO | THR | UN | N/A |
| V840 | 6" | GAV-10 | CLARK-A-2 | YES | FLG X MJ | UN | N |
| V841 | 6" | GAV-10 | CLARK-A-2 | YES | FLG X MJ | UN | N |
| V842 | 6" | GAV-10 | CLARK-A-2 | YES | FLG X MJ | UN | N |
| V843 | 12" | GAV-10 | CLARK-A-2 | YES | FLG X FLG | UN | N |
| V844 | 6" | GAV-10 | CRANDALL | YES | FLG X FLG | UN | N |
| V845 | 6" | GAV-10 | CRANDALL | NO | FLG X FLG | UN | N |
| V846 | 2" | CURB-01LF | CRANDALL | NO | THR | UN | N |
| V847 | 2" | CARV-02 | CRANDALL | NO | THR | EX | N/A |
| V848 | 6" | GAV-10 | CRANDALL | NO | FLG X FLG | UN | N |
| V849 | 6" | GAV-10 | CRANDALL | YES | FLG X FLG | UN | N |
| V850 | 6" | GAV-10 | DEODARA | YES | FLG X MJ | UN | N |
| V851 | 8" | GAV-10 | DEODARA | YES | FLG X FLG | UN | N |
| V852 | 2" | BAV-01LF | DEODARA | NO | THR | UN | L |
| V853 | 6" | GAV-10 | HIMMEL | NO | FLG X FLG | UN | N |
| V854 | 6" | GAV-10 | HIMMEL | YES | FLG X FLG | UN | N |
| V855 | 6" | GAV-10 | HIMMEL | YES | FLG X FLG | UN | N |
| V856 | 6" | GAV-10 | FOREST | YES | FLG X FLG | UN | N |
| V857 | 2" | CURB-01LF | FOREST | NO | THR | UN | N |
| V858 | 2" | CARV-02 | FOREST | NO | THR | EX | N/A |
| V859 | 2" | BAV-01LF | FOREST | NO | THR | UN | L |
| V860 | 6" | GAV-10 | YORK TOWNE | YES | FLG X MJ | UN | N |
| V861 | 6" | GAV-10 | YORK TOWNE | NO | FLG X FLG | UN | N |
| V862 | 2" | BAV-01LF | YORK TOWNE | NO | THR | UN | L |
| V863 | 2" | CURB-01LF | PARADISE | NO | THR | UN | N |
| V864 | 2" | CARV-02 | PARADISE | NO | THR | UN | N/A |
| V865 | 2" | BAV-01LF | PARADISE | NO | THR | UN | L |
| V866 | 6" | GAV-10 | MOON-HAZEL | YES | FLG X MJ | UN | N |
| V867 | 2" | BAV-01LF | MOON-HAZEL | NO | THR | UN | L |
| V868 | 6" | GAV-10 | FAWNDALE | YES | FLG X MJ | UN | N |
| V869 | 6" | GAV-10 | SAWMILL | YES | FLG X MJ | UN | N |
| V870 | 2" | BAV-01LF | SAWMILL | NO | THR | UN | L |
| V871 | 8" | GAV-10 | FEATHER RIVER | YES | FLG X MJ | UN | N |
| V914 | 2" | CURB-01LF | FEATHER RIVER | NO | THR | UN | N |
| V915 | 2" | CARV-02 | FEATHER RIVER | NO | THR | UN | N/A |
| V872 | 6" | GAV-10 | FEATHER RIVER | NO | FLG X FLG | UN | N |
| V873 | 2" | BAV-01LF | FEATHER RIVER | NO | THR | UN | L |
| V874 | 6" | GAV-10 | CYPRESS | YES | FLG X MJ | UN | N |

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| | | | | | | | |
|------|-----|-----------|-----------------------|-----|-----------|----|-----|
| V875 | 6" | GAV-10 | CYPRESS | NO | FLG X FLG | UN | N |
| V876 | 10" | GAV-10 | SKYWAY-1 | YES | FLG X MJ | UN | N |
| V877 | 6" | GAV-10 | SKYWAY-1 | YES | FLG X FLG | UN | N |
| V916 | 10" | GAV-10 | SKYWAY-1 | YES | FLG X FLG | UN | N |
| V878 | 10" | GAV-10 | SKYWAY-1 | NO | FLG X FLG | UN | N |
| V879 | 6" | GAV-10 | SKYWAY-1 | YES | FLG X MJ | UN | N |
| V880 | 10" | GAV-10 | SKYWAY-1 | NO | FLG X FLG | UN | N |
| V881 | 10" | GAV-10 | SKYWAY-2 | NO | FLG X FLG | UN | N |
| V882 | 10" | GAV-10 | CLARK-B | YES | FLG X FLG | UN | N |
| V883 | 12" | GAV-10 | CLARK-B | YES | FLG X MJ | UN | N |
| V884 | 2" | CURB-01LF | CLARK-B | NO | THR | UN | N |
| V885 | 2" | CARV-02 | CLARK-B | NO | THR | EX | N/A |
| V886 | 6" | GAV-10 | CLARK-B | NO | FLG X FLG | UN | N |
| V887 | 10" | GAV-10 | CLARK-B | YES | FLG X FLG | UN | N |
| V888 | 2" | CURB-01LF | PACIFIC-ORCHARD | NO | THR | UN | N |
| V889 | 2" | CARV-02 | PACIFIC-ORCHARD | NO | THR | EX | N/A |
| V890 | 6" | GAV-10 | PACIFIC-ORCHARD | YES | FLG X FLG | UN | N |
| V891 | 6" | GAV-10 | PACIFIC-ORCHARD | YES | FLG X FLG | UN | N |
| V892 | 6" | GAV-10 | PACIFIC-ORCHARD | YES | FLG X FLG | UN | N |
| V893 | 6" | GAV-10 | PACIFIC-ORCHARD | NO | FLG X FLG | UN | N |
| V894 | 2" | BAV-01LF | PACIFIC-ORCHARD | NO | THR | UN | L |
| V897 | 4" | GAV-10 | CORAL AVE | YES | FLG X MJ | UN | N |
| V898 | 2" | BAV-01LF | CORAL AVE | NO | THR | UN | L |
| V899 | 4" | GAV-10 | CORAL CIR | YES | FLG X MJ | UN | N |
| V900 | 2" | BAV-01LF | CORAL CIR | NO | THR | UN | L |
| V901 | 6" | GAV-10 | BELLA VISTA-DEL MONTE | YES | FLG X MJ | UN | N |
| V902 | 6" | GAV-10 | BELLA VISTA-DEL MONTE | NO | FLG X FLG | UN | N |
| V903 | 6" | GAV-10 | ASPEN | YES | FLG X MJ | UN | N |
| V904 | 2" | BAV-01LF | ASPEN | NO | THR | UN | L |
| V905 | 4" | GAV-10 | LOWRY | YES | FLG X MJ | UN | N |
| V906 | 2" | BAV-01LF | LOWRY | NO | THR | UN | L |
| V907 | 2" | CURB-01LF | GRAYSTONE | NO | THR | UN | N |
| V908 | 2" | CARV-02 | GRAYSTONE | NO | THR | EX | N/A |
| V909 | 2" | BAV-01LF | GRAYSTONE | NO | THR | UN | L |
| V910 | 6" | GAV-10 | KEMLYN | YES | FLG X MJ | UN | N |
| V921 | 6" | GAV-10 | WOODSDALE | YES | FLG X MJ | UN | N |
| V922 | 2" | BAV-01LF | WOODSDALE | NO | THR | UN | L |
| V923 | 6" | GAV-10 | WOODSDALE | YES | FLG X FLG | UN | N |

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Valve Schedule

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SECTION 02080 HS

HYDRANT SCHEDULE

1.1 DESCRIPTION

A. General:

1. This schedule is provided for the convenience of the CONTRACTOR. Some valves may be shown on the drawings, but not listed here.
2. Hydrant specification and work summary is given in Section 15200, Valves

B. Hydrant Number:

1. Hydrant numbers listed on the below schedule correspond with numbers shown on the Drawings.

C. Hydrant Model:

1. Hydrant heads that are to be installed new are to be CLOW Model 850 or Model 860 as described in Section 15200, Valves.
2. For any hydrant heads that are to be salvaged, the model of the existing hydrant head is provided in the bid schedule below.

1.2 HYDRANT SCHEDULE

| Main Segment | Hydrant Number | Bid Item 20 Remove | Bid Item 21 New Hydrant | Bid Item 22 Salvage | Model |
|--------------|----------------|--------------------|-------------------------|---------------------|----------|
| Judy | H100 | 1 | 0 | 1 | LBIW 425 |
| Gracephil | H101 | 0 | 1 | 0 | CLOW 850 |
| Farber | H102 | 0 | 1 | 0 | 850 |
| Linry | H103 | 0 | 1 | 0 | 850 |
| A-Zone-1 | H104 | 1 | 1 | 0 | 850 |
| A-Zone-1 | H105 | 1 | 1 | 0 | 850 |
| A-Zone-2 | H106 | 1 | 1 | 0 | 850 |
| A-Zone-3 | H107 | 1 | 1 | 0 | 860 |
| A-Zone-4 | H108 | 0 | 1 | 0 | 850 |
| A-Zone-4 | H109 | 1 | 1 | 0 | 850 |
| A-Zone-5 | H110 | 1 | 0 | 1 | LBIW 425 |
| A-Zone-5 | H111 | 1 | 0 | 1 | LBIW 425 |
| A-Zone-6 | H112 | 1 | 1 | 0 | 860 |
| A-Zone-6 | H113 | 1 | 0 | 1 | LBIW 430 |
| A-Zone-6 | H114 | 1 | 0 | 1 | LBIW 430 |
| Clark-A-2 | H115 | 1 | 0 | 1 | LBIW 430 |
| Clark-A-2 | H116 | 1 | 0 | 1 | LBIW 430 |
| Crandall | H117 | 1 | 0 | 1 | LBIW 425 |
| Crandall | H118 | 1 | 0 | 1 | LBIW 425 |

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Valve Schedule

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| | | | | | |
|-----------------------|------|---|---|---|----------|
| Crandall | H119 | 1 | 0 | 1 | 850 |
| Deodara | H120 | 1 | 1 | 0 | 850 |
| Himmel | H121 | 0 | 1 | 0 | 850 |
| Himmel | H122 | 1 | 1 | 0 | 850 |
| Forest | H123 | 1 | 0 | 1 | LBIW 425 |
| York Towne | H124 | 1 | 1 | 0 | 850 |
| Moon-Hazel | H125 | 0 | 1 | 0 | 850 |
| Fawndale | H126 | 0 | 1 | 0 | 850 |
| Sawmill | H127 | 0 | 1 | 0 | 850 |
| Feather River | H128 | 1 | 0 | 1 | LBIW 425 |
| Feather River | H129 | 1 | 0 | 1 | LBIW 425 |
| Feather River | H130 | 1 | 0 | 1 | LBIW 425 |
| Cypress | H131 | 1 | 1 | 0 | 860 |
| Cypress | H132 | 1 | 1 | 0 | 860 |
| Cypress | H133 | 1 | 0 | 1 | LBIW 425 |
| Skyway-1 | H134 | 1 | 0 | 1 | LBIW 430 |
| Skyway-2 | H135 | 1 | 1 | 0 | 860 |
| Skyway-2 | H136 | 1 | 0 | 1 | LBIW 430 |
| Skyway-2 | H137 | 1 | 0 | 1 | LBIW 430 |
| Clark-B | H138 | 1 | 0 | 1 | LBIW 430 |
| Clark-B | H139 | 1 | 0 | 1 | LBIW 430 |
| Pacific-Orchard | H140 | 1 | 1 | 0 | 850 |
| Pacific-Orchard | H141 | 1 | 1 | 0 | 850 |
| Pacific-Orchard | H142 | 1 | 1 | 0 | 850 |
| Bella-Vista-Del Monte | H143 | 1 | 1 | 0 | 850 |
| Kemlyn | H144 | 1 | 1 | 0 | 850 |

++ END OF SECTION ++

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Valve Schedule

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SECTION 15990

TESTING OF PRESSURE PIPING SYSTEMS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope: Provide all labor, materials, equipment, and incidentals required to perform the pressure testing of piping systems.

1.2 SUBMITTALS

- A. Testing Plan: Submit prior to testing and include at least the information that follows.
 - a. Testing dates
 - b. Piping systems and section(s) to be tested
 - c. Test type
 - d. Method of isolation
 - e. Calculation of maximum allowable leakage for piping section(s) to be tested
- B. Certifications of Calibration: Testing equipment
- C. Certified Test Report

1.3 REFERENCE

- A. Reference Section 15100 PS, Pipe Schedule for test pressure.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 NOTIFICATION

- A. Notify ENGINEER in writing 5 days in advance of testing. Perform testing in presence of ENGINEER.

3.2 PRESSURE TESTING

- A. General:
 - 1. Complete installation of piping system, including all thrust restraint, prior to pressure testing.
 - a. If thrust blocking is specified, wait 5 days minimum after concrete thrust blocking is installed to perform pressure tests. If high-early strength cement is used for thrust blocking, wait may be reduced to 2 days.
 - 2. Following DISTRICT inspection and approval of the piping system, or completed sections, all pipe with the exception of joints, fabricated sections and service lines shall be backfilled with the piping filled with water. CONTRACTOR shall be responsible

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Testing of Pressure Piping Systems

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for filling the mainline with water. CONTRACTOR shall not operate valves in the DISTRICT's existing distribution system, including any hot tapped or tie valves installed during construction. Authorized DISTRICT personnel must operate all valves necessary to direct water from the existing system into the pipeline extension.

3. Pipeline extensions that are tied to the existing distribution system prior to testing shall be flushed and bacti tested before hydrostatic testing. Pipeline extensions that are not connected to the existing distribution system may be hydrostatically tested first and flushing and bacti testing conducted later.
4. Prior to test, remove and replace with pipe spools or suitably isolate appurtenant instruments or devices that could be damaged by pressure testing.
5. New Piping Connected to Existing Piping: Isolate new piping with grooved-end pipe caps, spectacle blinds, blind flanges, or as acceptable to ENGINEER.
6. Piping to be Pressure Tested and Test Pressure: as indicated on Piping Schedule.

B. Hydrostatic Testing (Pipe Other than PSDS HDPE):

1. Testing Fluid: Clean, potable water.
2. Pipeline Protection:
 - a. Maximum Filling Velocity: 1 foot per second, applied over full area of pipe.
 - b. Vent piping during filling. Open vents at high points of piping system or loosen flanges, using at least four bolts, or use equipment vents to purge air pockets.
3. Exposed Piping:
 - a. Perform testing on insulated piping prior to application of insulation
 - b. Maintain hydrostatic test pressure continuously for 60 minutes, minimum, and for such additional time as necessary to conduct examinations for leakage.
 - c. Examine joints and connections for leakage.
 - 1) Correct visible leakage and retest as specified.
 - 2) Empty pipe of water prior to final cleaning or disinfection.
4. Buried Piping:
 - a. Test after backfilling has been completed.
 - b. Expel air from piping system during filling.
 - c. Apply and maintain specified test pressure with hydraulic force pump. Valve off piping system when test pressure is reached.
 - d. Hydrostatic test pressure shall not exceed +/-5 psi of test pressure for 2 hours minimum, reopening isolation valve only as necessary to restore test pressure.
 - e. Determine actual leakage by measuring quantity of water necessary to maintain specified test pressure for duration of test.
 - f. Maximum Allowable Leakage:

$$L = \frac{SD(P)^{1/2}}{133,200}$$

where:

L = Allowable leakage, in gallons per hour.

S = Length of pipe tested, in feet.

D = Nominal diameter of pipe, in inches.

P = Test pressure during leakage test, in pounds per square inch.

- g. Correct leakage greater than allowable, and retest as specified.

C. Hydrostatic Testing of PSDS HDPE Pipe per ASTM F2164:

1. Testing Fluid: Clean, potable water.

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2. Pipeline Protection:
 - a. Maximum Filling Velocity: 0.25 foot per second, applied over full area of pipe.
 - b. Vent piping during filling. Open vents at high points of piping system or loosen flanges, using at least four bolts, or use equipment vents to purge air pockets.
3. Allow the test section and test liquid to equalize to a common temperature.
4. Pressurizing (initial expansion phase):
 - a. Once test section is completely filled and void of all air pockets, gradually increase pressure in the test section to the specified test pressure.
 - b. Test section shall not exceed 1.5 x design pressure at systems lowest point.
 - c. Should test pressure not be obtainable, examine pipe for leaks, air pockets or other faults prior to continuing test.
 - d. Once test section has achieved stable test pressure, add make-up water as necessary to maintain test pressure for four (4) hours.
5. Test Phase
 - a. Reduce test pressure by 10 psi and monitor pressure for one (1) hour. Do not increase pressure or add make-up water.
 - b. If no visual leakage is observed and pressure during the test phase remains steady (within 5% of the test phase pressure) for the one (1) hour test period, a passing test is achieved.
6. Retesting
 - a. If retesting is necessary, depressurize the test section by releasing test liquid at a controlled rate. Sudden depressurization can cause water hammer.
 - b. Do not attempt to correct faults or make repairs while test section is pressurized.
 - c. Allow the test section to relax for a period of eight (8) hours before restarting the pressurization step of testing.

3.3 PIPE PRESSURE TESTING LOG

- A. All pressure tests shall be witnessed by ENGINEER. CONTRACTOR shall keep a pipe pressure testing log to document the pressure testing and ENGINEER's approval of such.
 1. Specific details of the contents and format pipe pressure testing log shall be determined by the CONTRACTOR and approved by the ENGINEER.
 2. At a minimum, pipe pressure testing log shall record, on a daily basis for any day when pipe pressure testing is performed:
 - a. Test Report Documentation:
 - 1) Test date
 - 2) Description and identification of piping tested
 - 3) Test fluid
 - 4) Test pressure
 - 5) Remarks, including:
 - a) Leaks (type, location)
 - b) Repair/replacement performed to remedy excessive leakage
 3. Pipe pressure testing log shall be kept on-site. Pipe pressure testing log shall be signed on a daily basis, for any day when pipe pressure testing log work is performed, by the supervisor of the CONTRACTOR's field crew and by the ENGINEER.
 4. Any piping system which was pressure tested, but which was not recorded in the pipe pressure testing log, shall be re-tested at the ENGINEER's discretion.

++ END OF SECTION ++

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Testing of Pressure Piping Systems

PHASE 1 MAINS REPLACEMENT PROJECT

PARADISE IRRIGATION DISTRICT

WWE PROJECT: 19-017

MAY 2023

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SECTION 15995

DISINFECTION OF POTABLE WATER SYSTEMS

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Informational Submittals:
 - 1. Plan describing and illustrating conformance to appropriate AWWA standards and this Specification.
 - 2. Procedure and plan for cleaning the wetted area of all new piping and appurtenances to be installed.
 - 3. Procedures and plans for disinfection and testing of all new piping and appurtenances to be installed including sequence of tie-ins and decommissioning of existing water main and services.
 - 4. Proposed locations within system where samples will be taken. Representative samples should be collected for all areas in the system where the water main was shut down or depressurized including existing water mains.
 - 5. Type of disinfecting solution and method of preparation.
 - 6. Certification that employees working with concentrated chlorine solutions or gas have received appropriate safety training.
 - 7. Method of disposal for highly chlorinated disinfecting water.
 - 8. Independent Testing Agency: Certification that testing agency is qualified to perform bacteriological testing in accordance with AWWA standards, agency requirements, and this Specification.
 - 9. Certified Bacteriological Test Results:
 - a. Facility tested is free from coliform bacteria contamination.
 - b. Forward results directly to ENGINEER.

1.2 QUALIFICATIONS

- A. Independent Testing Agency: Certified in the State of California with 10 years' experience in field of water sampling and testing. Agency shall use calibrated testing instruments and equipment and documented standard procedures for performing specified testing.

PART 2 - PRODUCTS

2.1 WATER FOR DISINFECTION

- A. Clean, uncontaminated, and potable.
- B. CONTRACTOR shall make arrangements with PID for water supply and convey water in disinfected pipelines or containers. Water from adjacent parcels not included in this project as construction sites may not be used for any purpose by the CONTRACTOR without specific permission from PID.

2.2 DISINFECTANT AGENT

- A. During construction, 5-gram calcium hypochlorite tablets shall be placed in each section of water main pipe and also one such tablet shall be placed in each hydrant, hydrant branch, and other appurtenance. Calcium hypochlorite tablets shall meet the requirements of AWWA Standard B-300. Table 15995-1 shows the number of tablets required for commonly used sizes of pipe. The adhesive used to attach the tablets to the pipe shall be approved by the OWNER prior to use. There shall be no adhesive on the tablet except on the broad side attached to the surface of the pipe. Attach all tablets inside and at the top of the main, with approximately equal numbers of tablets at each end of a given pipe length. If the tablets are attached before the pipe section is placed in the trench, their position shall be marked on the section so it can be readily determined that the pipe is installed with the tablets at the top.

Table 15559-1: Number of 5g Calcium Hypochlorite Tablets Required for 25mg/L Dose.

| Pipe Diameter (inches) | Pipe Length (feet) | | | | |
|---|--------------------|----|----|----|----|
| | 13 or less | 18 | 20 | 30 | 40 |
| Number of 5-gram Calcium Hypochlorite Tablets* | | | | | |
| 4 | 1 | 1 | 1 | 1 | 1 |
| 6 | 1 | 1 | 1 | 2 | 2 |
| 8 | 1 | 2 | 2 | 3 | 4 |
| 10 | 2 | 3 | 3 | 4 | 5 |
| 12 | 3 | 4 | 4 | 6 | 7 |
| 16 | 4 | 6 | 7 | 10 | 13 |
| Based on 3.25 grams available chlorine per tablet. Any portion of a tablet rounded to next higher number. | | | | | |

2.3 CONTRACTOR'S EQUIPMENT

- A. Furnish chemicals and equipment, such as pumps and hoses, to accomplish disinfection.
- B. Water used to fill pipeline may be supplied using a temporary connection to existing PID distribution system only at the site of construction or another nearby construction site which is part of this project. Provide protection against cross-connections as required by AWWA C651. Temporary connections to existing PID distribution system shall be approved by PID.

PART 3 - EXECUTION

3.1 GENERAL

- A. Conform to AWWA C651 for pipes and pipelines except as modified in these Specifications.
- B. Disinfect the following items installed or modified under this Project, intended to hold, transport, or otherwise contact potable water:

1. Complete service extending from service saddle through the reconnection to customer plumbing.
 2. Pipelines: Disinfect new pipelines that connect to existing pipelines up to point of connection or where existing pipeline was exposed to dirt and other foreign matter during tie-in.
 3. Full hydrant assembly
 4. Buried valves
 5. Air release and vacuum relief valve assembly
- C. Disinfect surfaces of materials that will contact finished water, both during and following construction, using one of the methods described in AWWA C652 and C653. Disinfect prior to contact with finished water. Take care to avoid recontamination following disinfection.
- D. Prior to application of disinfectants, clean all piping and appurtenances of loose and suspended material.
- E. Solvent weld pipes are no longer accepted for use on OWNER facilities, as chlorine disinfection for solvent welded pipes is not permissible.

3.2 PIPING

- A. Cleaning:
1. Before disinfecting, clean all foreign matter from pipe in accordance with AWWA C651.
- B. If the continuous feed method or the slug method of disinfection, as described in AWWA C651 are used, flush pipelines with potable water until clear of suspended solids and color. Provide hoses, temporary pipes, ditches, and other conduits as needed to dispose of flushing water without damage to adjacent properties.
- C. Flush service connections and hydrants. Flush distribution lines prior to flushing hydrants and service connections. Operate valves during flushing process at least twice during each flush.
- D. Flush pipe through flushing branches and remove branches after flushing is completed.
- E. Disinfecting Procedure: In accordance with AWWA C651, unless herein modified.

3.3 DISPOSAL OF HEAVILY CHLORINATED WATER

- A. Do not allow flow into a waterway without neutralizing disinfectant residual.
- B. See the appendix of AWWA C651, C652, C653, and C654 for acceptable neutralization methods.

++ END OF SECTION ++

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APPENDIX A

QUOTE FROM ZENNER USA



May 17, 2023

Re: Paradise Irrigation District Phase 1 Main Replacement Project

| Paradise Irrigation District Phase 1 Main Replacement Project | | | |
|---|---------------------|-------------|-----------|
| ITEM | Est. Total Quantity | Unit Price | Note |
| 1 Meters | 182 | | |
| 3/4" (assumed ~85%) Includes Nicor Connector | 159 | \$ 144.78 | per meter |
| 1" (assumed ~10%) Includes Nicor Connector | 17 | \$ 237.49 | per meter |
| 1.5" (assumed ~3%) Includes Nicor Connector | 4 | \$ 331.00 | per meter |
| 2" (assumed ~2%) Includes Nicor Connector | 2 | \$ 431.03 | per meter |
| 2 Meter Interface Unit (MIU) Includes Nicor Connector | 182 | \$ 93.50 | per MIU |
| 4 Lid Locks | 182 | \$ 4.50 | per unit |
| Handheld Programmer | | | |
| 5 <i>(or any other equipment needed by contractor to install meter /MIU), Android Tablet, BTIR and Licenses)</i> | | \$ 2,350.00 | per unit |
| <i>If they have there own android device ,BTIR, Licenses</i> | | \$ 1,850.00 | |
| 6 Training for installation staff Per Day | | \$ 1,400.00 | |
| <i>(2 Day Minium)</i> | | | |

If you have any questions, please don't hesitate to contact me

Ronnell J. Gallon

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