MARINA COAST WATER DISTRICT
MARINA, CA

REGIONAL URBAN WATER AUGMENTATION PROJECT

RECYCLED WATER DISTRIBUTION PIPELINES

CIP # RW-0174

ADDENDUM NO. 3
TO THE
CONTRACT DOCUMENTS

DECEMBER 2019

Digitally signed by Jonathon P. Marshall
Contact Info: Carollo Engineers, Inc.
Date: 2019.12.11 15:04:21-08'00'

REGISTERED PROFESSIONAL ENGINEER
JONATHON P. MARSHALL
No. 73265
CIVIL
STATE OF CALIFORNIA

2700 YGNACIO VALLEY ROAD, SUITE 300 • WALNUT CREEK, CALIFORNIA 94598 • P. 925.932.1710 • F. 925.930.0208

Bidders on the above-named project are hereby notified that the Bidding Documents are modified as indicated below. Bidders are required to acknowledge receipt of this Addendum in the space provided on the Document 00 41 00 Bid Form.

This Addendum shall become part of the Contract and provisions of the Contract apply.

SPECIFICATIONS

The following sections are modified as indicated below.

1. SECTION 00 21 00 – Instructions to Bidders
   a. REPLACE section in its entirety with the attached section.
2. SECTION 00 41 00 – Bid Form
   a. REPLACE section in its entirety with the attached section.
3. SECTION 00 45 26 – Public Works Contractor Registration Certification
   a. REPLACE section in its entirety with the attached section.
4. SECTION 00 52 00 – Agreement
   a. REPLACE section in its entirety with the attached section.
5. SECTION 00 73 50 – State Revolving Fund and Proposition 1 Funding Requirements
   a. ADD Davis Bacon Wage Determinations, attached, to the end of Section 00 73 50.
6. SECTION 01270 – Unit Prices
   a. REPLACE section in its entirety with the attached section.
7. SECTION 02318 – Trenching
   a. REPLACE section in its entirety with the attached section.
8. SECTION 09960 – High-Performance Coatings
   a. REPLACE section in its entirety with the attached section.
9. SECTION 15052 – Common Work Results for General Piping
   a. REPLACE section in its entirety with the attached section.
10. Appendix H – UCMBEST Record Drawings
    a. ADD an overall site map of existing UCMBEST recycled water facilities included for reference. This overall site map includes some recycled water facilities not shown in the UCMBEST record drawings.

DRAWINGS

The following drawings are modified as indicated below.

1. DRAWING: T03

   Narrative of Edit: Callout referencing Section 15100 was removed from MCWD Std. Dtl. W-7.

2. DRAWING: TP01

   Narrative of Edit: Detail P030 was revised.

3. DRAWING: P09

   Narrative of Edit: Proposed layout of blow-off assembly was added.

4. DRAWING: P10

   Narrative of Edit: Proposed layout of blow-off and air release valve assemblies were added.

Replacement Section

INSTRUCTIONS TO BIDDERS

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ARTICLE 1 – DEFINED TERMS

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

A. *Issuing Office* – The office from which the Bidding Documents are to be issued, which is the MCWD Engineering Office, 2840 4th Avenue, Marina, CA 93933.

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office on CD and on the website www.MCWD.org in the number and format stated in the advertisement or invitation to bid.

2.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit with its Bid (a) written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and (b) the following additional information:

A. Evidence of Bidder's authority to do business in the state where the Project is located.

B. Bidder's state or other contractor license number, if applicable.

3.02 To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit within 3 business days following the bid opening the following additional information:

A. Disadvantaged Business Enterprise documentation not required at the time of bid opening.

3.03 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

3.04 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

3.05 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

ARTICLE 4 – SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

4.01 *Site and Other Areas*

A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of

materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

B. See Section 01140 - Work Restrictions, for constraints on site access, sequencing and scheduling of work.

4.02 *Existing Site Conditions*

A. Subsurface and Physical Conditions; Hazardous Environmental Conditions

1. The Supplementary Conditions identify:

a. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site.

b. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

c. reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.

d. Technical Data contained in such reports and drawings.

2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.

B. Underground Facilities: Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or adjacent to the Site are set forth in the Contract Documents and are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

C. Adequacy of Data: Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

4.03 *Site Visit and Testing by Bidders*

A. Bidder shall conduct the required Site visit during normal working hours, and shall not disturb any ongoing operations at the Site.

1. Site visits are to be conducted during the pre-bid meeting and by appointment only for the following locations: MCWD Reservoir 2 (along the Beach Road

Alignment). Contact Don Wilcox at (831) 883-5935 for arranging the visit by appointment and conditions of access.

B. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.

C. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site.

D. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.

E. 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.

4.04 *Owner's Safety Program*

A. Site visits and work at the Site may be governed by an Owner safety program. As the General Conditions indicate, if an Owner safety program exists, it will be noted in the Supplementary Conditions.

4.05 *Other Work at the Site*

A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

ARTICLE 5 – BIDDER'S REPRESENTATIONS

5.01 It is the responsibility of each Bidder before submitting a Bid to:

A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;

B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;

D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and

drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;

E. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;

F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;

G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;

H. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;

I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and

J. agree that 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 and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 6 – PRE-BID CONFERENCE

6.01 A mandatory pre-Bid conference will be held at the time and location stated in the invitation or advertisement to bid. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

ARTICLE 7 – INTERPRETATIONS AND ADDENDA

7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Owner in writing as stated in the invitation or advertisement to bid. Questions must be received by 5:00 p.m. local time on **Thursday November 21, 2019**. Questions received after this date may not be answered. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda and posted by the Issuing Office online at www.mcwd.org. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

7.02 Addenda may be issued to clarify, correct, supplement, or change the Bidding Documents.

ARTICLE 8 – BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 10% (ten percent) of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.

8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 calendar days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.

8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven calendar days after the Effective Date of the Contract or 90~~61~~ calendar days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.

8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven calendar days after the Bid opening.

ARTICLE 9 – CONTRACT TIMES

9.01 The number of calendar days within which, or the dates by which, the Work is to be substantially completed, and completed and ready for final payment, are set forth in the Agreement.

ARTICLE 10 – LIQUIDATED DAMAGES

10.01 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 11 – SUBSTITUTE AND "OR-EQUAL" ITEMS

11.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, and those "or-equal" or substitute or materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by Addendum. No item of material or equipment will be considered by Engineer as an "or-equal" or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer at least 15 calendar days prior to the date for receipt of Bids. Each such request shall comply with the requirements of Paragraphs 7.04 and 7.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. If Engineer approves any such proposed item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner.

11.02 All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of "or-equal" or substitution requests are made at Bidder's sole risk.

ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

12.01 A Bidder shall be prepared to retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of the Work if required by the Bidding Documents (most commonly in the Specifications) to do so. If a prospective Bidder objects to retaining any such Subcontractor, Supplier, or other individual or entity, and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.

12.02 Subsequent to the submittal of the Bid, Owner may not require the Successful Bidder or Contractor to retain any Subcontractor, Supplier, or other individual or entity against which Contractor has reasonable objection.

12.03 The apparent Successful Bidder, and any other Bidder so requested, shall within three business days after Bid opening, submit to Owner qualifications information for the Subcontractors or Suppliers proposed for the following portions of the Work: Paving and Guided Auger Boring.

If requested by Owner, such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, or other individual or entity. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder shall submit a substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

12.04 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, or other individuals or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.

ARTICLE 13 – PREPARATION OF BID

13.01 The Bid Form is included with the Bidding Documents.

A. All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.

B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words "No Bid" or "Not Applicable."

13.02 A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown.

13.03 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The partnership's address for receiving notices shall be shown.

13.04 A Bid by a limited liability company shall be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the firm's address for receiving notices shall be shown.

13.05 A Bid by an individual shall show the Bidder's name and address for receiving notices.

13.06 A Bid by a joint venture shall be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture's address for receiving notices shall be shown.

13.07 All names shall be printed in ink below the signatures.

13.08 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

13.09 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.

13.10 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 14 – BASIS OF BID

14.01 *Unit Price*

A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.

B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity" (which Owner or its representative has set forth in the Bid Form) for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. Bid Alternates will not be used for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.

C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

14.02 *Allowances*

A. For cash allowances the Bid price shall include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

B. If the Owner includes reimbursement allowances, the allowance value will be pre-entered in the Bid Form.

ARTICLE 15 – SUBMITTAL OF BID

15.01 With each copy of the Bidding Documents, a Bidder is furnished one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 7 of the Bid Form.

15.02 A Bid shall be received no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to Marina Coast Water District, 11 Reservation Road, Marina, CA 93933, ATTN: District Engineer.

15.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID

16.01 A Bid may be 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 prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.

16.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 16.01 and submit a new Bid prior to the date and time for the opening of Bids.

16.03 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, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 17 – OPENING OF BIDS

17.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work.

19.02 If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Bid.

19.03 Evaluation of Bids

A. In evaluating Bids, Owner will consider 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.

B. In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.

C. Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 20 – BONDS AND INSURANCE

20.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the Agreement (executed by Successful Bidder) to Owner, it shall be accompanied by required bonds and insurance documentation.

ARTICLE 21 – SIGNING OF AGREEMENT

21.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 10 calendar days thereafter, Successful Bidder shall execute and deliver the required number of counterparts of the Agreement (and any bonds and insurance documentation required to be delivered by the Contract Documents) to Owner. Within ten calendar days thereafter, Owner shall deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

ARTICLE 22 – SALES AND USE TAXES (NOT USED)

ARTICLE 23 – RETAINAGE

23.01 Provisions concerning Contractor's rights to deposit securities in lieu of retainage are set forth in the Supplemental Conditions.

ARTICLE 24 – PREVAILING WAGE

24.01 The Work is subject to California State prevailing wage requirements as set forth in the Supplementary Conditions, and Federal (Davis-Bacon Act) prevailing wage requirements as set forth in Section 00 73 50, State Revolving Fund and Proposition 1 Funding Requirements[AD1]

ARTICLE 25 – DISADVANTAGED BUSINESS ENTERPRISES

25.01 Bidders must document a Good Faith Effort to hire Disadvantaged Business Enterprises (DBE) for this project, per the requirements set forth in Section 00 73 50, State Revolving Fund and Proposition 1 Funding Requirements.

25.02 A DBE minimum participation goal has not been established for this project.

ARTICLE 26 – DISQUALIFIED BUSINESSES

26.01 State and Federally Disqualified Business are prohibited from participating in this project, as set forth in Section 00 73 50, State Revolving Fund and Proposition I Funding Requirements.

END OF DOCUMENT

Replacement Section

BID FORM

CIP # RW-0174, REGIONAL URBAN WATER MANAGEMENT PROJECT
RECYCLED WATER DISTRIBUTION MAINS PROJECT

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ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

Marina Coast Water District

11 Reservation Road

Marina, CA 93933

ATTN: District Engineer

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER'S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 90 calendar after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

Addendum No.	Addendum, Date
1	11/19/2019
2	11/22/2019
3	12/11/2019

B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.

F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder 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 Bidding Documents.

H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.

I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.

J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid 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 e execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
1	Mobilization and Demobilization (Shall not exceed 5% of Total of All Unit Price Bid Items)	LS	1		
2	Sheeting, shoring, and bracing, or equivalent method for the protection of life and limb in trenches and open excavation, pursuant to California Labor Code §6707 and Section 02260.	LS	1		
3	Stormwater Pollution Prevention	LS	1		
4	Traffic Management	LS	1		
5	Locating and Verifying Concealed existing Utilities per Section 01350	LS	1		
6	Blow-off Assemblies	EA	216		
7	Combination Air/Vacuum Valves	EA	1921		
8	8" Isolation Valves (Gate)	EA	17		
9	12" Isolation Valves (Gate)	EA	104		
10	Beach Road: 8-inch Pipeline (Ductile Iron)	LF	164		
11	Beach Road: Pressure Reducing Station	LS	1		
12	Beach Road: 8-inch Pipeline (PVC)	LF	3,790		
13	Beach Road: Slurry Seal	SY	11,273 9,600		
14	Beach Road: Pavement Striping	LS	1		
15	Potable Water Pipeline: Beach Road from Del Monte Blvd to De Forest Rd (PVC)	LF	2,748		
16	Potable Water Pipeline: Beach Road Blow-off Assemblies	EA	42		
17	Potable Water Pipeline: Beach Road Combination Air/Vacuum Valves	EA	42		
18	Potable Water Pipeline: Beach Road 12" Isolation Valves (Gate)	EA	5		
19	Potable Water Pipeline: From Reservoir 2 to Crescent Ave (PVC)	LF	518		
20	Potable Water Pipeline: Reservoir 2 to Crescent Ave Blow-off Assemblies	EA	1		

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
21	Potable Water Pipeline: Reservoir 2 to Crescent Ave Combination Air/Vacuum Valves	EA	1		
22	Potable Water Pipeline: Reservoir 2 to Crescent Ave 12" Isolation Valves (Gate)	EA	4		
23	Carmel Avenue: 8-inch Pipeline (Ductile Iron)	LF	120		
24	Carmel Avenue: Pressure Reducing Station	LS	1		
25	Carmel Avenue: 8-inch Pipeline (PVC)	LF	2,615		
26	Carmel Avenue: Slurry Seal	SY	13,753~~425~~		
27	Carmel Avenue: Pavement Striping	LS	1		
28	Marina Heights Drive: 16-inch Pipeline (Ductile Iron)	LF	240		
29	Marina Heights Drive: Pressure Reducing Station	LS	1		
30	Marina Heights Drive: Slurry Seal	SY	~~389~~553		
31	Marina Heights Drive: Pavement Striping	LS	1		
32	Abrams Drive North of Imjim Parkway: 12-inch Pipeline (DIP~~PVC~~)	LF	953		
33	Abrams Drive North of Imjim Parkway: Slurry Seal	SY	4,469~~394~~		
34	Abrams Drive North of Imjim Parkway: Pavement Striping	LS	1		
35	Pressure Test and Disinfect Existing Pipeline in UCMBEST Property	LS	1		
36	Blanco Road: 12-inch Pipeline (PVC)	LF	584		
37	Allowance for sensitive plant species restoration on Blanco Road	ALW	1	$20,000.00	$20,000.00
38	Blanco Road: Launching Shaft for Guided Auger Boring Installation	LS	1		
39	Blanco Road: Guided Auger Boring Casing Pipeline Installation	LF	418		
40	Blanco Road: Guided Auger Boring Carrier Pipeline Installation (PVC)	LF	418		
41	Reservation Road: Receiving Shaft for Guided Auger Boring Installation	LS	1		
42	Reservation Road: 12-inch Pipeline (PVC)	LF	~~8,147~~5,163		

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
43	Reservation Road: 2.5-inch Grind and Inlay	SY	~~3,819~~8,339		
44	Reservation Road: Pavement Striping	LS	1		
45	9th Street: 8-inch Pipeline (Ductile Iron)	LF	78		
46	9th Street: Pressure Reducing Station	LS	1		
47	9th Street: 8-inch Pipeline (PVC)	LF	975		
48	9th Street: Slurry Seal	SY	~~800~~3,136		
49	9th Street: Pavement Striping	LS	1		
50	Coe Avenue: 8-inch Pipeline (Ductile Iron)	LF	2,043		
51	Coe Avenue: Pressure Reducing Station	LS	1		
52	Coe Avenue: 8-inch Pipeline (PVC)	LF	1,127		
53	Coe Avenue: Slurry Seal	SY	~~3,142~~12,560		
54	Coe Avenue: Pavement Striping	LS	1		
55	Reimbursement Allowance for City of Marina Encroachment Permit Fee	ALW	1	$~~25~~70,000.00	$~~25~~70,000.00
56	Reimbursement Allowance for Monterey County Encroachment Permit Fee	ALW	1	$20,000.00	$20,000.00
57	Reimbursement Allowance for City of Seaside Encroachment Permit Fee	ALW	1	$15,000.00	$15,000.00
58	Reimbursement Allowance for Business Licenses from Cities and County	ALW	1	$25,000.00	$25,000.00
59	Potential Installation of 1-inch Service per Detail W-1	EA	2		
60	Potential Installation of 4-inch Service	EA	2		
61	Contingency Allowance for Unknown Utility Conflicts	ALW	1	$50,000.00	$50,000.00
62	All work required to be completed for the project that is not included in the previous bid items	LS	1		
Total of All Unit Price Bid Items (in numbers):		**$**			

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
Total of All Unit Price Bid Items (in words):					

ALW = Allowance, LF = Linear Feet, LS = Lump Sum, SY = Square Yards

Bidder acknowledges that (1) each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

5.02 Bid Alternatives

A. Bidder offers to make, at the bid alternate prices following, the changes in the Work covered by the Unit Prices that are specified in the bid alternates priced below.

B. It is understood that:

1. All bid alternate prices must be filled in.
2. The acceptance or rejection of any or all of these bid alternates is at the option of the Owner.
3. Acceptance or rejection of bid alternates will not necessarily be made on the basis of price alone.
4. The acceptance or rejection of one or more bid alternates will not affect the Lump Sum Bid Price, nor other conditions of this Bid, nor the price of other accepted bid alternates.
5. The addition or deduction shown herein for each bid alternate is the net addition or net deduction that is to be applied to the Lump Sum Bid Price of the undersigned if the bid alternate is accepted by Owner.
6. The Contract Price shall be the net amount determined by applying the bid alternate prices of all accepted bid alternates to the Total Unit Price Bid.

C. **Bid Alternate A – Perform All Work along Abrams Drive South of Imjin Parkway (add)**: Bidder agrees to add to the Total Unit Price Bid the amount shown below for all mobilization and demobilization, sheeting shoring and bracing, stormwater pollution prevention, traffic management, locating and verifying existing underground utilities, labor, equipment, materials, insurance, permits, and all other work necessary to install all pipeline, pipe fittings and couplings, coatings, appurtenances, trench cutoffs, testing, valves, witness markers, backfill, compaction, temporary paving, final trench paving, slurry seal, pavement striping and all other related Work along Abrams Drive, south of Imjin Parkway, as described in the Contract Documents.

Description	Unit	Estimated Quantity	Unit Price	Total Amount

Bid Alternate A - Perform All Work along Abrams Drive South of Imjin Parkway	LS	1	$	$

ARTICLE 6 – TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

7.01 The items listed in Document 00 43 93, Bid Submittal checklist, are submitted with and made a condition of this Bid.

ARTICLE 8 – DEFINED TERMS

8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

_____

By:
[Signature] _____

[Printed name] _____
(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:
[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices:

_____

_____

_____

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail address: _____

_____

Bidder's License No.: _____
(where applicable)

Replacement Section

PUBLIC WORKS CONTRACTOR REGISTRATION CERTIFICATION

SUBMIT WITH BID

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

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

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

Name of Bidder: _____

DIR Registration Number: _____

Name of Subcontractor: _____

DIR Registration Number: _____

Name of Subcontractor: _____

DIR Registration Number: _____

Name of Subcontractor: _____

DIR Registration Number: _____

Name of Subcontractor: _____

DIR Registration Number: _____

Name of Subcontractor: _____

DIR Registration Number: _____

Name of Subcontractor: _____

DIR Registration Number: _____

Name of Subcontractor: _____

DIR Registration Number: _____

Bidder further acknowledges:

1. Bidder shall maintain a current DIR registration for the duration of the project.

2. Bidder shall include the requirements of Labor Code sections 1725.5 and 1771.1 in its contract with subcontractors and ensure that all subcontractors are registered at the time of bid opening and maintain registration status for the duration of the project.

3. Failure to submit this form or comply with any of the above requirements may result in a finding that the bid is non-responsive.

Bidder's Signature: _____

Bidder's Name and Title: _____

Firm: _____

Date: _____

END OF DOCUMENT

AGREEMENT
BETWEEN MARINA COAST WATER DISTRICT
AND _____
FOR THE
REGIONAL URBAN WATER AUGMENTATION PROJECT
RECYCLED WATER DISTRIBUTION PIPELINES
CIP# RW-0174

THIS AGREEMENT is by and between Marina Coast Water District ("Owner") and _____ ("Contractor").

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:

The Project consists of constructing approximately 5 miles of 8-inch diameter to 12-inch diameter ductile iron and polyvinyl chloride recycled water and potable water pipeline in paved and non-paved roadways and easements, connecting to existing pipelines, pipeline valves and appurtenances, a guided auger bore trenchless roadway crossing, five pressure reducing stations, and roadway paving for a complete in-place operational system.

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: CIP # RW-0174, REGIONAL URBAN WATER AUGMENTATION PROJECT RECYCLED WATER DISTRIBUTION PIPELINES.

ARTICLE 3 – ENGINEER

3.01 The part of the Project that pertains to the Work has been designed by Carollo Engineers, Inc., 2700 Ygnacio Valley Road, Suite 300, Walnut Creek, CA 94598.

3.02 The Owner has retained Carollo Engineers ("Engineer") to act as Owner's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Contract Times: Days*

A. The Work will be substantially completed within 27300 calendar 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 3035 calendar days after the date when the Contract Times commence to run.

4.03 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. 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. Abrams Drive (both north and south of Imjim Road): Contractor shall pay Owner $1,500 for each calendar day (or partial calendar day) after April May 291, 2020 until the Work along Abrams Drive is substantially complete.

2. Marina Heights Drive: Contractor shall pay Owner $1,500 for each calendar day (or partial calendar day) after May 29April 1, 2020 until the Work in the road of Marina Heights Drive is substantially complete. Work outside the road (such as the pressure reducing station beyond the road curb) is not subject to this liquidated damage.

3. Beach Road, Carmel Avenue and Coe Avenue: Contractor shall pay Owner $1,500 for each calendar day (or partial calendar day) Work is done in Beach Road, Carmel Avenue and Coe Avenue on days outside of the schools summer break dates defined in Section 01140.

4. Blanco Road and Reservation Road Intersection Receiving Shaft: Contractor shall pay Owner $500 for each calendar day (or partial calendar day) the receiving shaft is not restored and temporary paved beyond the allowable duration specified in Section 02261.

5. Trench Plates: Contractor shall pay Owner $500 per 20 linear feet of steel plating for each night that steel plating, in excess of 20 linear feet, is left in the public right-of-way.

6. Substantial Completion: Contractor shall pay Owner $5,000 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.

7. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner $5,000 for each day that expires after such time until the Work is completed and ready for final payment.

8. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

~~4.04 *Special Damages*~~

~~A. In addition to the amount provided for liquidated damages, Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor's failure to attain Substantial Completion according to the Contract Times, and (2) for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.~~

~~B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.~~

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 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 (adjusted for any math errors in the submitted bid form) times the actual quantity of that item):

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
1	Mobilization and Demobilization (Shall not exceed 5% of Total of All Unit Price Bid Items)	LS	1		
2	Sheeting, shoring, and bracing, or equivalent method for the protection of life and limb in trenches and open excavation, pursuant to California Labor Code §6707 and Section 02260.	LS	1		
3	Stormwater Pollution Prevention	LS	1		
4	Traffic Management	LS	1		
5	Locating and Verifying Concealed existing Utilities per Section 01350	LS	1		
6	Blow-off Assemblies	EA	2~~1~~6		
7	Combination Air/Vacuum Valves	EA	19~~21~~		
8	8" Isolation Valves (Gate)	EA	17		
9	12" Isolation Valves (Gate)	EA	1~~0~~4		
10	Beach Road: 8-inch Pipeline (Ductile Iron)	LF	164		

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
11	Beach Road: Pressure Reducing Station	LS	1		
12	Beach Road: 8-inch Pipeline (PVC)	LF	3,790		
13	Beach Road: Slurry Seal	SY	~~9,600~~11,273		
14	Beach Road: Pavement Striping	LS	1		
15	Potable Water Pipeline: Beach Road from Del Monte Blvd to De Forest Rd (PVC)	LF	2,748		
16	Potable Water Pipeline: Beach Road Blow-off Assemblies	EA	~~4~~2		
17	Potable Water Pipeline: Beach Road Combination Air/Vacuum Valves	EA	~~4~~2		
18	Potable Water Pipeline: Beach Road 12" Isolation Valves (Gate)	EA	5		
19	Potable Water Pipeline: From Reservoir 2 to Crescent Ave (PVC)	LF	518		
20	Potable Water Pipeline: Reservoir 2 to Crescent Ave Blow-off Assemblies	EA	1		
21	Potable Water Pipeline: Reservoir 2 to Crescent Ave Combination Air/Vacuum Valves	EA	1		
22	Potable Water Pipeline: Reservoir 2 to Crescent Ave 12" Isolation Valves (Gate)	EA	4		
23	Carmel Avenue: 8-inch Pipeline (Ductile Iron)	LF	120		
24	Carmel Avenue: Pressure Reducing Station	LS	1		
25	Carmel Avenue: 8-inch Pipeline (PVC)	LF	2,615		
26	Carmel Avenue: Slurry Seal	SY	~~3,425~~13,753		
27	Carmel Avenue: Pavement Striping	LS	1		
28	Marina Heights Drive: 16-inch Pipeline (Ductile Iron)	LF	240		
29	Marina Heights Drive: Pressure Reducing Station	LS	1		
30	Marina Heights Drive: Slurry Seal	SY	~~389~~553		
31	Marina Heights Drive: Pavement Striping	LS	1		
32	Abrams Drive North of Imjim Parkway: 12-inch Pipeline (DIP~~PVC~~)	LF	953		
33	Abrams Drive North of Imjim Parkway: Slurry Seal	SY	4,~~394~~694		
34	Abrams Drive North of Imjim Parkway: Pavement Striping	LS	1		

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
35	Pressure Test and Disinfect Existing Pipeline in UCMBEST Property	LS	1		
36	Blanco Road: 12-inch Pipeline (PVC)	LF	584		
37	Allowance for sensitive plant species restoration on Blanco Road	ALW	1	$20,000.00	$20,000.00
38	Blanco Road: Launching Shaft for Guided Auger Boring Installation	LS	1		
39	Blanco Road: Guided Auger Boring Casing Pipeline Installation	LF	418		
40	Blanco Road: Guided Auger Boring Carrier Pipeline Installation (PVC)	LF	418		
41	Reservation Road: Receiving Shaft for Guided Auger Boring Installation	LS	1		
42	Reservation Road: 12-inch Pipeline (PVC)	LF	~~8,147~~5,163		
43	Reservation Road: 2.5-inch Grind and Inlay	SY	~~3,819~~8,339		
44	Reservation Road: Pavement Striping	LS	1		
45	9th Street: 8-inch Pipeline (Ductile Iron)	LF	78		
46	9th Street: Pressure Reducing Station	LS	1		
47	9th Street: 8-inch Pipeline (PVC)	LF	975		
48	9th Street: Slurry Seal	SY	~~800~~3,136		
49	9th Street: Pavement Striping	LS	1		
50	Coe Avenue: 8-inch Pipeline (Ductile Iron)	LF	2,043		
51	Coe Avenue: Pressure Reducing Station	LS	1		
52	Coe Avenue: 8-inch Pipeline (PVC)	LF	1,127		
53	Coe Avenue: Slurry Seal	SY	~~3,142~~12,560		
54	Coe Avenue: Pavement Striping	LS	1		
55	Reimbursement Allowance for City of Marina Encroachment Permit Fee	ALW	1	$~~25~~70,000.00	$~~25~~70,000.00
56	Reimbursement Allowance for Monterey County Encroachment Permit Fee	ALW	1	$20,000.00	$20,000.00
57	Reimbursement Allowance for City of Seaside Encroachment Permit Fee	ALW	1	$15,000.00	$15,000.00
58	Reimbursement Allowance for Business Licenses from Cities and County	ALW	1	$25,000.00	$25,000.00
59	Potential Installation of 1-inch Service	EA	2		

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
	per Detail W-1				
60	Potential Installation of 4-inch Service	EA	2		
61	Contingency Allowance for Unknown Utility Conflicts	ALW	1	$50,000.00	$50,000.00
62	All work required to be completed for the project that is not included in the previous bid items	LS	1		
Total of All Unit Price Bid Items (in numbers): $					
Total of All Unit Price Bid Items (in words):					

ALW = Allowance, LF = Linear Feet, LS = Lump Sum, SY = Square Yards, EA = Each

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.

5.02 Bid Alternatives

A. Bidder offers to make, at the bid alternate prices following, the changes in the Work covered by the Unit Prices that are specified in the bid alternates priced below.

B. It is understood that:

1. All bid alternate prices must be filled in.
2. The acceptance or rejection of any or all of these bid alternates is at the option of the Owner.
3. Acceptance or rejection of bid alternates will not necessarily be made on the basis of price alone.
4. The acceptance or rejection of one or more bid alternates will not affect the Lump Sum Bid Price, nor other conditions of this Bid, nor the price of other accepted bid alternates.
5. The addition or deduction shown herein for each bid alternate is the net addition or net deduction that is to be applied to the Lump Sum Bid Price of the undersigned if the bid alternate is accepted by Owner.
6. The Contract Price shall be the net amount determined by applying the bid alternate prices of all accepted bid alternates to the Total Unit Price Bid.

C. **Bid Alternate A – Perform All Work along Abrams Drive South of Imjin Parkway (add)**: Bidder agrees to add to the Total Unit Price Bid the amount shown below for all

mobilization and demobilization, sheeting shoring and bracing, stormwater pollution prevention, traffic management, locating and verifying existing underground utilities, labor, equipment, materials, insurance, permits, and all other work necessary to install all pipeline, pipe fittings and couplings, coatings, appurtenances, trench cutoffs, testing, valves, witness markers, backfill, compaction, temporary paving, final trench paving, slurry seal, pavement striping and all other related Work along Abrams Drive, south of Imjin Parkway, as described in the Contract Documents.

Description	Unit	Estimated Quantity	Unit Price	Total Amount
Bid Alternate A - Perform All Work along Abrams Drive South of Imjin Parkway	LS	1	$	$

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 account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 30th 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 Work completed (with the balance being retainage). If the Work has been 50 percent 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. 0 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 200 percent of

Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 7 – INTEREST

7.01 All amounts not paid when due shall bear interest at the legal rate unless otherwise specified according to California law.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.

B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

E. 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 Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.

F. 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.

G. 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.

H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

J. 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.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

A. The Contract Documents consist of the following:

1. This Agreement.
2. Performance bond.
3. Payment bond.
4. General Conditions.
5. Supplementary Conditions.
6. Specifications as listed in the table of contents of the Project Manual.
7. Drawings (not attached but incorporated by reference) consisting of 66 sheets with each sheet bearing the following general title: Regional Urban Water Augmentation Project Recycled Water Distribution Mains, Capital Improvement Program Potable Water Mains Beach Road, and Capital Improvement Program Potable Water Mains Reservoir 2 to Crescent Ave.
8. Typical Details listed or incorporated into the Project Manual.
9. Addenda (numbers 1 to X, inclusive).
10. Exhibits to this Agreement (enumerated as follows):
    a. List of Project References (00 45 12)
    b. Designation of Subcontractors (00 45 14)
    c. List of Manufacturers (0045 16)
    d. Designation of Insurance Agent or Broker (00 45 18)
    e. Stop Notice Information (00 45 20)
    f. Non-Collusion Declaration (00 45 22)
    g. Prevailing Wage (00 45 24)
    h. Public Works Contractor Registration Certification (00 45 26)
    i. Local Hiring for Public Works (00 45 28)[AD1]
    j. Iran Contracting Act Certification (00 45 30)
    k. American Iron and Steel Certification (00 45 32)

l. Anti-Lobbying Certification (00 45 34)

m. DBE Good Faith Efforts Verification (00 45 36)

n. Bidder's List (00 45 38)

o. State Revolving Fund and Proposition 1 Funding Requirements (00 73 50).

11. 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.

12. The standard Plans and Specifications of the Marina Coast Water District, dated November 2007 (not attached but incorporated by reference).

B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 9.

D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

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

10.02 *Assignment of Contract*

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto 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 Documents.

10.03 *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.

10.04 *Severability*

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract

Documents shall 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.

10.05 *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 10.05:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing 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.

10.06 In accordance with Section 1775, California Labor Code, Contractor shall forfeit to Owner, as a penalty, not more than $50 for each calendar day, or portion thereof, for each worker paid, either by Contractor or any subcontractor, less than the prevailing rates as determined by the Director of California Department of Industrial Relations for the Work.

10.07 In the performance of the Work, a day's work shall be 8 hours of labor in any workday and 40 hours in any work week and any other work as required by Section 510, California Labor Code, and Contractor shall further conform to the requirements of Section 1813, California Labor Code, or forfeit to Owner, as a penalty, the sum of $25 for each worker employed in the execution of the Work by Contractor or any subcontractor, for each day during which any worker is required or permitted to labor more than 8 hours in any workday or more than 40 hours in any 1 calendar week in violation of Section 510.

10.08 Contractor shall carry workers' compensation insurance and require subcontractors to carry workers' compensation insurance as required by Section 3700, California Labor Code.

10.09 Pursuant to California Labor Code Section 6705, excavation of any trench or trenches 5 feet or more in depth, involving estimated expenditures in excess of $25,000 shall require, in advance of excavation, a detailed plan showing the design of shoring, bracing, sloping or other provisions to be made for worker protection prepared by a registered civil or structural engineer.

10.10 *Contractor registration:*

A. Project is subject to compliance monitoring and enforcement by the California Department of Industrial Relations (DIR).

10.11 Pursuant to Section 1770 et seq., California Labor Code, the successful Bidder shall pay not less than the prevailing rate of per diem wages as determined by the Director of California

Department of Industrial Relations. A copy of such prevailing rate is on file at the offices of the Owner, which copy will be made available for examination during business hours to any party on request.

10.12 Contractor, by signing this Agreement, certifies the following: "I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the Work of this Contract."

10.13 Nothing in this Agreement shall prevent Contractor or any Subcontractor from employing properly registered apprentices in the execution of the Agreement. Contractor shall have responsibility for compliance with California Labor Code Section 1777.5 for all apprenticeable occupations.

10.14 *Other Provisions*

A. Owner stipulates that the General Conditions that are made a part of this Contract are the EJCDC® C-700, Standard General Conditions for the Construction Contract, published by the Engineers Joint Contract Documents Committee®, with modifications made solely in the Supplementary Conditions.

B. Since this Project is funded in whole or in part with SRF funds, the work must also comply with the minimum rates for wages for laborers and mechanics as determined by the Secretary of Labor in accordance with the provisions of Davis-Bacon. As between the State and Federal rates, the higher of the two rates must be paid. Attention is directed to the SRF Funding Requirements section of the Contract Documents.

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:
_____	_____
By: _____	By: _____
Title: General Manager	Title: _____
	(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)
Attest: _____	Attest: _____
Title: _____	Title: _____
Address for giving notices:	Address for giving notices:
Marina Coast Water District	_____
11 Reservation Road	_____
Marina, CA 93933	_____
	License No.: _____ *(where applicable)*

DAVIS BACON WAGE DETERMINATIONS

"General Decision Number: CA20190018 11/29/2019

Superseded General Decision Number: CA20180029

State: California

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

Counties: Alameda, Calaveras, Contra Costa, Fresno, Kings, Madera, Mariposa, Merced, Monterey, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Stanislaus and Tuolumne Counties in California.

BUILDING CONSTRUCTION PROJECTS; DREDGING PROJECTS (does not include hopper dredge work); HEAVY CONSTRUCTION PROJECTS (does not include water well drilling); HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.60 for calendar year 2019 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, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.60 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 calendar year 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate,if it is higher than the conformed wage rate). The EO minimum wage rate

will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/04/2019
1	02/01/2019
2	02/15/2019
3	02/22/2019
4	05/03/2019
5	07/26/2019
6	11/08/2019
7	11/15/2019
8	11/22/2019
9	11/29/2019

ASBE0016-004 01/01/2019

AREA 1: CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, MONTEREY, SAN BENITO, SAN JOAQUIN, SANTA CRUZ, STANISLAUS & TOULMNE COUNTIES

AREA 2: ALAMEDA, CONTRA COSTA, SAN FRANSICO, SAN MATEO & SANTA CLARA COUNTIES

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

insulation materials from
mechanical systems, whether
they contain asbestos or not)

Area 1	$ 28.20	9.27
Area 2	$ 36.53	9.27

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* ASBE0016-008 08/01/2019

AREA 1: ALAMEDA, CONTRA COSTA, MONTEREY, SAN BENITO, SAN FRANSICO, SAN MATEO, SANTA CLARA, & SANTA CRUZ

AREA 2: CALAVERAS, COLUSA, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAU, & TUOLUMNE

	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	$ 71.16	23.39
Area 2	$ 54.26	23.30

BOIL0549-001 10/01/2016

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

AREA 2: REMAINING COUNTIES

	Rates	Fringes
BOILERMAKER		
Area 1	$ 43.28	37.91
Area 2	$ 39.68	35.71

BRCA0003-001 08/01/2019

	Rates	Fringes
MARBLE FINISHER	$ 35.41	16.45

BRCA0003-003 08/01/2019

	Rates	Fringes
MARBLE MASON	$ 49.42	27.86

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* BRCA0003-005 05/01/2019

	Rates	Fringes
BRICKLAYER		
(1) Fresno, Kings, Madera, Mariposa, Merced	$ 41.88	22.19
(7) San Francisco, San Mateo	$ 42.34	25.83
(8) Alameda, Contra Costa, San Benito, Santa Clara	$ 44.16	21.71
(9) Calaveras, San Joaquin, Stanislaus, Toulumne	$ 39.66	20.76
(16) Monterey, Santa Cruz	$ 39.51	23.49

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* BRCA0003-008 07/01/2019

	Rates	Fringes
TERRAZZO FINISHER	$ 37.58	17.33
TERRAZZO WORKER/SETTER	$ 48.53	26.84

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* BRCA0003-011 04/01/2019

AREA 1: Alameda, Contra Costa, Monterey, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz

AREA 2: Calaveras, San Joaquin, Stanislaus, Tuolumne

AREA 3: Fresno, Kings, Madera, Mariposa, Merced

	Rates	Fringes
TILE FINISHER		
Area 1	$ 29.94	16.38
Area 2	$ 25.60	14.30
Area 3	$ 26.58	15.65
Tile Layer		
Area 1	$ 49.90	19.16
Area 2	$ 42.67	16.81
Area 3	$ 40.27	18.58

CARP0022-001 07/01/2019

San Francisco County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway		
Carpenter	$ 50.50	30.20
Hardwood Floorlayer,		
Shingler, Power Saw		
Operator, Steel Scaffold &		
Steel Shoring Erector, Saw		
Filer	$ 50.65	30.20
Journeyman Carpenter	$ 50.50	30.20
Millwright	$ 50.60	31.79

CARP0034-001 07/01/2019

	Rates	Fringes
Diver		
Assistant Tender, ROV		
Tender/Technician	$ 49.75	33.40
Diver standby	$ 55.73	33.40
Diver Tender	$ 54.73	33.40

Diver wet	$ 99.27	33.40
Manifold Operator (mixed gas)	$ 59.73	33.40
Manifold Operator (Standby)	$ 54.73	33.40

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.

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* CARP0034-003 07/01/2019

	Rates	Fringes
Piledriver	$ 50.75	33.40

CARP0035-007 07/01/2017

AREA 1: Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara counties

AREA 2: Monterey, San Benito, Santa Cruz Counties

AREA 3: Calaveras, Fresno, Kings, Madera, Mariposa, Merced, San Joaquin, Stanislaus, Tuolumne Counties

	Rates	Fringes
Modular Furniture Installer		
Area 1		
Installer I	$ 25.61	20.42
Installer II	$ 22.18	20.42
Lead Installer	$ 29.06	20.92
Master Installer	$ 33.28	20.92
Area 2		
Installer I	$ 22.96	20.42
Installer II	$ 20.01	20.42
Lead Installer	$ 25.93	20.92
Master Installer	$ 29.56	20.92
Area 3		
Installer I	$ 22.01	20.42
Installer II	$ 19.24	20.42
Lead Installer	$ 24.81	20.92
Master Installer	$ 31.83	20.92

CARP0035-008 08/01/2018

AREA 1: Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara counties

AREA 2: Monterey, San Benito, Santa Cruz Counties

AREA 3: San Joaquin

AREA 4: Calaveras, Fresno, Kings, Madera, Mariposa, Merced, Stanislaus, Tuolumne Counties

	Rates	Fringes
Drywall Installers/Lathers:		
Area 1	$ 48.40	29.76
Area 2	$ 42.52	29.76
Area 3	$ 41.02	29.15
Area 4	$ 41.67	29.76
Drywall Stocker/Scrapper		
Area 1	$ 24.20	17.29
Area 2	$ 21.26	17.29
Area 3	$ 20.51	16.88
Area 4	$ 20.84	17.29

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* CARP0152-001 07/01/2019

Contra Costa County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway		
Carpenter	$ 50.50	30.20
Hardwood Floorlayer,		
Shingler, Power Saw		
Operator, Steel Scaffold &		
Steel Shoring Erector, Saw		
Filer	$ 50.65	30.20
Journeyman Carpenter	$ 50.50	30.20
Millwright	$ 50.60	31.79

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* CARP0152-002 07/01/2019

San Joaquin County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway		
Carpenter	$ 50.50	30.20
Hardwood Floorlayer,		

Shingler, Power Saw
Operator, Steel Scaffold &
Steel Shoring Erector, Saw
Filer.....$ 44.77 30.20
Journeyman Carpenter.....$ 44.62 30.20
Millwright.....$ 47.12 31.79

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* CARP0152-004 07/01/2019

Calaveras, Mariposa, Merced, Stanislaus and Tuolumne Counties

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter	$ 50.50	30.20
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer	$ 43.42	30.20
Journeyman Carpenter	$ 43.27	30.20
Millwright	$ 45.77	31.79

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* CARP0217-001 07/01/2019

San Mateo County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter	$ 50.50	30.20
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer	$ 50.65	30.20
Journeyman Carpenter	$ 50.50	30.20
Millwright	$ 50.60	31.79

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* CARP0405-001 07/01/2019

Santa Clara County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter	$ 50.50	30.20
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer	$ 50.65	30.20
Journeyman Carpenter	$ 50.50	30.20
Millwright	$ 50.60	31.79

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* CARP0405-002 07/01/2019

San Benito County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter	$ 50.50	30.20
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer	$ 44.68	30.20
Journeyman Carpenter	$ 44.62	30.20
Millwright	$ 47.12	31.79

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* CARP0505-001 07/01/2019

Santa Cruz County

	Rates	Fringes
Carpenters		

Bridge Builder/Highway

Carpenter.....$ 50.50 30.20

Hardwood Floorlayer,

Shingler, Power Saw

Operator, Steel Scaffold &

Steel Shoring Erector, Saw

Filer.....$ 44.77 30.20

Journeyman Carpenter.....$ 44.62 30.20

Millwright.....$ 47.12 31.79

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* CARP0605-001 07/01/2019

Monterey County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway		
Carpenter	$ 50.50	30.20
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw		
Filer	$ 44.77	30.20
Journeyman Carpenter	$ 44.62	30.20
Millwright	$ 47.12	31.79

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* CARP0701-001 07/01/2019

Fresno and Madera Counties

	Rates	Fringes
Carpenters		
Bridge Builder/Highway		
Carpenter	$ 50.50	30.20
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw		
Filer	$ 43.42	30.20

Journeyman Carpenter.....$ 43.27 30.20

Millwright.....$ 45.77 31.79

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* CARP0713-001 07/01/2019

Alameda County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter	$ 50.50	30.20
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer	$ 50.65	30.20
Journeyman Carpenter	$ 50.50	30.20
Millwright	$ 50.60	31.79

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* CARP1109-001 07/01/2019

Kings County

	Rates	Fringes
Carpenters		
Bridge Builder/Highway Carpenter	$ 50.50	30.20
Hardwood Floorlayer, Shingler, Power Saw Operator, Steel Scaffold & Steel Shoring Erector, Saw Filer	$ 43.42	30.20
Journeyman Carpenter	$ 43.27	30.20
Millwright	$ 45.77	31.79

ELEC0006-004 12/01/2018

SAN FRANCISCO COUNTY

	Rates	Fringes
Sound & Communications		
Installer	$ 40.52	3%+19.05
Technician	$ 46.60	3%+19.05

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

FOOTNOTE: Fire alarm work when installed in raceways (including wire and cable pulling), on projects which involve new or major remodel building construction, for which the conductors for the fire alarm system are installed in the conduit, shall be performed by the inside electrician.

ELEC0006-007 06/01/2019

SAN FRANCISCO COUNTY

	Rates	Fringes
ELECTRICIAN	$ 74.50	3%+33.715

ELEC0100-002 03/01/2019

FRESNO, KINGS, AND MADERA COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 38.75	23.06

ELEC0100-005 12/01/2018

FRESNO, KINGS, MADERA

	Rates	Fringes
Communications System		
Installer	$ 33.59	19.55
Technician	$ 38.63	19.71

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.

ELEC0234-001 12/24/2018

MONTEREY, SAN BENITO AND SANTA CRUZ COUNTIES

	Rates	Fringes
ELECTRICIAN		
Zone A	$ 49.30	25.58
Zone B	$ 54.23	25.73

Zone A: All of Santa Cruz, Monterey, and San Benito Counties within 25 air miles of Highway 1 and Dolan Road in Moss

Landing, and an area extending 5 miles east and west of Highway 101 South to the San Luis Obispo County Line

Zone B: Any area outside of Zone A

ELEC0234-003 12/01/2018

MONTEREY, SAN BENITO, AND SANTA CRUZ COUNTIES

	Rates	Fringes
Sound & Communications		
Installer	$ 40.02	19.75
Technician	$ 46.02	19.75

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

FOOTNOTE: Fire alarm work when installed in raceways (including wire and cable pulling), on projects which involve new or major remodel building construction, for which the conductors for the fire alarm system are installed in the conduit, shall be performed by the inside electrician.

ELEC0302-001 02/25/2019

CONTRA COSTA COUNTY

	Rates	Fringes
CABLE SPLICER	$ 60.48	26.06
ELECTRICIAN	$ 53.76	25.86

ELEC0302-003 12/01/2018

CONTRA COSTA COUNTY

	Rates	Fringes
Sound & Communications		
Installer	$ 38.42	19.70
Technician	$ 44.18	19.88

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

FOOTNOTE: Fire alarm work when installed in raceways (including wire and cable pulling), on projects which involve new or major remodel building construction, for which the conductors for the fire alarm system are installed in the conduit, shall be performed by the inside electrician.

ELEC0332-001 06/01/2018

SANTA CLARA COUNTY

	Rates	Fringes
CABLE SPLICER	$ 75.35	35.491
ELECTRICIAN	$ 65.52	35.196

FOOTNOTES: Work under compressed air or where gas masks are required, orwork on ladders, scaffolds, stacks, ""Bosun's chairs,"" or other structures and where the workers are not protected by permanent guard rails at a distance of 40 to 60 ft. from the ground or supporting structures: to be paid one and one-half times the straight-time rate of pay.
Work on structures of 60 ft. or over (as described above): to be paid twice the straight-time rate of pay.

ELEC0332-003 12/01/2018

SANTA CLARA COUNTY

	Rates	Fringes
Sound & Communications		
Installer	$ 40.02	19.75
Technician	$ 46.02	19.93

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

excluding energy management systems.

FOOTNOTE: Fire alarm work when installed in raceways (including wire and cable pulling), on projects which involve new or major remodel building construction, for which the conductors for the fire alarm system are installed in the conduit, shall be performed by the inside electrician.

ELEC0595-001 06/01/2019

ALAMEDA COUNTY

	Rates	Fringes
CABLE SPLICER	$ 65.90	3%+36.82
ELECTRICIAN	$ 57.30	3%+36.82

ELEC0595-002 06/01/2019

CALAVERAS AND SAN JOAQUIN COUNTIES

	Rates	Fringes
CABLE SPLICER	$ 43.99	7.75%+24.83
ELECTRICIAN		
(1) Tunnel work	$ 40.16	7.75%+24.83
(2) All other work	$ 38.25	7.75%+24.83

ELEC0595-006 12/01/2018

ALAMEDA COUNTY

	Rates	Fringes
Sound & Communications		
Installer	$ 40.02	3%+18.96
Technician	$ 46.02	3%+18.96

SCOPE OF WORK: Including any data system whose only function

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

FOOTNOTE: Fire alarm work when installed in raceways (including wire and cable pulling), on projects which involve new or major remodel building construction, for which the conductors for the fire alarm system are installed in the conduit, shall be performed by the inside electrician.

ELEC0595-008 12/01/2018

CALAVERAS AND SAN JOAQUIN COUNTIES

	Rates	Fringes
Communications System		
Installer	$ 33.59	3%+18.86
Technician	$ 38.63	3%+18.86

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

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

FOOTNOTE: Fire alarm work when installed in raceways (including wire and cable pulling), on projects which involve new or major remodel building construction, for which the conductors for the fire alarm system are installed in the conduit, shall be performed by the inside electrician.

ELEC0617-001 06/01/2019

SAN MATEO COUNTY

	Rates	Fringes
ELECTRICIAN	$ 63.00	37.68

ELEC0617-003 12/01/2018

SAN MATEO COUNTY

	Rates	Fringes
Sound & Communications		
Installer	$ 40.02	19.93
Technician	$ 46.02	19.93

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

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

FOOTNOTE: Fire alarm work when installed in raceways (including wire and cable pulling), on projects which involve new or major remodel building construction, for which the conductors for the fire alarm system are installed in the conduit, shall be performed by the inside electrician.

ELEC0684-001 06/01/2019

MARIPOSA, MERCED, STANISLAUS AND TUOLUMNE COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 40.25	3%+22.83

CABLE SPLICER = 110% of Journeyman Electrician

ELEC0684-004 12/01/2018

MARIPOSA, MERCED, STANISLAUS AND TUOLUMNE COUNTIES

	Rates	Fringes
Communications System		
Installer	$ 33.59	19.56
Technician	$ 38.63	19.71

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

performed on new or major remodel building projects or jobs for which the conductors for the fire alarm system are installed in conduit; excluding installation of raceway systems, line voltage work, industrial work, life-safety systems (all buildings having floors located more than 75' above the lowest floor level having building access); excluding energy management systems.

FOOTNOTE: Fire alarm work when installed in raceways (including wire and cable pulling), on projects which involve new or major remodel building construction, for which the conductors for the fire alarm system are installed in the conduit, shall be performed by the inside electrician.

ELEC1245-001 01/01/2019

	Rates	Fringes
LINE CONSTRUCTION		
(1) Lineman; Cable splicer..	$ 56.79	17.41
(2) Equipment specialist (operates crawler tractors, commercial motor vehicles, backhoes, trenchers, cranes (50 tons and below), overhead & underground distribution line equipment).....	$ 45.36	16.24
(3) Groundman.....	$ 34.68	15.86
(4) Powderman.....	$ 49.55	3%+17.65

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

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ELEV0008-001 01/01/2019

	Rates	Fringes

ELEVATOR MECHANIC.....$ 67.56 34.125+a+b

FOOTNOTE:

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.

PAID HOLIDAYS: New Years Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Friday after Thanksgiving, and Christmas Day.

ENGI0003-001 06/24/2019

""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	$ 49.02	30.74
GROUP 2	$ 47.49	30.74
GROUP 3	$ 46.01	30.74
GROUP 4	$ 44.63	30.74
GROUP 5	$ 43.36	30.74
GROUP 6	$ 42.04	30.74
GROUP 7	$ 40.90	30.74
GROUP 8	$ 39.76	30.74
GROUP 8-A	$ 37.55	30.74
OPERATOR: Power Equipment (Cranes and Attachments - AREA 1:)		
GROUP 1		
Cranes	$ 50.65	30.74
Oiler	$ 36.63	30.39

Truck crane oiler.....$ 39.20 30.39

GROUP 2

Cranes.....$ 48.14 30.74

Oiler.....$ 36.36 30.39

Truck crane oiler.....$ 38.98 30.39

GROUP 3

Cranes.....$ 46.40 30.74

Hydraulic.....$ 38.32 30.39

Oiler.....$ 36.14 30.39

Truck Crane Oiler.....$ 38.71 30.39

GROUP 4

Cranes.....$ 43.36 30.74

OPERATOR: Power Equipment

(Piledriving - AREA 1:)

GROUP 1

Lifting devices.....$ 45.89 30.39

Oiler.....$ 36.63 30.39

Truck crane oiler.....$ 39.20 30.39

GROUP 2

Lifting devices.....$ 44.07 30.39

Oiler.....$ 36.36 30.39

Truck Crane Oiler.....$ 38.98 30.39

GROUP 3

Lifting devices.....$ 42.39 30.39

Oiler.....$ 36.14 30.39

Truck Crane Oiler.....$ 38.71 30.39

GROUP 4

Lifting devices.....$ 40.62 30.39

GROUP 5

Lifting devices.....$ 39.32 30.39

GROUP 6

Lifting devices.....$ 37.98 30.39

OPERATOR: Power Equipment

(Steel Erection - AREA 1:)

GROUP 1

Cranes.....$ 46.30 30.39

Oiler.....$ 36.63 30.39

Truck Crane Oiler.....$ 39.20 30.39

GROUP 2

Cranes.....$ 43.79 30.39

Oiler.....$ 36.36 30.39

Truck Crane Oiler.....$ 38.98 30.39

GROUP 3

Cranes.....$ 42.05 30.39

Hydraulic.....$ 38.32 30.39

Oiler.....$ 36.14 30.39

Truck Crane Oiler.....$ 38.71 30.39

GROUP 4

Cranes.....$ 39.01 30.39

GROUP 5

Cranes.....$ 35.13 30.39

OPERATOR: Power Equipment

(Tunnel and Underground Work

- AREA 1:)

SHAFTS, STOPES, RAISES:

GROUP 1.....$ 40.77 30.39

GROUP 1-A.....$ 43.24 30.39

GROUP 2.....$ 39.51 30.39

GROUP 3.....$ 38.18 30.39

GROUP 4.....$ 37.04 30.39

GROUP 5.....$ 35.90 30.39

UNDERGROUND:

GROUP 1.....$ 40.67 30.39

GROUP 1-A.....$ 43.14 30.39

GROUP 2.....$ 39.41 30.39

GROUP 3.....$ 38.08 30.39

GROUP 4.....$ 36.94 30.39

GROUP 5.....$ 35.80 30.39

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 constuction work boat operator, on site; Timber skidder; Track loader up to 4 yds.; Tractor-drawn scraper; Tractor, compressor drill combination; Welder; Woods-Mixer (and other similar Pugmill equipment)

GROUP 5: Cast-in-place pipe laying machine; Combination slusher and motor operator; Concrete conveyor or concrete

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

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

GROUP 7: Ballast regulator; Boom truck or dual-purpose A-frame truck, non-rotating - under 15 tons; Cary lift or similar; Combination slurry mixer and/or cleaner; Drilling equipment, 20 ft. and under m.r.c.; Firetender (hot plant); Grouting machine operator; Highline cableway signalperson; Stationary belt loader (Kolman or similar); Lift slab machine (Vagtborg and similar types); Maginnes internal

full slab vibrator; Material hoist (1 drum); Mechanical trench shield; Pavement breaker with or without compressor combination); Pipe cleaning machine (tractor propelled and supported); Post driver; Roller (except asphalt); Chip Seal; Self-propelled automatically applied concrete curing mahcine (on streets, highways, airports and canals); Self-propelled compactor (without dozer); Signalperson; Slip-form pumps (lifting device for concrete forms); Tie spacer; Tower mobile; Trenching machine, maximum digging capacity up to and including 5 ft. depth; Truck- type loader

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

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

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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;

PILEDRIVERS

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

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AREA DESCRIPTIONS:

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

AREA 1: ALAMEDA, CALAVERAS, CONTRA COSTA, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, MONTEREY, SAN BENITO, SAN FRANCISCO, SAN JOAQUIN, SAN MATEO, SANTA CLARA, SANTA CRUZ, STANISLAUS, TUOLUMNE

AREA 2 -NOTED BELOW

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

CALAVERAS COUNTY:

Area 1: Remainder

Area 2: Eastern Part

FRESNO COUNTY:

Area 1: Remainder

Area 2: Eastern Part

MADERA COUNTY:

Area 1: Remainder

Area 2: Eastern Part

MARIPOSA COUNTY:

Area 1: Remainder

Area 2: Eastern Part

MONTEREY COUNTY:

Area 1: Remainder

Area 2: Southwestern part

TUOLUMNE COUNTY:

Area 1: Remainder

Area 2: Eastern Part

ENGI0003-008 07/01/2017

	Rates	Fringes
Dredging: (DREDGING: CLAMSHELL & DIPPER DREDGING; HYDRAULIC SUCTION DREDGING:)		
AREA 1:		
(1) Leverman	$ 44.77	31.25
(2) Dredge Dozer; Heavy duty repairman	$ 39.81	31.25
(3) Booster Pump Operator; Deck Engineer; Deck mate; Dredge Tender; Winch Operator	$ 38.69	31.25
(4) Bargeman; Deckhand; Fireman; Leveehand; Oiler	$ 35.39	31.25
AREA 2:		
(1) Leverman	$ 46.77	31.25
(2) Dredge Dozer; Heavy duty repairman	$ 41.81	31.25
(3) Booster Pump Operator; Deck Engineer; Deck mate; Dredge Tender; Winch Operator	$ 40.69	31.25
(4) Bargeman; Deckhand; Fireman; Leveehand; Oiler	$ 37.39	31.25

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 07/26/2017

SEE AREA DESCRIPTIONS BELOW

	Rates	Fringes
OPERATOR: Power Equipment		
(LANDSCAPE WORK ONLY)		
GROUP 1		
AREA 1	$ 34.05	28.73
AREA 2	$ 36.05	28.73
GROUP 2		
AREA 1	$ 30.45	28.73
AREA 2	$ 32.45	28.73
GROUP 3		
AREA 1	$ 25.84	28.73
AREA 2	$ 27.84	28.73

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

IRON0377-002 01/01/2019

	Rates	Fringes
Ironworkers:		
Fence Erector	$ 32.58	23.41
Ornamental, Reinforcing and Structural	$ 39.00	32.05

PREMIUM PAY:

$6.00 additional per hour at the following locations:

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

$4.00 additional per hour at the following locations:

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

$2.00 additional per hour at the following locations:

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

LABO0067-002 07/01/2019

AREA ""A"" - ALAMEDA, CONTRA COSTA, SAN FRANCISCO, SAN MATEO AND SANTA CLARA COUNTIES

AREA ""B"" - CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, MONTEREY, SAN BENITO, SAN JOAQUIN, STANISLAUS, AND TUOLUMNE COUNTIES

	Rates	Fringes

Asbestos Removal Laborer

All Counties	$ 24.00	11.30

LABORER (Lead Removal)

Area A	$ 31.81	24.61
Area B	$ 30.81	24.61

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

LABO0073-002 06/25/2018

CALAVERAS AND SAN JOAQUIN COUNTIES

	Rates	Fringes
LABORER (TRAFFIC CONTROL/LANE CLOSURE)		
Escort Driver, Flag Person	$ 29.54	23.65
Traffic Control Person I	$ 29.84	23.65
Traffic Control Person II	$ 27.34	23.65

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.

LABO0073-003 07/01/2018

SAN JOAQUIN COUNTY

	Rates	Fringes
LABORER		
Mason Tender-Brick	$ 31.20	22.20

LABO0073-005 06/25/2018

	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; 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

LABO0073-007 06/25/2018

CALAVERAS AND SAN JOAQUIN COUNTIES

	Rates	Fringes
LABORER (CONSTRUCTION CRAFT LABORERS)		
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	$ 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)		
(1) New Construction	$ 29.54	23.20
(2) Establishment Warranty Period	$ 23.23	23.20
LABORER (GUNITE)		
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)		
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 bucker; 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 shal 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)

LABO0073-009 07/01/2018

CALAVERAS AND SAN JOAQUIN COUNTIES

	Rates	Fringes
LABORER (Plaster Tender).....	$ 32.02	23.00

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

LABO0261-003 06/25/2018

SAN FRANCISCO AND SAN MATEO COUNTIES

	Rates	Fringes
LABORER (TRAFFIC CONTROL/LANE CLOSURE)		
Escort Driver, Flag Person	$ 20.54	23.65
Traffic Control Person I	$ 30.84	23.65
Traffic Control Person II	$ 28.34	23.65

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.

LABO0261-005 06/25/2018

SAN FRANCISCO AND SAN MATEO 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; 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

LABO0261-009 06/25/2018

SAN FRANCISCO, AND SAN MATEO COUNTIES

	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 (WRECKING - AREA A:)

GROUP 1.....$ 30.79 23.20

GROUP 2.....$ 30.64 23.20

Laborers: (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

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 bucker; 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 shal 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)

LABO0261-011 05/01/2018

SAN FRANCISCO AND SAN MATEO COUNTIES:

	Rates	Fringes
MASON TENDER, BRICK	$ 35.37	20.70

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

LABO0261-014 07/01/2017

SAN FRANCISCO AND SAN MATEO COUNTIES:

	Rates	Fringes
PLASTER TENDER	$ 34.70	23.11

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

LABO0270-003 06/25/2018

AREA A: SANTA CLARA

AREA B: MONTEREY, SAN BENITO AND SANTA CRUZ COUNTIES

	Rates	Fringes
LABORER (TRAFFIC CONTROL/LANE CLOSURE)		
Escort Driver, Flag Person		

Area A	$ 30.54	23.65
Area B	$ 29.54	23.65
Traffic Control Person I		
Area A	$ 30.84	23.65
Area B	$ 29.84	23.65
Traffic Control Person II		
Area A	$ 28.34	23.65
Area B	$ 27.34	23.65

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.

LABO0270-004 06/25/2018

MONTEREY, SAN BENITO, SANTA CLARA, AND SANTA CRUZ 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; 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

LABO0270-005 07/01/2018

MONTEREY AND SAN BENITO COUNTIES

	Rates	Fringes
LABORER		
Mason Tender-Brick	$ 31.20	22.20

LABO0270-007 06/25/2018

MONTEREY, SAN BENITO, AND SANTA CRUZ, COUNTIES

	Rates	Fringes
LABORER (CONSTRUCTION CRAFT LABORERS - AREA B)		
Construction Specialist Group	$ 30.40	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	$ 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 bucker; 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 shal 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)

LABO0270-010 06/25/2018

SANTA CLARA 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	$ 30.37	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 bucker; 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 shal 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)

LABO0270-011 07/01/2017

MONTEREY, SAN BENITO, SANTA CRUZ, SANTA CLARA COUNTIES

	Rates	Fringes
LABORER (Plaster Tender).....	$ 34.70	21.22

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

LABO0294-001 07/01/2018

FRESNO, KINGS AND MADERA COUNTIES

	Rates	Fringes
LABORER (Brick)		
Mason Tender-Brick.....	$ 31.20	22.20

LABO0294-002 06/25/2018

FRESNO, KINGS, AND MADERA COUNTIES

	Rates	Fringes
LABORER (TRAFFIC CONTROL/LANE CLOSURE)		
Escort Driver, Flag Person..	$ 29.54	23.65
Traffic Control Person I....	$ 29.84	23.65
Traffic Control Person II...	$ 27.34	23.65

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.

LABO0294-005 06/25/2018

FRESNO, KINGS, AND MADERA 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; 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

LABO0294-008 06/25/2018

FRESNO, KINGS, AND MADERA 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	$ 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 bucker; 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 shal 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)

LABO0294-010 07/01/2018

CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAUS & TUOLUMNE

	Rates	Fringes
Plasterer tender	$ 32.02	23.00

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

LABO0294-011 07/01/2017

FRESNO, KINGS, AND MADERA COUNTIES

	Rates	Fringes

LABORER (Plaster Tender).....$ 31.02 22.52

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

LABO0304-002 06/25/2018

ALAMEDA COUNTY

	Rates	Fringes
LABORER (TRAFFIC CONTROL/LANE CLOSURE)		
Escort Driver, Flag Person..	$ 30.54	23.65
Traffic Control Person I....	$ 30.84	23.65
Traffic Control Person II...	$ 28.34	23.65

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.

LABO0304-003 06/26/2017

ALAMEDA COUNTY

	Rates	Fringes
Tunnel and Shaft Laborers:		
GROUP 1.....	$ 36.60	24.83
GROUP 2.....	$ 36.37	24.83
GROUP 3.....	$ 36.12	24.83
GROUP 4.....	$ 35.67	24.83
GROUP 5.....	$ 35.13	24.83
Shotcrete Specialist.....	$ 37.12	24.83

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

LABO0304-004 06/25/2018

ALAMEDA 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	$ 30.37	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 bucker; 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 shal 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)

LABO0304-005 05/01/2018

ALAMEDA COUNTY

	Rates	Fringes
Brick Tender	$ 35.37	20.70

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

LABO0304-008 07/01/2017

ALAMEDA AND CONTRA COSTA COUNTIES:

	Rates	Fringes
Plasterer tender	$ 34.70	23.11

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

LABO0324-002 06/25/2018

CONTRA COSTA COUNTY

	Rates	Fringes
LABORER (TRAFFIC CONTROL/LANE CLOSURE)		

Escort Driver, Flag Person..	$ 30.54	23.65
Traffic Control Person I....	$ 30.84	23.65
Traffic Control Person II...	$ 28.34	23.65

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.

LABO0324-006 06/25/2018

CONTRA COSTA COUNTY

	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; 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

LABO0324-012 06/25/2018

CONTRA COSTA 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	$ 30.37	23.20
GROUP 1-g	$ 30.99	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, HORTICULURAL & 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 bucker; 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 shal 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 1-g, CONTRA COSTA COUNTY: Pipelayer (including grade checking in connection with pipelaying); Caulker; Bander; Pipewrapper; Conduit layer; Plastic pipe layer; Pressure pipe tester; No joint pipe and stripping of same, including repair of voids; Precast manhole setters, cast in place manhole form setters

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

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

GROUP 4: 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)

GROUP 1-g, CONTRA COSTA COUNTY: Pipelayer (including grade checking in connection with pipelaying); Caulker; Bander; Pipewrapper; Conduit layer; Plastic pipe layer; Pressure pipe tester; No joint pipe and stripping of same, including repair of voids; Precast manhole setters, cast in place manhole form setters

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LABO0324-014 05/01/2018

CONTRA COSTA COUNTY:

	Rates	Fringes
Brick Tender	$ 35.37	20.70

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

LABO0324-018 07/01/2018

ALAMEDA AND CONTRA COSTA COUNTIES:

	Rates	Fringes
Plasterer tender	$ 37.14	22.32

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

LABO1130-002 06/25/2018

MARIPOSA, MERCED, STANISLAUS, AND TUOLUMNE COUNTIES

	Rates	Fringes
LABORER (TRAFFIC CONTROL/LANE CLOSURE)		
Escort Driver, Flag Person	$ 29.54	23.65
Traffic Control Person I	$ 29.84	23.65
Traffic Control Person II	$ 27.34	23.65

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.

LABO1130-003 06/26/2017

MARIPOSA, MERCED, STANISLAUS, AND TUOLUMNE COUNTIES

	Rates	Fringes
Tunnel and Shaft Laborers:		
GROUP 1	$ 36.60	24.83
GROUP 2	$ 36.37	24.83
GROUP 3	$ 36.12	24.83
GROUP 4	$ 35.67	24.83
GROUP 5	$ 35.13	24.83
Shotcrete Specialist	$ 37.12	24.83

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

LABO1130-005 07/01/2018

MARIPOSA, MERCED, STANISLAUS AND TUOLUMNE COUNTIES

	Rates	Fringes
LABORER		
Mason Tender-Brick	$ 31.20	22.20

LABO1130-007 06/25/2018

MARIPOSA, MERCED, STANISLAUS, AND TUOLUMNE , 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 (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 bucker; 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 shal 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)

LABO1130-008 07/01/2018

CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAUS & TUOLUMNE

	Rates	Fringes
Plasterer tender	$ 32.02	23.00

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

LABO1130-009 07/01/2018

MARIPOSA, MERCED, STANISLAUS, AND TUOLUMNE COUNTIES

	Rates	Fringes
LABORER (Plaster Tender)	$ 32.02	23.00

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

PAIN0016-001 01/01/2019

ALAMEDA, CONTRA COSTA, MONTEREY, SAN BENITO, SAN MATEO, SANTA CLARA, AND SANTA CRUZ COUNTIES

	Rates	Fringes

Painters:.....$ 42.67 24.03

PREMIUMS:

EXOTIC MATERIALS - $0.75 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 houir additional

PAIN0016-003 01/01/2018

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

AREA 2: CALAVERAS, MARIPOA, MERCED, MONTEREY, SAN BENITO, SAN JOAQUIN, SANTA CRUZ, STANISLAUS & TUOLUMNE COUNTIES

	Rates	Fringes
Drywall Finisher/Taper		
AREA 1	$ 45.16	26.74
AREA 2	$ 41.03	25.34

PAIN0016-012 01/01/2019

ALAMEDA, CONTRA COSTA, MARIPOSA, MERCED, MONTEREY, SAN BENITO, SAN FRANCISCO, SAN MATEO, SANTA CLARA AND SANTA CRUZ COUNTIES

	Rates	Fringes
SOFT FLOOR LAYER	$ 48.60	27.43

PAIN0016-015 01/01/2019

CALAVERAS, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAUS & TUOLUMNE COUNTIES

	Rates	Fringes
PAINTER		
Brush	$ 33.68	20.24

FOOTNOTES:
SPRAY/SANDBLAST: $0.50 additional per hour.
EXOTIC MATERIALS: $1.00 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.

PAIN0016-022 01/01/2019

SAN FRANCISCO COUNTY

	Rates	Fringes
PAINTER	$ 46.29	24.03

PAIN0169-001 01/01/2018

FRESNO, KINGS, MADERA, MARIPOSA AND MERCED COUNTIES:

	Rates	Fringes
GLAZIER	$ 35.00	26.26

PAIN0169-005 01/01/2019

ALAMEDA CONTRA COSTA, MONTEREY, SAN BENITO, SAN FRANCISCO, SAN MATEO, SANTA CLARA & SANTA CRUZ COUNTIES

	Rates	Fringes
GLAZIER	$ 50.03	28.19

PAIN0294-004 01/01/2019

FRESNO, KINGS AND MADERA COUNTIES

	Rates	Fringes
PAINTER		
Brush, Roller	$ 30.53	19.11
Drywall Finisher/Taper	$ 34.87	23.68

FOOTNOTE:

Spray Painters & Paperhangers recive $1.00 additional per hour. Painters doing Drywall Patching receive $1.25 additional per hour. Lead Abaters & Sandblasters receive $1.50 additional per hour. High Time - over 30 feet (does not include work from a lift) $0.75 per hour additional.

PAIN0294-005 01/01/2018

FRESNO, KINGS & MADERA

	Rates	Fringes
SOFT FLOOR LAYER	$ 31.49	20.48

PAIN0767-001 01/01/2019

CALAVERAS, SAN JOAQUIN, STANISLAUS AND TUOLUMNE COUNTIES:

	Rates	Fringes
GLAZIER	$ 38.47	28.40

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 rquired to wear a body harness shall receive $1.50 per hour above the basic hourly rate at any elevation.

PAIN1176-001 01/01/2017

HIGHWAY IMPR0VEMENT

	Rates	Fringes
Parking Lot Striping/Highway Marking:		
GROUP 1	$ 34.41	16.31
GROUP 2	$ 29.25	16.31
GROUP 3	$ 29.59	16.31

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

PAIN1237-003 10/01/2018

CALAVERAS; SAN JOAQUIN COUNTIES; STANISLAUS AND TUOLUMNE COUNTIES:

	Rates	Fringes
SOFT FLOOR LAYER	$ 36.81	21.51

PLAS0066-002 07/01/2017

ALAMEDA, CONTRA COSTA, SAN MATEO AND SAN FRANCISCO COUNTIES:

	Rates	Fringes
PLASTERER	$ 40.51	27.13

PLAS0300-001 07/01/2018

	Rates	Fringes
PLASTERER		
AREA 188: Fresno	$ 32.70	31.68
AREA 224: San Benito, Santa Clara, Santa Cruz	$ 32.88	31.68
AREA 295: Calaveras & San Joaquin Couonties	$ 32.70	31.68
AREA 337: Monterey County	$ 32.88	31.68
AREA 429: Mariposa, Merced, Stanislaus, Tuolumne Counties	$ 32.70	31.68

PLAS0300-005 07/01/2017

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 33.49	23.67

PLUM0038-001 07/01/2018

SAN FRANCISCO COUNTY

	Rates	Fringes
PLUMBER (Plumber, Steamfitter, Refrigeration Fitter)	$ 72.00	41.94

PLUM0038-005 07/01/2018

SAN FRANCISCO COUNTY

	Rates	Fringes
Landscape/Irrigation Fitter (Underground/Utility Fitter)	$ 61.20	30.17

PLUM0062-001 07/01/2019

MONTEREY AND SANTA CRUZ COUNTIES

	Rates	Fringes
PLUMBER & STEAMFITTER	$ 43.80	34.19

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* PLUM0159-001 07/01/2019

CONTRA COSTA COUNTY

	Rates	Fringes
Plumber and steamfitter		
(1) Refrigeration	$ 56.93	41.04
(2) All other work	$ 57.82	41.04

PLUM0246-001 07/01/2019

FRESNO, KINGS & MADERA COUNTIES

	Rates	Fringes
PLUMBER & STEAMFITTER	$ 41.15	33.14

PLUM0246-004 01/01/2017

FRESNO, MERCED & SAN JOAQUIN COUNIES

	Rates	Fringes
PLUMBER (PIPE TRADESMAN)	$ 13.00	10.74

PIPE TRADESMAN SCOPE OF WORK:

Installation of corrugated metal piping for drainage, as well as installation of corrugated metal piping for culverts in connection with storm sewers and drains; Grouting, dry packing and diapering of joints, holes or chases including paving over joints, in piping; Temporary piping for dirt work for building site preparation; Operating jack hammers, pavement breakers, chipping guns, concrete saws and spades to cut holes, chases and channels for piping systems; Digging, grading, backfilling and ground preparation for all types of pipe to all points of the jobsite; Ground preparation including ground leveling, layout and planting of shrubbery, trees and ground cover, including watering, mowing, edging, pruning and fertilizing, the breaking of concrete, digging, backfilling and tamping for the preparation and completion of all work in connection with lawn sprinkler and landscaping; Loading, unloading and distributing materials at jobsite; Putting away materials in storage bins in jobsite secure storage area; Demolition of piping and fixtures for remodeling and additions; Setting up and tearing down work benches, ladders and job shacks; Clean-up and sweeping of jobsite; Pipe wrapping and waterproofing where tar or similar material is applied for protection of buried piping; Flagman

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PLUM0342-001 07/01/2018

ALAMEDA & CONTRA COSTA COUNTIES

	Rates	Fringes
PIPEFITTER		
CONTRA COSTA COUNTY.....	$ 58.68	42.40
PLUMBER, PIPEFITTER, STEAMFITTER		
ALAMEDA COUNTY.....	$ 58.68	42.40

PLUM0355-004 07/01/2018

ALAMEDA, CALAVERAS, CONTRA COSTA, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, MONTEREY, SAN BENITO, SAN JOAQUIN, SAN MATEO,

SANTA CLARA, SANTA CRUZ, STANISLAUS, AND TUOLUMNE COUNTIES:

	Rates	Fringes
Underground Utility Worker /Landscape Fitter	$ 27.10	16.30

PLUM0393-001 07/01/2018

SAN BENITO AND SANTA CLARA COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER	$ 62.66	41.93

PLUM0442-001 07/01/2019

CALAVERAS, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAUS & TUOLUMNE COUNTIES

	Rates	Fringes
PLUMBER & STEAMFITTER	$ 43.50	30.89

PLUM0467-001 07/01/2018

SAN MATEO COUNTY

	Rates	Fringes
Plumber/Pipefitter/Steamfitter	$ 65.11	35.25

ROOF0027-002 01/01/2019

FRESNO, KINGS, AND MADERA COUNTIES

	Rates	Fringes
ROOFER	$ 28.21	14.21

FOOTNOTE: Work with pitch, pitch base of pitch impregnated products or any material containing coal tar pitch, on any building old or new, where both asphalt and pitchers are used in the application of a built-up roof or tear off: $2.00 per hour additional.

ROOF0040-002 08/01/2019

SAN FRANCISCO & SAN MATEO COUNTIES:

	Rates	Fringes
ROOFER	$ 41.88	19.44

ROOF0081-001 08/01/2018

ALAMEDA AND CONTRA COSTA COUNTIES:

	Rates	Fringes
Roofer	$ 39.40	17.58

ROOF0081-004 08/01/2018

CALAVERAS, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAUS AND TUOLUMNE COUNTIES:

	Rates	Fringes
ROOFER	$ 39.40	17.58

ROOF0095-002 08/30/2018

MONTEREY, SAN BENITO, SANTA CLARA, AND SANTA CRUZ COUNTIES:

	Rates	Fringes
ROOFER		

Journeyman.....$ 42.59 18.89

Kettle person (2 kettles);

Bitumastic, Enameler, Coal

Tar, Pitch and Mastic

worker.....$ 44.59 18.89

SFCA0483-001 01/01/2019

ALAMEDA, CONTRA COSTA, SAN FRANCISCO, SAN MATEO AND SANTA CLARA COUNTIES:

	Rates	Fringes
SPRINKLER FITTER (FIRE).....	$ 63.52	31.17

SFCA0669-011 04/01/2018

CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, MONTEREY, SAN BENITO, SAN JOAQUIN, SANTA CRUZ, STANISLAUS AND TUOLUMNE COUNTIES:

	Rates	Fringes
SPRINKLER FITTER.....	$ 38.85	21.87

SHEE0104-001 07/02/2018

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

AREA 2: MONTEREY & SAN BENITO

AREA 3: SANTA CRUZ

	Rates	Fringes
SHEET METAL WORKER		
AREA 1:		

Mechanical Contracts
under $200,000.....$ 51.87 37.91
All Other Work.....$ 59.11 38.51
AREA 2.....$ 48.90 32.70
AREA 3.....$ 51.21 30.26

SHEE0104-003 07/01/2018

CALAVERAS AND SAN JOAQUIN COUNTIES:

	Rates	Fringes
SHEET METAL WORKER.....	$ 40.34	32.80

SHEE0104-005 07/01/2018

MARIPOSA, MERCED, STANISLAUS AND TUOLUMNE COUNTIES:

	Rates	Fringes
SHEET METAL WORKER (Excluding metal deck and siding).....	$ 38.40	35.69

SHEE0104-007 07/01/2018

FRESNO, KINGS, AND MADERA COUNTIES:

	Rates	Fringes
SHEET METAL WORKER.....	$ 38.49	35.65

SHEE0104-015 07/01/2017

ALAMEDA, CONTRA COSTA, MONTEREY, SAN BENITO, SAN FRANCISCO, SAN MATEO, SANTA CLARA AND SANTA CRUZ COUNTIES:

	Rates	Fringes
SHEET METAL WORKER (Metal Decking and Siding only).....	$ 37.53	32.10

SHEE0104-018 07/01/2018

CALAVERAS, FRESNO, KINGS, MADERA, MARIPOSA, MERCED, SAN JOAQUIN, STANISLAUS AND TUOLUMNE COUNTIES:

	Rates	Fringes
Sheet metal worker (Metal decking and siding only)	$ 39.93	32.70

TEAM0094-001 07/01/2018

	Rates	Fringes
Truck drivers:		
GROUP 1	$ 31.68	27.86
GROUP 2	$ 31.98	27.86
GROUP 3	$ 32.28	27.86
GROUP 4	$ 32.63	27.86
GROUP 5	$ 32.98	27.86

FOOTNOTES:

Articulated dump truck; Bulk cement spreader (with or without auger); Dumpcrete truck; Skid truck (debris box); Dry pre-batch concrete mix trucks; Dumpster or similar type; Slurry truck: Use dump truck yardage rate.

Heater planer; Asphalt burner; Scarifier burner; Industrial lift truck (mechanical tailgate); Utility and clean-up truck: Use appropriate rate for the power unit or the equipment utilized.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Dump trucks, under 6 yds.; Single unit flat rack (2-axle unit); Nipper truck (when flat rack truck is used appropriate flat rack shall apply); Concrete pump truck (when flat rack truck is used appropriate flat rack shall apply); Concrete pump machine; Fork lift and lift jitneys;

Fuel and/or grease truck driver or fuel person; Snow buggy; Steam cleaning; Bus or personhaul driver; Escort or pilot car driver; Pickup truck; Teamster oiler/greaser and/or serviceperson; Hook tender (including loading and unloading); Team driver; Tool room attendant (refineries)

GROUP 2: Dump trucks, 6 yds. and under 8 yds.; Transit mixers, through 10 yds.; Water trucks, under 7,000 gals.; Jetting trucks, under 7,000 gals.; Single-unit flat rack (3-axle unit); Highbed heavy duty transport; Scissor truck; Rubber-tired muck car (not self-loaded); Rubber-tired truck jumbo; Winch truck and ""A"" frame drivers; Combination winch truck with hoist; Road oil truck or bootperson; Buggymobile; Ross, Hyster and similar straddle carriers; Small rubber-tired tractor

GROUP 3: Dump trucks, 8 yds. and including 24 yds.; Transit mixers, over 10 yds.; Water trucks, 7,000 gals. and over; Jetting trucks, 7,000 gals. and over; Vacuum trucks under 7500 gals. Trucks towing tilt bed or flat bed pull trailers; Lowbed heavy duty transport; Heavy duty transport tiller person; Self- propelled street sweeper with self-contained refuse bin; Boom truck - hydro-lift or Swedish type extension or retracting crane; P.B. or similar type self-loading truck; Tire repairperson; Combination bootperson and road oiler; Dry distribution truck (A bootperson when employed on such equipment, shall receive the rate specified for the classification of road oil trucks or bootperson); Ammonia nitrate distributor, driver and mixer; Snow Go and/or plow

GROUP 4: Dump trucks, over 25 yds. and under 65 yds.; Water pulls - DW 10's, 20's, 21's and other similar equipment when pulling Aqua/pak or water tank trailers; Helicopter pilots (when transporting men and materials); Lowbedk Heavy Duty Transport up to including 7 axles; DW10's, 20's, 21's and other similar Cat type, Terra Cobra, LeTourneau Pulls, Tournorocker, Euclid and similar type equipment when pulling fuel and/or grease tank trailers or other miscellaneous trailers; Vacuum Trucks 7500 gals and over and truck repairman

GROUP 5: Dump trucks, 65 yds. and over; Holland hauler; Low bed Heavy Duty Transport over 7 axles

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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 www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (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 Regional Office for the area in which the survey was conducted because those Regional Offices have 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 DECISION"

Replacement Section

SECTION 01270

UNIT PRICES

PART 1 GENERAL

1.01 SUMMARY

A. Section includes: Procedures for measurement and payment of Work performed on a unit price basis.

B. Related documents:
   1. Document 00 41 00 - Bid Form.

1.02 MEASUREMENT OF QUANTITIES

A. Work paid at a unit price times number of units measured will be measured by Engineer in accordance with United States Standard Measures:
   1. 1 ton shall consist of 2,000 pounds avoirdupois.

B. Provide and pay for accurate scales:
   1. Use platform scales of sufficient size and capacity to permit the entire vehicle or combination of vehicles to rest on the scale platform while being weighed.
   2. Combination vehicles may be weighed as separate units provided they are disconnected while being weighed.
   3. Have scales inspected and certified as often as necessary to ascertain accuracy.
   4. Furnish weigh slips and daily summary weigh sheets to Engineer.

C. When material is shipped by rail, certified car weights will be acceptable, provided that not more than the actual weight of material will be paid, without consideration of minimum car weight used for assessing freight tariff:
   1. Car weight will not be acceptable for materials passing through mixing plants.

D. Daily, or at shorter intervals when necessary to ensure accuracy, weigh empty trucks used to haul material paid by weight:
   1. Provide such trucks with plainly, unique, permanent, legible, identification marks.

E. Reinforcing steel, steel shapes, castings, and similar items paid by weight will be measured by handbook weights for the type and quantity indicated for the Work.

1.03 PAY ITEMS

A. General: Pay items following are included in Document 00 41 00 - Bid Form.

B. Schedule of Unit Price Bid Items:
   1. Bid Item 1: Mobilization and Demobilization (Shall not exceed 5 percent of the Total of All Unit Price Bid Items):
      a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required for mobilization and demobilization, complete as specified, including, but not limited to, surveying to establish preconstruction conditions, preconstruction photographs and videos, cost of obtaining and complying with all necessary permits not obtained by the District or in other Bid Items, cost for complying with all conditions set by all of the required permits, move in of equipment, tools, supplies, materials, and manpower to the jobsite, move out and cleanup of job site after the project is complete and accepted by the District.
      b. Measurement: Measurement for this bid item is by Lump Sum.
      c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item. A maximum of 50 percent will be paid after satisfactory mobilization. The balance will be paid after satisfactory demobilization.
   2. Bid Item 2: Sheeting, Shoring, and Bracing:
      a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required for sheeting, shoring, and bracing and all other actives required to provide all temporary sheeting, shoring, and bracing for excavations and grading required per the Contract Documents including, but not limited to, engineering, permits, materials, tools, labor, and equipment necessary to performing the Work.
      b. Measurement: Measurement for this bid item is by Lump Sum.
      c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
   3. Bid Item 3: Stormwater Pollution Prevention:
      a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to comply with all regulatory requirements and install and maintain stormwater pollution prevention facilities, comply with Section 01355A - Stormwater Pollution Prevention and all other associated work (excluding items included in other bid items) per the Contract Documents.
      b. Measurement: Measurement for this bid item is by Lump Sum.
      c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
   4. Bid Item 4: Traffic Management:
      a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to furnish and install a complete traffic management system including but not limited to temporary striping, signage, delineators, K-rails, cones, labor, flagmen, temporary fence, and equipment necessary for traffic control and all other associated work (excluding items included in other bid items) per the Contract Documents.
      b. Measurement: Measurement for this bid item is by Lump Sum.
      c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
   5. Bid Item 5: Locating and Verifying Concealed existing Utilities per Section 01350~~Potholing and Storm Drain CCTV~~:

a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to locate and pothole existing utility crossings and nearby adjacent utilities per Section 01350 - Special Procedures and perform closed circuit television inspection of storm drain crossings per Section 01140 - Work Restrictions and all other associated work (excluding items included in other bid items) per the Contract Documents.
b. Measurement: Measurement for this bid item is by Lump Sum.
c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.

6. Bid Item 6: Blow-off Assemblies:
   a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to furnish and install blow-off valves and assemblies including, but not limited to, trenching, earthwork, valve, piping, fittings, valve boxes, all labor, materials, tools and equipment in performing all Work (excluding items included in other bid items) per the Contract Documents.
   b. Measurement: Measurement for this bid item is by Each.
   c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
7. Bid Item 7: Combination Air/Vacuum Valves:
   a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to furnish and install air valve assemblies including, but not limited to, earthwork, valve, piping, fittings, valve boxes, vent risers, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents.
   b. Measurement: Measurement for this bid item is by Each.
   c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
8. Bid Item 8: 8-inch Isolation Valves (Gate):
   a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required furnish and installing valves including, but not limited to, earthwork, valve, piping, fittings, valve boxes, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents.
   b. Measurement: Measurement for this bid item is by Each.
   c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
9. Bid Item 9: 12-inch Isolation Valves (Gate):
   a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required furnish and installing valves including, but not limited to, earthwork, valve, piping, fittings, valve boxes, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents.
   b. Measurement: Measurement for this bid item is by Each.
   c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
10. Bid Item 10: Beach Road: 8-inch Pipeline (Ductile Iron):

a. Bid Item Description: Work in this bid item generally includes installation of the pipeline and includes excavation, disposal of debris, protection and restoration of existing improvements such as utility crossings, furnishing and installing pipeline, trench bedding, backfill, compaction, disposal of excess soil, compaction, specified testing procedures, temporary and permanent surface restoration and temporary and permanent paving and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents.
b. Measurement: Measurement for this bid item is by Linear Foot.
c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.

11. Bid Item 11: Beach Road: Pressure Reducing Station:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to furnish and install a complete pressure reducing station including the excavation, grading, subgrade installation, mechanical piping, concrete pad, and all work (excluding items included in other bid items) for the pressure reducing station including all civil, structural, mechanical, and other work required per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Lump Sum.
    c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
12. Bid Item 12: Beach Road: 8-inch Pipeline (PVC):
    a. Bid Item Description: Work in this bid item generally includes installation of the pipeline and includes excavation, disposal of debris, protection and restoration of existing improvements such as utility crossings, furnishing and installing pipeline, trench bedding, backfill, compaction, disposal of excess soil, compaction, specified testing procedures, temporary and permanent surface restoration and temporary and permanent paving, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Linear Foot.
    c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
13. Bid Item 13: Beach Road: Slurry Seal:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to furnish and install a complete slurry seal pavement treatment where shown on the drawings, including removal of pavement markings all labor, materials, tools and equipment in performing all Work (excluding items included in other bid items) required per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Square Yard.
    c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
14. Bid Item 14: Beach Road: Pavement Striping:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, developing a striping plan and obtaining approval of the plan, and other activities required to furnish and install a complete striping system on the road where striping was removed, damaged, or otherwise

impacted by work, and all work (excluding items included in other bid items) required per the Contract Documents.
   b. Measurement: Measurement for this bid item is by Lump Sum.
   c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
15. Bid Item 15: Potable Water Pipeline: Beach Road from Del Monte Blvd to De Forest Rd (PVC):
   a. Bid Item Description: Work in this bid item generally includes installation of the pipeline and includes mobilization / demobilization, excavation, disposal of debris, protection and restoration of existing improvements such as utility crossings, furnishing and installing pipeline, trench bedding, backfill, compaction, disposal of excess soil, compaction, specified testing procedures, temporary and permanent surface restoration and temporary and permanent paving, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents. This work is being funded from a separate funding source, so cost for this bid item shall include any mobilization or other costs required to complete this work.
   b. Measurement: Measurement for this bid item is by Linear Foot.
   c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
16. Bid Item 16: Potable Water Pipeline: Beach Road Blow-off Assemblies:
   a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to furnish and install blow-off valves and assemblies including, but not limited to, trenching, earthwork, valve, piping, fittings, valve boxes, all labor, materials, tools and equipment in performing all Work (excluding items included in other bid items) per the Contract Documents.
   b. Measurement: Measurement for this bid item is by Each.
   c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
17. Bid Item 17: Potable Water Pipeline: Beach Road Combination Air/Vacuum Valves:
   a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to furnish and install air valve assemblies including, but not limited to, earthwork, valve, piping, fittings, valve boxes, vent risers, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents.
   b. Measurement: Measurement for this bid item is by Each.
   c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
18. Bid Item 18: Potable Water Pipeline: Beach Road 12-inch Isolation Valves (Gate):
   a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required furnish and installing valves including, but not limited to, earthwork, valve, piping, fittings, valve boxes, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents.
   b. Measurement: Measurement for this bid item is by Each.

c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.

19. Bid Item 19: Potable Water Pipeline: From Reservoir 2 to Crescent Ave (PVC):
    a. Bid Item Description: Work in this bid item generally includes installation of the pipeline and includes all mobilization / demobilization, excavation, disposal of debris, protection and restoration of existing improvements such as utility crossings, furnishing and installing pipeline, trench bedding, backfill, compaction, disposal of excess soil, compaction, specified testing procedures, temporary and permanent surface restoration and temporary and permanent paving, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents. This work is being funded from a separate funding source, so cost for this bid item shall include any mobilization or other costs required to complete this work.
    b. Measurement: Measurement for this bid item is by Linear Foot.
    c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
20. Bid Item 20: Potable Water Pipeline: Reservoir 2 to Crescent Ave Blow-off Assemblies:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to furnish and install blow-off valves and assemblies including, but not limited to, trenching, earthwork, valve, piping, fittings, valve boxes, all labor, materials, tools and equipment in performing all Work (excluding items included in other bid items) per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Each.
    c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
21. Bid Item 21: Potable Water Pipeline: Reservoir 2 to Crescent Ave Combination Air/Vacuum Valves:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to furnish and install air valve assemblies including, but not limited to, earthwork, valve, piping, fittings, valve boxes, vent risers, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Each.
    c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
22. Bid Item 22: Potable Water Pipeline: Reservoir 2 to Crescent Ave 12-inch Isolation Valves (Gate):
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required furnish and installing valves including, but not limited to, earthwork, valve, piping, fittings, valve boxes, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Each.
    c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
23. Bid Item 23: Carmel Avenue: 8-inch Pipeline (Ductile Iron):

a. Bid Item Description: Work in this bid item generally includes installation of the pipeline and includes excavation, disposal of debris, protection and restoration of existing improvements such as utility crossings, furnishing and installing pipeline, trench bedding, backfill, compaction, disposal of excess soil, compaction, specified testing procedures, temporary and permanent surface restoration and temporary and permanent paving, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents.
b. Measurement: Measurement for this bid item is by Linear Foot.
c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.

24. Bid Item 24: Carmel Avenue: Pressure Reducing Station:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to furnish and install a complete pressure reducing station including the excavation, grading, subgrade installation, pressure reducing vault, future flow meter vault, above ground air valve, mechanical piping, concrete pad, and all work (excluding items included in other bid items) for the pressure reducing station including all civil, structural, mechanical, and other work required per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Lump Sum.
    c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
25. Bid Item 25: Carmel Avenue: 8-inch Pipeline (PVC):
    a. Bid Item Description: Work in this bid item generally includes installation of the pipeline and includes excavation, disposal of debris, protection and restoration of existing improvements such as utility crossings, furnishing and installing pipeline, trench bedding, backfill, compaction, disposal of excess soil, compaction, specified testing procedures, temporary and permanent surface restoration and temporary and permanent paving, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Linear Foot.
    c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
26. Bid Item 26: Carmel Avenue: Slurry Seal:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to furnish and install a complete slurry seal pavement treatment where shown on the drawings, including removal of pavement markings all labor, materials, tools and equipment in performing all Work (excluding items included in other bid items) required per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Square Yard.
    c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
27. Bid Item 27: Carmel Avenue: Pavement Striping:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, developing a striping plan and obtaining approval of the plan, and other activities required to furnish and install a complete striping system on the road where striping was removed, damaged, or otherwise

impacted by work, and all work (excluding items included in other bid items) required per the Contract Documents.

b. Measurement: Measurement for this bid item is by Lump Sum.

c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.

28. Bid Item 28: Marina Heights Drive: 16-inch Pipeline (Ductile Iron):
    a. Bid Item Description: Work in this bid item generally includes installation of the pipeline and includes excavation, disposal of debris, protection and restoration of existing improvements such as utility crossings, furnishing and installing pipeline, trench bedding, backfill, compaction, disposal of excess soil, compaction, specified testing procedures, temporary and permanent surface restoration and temporary and permanent paving, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Linear Foot.
    c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
29. Bid Item 29: Marina Heights Drive: Pressure Reducing Station:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to furnish and install a complete pressure reducing station including the excavation, grading, subgrade installation, pressure reducing vault, future flow meter vault, above ground air valve, mechanical piping, concrete pad, and all work (excluding items included in other bid items) for the pressure reducing station including all civil, structural, mechanical, and other work required per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Lump Sum.
    c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
30. Bid Item 30: Marina Heights Drive: Slurry Seal:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to furnish and install a complete slurry seal pavement treatment where shown on the drawings, including removal of pavement markings all labor, materials, tools and equipment in performing all Work (excluding items included in other bid items) required per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Square Yard.
    c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
31. Bid Item 31: Marina Heights Drive: Pavement Striping:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, developing a striping plan and obtaining approval of the plan, and other activities required to furnish and install a complete striping system on the road where striping was removed, damaged, or otherwise impacted by work, and all work (excluding items included in other bid items) required per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Lump Sum.
    c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
32. Bid Item 32: Abrams Drive North of Imjim Parkway: 12-inch Pipeline (DIP~~PVC~~):

a. Bid Item Description: Work in this bid item generally includes installation of the pipeline and includes excavation, disposal of debris, protection and restoration of existing improvements such as utility crossings, furnishing and installing pipeline, trench bedding, backfill, compaction, disposal of excess soil, compaction, specified testing procedures, temporary and permanent surface restoration and temporary and permanent paving, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents.
b. Measurement: Measurement for this bid item is by Linear Foot.
c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.

33. Bid Item 33: Abrams Drive North of Imjim Parkway: Slurry Seal:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to furnish and install a complete slurry seal pavement treatment where shown on the drawings, including removal of pavement markings all labor, materials, tools and equipment in performing all Work (excluding items included in other bid items) required per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Square Yard.
    c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
34. Bid Item 34: Abrams Drive North of Imjim Parkway: Pavement Striping:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, developing a striping plan and obtaining approval of the plan, and other activities required to furnish and install a complete striping system on the road where striping was removed, damaged, or otherwise impacted by work, and all work (excluding items included in other bid items) required per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Lump Sum.
    c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
35. Bid Item 35: Pressure Test and Disinfect Existing Pipeline in UCMBEST Property:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, developing a plan to pressure test and disinfect the existing recycled water facilities in UCMBEST property (as shown in the Appendix) including assuming not less than 5 days for a crew to physically locate and perform general cleaning and routine maintenance on and repair of all appurtenances (air valves, blow-offs, etc.) to ensure they are operational, flushing the entire existing system to remove any sediment buildup with the existing pipelines, pressure testing and disinfecting the system prior to connecting to it at Blanco Road.
    b. Measurement: Measurement for this bid item is by Lump Sum.
    c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
36. Bid Item 36: Blanco Road: 12-inch Pipeline (PVC):
    a. Bid Item Description: Work in this bid item generally includes installation of the pipeline and includes excavation, disposal of debris, protection and restoration of existing improvements such as utility crossings, furnishing and installing pipeline, trench bedding, backfill, compaction, disposal of excess soil, compaction, specified testing procedures, temporary and

permanent surface restoration and temporary and permanent paving, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents.

b. Measurement: Measurement for this bid item is by Linear Foot.

c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.

37. Bid Item 37: Allowance for sensitive plant species restoration on Blanco Road:
    a. Bid Item Description: A preconstruction survey for sensitive plant species identified Monterey Spineflower west of Blanco road, in the pipeline alignment from Research Drive to Reservation Road. MCWD will hire a biologist to develop a Rare Plant Restoration Plan, which is anticipated to generally consist of requirements to separately excavate, store, and re-place soil where the Monterey Spineflower was growing and temporarily provide water to help re-establish growth. Since the Restoration Plan has not yet been completed and the requirements defined, this allowance is a placeholder for that work.
    b. Measurement: Measurement for this bid item is a defined allowance.
    c. Payment: Payment for this bid item will be made based on actual costs of sensitive plant species restoration. Payment will only be made if specifically authorized in writing by the Construction Manager in advance of the work taking place.
38. Bid Item 38: Blanco Road: Launching Shaft for Guided Auger Boring Installation:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to install the launching shaft, as required, for the guided auger boring installation, including but not limited to designing and installing the shaft, groundwater dewatering, excavation material processing and disposal, restoration of existing improvements such as vegetation, and shaft restoration including, bedding, backfill, disposal of excess soil, specified testing procedures, and all other associated work (excluding items included in other bid items) per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Lump Sum.
    c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
39. Bid Item 39: Blanco Road: Guided Auger Boring Casing Pipeline Installation:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to set up the guided auger boring installation, boring the casing pipe, grouting the annular space outside the casing pipe, and ancillary operations, including but not limited to obtaining and boring with guided auger boring machine, head recovery, excavation material processing, grouting, and disposal of boring of debris, specified testing procedures, and all other associated work (excluding items included in other bid items) per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Linear Foot.
    c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
40. Bid Item 40: Blanco Road: Guided Auger Boring Carrier Pipeline Installation (PVC):
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to set up the carrier

pipeline installation within the bored casing, installing runners on the carrier pipe, installing the carrier pipe, grouting the annular space between the carrier and the casing pipe, installing end seals, and ancillary operations, including but not limited to and disposal of debris, specified testing procedures, and all other associated work (excluding items included in other bid items) per the Contract Documents.

b. Measurement: Measurement for this bid item is by Linear Foot.

c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.

41. Bid Item 41: Reservation Road: Receiving Shaft for Guided Auger Boring Installation:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to install the receiving shaft, as required, for the guided auger boring installation, including but not limited to designing and installing the shaft, groundwater dewatering, excavation material processing and disposal, restoration of existing improvements such as vegetation, and shaft restoration including, bedding, backfill, disposal of excess soil, specified testing procedures, and all other associated work (excluding items included in other bid items) per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Lump Sum.
    c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
42. Bid Item 42: Reservation Road: 12-inch Pipeline (PVC):
    a. Bid Item Description: Work in this bid item generally includes installation of the pipeline and includes excavation, disposal of debris, protection and restoration of existing improvements such as utility crossings, furnishing and installing pipeline, trench bedding, backfill, compaction, disposal of excess soil, compaction, specified testing procedures, temporary and permanent surface restoration and temporary and permanent paving, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Linear Foot.
    c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
43. Bid Item 43: Reservation Road: 2.5-inch Grind and Inlay:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to furnish and install a complete asphalt pavement grind and inlay where shown on the drawings, including removal of pavement markings, wedge grinds, conform grinds, asphalt concrete, ensuring existing utility valve cans and monuments are flush with grade, all labor, materials, tools and equipment in performing all Work (excluding items included in other bid items) required per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Square Yard.
    c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
44. Bid Item 44: Reservation Road: Pavement Striping:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, developing a striping plan and obtaining approval of the plan, and other activities required to furnish and install a complete striping

system on the road where striping was removed, damaged, or otherwise impacted by work, and all work (excluding items included in other bid items) required per the Contract Documents.

b. Measurement: Measurement for this bid item is by Lump Sum.

c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.

45. Bid Item 45: 9th Street: 8-inch Pipeline (Ductile Iron):
    a. Bid Item Description: Work in this bid item generally includes installation of the pipeline and includes excavation, disposal of debris, protection and restoration of existing improvements such as utility crossings, furnishing and installing pipeline, trench bedding, backfill, compaction, disposal of excess soil, compaction, specified testing procedures, temporary and permanent surface restoration and temporary and permanent paving, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Linear Foot.
    c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
46. Bid Item 46: 9th Street: Pressure Reducing Station:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to furnish and install a complete pressure reducing station including the excavation, grading, subgrade installation, pressure reducing vault, future flow meter vault, above ground air valve, mechanical piping, concrete pad, and all work (excluding items included in other bid items) for the pressure reducing station including all civil, structural, mechanical, and other work required per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Lump Sum.
    c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
47. Bid Item 47: 9th Street: 8-inch Pipeline (PVC):
    a. Bid Item Description: Work in this bid item generally includes installation of the pipeline and includes excavation, disposal of debris, protection and restoration of existing improvements such as utility crossings, furnishing and installing pipeline, trench bedding, backfill, compaction, disposal of excess soil, compaction, specified testing procedures, temporary and permanent surface restoration and temporary and permanent paving, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Linear Foot.
    c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
48. Bid Item 48: 9th Street: Slurry Seal:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to furnish and install a complete slurry seal pavement treatment where shown on the drawings, including removal of pavement markings all labor, materials, tools and equipment in performing all Work (excluding items included in other bid items) required per the Contract Documents.

b. Measurement: Measurement for this bid item is by Square Yard.
c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.

49. Bid Item 49: 9th Street: Pavement Striping:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, developing a striping plan and obtaining approval of the plan, and other activities required to furnish and install a complete striping system on the road where striping was removed, damaged, or otherwise impacted by work, and all work (excluding items included in other bid items) required per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Lump Sum.
    c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
50. Bid Item 50: Coe Avenue: 8-inch Pipeline (Ductile Iron):
    a. Bid Item Description: Work in this bid item generally includes installation of the pipeline and includes excavation, disposal of debris, protection and restoration of existing improvements such as utility crossings, furnishing and installing pipeline, trench bedding, backfill, compaction, disposal of excess soil, compaction, specified testing procedures, temporary and permanent surface restoration and temporary and permanent paving, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Linear Foot.
    c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
51. Bid Item 51: Coe Avenue: Pressure Reducing Station:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to furnish and install a complete pressure reducing station including the excavation, grading, subgrade installation, pressure reducing vault, future flow meter vault, above ground air valve, mechanical piping, concrete pad, and all work (excluding items included in other bid items) for the pressure reducing station including all civil, structural, mechanical, and other work required per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Lump Sum.
    c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
52. Bid Item 52: Coe Avenue: 8-inch Pipeline (PVC):
    a. Bid Item Description: Work in this bid item generally includes installation of the pipeline and includes excavation, disposal of debris, protection and restoration of existing improvements such as utility crossings, furnishing and installing pipeline, trench bedding, backfill, compaction, disposal of excess soil, compaction, specified testing procedures, temporary and permanent surface restoration and temporary and permanent paving, and all other associated work (excluding items included in other bid items) necessary to install the pipe complete and in place per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Linear Foot.
    c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.

53. Bid Item 53: Coe Avenue: Slurry Seal:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, and other activities required to furnish and install a complete slurry seal pavement treatment where shown on the drawings, including removal of pavement markings all labor, materials, tools and equipment in performing all Work (excluding items included in other bid items) required per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Square Yard.
    c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
54. Bid Item 54: Coe Avenue: Pavement Striping:
    a. Bid Item Description: Work in this bid item generally includes all materials, labor, equipment, developing a striping plan and obtaining approval of the plan, and other activities required to furnish and install a complete striping system on the road where striping was removed, damaged, or otherwise impacted by work, and all work (excluding items included in other bid items) required per the Contract Documents.
    b. Measurement: Measurement for this bid item is by Lump Sum.
    c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.
55. Bid Item 55: Reimbursement Allowance for City of Marina Encroachment Permit Fee:
    a. Bid Item Description: This bid item is an allowance for the encroachment permit fee.
    b. Measurement: Measurement for this bid item is a defined allowance.
    c. Payment: Payment for this bid item will be for actual cost paid for the encroachment permit. Markups, contingencies, labor, and/or any other costs shall not be included.
56. Bid Item 56: Reimbursement Allowance for Monterey County Encroachment Permit Fee:
    a. Bid Item Description: This bid item is an allowance for the encroachment permit fee.
    b. Measurement: Measurement for this bid item is a defined allowance.
    c. Payment: Payment for this bid item will be for actual cost paid for the encroachment permit. Markups, contingencies, labor, and/or any other costs shall not be included.
57. Bid Item 57: Reimbursement Allowance for City of Seaside Encroachment Permit Fee:
    a. Bid Item Description: This bid item is an allowance for the encroachment permit fee.
    b. Measurement: Measurement for this bid item is a defined allowance.
    c. Payment: Payment for this bid item will be for actual cost paid for the encroachment permit. Markups, contingencies, labor, and/or any other costs shall not be included.
58. Bid Item 58: Reimbursement Allowance for Business License Fees from Cities and County:
    a. Bid Item Description: This bid item is an allowance for business license fees from the City of Marina, City of Seaside, and County of Monterey.
    b. Measurement: Measurement for this bid item is a defined allowance.
    c. Payment: Payment for this bid item will be for actual cost paid for the business license. Markups, contingencies, labor, and/or any other costs shall not be included.

59. Bid Item 59: Potential Installation of 1-inch Service per Detail W-1:
    a. Bid Item Description: Work in this bid item generally includes excavation, disposal of debris, protection and restoration of existing improvements such as utility crossings, furnishing and installing pipeline, trench bedding, backfill, compaction, disposal of excess soil, compaction, specified testing procedures, temporary and permanent surface restoration and temporary and permanent paving, and all other associated work (excluding items included in other bid items) necessary to install a recycled water service installation per MCWD Detail W-1. MCWD may elect to install 1-inch services that have not yet been identified. For bidding purposes, Contractor shall assume the service is from an 8-inch diameter recycled water main and the back of curb is 40 feet from the recycled water main.
    b. Measurement: Measurement for this bid item is by Each.
    c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
60. Bid Item 60: Potential Installation of 4-inch Service:
    a. Bid Item Description:: Work in this bid item generally includes excavation, disposal of debris, protection and restoration of existing improvements such as utility crossings, furnishing and installing pipeline, trench bedding, backfill, compaction, disposal of excess soil, compaction, specified testing procedures, temporary and permanent surface restoration and temporary and permanent paving, and all other associated work (excluding items included in other bid items) necessary to install a recycled water service installation per MCWD Detail W-1. MCWD may elect to install 4-inch services that have not yet been identified. For bidding purposes, Contractor shall assume the service includes an 8-inch by 4-inch mechanical joint tee with restrained retainer glands, 4-inch gate valve, 40 feet of 4-inch diameter DR14 C900 PVC pipeline and a 4-inch mechanical joint cap.
    b. Measurement: Measurement for this bid item is by Each.
    c. Payment: Payment for this bid item will be made at the Contract unit prices for the quantities determined as specified.
61. Bid Item 61: Contingency Allowance for Unknown Utility Conflicts:
    a. Bid Item Description: This bid item is an allowance for work associated with mitigating the impacts of an unknown utility, such a lowering the pipeline to avoid a conflict with the unknown utility.
    b. Measurement: Measurement for this bid item is by Lump Sum.
    c. Payment: Payment for this bid item will be made based on actual costs of mitigating the impacts of an unknown utility, and shall be tracked on a time and material basis. Payment will only be made if specifically authorized in writing by the Construction Manager in advance of the work taking place.
62. Bid Item 62: All work required to be completed for the project that is not included in the previous bid items:
    a. Bid Item Description: Work in this bid item generally includes all work needed to complete the project that is not specifically included in other Bid Items. This bid item is intended to provide a location for miscellaneous work required to complete the project that is not covered by any other bid item.
    b. Measurement: Measurement for this bid item is by Lump Sum.
    c. Payment: Payment for this bid item will be made for actual work completed in proportion to the total value of work for this bid item.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

Replacement Section

SECTION 02318

TRENCHING

PART 1 GENERAL

1.01 SUMMARY

A. Section includes: Trench excavation and trench backfill.

B. Contractor shall not anticipate that trenches will maintain a vertical cut. See available geotechnical investigations and trenching evaluation for more information about the existing soil.

C. Plan and profile drawings call out trenching all pipe per Typical Detail P002. The trench backfill material and requirements are provided in this specification, under PART 3. Where work occurs in the City of Marina, use the City of Marina's Detail SD-1 for trench paving restoration. Where work occurs in the City of Seaside, use the City of Seaside's Detail S601 for trench paving restoration. Where work occurs in the County of Monterey or Marina Coast Water District, use the Detail P002 for trench paving restoration. Road section depths (Asphalt and Aggregate Base Course) are listed in Section 01140.

1.02 REFERENCES

A. ASTM International (ASTM):
   1. D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand Cone Method.
   2. D1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3).

1.03 SUBMITTALS

A. As specified in Section 01330 - Submittal Procedures.

B. Product data on soils and aggregates:
   1. Material source.
   2. Gradation.
   3. Test data to demonstrate compliance with this Section.

C. Samples:
   1. Provide 50-pound sample of materials when requested by the Engineer.

D. Confirmation testing:
   1. Certification of Contractor's testing laboratory.
   2. Record copy report for tests performed by Contractor's testing laboratory.

1.04 DEFINITIONS

A. Backfill: Material placed in trench above the pipe embedment zone.

B. Bedding: Material placed under, around, and over pipes or ducts in trenches.

C. Center bedding: Material placed at the bottom of the trench directly under the center of the pipe to provide a malleable resting surface.

D. Fine grading: Material placed directly below pipes or ducts to provide support at the bottom of the trench and to bring those elements to required grades and elevations.

E. Flexible pipe: Includes steel, ductile iron, thermoplastics such as polyvinyl chloride (PVC) and high-density polyethylene (HDPE), thermosetting plastics such as fiberglass-reinforced polymer (FRP), bar-wrapped concrete cylinder pipe, and corrugated steel pipes.

F. Haunch zone: Material placed below and beside the pipe up to the pipe springline.

G. Lift: A layer of soil or aggregate material, measured before compaction.

H. Maximum density, laboratory compaction: Soil maximum density and optimum water content when tested in accordance with ASTM D1557.

I. Maximum density, field compaction: Soil density and water content when tested in accordance with ASTM D1556.

J. Pavement section: Includes pavement plus underlying courses such as base course and subgrade.

K. Pipe embedment zone: Includes bedding, fine grading, center bedding, and haunch zone.

L. Pipe foundation: Material placed at the bottom of trench to provide support.

M. Pipe springline: A horizontal reference line located at mid-height, or halfway point, of a circular conduit, pipe, or tunnel. It is the maximum horizontal dimension or diameter of a circular conduit, pipe, or tunnel.

N. Rigid pipe: Includes reinforced non-cylinder concrete, reinforced concrete cylinder, prestressed concrete cylinder, vitrified clay, polymer concrete, cast iron, asbestos cement and cast-in-place pipes.

PART 2 PRODUCTS

2.01 MATERIALS

A. As specified in Section 02050 - Soils and Aggregates for Earthwork.

B. Class C concrete: As specified in Section 03300 - Cast-in-Place Concrete.

C. Controlled low-strength material: As specified in Section 02312 - Controlled Low Strength Material (CLSM).

PART 3 EXECUTION

3.01 PREPARATION

A. Stabilize excavations as specified in Section 02260 - Excavation Support and Protection.

3.02 DEWATERING

A. As specified in Section 02240 - Dewatering.

3.03 TRENCH EXCAVATION

A. Excavate bottom of trench to depth indicated on the Drawings.

B. Areas of new fill or embankment:
   1. Prior to laying pipes or electrical service, place fill and compact as specified to not less than 2 feet above top of pipe, conduit, or duct bank.
   2. Excavate through fill for pipe trench.

C. Trench widths as specified in the following table:

Buried Pipe Or Accessory	Minimum Trench Width	Maximum Trench Width
Nominal Pipe Diameter: 4 inch to 24 inch	OD + 18 inches	OD + 24 inches
Nominal Pipe Diameter: Greater than 24 inch	OD + 24 inches	OD + 36 inches
Manholes, valves, or other accessories	12 inches between outer surface and trench side or shoring	Not applicable

D. At road crossings or existing driveways:
   1. Make provision for channel or trench crossings at these points, either by means of trenchless technologies or temporary bridges.
   2. Engineer approval for remedy, without additional cost to Owner, when trench width at top of pipe is increased beyond width specified in this Section because of soil conditions, safety requirements, or other reasons:
      a. Remedy may include upgrade laying conditions or install stronger pipe designed in accordance with Specifications.

3.04 TRENCH BACKFILL - GENERAL

A. Place material, except CLSM and concrete, in maximum 6 inch lifts, measured before compaction.

B. Backfilling of manhole excavation: Conform to backfilling requirements as specified for trenches in this Section.

3.05 PIPE FOUNDATION

A. Provide trench bottom with firm, dry, uniform bearing surface at the grade indicated on the Drawings:
   1. Prepare pipe foundation, with any unauthorized excess excavation below elevation indicated on the Drawings, at no additional cost to Owner.

B. If bottom of trench excavation consists of soil:
   1. Scarify bottom of trench to a depth of 6 inches below the grade indicated on the Drawings.
   2. Materials and placement:
      a. Re-compact scarified native material to 95 percent of maximum density.

C. If bottom of trench excavation consists of rock or any material that, by reason of its hardness, cannot be excavated to provide uniform bearing surface:
   1. Remove such rock or other material to a depth of not less than 4 inches below pipe embedment zone.
   2. Materials:
      a. CLSM.
      b. Class C concrete.

D. If bottom of trench excavation consists of unacceptable material:
   1. Remove such unacceptable material to a depth of not less than 18 inches below pipe embedment zone.
   2. Material and placement:
      a. Stabilization material compacted to 95 percent of maximum density:
         1) Maximum particle size for backfill material limited as specified in the following table:

Buried Pipe	Maximum Particle Size
Nominal Pipe Diameter: 6 inch to 8 inch	3/4 inch
Nominal Pipe Diameter: 10 inch to 16 inch	3/4 inch
Nominal Pipe Diameter: Greater than 18 inch	3/4 inch

3.06 PIPE EMBEDMENT ZONE

A. General:
   1. Pipe displacement:
      a. Take necessary precautions in placement and compaction of bedding material to prevent displacement of piping.
      b. In event there is movement or floating of the piping, re-excavate, re-lay, and backfill the pipe.
   2. Depressions for joints or couplings:
      a. Excavate holes in graded trench bottom.
      b. Provide holes of sufficient width to provide ample room for grouting, banding, or welding as necessary for making joints and to ensure that pipe rests upon prepared trench bottom and not supported by any portion of the joint.

B. Fine grading:
    a. Compacted depth below bottom of pipe: 6 inch minimum.
    b. Materials and placement:
        1) Native compacted to 95 percent maximum dry density.

C. Bedding:
    a. Compacted depth above top of pipe: 12 inch minimum.
    b. Materials and placement:
        1) Native compacted to 95 percent maximum dry density.

3.07 BACKFILL

A. All trench backfill above pipe embedment zone:
    1. Materials and placement:
        a. Native soil compacted to 95 percent maximum dry density.
        b. Aggregate base course compacted to 95 percent maximum dry density.
        c. CLSM.

B. Trenches in rock:
    1. Backfill to top of rock:
        a. Materials and placement:
            1) CLSM.
            2) Class C concrete.
    2. Backfill from top of rock to grade, if applicable:
        a. Materials and placement:
            1) Aggregate base course compacted to 95 percent of maximum density.

C. Trenches below or within 10 feet of the outside perimeter of structures:
    1. Backfill to underside of aggregate base course below structure.
    2. Materials and placement:
        a. Aggregate base course compacted to 95 percent of maximum density.
        b. CLSM.

D. Trenches in roadways and paved areas:
    a. Above the trench backfill, the road structural section (asphalt cement above aggregate base course) shall be as specified in Section 01140.

E. Trenches in areas outside the improved section of roadways or in open country:
    1. Backfill to finished grade.
    2. Materials and placement:
        a. Native soil, native soil - select, imported material, or aggregate base course compacted to 95 percent of maximum density.

F. Trenches under existing intersecting pipes, duct banks, or conduits larger than 3 inches in diameter:
    1. Backfill from above top of new pipe embedment zone to springline of intersecting pipe or conduit:
        a. Extend backfill at least 2 feet on either side of intersecting pipe or conduit to ensure backfill material remains in place while other backfill is being placed.
        b. Materials and placement:
            1) CLSM, unless otherwise indicated on the Drawings.

2. Backfill remainder of trench:
   a. Materials and placement:
      1) CLSM or ABC.

3.08 EXCESS MATERIAL

A. Remove excess excavated material from the Project site as specified in Section 02300 - Earthwork.

3.09 FIELD QUALITY CONTROL

A. Provide field quality control for the Work as specified in Section 01450 - Quality Control.

B. ~~Contractor~~ **The Owner's Construction Manager will** ~~shall~~ pay for and obtain a qualified testing agency to perform ~~all quality control testing~~**the Initial Compaction Demonstration**. ~~**The Owner's Construction Manager will pay for and perform**~~

C. The following confirmation and compliance testing is required at a minimum. Local agencies where work occurs have additional testing requirements, which the Contractor must also comply with.

D. Initial ~~compaction~~ **Compaction** ~~demonstration~~**Demonstration**:
   1. **An initial compaction demonstration is required at each project location.**
   2. ~~**Contractor**~~**The Owner's Construction Manager will** ~~**shall**~~ **pay for and obtain a qualified testing agency to perform** ~~Pay for and perform i~~Initial compaction testing.
   3. **Contractor's responsibilities:**
      a. **Provide access for the Construction Manager to perform testing.**
      ~~.~~**b. Notify the Construction Manager not less than 24 hours before Initial Compaction testing is needed so the Construction Manager can coordinate the testing.**
   ~~2.~~**4.** Adequacy of compaction equipment and procedures: Demonstrate adequacy of compaction equipment and procedures ~~**and provide verified testing results to the Construction Manager**~~ before exceeding the following:
      a. 25 linear feet of pipeline.
   ~~3.~~**5.** Compaction sequence requirements: Until specified degree of compaction on previously specified amounts of ~~earthwork~~ **trenching** is achieved, do not perform additional ~~earthwork~~ **trenching** of the same kind.
   ~~4. After satisfactory conclusion of~~ **the I**~~initial compaction~~ **Compaction** ~~demonstration~~ **Demonstration, immediately submit** ~~and at any time during construction, provide confirmation~~**compaction** ~~test~~ **results**~~s as specified under "FIELD QUALITY CONTROL~~**" to both the Owner and agency having jurisdiction.**~~."~~

E. Confirmation tests:
   1. **The Owner's Construction Manager will pay for and perform all compaction confirming testing after the Initial Compaction Demonstration.**
   ~~1.~~**2.** Contractor's responsibilities:
      a. **Provide access for the Construction Manager to perform testing.**
      ~~a.~~ **Notify the Construction Manager not less than 24 hours before compaction confirmation testing is needed so the Construction**

Manager can coordinate the testing.~~Pay for and perform all quality control testing **if initial test is failed**.~~

b.

~~b. Adequacy of compaction equipment and procedures:~~

~~1) At each test location include tests for each type or class of backfill from bedding to finish grade.~~

~~c. Compaction sequence requirements:~~

c. Do not perform additional ~~earthwork of the same kind~~**trenching** until specified degree of compaction has been ~~demonstrated~~**achieved**.

~~d. Cost of confirmation tests: Paid for by the Contractor **if initial test is failed**.~~

~~e. Qualifications of Contractor's testing laboratory: Acceptable to Engineer.~~

~~f.~~**d.** ~~Copies of confirmation test reports: Submit promptly to the Engineer.~~**Where the Contractor does not meet the minimum specified compaction, as tested by the Construction Manager, Contractor shall be responsible for paying the costs of subsequent follow-up retesting.**

~~2.~~**3.** Frequency of confirmation testing:

~~a.~~ **Contractor shall anticipate compaction confirmation testing up to every 50 linear feet.**~~Maximum dry density versus moisture:~~

~~50 linear feet.~~

~~**Compaction testing:**~~

a. ~~**50 linear feetre**~~

~~F. Compliance tests:~~

~~1. Frequency of testing: Periodic compliance tests will be made by the Construction Manager to verify that compaction is meeting requirements previously specified.~~

~~2. Perform remedial work if compaction test fails to meet specified requirements using one of the following methods:~~

~~a. Remove and replace backfill at the proper density.~~

~~3. Retesting:~~

~~a. Costs of retesting: Contractor is responsible for the costs of retesting required to confirm and verify that remedial work has brought compaction within specified requirements.~~

~~b. Contractor's confirmation tests during performance of remedial work:~~

~~1) Performance: Perform tests in manner acceptable to the Engineer.~~

~~2) Frequency: Double amount specified for initial confirmation tests.~~

~~G.~~**F.** Piping system testing:

1. As specified in Section 15956 - Piping Systems Testing.

END OF SECTION

SECTION 09960

HIGH-PERFORMANCE COATINGS

PART 1 GENERAL

1.01 SUMMARY

A. Section includes: Field-applied coatings.

B. Related sections:
   1. Section 01140 - Work Restrictions.
   2. Section 01312 - Project Meetings.
   3. Section 01330 - Submittal Procedures.
   4. Section 01601 - Product Requirements.
   5. Section 01770 - Closeout Procedures.
   6. Section 15076 - Pipe Identification.

1.02 REFERENCES

A. ASTM International (ASTM):
   1. D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications.
   2. D4541 - Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.

B. International Concrete Repair Institute (ICRI):
   1. Guideline 310.2R - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair.

C. NACE International (NACE):
   1. SP0178 - Design, Fabrication, and Surface Finish Practices for Tanks and Vessels to Be Lined for Immersion Service.
   2. SP0188 - Discontinuity (Holiday) Testing of Protective Coatings.

D. National Association of Pipe Fabricators (NAPF):
   1. 500-03 - Surface Preparation Standard for Ductile Iron Pipe and Fittings Receiving Special External Coatings and/or Special Internal Linings.

E. NSF International (NSF):
   1. 61 - Drinking Water System Components - Health Effects.

F. Society for Protective Coatings (SSPC):
   1. SP COM - Surface Preparation Commentary for Steel and Concrete Substrates.
   2. SP 1 - Solvent Cleaning.
   3. SP 2 - Hand Tool Cleaning.
   4. SP 3 - Power Tool Cleaning.
   5. SP 5 - White Metal Blast Cleaning.
   6. SP 6 - Commercial Blast Cleaning.

7. SP 7 - Brush-Off Blast Cleaning.
8. SP 10 - Near-White Blast Cleaning.
9. SP 13 - Surface Preparation of Concrete.

G. United States Environmental Protection Agency (EPA):
1. Method 24 - Surface Coatings.

1.03 DEFINITIONS

A. Submerged metal: Steel or iron surfaces below tops of channel or structure walls that will contain water even when above expected water level.

B. Submerged concrete and masonry surfaces: Surfaces that are or will be:
1. Underwater.
2. In structures that normally contain water.
3. Below tops of walls of water-containing structures.

C. Exposed surface: Any metal or concrete surface, indoors or outdoors, that is exposed to view.

D. Dry film thickness (DFT): Thickness of fully cured coating, measured in mils.

E. Volatile organic compound (VOC): Content of air polluting hydrocarbons in uncured coating product measured in units of grams per liter or pounds per gallon, as determined by EPA Method 24.

F. Ferrous: Cast iron, ductile iron, wrought iron, and all steel alloys except stainless steel.

G. Where SSPC surface preparation standards are specified or implied for ductile iron pipe or fittings, the equivalent NAPF surface preparation standard shall be substituted for the SSPC standard.

1.04 PERFORMANCE REQUIREMENTS

A. Coating materials shall be especially adapted for use in water and recycled water facilities.

B. Coating materials used in contact with potable water supply systems shall be certified to NSF 61.

1.05 SUBMITTALS

A. General: Submit as specified in Section 01330.

B. Shop drawings:
1. Schedule of proposed coating materials.
2. Schedule of surfaces to be coated with each coating material.

C. Product data: Include description of physical properties of coatings including solids content and ingredient analysis, VOC content, temperature resistance, typical exposures and limitations, and manufacturer's standard color chips:
   1. Regulatory requirements: Submit data concerning the following:
      a. VOC limitations.
      b. Coatings containing lead compounds and polychlorinated biphenyls.
      c. Abrasives and abrasive blast cleaning techniques, and disposal.
      d. NSF certification of coatings for use in potable water supply systems.

D. Samples: Include 8-inch square drawdowns or brush-outs of topcoat finish when requested. Identify each sample as to finish, formula, color name and number, sheen name, and gloss units.

E. Certificates: Submit in accordance with requirements for Product Data.

F. Manufacturer's instructions: Include the following:
   1. Special requirements for transportation and storage.
   2. Mixing instructions.
   3. Shelf life.
   4. Pot life of material.
   5. Precautions for applications free of defects.
   6. Surface preparation.
   7. Method of application.
   8. Recommended number of coats.
   9. Recommended DFT of each coat.
   10. Recommended total DFT.
   11. Drying time of each coat, including prime coat.
   12. Required prime coat.
   13. Compatible and non-compatible prime coats.
   14. Recommended thinners, when recommended.
   15. Limits of ambient conditions during and after application.
   16. Time allowed between coats (minimum and maximum).
   17. Required protection from sun, wind, and other conditions.
   18. Touch-up requirements and limitations.
   19. Minimum adhesion of each system submitted in accordance with ASTM D4541.

G. Manufacturer's Representative’s Field Reports.

H. Operations and Maintenance Data: Submit as specified in Section 01770.
   1. Reports on visits to project site to view and approve surface preparation of structures to be coated.
   2. Reports on visits to project site to observe and approve coating application procedures.
   3. Reports on visits to coating plants to observe and approve surface preparation and coating application on items that are “shop coated.”

I. Quality Assurance Submittals:
   1. Quality assurance plan.
   2. Qualifications of coating applicator including List of Similar Projects.

J. Certifications:
   1. Submit notarized certificate that:
      a. All paints and coatings to be used on this project comply with current federal, state, and local VOC regulations.
   2. California certifications:
      a. All paints and coatings to be used on this project comply with the current VOC regulations of the State of California Air Management District in which the coatings will be used.

1.06 QUALITY ASSURANCE

A. Applicator qualifications:
   1. Minimum of 5 years of experience applying specified type or types of coatings under conditions similar to those of the Work:
      a. Provide qualifications of applicator and references listing 5 similar projects completed in the past 2 years.
   2. Manufacturer-approved applicator when manufacturer has approved applicator program.

B. Regulatory requirements: Comply with governing agencies regulations by using coatings that do not exceed permissible VOC limits and do not contain lead:
   1. Do not use coal-tar epoxy in contact with drinking water or exposed to ultraviolet radiation.

C. Field samples:
   1. Prepare and coat a minimum 100-square-foot area between corners or limits such as control or construction joints of each system.
   2. Approved field sample may be part of the Work.
   3. Obtain approval before painting other surfaces.

D. Pre-installation conference: Conduct as specified in Section 01312.

E. Compatibility of coatings: Use products by same manufacturer for prime coats, intermediate coats, and finish coats on same surface, unless specified otherwise.

F. Services of coating manufacturer's representative: Arrange for coating manufacturer's representative to attend pre-installation conferences. Make periodic visits to the project site to provide consultation and inspection services during surface preparation and application of coatings, and to make visits to coating plants to observe and approve surface preparation procedures and coating application of items to be "shop-primed and coated."

1.07 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products as specified in Section 01601.

B. Remove unspecified and unapproved paints from Project site immediately.

C. Deliver new unopened containers with labels identifying the manufacturer's name, brand name, product type, batch number, date of manufacturer, expiration date or shelf life, color, and mixing and reducing instructions.
   1. Do not deliver materials aged more than 12 months from manufacturing date.

D. Store coatings in well-ventilated facility that provides protection from the sun weather, and fire hazards. Maintain ambient storage temperature between 45 and 90 degrees Fahrenheit, unless otherwise recommended by the manufacturer.

E. Take precautions to prevent fire and spontaneous combustion.

1.08 PROJECT CONDITIONS

A. Surface moisture contents: Do not coat surfaces that exceed manufacturer-specified moisture contents, or when not specified by the manufacturer, with the following moisture contents:
   1. Concrete: 12 percent.
   2. Concrete floors: 7 percent.

B. Do not apply coatings:
   1. Under dusty conditions or adverse environmental conditions, unless tenting, covers, or other such protection is provided for structures to be coated.
   2. When light on surfaces measures less than 15 foot-candles.
   3. When ambient or surface temperature is less than 55 degrees Fahrenheit unless manufacturer allows a lower temperature.
   4. When relative humidity is higher than 85 percent.
   5. When surface temperature is less than 5 degrees Fahrenheit above dew point.
   6. When surface temperature exceeds the manufacturer's recommendation.
   7. When ambient temperature exceeds 90 degrees Fahrenheit, unless manufacturer allows a higher temperature.
   8. Apply clear finishes at minimum 65 degrees Fahrenheit.

C. Provide fans, heating devices, dehumidifiers, or other means recommended by coating manufacturer to prevent formation of condensate or dew on surface of substrate, coating between coats and within curing time following application of last coat.

D. Provide adequate continuous ventilation and sufficient heating facilities to maintain minimum 55 degrees Fahrenheit for 24 hours before, during, and 48 hours after application of finishes.

1.09 SEQUENCING AND SCHEDULING

A. Sequence and Schedule: As specified in Section 01140.

1.10 MAINTENANCE

A. Extra materials: Deliver as specified in Section 01770. Include minimum 1 gallon of each type and color of coating applied:
   1. When manufacturer packages material in gallon cans, deliver unopened labeled cans as comes from factory.
   2. When manufacturer does not package material in gallon cans, deliver material in new gallon containers, properly sealed and identified with typed labels indicating brand, type, and color.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Special coatings: One of the following or equal:
   1. Carboline: Carboline, St. Louis, MO.
   2. Ceilcote: International Protective Coatings, Berea, OH.
   3. Dampney: The Dampney Company, Everett, MA.
   4. Devoe: International Protective Coatings, Louisville, KY.
   5. Dudick: Dudick, Inc., Streetsboro, OH.
   6. GET: Global Eco Technologies, Pittsburg, CA.
   7. Henkel: Henkel North America, Madison Heights, MI.
   8. IET: Integrated Environmental Technologies, Santa Barbara, CA.
   9. PPC: Polymorphic Polymers Corp., North Miami, FL.
   10. PPG Amercoat: PPG Protective & Marine Coatings, Brea, CA.
   11. Rustoleum: Rustoleum Corp., Sommerset, NJ.
   12. Sanchem: Sanchem, Chicago, IL.
   13. Superior: Superior Environmental Products, Inc., Addison, TX.
   14. S-W: Sherwin-Williams Co., Cleveland, OH.
   15. Tnemec: Tnemec Co., Kansas City, MO.
   16. Wasser: Wasser High Tech Coatings, Kent, WA.
   17. ZRC: ZRC Worldwide Innovative Zinc Technologies, Marshfield, MA.

2.02 PREPARATION AND PRETREATMENT MATERIALS

A. Metal pretreatment: As manufactured by one of the following or equal:
   1. Henkel: Galvaprep 5.
   2. International: AWLGrip Alumiprep 33.

B. Surface cleaner and degreaser: As manufactured by one of the following or equal:
   1. Carboline Surface Cleaner No. 3.
   2. Devoe: Devprep 88.
   3. S-W: Clean and Etch.

2.03 COATING MATERIALS

A. Alkali-resistant bitumastic: As manufactured by one of the following or equal:
   1. Carboline: Bitumastic No. 50.
   2. S-W: Targuard.
   3. Wasser: MC-Tar.

B. High solids epoxy (self-priming) not less than 72 percent solids by volume: As manufactured by one of the following or equal:
   1. Carboline: Carboguard 891.
   2. Devoe: Bar Rust 233H.
   3. PPG Amercoat: Amerlock 2.
   4. S-W: Macropoxy 646.

C. Aliphatic or aliphatic-acrylic polyurethane: As manufactured by one of the following or equal:
   1. Carboline: Carbothane 134 VOC.
   2. Devoe: Devthane 379.
   3. PPG Amercoat: Amershield VOC.
   4. Non-submerged: S-W High Solids Polyurethane [CA].
   5. Tnemec: Endura-Shield II Series 1075 (U).

D. Protective coal tar: As manufactured by one of the following or equal:
   1. Carboline: Bitumastic No. 50.
   2. PPG Amercoat: 78HB

E. Concrete floor coatings: As manufactured by one of the following or equal:
   1. Carboline: Semstone 140SL.
   2. Devoe: Devran 124.
   3. Dudick: Polymer Alloy 1000.
   4. Tnemec: Tneme-Glaze Series 282.

F. Galvanizing zinc compound: As manufactured by one of the following or equal:
   1. ZRC: Cold Galvanizing Compound.

2.04 MIXES

A. Mix in accordance with manufacturer's instructions.

PART 3 EXECUTION

3.01 GENERAL PROTECTION

A. Protect adjacent surfaces from coatings and damage. Repair damage resulting from inadequate or unsuitable protection.

B. Protect adjacent surfaces not to be coated from spatter and droppings with drop cloths and other coverings:
   1. Mask off surfaces of items not to be coated or remove items from area.

C. Furnish sufficient drop cloths, shields, and protective equipment to prevent spray or droppings from fouling surfaces not being coated and, in particular, surfaces within storage and preparation areas.

D. Place cotton waste, cloths, and material that may constitute a fire hazard in closed metal containers and remove daily from site.

E. Remove electrical plates, surface hardware, fittings, and fastenings prior to application of coating operations. Carefully store, clean, and replace on completion of coating in each area. Do not use solvent or degreasers to clean hardware that may remove permanent lacquer finish.

3.02 GENERAL PREPARATION

A. Prepare surfaces in accordance with coating manufacturer's instructions, unless more stringent requirements are specified in this Section.

B. Protect the following surfaces from abrasive blasting by masking or other means:
   1. Threaded portions of valve and gate stems, grease fittings, and identification plates.
   2. Machined surfaces for sliding contact.
   3. Surfaces to be assembled against gaskets.
   4. Surfaces of shafting on which sprockets are to fit.
   5. Surfaces of shafting on which bearings are to fit.
   6. Machined surfaces of bronze trim, including slide gates.
   7. Cadmium-plated items except cadmium-plated, zinc-plated, or sherardized fasteners used in assembly of equipment requiring abrasive blasting.
   8. Galvanized items, unless scheduled to be coated.

C. Protect installed equipment, mechanical drives, and adjacent coated equipment from abrasive blasting to prevent damage caused by entering sand or dust.

D. Concrete:
   1. Allow new concrete to cure for minimum of 28 days before coating.
   2. Clean concrete surfaces of dust, mortar, fins, loose concrete particles, form release materials, oil, and grease. Fill voids so that surface is smooth. Prepare concrete surface for coating in accordance with SSPC SP 13. Provide ICRI 310.2 CSP-3 surface profile, or as recommended by coating manufacturer. All concrete surfaces shall be vacuumed clean prior to coating application.

E. Ferrous metal surfaces:
   1. Remove grease and oil in accordance with SSPC SP 1.
   2. Remove rust, scale, and welding slag and spatter, and prepare surfaces in accordance with appropriate SSPC standard as specified.
   3. Abrasive blast surfaces prior to coating.
      a. When abrasive blasted surfaces rust or discolor before coating, abrasive blast surfaces again to remove rust and discoloration.
      b. When metal surfaces are exposed because of coating damage, abrasive blast surfaces and feather in to a smooth transition before touching up.
      c. Ferrous metal surfaces not to be submerged: Abrasive blast in accordance with SSPC SP 10, unless blasting may damage adjacent surfaces, prohibited, or specified otherwise. Where not possible to abrasive blast, power tool clean surfaces in accordance with SSPC SP 3.

d. Ferrous metal surfaces to be submerged: Unless specified otherwise, abrasive blast in accordance with SSPC SP 5 to clean and provide roughened surface profile of not less than 2 mils and not more than 4 mils in depth when measured with Elcometer 123, or as recommended by the coating manufacturer.

4. All abrasive blast cleaned surfaces shall be blown down with clean dry air and/or vacuumed.

F. Ductile iron pipe and fittings to be lined or coated: Prepare in accordance with the manufacturer's recommendation.

G. Sherardized, aluminum, copper, and bronze surfaces: Prepare in accordance with coating manufacturer's instructions.

H. Galvanized surface:
1. Degrease or solvent clean (SSPC SP 1) to remove oily residue.
2. Power tool or hand tool clean or whip abrasive blast.
3. Test surface for contaminants using copper sulfate solution.
4. Apply metal pretreatment within 24 hours before coating galvanized surfaces that cannot be thoroughly abraded physically, such as bolts, nuts, or preformed channels.

I. Shop-primed metal:
1. Certify that primers applied to metal surfaces in the shop are compatible with coatings to be applied over such primers in the field.
2. Remove shop primer from metal to be submerged by abrasive blasting in accordance with SSPC SP 10, unless greater degree of surface preparation is required by coating manufacturer's representative.
3. Correct abraded, scratched, or otherwise damaged areas of prime coat by sanding or abrasive blasting to bare metal in accordance with SSPC SP 2, SP 3, or SP 6, as directed by the Engineer. When entire shop priming fails or has weathered excessively (more than 25 percent of the item), or when recommended by coating manufacturer's representative, abrasive blast shop prime coat to remove entire coat and prepare surface in accordance with SSPC SP 10.
4. When incorrect prime coat is applied, remove incorrect prime coat by abrasive blasting in accordance with SSPC SP 10.
5. When prime coat not authorized by Engineer is applied, remove unauthorized prime coat by abrasive blasting in accordance with SSPC SP 10.
6. Shop applied bituminous paint or asphalt varnish: Abrasive blast clean shop applied bituminous paint or asphalt varnish from surfaces scheduled to receive non-bituminous coatings.

J. Cadmium-plated, zinc-plated, or sherardized fasteners:
1. Abrasive blast in the same manner as unprotected metal when used in assembly of equipment designated for abrasive blasting.

K. Abrasive blast components that are to be attached to surfaces that cannot be abrasive blasted before components are attached.

L. Grind sharp edges to approximately 1/16-inch radius before abrasive blast cleaning.

M. Remove and grind smooth all excessive weld material and weld spatter before blast cleaning in accordance with NACE SP0178.

N. Cleaning of previously coated surfaces:
   1. Utilize cleaning agent to remove soluble salts such as chlorides and sulfates from concrete and metal surfaces:
      a. Cleaning agent: Biodegradable non-flammable and containing no VOC.
      b. Manufacturer: The following or equal:
         1) CHLOR*RID International, Inc.
   2. Cleaning of surfaces utilizing the decontamination cleaning agent may be accomplished in conjunction with abrasive blast cleaning, steam cleaning, high-pressure washing, or hand washing as approved by the coating manufacturer's representative and the Engineer.
   3. Test cleaned surfaces in accordance with the cleaning agent manufacturer's instructions to ensure all soluble salts have been removed. Additional cleaning shall be carried out as necessary.
   4. Final surface preparation prior to application of new coating system shall be made in strict accordance with coating manufacturer's printed instructions.

3.03 MECHANICAL AND ELECTRICAL EQUIPMENT PREPARATION

A. Remove grilles, covers, and access panels for mechanical and electrical system from location and coat separately.

B. Prepare and finish coat primed equipment with color selected by the Engineer.

C. Prepare and prime and coat insulated and bare pipes, conduits, boxes, insulated and bare ducts, hangers, brackets, collars, and supports, except where items are covered with prefinished coating.

D. Replace identification markings on mechanical or electrical equipment when coated over or spattered.

E. Prepare and coat interior surfaces of air ducts, and convector and baseboard heating cabinets that are visible through grilles and louvers with 1 coat of flat black paint, to limit of sight line.

F. Prepare and coat dampers exposed immediately behind louvers, grilles, and convector and baseboard heating cabinets to match face panels.

G. Prepare and coat exposed conduit and electrical equipment occurring in finished areas with color and texture to match adjacent surfaces.

H. Prepare and coat both sides and edges of plywood backboards for electrical equipment before installing backboards and mounting equipment on them.

I. Color code equipment, piping, conduit, and exposed ductwork and apply color banding and identification, such as flow arrows, naming, and numbering, in accordance with the Contract Documents.

3.04 GENERAL APPLICATION REQUIREMENTS

A. Apply coatings in accordance with manufacturer's instructions.

B. Coat metal unless specified otherwise:
   1. Aboveground piping to be coated shall be empty of contents during application of coatings.

C. Verify metal surface preparation immediately before applying coating in accordance with SSPC SP COM.

D. Allow surfaces to dry, except where coating manufacturer requires surface wetting before coating.

E. Wash coat and prime sherardized, aluminum, copper, and bronze surfaces, or prime with manufacturer's recommended special primer.

F. Prime shop-primed metal surfaces. Spot prime exposed metal of shop-primed surfaces before applying primer over entire surface.

G. Multiple coats:
   1. Apply minimum number of specified coats.
   2. Apply additional coats when necessary to achieve specified thicknesses.
   3. Apply coats to thicknesses specified, especially at edges and corners.
   4. When multiple coats of same material are specified, tint prime coat and intermediate coats with suitable pigment to distinguish each coat.
   5. Lightly sand and dust surfaces to receive high-gloss finishes, unless instructed otherwise by coating manufacturer.
   6. Dust coatings between coats.

H. Coat surfaces without drops, overspray, dry spray, runs, ridges, waves, holidays, laps, or brush marks.

I. Remove spatter and droppings after completion of coating.

J. Apply coating by brush, roller, trowel, or spray, unless particular method of application is required by coating manufacturer's instructions or these Specifications.

K. Plural component application: Drums shall be premixed each day. All gauges shall be in working order prior to the start of application. Ratio checks shall be completed prior to each application. A spray sample shall be sprayed on plastic sheeting to ensure set time is complete prior to each application. Hardness testing shall be performed after each application.

L. Spray application:
   1. Stripe coat edges, welds, nuts, bolts, and difficult-to-reach areas by brush before beginning spray application, as necessary, to ensure specified coating thickness along edges.
   2. When using spray application, apply coating to thickness not greater than that recommended in coating manufacturer's instructions for spray application.

3. Use airless spray method, unless air spray method is required by coating manufacturer's instruction or these Specifications.
4. Conduct spray coating under controlled conditions. Protect adjacent construction and property from coating mist, fumes, or overspray.

M. Drying and recoating:
1. Provide fans, heating devices, or other means recommended by coating manufacturer to prevent formation of condensate or dew on surface of substrate, coating between coats and within curing time following application of last coat.
2. For submerged service, the Contractor shall provide a letter to the Engineer that the lining system is fully cured and ready to be placed into service.
3. Limit drying time to that required by these Specifications or coating manufacturer's instructions.
4. Do not allow excessive drying time or exposure, which may impair bond between coats.
5. Recoat epoxies within time limits recommended by coating manufacturer.
6. When time limits are exceeded, abrasive blast clean and de-gloss clean prior to applying another coat.
7. When limitation on time between abrasive blasting and coating cannot be met before attachment of components to surfaces that cannot be abrasive blasted, coat components before attachment.
8. Ensure primer and intermediate coats of coating are unscarred and completely integral at time of application of each succeeding coat.
9. Touch-up suction spots between coats and apply additional coats where required to produce finished surface of solid, even color, free of defects.
10. Leave no holidays.
11. Sand and feather in to a smooth transition and recoat scratched, contaminated, or otherwise damaged coating surfaces so damages are invisible to the naked eye.

N. Concrete:
1. Apply first coat (primer) only when surface temperature of concrete is decreasing in order to eliminate effects of off-gassing on coating.

3.05 ALKALI-RESISTANT BITUMASTIC

A. Preparation:
1. Prepare surfaces in accordance with general preparation requirements.

B. Application:
1. Apply in accordance with general application requirements and as follows:
   a. Apply at least 2 coats, 8 to 14 mils DFT each.

3.06 HIGH SOLIDS EPOXY SYSTEM

A. Preparation:
   1. Prepare surfaces in accordance with general preparation requirements and as follows:
      a. Abrasive blast ferrous metal surfaces to be submerged at jobsite in accordance with SSPC SP 5 prior to coating. When cleaned surfaces rust or discolor, abrasive blast surfaces in accordance with SSPC SP 10.
      b. Abrasive blast non-submerged ferrous metal surfaces at jobsite in accordance with SSPC SP 10, prior to coating. When cleaned surfaces rust or discolor, abrasive blast surfaces in accordance with SSPC SP 6.
      c. Abrasive blast clean ductile iron surfaces at jobsite in accordance with SSPC SP 7.

B. Application:
   1. Apply coatings in accordance with general application requirements and as follows:
      a. Apply minimum 2-coat system with minimum total DFT of 12 mils.
      b. Recoat or apply succeeding epoxy coats within time limits recommended by manufacturer. Prepare surfaces for recoating in accordance with manufacturer's instructions.
      c. Coat metal to be submerged before installation when necessary, to obtain acceptable finish, and to prevent damage to other surfaces.
      d. Coat entire surface of support brackets, stem guides, pipe clips, fasteners, and other metal devices bolted to concrete.
      e. Coat surface of items to be exposed and adjacent 1 inch to be concealed when embedded in concrete or masonry.

3.07 HIGH SOLIDS EPOXY AND POLYURETHANE COATING SYSTEM

A. Preparation:
   1. Prepare surfaces in accordance with general preparation requirements and as follows:
      a. Prepare concrete surfaces in accordance with general preparation requirements.
      b. Touch up shop-primed steel and miscellaneous iron.
      c. Abrasive blast ferrous metal surfaces at jobsite prior to coating. Abrasive blast clean rust and discoloration from surfaces.
      d. Degrease or solvent clean, whip abrasive blast, power tool, or hand tool clean galvanized metal surfaces.
      e. Abrasive blast clean ductile iron surfaces.

B. Application:
   1. Apply coatings in accordance with general application requirements and as follows:
      a. Apply a 3-coat system consisting of:
         1) Primer: 4 to 5 mils DFT high solids epoxy.
         2) Intermediate coat: 4 to 5 mils DFT high solids epoxy.
         3) Topcoat: 2.5 to 3.5 mils DFT aliphatic or aliphatic-acrylic polyurethane topcoat.

2. Recoat or apply succeeding epoxy coats within 30 days or within time limits recommended by manufacturer, whichever is shorter. Prepare surfaces for recoating in accordance with manufacturer's instructions.

3.08 ASPHALT VARNISH

A. Preparation:
   1. Prepare surfaces in accordance with general preparation requirements.

B. Application:
   1. Apply coatings in accordance with general application requirements and as follows:
      a. Apply minimum 2 coats.

3.09 PROTECTIVE COAL TAR

A. Preparation:
   1. Prepare surfaces in accordance with general preparation of coal-tar requirements.

B. Application:
   1. Apply coatings in accordance with general application requirements and as follows:
      a. Apply minimum 20 mils DFT coating.

3.10 CONCRETE FLOOR COATINGS

A. Preparation:
   1. Prepare surfaces in accordance with general application requirements and in strict accordance with coating manufacturer’s instructions.

~~Application:~~
~~Apply primer if required by coating manufacturer.~~
~~Apply 1 or more coats as recommended by coating manufacturer to receive a minimum total DFT of 25 mils; color as selected by the Owner.~~

B. If concrete floors are not constructed with a non-skid surface, install a ~~Final topcoat shall include~~ non-skid surface, applied in strict accordance with coating manufacturer's instructions. A rough broom finish will be considered non-skid.

3.11 FIELD QUALITY CONTROL

A. Each coat will be inspected. Strip and remove defective coats, prepare surfaces, and recoat. When approved, apply next coat.

B. Control and check DFT and integrity of coatings.

C. Measure DFT with calibrated thickness gauge.

D. DFT on ferrous-based substrates may be checked with Elcometer Type 1 Magnetic Pull-Off Gauge or PosiTector® 6000.

E. Verify coat integrity with low-voltage sponge or high-voltage spark holiday detector, in accordance with NACE SP0188. Allow Engineer to use detector for additional checking.

F. Arrange for services of coating manufacturer's field representative to provide periodic field consultation and inspection services to ensure proper surface preparation of facilities and items to be coated, and to ensure proper application and curing:
   1. Notify Engineer 24 hours in advance of each visit by coating manufacturer's representative.
   2. Provide Engineer with a written report by coating manufacturer's representative within 48 hours following each visit.

3.12 SCHEDULE OF ITEMS NOT REQUIRING COATING

A. General: Unless specified otherwise, the following items do not require coating:
   1. Items that have received final coat at factory and are not listed to receive coating in field.
   2. Aluminum, brass, bronze, copper, plastic (except PVC pipe), rubber, stainless steel, chrome, Everdur, or lead.
   3. Buried or encased piping or conduit.
   4. Exterior concrete.
   5. Galvanized steel wall framing, galvanized electrical conduits, galvanized pipe trays, galvanized cable trays, and other galvanized items:
      a. Areas on galvanized items or parts where galvanizing has been damaged during handling or construction shall be repaired as follows:
         1) Clean damaged areas by SSPC SP 1, SP 2, SP 3, or SP 7 as required.
         2) Apply 2 coats of a galvanizing zinc compound in strict accordance with manufacturer’s instructions.
      b. If coating of galvanized steel has been specified, prepare surface prior to coating by removing all oils and waxes from post-galvanizing treatment.
   6. Grease fittings.
   7. Steel to be encased in concrete or masonry.

3.13 SCHEDULE OF SURFACES TO BE COATED IN THE FIELD

A. In general, apply coatings to steel, iron, galvanized surfaces, and wood surfaces unless specified or otherwise indicated on the Drawings.

B. Coat unlisted surfaces with same coating system as similar listed surfaces.

C. Coat concrete surfaces and anodized aluminum only when specified or indicated on the Drawings.

D. Coat unlisted surfaces with same coating system as similar listed surfaces.

E. Color coat all exposed piping as specified in Section 15076.

F. Color coat all exposed valves with color to match pipe.

~~The following schedule is incomplete. Coat unlisted surfaces with same coating system as similar listed surfaces. Verify questionable surfaces.~~

G. Concrete:

~~High solids epoxy:~~

~~Safety markings.~~

~~Valves.~~

1. Concrete floor ~~coating~~s without a non-skid surface.

H. Metals:

1. Alkali-resistant bitumastic:
   a. Aluminum surfaces to be placed in contact with wood, concrete, or masonry.
2. High solids epoxy and polyurethane system: exterior non immersed ferrous metal surfaces including:
   a. Pipe, valves, pipe hangers, supports and saddles, conduit, cable tray hangers, and supports.
   b. Motors and motor accessory equipment.
   c. Drive gear, drive housing, coupling housings, and miscellaneous gear drive equipment.
   d. Valve and gate operators and stands.
   e. Structural steel including galvanized structural steel.
   f. Mechanical equipment supports, drive units, and accessories.
   g. Other miscellaneous metals.
3. High solids epoxy system:
   a. Field priming of ferrous metal surfaces with defective shop-prime coat where no other prime coat is specified; for non-submerged service.
   b. Bell rings, underside of manhole covers and frames.
   c. Sump pumps and grit pumps, including underside of base plates and submerged suction and discharge piping.
   d. Exterior of submerged piping and valves other than stainless steel or PVC piping.
   e. Submerged pipe supports and hangers.
   f. Stem guides.
   g. Other submerged iron and steel metal unless specified otherwise.
   h. Interior surface of suction inlet and volute of submersible influent pumps. Apply coating prior to pump testing.
   i. Submerged piping.
   j. Exterior of influent pumps and influent pump submerged discharge piping.
4. Asphalt varnish:
   a. Underground valve boxes.
5. Protective coal tar:
   a. Underground pipe flanges, excluding pipe, corrugated metal pipe couplings, flexible pipe couplings and ~~miscellaneous~~all other underground metals not otherwise specified to receive another protective coating.

~~PART 1 GENERAL~~

~~1.01 SUMMARY~~

~~A. Section includes: Coatings, including coating systems, surface preparation, application requirements, and quality control requirements.~~

~~1.02 REFERENCES~~

~~A. ASTM International (ASTM):~~

~~1. D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications.~~
~~2. D2200 - Standard Practice for Use of Pictorial Surface Preparation Standards and Guides for Painting Steel Surfaces.~~
~~3. D3359 - Standard Test Methods for Rating Adhesion by Tape Test.~~
~~4. D3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.~~
~~5. D4262 - Standard Test Method for pH of Chemically Cleaned or Etched Concrete Surfaces.~~
~~6. D4263 - Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.~~
~~7. D4285 - Standard Test Method for Indicating Oil or Water in Compressed Air.~~
~~8. D4414 - Standard Practice for Measurement of Wet Film Thickness by Notch Gages.~~
~~9. D4417 - Standard Test Methods for Field Measurement of Surface Profile of Blast-Cleaned Steel.~~
~~10. D4541 - Standard Test Methods for Pull-Off Strength of Coatings Using Portable Adhesion Testers.~~
~~11. D4787 - Standard Practice for Continuity Verification of Liquid or Sheet Linings Applied to Concrete Substrates.~~
~~12. D5162 - Standard Practice for Discontinuity (Holiday) Testing of Nonconductive Protective Coating on Metallic Substrates.~~
~~13. D7234 - Standard Test Method for Pull-Off Adhesion Strength of Coatings on Concrete Using Portable Pull-Off Adhesion Testers.~~
~~14. E337 - Standard Test Method for Measuring Humidity with a Psychrometer (the Measurement of Wet- and Dry-Bulb Temperatures).~~
~~15. F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.~~
~~16. F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-situ Probes.~~

~~B. International Concrete Repair Institute (ICRI):~~

~~1. 310.2 - Guideline for Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair.~~

C. NACE International (NACE):
1. SP0178 - Design, Fabrication, and Surface Finish Practices for Tanks and Vessels to Be Lined for Immersion Service.
2. SP0188 - Discontinuity (Holiday) Testing of New Protective Coatings on Conductive Substrates.

D. National Association of Pipe Fabricators (NAPF):
1. 500-03 - Surface Preparation Standard for Ductile Iron Pipe and Fittings in Exposed Locations Receiving Special External Coatings and/or Special Internal Linings.

E. NSF International (NSF):
1. 61 - Drinking Water System Components - Health Effects.

F. Occupational Safety and Health Administration (OSHA).

G. Society of Protective Coatings (SSPC):
1. Glossary - SSPC Protective Coatings Glossary.
2. Guide 6 - Guide for Containing Surface Preparation Debris Generated during Paint Removal Operations.
3. Guide 15 - Field Methods for Retrieval and Analysis of Soluble Salts on Steel and Other Nonporous Substrates.
4. PA 1 - Shop, Field, and Maintenance Painting of Steel.
5. PA 2 - Procedure for Determining Conformance to Dry Coating Thickness Requirements.
6. PA 9 - Measurement of Dry Coating Thickness Using Ultrasonic Gages.
7. QP 1 - Standard Procedure for Evaluating the Qualifications of Industrial/Marine Painting Contractors.
8. SP 1 - Solvent Cleaning.
9. SP 3 - Power Tool Cleaning.
10. SP 5 - White Metal Blast Cleaning.
11. SP 10 - Near-White Metal Blast Cleaning.
12. SP 11 - Power Tools Cleaning to Bare Metal.
13. SP 13 - Surface Preparation of Concrete.
14. SP 16 - Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals.
15. SP COM - Surface Preparation Commentary.
16. SP VIS 1 - Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning.
17. SP WJ-1 - Waterjet Cleaning of Metals -- Clean to Bare Substrate.
18. SP WJ-2 - Waterjet Cleaning of Metals -- Very Thorough Cleaning.
19. SP WJ-3 - Waterjet Cleaning of Metals -- Thorough Cleaning.
20. SP WJ-4 - Waterjet Cleaning of Metals -- Light Cleaning.

1.03 DEFINITIONS

A. Definitions used in this Section are in accordance with definitions referenced in ASTM D16, ASTM D3960, and SSPC Glossary of Definitions.

B. Specific definitions:
1. Abrasive: Material used for blast cleaning, such as sand, grit, or shot.
2. Abrasive Blast Cleaning: Cleaning/surface preparation by abrasive propelled at high speed.

3. Anchor Pattern: Profile or texture of prepared surface(s).
4. Biogenic Sulfide Corrosion: Corrosion caused by sulfuric acid formed when *Thiobacillus* bacteria metabolizes hydrogen sulfide.
5. Bug Holes: Small cavities resulting when air bubbles are entrapped in the surface of formed concrete during placement and consolidation.
6. System: Protective film with 1 or more coats applied in a predetermined order, including surface preparation and quality control requirements.
7. Coating/Paint/Lining Thickness: Total thickness of primer, intermediate, and/or finish coats after drying or curing.
8. Dew point: Temperature a given air/water vapor mixture starts to condense.
9. Drying Time: Time interval between application and material curing.
10. Dry to Recoat: Time interval between material application and its ability to receive the next coat.
11. Dry to Touch: Time interval between material application and its ability to tolerate a light ouch without coating damage.
12. Exposed Surface: Any indoor or outdoor surface not buried or encased.
13. Feather Edging: Reducing coating thickness at its edge to blend with existing surrounding coating.
14. Feathering: Tapering off a wet edge with a comparatively dry brush.
15. Ferrous: Cast iron, ductile iron, wrought iron, and all steel alloys except stainless steel.
16. Field Coat: Application of a surface coating system at the work site.
17. Finish Coat: Final coat in a paint system, including texture, color, smoothness of surface, and other properties affecting appearance.
18. Hold Point: A defined point, specified in this Section, at which work shall be halted for inspection.
19. Holiday: A discontinuity, skip, void, or pinhole in coating or coating system film that exposes the substrate.
20. Honeycomb: Segregated and porous surface of hardened concrete due to insufficient consolidation.
21. Hydroblast: High or ultra-high pressure water jet surface preparation.
22. Incompatibility: One coating's inability to overlay another coating or surface as evidenced by bleeding, poor bonding, or lifting of old coating; inability of a coating to bond to a substrate.
23. Immersed/Immersion: A service condition in which substrate is submerged, is immediately above liquids, or is subject to frequent wetting, splashing, or washdown.
24. Laitance: A thin, weak, brittle layer of cement and aggregate fines on a concrete surface.
25. Mil: 0.001 inch.
26. Overspray: Dry spray, particularly paint bonded to an unintended surface.
27. Pinhole: A small diameter discontinuity in a coating or coating system film, created by offgassing from a void in a concrete or masonry substrate causing a void between coats or exposing the substrate. Usually caused by coating application while temperature is rising.
28. Pot Life: Time interval after components are mixed and coating can be satisfactorily applied.
29. Prime Coat: First full paint coat applied to a surface when using a multicoat system. Primers adhere to a new substrate, protect the substrate, and promote adhesion of subsequent coats of paint. The prime coat on metal surfaces is the first full coat and does not include solvent wash, grease emulsifiers, or other pretreatment applications.

30. Resurfacer/Resurfacing Material: A layer of cementitious and/or resin-based material used to fill or otherwise restore surface continuity to worn or damaged concrete surfaces.
31. Shelf Life: Maximum storage time a material may be stored without losing its usefulness.
32. Shop Coat: 1 or more coats applied in an off-site shop or plant before shipment to work site where field or finishing coat(s) are applied.
33. Spreading Rate: Area covered by a unit volume of paint at a specific thickness.
34. Stripe Coat: A separate brush coat of paint applied to all weld seams, pits, nuts/bolts/washers, and edges. This coat shall not be applied until previous coats have cured. Once applied, the coat shall be allowed to cure before subsequent coats are applied.
35. Tie Coat: An intermediate coat that bonds different types of paint material, improving succeeding coat adhesion.
36. Thick Film Coating System: A coating system applied with a minimum dry film thickness of 25 mils.
37. Touch-Up Painting: Application of paint on previously painted surfaces to repair marks, scratches, and deteriorated or damaged areas to restore the appearance and performance of the coating.
38. Water Blast: An alternative to air abrasive blast cleaning that can be used with or without abrasive injection. Water cleaning at pressures up to 5,000 pounds per square inch is called low-pressure water cleaning or power washing. High pressure water cleaning uses water pressures between 5,000 and 10,000 pounds per square inch. Water jetting is water blasting with added abrasive at pressures between 10,000 and 25,000 pounds per square inch. Ultra- high- pressure water jetting is water blasting at pressures above 25,000 pounds per square inch.
39. Weld Splatter: Beads of non-structural weld metal that adhere to the surrounding surface, removed as part of surface preparation.

1.04 ABBREVIATIONS

A. CSM - Coating System Manufacturer.

B. CMU - Concrete Masonry Units.

C. CSA - Coating System Applicator. Specialty subcontractor retained by the Contractor to install the coating systems specified in this Section.

D. CTR - Coating System Manufacturer's Technical Representative.

E. DFT - Dry Film Thickness. Thickness of cured film, usually expressed in mils (0.001 inch).

F. SSD - Surface Saturated Dry. Refers to concrete surface condition where the surface is saturated (damp) without the presence of standing water.

G. TPC - Technical Practice Committee.

H. VOC - Volatile Organic Compound. Portion of the coating that is a compound of carbon, is photochemically reactive, and evaporates during drying or curing;

expressed in grams per liter (g/l) or pounds per gallon (lb/gal). VOC is determined by EPA Method 24.

l. WFT - Wet Film Thickness. Coating thickness as measured immediately after application. Usually expressed in mils (0.001 inch).

1.05 PERFORMANCE REQUIREMENTS

A. Coating materials shall be formulated for environments encountered in water and wastewater treatment processes.

B. Coating materials that come in contact with water distributed as potable water shall be certified in accordance with NSF 61.

1.06 SUBMITTALS

A. As specified in Section 01330 - Submittal Procedures, submit the following:
   1. Schedule of proposed coating materials.
   2. Schedule of surfaces to be coated with each coating material.
   3. Dehumidification and heating plan.
   4. Product data:
      a. Physical properties of coatings, including the following:
         1) Solids content.
         2) Ingredient analysis.
         3) VOC content.
         4) Temperature resistance.
         5) Typical exposures and limitations.
         6) Manufacturer's standard color chips.
      b. Compliance with regulatory requirements:
         1) VOC limitations.
         2) Lead compounds and polychlorinated biphenyls.
         3) Abrasives and abrasive blast cleaning techniques and disposal.
         4) Methods for tenting blasting areas and methods to protect existing equipment from dust and debris.
         5) NSF certification of coatings for potable water supply systems.
      c. CSM's current printed recommendations and product data sheets for coating systems, including:
         1) Surface preparation recommendations.
         2) Primer type.
         3) Maximum dry and wet-mil thickness per coat and number of coats:
            a) Coating Coverage Worksheets.
         4) Minimum and maximum curing time between coats, including atmospheric conditions for each.
         5) Curing time before submergence in liquid.
         6) Thinner to be used for each coating.
         7) Ventilation requirements.
         8) Minimum and maximum atmospheric conditions during which the paint shall be applied.
         9) Allowable application methods.
         10) Maximum allowable substrate moisture content.
         11) Maximum shelf life.
         12) Requirements for transportation and storage.

13) Mixing instructions.
14) Shelf life.
15) Material Pot life.
16) Precautions for applications free of defects.
17) Method of application.
18) Drying time of each coat, including prime coat.
19) Compatible prime coats.
20) Limits of ambient conditions during and after application.
21) Required protection from sun, wind, and other conditions.
22) Touch-up requirements and limitations.
23) Minimum adhesion of each system submitted in accordance with ASTM D4541 and ASTM D7234.

d. Samples: Include 8-inch square drawdowns or brushouts of topcoat finish when requested. Identify each sample as to finish, formula, color name and number, sheen name, and gloss units.

e. Affidavits signed by an officer of the CSM's corporation attesting to full compliance of each coating system component with current federal, state, and local air pollution control regulations and requirements.

f. List of cleaning and thinner solutions allowed by the CSMs.

g. Storage requirements, including temperature, humidity, and ventilation for Coating System Materials as recommended by the CSMs.

h. Thick film coating systems (greater than 25 mils):
1) CSM's detailed written instructions for coating system treatment and graphic details for coating system terminations in coated structures, including pipe penetrations, metal embedments, gate frames, and other terminations encountered.
2) Include detail treatment for coating system at concrete joints.
3) Manufacturer's Representative's (CTR) Field Reports.

5. Quality assurance submittals:
a. Quality assurance plan.
b. Qualifications of CSA, including:
1) List of Similar Projects:
a) Name and address of project.
b) Year of installation.
c) Year placed in operation.
d) Point of contact: Name and phone number.
2) Provide a minimum of 5 project references, each including contact name, address, and telephone number where similar coating work has been performed by their company in the past 5 years.

c. CSA Reports:
1) Written daily quality control inspection reports.

d. CTR Reports:
1) Reports on visits to project site to view and approve surface preparation of structures to be coated.
2) Reports on visits to project site to observe and approve coating application procedures.
3) Reports on visits to coating plants to observe and approve surface preparation and coating application on shop-coated items.

1.07 QUALITY ASSURANCE

A. CSA qualifications:
   1. Minimum of 5 years of experience applying specified type or types of coatings under conditions similar to those of the Work:
      a. Provide qualifications of applicator and references listing 5 similar projects completed in the past 5 years.
   2. SSPC QP 1 certified.
   3. Manufacturer-approved applicator when manufacturer has approved applicator program or when required in these specifications.

B. CTR qualifications:
   1. Certification, one of the following:
      a. NACE Level 2 or 3 Certified Coating Inspector.
      b. SSPC Level 3 Protective Coatings Inspector.
   2. Minimum of 5 years of experience applying manufacturer's coatings under conditions similar to those of the Work:
      a. Provide qualifications of applicator and references listing 5 similar projects completed in the past 5 years.

C. Regulatory requirements: Comply with governing agencies' regulations by using coatings conforming to their VOC limits:
   1. Lead-based coatings are not permitted.
   2. Do not use coal-tar epoxy in contact with drinking water or exposed to ultraviolet radiation.

D. Pre-installation conference: Conduct as specified in Section 01312 - Project Meetings:
   1. Coordinate Hold Point schedule

E. Field samples:
   1. Prepare and coat a minimum 100-square-foot area of each system between corners or limits such as control or construction joints.
   2. Approved field sample may be part of the Work.

F. Obtain approval before coating other surfaces. Use products by same manufacturer for prime coats, intermediate coats, and finish coats on same surface, unless specified otherwise.

G. CSM services:
   1. CSA shall arrange for CTR to attend pre-installation conferences.
   2. Visit the project site periodically to consult on and inspect specified surface preparation and application Hold Points.
   3. Visit coating plants to observe and approve surface preparation procedures and coating application of items to be shop primed and coated.
   4. CTR shall provide written inspection reports.

H. Quality control requirements:
   1. Contractor shall be responsible for the workmanship and quality of the coating system installation:
      a. Inspections by Owner, Engineer, CSA, or CTR will not relieve or limit Contractor's responsibilities.

2. Conform to this specification's requirements and the standards referenced in this Section. Changes in the coating system application requirements will be allowed only with the Engineer's written acceptance.
3. Specially trained crews with experience applying the specified coating system coating are required for:
    a. Coating application using plural component spray equipment or other specialty equipment.
    b. Coating with specialty linings for severe service conditions, including floor coatings, and with linings for corrosive headspaces or secondary containment areas.
4. CTR shall specially train personnel for coating systems as specified in Appendix B Coating Detail Sheets:
    a. CSM shall approve personnel in writing applying the coating system.
5. Do not use contaminated, outdated, diluted materials, and/or materials from previously opened containers.
6. Identify inspection access points used by Owners or Engineers.
7. Provide ventilation, ingress, egress, or other means as necessary for Owner's or Engineer's personnel to safely access the work areas.
8. Conduct and continually inspect work so the coating system is installed as specified. The CSM shall provide written directions to correct coating work not conforming to the specifications or is otherwise unacceptable.
9. Provide written daily reports summarizing test data, work progress, surfaces covered, ambient conditions, quality control inspection test findings, and other information pertinent to the coating system application:
    a. Determine relative humidity in accordance with ASTM E337. Confirm other conditions, such as proper protective measures for surfaces not to be coated and safety requirements for personnel:
        1) Measure daily at shift's beginning and end and at intervals not to exceed 4 hours during the shift.
        2) Determine the acceptability of weather and/or environmental conditions within the structure in accordance with the CSM's requirements.
    b. Monitoring surface preparation: Spot check cleanliness, surface profile, and surface pH testing at least 3 times daily. Check each surface at least once. In accordance with:
        1) ASTM D4262.
        2) ASTM D4263.
        3) ASTM D4417.
        4) ICRI 310.2 requirements.
        5) SSPC Surface Preparation Standards.
    c. Confirm that compressed air used for surface preparation or blow-down cleaning is free of oil and moisture.
    d. Monitor surface preparation daily at shift's beginning and end and at intervals not to exceed 4 hours during the shift.
    e. Do not apply coatings when environmental conditions are outside of the CSM's published limits.
    f. Monitoring coatings application: Continuously inspect, measure, and record the wet film thickness and general film quality (visual inspection) for runs, sags, pinholes, holidays, etc. during coating:
        1) Perform WFT measurements in accordance with ASTM D4414.
    g. Post cure evaluation: Measure and inspect the overall dry film thickness on all surfaces. Conduct a DFT survey and perform adhesion testing,

holiday detection, or cure testing as required in this Section and/or the CSM's written instructions. Perform all applicable tests in accordance with ASTM D4541, ASTM D4787, ASTM D5162, ASTM D7234, SSPC-PA 1, SSPC-PA 2, SSPC-PA 9, and other pertinent standards and recommended practices.

I. Inspection at Hold Points:
   1. Conduct inspections at Hold Points during the coating system application and record the results.
   2. Coordinate Hold Points with the Engineer so the Engineer can observe Contractor's inspections on a scheduled basis.
   3. Provide the Engineer a minimum of 24 hours of notice before conducting Hold Point Inspections.
   4. Hold Points shall be as follows:
      a. Conditions before surface preparation: Before starting surface preparation, observe, record, and confirm that oil, grease, and/or soluble salts are gone from the surface.
      b. Post surface preparation: After completing surface preparation, measure and inspect for cleanliness and proper surface profile as specified in this Section and in the CSM's written instructions.
      c. Coatings application: At the beginning of any coating system application, measure, record, and confirm acceptability of surface and ambient air temperature and humidity. Inspect applicator's equipment for serviceability and suitability for coatings application.
      d. Post application inspection: Identify defects in application work on all surfaces, including pinholes, holidays, excessive runs or sags, inadequate or excessive film thickness, and other problems.
      e. Follow-up corrective actions and final inspection: Measure and re-inspect corrective coating work performed to repair defects at prior Hold Points, and repeat until the surface condition is acceptable. Conduct final visual inspection with follow-up tests, such as holiday detection, adhesion tests, and DFT surveys.

1.08 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products as specified in Section 01601 - Product Requirements.

B. Immediately remove unspecified and unapproved coatings from Project site.

C. Deliver new labeled, unopened containers:
   1. Do not deliver materials after manufacturer's expiration date or over 12 months from manufacturing date, whichever is more stringent. Store materials in well- ventilated enclosed structures and protect from weather and excessive heat or cold in accordance with the CSM's recommendations:
      a. Store flammable materials in accordance with federal, state, and local requirements.
      b. Store rags and cleanup materials appropriately to prevent fire and spontaneous combustion.
   2. Store and dispose of hazardous waste in accordance with federal, state, and local requirements. This requirement specifically applies to waste solvents and coatings.

3. Container labels shall show the following:
    a. Brand name or product title.
    b. CSM's batch number.
    c. CSM's manufacture date.
    d. CSM's name.
    e. Generic material type.
    f. Application and mixing instructions.
    g. Hazardous material identification label.
    h. Shelf life expiration date.
    i. Color.
    j. Mixing and reducing instructions.
4. Clearly mark containers to indicate safety hazards associated with the use of or exposure to materials.

1.09 PROJECT CONDITIONS

A. Apply coatings to dry surfaces:
    1. Surface moisture: Comply with manufacturer's requirements or as specified in this Section:
        a. Concrete floors: Moisture vapor transmission rate of no more than 3.0 pounds per 1,000 square feet per 24 hours in accordance with ASTM F1869 or relative humidity no greater than 80 percent if tested in accordance with ASTM F2170 unless the CSM's recommendations are more restrictive.
        b. Concrete structures: Negative results from Plastic Sheet Test in accordance with ASTM D4263, and maximum of 80 percent relative humidity in accordance with ASTM F2170.

B. Do not apply coatings when the following conditions exist. If such conditions exist, provide containment, covers, environmental controls, and other necessary measures:
    1. During rainy, misty, or damp weather, or to surfaces with frost or condensation.
    2. When the surface temperature is below 10 degrees Fahrenheit above the dew point.
    3. When ambient or surface temperature:
        a. Is less than 55 degrees Fahrenheit unless manufacturer allows a lower temperature.
        b. Is less than 65 degrees Fahrenheit for clear finishes, unless manufacturer allows a lower temperature.
        c. Exceeds 90 degrees Fahrenheit, unless manufacturer allows a higher temperature.
        d. Exceeds manufacturer's recommendation.
    4. When relative humidity is higher than 85 percent.
    5. Under dusty or adverse environmental conditions.
    6. When light on surfaces measures less than 15 foot-candles.
    7. When wind speed exceeds 15 miles per hour.

C. Apply coating only under evaporation conditions rather than condensation:
   1. Use dehumidification equipment, fans, and/or heaters inside enclosed areas to maintain required atmospheric and surface temperature requirements for proper coating application and cure.
   2. Measure and record relative humidity and air and surface temperatures at the start and end of each shift to confirm proper humidity and temperature levels inside the work area:
      a. Submit test results.

D. Continuously ventilate, dehumidify, and heat enclosed spaces with high humidity during surface preparation, coating application, and curing:
   1. Maintain minimum air temperature of 55 degrees Fahrenheit and 10 degrees Fahrenheit above the dew point.
   2. Maintain dew point of at least 10 degrees Fahrenheit less than the temperature of the coldest part of the structure where work is performed.
   3. Reduce dew point temperature in conditioned space by at least 10 degrees Fahrenheit within 20 minutes.
   4. Seal work areas and maintain positive pressure per dehumidification equipment supplier's recommendations.
   5. Maintain these conditions before, during, and after application to ensure proper adhesion and cure of coatings for no less than:
      a. Entire curing period.
      b. 8 hours after coating.

E. Systems:
   1. Site electrical power availability as specified in Section 01500 - Temporary Facilities and Controls.
   2. Internal combustion engine generators may be used:
      a. Obtain required permits and provide air pollution and noise control devices on equipment as required by permitting agencies require.
      b. Comply with state, federal, and local fire and explosion protection measures when locating and operating generator.
      c. Locate engine generator outside hazardous classified areas per NFPA 820.
      d. Provide daily fuel service for generator for duration of use.
   3. Dehumidification:
      a. Provide desiccant or refrigeration drying.
      b. Use only desiccant types with a rotary desiccant wheel capable of continuous operation.
      c. Liquid, granular, or loose lithium chloride drying systems are not acceptable.
   4. Heating:
      a. Use electric, indirect combustion, or steam coil.
      b. Direct-fired combustion heaters are not acceptable heat sources during abrasive blasting, coating application, or coating cure.
   5. Filters:
      a. Use a filtration system for dust removal designed to not interfere with dehumidification equipment's ability to control dew point and relative humidity inside the reservoir.
      b. Do not allow air from the working area or dust filtration equipment to recirculate through thein dehumidifier during coating application or when solvent vapors are present.

6. Design and submittals:
   a. Prepare and submit dehumidification and heating plan, including all equipment and operating procedures.
   b. Suppliers of services and equipment shall have at least 3 years of experience in similar applications.

F. Provide containment and ventilation system components in accordance with SSPC- Guide 6, Level 3 and as required for hazardous materials.

1.10 MAINTENANCE

A. Provide table of products applied organized by surface type. List coating manufacturer, color, color formulation, distributor name, telephone number, and address.

B. Provide extra materials:
   1. Minimum 1 gallon of each type and color of coating applied or provide additional quantities if specified in the Contract Documents.
   2. Deliver unopened factory-labeled cans when manufacturer packages material in gallon cans.
   3. Deliver material in new gallon containers, properly sealed and identified with permanently affixed, durable, printed labels indicating brand, type, and color, when manufacturer does not package material in gallon cans, deliver.

1.11 CTR RESPONSIBILITIES

A. General:
   1. Attend pre-installation conference.
   2. Perform onsite application training.
   3. Periodically inspect coating system application.

B. Coating system installation training:
   1. Provide a minimum of 8 hours of classroom and off-site training for application personnel and supervisory personnel in one of the following ways:
      a. Train a minimum of 2 supervisory personnel and 2 application personnel.
      b. Submit a letter from the CSM stating that CSM approves the supervisory and application personnel, listed by name and responsibility, and no additional training is required.
   2. CTR can train up to 14 application personnel and 3 supervisory personnel at a time.
   3. Minimum training requirements:
      a. Explain in detail the mixing, application, curing, and termination requirements.
      b. Provide hands-on demonstration of coating system mixing.
      c. Explain in detail the ambient condition requirements for temperature and humidity.
      d. Explain in detail the surface preparation requirements.
      e. Explain in detail the re-coat times, cure times, and related ambient condition requirements.
      f. Write a letter stating that training was satisfactorily completed by the personnel, listed by name and responsibility.
   4. Provide special training as specified in the Coating Detail Sheets.

C. Coating system inspection:
1. CTR inspection is in addition to the CSA's inspection as specified in this Section.
2. Be on-site to oversee:
a. Coating application at least once a week.
b. End of surface preparation.
c. During coating application.
d. Post-cure inspection.
3. Routinely inspect and verify in writing that application personnel have successfully performed surface preparation, filler/surfacer application, coating system application, and Quality Control Inspection in accordance with this Section and to warrantable quality.
4. Perform the following activities to confirm conformance with the specifications:
a. Inspect ambient conditions during coating system installation at Hold Points for conformance with the specified requirements.
b. Inspect each coated surface type and coating system applied to verify the following:
1) Cleanliness.
2) Surface pH for concrete substrates.
3) Confirm surface preparation of substrates where coating system will terminate or will be applied for conformance to the specified application criteria.
c. Verify surface profile of substrates by completing the following:
1) Inspect preparation and application of coating detail treatment at terminations, transitions, metal embedments in concrete, and joints and cracks in substrates.
2) Inspect application of filler/surfacer materials for concrete and masonry substrates.
3) Verify proper mixing of coating materials.
4) Inspect application of primers and finish coats, including wet and dry film thickness.
5) Inspect coating systems for proper cure times and conditions.
d. Review adhesion testing of cured coating systems.
e. Review coating system continuity testing.
f. Inspect and record representative localized repairs.
g. Conduct final review of completed coating system installation.
h. Prepare and submit site visit reports after each site visit to document that the coating work is in accordance with the CSM's Recommendations.

D. Final report:
1. Prepare a final report, after coating work ends, summarizing each day's test data, observations, drawings, and photographs. Include substrate conditions, ambient conditions, and application procedures observed during the CTR's site visits. Include a statement that completed work was performed in accordance with the requirements of the CSM's recommendations.

PART 2 PRODUCTS

2.01 MATERIALS

A. General:
1. Product requirements as specified in Section 01601 - Product Requirements.

2.02 COATING SYSTEMS IDENTIFICATION

A. Naming Conventions: Coating Systems Identifications contain the elements defined in Table 1.

Table 1 Coating System Identification Elements

First Element	-	Second Element	-	Third Element	-	Fourth Element (optional)
3 or 4 alpha characters		1-3 alpha characters		1 number		3 or 4 alpha characters
Coating Type		Substrate		System Number		Additional Substrate or Special Condition
Example: EPX	-	C	-	6	-	BSC

1) First element identifies the coating type using the following abbreviations:
   a) ACR: acrylic.
   b) CTE: coal tar epoxy.
   c) ELA: elastomeric acrylic.
   d) EPU: epoxy-polyurethane.
   e) EPX: epoxy.
   f) POL: polyurethane.
   g) SIL: silicone.
   h) SILX: siloxane or silane.
   i) VE: vinyl ester.
2) Second element identifies the substrate using the following abbreviations:
   a) C: concrete or masonry.
   b) F: concrete flooring.
   c) FRP: fiber-reinforced plastic.
   d) GM: galvanized metal.
   e) M: metal.
   f) PVC: polyvinyl chloride, chlorinated polyvinyl chloride.
3) Third element identifies the sequential system number:
   a) For example, EPX-C-2 is the second standard epoxy coating system for concrete substrates.
4) Fourth element is optional and identifies the additional substrate or special condition with the following abbreviations:
   a) PWS: Potable water service applications (NSF-61 approved).
   b) BSC: Biogenic sulfide corrosion-resistant applications in wastewater.
   c) BG: Below grade or buried.
   d) OZ: Organic zinc primer, epoxy polyurethane system.
   e) SC: Secondary containment.

2.03 PRODUCTS FOR COATING SYSTEMS

A. Products: As specified in Appendix B Coating Detail Sheets.

B. Cleaning solvents:
   1. Requirements for solvent wash, solvent wipe, or cleaner used, including, but not limited to, those used for surface preparation in accordance with SSPC- SP 1:
      a. Emulsifying type.
      b. Containing no phosphates.
      c. Biodegradable.
      d. Does not damage zinc.
      e. Compatible with the specified primer.
      f. Complying with applicable air-quality control board requirements.
   2. Use clean white cloths and clean fluids in solvent cleaning.

PART 3 EXECUTION

3.01 GENERAL PROTECTION REQUIREMENTS

A. Protect adjacent coated surfaces from coatings and damage associated with coating work. Repair damage resulting from inadequate or unsuitable protection.

B. Use drop cloths and other coverings to protect adjacent surfaces not to be coated against spatter and droppings.

C. Mask off surfaces of items not to be coated or remove items from area.

D. Furnish and deploy sufficient drop cloths, shields, and protective equipment to prevent spray or droppings from fouling surfaces not being coated and, in particular, surfaces within storage and preparation areas.

E. Place coating waste, cloths, and material that may pose a fire hazard in closed metal containers and remove daily from site.

F. Remove electrical plates, surface hardware, fittings, and fasteners before coating application. Carefully store, clean, and replace items after completing coating in each area. Do not use solvent or degreasers to clean hardware that may remove permanent lacquer finishes.

G. Erect and maintain protective enclosures in accordance with SSPC- Guide 6.

H. Protect the following surfaces from abrasive blasting by masking or by other means:
   1. Threaded portions of valve and gate stems, grease fittings, and identification plates.
   2. Machined surfaces for sliding contact.
   3. Surfaces to be assembled against gaskets.
   4. Surfaces of shafting where sprockets will be fit.
   5. Surfaces of shafting where bearings will be fit.
   6. Machined bronze surfaces, including slide gates.

7. Cadmium-plated items, except cadmium-plated, zinc-plated, or sherardized fasteners used to assemble equipment requiring abrasive blasting.
8. Galvanized items, unless scheduled to be coated.

I. Protect installed equipment, mechanical drives, and adjacent coated equipment from abrasive blasting to prevent damage caused by spent abrasive blast media, dust, or dirt entering such equipment.

J. Schedule cleaning and coating to keep dust and spray from the cleaning process from falling on wet, newly coated surfaces:
1. Whenever possible, coordinate with other trades and complete surface preparation and coating work before installing hardware, hardware accessories, nameplates, data tags, electrical fixtures, and similar uncoated items that will be in contact with coated surfaces. Mask machined surfaces, sprinkler heads, and other small items that will not be coated.
2. After completing coating, reinstall removed items.
3. Disconnect and move equipment adjacent to walls to clean and coat equipment and walls. Replace and reconnect equipment after coating.

3.02 GENERAL SURFACE PREPARATION REQUIREMENTS

A. Prepare surfaces in accordance with CSM's instructions unless more stringent requirements are specified in this Section.

B. Coating detail sheets in Appendix B include additional surface preparation requirements.

C. Follow more stringent requirement if information conflicts.

D. Where required by the Owner's representative, a NACE International certified coatings inspector, provided by the Owner, will inspect and approve surfaces to be coated before applying a coating:
1. CSA shall coordinate coating inspections.
   a. Identify coating inspection Hold Points during the pre-installation conference.
   b. Provide at least 2 days' notice before inspection.
2. Contractor shall correct surface defects identified by the inspector at no additional cost to Owner.

3.03 MECHANICAL AND ELECTRICAL EQUIPMENT PREPARATION

A. Identify equipment, ducting, piping, and conduit as specified in Section 15076 - Pipe Identification.

B. Remove grilles, covers, and access panels for mechanical and electrical system and coat separately.

C. Prepare and finish coat equipment primed by the manufacturer using specified intermediate and top coats, as applicable, and color selected by the Owner.

D. Prepare, prime, and coat both insulated and bare pipes, conduits, boxes, insulated and bare ducts, hangers, brackets, collars, and supports, except where items are covered with material not requiring coating, or with a prefinished coating.

E. Replace identification markings on mechanical or electrical equipment when coated over or spattered.

F. Prepare and coat interior surfaces of air ducts and convector and baseboard heating cabinets visible through grilles and louvers with 1 coat of flat black paint to limit of sight line.

G. Prepare and coat dampers exposed immediately behind louvers, grilles, and convector and baseboard heating cabinets to match face panels.

H. Prepare and coat exposed conduit and appurtenances occurring in finished areas with color and texture to match adjacent surfaces.

I. Prepare and coat sides' front, back, and edges of plywood backboards for electrical equipment before installing backboards and mounting equipment on them.

J. Color code equipment, piping, conduit, and exposed ductwork and apply color banding and identification, such as flow arrows, naming, and numbering, in accordance with the Contract Documents.

3.04 CLEANING OF NEW AND PREVIOUSLY COATED OR NEW SURFACES

A. Utilize cleaning agent to remove soluble salts, such as chlorides, from concrete and metal surfaces:
   1. Cleaning agent: Biodegradable non-flammable and containing no VOC.
   2. Manufacturers: The following or equal:
      a. CHLOR*RID International, Inc.:
         1) Complete soluble salt removal with steam or warm water cleaning.
   3. Test cleaned surfaces to ensure removal of soluble salts. Carry out additional cleaning as needed.
   4. Complete final surface preparation before applying new coating system in strict accordance with CSM's printed instructions.

3.05 BLAST CLEANING

A. Surface preparation requirements:
   1. Do not reuse spent blast abrasive.
   2. Ensure that filter compressed air used for blast cleaning is free of condensed water and oil. Clean moisture traps at least once every 4 hours or more frequently, as required, to prevent moisture from entering the abrasive blasting equipment air supply. Check blast air for moisture and oil after each cleaning in accordance with ASTM D4285.
   3. Install oil separators just downstream of compressor discharge valves and at the discharge point of blast pot discharges. Check separators on the same frequency as the moisture traps.
   4. Keep regulators, gauges, filters, and separators on compressor air lines to blasting nozzles operational at all times.
   5. Install an air dryer or desiccant filter drying unit to dry the compressed air before blast pot connections. Use and maintain the dryer throughout surface preparation work.
   6. Use a venturi-type, or other high velocity-type, abrasive blast nozzles supplied with at least 100 pounds per square inch gauge air pressure at the nozzle and

enough volume to obtain appropriate blast cleaning production rates and surface cleanliness.

7. Provide airborne particulate evacuation and filtering that meets OSHA safety standards. Maintain optimal visibility both to clean and provide the specified surface profile and to allow inspection of the substrate during surface preparation work.
8. If prepared and cleaned metallic substrates become contaminated between final surface preparation work and coating system application, or if the prepared substrate darkens or changes color, re-clean by water blasting, or abrasive blast cleaning as appropriate until the specified degree of cleanliness is restored.

B. Water jetting or water blasting:
   1. Use water jetting or water blasting for recoating or relining where an adequate surface profile exists.
   2. Perform water jetting or water blasting in accordance with SP 13 and SSPC- WJ-1, WJ-2, WJ-3, WJ-4.

3.06 PREPARATION REQUIREMENTS FOR CONCRETE SURFACES

A. Cure for at least 28 days before coating.

B. Remove degraded concrete using abrasive blast cleaning or high or ultrahigh pressure water jetting, chipping, or other abrading tools until achieving a sound, clean substrate. Remove all bruised or cracked concrete.

C. Prepare substrate cracks and areas requiring resurfacing; perform detail treatment, including, but not limited to, terminating edges per the CSM's recommendations and as indicated on the Drawings:
   1. Prepare concrete surfaces in accordance with SSPC-SP 13.

D. Prepare concrete surfaces in accordance with SSPC-SP 13:
   1. Inspect concrete surfaces to select appropriate surface preparation method to provide a suitable substrate for the specified coating system.
   2. Use blast cleaning or other means to expose the complete perimeter of air voids or bug holes. Do not leave shelled over, hidden air voids beneath the exposed concrete surface.
   3. Repair concrete defects and physical damage.
   4. Clean concrete surfaces of dust, mortar, formwork, fins, loose concrete particles, form release materials, oil, and grease.
   5. Fill voids to provide surface as specified in Section 03366 - Tooled Concrete Finishing.

E. Provide clean substrate visually free of calcium sulfate, loose, coarse, or fine aggregate, laitance, loose hydrated cement paste, and otherwise harmful substances:
   1. Confirm concrete surface minimum pH of 9.0 with surface pH testing.
   2. If after surface preparation the surface pH remains below 9.0, perform additional water blasting, cleaning, or abrasive blast cleaning until additional pH testing indicates an acceptable pH level.

F. Prepare concrete surface for coating in accordance with SSPC-SP 13:
   1. Provide ICRI 310.2 minimum No. 3 concrete surface profile (CSP) or as specified on Coating Detail Sheets.
   2. Evaluate profile of the prepared concrete using ICRI 310.2 surface profile replicas.

G. Blast clean cementitious repair mortars or grouts to the same profile and degree of cleanliness requirements required for concrete substrates.

H. Blast clean polymer-based surfacers or waterborne modified cementitious surfaces only if they have exceeded the CSM's recommended recoat time.

I. Vacuum all concrete surfaces before coating application, leaving a dust free, sound concrete substrate:
   1. Thoroughly clean concrete surfaces to be coated to remove loose dirt and spent abrasive.
   2. Remove debris produced by blast cleaning from the structures to be coated, and legally dispose of it off-site.

J. Test moisture content of concrete to be coated:
   1. Conduct ASTM D4263 plastic sheet test at least once for every 500 square feet of surface area to be coated:
      a. Any moisture on plastic sheet after test period constitutes a non-acceptable test, and the concrete must be dried further.
   2. Conduct ASTM F1869 test at least once for every 1,000 square feet of concrete floor surface area to be coated.
   3. Conduct ASTM F2170 one relative humidity moisture test at least once for each 500 square feet of non-floor concrete surface area where the opposite side is exposed to soil or water.
   4. Comply with specified minimum moisture content and CSM's written recommendations for moisture vapor transmission rates or relative humidity values.

K. Masonry surfaces:
   1. Cure for at least 28 days before coating.
   2. Prepare masonry surfaces to remove chalk, laitance, loose dirt, dried mortar splatter, dust, peeling, or loose existing coatings, or otherwise deleterious substances to leave a clean, sound substrate.
   3. Wash and scrub masonry surfaces with clear water. Do not use muriatic acid.
   4. Seal or fill masonry surfaces with a sealer or block filler compatible with the specified primer after cleaning.
   5. Confirm that masonry surfaces are dry before coating application:
      a. If using pressure washing or low-pressure water blast cleaning for preparation, allow the masonry to dry for at least 5 days under dry weather conditions or until the minimum ambient temperature is 70 degrees Fahrenheit before coating.

3.07 GENERAL PREPARATION REQUIREMENTS FOR METALLIC SURFACES

A. Remove rust, scale, and welding slag and spatter:
   1. Remove and grind smooth all excessive weld material and weld spatter on metal surfaces before blast cleaning in accordance with NACE SP0178, Appendix C, Level C.
   2. Grind sharp edges on metal substrate to approximately 1/16-inch radius before abrasive blast cleaning.

B. Prepare metallic surfaces in accordance with applicable portions of surface preparation specifications of the SSPC specified for each coating system:
   1. Remove grease and oil in accordance with SSPC-SP 1.
   2. Use solvent as recommended by the CSM.
   3. Measure profile depth of the surface to be coated in accordance with Method C of ASTM D4417. Contractor shall select blast particle size and gradation to produce the specified surface profile.
   4. Constantly monitor and maintain ambient environmental conditions to ensure cleanliness and that no “rust back” occurs before coating material application.

C. Prepare metallic surfaces by blast cleaning in accordance with SSPC-VIS 1 (ASTM D2200). Prepare abrasive blast representative areas for the Owner's representative to inspect on the first day of cleaning.

D. Unless otherwise specified, the requirements for blast cleaning steel, ductile iron, and stainless steel substrates are as follows:
   1. Ferrous metal surfaces not to be submerged: Abrasive blast in accordance with SSPC-SP 10 unless blasting may damage adjacent surfaces, is prohibited, or is specified otherwise. Where abrasive blasting is not possible, clean surfaces to bare metal with power tools in accordance with SSPC- SP 11.
   2. Ferrous metal surfaces to be submerged: Abrasive blast in accordance with SSPC-SP 5, unless specified otherwise, to clean and provide roughened surface profile with a depth between 2 and 4 mils.
   3. Remove traces of grit, dust, dirt, rust scale, friable material, loose corrosion products, or embedded abrasive from substrate before coating application.
   4. When abrasive blasted surfaces rust or discolor before coating, abrasive blast clean surfaces again.

E. Field preparation of shop-primed surfaces:
   1. Smooth welds and prominences with power tools before applying field-applied coatings.
   2. Clean and dry shop-primed ferrous metal surfaces and fabricated assemblies before applying field coats.
   3. Prepare shop epoxy primed surfaces with light abrasive blasting or abrading and then vacuum before applying finish coats:
      a. Follow CSM instructions for surface preparation when the primer recoat limit has been exceeded.
   4. Non-immersion service: Clean in accordance with SSPC-SP 2 (Hand Tool Cleaning) or SSPC-SP 3 (Power Tool Cleaning) and uniformly roughen.
   5. Immersion, BSC, and SC service: Remove shop primer in accordance with SSPC-SP 5 (Near-White Blast Cleaning).

F. Damaged shop primer or rust bleeding:
1. Ferrous metals: Clean in accordance with SSPC-SP 1 (Solvent Cleaning) and spot blast in accordance with SSPC-SP 10 (Near-White Metal Blast Cleaning) to achieve a uniform surface profile between 2.0 and 2.5 mils before recoating.
2. Reject galvanized steel with rust bleeding.

G. Damaged coating: Repair by abrasive blast cleaning surfaces as specified for the coating system; feather to a smooth transition before touching up.

3.08 PREPARATION REQUIREMENTS BY SURFACE TYPE

A. Galvanized steel and non-ferrous metal surfaces:
1. Degrease or solvent clean (SSPC-SP 1) to remove oily residue.
2. Abrasive blast clean in accordance with SSPC-SP 16:
a. If abrasive blast cannot be performed, abrade in accordance with SSPC-SP 3 (Power Tool Cleaning).
3. Apply metal pretreatment within 24 hours before coating galvanized surfaces that cannot be thoroughly abraded, such as bolts, nuts, or preformed channels.
4. Test surface for contaminants using copper sulfate solution.

B. Stainless steel surfaces:
1. Abrasive blast clean in accordance with SSPC-SP 16 to leave a clean, uniform appearance with surface profile between 1.5 and 2.5 mils.

C. Ductile iron pipe and fittings to be lined or coated: Abrasive blast clean in accordance with NAPF 500-03.

D. Sherardized, aluminum, copper, and bronze surfaces:
1. Abrasive blast clean in accordance with SSPC-SP 16.
2. Prepare in accordance with CSM's instructions.

E. Cadmium-plated, zinc-plated, or sherardized fasteners:
1. Abrasive blast in the same manner as uncoated metal when assembling equipment designated for abrasive blasting.

F. PVC and FRP surfaces:
1. Lightly sand surfaces to be coated:
a. Sand to remove gloss and establish uniform surface profile.
2. Vacuum to remove loose dust, dirt, and other materials.
3. Solvent clean with clean white rags and allow solvent to evaporate completely before applying coating materials.

3.09 APPLICATION REQUIREMENTS

A. Apply coatings in accordance with manufacturer's instructions.

B. Empty aboveground piping to be coated of contents when applying coatings.

C. Mechanical equipment shop primed by the manufacturer:
1. Pumps and valves: Shop coat with manufacturer's highest quality coating system meeting the project specifications:
a. Contractor shall provide CTR shop coating reports.

2. Non-immersed equipment: Touch up shop primer, and coat in the field with specified coating system after installation:
    a. If project requires equipment removal and reinstallation, complete touchup coating after final installation.
3. Immersed equipment not shop coated: Remove shop primer before surface preparation and field apply coating.

D. Verify surface preparation immediately before applying coating in accordance with SSPC SP COM and the SSPC visual standard for the specified surface preparation method.

E. Allow surfaces to dry, except where coating manufacturer requires surface wetting before coating.

F. Wash coat and prime sherardized, aluminum, copper, and bronze surfaces, or prime with manufacturer's recommended special primer.

G. Do not apply coatings to a surface until it has been prepared as specified.

H. Use equipment designed to apply materials specified:
1. Use compressors with moisture traps and filters that remove water and oils from the air:
    a. Perform a paper blotter test at the Engineer's request to verify air is sufficiently free of oil and moisture. Do not allow the amount of oil and moisture to exceed CSM-recommended amount.
2. Equip spray equipment with properly sized mechanical agitators, pressure gauges, pressure regulators, and spray nozzles.

I. Where 2 or more coats are required, tint prime coat intermediate coats as necessary to distinguish each coating and to help indicate coverage:
1. Do not use color additives with chromium, lead or lead compounds that hydrogen sulfide, other corrosive gases, might destroy or alter. Apply the specified number of coats.

J. Apply coating by brush, roller, trowel, or spray unless a specific application method is required by coating manufacturer's instructions or these Specifications:
1. Apply primer or first coat by brush to power tool cleaned ferrous surfaces.
2. Brush or spray-apply coats for blast-cleaned ferrous surfaces and subsequent coats for non-blast cleaned ferrous surfaces.
3. After prime coat dries, mark, repair, and retest pinholes and holidays before intermediate or top coats are applied.

K. Spray application:
1. With a brush, stripe coat edges, welds, corners, nuts, bolts, and difficult-to-reach areas, as necessary, before spray application to ensure specified coating thickness along edges.
2. When using spray application, apply each coat to thickness no greater than recommended in coating manufacturer's instructions.
3. Use airless spray method unless air spray method is required by CSM's instruction or these Specifications.
4. Conduct spray coating under controlled conditions. Protect adjacent construction and property from coating mist, fumes, or overspray.

L. Lightly sand and thoroughly clean surfaces to receive high-gloss finishes unless CSM instructs otherwise.

M. Remove all dust on coatings between coats.

N. Shop and field coats:
1. Prime coat: Shop-apply or field-apply prime coats as specified. Use shop-applied primer compatible with the specified field coating system and apply at the minimum dry film thickness recommended by the finish coat CSM:
a. Provide data sheets identifying the shop primer to on-site coating application personnel.
b. Perform adhesion tests on the shop primer.
c. Remove and recoat damaged, deteriorated, and poorly applied shop coatings.
d. If shop primer coat meets this Section's requirements, spot prime exposed metal of shop-primed surfaces before spray applying primer over the entire surface.
2. Field coats: Apply field coats with 1 or more prime coats and finish coats to build up coating to dry film thickness specified for the coating system:
a. Do not apply finish coats until other work in the area is complete and previous coats are inspected.
3. Adhesion confirmation: Perform adhesion tests after proper coating cure in accordance with ASTM D3359. Demonstrate that:
a. Prime coat adheres to the substrate.
b. Coatings adhere to the prime and intermediate coats:
1) Coating 5 mils or more DFT: Achieve adhesion test result of 5A on immersed surfaces and 4A or better on other surfaces.
2) Coating less than 5 mils DFT: Achieve adhesion test results of 5B on immersed surfaces and 4B or better on other surfaces.

O. Brush, roll, trowel, or spray and back roll coats for concrete and masonry.

P. Plural component coating application:
1. Premix contents of component drums if required by the CSM each day.
2. Before starting application:
a. Verify gauges are working properly.
b. Complete ratio checks.
c. Sample the mix on plastic sheeting to ensure set time is appropriate and complete.
d. Label and retain all spray samples. Submit to Engineer when requested.

Q. Drying and recoating:
1. Provide fans, heating devices, or other means to prevent condensate or dew on substrate surface or between coats and during curing after applying the last coat.
2. Allow each coat to cure or dry thoroughly, in accordance with if required in CSM's printed instructions, before recoating.
3. Use CSM's printed instructions and the requirements specified in this Section to determine minimum required drying time:
a. Do not allow excessive drying time or exposure, which may impair bond between coats.

b. Recoat all coatings within time limits recommended by CSM.
c. If time limits are exceeded, abrasive blast clean and de-gloss clean before applying another coat.

4. If limitations on time between abrasive blasting and coating are not met before attaching components to surfaces that cannot be abrasive blasted, coat components before attachment.
5. Ensure primer and intermediate coats of coating are unscarred and completely integral when applying each succeeding coat.
6. Touch up suction spots between coats and apply additional coats where required to produce finished surface of solid, even color, free of defects.
7. Leave no holidays. Repair all holidays in accordance with the requirements on pertinent Coating Detail Sheets or as recommended by the CSM.
8. Sand and feather in to a smooth transition and recoat scratched, contaminated, or otherwise damaged coating surfaces so repairs are invisible to the naked eye.

R. Workmanship:

1. Ensure that coated surfaces are free from runs, drips, ridges, waves, laps, and brush marks. Coats shall be applied to produce a smooth, even film of uniform thickness completely coating corners and crevices.
2. Coat surfaces without drops, overspray, dry spray, excessive runs, ridges, waves, holidays, laps, or brush marks.
3. Remove splatter and droppings after coating work is completed.
4. Evenly apply each coat of material and sharply cut to a line created with masking tape or other suitable materials.
5. Avoid over spraying or spattering paint on surfaces not to be coated. Protect glass, hardware, floors, roofs, vehicles, and other adjacent areas and installations by taping, drop cloths, or other suitable measures.
6. When coating complex steel shapes, stripe coat welds, edges of structural steel shapes, metal cut-outs, pits in steel surfaces, or rough surfaces with the primer before overall coating system application:
   a. Brush apply stripe coat to ensure proper coverage.
   b. Do not stripe coat with spray or roller.
7. Ensure that finish coat, including repairs, has a uniform color and gloss.

S. Coating properties, mixing, and thinning:

1. Thin prime coat and apply as recommended by the CSM. Thinned coating must comply with prevailing air pollution control regulations.
2. If maximum recoat time is exceeded, prepare surface with solvent washing, light abrasive blasting, or other procedures per CSM's instructions.
3. Allow adequate drying time between coats as instructed by the CSM, adjusted as necessary for the site conditions.
4. Ensure that coatings, when applied, provide a satisfactory film and a smooth even surface. Lightly sand glossy undercoats to provide a surface suitable for proper application and adhesion of subsequent coats. Thoroughly stir and strain coating materials during application and maintain uniform consistency.
5. Mix coatings with 2 or more components in accordance with CSM's instructions.
6. Where necessary to suit conditions of the surface, temperature, weather and method of application, thin the coating per CSM's recommendations:
   a. Ensure that volatile organic content (VOC) of the thinned coating complies with prevailing air pollution control regulations.

b. Thin coatings to only what is necessary to obtain proper application characteristics.
c. Use a thinner recommended by the CSM.

T. Film thickness and continuity:
1. Apply coating to the specified thicknesses:
a. Apply additional coats when necessary to achieve specified thicknesses, especially at edges and corners.
2. Verify WFT of the coating system first coat and after applying each subsequent coat.
3. Do not allow the minimum thickness at any point to deviate more than 25 percent from the required average.
4. Do not allow the surface area covered per gallon of coating for various types of surfaces to exceed those recommended by the CSM:
a. Provide coating coverage worksheets listing the maximum and minimum coverage for each unit volume of coating for concrete surfaces.
5. Apply additional coats to achieve the specified dry film thickness if brush or roller application methods cannot achieve the specified film thicknesses per coat.

U. Protecting coated surfaces:
1. Do not handle, work on, or otherwise disturb coated items until the coating is completely dry and hard.
2. After installation, recoat shop-coated surfaces with specified coating system as necessary to match surrounding surfaces, and to coordinate with the specified color identification requirements.

V. Special requirements:
1. Before erection, apply all but the final finish coat to interior surfaces of roof plates, roof rafters and supports, pipe hangers, piping in contact with hangers, and contact surfaces inaccessible after assembly. Apply final coat after erection.
2. Coat structural slip-critical connections and high strength bolts and nuts after erection.
3. Areas damaged during erection:
a. Prepare surface for spot repairs as specified for the coating system.
b. Recoat with prime coat before applying subsequent coats.
c. Touch up surfaces after installation.
d. Clean and dry surfaces to be coated at time of application.
4. Coat underside of equipment bases and supports not galvanized with at least 2 coats of primer specified before setting the equipment in place.
5. Coat aluminum in contact with concrete.

3.10 APPLICATION REQUIREMENTS FOR CONCRETE COATING SYSTEMS

A. Apply filler/surfacer as recommended by CSM to fill bug holes and air voids in concrete or block texture in CMU, leaving a uniformly filled surface that does not produce blowholes or outgassing causing the coating system to pinhole:
1. Allow filler/surfacers to cure sufficiently before applying prime coat as required by the CSM. Use the CSM-recommended drying time between coats.

B. Apply surfacer or filler and let dry before coating application:
   1. Use the drying time between filler/surfacer and coating system specified by the CSM for the site conditions:
      a. Let concrete substrate dry before applying filler/surfacers or coating system materials.
   2. If the maximum recoat time is exceeded, prepare surfaces by solvent washing, light abrasive blasting, and other procedures per CSM's instructions.
   3. Apply a complete parge coat of the specified filler/surfacer material over the entire substrate before applying the coating system:
      a. Scrub filler/surfacer into the substrate to completely fill open air voids and bug holes.
      b. Completely cover the substrate, unless otherwise specified, above such filled voids by 1/8 inch of thickness.
      c. Provide relatively flat, uniformly even surface before coating application.
   4. Secondary containment: Place surfacer or filler 1/16 inch thick above concrete plane to create a monolithic surface free of pinholes:
      a. Floor surfaces: Broadcast with aggregate to create a non-slip surface texture.
      b. Remove excess aggregates and apply base coat to encapsulate embedded non-slip aggregate.

C. Concrete substrate temperatures:
   1. Apply filler/surfacers and the coating system when temperatures are falling, typically late afternoon or evening:
      a. Do not coat concrete with rising concrete substrate surface temperatures or substrates in direct sunlight, to minimize outgassing from the substrate and formation of pinholes, and/or blistering.
   2. Should bubbles, pinholes, or other discontinuities form in the applied coating system material, they shall be repaired:
      a. Should discontinuities develop in the filler/surfacer material or in the first coat of the coating material, repair them before the next coat.
      b. When discontinuities occur, open the air void behind or beneath the discontinuities and completely fill with specified coating material. Then, abrade the coated area around the discontinuities repair reapply coating over that area.

D. Perform application detail work in accordance with these Specifications, the CSM's current written recommendations, and drawings, whichever is stricter.

E. Concrete coating systems application requirements:
   1. Concrete coating minimum dry film thickness excludes parge coat, block filler, and sealer.

3.11 COATING SYSTEM SCHEDULE

A. Appendix A specifies surfaces to be coated in the field with the coating systems required.

3.12 SURFACES NOT REQUIRING COATING

A. Stainless steel piping, valves, pipe supports, instrument sunshades.

B. Sliding surfaces on expansion joints, motor and pump shafts, machined surfaces at bearings and seals, grease fittings, etc.

C. Galvanized structural steel framing, galvanized roof decking, galvanized pipe supports.

D. Copper and brass pipe, fittings, valves, etc.

E. Bronze valves, bearings, bushings, and fasteners.

F. Corrosion resistant special alloys: Inconel, Alloy 20, Hastelloy, etc.

G. Exterior Concrete.

H. Plastic surfaces except coat PVC, CPVC, and other plastic piping system exposed to sunlight.

I. Buried Piping that is encased in concrete or cement mortar.

3.13 QUALITY CONTROL

A. Owner-provided inspection or inspection by others does not limit the Contractor's or CSA's responsibilities for quality workmanship or quality control as specified or as required by the CSM's instructions. Owner inspection is in addition to any inspection required of the Contractor.

B. Owner may perform, or contract with an inspection agency to perform, quality control inspection and testing of the coating work covered by this Section. These inspections may include the following:
1. Inspect materials upon receipt to ensure that the CSM supplied them.
2. Verify that specified storage conditions for the coating system materials, solvents, and abrasives are provided.
3. Inspect and record findings for substrate cleanliness.
4. Inspect and record pH of concrete and metal substrates.
5. Inspect and record substrate profile (anchor pattern).
6. Measure and record ambient air and substrate temperature.
7. Measure and record relative humidity.
8. Check for substrate moisture in concrete.
9. Verify that mixing of coating system materials is in accordance with CSM's instructions.
10. Inspect, confirm, and record that coating system materials' "pot life" is not exceeded during installation. Inspect to verify that recoat limitations for coating materials are not exceeded.
11. Perform adhesion testing.
12. Measure and record the coating system's thickness.
13. Verify proper curing of the coating system in accordance with the CSM's instructions.
14. Holiday or continuity testing in accordance with NACE SP0188 for coatings that will be immersed or exposed to aggressively corrosive conditions.

C. Contractor shall perform holiday testing in accordance with NACE SP0188 to identify holidays or pinholes needing repair for coating over 100 percent of surfaces:
1. Coated steel that will be immersed or exposed to aggressively corrosive conditions.
2. Coated concrete.
3. Perform holiday tests after proper application and coating system cure.

3.14 CORRECTIVE MEASURES

A. Repair pinholes or holidays identified by Holiday Testing as follows:
1. Remove the coating system with a grinder or other suitable power tool.
2. Remove coating system at all pinholes and holidays at least 2 inches diameter around the defect back to expose substrate.
3. Concrete voids: chip back to expose entire cavity in all directions:
a. Completely fill void with approved filler/surfacer material using a putty knife or other suitable tool, and strike off. Cure per CSM's recommendations.
4. Aggressively abrade or sand the intact coating system surface at least 3 inches beyond the removal area in all directions to produce a uniform 6- to 8-mil profile in the intact coating system.
5. Vacuum the prepared area to remove all dust, dirt, etc., leaving clean, sound surfaces.
6. Tape to mask the periphery of the prepared intact coating area to prevent coating repair application onto the prepared area.
7. Apply the coating system with enough coats to achieve the specified finish coat thickness over the defect and coating removal area. Feather the coating onto the abraded coated surfaces around the removal area to avoid a lip and to achieve a neat repair outline.
8. Follow curing time between coats as specified by CSM for the site conditions. Solvent wash and abrasive blast per CSM's instructions, if the maximum recoat time is exceeded.
9. Apply coating at specified dry film thickness.

3.15 CLEANUP

A. Remove surplus materials, protective coverings, and accumulated rubbish after completing coating. Thoroughly clean surfaces and repair overspray or other coating-related damage.

3.16 FINAL INSPECTION

A. Conduct final inspection of coating system work to determine whether it meets specifications requirements.

B. Conduct subsequent final inspection with Engineer to ensure work conforms to contract documents requirements.

C. Mark any rework required:
1. Re-clean and repair, as specified, at no additional cost to the Owner.

END OF SECTION

Replacement Section

SECTION 15052

COMMON WORK RESULTS FOR GENERAL PIPING

PART 1 GENERAL

1.01 SUMMARY

A. Section includes: Basic materials and methods for metallic and plastic piping systems.

1.02 REFERENCES

A. American Society of Mechanical Engineers (ASME):
   1. B16.5 - Pipe Flanges and Flanged Fittings: NPS 1/2 through 24.
   2. B16.47 - Large Diameter Steel Flanges: NPS 26 Through NPS 60 Metric/Inch Standard.

B. American Water Work Association (AWWA):
   ~~1. C105 - Standard for Polyethylene Encasement for Ductile-Iron Pipe Systems.~~
   ~~2.~~1. C207 - Standard for Steel Pipe Flanges for Waterworks Services-Size 4 In. Through 144 In.

C. ASTM International (ASTM):
   1. A193 - Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications.
   2. A194 - Standard Specification for Carbon Steel, Alloy Steel, and Stainless Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both.
   3. A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60,000 PSI Tensile Strength.
   4. A563 - Standard Specification for Carbon and Alloy Steel Nuts.
   5. F37 - Standard Test Methods for Sealability of Gasket Materials.
   6. F2329 - Standard Specification for Zinc Coating, Hot-Dip, Requirements of Application to Carbon and Alloy Steel Bolts, Screws, Washers, Nuts, and Special Threaded Fasteners.

D. California Health and Safety Code.

E. NSF International (NSF).

1.03 DEFINITIONS

A. Buried pipes: Pipes that are buried in the soil with or without a concrete pipe encasement.

B. Exposed pipe: Pipes that are located above ground, or located inside a structure, supported by a structure, or cast into a concrete structure.

C. Underground pipes: Buried pipes - see A. above.

D. Underwater pipes: Pipes below the top of walls in basins or tanks containing water.

E. Wet wall: A wall with water on at least 1 side.

PART 2 PRODUCTS

2.01 GENERAL

A. Materials as specified in Section 01601 - Product Requirements including special requirements for materials in contact with drinking water.

2.02 ESCUTCHEONS

A. Material: Chrome-plated steel plate.

B. Manufacturers: One of the following or equal:
   1. Dearborn Brass Co., Model Number 5358.
   2. Keeney Manufacturing Co., Model Number 102 or Number 105.

2.03 LINK TYPE SEALS

A. Characteristics:
   1. Modular mechanical type, consisting of interlocking neoprene or synthetic rubber links shaped to continuously fill the annular space between the pipe and wall opening.
   2. Links to form a continuous rubber belt around the pipe.
   3. Provide a nylon polymer pressure plate with Type 316 stainless steel hardware. Isolate pressure plate from contact with wall sleeve.
   4. Hardware to be Type 316 stainless steel:
      a. Provide anti-galling lubricant for threads.

B. One of the following or equal:
   1. Link-Seal.
   2. Pipe Linx.

2.04 BOLTS AND NUTS

A. General:
   1. Washer:
      a. Provide a washer for each nut.
      b. Washer shall be of the same material as the nut.
   2. Nuts: Heavy hex-head.
   3. Cut and finish flange bolts to project a maximum of 1/4-inch beyond outside face of nut after assembly.
   4. Tap holes for cap screws or stud bolts when used.
   5. Lubricant for stainless steel bolts and nuts:
      a. Chloride-free.
      b. Manufacturers: One of the following or equal:
         1) Huskey FG-1800 Anti-Seize.
         2) Weicon Anti-Seize High-Tech.

B. For ductile iron pipe:
   1. On exposed pipes:
      a. Bolts: ASTM A193, Grade B7 with the same coating as exposed ductile iron pipe. ~~with a petroleum wax tape coating~~
      b. Nuts: ASTM A194, Grade 2H.
      c. Bolts and nuts: Hot-dip galvanized in accordance with ASTM F2329.
   2. On underwater pipes and pipes adjacent to wet walls:
      a. Bolts: ASTM A193, Grade B7 with a petroleum wax tape coating.
      b. Nuts: ASTM A194, Grade 2H. with a petroleum wax tape coating
   3. On buried pipes:
      a. Bolts: ASTM A193, Grade B7 with a petroleum wax tape coating.
      b. Nuts: ASTM A194, Grade 2h for nuts with a petroleum wax tape coating
      ~~c. Encase in V-Bio polyethylene wrap in accordance with AWWA C105.~~

C. Plastic pipe:
   1. On exposed pipes:
      a. Bolts: ASTM A307, Grade B.
      b. Nuts: ASTM A563, Grade A.
      c. Bolts and Nuts: Hot-dip galvanized in accordance with ASTM F2329.
   2. On underwater pipes and pipes adjacent to wet walls:
      a. Bolts: ASTM A193, Grade B8M.
      b. Nuts: ASTM A194, Grade 8M.

2.05 GASKETS

A. General.
   1. Gaskets shall be suitable for the specific fluids, pressure, and temperature conditions.

B. Gaskets for ductile iron piping:
   1. Suitable for pressures equal to and less than 350 pounds per square inch gauge, temperatures equal to and less than 100 degrees Fahrenheit, and raw sewage service.
   2. Gasket material:
      a. ~~EPDM with minimum Shore A hardness value of 70.~~Styrene Butadiene (SBR) rated to not less than the pressure rating of the pipeline pressure rating
      b. Reinforcement: Cloth or synthetic fiber.
      c. Thickness: Minimum 3/32-inch thick for less than 10-inch pipe; minimum 1/8-inch thick for 10-inch and larger pipe.
   3. Manufacturers: One of the following or equal:
      a. Pipe less than 48 inches in diameter:
         1) Toruseal Flange Gaskets.
         2) Or equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. General:
   1. Piping drawings:
      a. Except in details, piping is indicated diagrammatically. Not every offset and fitting, or structural difficulty that may be encountered has been indicated on the Drawings. Sizes and locations are indicated on the Drawings.
      b. Perform minor modifications to piping alignment where necessary to avoid structural, mechanical, or other type of obstructions that cannot be removed or changed:
         1) Modifications are intended to be of minor scope, not involving a change to the design concept or a change to the Contract Price or Contract Times.
   2. Piping alternatives:
      a. Provide piping as specified in this Section, unless indicated on the Drawings or specified otherwise.
      b. Alternative pipe ratings:
         1) Piping with greater pressure rating than specified may be substituted in lieu of specified piping without changes to the Contract Price.
         2) Piping of different material may not be substituted in lieu of specified piping.
      c. Valves in piping sections: Capable of withstanding specified test pressures for piping sections and fabricated with ends to fit piping.
      d. Grooved joints: Use couplings, flange adapters, and fittings of the same manufacturer:
         1) Manufacturer's factory trained representative:
            a) Provide on-site training for Contractor's field personnel.
            b) Periodically visit the jobsite to verify Contractor is following best recommended practices.
         2) Distributor's representative is not considered qualified to conduct the training or jobsite visits.
      e. Flanged joints: where 1 of the joining flanges is raised face type, provide a matching raised face type flange for the other joining flange.
   3. Unless otherwise indicated on the Drawings, piping at pipe joints, fittings, couplings, and equipment shall be installed without rotation, angular deflection, vertical offset, or horizontal offset.

B. Wall and slab penetrations:
   1. Provide flexibility in piping connecting to structures to accommodate movement due to soil settlement and earthquakes. Provide flexibility using details indicated on the Drawings.

C. Exposed piping:
   1. Install exposed piping in straight runs parallel to the axes of structures, unless otherwise indicated on the Drawings:
      a. Install piping runs plumb and level, unless otherwise indicated on the Drawings:
         1) Slope plumbing drain piping with a minimum of 1/4-inch per foot downward in the direction of flow.

2. Install exposed piping after installing equipment and after piping and fitting locations have been determined.
3. Support piping: As specified in Sections 15061 - Pipe Supports:
    a. Do not transfer pipe loads and strain to equipment.
4. In addition to the joints indicated on the Drawings, provide unions, flexible couplings, flanged joints, flanged coupling adapters, and other types of joints or means which are compatible with and suitable for the piping system, and necessary to allow ready assembly and disassembly of the piping.
5. Assemble piping without distortion or stresses caused by misalignment:
    a. Match and properly orient flanges, unions, flexible couplings, and other connections.
    b. Do not subject piping to bending or other undue stresses when fitting piping.
    c. Do not correct defective orientation or alignment by distorting flanged joints or subjecting flange bolts to bending or other undue stresses.
    d. Flange bolts, union halves, flexible connectors, and other connection elements shall slip freely into place.
    e. Alter piping assembly to fit, when proper fit is not obtained.
    f. Install eccentric reducers or increasers with the top horizontal for pump suction piping.

D. Buried piping:
1. Bury piping with minimum 4-foot cover without air traps, unless otherwise indicated on the Drawings.
2. Where 2 similar services run parallel to each other, piping for such services may be laid in the same trench:
    a. Lay piping with sufficient room for assembly and disassembly of joints, for thrust blocks, for other structures, and to meet separation requirements of public health authorities having jurisdiction.
3. Laying piping:
    a. Lay piping in finished trenches free from water or debris. Begin at the lowest point with bell ends up slope.
    b. Place piping with top or bottom markings with markings in proper position.
    c. Lay piping on an unyielding foundation with uniform bearing under the full length of barrels.
    d. Where joints require external grouting, banding, or pointing, provide space under and immediately in front of the bell end of each section laid with sufficient shape and size for grouting, banding, or pointing of joints.
    e. At the end of each day's construction, plug open ends of piping temporarily to prevent entrance of debris or animals.

E. Venting piping under pressure:
1. Lay piping under pressure flat or at a continuous slope without air traps, unless otherwise indicated on the Drawings.
2. Install plug valves as air bleeder cocks at high points in piping:
    a. Provide 1-inch plug valves for water lines, and 2-inch plug valves for sewage and sludge lines, unless otherwise indicated on the Drawings.
3. Provide additional pipe taps with plug cocks and riser pipes along piping as required for venting during initial filling, disinfecting, and sampling.
4. Before piping is placed into service, close plug valves and install plugs. Protect plugs and plug valves from corrosion in as specified in Section 09960 - High-Performance Coatings.

A. Restraining buried piping:
   1. Restrain piping at valves and at fittings where piping changes direction, changes sizes, and at ends:
      a. When piping is underground, use concrete thrust blocks, mechanical restraints, or push-on restraints.
      b. Determine thrust forces by multiplying the nominal cross-sectional area of the piping by design test pressure of the piping.
   2. Provide restraints with ample size to withstand thrust forces resulting from test pressures:
      a. During testing, provide suitable temporary restraints where piping does not require permanent restraints.
   3. Place concrete thrust blocks against undisturbed soil.
   4. Place concrete so piping joints, fittings, and other appurtenances are accessible for assembly and disassembly.
   5. Provide underground mechanical restraints where specified in the Piping Schedule.

B. Restraining above ground piping:
   1. Restrain piping at valves and at fittings where piping changes direction, changes sizes, and at ends:
      a. When piping is aboveground or underwater, use mechanical or structural restraints.
      b. Determine thrust forces by multiplying the nominal cross-sectional area of the piping by design test pressure of the piping.
   2. Provide restraints with ample size to withstand thrust forces resulting from test pressures:
      a. During testing, provide suitable temporary restraints where piping does not require permanent restraints.

C. Connections to existing piping:
   1. Expose existing piping to which connections are to be made with sufficient time to permit, where necessary, field adjustments in line, grade, or fittings:
      a. Protect domestic water/potable water supplies from contamination:
         1) Make connections between domestic water supply and other water systems in accordance with requirements of public health authorities.
         2) Provide devices approved by Owner of domestic water supply system to prevent flow from other sources into the domestic supply system.
   2. Make connections to existing piping and valves after sections of new piping to be connected have been tested and found satisfactory.
   3. Provide sleeves, flanges, nipples, couplings, adapters, and other fittings needed to install or attach new fittings to existing piping and to make connections to existing piping.
   4. For flanged connections, provide stainless steel bolts with isolation bushings and washers, and full-face flange gaskets.

D. Connections to in-service piping:
   1. As specified in Section 01140 - Work Restrictions.

E. Connections between ferrous and nonferrous metals:

1. Connect ferrous and nonferrous metal piping, tubing, and fittings with dielectric couplings especially designed for the prevention of chemical reactions between dissimilar metals.
2. Nonferrous metals include aluminum, copper, and copper alloys.

F. Flanged connections between dissimilar metals such as ductile iron pipe and steel pipe:
1. Provide stainless steel bolts with isolation bushings and washers, and full-face flange gaskets.

3.02 CLEANING

A. Piping cleaning:
1. Upon completion of installation, clean piping interior of foreign matter and debris.
2. Perform special cleaning when required by the Contract Documents.

B. Cleaning potable water piping:
1. Flush and disinfect potable water piping as specified in Section 01757 - Disinfection.

C. Conduct pressure and leak test, as specified.

3.03 PIPING SCHEDULE

PIPING SCHEDULE											
Process Abbrev.	**Service**	**Nominal Diameter (inches)**	**Material**	**Pressure Class Special Thickness Class Schedule Wall Thickness**	**Pipe Spec. Section**	**Joints/ Fittings**	**Test Pressure/ Method**	**Lining**	**Coating**	**Service Conditions**	**Comments**
3W	Reclaimed Water										
	Underground	4-16	PVC	C900 DR-14	15244 - Polyvinyl Chloride Pipe: AWWA C900	IRJ	200 v/HH	None	None		
		4-16	DIP	Class 350	15211 - Ductile Iron Pipe: AWWA C151	IRJ	Upstream of PRV 250 psig/HH	CM	~~None~~V-Bio ~~Polywrap~~Zinc		
	Aboveground or in Vault	3-16	DIP	CL 53	15211 - Ductile Iron Pipe: AWWA C151	FL	Downstream of PRV 200 psig/HH 175 psig /HH	CM	EPP		
	Aboveground or in Vault	2	Brass	ASTM B43 extra strong wall thickness		Conform to ANSI B2.1 w/ teflon tape		None	None		

PIPING SCHEDULE											
Process Abbrev.	**Service**	**Nominal Diameter (inches)**	**Material**	**Pressure Class Special Thickness Class Schedule Wall Thickness**	**Pipe Spec. Section**	**Joints/ Fittings**	**Test Pressure/ Method**	**Lining**	**Coating**	**Service Conditions**	**Comments**

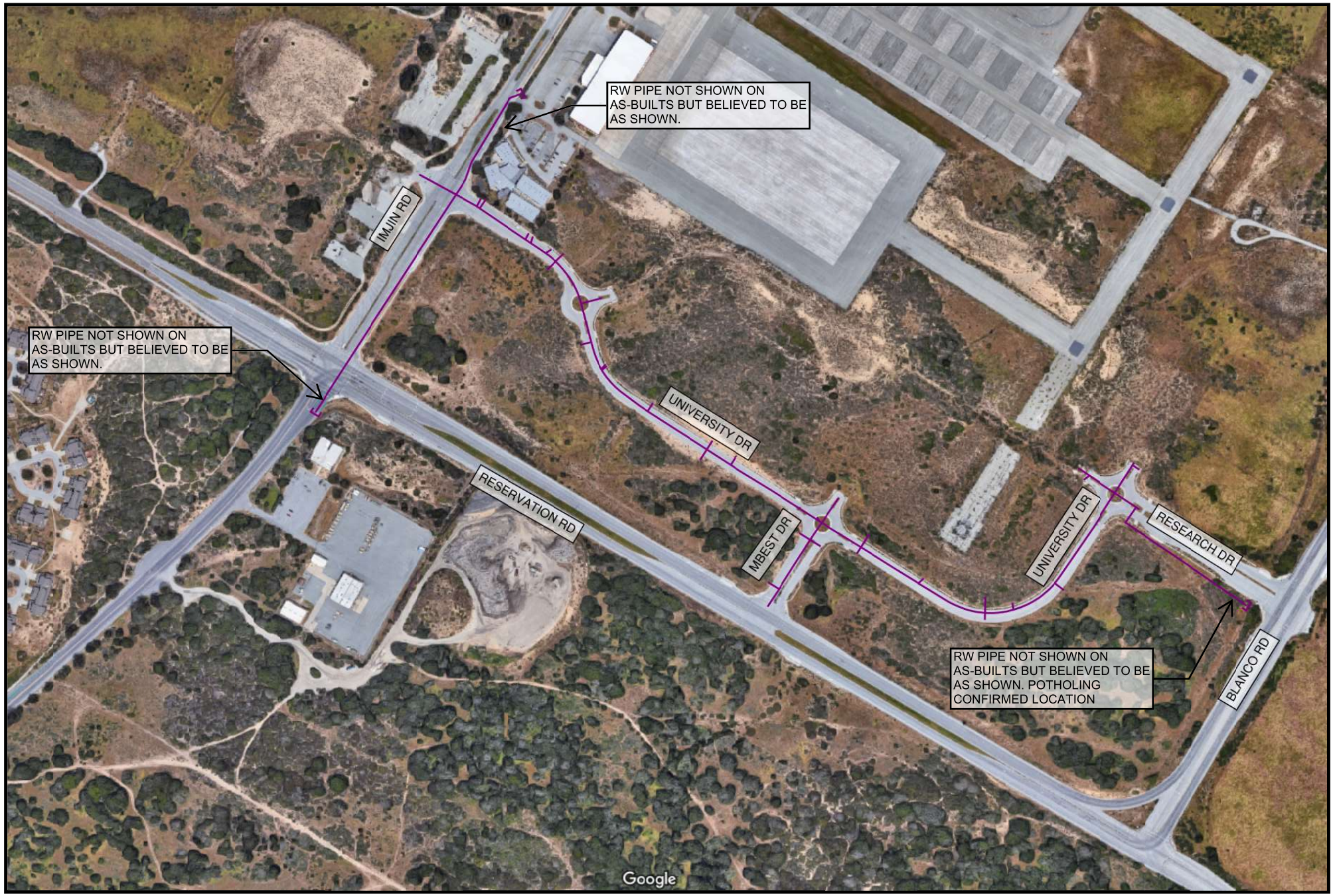
Abbreviations:

1. The following abbreviations used in the column of test method refer to the respective methods as specified in Section 15956 - Piping Systems Testing.
   - AM Air method
   - GR Gravity method
   - HH High head method
   - LH Low head method
   - SC Special case
2. Abbreviations to designate piping include the following:
   - B&SP Bell and spigot
   - CI Cast iron
   - CISP Cast iron soil pipe
   - CL Class, followed by the designation
   - CM Cement mortar
   - CTP Coal tar pitch
   - DIP Ductile iron piping
   - EPP Epoxy polyurethane coating FLFlange
   - GA Gauge, preceded by the designation
   - GE Grooved end joint
   - GL Glass lined
   - GSP Galvanized steel pipe
   - IRJ Integrally restrained joint
   - MJ Mechanical joint
   - NPS Nominal pipe size, followed by the number in inches
   - psi pounds per square inch
   - psig pounds per square inch gauge
   - PE Polyethylene
   - PEE Polyethylene encasement
   - PTW Polyethylene tape wrap
   - PVC Polyvinyl Chloride
   - SCH Schedule, followed by the designation
   - SCRD Screwed-On
   - SST Stainless steel
   - SW Solvent welded
   - VCP Vitrified clay piping
   - WLD Weld

END OF SECTION

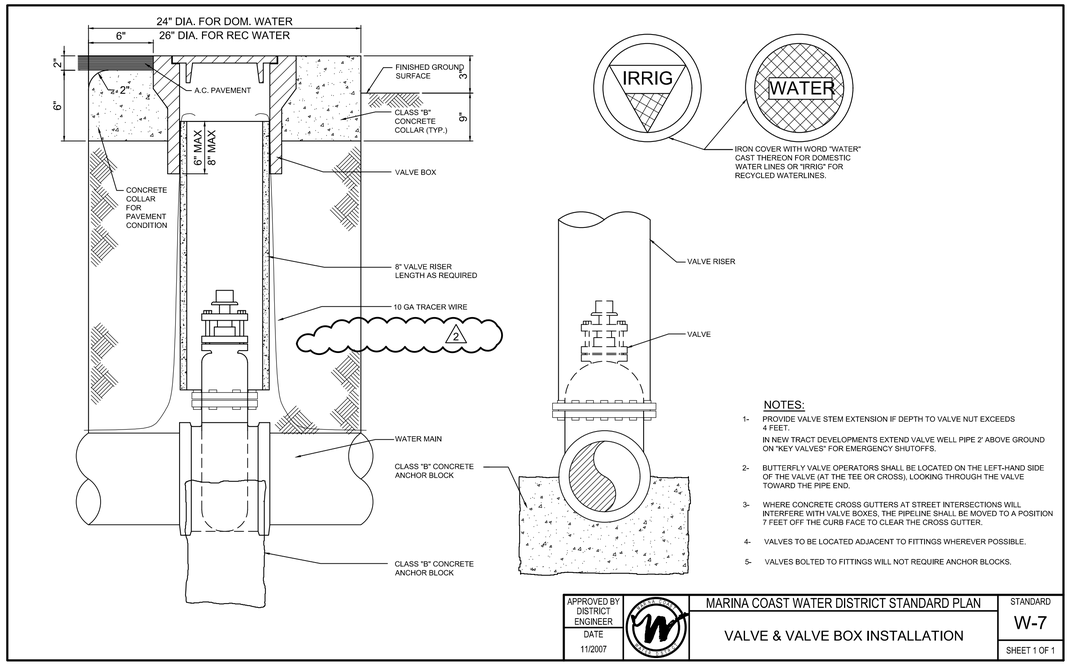
UMBEST RECORD DRAWINGS

Existing Recycled Water Facilities on UCMBEST Property



Location of RW facilities shown are approximate only. Please find record drawings, attached, for more accurate location of facilities.

DRAWINGS



NOTES:

1- PROVIDE VALVE STEM EXTENSION IF DEPTH TO VALVE NUT EXCEEDS 4 FEET.
IN NEW TRACT DEVELOPMENTS EXTEND VALVE WELL PIPE 2' ABOVE GROUND ON "KEY VALVES" FOR EMERGENCY SHUTOFFS.

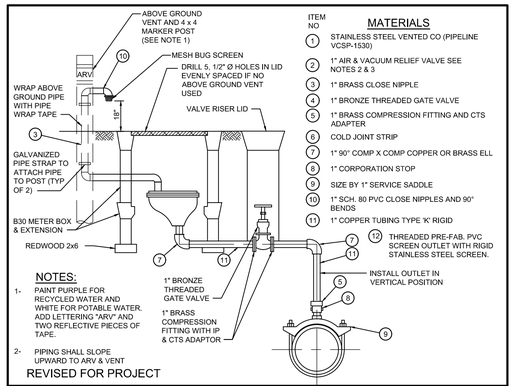
2- BUTTERFLY VALVE OPERATORS SHALL BE LOCATED ON THE LEFT-HAND SIDE OF THE VALVE (AT THE TEE OR CROSS), LOOKING THROUGH THE VALVE TOWARD THE PIPE END.

3- WHERE CONCRETE CROSS GUTTERS AT STREET INTERSECTIONS WILL INTERFERE WITH VALVE BOXES, THE PIPELINE SHALL BE MOVED TO A POSITION 7 FEET OFF THE CURB FACE TO CLEAR THE CROSS GUTTER.

4- VALVES TO BE LOCATED ADJACENT TO FITTINGS WHEREVER POSSIBLE.

5- VALVES BOLTED TO FITTINGS WILL NOT REQUIRE ANCHOR BLOCKS.

APPROVED BY DISTRICT ENGINEER		MARINA COAST WATER DISTRICT STANDARD PLAN	STANDARD
DATE 11/2007		VALVE & VALVE BOX INSTALLATION	W-7
			SHEET 1 OF 1



ITEM NO — MATERIALS

1. STAINLESS STEEL VENTED CO (PIPELINE VCSP-1530)
2. 1" AIR & VACUUM RELIEF VALVE SEE NOTES 2 & 3
3. 1" BRASS CLOSE NIPPLE
4. 1" BRONZE THREADED GATE VALVE
5. 1" BRASS COMPRESSION FITTING AND CTS ADAPTER
6. COLD JOINT STRIP
7. 1" 90° COMP X COMP COPPER OR BRASS ELL
8. 1" CORPORATION STOP
9. SIZE BY 1" SERVICE SADDLE
10. 1" SCH. 80 PVC CLOSE NIPPLES AND 90° BENDS
11. 1" COPPER TUBING TYPE 'K' RIGID

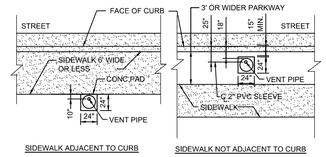
NOTES:

1- PAINT PURPLE FOR RECYCLED WATER AND WHITE FOR POTABLE WATER. ADD LETTERING "ARV" AND TWO REFLECTIVE PIECES OF TAPE.

2- PIPING SHALL SLOPE UPWARD TO ARV & VENT

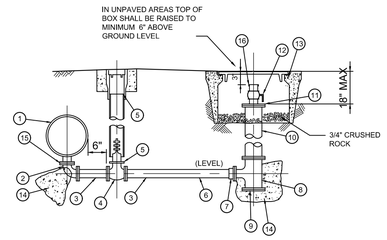
REVISED FOR PROJECT

VALVE ASSEMBLY LOCATION



REVISED FOR PROJECT

APPROVED BY DISTRICT ENGINEER		MARINA COAST WATER DISTRICT STANDARD PLAN	STANDARD
DATE 11/2007		1" AIR RELEASE & VACUUM RELIEF VALVE ASSEMBLY	W-10A
			SHEET 1 OF 1



MATERIALS

1. PIPE DIA. x 4" D.I. OR WSP TEE, FLANGED
2. 4" D.I. 90° ELL, FLG. x FLG.
3. 4" x AS REQ'D D.I. SPOOL
4. 4" RW GATE VALVE, FLG. x FLG. ONE VALVE REQUIRED FOR MAINS LESS THAN 24-INCHES IN DIAMETER. TWO VALVES ARE REQUIRED, AS SHOWN, FOR MAINS 24-INCHES IN DIAMETER AND LARGER.
5. VALVE AND VALVE BOX INSTALLATION PER M.C.W.D. STD. PLAN W-7
6. 4" x AS REQ'D FLG. x PE D.I. PIPE
7. 4" D.I. FLANGE COUPLING ADAPTER
8. 8" x 4" D.I. TEE
9. 8" D.I. BLIND FLANGE
10. 8" x AS REQ'D D.I. PIPE
11. 8" BLIND FLANGE W/ 2 1/2 " TAP
12. 2 1/2" BRASS NIPPLE AND 2 1/2" BALL VALVE, IP THREAD
13. 30" MINIMUM DIAMETER VALVE BOX
14. THRUST BLOCKS PER MCWD STD. PLAN W-13
15. INSULATING KIT SHALL BE PROVIDED AS REQUIRED BY CORROSION STUDY & DISTRICT.
16. 2 1/2" BRASS NIPPLE, I.P. THREAD X FH THREAD, WITH PROTECTIVE CAP

REVISED FOR PROJECT

APPROVED BY DISTRICT ENGINEER		MARINA COAST WATER DISTRICT STANDARD PLAN	STANDARD
DATE 11/2007		4 INCH LINE DRAIN BLOWOFF ASSEMBLY	W-11A
			SHEET 1 OF 1

(A) NEW WATER MAINS AND NEW SUPPLY LINES SHALL NOT BE INSTALLED IN THE SAME TRENCH AS, AND SHALL BE AT LEAST 10 FEET HORIZONTALLY FROM AND ONE FOOT VERTICALLY ABOVE, ANY PARALLEL PIPELINE CONVEYING:
(1) UNTREATED SEWAGE,
(2) PRIMARY OR SECONDARY TREATED SEWAGE,
(3) DISINFECTED SECONDARY-2.2 RECYCLED WATER (DEFINED IN SECTION 60301.220),
(4) DISINFECTED SECONDARY-23 RECYCLED WATER (DEFINED IN SECTION 60301.225), AND
(5) HAZARDOUS FLUIDS SUCH AS FUELS, INDUSTRIAL WASTES, AND WASTEWATER SLUDGE.
(B) NEW WATER MAINS AND NEW SUPPLY LINES SHALL BE INSTALLED AT LEAST 4 FEET HORIZONTALLY FROM, AND ONE FOOT VERTICALLY ABOVE, ANY PARALLEL PIPELINE CONVEYING:
(1) DISINFECTED TERTIARY RECYCLED WATER (DEFINED IN SECTION 60301.230), AND
(2) STORM DRAINAGE.
(C) NEW SUPPLY LINES CONVEYING RAW WATER TO BE TREATED FOR DRINKING PURPOSES SHALL BE INSTALLED AT LEAST 4 FEET HORIZONTALLY FROM, AND ONE FOOT VERTICALLY BELOW, ANY WATER MAIN.
(D) IF CROSSING A PIPELINE CONVEYING A FLUID LISTED IN SUBSECTION (A) OR (B), A NEW WATER MAIN SHALL BE CONSTRUCTED NO LESS THAN 45-DEGREES TO AND AT LEAST ONE FOOT ABOVE THAT PIPELINE. NO CONNECTION JOINTS SHALL BE MADE IN THE WATER MAIN WITHIN EIGHT HORIZONTAL FEET OF THE FLUID PIPELINE.
(E) THE VERTICAL SEPARATION SPECIFIED IN SUBSECTIONS (A), (B), AND (C) IS REQUIRED ONLY WHEN THE HORIZONTAL DISTANCE BETWEEN A WATER MAIN AND PIPELINE IS LESS THAN TEN FEET.
(F) NEW WATER MAINS SHALL NOT BE INSTALLED WITHIN 100 HORIZONTAL FEET OF THE NEAREST EDGE OF ANY SANITARY LANDFILL, WASTEWATER DISPOSAL POND, OR HAZARDOUS WASTE DISPOSAL SITE, OR WITHIN 25 HORIZONTAL FEET OF THE NEAREST EDGE OF ANY CESSPOOL, SEPTIC TANK, SEWAGE LEACH FIELD, SEEPAGE PIT, UNDERGROUND HAZARDOUS MATERIAL STORAGE TANK, OR GROUNDWATER RECHARGE PROJECT SITE.
(G) THE MINIMUM SEPARATION DISTANCES SET FORTH IN THIS SECTION SHALL BE MEASURED FROM THE NEAREST OUTSIDE EDGE OF EACH PIPE BARREL.
(H) WITH STATE BOARD APPROVAL, NEWLY INSTALLED WATER MAINS MAY BE EXEMPT FROM THE SEPARATION DISTANCES IN THIS SECTION, EXCEPT SUBSECTION (F), IF THE NEWLY INSTALLED MAIN IS:
(1) LESS THAN 1320 LINEAR FEET,
(2) REPLACING AN EXISTING MAIN, INSTALLED IN THE SAME LOCATION, AND HAS A DIAMETER NO GREATER THAN SIX INCHES MORE THAN THE DIAMETER OF THE MAIN IT IS REPLACING, AND
(3) INSTALLED IN A MANNER THAT MINIMIZES THE POTENTIAL FOR CONTAMINATION, INCLUDING, BUT NOT LIMITED TO:
(A) SLEEVING THE NEWLY INSTALLED MAIN, OR
(B) UTILIZING UPGRADED PIPING MATERIAL.

1

WATER MAIN SEPARATION REQUIREMENTS

California Water Boards

State Water Resources Control Board
Division of Drinking Water

Edmund G. Brown Jr., Governor
Matthew Rodriquez, Secretary for Environmental Protection

December 14, 2017

Separation of Water Mains and Non-Potable Pipelines – Requests for Alternatives to the Waterworks Standards

Dear Public Water System Owners and Operators:

This letter supersedes prior guidance regarding the separation of water mains and non-potable pipelines, including Guidance Memo 2003-02, dated October 16, 2003. Guidance Memo 2003-02 and previous versions should be discarded.

The California Waterworks Standards (California Code of Regulations (CCR), Title 22, Division 4, Chapter 16, Section 64572) establish criteria for the separation of new water mains from non-potable pipelines. Public water systems should ensure that these distances are met, whenever feasible, for all new construction. The Division of Drinking Water (Division) recognizes that certain conditions may call for the installation of pipelines with less separation distance than what is required by the regulations. In these situations, the water system may propose an alternative pursuant to CCR, Title 22, Section 64551.100:

§64551.100. Waivers and Alternatives.
(a) A water system that proposes to use an alternative to a requirement in this chapter shall:
(1) Demonstrate to the State Board that the proposed alternative would provide at least the same level of protection to public health; and
(2) Obtain written approval from the State Board prior to implementation of the alternative.

In proposing an alternative to the Waterworks Standards, water systems should observe the following:

- The water system must accept responsibility for the adequacy of the proposed alternative. The Division may require a written statement, signed by the water system's management, certifying that the proposed alternative adequately protects public health.
- In most circumstances, the Division cannot offer technical assistance with pipeline or infrastructure design. The water system proposing an alternative must demonstrate adequate expertise on the part of its own personnel or its hired consultants.
- The water system should describe how the proposed alternative provides at least the same level of protection to public health as the minimum separation distances prescribed in the regulation.
- While exorbitant cost may present a hardship in meeting the regulatory separation requirements and can be considered, public health must be prioritized above construction costs in determining an acceptable alternative.

Felicia Marcus, Chair | Thomas Howard, Executive Director
1001 I Street, Sacramento, CA 95814 | Mailing Address: P.O. Box 100, Sacramento, Ca 95812-0100 | www.waterboards.ca.gov

WATER MAIN SEPARATION REQUIREMENTS

Public Water Systems - 2 - December 14, 2017

The Division has prepared an application checklist that may be used by water systems in proposing an alternative to the Waterworks Standards (Enclosure). The purpose of the checklist is to ensure that the Division has sufficient information to evaluate the proposal. **The water system may submit the information in a different format from the checklist, provided that the submittal provides adequate information.** The checklist may also be used to provide written certification that the proposed alternative adequately protects public health.

If you have any questions, please contact the Division office that oversees your water system.

Sincerely,

Darrin Polhemus, P.E.
Deputy Director
Division of Drinking Water

Enclosure: Waterworks Standards Main Separation Alternative Request Example Checklist

WATER MAIN SEPARATION REQUIREMENTS

REV	DATE	BY	DESCRIPTION
2	12-09-19	JPM	CHANGED PER ADDENDUM NO. 3
1	11-15-19	JPM	CHANGED PER ADDENDUM NO. 1

DESIGNED JPM
DRAWN TLR
CHECKED
DATE OCTOBER 2019

REGISTERED PROFESSIONAL ENGINEER — JONATHON P. MARSHALL — No. 73265 — CIVIL — STATE OF CALIFORNIA

Digitally signed by Jonathon P. Marshall
Contact Info: Carollo Engineers,,Inc.
Date: 2019.12.11 09:18:04 -08'00'

carollo

MARINA COAST WATER DISTRICT

Marina Coast Water District

REGIONAL URBAN WATER AUGMENTATION PROJECT
RECYCLED WATER DISTRIBUTION MAINS
TYPICALS
AGENCY TYPICAL DETAILS - 3

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7568C.10
DRAWING NO. T03
SHEET NO. 8 OF 66

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PROJECT NO. 7568C10
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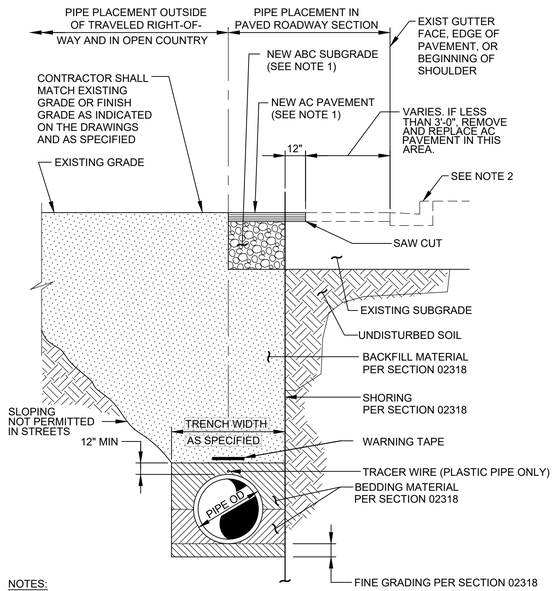
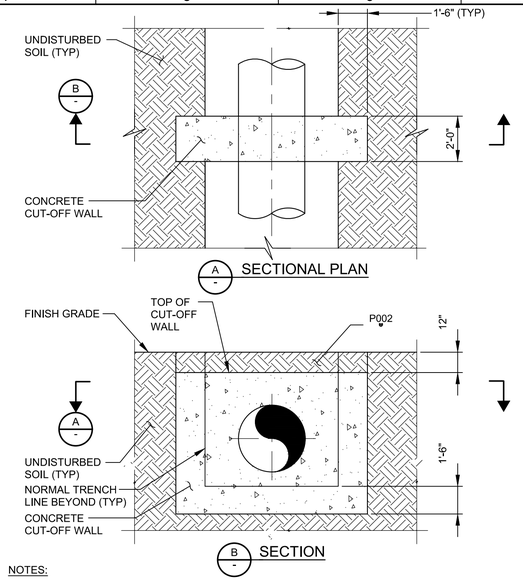


NOTES:

1. ASPHALT CEMENT AND AGGREGATE BASE COURSE PER SECTION 01140 AND MARINA DETAIL SD-1 AND SEASIDE DETAIL S601.
2. CURB, GUTTER, AND SIDEWALK REPLACEMENT PER MARINA DETAIL ST-1 AND ST-2 AND SEASIDE DETAIL S-102

P002 TYP — PIPE INSTALLATION AND PAVEMENT REPLACEMENT

N 09/06/13

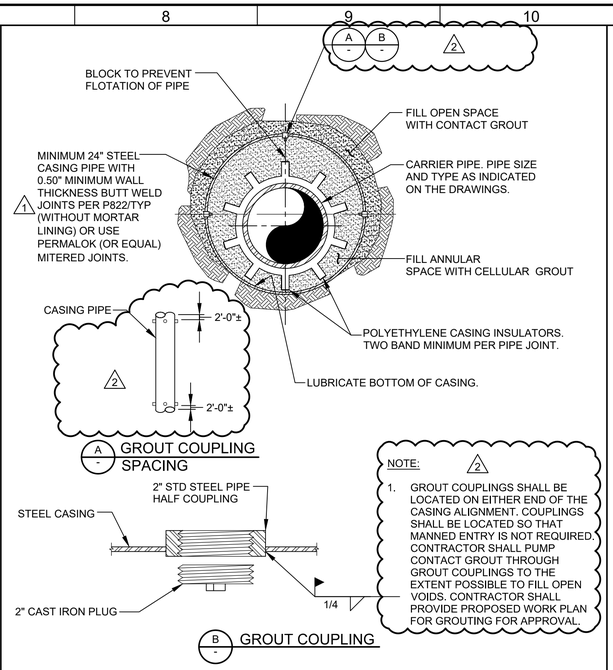


NOTES:

1. BRACE CUT-OFF WALL UNTIL BACKFILL IS PLACED.
2. KEEP BACKFILL DEPTH EQUAL ON BOTH SIDES OF CUT-OFF WALL AS TRENCH IS BACKFILLED.
3. DO NOT LOCATE PIPE JOINTS IN CUT-OFF WALL.
4. CLEAN PIPE WALL WITHIN CUTOFF WALL FOR GOOD BOND.

P014 TYP — PIPE TRENCH CONCRETE CUT-OFF WALL

N 03/24/15

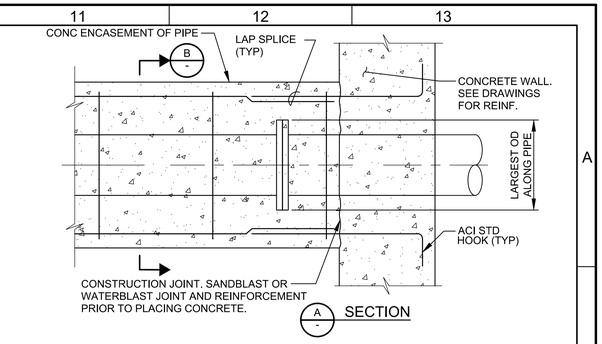


NOTE: 2

1. GROUT COUPLINGS SHALL BE LOCATED ON EITHER END OF THE CASING ALIGNMENT. COUPLINGS SHALL BE LOCATED SO THAT MANNED ENTRY IS NOT REQUIRED. CONTRACTOR SHALL PUMP CONTACT GROUT THROUGH GROUT COUPLINGS TO THE EXTENT POSSIBLE TO FILL OPEN VOIDS. CONTRACTOR SHALL PROVIDE PROPOSED WORK PLAN FOR GROUTING FOR APPROVAL.

P030 TYP — PIPE IN STEEL CASING - GROUT FILL

R 03/01/10

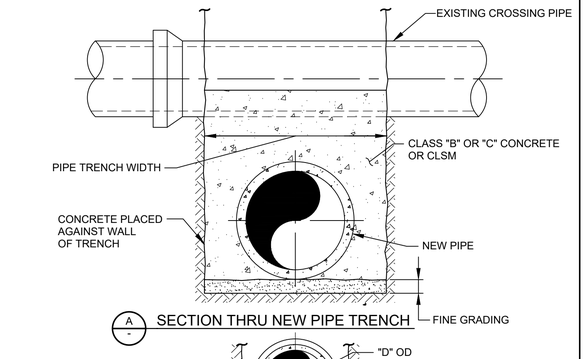


NOTE:

1. TYPE OF PIPE AND TYPE OF PIPE JOINT OR COUPLER AS INDICATED ON THE DRAWINGS.

P040 TYP — CONCRETE ENCASEMENT OF PIPE

R 03/24/15

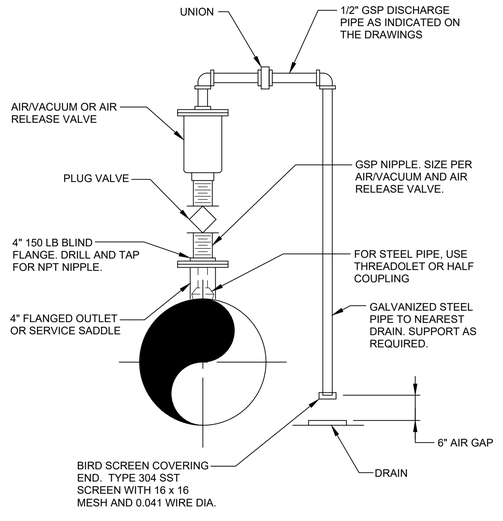


NOTES:

1. REQUIRED WHERE EXISTING PIPE IS GREATER THAN 2".

P048 TYP — PIPE SUPPORT ACROSS TRENCH

03/02/15

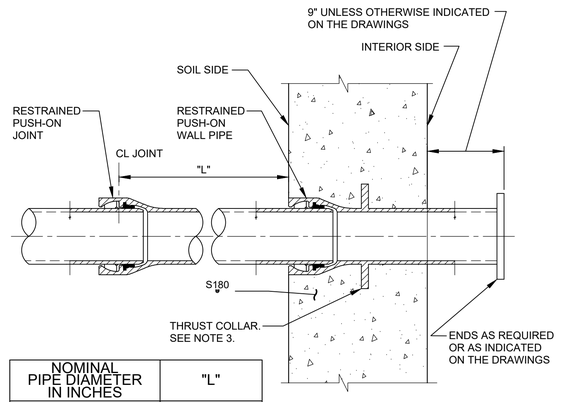


NOTES:

1. VALVE SIZE SHALL BE AS INDICATED ON THE DRAWINGS.
2. SERVICE TAP AND PLUG VALVE SHALL MATCH VALVE INLET SIZE.

P240 TYP — AIR VACUUM AND AIR RELEASE FOR 3" AND SMALLER VALVE ASSEMBLY

03/01/10



NOMINAL PIPE DIAMETER IN INCHES	"L"
LESS THAN 12"	5'-0"
GREATER THAN 12"- 18"	6'-6"
GREATER THAN 18"- 24"	7'-9"
GREATER THAN 24"- 36"	12'-9"
GREATER THAN 36"	STANDARD PIPE LENGTH

NOTES:

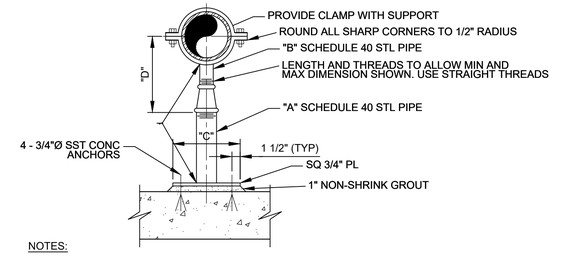
1. FLEXIBLE CONNECTION IS DESIGNED TO ACCOMMODATE SETTLEMENT AND EARTHQUAKE MOVEMENT.
2. PIPES SHALL BE INSTALLED STRAIGHT WITHOUT HORIZONTAL OR VERTICAL OFFSET. DO NOT USE JOINT ANGULAR DEFLECTION TO MAKE UP FOR MISALIGNED PIPE.
3. WALL PIPE WITH WEEP RING (THRUST COLLAR) SHALL BE CAPABLE OF RESISTING THRUST.

P342 TYP — RESTRAINED DIP FLEXIBLE CONNECTION AT WALL PENETRATION

N 07/31/08

ADJUSTABLE PIPE SADDLE SUPPORT SCHEDULE (INCHES)

SIZE OF SUPPORTED PIPE **	PIPE SIZE "A"	PIPE SIZE "B"	"C"	"D" MINIMUM	"D" MAXIMUM
2 1/2 *	2 1/2	1 1/2	12	8	13
3	2 1/2	1 1/2	12	8 1/2	13 1/2
3 1/2	2 1/2	1 1/2	12	8 1/2	13 1/2
4	3	2 1/2	12	9 1/2	14
6	3	2 1/2	12	10 1/2	15 1/2
8	3	2 1/2	12	11 1/2	16 1/2
10	3	2 1/2	12	13 1/2	18 1/2
12	3	2 1/2	12	15	19 1/2
14	4	3	12	16 1/2	20 1/2
16	4	3	12	17 1/2	22 1/2
18	6	3 1/2	14	19 1/2	24
20	6	3 1/2	14	21	25 1/2
24	6	4	14	23 1/2	28 1/2
30	6	4	14	27	31 1/2
32	6	4	14	28 1/2	32 1/2
36	6	4	14	30 1/2	34 1/2



NOTES:

1. HOT-DIP GALVANIZED SUPPORT AFTER FABRICATION.
2. * = USE 2 1/2" SUPPORTS FOR PIPES LESS THEN 2 1/2"Ø.
3. ** = NOMINAL PIPE SIZE.

P624 TYP — ADJUSTABLE PIPE SUPPORT

NS 09/04/13

REV	DATE	BY	DESCRIPTION
2	12-09-19	JPM	CHANGED PER ADDENDUM NO. 3
1	11-15-19	JPM	CHANGED PER ADDENDUM NO. 1

DESIGNED JPM
DRAWN TLR
CHECKED
DATE OCTOBER 2019

REGISTERED PROFESSIONAL ENGINEER JONATHON P. MARSHALL No. 73265 CIVIL STATE OF CALIFORNIA

Digitally signed by Jonathon P. Marshall
Contact Info: Carollo Engineers, Inc.
Date: 2019.12.11 09:18:54 -08'00'

carollo

MARINA COAST WATER DISTRICT

Marina Coast Water District

REGIONAL URBAN WATER AUGMENTATION PROJECT

RECYCLED WATER DISTRIBUTION MAINS

TYPICAL

PIPING TYPICAL DETAILS - 1

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7568C.10
DRAWING NO. TP01
SHEET NO. 11 OF 66

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PROJECT NO. 7568C10
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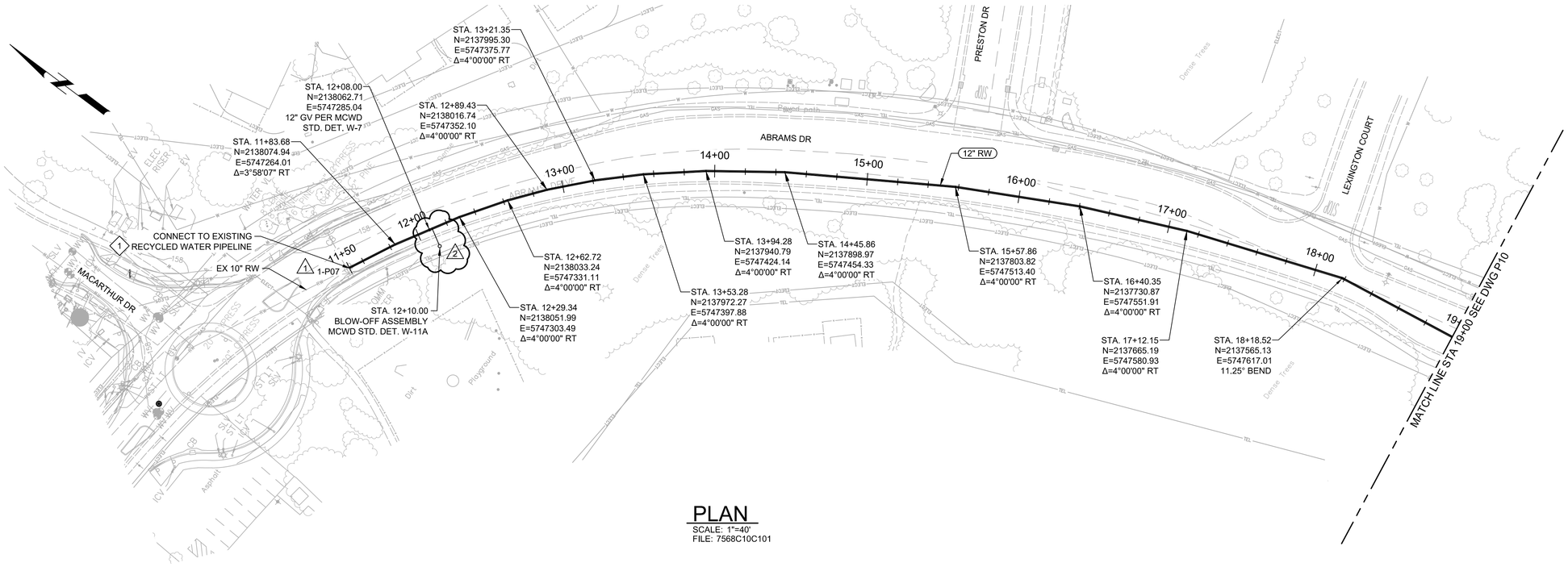
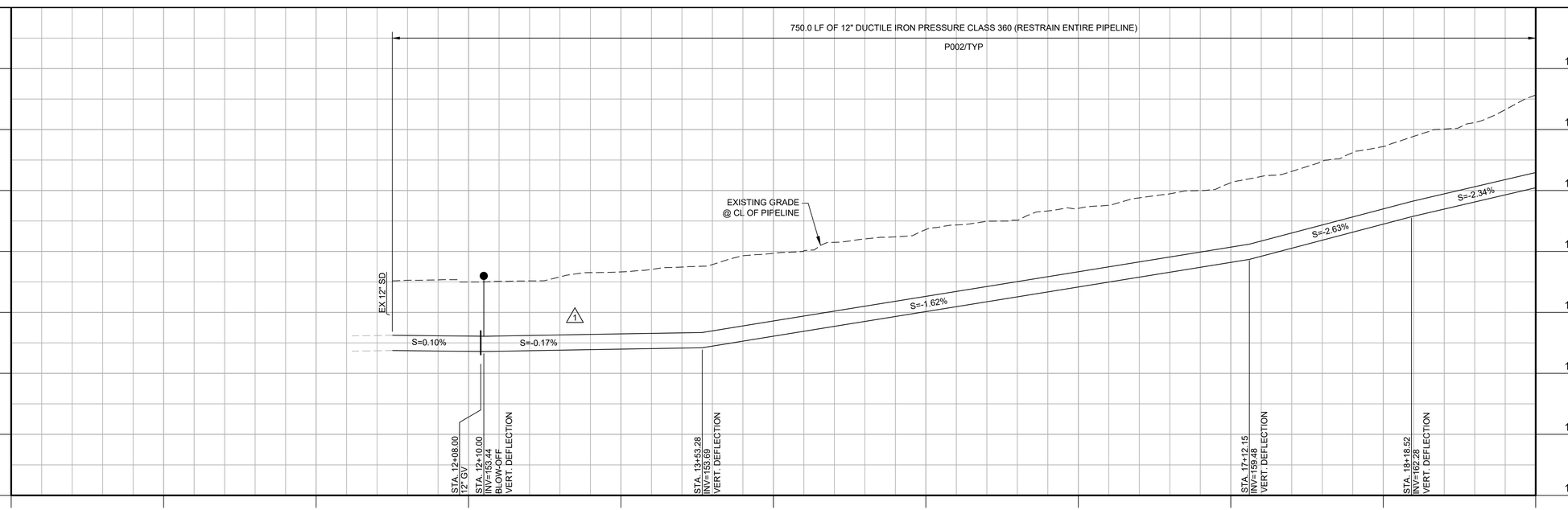


PLAN

SCALE: 1"=40'
FILE: 7568C10C101



PROFILE

HORIZ SCALE: 1"=40'
VERT SCALE: 1"=4'
FILE: 7568C10C101

GENERAL NOTES:

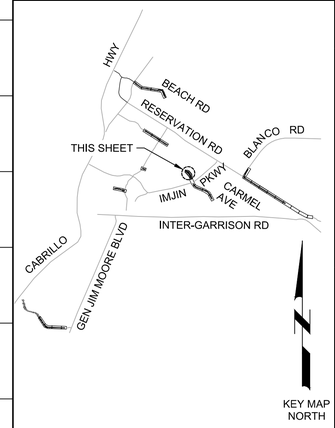
1. CONSTRUCT PIPELINE WITH A MINIMUM 4' OF COVER UNLESS SPECIFICALLY CALLED OUT TO BE LESS THAN 4'.

KEY NOTES:

1. APPROXIMATE TIE-IN LOCATION. EXISTING PIPELINE IS APPROXIMATELY 3'-6" DEEP. CONTRACTOR TO POTHOLE TO VERIFY. REMOVE EXISTING PIPE CAP AND CONNECT TO THE EXISTING PIPE WITH 10" X 12" MECHANICAL JOINT REDUCER WITH MECHANICAL WEDGE ACTION JOINT RESTRAINTS.

811 Know what's **below.** **Call** before you dig.

KEY MAP



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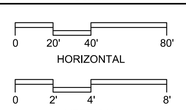


REV	DATE	BY	DESCRIPTION
2	12-09-19	JPM	CHANGED PER ADDENDUM NO. 3
1	11-15-19	JPM	CHANGED PER ADDENDUM NO. 1

DESIGNED JPM/KMM
DRAWN AL/BWH
CHECKED
DATE OCTOBER 2019

REGISTERED PROFESSIONAL ENGINEER JONATHON P. MARSHALL No. 73265 CIVIL STATE OF CALIFORNIA

Digitally signed by Jonathon P. Marshall
Contact Info: Carollo Engineers, Inc.
Date: 2019.12.11 09:18:04-08'00'

carollo

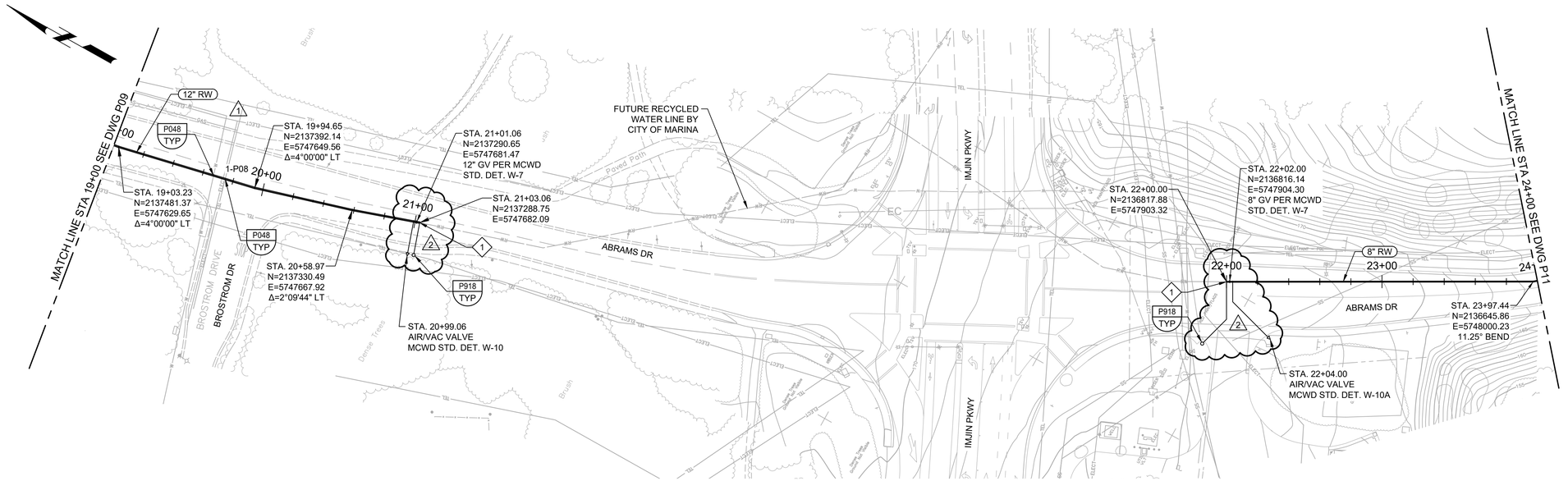
MARINA COAST WATER DISTRICT

Marina Coast Water District

REGIONAL URBAN WATER AUGMENTATION PROJECT
RECYCLED WATER DISTRIBUTION MAINS
CIVIL DISTRIBUTION MAIN
ABRAMS DRIVE
STA 11+50 TO 19+00

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

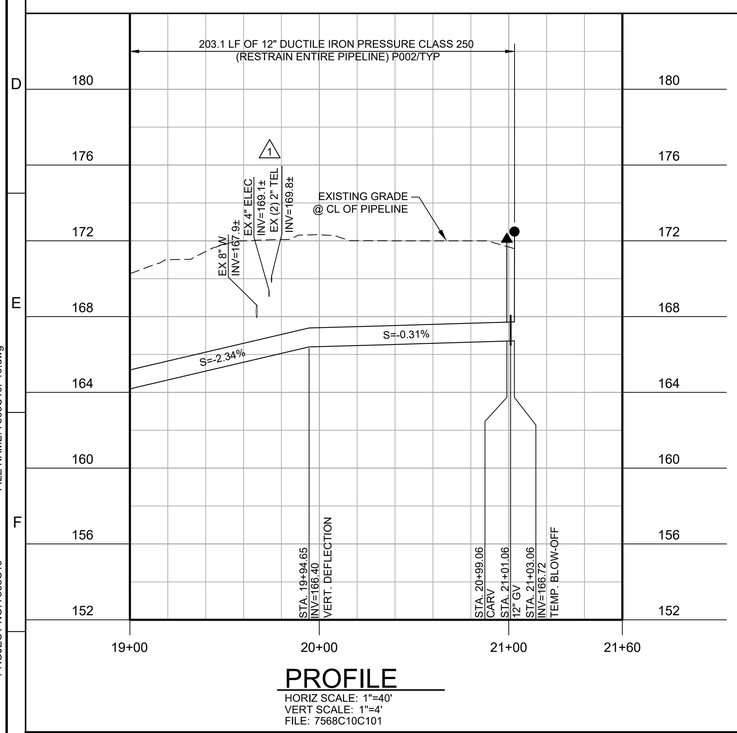
JOB NO. 7568C.10
DRAWING NO. P09
SHEET NO. 31 OF 66



PLAN

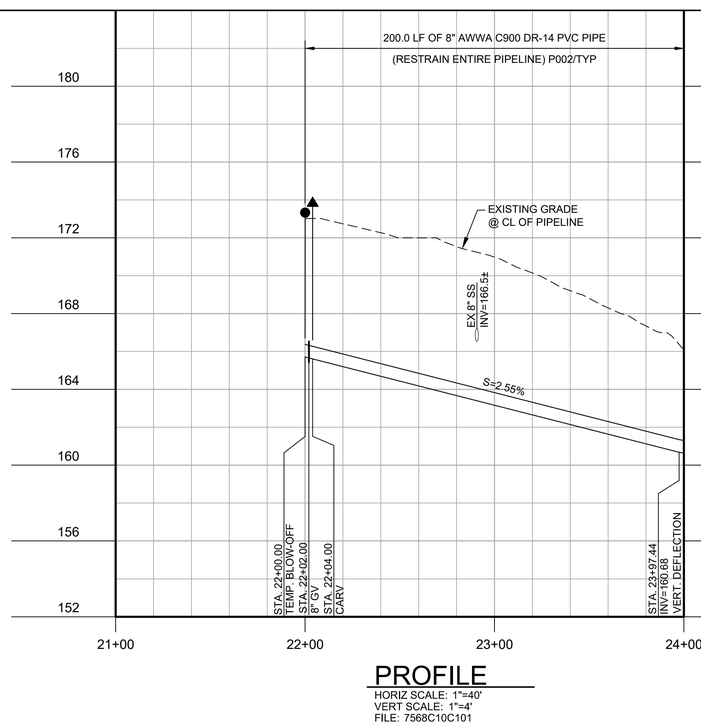
SCALE: 1"=40'
FILE: 7568C10C101

BID ALTERNATE A



PROFILE

HORIZ SCALE: 1"=40'
VERT SCALE: 1"=4'
FILE: 7568C10C101



PROFILE

HORIZ SCALE: 1"=40'
VERT SCALE: 1"=4'
FILE: 7568C10C101

GENERAL NOTES:

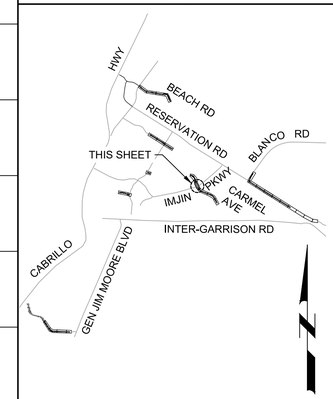
1. CONSTRUCT PIPELINE WITH A MINIMUM 4' OF COVER UNLESS SPECIFICALLY CALLED OUT TO BE LESS THAN 4'.
2. DEFLECTIONS (CHANGES IN DIRECTION) OF PVC PIPE SHALL BE ACHIEVED BY BENDING ONE OR MORE PIPE BARRELS. DO NOT EXCEED THE ALLOWABLE JOINT OR PIPE BARREL DEFLECTION PER THE SPECIFICATIONS.

KEY NOTES:

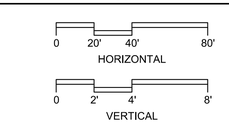
1. INSTALL TEMPORARY CAP AND BLOW-OFF.

811
Know what's below.
Call before you dig.

KEY MAP



SCALE



REV	DATE	BY	DESCRIPTION
2	12-09-19	JPM	CHANGED PER ADDENDUM NO. 3
1	11-15-19	JPM	CHANGED PER ADDENDUM NO. 1

DESIGNED JPM/KMM
DRAWN AL/BWH
CHECKED
DATE OCTOBER 2019

REGISTERED PROFESSIONAL ENGINEER
JONATHON P. MARSHALL
No. 73265
CIVIL
STATE OF CALIFORNIA

Digitally signed by Jonathon P. Marshall
Contact Info: Carollo Engineers, Inc.
Date: 2019.12.11 09:18:54-08'00'

carollo

MARINA COAST WATER DISTRICT

Marina Coast Water District

REGIONAL URBAN WATER AUGMENTATION PROJECT
RECYCLED WATER DISTRIBUTION MAINS
CIVIL DISTRIBUTION MAIN
ABRAMS DRIVE
STA19+00 TO 21+03.06 AND STA 22+00 TO 24+00

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7568C.10
DRAWING NO. P10
SHEET NO. 32 OF 66

Plot Date: 12/6/2019 2:17:56 PM
FILE NAME: 7568C10P10.dwg
PROJECT NO. 7568C10
LAST SAVED BY: bhawes