

ROSAMOND COMMUNITY SERVICES DISTRICT

Rosamond, California

TECHNICAL SPECIFICATIONS

Tank 3 Recoat Project

June 2026



PROJECT MANUAL

Tank 3 Recoat Project

Bid Opening Date
TUESDAY, JULY 14, 2026 at 2:00 P.M.



Rosamond Community Services District

RCSD Project Number: 12512
Approved: Board of Directors
Required Contractor's License Classification: Class A
Construction Estimate: \$1,720,000

Rosamond Community Services District
3179 35th Street West
Rosamond, CA 93560

MANDATORY PRE-BID JOBWALK

DATE: THURSDAY, JUNE 25, 2026, at 10:00 A.M.

**INTERESTED CONTRACTORS SHALL ASSEMBLE AT
THE ROSAMOND COMMUNITY SERVICES DISTRICT
OFFICE LOCATED AT**

**3179 35TH Street West,
Rosamond, CA 93560**

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DOCUMENT 00 0105

CERTIFICATIONS PAGE

PROJECT TITLE: Tank 3 Recoat Project

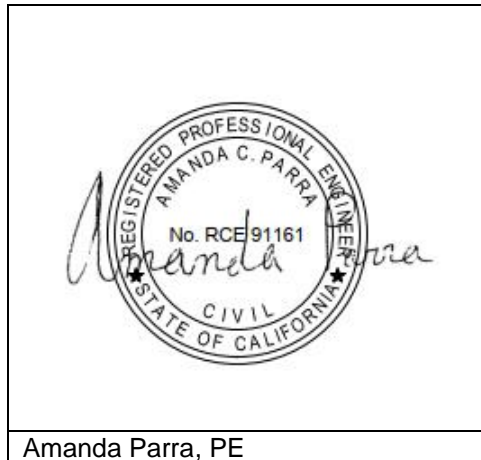
LOCATION: Road north of Felsite Ave and West of 30th Street,
Rosamond, CA 93560

RCSD PROJECT NUMBER(S): 12512

OWNER: ROSAMOND COMMUNITY SERVICES DISTRICT
3179 35TH STREET WEST
ROSAMOND, CA 93560
TEL: 661-256-3411
FAX: 661-256-2557

OWNER'S PROJECT MANAGER: General Manager or its Designee

CONSULTANT/PROJECT ENGINEER: AECOM Technical Services, Inc.
5001 E. Commercenter Drive, Suite 100
Bakersfield, CA 93309



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DOCUMENT 00 0110

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**DOCUMENT 00 1113
NOTICE TO CONTRACTORS**

ARTICLE 1 – INVITATION TO BID

- 1.01 Notice Inviting Bids:** Rosamond Community Services District (hereinafter “Owner”) will receive sealed Bids at the Rosamond Community Services District office, **3179 35th Street West, Rosamond, California 93560** until **2:00 p.m. on Tuesday, July 14, 2026**, for the following public work:

TANK 3 RECOAT PROJECT

Project Description: The project, in general, consists of **refurbishment of Tank 3 interior and exterior coatings. The Tank is located just west of 30th Street and north of Felsite Ave. The repair includes but not limited of Tank Recoating and Repair or Replacement of corroded equipment. The project also includes modification to inlet and suction manifold piping located at the Tank 3 site.**

Work shall be completed within **One-Hundred and Twenty (120) Working Days** from the Notice to Proceed.

- 1.02 Procurement of Bidding Documents:** Interested Bidders shall access the bid documents via the link at **<https://www.rosamondcsd.com/engineering-planning>**. It is the sole responsibility of the Bidder to contact the Owner at 661-256-3411 to verify that all addenda have been received. Addenda may be obtained from the Owner's website or from the Owner. Bid Proposals that do not contain a signed cover sheet for all addenda may, in the sole discretion of the Owner, be rejected as non-responsive.

- 1.03 Instructions:** Bidders shall refer to Document 00 2113 Instructions to Bidders for the required documents and items to be submitted in a sealed envelope. Sealed proposals will be received on the date and time indicated in Paragraph 1.01, at the following location:

Delivered in person, by courier service or by mail to the Rosamond Community Services District, 3179 35th Street West, Rosamond, CA 93560.

It is the sole responsibility of the Bidder to arrive at the Owner's lobby at least ten (10) minutes prior to the bid receipt deadline to receive a test time stamp. The time stamp clock in the main lobby of the Owner shall be the official time. Any bid received at or after **2:00 p.m.** will be returned unopened. Soon after **2:00 p.m.** the bids will be publicly opened and read in the Board Chambers at the Owner's address listed above.

- 1.04 Mandatory Pre-Bid Site Visit:** Owner will conduct a **Mandatory Pre-Bid Conference and Site Visit** at:

**Rosamond Community Services District Office
3179 35th Street West
Rosamond, CA
on
Thursday June 25, 2026, at 10:00 a.m.**

- 1.05 Bid Preparation Cost:** Bidders are solely responsible for the cost of preparing their Bids.

- 1.06 Reservation of Rights:** Owner specifically reserves the right, in its sole discretion, to reject any or all Bids, to re-bid, or to waive inconsequential defects in bidding not involving time, price or quality of the work.

ARTICLE 2 – LEGAL REQUIREMENTS

- 2.01 Required Contractor’s License(s):** A California “A” contractor’s license is required to bid this contract. Joint ventures must secure a joint venture license prior to award of this Contract.
- 2.02 Substitution of Securities:** Owner will permit the successful bidder to substitute securities for any retention monies withheld to ensure performance of the contract, as set forth in Document 00 6290 Escrow Agreement For Security Deposits In Lieu Of Retention and incorporated herein in full by this reference, in accordance with Section 22300 of the California Public Contract Code.
- 2.03 Prevailing Wage Laws:** Pursuant to Part 7 of Division 2 of the California Labor Code (Section 1720 et seq.) the Contractor shall pay not less than the prevailing rate of wages to workers on this project as determined by the Director of the California Department of Industrial Relations. The Director's schedule of prevailing rates is on file and open for inspection at the Rosamond Community Services District, 3179 35th Street West, Rosamond CA, 93560, and is incorporated herein by this reference.

This project may be subject to monitoring and enforcement by the Department of Industrial Relations (DIR), including the obligation to submit certified payroll records directly to the DIR Compliance Monitoring Unit (CMU) at least monthly in a format prescribed by the Labor Commissioner. The contractor must post job site notices as prescribed by DIR regulation.

- 2.04 Required Registration with the State of California Department of Industrial Relations:** Pursuant to California Labor Code 1725.5, all contractors and subcontractors must be registered with the Department of Industrial Relations (DIR) in order to be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any public work contract. Detailed information about contractor’s responsibilities and online registration may be obtained on the State of California Department of Industrial Relations, Public Works website, <http://www.dir.ca.gov/Public-Works/PublicWorks.html>
- 2.05** For projects without Federal Funding, each Bidder must be licensed, as required by law, at the time the bid is submitted. For projects with Federal Funding, each Contractor must be licensed at the time the Contract is awarded.

END OF DOCUMENT

**DOCUMENT 00 2113
INSTRUCTIONS TO BIDDERS**

Bids are requested by the Rosamond Community Services District ("hereinafter "Owner"), for a general construction contract, or work described in general, as set forth in Document 00 1113 (Notice to Contractors), and the following additional terms.

ARTICLE 1 - PROCEDURES FOR SUBMISSION OF BIDS

1.01 Required Pre-Bid Conference and Site Visit

- A. Owner may conduct Pre-Bid Conference and Site Visit at the date, time and location indicated in Document 00 1113 (Notice to Contractors), to consider such matters as Bidders may request and perform a Site Visit immediately following, at the Site. If the Notice to Contractors specifies a required Site Visit, Bidders must attend Pre-Bid Conference and Site Visit and sign an attendance roster as a condition to bidding.
- B. The Site Visit may be the Bidders' only opportunity to investigate conditions at the Site. Other Pre-Bid Site Visits may be scheduled at Owner's sole discretion, depending on staff availability.

1.02 Required Pre-Bid Investigations

- A. Prior to submission of Bid, Bidder must conduct a careful examination of Bidding Documents and understand the nature, extent, and location of Work to be performed. Refer to Document 00 7200 (General Conditions) on required pre-bid investigations.

1.03 Bidder Questions and Answers

- A. Bidders must direct all questions about the meaning or intent of Bidding Documents to Owner in writing. Interpretations or clarifications considered necessary by Owner in response to such questions will be issued by written Addenda. It is the sole responsibility of the Bidder to contact Owner at 661-256-3411 to verify that all addenda have been received. Addenda will only be available from the Owner's website. The owner may not answer questions received less than ten Calendar Days prior to the date for opening Bids.
- B. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect, and Bidders shall not rely on oral statements.

1.04 Addenda

- A. Addenda may also be issued to modify the Bidding Documents as deemed advisable by Owner. It is the sole responsibility of the Bidder to contact Owner at 661-256-3411, to verify that all addenda have been received. Bid Proposals that do not contain a signed cover sheet for all addenda may, in the sole discretion of the Owner, be rejected as non-responsive. Addenda may also be acknowledged by number in Document 00 4100 (Bid Form). All addenda shall be part of the Contract Documents. A complete listing of Addenda may be secured from Owner.

ARTICLE 2 - RECEIPT OF BIDS:

2.01 Date and Time

- A. Sealed Bids will be received by the Owner until the date and time indicated in Document 00 1113 (Notice to Contractors). All Bid envelopes will be time-stamped to reflect their submittal time. Owner shall reject all Bids received after the specified time and will return such Bids to Bidders unopened. Bidders must submit Bids in accordance with this Document 00 2113.

2.02 Bid Submission:

- A. Owner will receive Bids in a sealed envelope, containing the required items described herein.
- B. Bidders should mark their Bid envelope using the name, address, identifying information and project number, indicated in Document 00 1113 (Notice to Contractors).

2.03 Required Contents of Bid Submittal Envelope

- A. Document 00 4100 (Bid Form). Bidders must submit Bids on Document 00 4100 (Bid Form) in accordance with the provisions of Document 00 4100. Bidders must complete all Bid items and supply all information required by Bid documents and specifications.
- B. Document 00 4411 (Bond Accompanying Bid). Bidders must submit Document 00 4411 (Bond Accompanying Bid) accompanied by a cashier's check, certified check (certified without qualification and drawn on a solvent bank of the State of California or a National Bank doing business in the State of California) or completed form of Document 00 4411 of not less than 10% of the base Bid, payable to Owner and completed in accordance with the provisions of Document 00 4411.
- C. Document 00 4412 (Bidder Registration and Experience Form). Bidders must submit Document 00 4412 (Bidder Registration and Experience Form), completed in accordance with the provisions of Document 00 4412.
- D. Document 00 4430 (Subcontractors List). Bidders must submit Document 00 4430 (Subcontractors List) completed in accordance with the provisions of Document 00 4430. The Subcontractors List must include the names and addresses of all subcontractors for those subcontractors who will perform any portion of work, including labor, rendering of service, or specially fabricating and installing a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in excess of one half of one percent (0.5%) of the total Bid amount. Any violation of this requirement may result in a Bid being deemed non-responsive and not being considered.
- E. Document 00 4452 (Non-Collusion Affidavit). Bidders must submit Document 00 4452 (Non-Collusion Affidavit) completed in accordance with the provisions of Document 00 4452.
- F. Document 00 4455 (Bidder Certifications). Bidders must submit Document 00 4455 (Bidder Certification) completed in accordance with the provisions of Document 00 4455.
- G. Document 00 4453 (Iran Contracting Act Certification). Bidders must submit Document 00 4453 (Iran Contracting Act Certification) in accordance with Public Contract Code Sections 2200 et seq.

ARTICLE 3 - BID OPENING AND EVALUATION

3.01 Determination of Apparent Low Bidder

- A. Owner will open each Bidders' Envelope at the time and place indicated in Document 00 1113 (Notice to Contractors), initially evaluate them for bid bond, subcontractor listing and addenda. Further evaluation will follow, and notification of the "Apparent Low Responsive, Responsible Bidder" will be recommended to the Board of Directors during an open meeting.
- B. If Apparent Low Bidder is determined to be non-responsive or non-responsible, then Owner may proceed to the next Apparent Low Bidder's Bid pursuant to any procedures determined in its reasonable discretion, and proceed for all purposes as if this Apparent Low Bidder were the original Apparent Low Bidder.

3.02 Evaluation of Bids

- A. Bids must be full, complete, clearly written and using the required forms. Bidders shall make any change in the Bid by crossing out the original entry, entering and initialing the new entry. Bidder's failure to submit all required documents strictly as required entitles Owner to reject the Bid as non-responsive. All Bidders must submit Bids containing each of the fully executed documents supplied in this Project Manual.
- B. In evaluating Bids, Owner will consider Bidders' qualifications, whether or not the Bids comply with the prescribed requirements, unit prices, and other data, as may be requested in Document 00 4100 (Bid Form) or prior to the Notice of Award.

- C. Owner may conduct reasonable investigations and reference checks of Bidder and other persons and organizations as Owner deems necessary to assist in the evaluation of any Bid and to establish Bidder's responsibility, qualifications, financial ability and ability to perform the Work in accordance with the Contract Documents to Owner's satisfaction within the prescribed time. Submission of a Bid constitutes Bidder's consent to the foregoing.
- D. Owner shall have the right to consider information provided by sources other than Bidder. Owner shall also have the right to communicate directly with Bidder's surety regarding Bidder's bonds.
- E. 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. Discrepancies between written words and figures will be resolved in favor of the words.
- F. Bids shall be deemed to include the written responses of the Bidder to any questions or requests for information of Owner made as part of Bid evaluation process after submission of Bid.

3.03 Reservation of Rights

- A. Owner reserves the right to reject any or all nonconforming, non-responsive, unbalanced, or conditional Bids, and to reject the Bid of any Bidder as non-responsive as a result of any error or omission in the Bid, or if Owner believes that it would not be in the best interest of Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by Owner. For purposes of this paragraph, an "unbalanced Bid" is one having nominal prices for some Bid items and enhanced prices for other Bid items.
- B. Owner may retain Bid securities and Bid bonds of other than the Apparent Low Bidder for a period of 90 Calendar Days after award or full execution of the Contract, whichever first occurs.
- C. Owner may reject any or all Bids and waive any informalities or minor irregularities in the Bids. Owner also reserves the right, in its discretion, to reject any or all Bids and to re-Bid the Project.

ARTICLE 4 - MANDATORY BID PROTEST PROCEDURES:

4.01 Submission of Written Bid Protest

- A. Any Bid protest in connection with the construction contract or work described in general in Document 00 1113 (Notice to Contractors) must be submitted in writing to the Rosamond Community Services District, 3179 35th Street West, Rosamond, CA 93560, before 4:30 P.M. of the fifth Business Day following opening of the Bids.
- B. The initial protest document must contain a complete statement of the basis for the protest.
- C. The protest must refer to the specific portion of the document that forms the basis for the protest.
- D. The protest must include the name, address, and telephone number of the person representing the protesting party.
- E. Only Bidders who the Owner otherwise determines are responsive and responsible are eligible to protest a Bid; protests from any other Bidder will not be considered. In order to determine whether a protesting Bidder is responsive and responsible, Owner may evaluate all information contained in any protesting Bidder's Bid.
- F. The party filing the protest must concurrently transmit a copy of the initial protest document and any attached documentation to all other parties with a direct financial interest that may be adversely affected by the outcome of the protest. Such parties shall include all other Bidders who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.

4.02 Exclusive Remedy

- A. The procedure and time limits set forth in this paragraph are mandatory and are Bidder's sole and exclusive remedy in the event of Bid protest. Bidder's failure to comply with these procedures shall constitute a waiver of any right to further pursue the Bid protest, including filing a Government Code Claim or legal proceedings. A Bidder may not rely on a protest submitted by another Bidder, but must timely pursue its own protest.

ARTICLE 5 - AWARD AND EXECUTION OF CONTRACT

5.01 Notice of Award and Submittal of Executed Contract Documents

- A. If Contract is to be awarded, it will be awarded to the lowest responsible responsive Bidder. Such Award, if made, will be made within sixty (60) Calendar Days after the opening of the Bid Proposals.
- B. Successful Bidder must execute and submit to Owner the "Required Contract Documents and Proof of Insurance" set forth below, within the time limits requested by Owner. Failure to deliver the "Required Contract Documents" to Owner by 5:00 p.m. of the 10th Day following Contractor's receipt of the Documents, will entitle the Owner to consider the Bid abandoned, and to declare the Bid security forfeited.

5.02 Required Contract Documents and Proof of Insurance

- A. Document 00 5200 (Agreement), fully executed by successful Bidder. Submit five originals, each bearing an original signature.
- B. Document 00 6001 (Construction Performance Bond), fully executed by successful Bidder and surety, in the amount set forth in Document 00 6001. Submit five originals.
- C. Document 00 6002 (Construction Labor and Material Payment Bond), fully executed by successful Bidder and surety, in the amount set forth in Document 00 6002. Submit five originals.
- D. Document 00 6003 (Guaranty), fully executed by successful Bidder. Submit five originals.
- E. Insurance certificates and endorsements required by Document 00 7300 (Supplementary Conditions—Insurance): Submit Five original set.
- F. Connelly Asbestos Notification IF APPLICABLE. Submit five originals.
- G. Corporate Resolution IF APPLICABLE. Submit five originals.
- H. Fictitious Business form IF APPLICABLE (copy of recorded document). Submit five originals.

5.03 Failure to Execute and Deliver Documents:

- A. If Bidder to whom Contract is awarded, within the period described in this Document 00 2113, fails or neglects to execute and deliver all required Contract Documents and file all required bonds, insurance certificates, and other documents, Owner may, in its sole discretion, rescind the award, recover on Bidder's surety bond, or deposit Bidder's cashier's check or certified check for collection, and retain the proceeds thereof as liquidated damages for Bidder's failure to enter into the Contract. Bidder agrees that calculating the damages Owner may suffer as a result of Bidder's failure to execute and deliver all required Contract Documents would be extremely difficult and impractical and that the amount of Bidder's required Bid security shall be the agreed and presumed amount of Owner's damages.
- B. Upon such failure to timely deliver all required Contract Documents as set forth herein, Owner may determine the next Apparent Low Bidder and proceed accordingly.

ARTICLE 6 - GENERAL CONDITIONS AND REQUIREMENTS

6.01 Modification of Commencement of Work:

- A. Owner expressly reserves the right to modify the date for the Commencement of Work under the Contract and to independently perform and complete work related to Project. Owner accepts no

responsibility to Contractor for any delays attributed to its need to complete independent work at the Site.

- B. Owner shall have the right to communicate directly with Apparent Low Bidder's proposed performance bond surety, to confirm the performance bond. Owner may elect to extend the time to receive faithful performance and labor and material payment bonds.

6.02 Conformed Project Manual:

- A. Following Award of Contract and at Owner's discretion, Owner may prepare a conformed Project Manual reflecting Addenda issued during bidding, which will constitute the approved Project Manual.

6.03 Payment Bond:

- A. If the Project described in Document 00 1113 (Notice to Contractors) involves an expenditure in excess of twenty-five thousand dollars (\$25,000), the successful Bidder must file a payment bond with and approved by Owner prior to entering upon the performance of the Work, in accordance with Civil Code § 9550.

6.04 Wage Rates:

- A. Copies of the general prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the Contract, as determined by Director of the State of California Department of Industrial Relations, are on file at the Rosamond Community Services District, 3179 35th Street West, Rosamond, CA 93560, and are deemed included in the Bidding Documents. Upon request, Owner will make available copies to any interested party. Also, Contractor shall post the applicable prevailing wage rates at the Site.

6.05 Withdrawal of Bids:

- A. Bidders may withdraw their Bids at any time prior to the Bid opening time fixed in this Document 00 2113, only by written request for the withdrawal of Bid filed with Owner at the Rosamond Community Services District, 3179 35th Street West, Rosamond, CA 93560. Bidder or its duly authorized representative shall execute request to withdraw Bid.

6.06 Ineligible Contractors and Subcontractors:

- A. Owner shall not accept a Bid from a Bidder who is ineligible to bid or work on, or be awarded, a public works project pursuant to California Labor Code section 1777.1 or 1777.7. Bidders and the Contractor who is awarded the project contract shall not utilize, or allow work by, any subcontractor who is ineligible to bid or work on, or be awarded, a public works project pursuant to California Labor Code Section 1777.1 or 1777.7. (See California Public Contract Code Section 6109.) The California Division of Labor Standards Enforcement publishes a list of debarred contractors and subcontractors on the Internet at www.dir.ca.gov/DLSE/debar.html.

6.07 Substitutions:

- A. Bidders must base their Bids on products and systems specified in Contract Documents or listed by name in Addenda. Owner will consider substitution requests only for "or equal items." Bidders wanting to use "or equal" item(s) shall submit Document 01 6000-A (Substitution Request Form) no later than 14 Calendar Days following the execution of the Contract by Owner. As a limitation on Bidder's privilege to request substitution of "or equal" items, Owner has found that certain items are designated as Owner standards and certain items are designated to match existing items in use on a particular public improvement either completed or in the course of completion or are available from one source. As to such items, Owner will not permit substitution. Such items are described in the Bidding Documents.

6.08 Definitions:

- A. All abbreviations and definitions of terms used in this Document 00 2113 are set forth in Document 00 7200 (General Conditions) and Section 01 4216 (Definitions).

END OF DOCUMENT

DOCUMENT 00 3100
GEOTECHNICAL DATA AND EXISTING CONDITIONS

ARTICLE 1 - REPORTS AND INFORMATION ON EXISTING CONDITIONS

1.01 Inspection of Reports:

- A. The Rosamond Community Services District (hereinafter "Owner"), its consultants, and prior contractors may have collected documents providing a general description of the Site and conditions of the Work. These documents may consist of geotechnical reports for and around the Site, contracts, contract specifications, tenant improvement contracts, as-built drawings, utility drawings, and information regarding Underground Facilities (collectively, "Existing Conditions Data".)
- B. Bidders may inspect Geotechnical and Existing Conditions Data, if available, these documents are listed in Section 01 1000 (Summary) and are available for review at the District upon request.
- C. Existing Conditions Data is for information only and does not describe labor, materials or equipment furnished by Contractor, but rather, information regarding conditions of the work. Such Existing Conditions Data is not a Contract Document.

ARTICLE 2 - USE OF EXISTING CONDITIONS DATA

2.01 Above-Ground Existing Conditions:

- A. Owner makes no warranty or representation of existing aboveground conditions, as-built conditions, or other aboveground actual conditions verifiable by reasonable independent investigation. These conditions are verifiable by Bidder by the performance of its own independent investigation that Bidder must perform prior to bidding and Bidder must not rely on the information supplied by Owner regarding existing conditions.
- B. Bidder represents and agrees that in submitting its Bid, it is not relying on any information regarding above-ground existing conditions supplied by Owner.
- C. Owner is not responsible for information regarding Underground Facilities owned by others.

2.02 Underground Facilities:

- A. Information supplied regarding existing Underground Facilities at or contiguous to the Site is based on information furnished to Owner by others (e.g., the builders of such Underground Facilities or others).
- B. Owner assumes responsibility for only the general accuracy, completeness or thoroughness of information regarding Underground Facilities that are owned by Owner. This express assumption of responsibility applies only if Bidder has conducted the independent investigation required of it under Document 00 7200 (General Conditions) and discrepancies were not apparent. Bidder is solely responsible for any interpretation or conclusion drawn from this information.
- C. Owner is not responsible only for information regarding Underground Facilities owned by others.

2.03 Hazardous Materials Surveys:

- A. Bidders may rely on this data and information for general accuracy regarding the locations of potentially hazardous materials subject of the Work. Owner does not warrant and makes no representation regarding the completeness or thoroughness of any data or information regarding existing conditions or hazardous materials, including, but not limited to, quantities, characteristics, volumes, or associated structural features. Bidder represents and agrees that in submitting a Bid it is not relying on any such data, information or deductions.
- B. Data and information regarding the locations of hazardous materials are not part of Contract Documents.

2.04 Geotechnical Data:

- A. Bidder may rely upon the general accuracy of the "technical data" contained in the geotechnical reports and drawings identified above, but only insofar as it relates to subsurface conditions, provided Bidder has conducted the independent investigation required of it and discrepancies were not apparent.

- B. The term “technical data” shall include actual reported depths, reported quantities, reported soil types, reported soil conditions, and reported material, equipment, or structures that were encountered during subsurface exploration. The term “technical data” does not include, and Bidder may not rely upon, any other data, interpretations, opinions or information shown or indicated in such drawings or reports that otherwise relate to subsurface conditions or described structures. The term “technical data” shall not include the location of Underground Facilities.
- C. Bidder may not rely on the completeness of reports and drawings for the purposes of bidding or construction. Bidder is solely responsible for any interpretation or conclusion drawn from any “technical data” or any other data, interpretations, opinions, or information contained in supplied geotechnical data.
- D. Except as expressly set forth in this Document 00 3100, Owner does not warrant, and makes no representation regarding, the accuracy or thoroughness of any geotechnical data.
- E. Bidder represents and agrees that in submitting its Bid, it is not relying on any geotechnical data supplied by Owner, except as specifically set forth herein.

ARTICLE 3 - INVESTIGATIONS

3.01 Required Investigations:

- A. Before submitting a Bid, each Bidder shall be responsible to obtain such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site or otherwise, which may affect cost, progress, performance or furnishing of Work or which relate to any aspect of the means, methods, techniques, sequences or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto or which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of Contract Documents.
- B. Bidders shall advise Owner in writing during the Bid period of any questions, suppositions, inferences or deductions Bidders may have for Owner’s review and response.
- C. Owner has provided time in the period prior to bidding for Bidder to perform these investigations.

3.02 Access to Site for Investigations:

- A. During the Pre-Bid Site Visit(s), Owner will provide each Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies, as each Bidder deems necessary for submission of a Bid. Bidders must fill all holes and clean up and restore the Site to its former conditions upon completion of such explorations, investigations, tests, and studies. Such investigations may be performed only under the provisions of Document 00 2113 (Instructions to Bidders) and Document 00 7200 (General Conditions) including, but not limited to, proof of insurance and obligation to indemnify against claims arising from such investigation work. Each Bidder shall supply all equipment required to perform any investigations as each Bidder deems necessary. Owner has the right to limit the number of pieces of machinery operating at one time due to safety concerns.

END OF DOCUMENT

**DOCUMENT 00 4100
BID FORM**

TO THE ROSAMOND COMMUNITY SERVICES DISTRICT

THIS BID IS SUBMITTED BY:

(Firm/Company Name)

Project Name: TANK 3 RECOAT PROJECT
RCSD Project No.: 12512

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with the Rosamond Community Services District (hereinafter "Owner") in the form included in the Contract Documents, Document 00 5200 (Agreement), to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Sum and within the Contract Time indicated in this Bid and in accordance with all other terms and conditions of the Contract Documents.
2. Bidder accepts all of the terms and conditions of the Contract Documents, Document 00 1113 (Notice to Contractors), and Document 00 2113 (Instructions to Bidders), including, without limitation, those dealing with the disposition of Bid Security. This Bid will remain subject to acceptance for 60 Calendar Days after the day of Bid opening, unless there is a bid protest, then 90 Calendar days after the day of bid opening.
3. In submitting this Bid, Bidder represents that Bidder has examined all of the Contract Documents, performed all necessary Pre-Bid investigations, received, reviewed and has included the signed cover sheet for each of the following Addenda in this bid submission:

Addendum Number	Addendum Date	Signature of Bidder

4. The undersigned, as Bidder, declares that: the Bidder is duly licensed under the Contractor's State License Law Business and Professions Code Section 7000 et.seq.; the only persons or parties interested in this proposal as principals are those named herein; this proposal is made without collusion with any other person, firm or corporation; the bidder has examined the location of the proposed work, the attached proposed form of Agreement, Plans, Specifications, and Addenda referred to; the Bidder agrees that if this proposal is accepted by the Owner, Bidder will contract with the Owner by execution of the documents required by Document 00 2113 (Instruction to Bidders); to do all the work and furnish all the materials specified in the contract, in the manner and time therein prescribed, and according to the requirements of the Owner as therein set forth, and that the Bidder will accept in full payment the following amounts:

SCHEDULE OF WORK ITEMS

Bid Schedule

Item No.	Qty	Unit	Description	Unit Price	Total Amount
1	1	LS	Mobilization / Demobilization / Cleanup	\$	\$
2	1	LS	Inspection Blast	\$	\$
3	1	LS	Dehumidification (including fuel generator and all associated costs for 24/7 operation)	\$	\$
4	1	LS	Surface Preparation and Recoating of Exterior Water Tank	\$	\$
5	1	LS	Surface Preparation and Recoating of Interior Water Tank	\$	\$
6	1	LS	Replace Existing Gauge Board, Existing Center Roof Vent, and Interior Safety Clip	\$	\$
7	1	LS	Suction Manifold Modification, including New 16-Inch Bypass Valve	\$	\$
8	1	LS	Inlet Piping Modifications, including New 16-inch Valves for Bypass	\$	\$
9	1	LS	Unforeseen Repair Allowances	\$144,000	\$144,000

Total Bid Schedule Bid Items 1 through 9 \$ _____

Total Bid Price:

_____ (\$ _____)
(Words)

5. Subcontractors for work included in all Bid items are listed on Document 00 4430 (Subcontractors List) submitted herewith.
6. The undersigned Bidder understands that Owner reserves the right to reject this Bid.
7. If the documents required by Document 00 2113 (Instructions to Bidders) are mailed or delivered to the undersigned Bidder within the time described in Paragraph 2 of this Document 00 4100, or at any other time thereafter before it is withdrawn, the undersigned Bidder will execute and deliver the documents required by Document 00 2113 (Instructions to Bidders) within the times specified therein.
8. The undersigned Bidder herewith encloses cash, a cashier's check, or certified check of or on a responsible bank in the United States, or a corporate surety bond furnished by a surety authorized to do a surety business in the State of California, in form specified in Document 00 2113 (Instructions to Bidders), in the amount of ten percent (10%) of the Total Bid Price and made payable to the Rosamond Community Services District.

- 9. The undersigned Bidder agrees to commence Work under the Contract Documents on the date established in Document 00 7200 (General Conditions) and to complete all Work within the time specified in Document 00 5200 (Agreement).
- 10. The undersigned Bidder agrees that, in accordance with Document 00 7200 (General Conditions), liquidated damages for failure to complete all Work in the Contract within the time specified in Document 00 5200 (Agreement) shall be as set forth in Document 00 5200.
- 11. The names of all persons interested in the foregoing Bid as principals are:

IMPORTANT NOTICE: If Bidder or other interested person is a corporation, give the legal name of corporation, state where incorporated, and names of president and secretary thereof; if a partnership, give name of the firm and names of all individual co-partners composing the firm; if Bidder or other interested person is an individual, give first and last names in full.

NAME OF BIDDER: _____,

licensed in accordance with an act for the registration of Contractors, and with license number:

_____ Expiration: _____.

(Place of Incorporation, if Applicable)	(Principal)
	(Principal)
	(Principal)

I certify (or declare) under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

(Signature of Bidder)

NOTE: If Bidder is a corporation, set forth the legal name of the corporation together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation. If Bidder is a partnership, set forth the name of the firm together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership.

Business Address: _____

Contractor's Representative(s): _____
 (Name/Title)

(Name/Title)

(Name/Title)

Officers Authorized to Sign Contracts

(Name/Title)

(Name/Title)

(Name/Title)

Telephone Number(s):

(Area Code) (Number)

(Area Code) (Number)

Fax Number(s):

(Area Code) (Number)

(Area Code) (Number)

Date of Bid:

END OF DOCUMENT

DOCUMENT 00 4411

BOND ACCOMPANYING BID

ROSAMOND COMMUNITY SERVICES DISTRICT

KNOW ALL MEN BY THESE PRESENTS,

That we, _____ as PRINCIPAL, and _____, as SURETY, are held and firmly bound unto the Rosamond Community Services District (hereinafter Obligee), a political subdivision of the State of California, in the penal sum of ten percent (10%) of the total amount of the bid of the Principal above named, submitted by said Principal to Obligee for the work described below, for the payment of which sum in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents. In no case shall the liability of the Surety hereunder exceed the sum of \$_____.

THE CONDITION OF THIS OBLIGATION IS SUCH, THAT WHEREAS THE PRINCIPAL has submitted the above mentioned bid to Obligee for certain construction specifically described as follows, for which bids are to be opened at Rosamond, California, on the date as indicated on the bid documents for the **Tank 3 Recoat Project**.

NOW, THEREFORE, if the aforesaid Principal is awarded the contract and, within the time and manner required under the Specifications, after the prescribed forms are presented to him for signature, enters into a written Agreement, in the prescribed form, in accordance with the bid, files the two bonds with the Obligee, one to guaranty faithful performance and the other to guaranty payment for labor and materials, as required by law, provides all required insurance certificates, Guaranty, and all other endorsements, forms, and documents required under Document 00 2113 (Instructions to Bidders), then this obligation shall be null and void; otherwise, it shall remain in full force and virtue.

If suit is brought upon this Bond by the Obligee and judgment is recovered, the Surety shall pay all costs incurred by the Obligee in such suit, including reasonable costs and Attorney's fees to be fixed by the Court.

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

Correspondence of claims relating to this bond should be sent to the surety at the following address: _____ (SEAL) _____ (SEAL) _____ (SEAL)

PRINCIPAL

_____ (SEAL)

_____ (SEAL)

_____ (SEAL)

SURETY

Phone: () _____

Note: Signatures of those executing for the Surety must be properly acknowledged.

END OF DOCUMENT

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**DOCUMENT 00 4412
BIDDER INFORMATION FORM**

INSTRUCTIONS

In order to register to undertake work for Owner, Bidder **must**:

- 1) Fill out this registration form completely; do not leave blanks.
- 2) Provide certificates of insurance or a letter evidencing coverage

INDEPENDENT CONTRACTOR REGISTRATION

Contractors DIR Registration Number: _____

Contractor's License # _____

Date: _____ Fed I.D. # _____

Full Corporate Name of Company: _____

Street Address: _____

Mailing Address: _____

Phone: _____ Fax: _____

Name of Principal Contact: _____

Type of Business: _____ Sole Proprietor _____ Partnership
 _____ Non-Profit 501(c)(3) _____ Corporation
 _____ other (please explain: _____)

INSURANCE

Workers' Compensation:

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

General Liability:

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: \$ _____

A.M. Best Rating: _____

Automobile Liability:

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: \$ _____

A.M. Best Rating: _____

BONDING

Surety Company Providing Bonds: _____

Address: _____

Phone and Fax: _____

Admitted in California YES _____ NO _____

A.M. Best Rating: _____

BIDDER CERTIFIES, UNDER PENALTY OF PERJURY, THAT THE FOREGOING INFORMATION IS CURRENT AND ACCURATE AND AUTHORIZES THE ROSAMOND COMMUNITY SERVICES DISTRICT AND ITS AGENTS AND REPRESENTATIVES TO OBTAIN A CREDIT REPORT AND/OR VERIFY ANY OF THE ABOVE INFORMATION.

SIGNATURE

DATE

SAFETY EXPERIENCE

The following statements as to the Bidder's safety experience are submitted with the Bid, as part thereof, and the Bidder guarantees the truthfulness and accuracy of all information.

1. List Bidder's interstate Experience Modification Rate for the last three years.
20__ ____ **20**__ ____ **20**__ ____

2. Use Bidder's last year's Cal/OSHA 200 log to fill in the following number of injuries and illnesses:
 - a. Number of lost workday cases _____
 - b. Number of medical treatment cases _____
 - c. Number of fatalities _____

3. Employee hours worked last year _____

4. State the name of Bidder's safety engineer/manager: _____

Attach a resume or outline of this individual's safety and health qualifications and experience.

I CERTIFY, UNDER PENALTY OF PERJURY, THAT THE FOREGOING INFORMATION IS CURRENT AND ACCURATE AND I AUTHORIZE THE ROSAMOND COMMUNITY SERVICES DISTRICT AND ITS AGENTS AND REPRESENTATIVES TO OBTAIN A CREDIT REPORT AND/OR VERIFY ANY OF THE ABOVE INFORMATION.

BIDDER:

By: _____
Signature

Its: _____
Title

Date _____

END OF DOCUMENT

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SUBCONTRACTORS LIST

Contractor Name: _____

Project Name: TANK 3 RECOAT PROJECT

Bidder submits the following information as to the subcontractors Bidder intends to employ if awarded the Contract. Only list subcontractors whose contract with the Contractor is in an amount greater than one-half of 1 percent of the Contractor's total bid.

Full Name of Subcontractor and Address of Mill or Shop	Description of Work: Reference To Bid Items	Subcontractor's License No.	DIR Registration No.

(Bidder to attach additional sheets if necessary)

Bidder must provide Subcontractor DIR Registration Number within twenty-four hours of bid opening.

END OF DOCUMENT

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**DOCUMENT 00 4452
NON-COLLUSION DECLARATION**

PUBLIC CONTRACT CODE §7106

PROJECT TITLE: **TANK 3 RECOAT PROJECT**

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

The undersigned declares:

I am the _____ of _____
(Office of Affiant) (Name of Bidder)

the party making the foregoing Bid.

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

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

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____, at _____,
_____. (Date) (City)
(State)

(Name of Bidder)

(Signature of Principal)

NOTE: If Bidder is a partnership or a joint venture, a copy of this declaration must be signed and sworn to by every member of the partnership or venture.

END OF DOCUMENT

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DOCUMENT 00 4453
IRAN CONTRACTING ACT CERTIFICATION
(Public Contract Code Sections 2200 et seq.)

Project Name: TANK 3 RECOAT PROJECT

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

- The Contractor is not:
 - (i) Identified on the current list of persons and entities engaging in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code section 2203; or
 - (ii) a financial institution that extends, for 45 days or more, credit in the amount of \$20,000,000 or more to any other person or entity identified on the current list of persons and entities engaging in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code section 2203, if that person or entity uses or will use the credit to provide goods or services in the energy sector in Iran.

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

- The amount of the Contract payable to the Contractor for the project is less than \$1,000,000.

CERTIFICATION

I, the official named below, CERTIFY UNDER PENALTY OF PERJURY, that I am duly authorized to legally bind the bidder to the above selected option. This certification is made under the laws of the State of California.

Firm

Signed

Date

Name/Title

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

END OF DOCUMENT

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**DOCUMENT 00 4455
BIDDER CERTIFICATIONS**

TO BE EXECUTED BY ALL BIDDERS AND SUBMITTED WITH BID

The undersigned Bidder certifies to the Rosamond Community Services District (hereinafter "Owner") as set forth in sections 1 through 6 below.

1. STATEMENT OF CONVICTIONS

By my signature hereunder, I hereby swear, under the penalty of perjury, that no more than one final, unappealable finding of contempt of court by a Federal Court has been issued against Bidder within the past two years because of failure to comply with an order of a Federal Court or to comply with an order of the National Labor Relations Board.

2. STATEMENT OF BIDDER

Have you, or any officer of yours, or any employee of yours who may have a proprietary interest in your Bid, ever been disqualified, removed, or otherwise prevented from bidding on or completing any Federal, State, or Local Governmental project because of a violation of law or safety regulations:

YES _____ NO _____

3. CERTIFICATION OF WORKER'S COMPENSATION INSURANCE

By my signature hereunder, as the Contractor, I certify that I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for worker's 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.

4. CERTIFICATION OF PREVAILING WAGE RATES AND RECORDS

By my signature hereunder, as the Contractor, I certify that I am aware of the provisions of Section 1773 of the California Labor Code, which requires the payment of prevailing wage on public projects. Also, that the Contractor and any subcontractors under the Contractor shall comply with California Labor Code §1776, regarding wage records, and with California Labor Code §1777.5, regarding the employment and training of apprentices. It is the Contractor's responsibility to ensure compliance by any and all subcontractors performing work under this Contract.

5. CERTIFICATION OF COMPLIANCE WITH PUBLIC WORKS CHAPTER OF LABOR CODE

By my signature hereunder, as the Contractor, I certify that I am aware of Sections 1777.1 and 1777.7 of the California Labor Code and am eligible to bid and work on public works projects.

6. CERTIFICATION OF ADEQUACY OF CONTRACT AMOUNT

By my signature hereunder, as the Contractor, pursuant to Labor Code Section 2810(a), I certify that, if awarded the Contract based on the undersigned's Bid, the Contract will include funds sufficient to allow the Contractor to comply with all applicable local, state, and federal laws or regulations governing the labor or services to be provided. I understand that the Owner will be relying on this certification if it awards the Contract to the undersigned.

BIDDER:

(Name of Bidder)

Date: _____, 20____

By: _____
(Signature)

Name: _____
(Print Name)

Its: _____
(Title)

END OF DOCUMENT

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**DOCUMENT 00 5199
PROPOSED CONTRACT DOCUMENTS TRANSMITTAL**

Date

Contractor Name
Contractor Address
City, State Zip

SUBJECT TANK 3 RECOAT PROJECT

The Contract Sum of your proposed contract is _____ **Dollars (\$_____)**.

1. The proposed Contract Documents listed below accompany this Document 00 5199. Contractor shall return FIVE copies of each of the required documents; each of the FIVE copies require original "wet" signatures.

2. Contractor shall return the required documents to the Rosamond Community Services District no later than _____ in order to meet the Board agenda requirements.
- a. Document 00 5200 (Agreement) **DO NOT DATE THE AGREEMENT. DATE OF BOARD MEETING WILL BE INSERTED BY THE DISTRICT.**
 - b. Document 00 6001 (Construction Performance Bond), executed by you and your surety. **BE CERTAIN TO HAVE A POWER OF ATTORNEY AND NOTARY FOR EACH OF THE PERFORMANCE BONDS (FIVE IN TOTAL FOR THE PERFORMANCE BOND)**
 - c. Document 00 6002 (Construction Labor and Material Payment Bond), executed by you and your surety. **BE CERTAIN TO HAVE A POWER OF ATTORNEY AND NOTARY FOR EACH OF THE LABOR AND MATERIAL PAYMENT BONDS (FIVE IN TOTAL FOR THE LABOR AND MATERIAL PAYMENT BOND)**
 - d. Insurance certificates **(INCLUDE ENDORSEMENTS AND WAIVER OF SUBROGATION)**, as required under Document 00 7300 (Supplementary Conditions – Insurance).
 - e. Document 00 6003 (Guaranty)
 - f. Document 00 6200 (Withheld Contract Funds Certification)
 - g. Connelly Asbestos Notification
 - h. Corporate Resolution, if applicable
 - i. Fictitious Business form, if applicable (must be copy of recorded document)

3. Failure to comply with these conditions will entitle Owner to consider your Bid abandoned, and to declare your Bid security forfeited.

4. Upon commencement of the Work, you and each of your Subcontractors shall certify copies of payroll records on forms provided by the Division of Labor Standards Enforcement, in accordance with California Labor Code §1776. Contractor and Subcontractors shall provide copies of certified payroll records upon request by the County.

5. The General Manager will recommend the Board of Directors execute the Agreement during the meeting of _____ at 6:00 pm. You will receive a copy of the Staff Report under separate cover.

6. The Owner has identified the following staff for this project:

- a. Project Contact - **Kim B. Domingo (General Manager) at 661-256-3411, or its designee**

END OF DOCUMENT

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**DOCUMENT 00 5200
AGREEMENT**

THIS AGREEMENT, entered into on this day of _____, is by and between _____, whose place of business is located at _____ ("Contractor"), and the ROSAMOND COMMUNITY SERVICES DISTRICT, a political subdivision of the State of California (hereinafter "Owner"), acting under and by virtue of the authority vested in Owner by the laws of the State of California.

WHEREAS, in consideration for the promises and payment to be made and performed by Owner, and under the conditions expressed in the incorporated Bid Proposal (Bid), bonds and related papers, Contractor agrees to do all the work and furnish all the materials at the expense of Contractor (except such as the Specifications state will be furnished by Owner) necessary to construct and complete in a good and workmanlike manner to the satisfaction of the Rosamond Community Services District all the work shown and described in the plans and specifications for the project known as:

TANK 3 RECOAT PROJECT

NOW, THEREFORE, in consideration of the mutual covenants hereinafter set forth, Contractor and Owner agree as follows:

ARTICLE 1 - SCOPE OF WORK OF THE CONTRACT

1.01 Work of the Contract

- A. Contractor shall complete all Work specified in the Contract Documents, in accordance with the Specifications, Drawings, and all other terms and conditions of the Contract Documents (**Work**).

1.02 Price for Completion of the Work

- A. Owner shall pay Contractor the following Contract Sum of _____ **Dollars (\$_____)** for completion of Work in accordance with Contract Documents as set forth in Contractor's Bid, attached hereto.

ARTICLE 2 - COMMENCEMENT AND COMPLETION OF WORK

2.01 Commencement of Work

- A. Contractor shall commence Work on the date established in the Notice to Proceed (**Commencement Date**).
- B. Owner reserves the right to modify or alter the Commencement Date.

2.02 Completion of Work

- A. Contractor shall achieve Final Completion of the entire Work **120 Working Days** from the Commencement Date.

ARTICLE 3 - LIQUIDATED DAMAGES FOR DELAY IN COMPLETION OF WORK

3.01 Liquidated Damage Amounts

- A. As liquidated damages for delay Contractor shall pay Owner five Hundred **dollars (\$500)** for each Calendar Day that expires after the time specified herein for Contractor to achieve Final Completion of the entire Work, until achieved.

3.02 Scope of Liquidated Damages

- A. Measures of liquidated damages shall apply cumulatively.

- B. Limitations and stipulations regarding liquidated damages are set forth in Document 00 7200 (General Conditions).

ARTICLE 4 - CONTRACT DOCUMENTS

- 4.01 Contract Documents consist of the following documents, including all changes, Addenda, and Modifications thereto:

Document 00 0101	Title Page
Document 00 1113	Notice to Contractors
Document 00 2113	Instruction to Bidders
Document 00 3100	Geotechnical Data and Existing Conditions
Document 00 4100	Bid Form
Document 00 4412	Bidder Information Form
Document 00 4430	Subcontractors List
Document 00 4452	Non-Collusion Declaration
Document 00 4453	Iran Contracting Act Certification
Document 00 4455	Bidder Certifications
Document 00 5199	Proposed Contract Documents Transmittal Agreement
Document 00 5200	Agreement
Document 00 5590	Release of Claims
Document 00 6001	Construction Performance Bond
Document 00 6002	Construction Labor and Material Payment Bond
Document 00 6003	Guaranty
Document 00 6200	Withheld Contract Funds Certification
Document 00 7200	General Conditions
Document 00 7280	Apprenticeship Programs
Document 00 7300	Supplementary Conditions – Insurance
Document 00 9111	Addendum Form - RCSD
Master Specifications	Divisions 01
Technical Specifications	
Drawings	

- 4.02 There are no Contract Documents other than those listed above. The Contract Documents may only be amended, modified or supplemented as provided in Document 00 7200 (General Conditions).

ARTICLE 5 - MISCELLANEOUS

- 5.01 Terms and abbreviations used in this Agreement are defined in Document 00 7200 (General Conditions) and Section 01 4216 (Definitions) and will have the meaning indicated therein.
- 5.02 It is understood and agreed that in no instance are the persons signing this Agreement for or on behalf of Owner or acting as an employee, agent, or representative of Owner, liable on this Agreement or any of the Contract Documents, or upon any warranty of authority, or otherwise, and it is further understood and agreed that liability of Owner is limited and confined to such liability as authorized or imposed by the Contract Documents or applicable law.
- 5.03 In entering into a public works contract or a subcontract to supply goods, services or materials pursuant to a public works contract, Contractor or Subcontractor offers and agrees to assign to the awarding body all rights, title and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. §15) or under the Cartwright Act (Chapter 2 (commencing with §16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time Owner tenders final payment to Contractor, without further acknowledgment by the parties.
- 5.04 Copies of the general prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the Contract, as determined by Director of the State of California

Department of Industrial Relations, are deemed included in the Contract Documents and on file at Owner's Office, and shall be made available to any interested party on request. Pursuant to California Labor Code §§ 1860 and 1861, in accordance with the provisions of Section 3700 of the Labor Code, every contractor will be required to secure the payment of compensation to his employees. Contractor represents that it is 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 Contractor shall comply with such provisions before commencing the performance of the Work of the Contract Documents.

5.05 This Agreement and the Contract Documents shall be deemed to have been entered into in the County of Kern, State of California, and governed in all respects by California law (excluding choice of law rules). The exclusive venue for all disputes or litigation hereunder shall be in the Superior Court for the County of Kern.

IN WITNESS WHEREOF the parties have executed five original Agreements on the day and year first above written.

RECOMMENDED AND APPROVED
AS TO CONTENT:

CONTRACTOR:

By _____
Kim B. Domingo, General Manager

Firm's Name

Type of Entity
(Corporation, partnership, sole proprietorship)

APPROVED AS TO FORM:

By _____
Signature

By _____
Signature

Typed Name

ROSAMOND COMMUNITY SERVICES DISTRICT

Title of Individual Executing Document on behalf of Firm

By _____
Ben Stewart
President, Board of Directors

NOTICE: CONTRACTORS ARE REQUIRED BY LAW TO BE LICENSED AND ARE REGULATED BY CONTRACTORS' STATE LICENSE BOARD. QUESTIONS CONCERNING A CONTRACTOR MAY BE REFERRED TO THE REGISTRAR OF THAT BOARD, WHOSE ADDRESS IS: CONTRACTORS' STATE LICENSE BOARD, 1020 "N" STREET, SACRAMENTO, CALIFORNIA 95814.

END OF DOCUMENT

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DOCUMENT 00 5590

**AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS
[Public Contract Code § 7100]**

THIS AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS (“Agreement and Release”), made and entered into this _____ day of _____, 20____, by and between the Rosamond Community Services District (hereinafter “Owner”), and _____ (“Contractor”), whose place of business is at _____.

RECITALS

Owner and Contractor entered into Contract Number _____ (the “Contract”) for construction of Owner’s **TANK 3 RECOAT PROJECT** located at **just west of 30th St and north of Felsite Ave, west of Sierra Highway, Rosamond, CA 93560.**

- A. The Work under the Contract has been completed.

AGREEMENT

NOW THEREFORE, it is mutually agreed between Owner and Contractor as follows:

- 1. Contractor will not be assessed liquidated damages except as detailed below:

Original Contract Sum \$ _____
Modified Contract Sum \$ _____
Payment to Date \$ _____
Liquidated Damages \$ _____
Payment Due Contractor \$ _____

- 2. Subject to the provisions of this Agreement and Release, Owner will forthwith pay to Contractor the sum of _____ Dollars and _____ Cents (\$ _____) under the Contract, less any amounts withheld under the Contract or represented by any Notice to Withhold Funds on file with Owner as of the date of such payment.
- 3. Contractor acknowledges and hereby agrees that there are no unresolved or outstanding claims in dispute against Owner arising from the Contract, except for the claims described in Paragraph 4 of this Document 00 5590. It is the intention of the parties in executing this Agreement and Release that this Agreement and Release shall be effective as a full, final and general release of all claims, demands, actions, causes of action, obligations, costs, expenses, damages, losses and liabilities of Contractor against Owner, and all if its agents, employees, consultants, inspectors, representatives, assignees and transferees, except for the Disputed Claims set forth in Paragraph 4 of this Document 00 5590. Nothing in this Agreement and Release shall limit or modify Contractor’s continuing obligations described in Paragraph 6 of this Document 00 5590.
- 4. The following claims submitted under Document 00 7200 (General Conditions), Article 12, are disputed (hereinafter, the “Disputed Claims”) and are specifically excluded from the operation of this Agreement and Release.

[Insert information in Chart below, affix attachment if necessary]

CLAIM NO.	DATE SUBMITTED	DESCRIPTION OF CLAIM	AMOUNT OF CLAIM

5. Consistent with California Public Contract Code §7100, Contractor hereby agrees that, in consideration of the payment set forth in Paragraph 2 of this Document 00 5590, Contractor hereby releases and forever discharges Owner, and all of its agents, employees, consultants, inspectors, assignees and transferees from any and all liability, claims, demands, actions or causes of action of whatever kind or nature arising out of or in any way concerned with the Work under the Contract.
6. Guarantees and warranties for the Work, and any other continuing obligation of Contractor, shall remain in full force and effect as specified in the Contract Documents.
7. Contractor shall immediately defend, indemnify and hold harmless Owner, any of the Owner's Representatives, and all of their agents, employees, consultants, inspectors, assignees and transferees, from any and all claims, demands, actions, causes of action, obligations, costs, expenses, damages, losses and liabilities that may be asserted against them by any of Contractor's suppliers and/or Subcontractors of any tier and/or any suppliers to them for any and all labor, materials, supplies and equipment used, or contemplated to be used in the performance of the Contract, except for the Disputed Claims set forth in Paragraph 4 of this Document 00 5590.
8. Contractor hereby waives the provisions of California Civil Code §1542, which provide as follows:

A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM OR HER, MUST HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR.
9. The provisions of this Agreement and Release are contractual in nature and not mere recitals and shall be considered independent and severable, and if any such provision or any part thereof shall be at any time held invalid in whole or in part under any federal, state, county, municipal or other law, ruling, or regulation, then such provision, or part thereof shall remain in force and effect only to the extent permitted by law, and the remaining provisions of this Agreement and Release shall also remain in full force and effect, and shall be enforceable.
10. Contractor represents and warrants that it is the true and lawful owner of all claims and other matters released pursuant to this Agreement and Release, and that it has full right, title and authority to enter into this instrument. Each party represents and warrants that it has been represented by counsel of its own choosing in connection with this Agreement and Release.
11. All rights of Owner shall survive completion of the Work or termination of the Contract, and execution of this Agreement and Release.

***** CAUTION: THIS IS A RELEASE - READ BEFORE EXECUTING *****

APPROVED AS TO FORM:

<<_____ (Contractor)>>

Type of Entity
(corporation, partnership, sole proprietorship)

By _____
Signature

By _____
Signature

ROSAMOND COMMUNITY SERVICES DISTRICT

Typed Name

By _____
Kim B. Domingo, General Manager

Title of Individual Executing
Document on behalf of Contractor

END OF DOCUMENT

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**DOCUMENT 00 6001
CONSTRUCTION PERFORMANCE BOND**

KNOW ALL PERSONS BY THESE PRESENTS:

- A. THAT WHEREAS, the ROSAMOND COMMUNITY SERVICES DISTRICT (hereinafter "**Owner**"), a public agency of the State of California, has awarded to _____, as Principal, a contract dated _____ (the "**Contract**"), in the amount of \$ _____. The Contract is by this reference made a part hereof, for the work of the following project:

TANK 3 RECOAT PROJECT

- 1.02** AND WHEREAS, Principal is required to furnish a bond in connection with the Contract, guaranteeing the faithful performance thereof;
- 1.03** NOW, THEREFORE, we, the undersigned Principal and _____, as Surety are held and firmly bound unto Owner in the sum of 100% OF THE CONTRACT PRICE to be paid to Owner or its successors and assigns; for which payment, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.
- 1.04** THE CONDITION OF THIS OBLIGATION IS SUCH, that if Principal, or its heirs, executors, administrators, successors, or assigns approved by Owner, shall promptly and faithfully perform the covenants, conditions, and agreements of the Contract during the original term and any extensions thereof as may be granted by Owner, with or without notice to Surety, and during the period of any guarantees or warranties required under the Contract, and shall also promptly and faithfully perform all the covenants, conditions, and agreements of any alteration of the Contract made as therein provided, notice of which alterations to Surety being hereby waived, on Principal's part to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify, defend, protect, and hold harmless Owner as stipulated in the Contract, then this obligation shall become and be null and void; otherwise it shall be and remain in full force and effect.
- 1.05** No extension of time, change, alteration, modification, or addition to the Contract, or of the work required thereunder, or work or actions by Owner to mitigate the damages resulting from any breach in performance by Contractor, shall release or exonerate Surety on this bond or in any way affect the obligation of this bond; and Surety does hereby waive notice of any such extension of time, change, alteration, modification, or addition.
- 1.06** Whenever Principal shall be and declared by Owner in default under the Contract, Surety shall promptly remedy the default, or shall promptly, and in no event later than thirty (30) days from notice:
- A. Undertake through its agents or independent contractors (but having qualifications and experience reasonably acceptable to Owner), to complete the Contract in accordance with its terms and conditions and to pay and perform all obligations of Principal under the Contract, including without limitation, all obligations with respect to warranties, guarantees, indemnities, and the payment of liquidated damages; or

B. Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and, upon determination by Owner of the lowest responsible bidder, arrange for a contract between such bidder and Owner and make available as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Sum, and to pay and perform all obligations of Principal under the Contract, including, without limitation, all obligations with respect to warranties, guarantees, and the payment of liquidated damages; but, in any event, Surety's total obligations hereunder shall not exceed the amount set forth in the third paragraph hereof. The term "balance of the Contract Sum," as used in this paragraph, shall mean the total amount payable by Owner to the Principal under the Contract and any amendments thereto, less the amount paid by Owner to Principal.

1.07 Surety's obligations hereunder are independent of the obligations of any other surety for the performance of the Contract, and suit may be brought against Surety and such other sureties, jointly and severally, or against any one or more of them, or against less than all of them without impairing Owner's rights against the others. If suit is brought upon this bond the Surety shall pay reasonable costs and attorney's fees to be fixed by the court.

1.08 Surety may not use Contractor to complete the Contract absent Owner's Consent. Owner shall have the right in its sole discretion to continue the work of the Contract, as necessary following a default and/or termination, as necessary to prevent risks of personal injury, property damage or delay to the Project.

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

1.10 Surety shall join in any proceedings brought under the Contract upon Owner's demand, and shall be bound by any judgment.

1.11 Correspondence or claims relating to this bond shall be sent to Surety at the address set forth below.

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

CONTRACTOR AS PRINCIPAL
(Corp. Seal)

SURETY
(Corp. Seal)

Company

Company

Signature

Signature

Name & Title

Name & Title

Address

Address

City, State, Zip Code

City, State, Zip Code

Phone

END OF DOCUMENT

DOCUMENT 00 6002
CONSTRUCTION LABOR AND MATERIAL PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS:

1.01 THAT WHEREAS, the ROSAMOND COMMUNITY SERVICES DISTRICT (hereinafter "**Owner**"), a public agency of the State of California, has awarded to _____, as Principal, a contract dated _____ (the "**Contract**"), in the amount of \$ _____. The Contract is by this reference made a part hereof, for the work of the following project:

TANK 3 RECOAT PROJECT

- A. AND WHEREAS, Principal is required to furnish a bond in connection with the Contract to secure the payment of claims of laborers, mechanics, material suppliers, and other persons as provided by law;
- B. NOW, THEREFORE, we, the undersigned Principal and _____, as Surety, are held and firmly bound unto Owner in the sum of 100% OF THE CONTRACT PRICE (**\$ _____**), for which payment well and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.
- C. THE CONDITION OF THIS OBLIGATION IS SUCH, that if Principal, or its executors, administrators, successors, or assigns approved by Owner, or its subcontractors shall fail to pay any of the persons named in California Civil Code §9100, or amounts due under the State of California Unemployment Insurance Code with respect to work or labor performed under the Contract, or for any amounts required to be deducted, withheld, and paid over to the State of California Employment Development Department from the wages of employees of Principal and subcontractors pursuant to Section 13020 of the State of California Unemployment Insurance Code with respect to such work and labor, that Surety will pay for the same in an amount not exceeding the sum specified in this bond, plus reasonable attorneys' fees, otherwise the above obligation shall become and be null and void.
- D. This bond shall inure to the benefit of any of the persons named in California Civil Code §9100, as to give a right of action to such persons or their assigns in any suit brought upon this bond. The intent of this bond is to comply with the California Mechanic's Lien Law.
- E. Surety, for value received, hereby expressly agrees that no extension of time, change, modification, alteration, or addition to the undertakings, covenants, terms, conditions, and agreements of the Contract, or to the work to be performed thereunder, shall in any way affect the obligation of this bond; and it does hereby waive notice of any such extension of time, change, modification, alteration, or addition to the undertakings, covenants, terms, conditions, and agreements of the Contract, or to the work to be performed thereunder.
- F. Surety's obligations hereunder are independent of the obligations of any other surety for the payment of claims of laborers, mechanics, material suppliers, and other persons in connection with Contract; and suit may be brought against Surety and such other sureties, jointly and severally, or against any one or more of them, or against less than all of them without impairing

Owner's rights against the other. If suit is brought upon this bond the Surety shall pay reasonable costs and attorney's fees to be fixed by the court.

G. Correspondence or claims relating to this bond shall be sent to Surety at the address set forth below.

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

CONTRACTOR AS PRINCIPAL

(Corp. Seal)

SURETY

(Corp. Seal)

Company

Company

Signature

Signature

Name & Title

Name & Title

Address

Address

City, State, Zip Code

City, State, Zip Code

Phone

END OF DOCUMENT

**DOCUMENT 00 6003
GUARANTEE**

TO: THE ROSAMOND COMMUNITY SERVICES DISTRICT (hereinafter "Owner"), for construction of **TANK 3 RECOAT PROJECT** located **just west of 30th St and north of Felsite Ave, west of Sierra Highway**

The undersigned guarantees all construction performed on this Project and also guarantees all material and equipment incorporated therein.

Contractor hereby grants to Owner for a period of one year following the date of Final Acceptance of the Work completed, or such longer period specified in the Contract Documents, its unconditional warranty of the quality and adequacy of all of the Work including, without limitation, all labor, materials and equipment provided by Contractor and its Subcontractors of all tiers in connection with the Work.

Neither final payment nor use nor occupancy of the Work performed by the Contractor shall constitute an acceptance of Work not done in accordance with this Guaranty or relieve Contractor of liability in respect to any express warranties or responsibilities for faulty materials or workmanship. Contractor shall remedy any defects in the Work and pay for any damage resulting therefrom, which shall appear within one year, or longer if specified, from the date of Final Acceptance of the Work completed.

If within one year after the date of Final Acceptance of the Work completed, or such longer period of time as may be prescribed by laws or regulations, or by the terms of Contract Documents, any Work is found to be Defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions, correct such Defective Work. Contractor shall remove any Defective Work rejected by Owner and replace it with Work that is not Defective, and satisfactorily correct or remove and replace any damage to other Work or the work of others resulting therefrom. If Contractor fails to promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the Defective Work corrected or the rejected Work removed and replaced. Contractor shall pay for all claims, costs, losses and damages caused by or resulting from such removal and replacement. Where Contractor fails to correct Defective Work, or defects are discovered outside the correction period, Owner shall have all rights and remedies granted by law.

Inspection of the Work shall not relieve Contractor of any of its obligations under the Contract Documents. Even though equipment, materials, or Work required to be provided under the Contract Documents have been inspected, accepted, and estimated for payment, Contractor shall, at its own expense, replace or repair any such equipment, material, or Work found to be Defective or otherwise not to comply with the requirements of the Contract Documents up to the end of the guaranty period.

All abbreviations and definitions of terms used in this Agreement shall have the meanings set forth in the Contract Documents.

//

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The foregoing Guaranty is in addition to any other warranties of Contractor contained in the Contract Documents, and not in lieu of, any and all other liability imposed on Contractor under the Contract Documents and at law with respect to Contractor's duties, obligations, and performance under the Contract Documents. In the event of any conflict or inconsistency between the terms of this Guaranty and any warranty or obligation of the Contractor under the Contract Documents or at law, such inconsistency or conflict shall be resolved in favor of the higher level of obligation of the Contractor.

Date

Name/Title

Contractor

Signature

For maintenance, repair or replacement service contact:

Name

Telephone

Address

Alt. Telephone

City, State, and Zip

END OF DOCUMENT

**DOCUMENT 00 6200
WITHHELD CONTRACT FUNDS CERTIFICATION**

Public Contract Code Section §22300 requires the inclusion in invitations for public agency bids and in public agency contracts a provision which will, at the expense of the contractor, permit the substitution of securities of equal value for any construction progress monies withheld to ensure performance under a contract. Therefore, as a contractor on: **TANK 3 RECOAT PROJECT**

- [] I do not intend to substitute securities for monies withheld and thereby avail myself of the process and rights provided in Public Contract Code Section §22300.
- [] I do intend to exercise my option as specified in Public Contract Code Section §22300 and hereby agree to the following:
1. I will establish an escrow agreement satisfactory to the Owner, with a state or federally chartered bank, which shall contain at a minimum provisions governing inter alia:
 - a. The amount of securities to be deposited;
 - b. The type of securities to be deposited, (eligible securities for deposit are described in Government Code Section 16430);
 - c. The providing of powers of attorney or other documents necessary for the transfer of the securities deposited;
 - d. The terms and conditions of conversion to cash to provide funds to meet defaults by the Contractor including, but not limited to termination of the Contractor's control over the work, stop notices filed pursuant to law, assessment of liquidated damages or other amounts to be kept or retained under the provisions of the contract;
 - e. The decrease in value of securities on deposit; and
 - f. The termination of the escrow agreement upon completion of the contract and acceptance by the Owner.
 2. I will obtain written consent of the surety to any such agreement; and
 3. I will attach to each progress payment submitted a notarized copy of escrow instructions executed by agents thereof and on bank letterhead as proof that such an account has been established. Such instructions will set forth that securities deposited shall not be withdrawn for any purpose (with contractor's complete and unreserved agreement) without prior written approval by the Rosamond Community Services District with respect to the project herein above referenced.

Signature of Bidder

END OF DOCUMENT

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DOCUMENT 00 6210

ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION

California Public Contract Code §22300

(Rosamond Community Services District – Vendor)

This Escrow Agreement is made and entered into on _____, 20__ by and between the Rosamond Community Services District whose address is **3179 35th Street West, Rosamond, California 93560** (hereinafter "Owner"), and _____, whose address is _____ (hereinafter "Contractor") and _____, whose address is _____ (hereinafter "Escrow Agent"),

WITNESSETH:

For the consideration hereinafter set forth, the Owner, Contractor, and Escrow Agent agree as follows:

1. Pursuant to Section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by Owner pursuant to the Construction Contract entered into between the Owner and the Contractor in the amount of _____ dollars (\$_____), dated _____ (hereinafter referred to as the "Contract"). Alternatively, on written request of the Contractor, the Owner shall make payments of the retention earnings directly to the Escrow Agent. When the Contractor deposits the securities as a substitute for Contract earnings, the Escrow Agent shall notify the Owner within 10 days of the deposit. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract between the Owner and Contractor. Securities shall be held in the name of Rosamond Community Services District, and shall designate the Contractor as the beneficial owner.

2. Owner shall make progress payments to the Contractor for those funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that Escrow Agent holds securities in the form and amount specified herein.

3. When Owner makes payment of retentions earned directly to Escrow Agent, Escrow Agent shall hold them for the benefit of Contractor until the time that the escrow created under this Contract is terminated. Contractor may direct the investment of the payments into securities.

All terms and conditions of this Agreement and the rights and responsibilities of the parties shall be equally applicable and binding when Owner pays Escrow Agent directly.

4. Contractor shall be responsible for paying all fees, costs, and expenses incurred by Escrow Agent in administering the escrow account and all expenses of Owner. These expenses and payment terms shall be determined by Owner, Contractor and Escrow Agent.

5. The interest earned on the securities or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to Owner.

6. Contractor shall have the right to withdraw all or any part of the principal in the escrow account only by written notice to Escrow Agent accompanied by written authorization from Owner to Escrow Agent that Owner consents to the withdrawal of the amount sought to be withdrawn by Contractor.

7. Owner shall have a right to draw upon the securities in the event of default by Contractor. Upon Seven (7) days written notice to the Escrow Agent from Owner of the default, Escrow Agent shall immediately convert the securities, any interest earned on the securities, and all interest earned on the interest, to cash and shall distribute the cash as instructed by Owner. Escrow Agent shall have no duty to determine whether a default has occurred and may rely solely upon the written notice of such default from Owner.

8. Upon receipt of written notification from Owner certifying that the Contract is final and complete, and that Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payment of fees and charges.

9. Escrow Agent shall rely on the written notifications from Owner and Contractor pursuant to Sections 5 to 8 of this Agreement. Owner and Contractor shall hold Escrow Agent harmless from Escrow Agent's release, conversion, and disbursement of the securities and interest as set forth above.

10. The names of the persons who are authorized to give written notice or to receive written notice on behalf of the Owner and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

(a) On behalf of the Owner:

Kim B. Domingo
General Manager
3179 35th Street West
Rosamond, CA 93560

Signature

(b) On behalf of the Contractor

Signature

(c) On behalf of the Escrow Agent

Signature

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

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

RECOMMENDED AND APPROVED
AS TO CONTENT:

ROSAMOND COMMUNITY SERVICES DISTRICT

By _____
Kim B. Domingo
General Manager

By _____
President, Board of Directors
"OWNER"

APPROVED AS TO FORM:

Contractor's Name

By _____
Signature

Type of Entity
(corporation, partnership, sole proprietorship)

NAME OF BANK

By _____
Signature

By _____
Signature

Print Name

, Branch Manager

Title of Individual Executing
Document on behalf of Firm

"ESCROW AGENT"

"CONTRACTOR"

END OF DOCUMENT

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GENERAL CONDITIONS

ARTICLE 1 - INTERPRETATION OF CONTRACT DOCUMENTS

1.1 Interpretation Of Documents

- A. Contract Documents are complementary; what is called for by one is as binding as if called for by all.
- B. Individual Contract Documents subdivide at first level into Articles, and then into paragraphs.

1.2 Order Of Precedence Of Documents

- A. In the case of discrepancy or ambiguity in the Contract Documents, the following order of precedence shall prevail:
 - 1. Modifications in inverse chronological order (i.e., most recent first), and in the same order as specific portions they are modifying;
 - 2. Agreement Forms (Document 00 5200), and terms and conditions referenced therein;
 - 3. Supplementary General Conditions, if included;
 - 4. General Conditions (Document 00 7200);
 - 5. Division 1 Specifications, if included;
 - 6. Drawings and Technical Specifications (Division 2 and above);
 - 7. Written numbers over figures, unless obviously incorrect;
 - 8. Figured dimensions over scaled dimensions;
 - 9. Large-scale Drawings over small-scale Drawings.
- B. Any conflict between Drawings and Technical Specifications (Division 2 and above) will be resolved in favor of the document of the latest date (i.e., the most recent document), and if the dates are the same or not determinable, then in favor of Specifications.
- C. Any conflict between a bill or list of materials shown in the Contract Documents and the actual quantities required to complete Work required by Contract Documents, will be resolved in favor of the actual quantities.
- D. All Technical Specifications included in the Project manual shall be included within the Contract Documents unless identified otherwise.

ARTICLE 2 - PRE-BID INVESTIGATIONS

2.1 Pre-Bid Investigations Required

- A. Prior to and as a condition of submitting a Bid and executing Document 00 5200 (Agreement), Contractor shall investigate fully the Work of the Contract. Contractor shall visit the Site, examine thoroughly and understand fully the nature and extent of the Contract Documents, Work, Site, locality, actual conditions and as-built conditions.
- B. During performance of the Contract, Contractor will be charged with knowledge of all information that it should have learned in performing these pre-bid investigations and other obligations, and shall not be entitled to Change Orders (time or compensation) due to any information, error, inconsistency, omission, or conditions that Contractor should have known as a part of this Work. Contractor shall be responsible for the resultant losses, including, without limitation, the cost of correcting Defective Work.

2.2 Limited Reliance Permitted On Owner's Existing Conditions Data

- A. Regarding aboveground and as-built conditions shown on the Contract Documents or supplied by Owner, such information has been compiled in good faith, however, Owner does not expressly or impliedly warrant or represent that such information is correctly shown or indicated, or otherwise complete for construction purposes. Contractor must independently verify such information as part of its pre-bid investigations, and where conditions are not reasonably verifiable or discrepancies are identified, bring such matters to Owner's attention through written question issued during the bid period. In executing Document 00 5200 (Agreement), Contractor shall rely

on the results of its own independent investigation and shall not rely on Owner-supplied information regarding aboveground conditions and as-built conditions, and Contractor shall accept full responsibility for its verification work sufficient to complete the Work as intended.

- B. Regarding subsurface conditions other than Underground Facilities shown on the Contract Documents or otherwise supplied by Owner, Contractor may rely only upon the general accuracy of actual reported depths, actual reported character of materials, actual reported soil types, actual reported water conditions, or actual obstructions shown or indicated in the Contract Documents. Owner is not responsible for the completeness of any subsurface condition information, Contractor's conclusions or opinions drawn from any subsurface condition information, or subsurface conditions that are not specifically shown. (For example, Owner is not responsible for soil conditions in areas contiguous to areas where a subsurface condition is shown.)

2.3 Pre-Bid Investigation Requirements For Excavation And Utilities Relocation Projects

- A. As part of its pre-bid investigations for Projects involving excavation and/or relocation of existing utilities, Contractor shall verify information regarding Underground Facilities, including but not limited to, requesting additional information or verification of information as necessary.
- B. Because of the nature and location of the Project, the existence of Underground Facilities is deemed inherent in the Work of the Contract, as is the fact that Underground Facilities are not always accurately shown or completely shown on as-built records, both as to their depth and location. Contractor shall, therefore, take care to note the existence and potential existence of Underground Facilities, in particular, above and below grade structures, drainage lines, storm drains, sewers, water, gas, electrical, chemical, hot water, and other similar items and utilities. Contractor shall carefully consider all supplied information, request additional information Contractor may deem necessary, and visually inspect the Site for above ground indications of Underground Facilities (such as, for example not by way of limitation, the existence of existing service laterals, appurtenances or other types of utilities, indicated by the presence of an underground transmission main or other visible facilities, such as buildings, new asphalt, meters and junction boxes, on or adjacent to the Site). Contractor shall also consider local underground conditions and typical practices for Underground Facilities, either through its own direct knowledge or through its subcontractors, and fully consider this knowledge in assessing the existing information and the reasonableness of its reliance.

ARTICLE 3 - SUBCONTRACTORS

3.1 Subcontractor Listing Law

- A. Contractor shall comply with the Subcontractor Listing law, California Public Contract Code §§4101 et seq. Contractor shall not substitute any other person or firm in place of any Subcontractor listed in the Bid except as may be allowed by law.
- B. Subcontractors shall not assign or transfer their subcontracts or permit them to be performed by any other contractor without Owner's written approval. At Owner's request, Contractor shall provide Owner with a complete copy of all executed subcontracts or final commercial agreements with Subcontractors and/or suppliers.

3.2 Subcontracts

- A. Subcontract agreements shall preserve and protect the rights of Owner under the Contract Documents so that subcontracting will not prejudice such rights. To the extent of the Work to be performed by a Subcontractor, Contractor shall require the Subcontractor's written agreement (1) to be bound to the terms of Contract Documents and (2) to assume all the obligations and responsibilities that Contractor assumes toward Owner under the Contract Documents. (These agreements include for example, and not by way of limitation, all warranties, claims procedures and rules governing submittals of all types to which Contractor is subject under the Contract Documents.)
- B. Contractor shall provide for the assignment to Owner of all rights any Subcontractor (of any tier) may have against any manufacturer, supplier, or distributor for breach of warranties and guarantees relating to the Work performed by the Subcontractor under the Contract Documents.

Subcontracts shall provide and acknowledge Owner as an intended third-party beneficiary of each subcontract and supply contract (of any tier).

ARTICLE 4 - DRAWINGS AND SPECIFICATIONS

4.1 Intent Of Drawings And Specifications

- A. Contractor shall interpret words or phrases used to describe Work (including services), materials, or equipment that have well-known technical or construction industry or trade meaning in accordance with that meaning. Drawings' intent specifically includes the intent to depict construction that complies with all applicable laws, codes and standards.
- B. As part of the "Work," Contractor shall provide all labor, materials, equipment, machinery, tools, facilities, services, employee training and testing, hoisting facilities, Shop Drawings, storage, testing, security, transportation, disposal, the securing of all necessary or required field dimensions, the cutting or patching of existing materials, notices, permits, documents, reports, agreements and any other items required or necessary to timely and fully complete Work described and the results intended by Contract Documents and, in particular, Drawings and Specifications. Divisions and Specification Sections and the identification on any Drawings shall not control Contractor in dividing Work among Subcontractors or suppliers or delineating the Work to be performed by any specific trade.
- C. Contractor shall perform reasonably implied parts of Work as "incidental work" although absent from Drawings and Specifications. Incidental work includes any work not shown on Drawings or described in Specifications that is necessary or normally or customarily required as a part of the Work shown on Drawings or described in Specifications. Incidental work includes any work necessary or required to make each installation satisfactory, legally operable, functional, and consistent with the intent of Drawings and Specifications or the requirements of Contract Documents. Contractor shall perform incidental work without extra cost to Owner. Incidental work shall be treated as if fully described in Specifications and shown on Drawings, and the expense of incidental work shall be included in price Bid and Contract Sum.

4.2 Checking Of Drawings And Specifications

- A. Before undertaking each part of Work, Contractor shall carefully study and compare Contract Documents and check and verify pertinent figures shown in the Contract Documents and all applicable field measurements. Contractor shall be responsible for any errors that might have been avoided by such comparison. Figures shown on Drawings shall be followed; Contractor shall not scale measurements. Contractor shall promptly report to Owner, in writing, any conflict, error, ambiguity or discrepancy that Contractor may discover. Contractor shall obtain a written interpretation or clarification from Owner before proceeding with any Work affected thereby. .

4.3 Interpretation Of Drawings And Specifications

- A. A typical or representative detail on Drawings shall constitute the standard for workmanship and material throughout corresponding parts of Work. Where necessary, and where reasonably inferable from Drawings, Contractor shall adapt such representative detail for application to such corresponding parts of Work. The details of such adaptation shall be subject to prior approval by Owner. Repetitive features shown in outline on Drawings shall be in exact accordance with corresponding features completely shown.
- B. Should any discrepancy appear or any misunderstanding arise as to the import of anything contained in Drawings and Specifications, or should Contractor have any questions or requests relating to Drawings or Specifications, Contractor shall refer the matter to Owner, in writing, with a copy to the Architect/Engineer, where applicable. Owner will issue with reasonable promptness written responses, clarifications or interpretations as Owner may determine necessary, which shall be consistent with the intent of and be reasonably inferable from Contract Documents. Such written clarifications or interpretations shall be binding upon Contractor. If Contractor believes that a written response, clarification or interpretation justifies an adjustment in the Contract Sum or Contract Time, Contractor shall give Owner prompt written notice. If the parties are unable to agree to the amount or extent of the adjustment, if any, then Contractor shall perform the Work in

conformance with Owner's response, clarification, or interpretation and may make a written claim for the adjustment as provided in Article 12.

- C. The following general specifications shall apply wherever in the Specifications, or in any directions given by Owner in accordance with or supplementing Specifications, it is provided that Contractor shall furnish materials or manufactured articles or shall do Work for which no detailed specifications are shown. Materials or manufactured articles shall be of the best grade, in quality and workmanship, obtainable in the market from firms of established good reputation. If not ordinarily carried in stock, the materials or manufactured articles shall conform to industry standards for first class materials or articles of the kind required, with due consideration of the use to which they are to be put. Work shall conform to the usual standards or codes, such as those cited herein, for first class work of the kind required. Contractor shall specify in writing to Owner the materials to be used or Work to be performed under this Paragraph ten Working Days prior to furnishing such materials or performing such Work.

4.4 Use Of Drawings And Specifications.

- A. Drawings, Specifications and other Contract Documents were prepared for use for Work of Contract Documents only. No part of Contract Documents shall be used for any other construction or for any other purpose except with the written consent of Owner. Any unauthorized use of Contract Documents is prohibited and at the sole liability of the user.

4.5 Standard Specifications.

- A. Standard Specifications refers to the most recent edition of the Standard Specifications of the State of California, Business and Transportation Agency, Department of Transportation.
- B. In case of conflict between the Standard Specifications and these General Conditions or the Division 1 Specifications, the General Conditions and Division 1 Specifications shall take precedence over and be used in lieu of the conflicting provisions of the Standard Specifications.

ARTICLE 5 - COMMENCEMENT OF THE WORK

5.1 Submission Of Required Schedules

- A. Contractor shall submit to Owner in draft for review and discussion at the Preconstruction Conference, and in final prior to the first payment application, the following schedules:
 - 1. Schedule of Values
 - 2. Critical Path Method Construction Schedule
 - 3. Schedule of Submittals.
- B. No progress payment shall be due or owing to Contractor until such schedules are submitted to and acceptable to Owner and/or Architect/Engineer as meeting the requirements of the Contract Documents. In Owner's sole discretion, Owner may elect to instead withhold a portion of any progress payment for unacceptable compliance with contract requirements for such schedules.
- C. Owner's acceptance of Contractor's schedules will not create any duty of care or impose on Owner any responsibility for the sequencing, scheduling or progress of Work nor will it interfere with or relieve Contractor from Contractor's full responsibility therefore.

5.2 Commencement Date Of Contract Time

- A. The Contract Time will commence ten (10) Working Days following execution of the Agreement by the Owner or, if a Notice to Proceed is given, on the date indicated in the Notice to Proceed.

ARTICLE 6 - CONTRACTOR'S ORGANIZATION AND EQUIPMENT

6.1 Contractor's Legal Address

- A. Address, facsimile number, and email address given in Contractor's Bid are hereby designated as Contractor's legal address, facsimile number, and email address. Contractor may change its legal address, facsimile number, and email address by notice in writing, delivered to Owner, which in conspicuous language advises Owner of a change in legal address, facsimile number, or

email address, and which Owner accepts in writing. Delivery to Contractor's legal address or depositing in any post office or post office box regularly maintained by the United States Postal Service, in a wrapper with postage affixed, directed to Contractor at legal address, or of any drawings, notice, letter or other communication, shall be deemed legal and sufficient service thereof upon Contractor. Facsimile or email to Contractor's designated facsimile number or email address of any letter, memorandum, or other communication on standard or legal sized paper, with proof of facsimile transmission or email confirmation, shall be deemed legal and sufficient service thereof upon Contractor.

6.2 Contractor's Superintendents Or Forepersons

- A. Contractor shall at all times be represented on Site by one or more superintendents or forepersons authorized and competent to receive and carry out any instructions that Owner may give and shall be liable for faithful observance of instructions delivered to Contractor or to authorized representative or representatives on Site. The Superintendent shall not be changed except with the consent of the Owner unless the Superintendent proves to be unsatisfactory to the Contractor and ceases to be in its' employ. If the Superintendent proves to be unsatisfactory to Owner, they shall be replaced within ten (10) Calendar Days after written notice from Owner to Contractor.

6.3 Proficiency In English

- A. Supervisors, security guards, safety personnel and employees who have unescorted access to the Site shall possess proficiency in the English language in order to understand, receive and carry out oral and written communications or instructions relating to their job functions, including safety and security requirements.

6.4 Contractor's And Subcontractors' Employees

- A. Contractor shall employ, and shall permit its Subcontractors to employ, only competent and skillful personnel to do Work. If Owner notifies Contractor that any of its employees, or any of its Subcontractors' employees on Work is incompetent, unfaithful, disorderly or profane, or fails to observe customary standards of conduct or refuses to carry out any provision of the Contract Documents, or uses threatening or abusive language to any person on Work representing Owner, or violates sanitary rules, or is otherwise unsatisfactory, and if Owner requests that such person be discharged from Work, then Contractor or its Subcontractor shall immediately discharge such person from Work and the discharged person shall not be re-employed on the Work except with consent of Owner.

6.5 Contractor's Use Of The Site

- A. Contractor shall not make any arrangements with any person to permit occupancy or use of any land, structure or building within the limits of the Work, for any purpose whatsoever, either with or without compensation, in conflict with any agreement between Owner and any Owner, former Owner or tenant of such land, structure or buildings. Contractor may not occupy Owner-owned property outside the limit of the Work as indicated on the Drawings unless it obtains prior approval from Owner.

ARTICLE 7 - OWNER'S ADMINISTRATION OF WORK

7.1 Owner's Representative(s)

- A. Owner's Representative(s) will have limited authority to act on behalf of Owner as set forth in the Contract Documents.
- B. Except as otherwise provided in these Contract Documents or subsequently identified in writing by Owner, Owner will issue all communications to Contractor through Owner's Representative, and Contractor shall issue all communications to Owner through Owner's Representative in a written document delivered to Owner.
- C. Should any direct communications between Contractor and Owner's consultants, architects or engineers not identified in Article 2 of Document 00 5200 (Agreement) occur during field visits or by telephone, Contractor shall immediately confirm them in a written document copied to Owner.

7.2 Owner's Observation Of The Work

- A. Work shall be performed under Owner's general observation and administration. Contractor shall comply with Owner's directions and instructions in accordance with the terms of Contract Documents, but nothing contained in these General Conditions shall be taken to relieve Contractor of any obligations or liabilities under the Contract Documents. Owner's failure to review or, upon review, failure to object to any aspect of Work reviewed, shall not be deemed a waiver or approval of any non-conforming aspect of Work.
- B. Subject to those rights specifically reserved in the Contract Documents, Owner will not supervise, or direct, or have control over, or be responsible for, Contractor's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or Contractor's failure to comply with laws and regulations applicable to the furnishing or performance of Work. Owner will not be responsible for Contractor's failure to perform or furnish the Work in accordance with Contract Documents.

7.3 Architect/Engineer's Observation Of Work

- A. Owner may engage an Architect/Engineer, an independent consultant or Project Manager (collectively for purposes of this Paragraph, "Project Manager/Engineer") to assist in administering the Work. If so engaged, Project Manager/Engineer will advise and consult with Owner, but will have authority to act on behalf of Owner only to the extent provided in the Contract Documents or as set forth in writing by Owner. Project Manager/Engineer will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with Work. Project Manager/Engineer will not be responsible for or have control over the acts or omissions of Contractor, Subcontractors or their agents or employees, or any other persons performing Work.
- B. Project Manager/Engineer may review Contractor's Submittals, such as Shop Drawings, Product Data, and Samples, but only for conformance with design concept of Work and with information given in the Contract Documents.
- C. Project Manager/Engineer may visit the Site at intervals appropriate to stage of construction to become familiar generally with the progress and quality of Work and to determine in general if Work is proceeding in accordance with Contract Documents. Based on its observations, Project Manager/Engineer may recommend to Owner disapproval or rejection of Work that Project Manager/Engineer believes to be Defective or will not produce a complete Project that conforms to Contract Documents or will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by Contract Documents. Owner will also have authority to require special inspection or testing of Work, whether or not the Work is fabricated, installed or completed.

7.4 Owner's And Architect/Engineer's Exercise Of Contract Responsibilities

- A. Owner, Project Manager, Architect/Engineer and all Owner's representatives, in performing their duties and responsibilities under the Contract Documents, accept no duties, responsibilities or duty of care, nor may the same be implied or inferred, towards Contractor, any Subcontractor, sub-Subcontractor or supplier, except those set forth expressly in the Contract Documents.

7.5 Owner's Right Of Access To The Work

- A. During performance of Work, Owner and its agents, consultants, and employees may at any time enter upon Work, shops or studios where any part of the Work may be in preparation, or factories where any materials for use in Work are being or are to be manufactured, and Contractor shall provide proper and safe access and facilities for this purpose, and shall make arrangements with manufacturers to facilitate inspection of their processes and products to such extent as Owner's interests may require. Other contractors performing work for Owner may also enter upon Work for all purposes required by their respective contracts. Subject to the rights reserved in the Contract Documents, Contractor shall have sole care, custody, and control of the Site and its Work areas.

7.6 Owner's Right Of Separate Construction

- A. Owner may perform with its own forces, construction or operations related to the Project, or the Site during Contractor's operations. Owner may also award separate contracts in connection with other portions of the Project or other construction or operations, on the Site or areas contiguous to the Site, under conditions similar to these Contract Documents, or may have utility Owners perform other work.
- B. Contractor shall adjust its schedule and fully coordinate with and shall afford all other contractors, utility districts and Owner (if Owner is performing work with its own forces), proper and safe access to the Site, and reasonable opportunity for the installation and storage of their materials. Contractor shall ensure that the execution of its Work properly connects and coordinates with others' work, do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work, and shall cooperate with them to facilitate the progress of the Work.
- C. To the extent that any part of Contractor's Work is to interface with work performed or installed by other contractors or utility owners, Contractor shall inspect and measure the in-place work. Contractor shall promptly report to Owner in writing any defect in in-place work that will impede or increase the cost of Contractor's interface unless corrected.

ARTICLE 8 - CONTRACTOR'S PROSECUTION AND PROGRESS OF THE WORK

8.1 Contractor To Supervise The Work

- A. Subject to those rights specifically reserved in the Contract Documents, Contractor shall supervise, direct, have control over, and be responsible for, Contractor's means, methods, techniques, sequences or procedures of construction, safety precautions and programs incident thereto, and compliance with laws and regulations applicable to the furnishing or performance of Work.
- B. Contractor shall keep on the Site at all times during Work progress a competent resident Superintendent, who shall not be replaced without Owner's express written consent. The Superintendent shall be Contractor's representative at the Site and shall have complete authority to act on behalf of Contractor. All communications to and from the Superintendent shall be as binding as if given to or by Contractor.
- C. Contractor shall supervise, inspect, and direct Work competently and efficiently, devoting the attention and applying such personal skills and expertise as may be required and necessary to perform Work in accordance with Contract Documents. Contractor shall be solely responsible for and have control and charge of construction means, methods, techniques, sequences and procedures, safety precautions and programs in connection with the Work. Contractor shall be responsible to see that the completed Work complies accurately with Contract Documents.
- D. Contractor is fully responsible for Contractor's own acts and omissions. Contractor is responsible for all acts and omissions of its Subcontractors, suppliers, and other persons and organizations performing or furnishing any of the Work, labor, materials, or equipment under a direct or indirect contract with Contractor.
- E. Contractor shall conduct monthly Contractor Safety Committee meetings, and weekly toolbox safety talks.

8.2 Contractor To Maintain Cost Data

- A. Contractor shall maintain full and correct information as to the number of workers employed in connection with each subdivision of Work, the classification and rate of pay of each worker in form of certified payrolls, the cost to Contractor of each class of materials, tools and appliances used by Contractor in Work, and the amount of each class of materials used in each subdivision of Work. Contractor shall provide summaries or reports comparing actual Project costs with Bid estimates or budgets, upon Owner's request.
- B. Contractor shall maintain daily job reports recording all significant activity on the job, including the number of workers on Site, Work activities, problems encountered and delays. Contractor shall provide Owner with copies for each Day Contractor works on the Project, to be delivered to Owner either the same Day or the following morning before starting work at the Site. Contractor shall take pre-construction and monthly progress photographs of all areas of the Work.

Contractor shall maintain copies of all correspondence with Subcontractors and records of meetings with Subcontractors.

- C. Owner shall have the right to audit and copy Contractor's books and records of any type, nature or description relating to the Project (including but not limited to financial records reflecting in any way costs claimed on the Project), and to inspect the Site, including Contractor's trailer, or other job Site office, and this requirement shall be contained in the subcontracts of Subcontractors working on Site. By way of example, Owner shall have the right to inspect and obtain copies of all Contract Documents, planning and design documents, Bid proposal and negotiation documents, cost records and job cost variance reports, design modification proposals, value engineering or other cost reduction proposals, revisions made to the original design, job progress reports, photographs, and as-built drawings maintained by Contractor. Owner and any other applicable governmental entity shall have the right to inspect all information and documents maintained hereunder at any time during the Project and for a period of five years following Final Completion, in accordance with the provisions of Section 8546.7 of the California Government Code. This right of inspection shall not relieve Contractor of its duties and obligations under the Contract Documents. This right of inspection shall be specifically enforceable in a court of law, either independently or in conjunction with enforcement of any other rights in the Contract Documents.

8.3 Contractor To Supply Sufficient Workers And Materials

- A. Unless otherwise required by Owner under the terms of Contract Documents, Contractor shall at all times keep on the Site materials and employ qualified workers sufficient to prosecute Work at a rate and in a sequence and manner necessary to complete Work within the Contract Time. This obligation shall remain in full force and effect notwithstanding disputes or claims of any type.

8.4 Contractor To Maintain Project Record Documents

- A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Contract Modifications, Change Orders, Work Directives, Force Account orders, and written interpretations and clarifications in good order and annotated to show all as-built changes made during construction. These Project Record Documents, together with all approved Samples and a counterpart of all approved Shop Drawings, shall be maintained and available to Owner for reference. Upon completion of the Work, Contractor shall deliver to Owner, the Project Record Documents, Samples and Shop Drawings and as-built drawings.
- B. Throughout Contractor's performance of the Work of the Project, Contractor shall maintain construction records to include: shop drawings; product data/material data sheets; samples; submittal; purchases; materials; equipment; inspections; applicable handbooks; applicable codes and standards; maintenance and operating manuals and instructions; RFI Log; Submittal Log; other related documents and revisions which arise out of the Construction Contracts. Contractor shall maintain records of principal building layout lines, elevations for the bottom of footings, floor levels, and key site elevations (certified by a qualified surveyor or professional engineer). Contractor shall make all records available to Owner. At the completion of the Project, Contractor shall deliver all such records to the Owner to have a complete set of record as-built drawings.

8.5 Contractor To Not Disrupt Owner Operation

- A. Contractor shall schedule and execute all Work in a manner that does not interfere with or disrupt Owner operations, including but not limited to, parking, utilities (electricity, gas, water), noise, access by employees and administration, access by vendors, physicians, patients and any other person or entity using Owner facilities or doing business with Owner. Contractor shall produce and supply coordination plans and requests to Owner, following Owner procedures, for all necessary interference of construction with Owner, which Owner will reasonably cooperate with.

8.6 Contractor To Provide Temporary Facilities And Controls

- A. Unless expressly provided otherwise in the Contract Documents, Contractor shall provide all temporary utilities (including without limitation electricity, water, natural gas), lighting, heating, cooling and ventilating devices, telephone, sanitary facilities, barriers, fences and enclosures, tree and plant protection, fire protection, pollution, erosion, Storm Water Pollution Prevention controls,

noise and traffic control, and any other necessary services required for construction, testing or completion of the Work.

ARTICLE 9 - WARRANTY, GUARANTY, AND INSPECTION OF WORK

9.1 Warranty And Guaranty

- A. General Representations and Warranties: Contractor represents and warrants that it is and will be at all times fully qualified and capable of performing every Phase of the Work and to complete Work in accordance with the terms of Contract Documents. Contractor warrants that all construction services shall be performed in accordance with generally accepted professional standards of good and sound construction practices and all requirements of the Contract Documents. Contractor warrants that Work, including but not limited to each item of materials and equipment incorporated therein, shall be new, of suitable grade of its respective kind for its intended use, and free from defects in design, engineering, materials, construction and workmanship. Contractor warrants that Work shall conform in all respects with all applicable requirements of federal, state and local laws, applicable construction codes and standards, licenses, and permits, Drawings and Specifications and all descriptions set forth therein, and all other requirements of Contract Documents.
- B. Extended Guarantees: Any guarantee exceeding one year provided by the supplier or manufacturer of any equipment or materials used in the Project shall be extended for such term. Contractor shall supply Owner with all warranty and guarantee documents relative to equipment and materials incorporated in the Project and guaranteed by their suppliers or manufacturers.
- C. Environmental and Toxics Warranty: The covenants, warranties and representations contained in this Paragraph are effective continuously during Contractor's Work on the Project and following cessation of labor for any reason including, but not limited to, Project completion. Contractor covenants, warrants and represents to Owner that:
 - 1. To Contractor's knowledge after due inquiry, no lead or Asbestos-containing materials were installed or discovered in the Project at any time during Contractor's construction thereof. If any lead or Asbestos-containing materials were discovered, Contractor made immediate written disclosure to Owner.
 - 2. To Contractor's knowledge after due inquiry, no electrical transformers, light fixtures with ballasts or other equipment containing PCBs are or were located on the Project at any time during Contractor's construction thereof. If any such materials were discovered, Contractor made immediate written disclosure to Owner.
 - 3. To Contractor's knowledge after due inquiry, no storage tanks for gasoline or any other toxic substance are or were located on the Project at any time during Contractor's construction thereof. If any such materials were discovered, Contractor made immediate written disclosure to Owner.
 - 4. Contractor's operations concerning the Project are and were not in violation of any applicable environmental federal, state, or local statute, law or regulation dealing with hazardous materials substances or toxic substances and no notice from any governmental body has been served upon Contractor claiming any violation of any such law, ordinance, code or regulation, or requiring or calling attention to the need for any Work, repairs, construction, alteration, or installation on or in connection with the Project in order to comply with any such laws, ordinances, codes, or regulations, with which Contractor has not complied. If there are any such notices with which Contractor has complied, Contractor shall provide Owner with copies thereof.

9.2 Inspection Of Work

- A. Work and materials, and manufacture and preparation of materials, from beginning of construction until Final Completion and acceptance of Work, shall be subject to inspection and rejection by Owner, its agents, representatives or independent contractors retained by Owner to perform inspection services, or governmental agencies with jurisdictional interests. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and program so that they may comply therewith as applicable. Upon

request or where specified, Owner shall be afforded access for inspection at the source of supply, manufacture or assembly of any item of material or equipment, with reasonable accommodations supplied for making such inspections.

- B. Contractor shall furnish, in such quantities and sizes as may be required for proper examination and tests, Samples or test specimens of all materials to be used or offered for use in connection with Work, in addition to tests and submittals required in the individual material or equipment specification sections. Contractor shall prepare Samples or test specimens at its expense and furnish them to Owner. Contractor shall submit all Samples in ample time to enable Owner to make any necessary tests, examinations, or analyses before the time it is desired to incorporate the material into the Work.
- C. Contractor shall give Owner no less than 48 hours notice of readiness of Work for all required inspections, tests or approvals, and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- D. If applicable laws or regulations of any authority having jurisdiction require any Work (or part thereof) specifically to be inspected, tested or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests or approvals, and furnish Owner with the required certificates of inspection, or approval. Owner will pay the cost of initial testing and Contractor shall pay all costs in connection with any follow-up or additional testing. Contractor shall also be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests or approvals required for the acceptance of materials or equipment to be incorporated in the Work, or of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.
- E. If Contractor covers any Work, or the work of others, prior to any required inspection, test or approval without written approval of Owner, Contractor shall uncover the Work at Owner's request. Contractor shall bear the expense of uncovering Work and replacing Work.
- F. Contractor shall furnish tools, labor and materials necessary to make examination of Work that may be completed or in progress, even to the extent of uncovering or taking down portions of finished Work. Cost of making examination and of reconstruction shall be borne by Contractor.
- G. Inspection of the Work by or on behalf of Owner, or Owner's failure to do so, shall not under any circumstances be deemed a waiver or approval of any non-conforming aspect of the Work. Contractor shall have an absolute duty, in the absence of a written Change Order signed by Owner, to perform Work in conformance with the Contract Documents and to immediately correct Defective Work immediately upon Contractor's knowledge.
- H. Any inspection, evaluation, or test performed by or on behalf of Owner relating to the Work is solely for the benefit of Owner, and shall not be relied upon by Contractor. Contractor shall not be relieved of the obligation to perform Work in accordance with the Contract Documents, nor relieved of any guaranty, warranty, or other obligation, as a result of any inspections, evaluations, or tests performed by Owner, whether or not such inspections, evaluations, or tests are permitted or required under the Contract Documents. Contractor shall be solely responsible for testing and inspecting Work already performed to determine whether such Work is in proper condition to receive later Work.

9.3 Correction Of Defective Work

- A. Owner may direct Contractor to correct any Defective Work or remove it from the Site and replace it with Work that is not Defective and satisfactorily correct or remove and replace any damage to other Work or the work of others resulting from the correction or removal. Contractor shall be responsible for any and all claims, costs, losses and damages caused by or resulting from such correction or removal. Owner's rights under this Paragraph shall be in addition to any other rights it may have under the Contract Documents or by law.
- B. If Contractor fails to supply sufficient skilled workers, suitable materials or equipment, or to furnish or perform the Work in such a way that the completed Work will conform to Contract Documents, Owner may order Contractor to replace any such Defective Work, or stop any portion of Work to permit Owner (at Contractor's expense) to replace such Defective Work. These Owner rights are entirely discretionary on the part of Owner, and shall not give rise to any duty on the part of Owner to exercise the rights for the benefit of Contractor or any other party.

9.4 Acceptance And Correction Of Defective Work By Owner

- A. Owner may in its sole discretion elect to accept Defective Work. Contractor shall pay all claims, costs, losses and damages attributable to Owner's evaluation of and determination to accept such Defective Work. If Owner accepts any Defective Work prior to final payment, a Change Order may be issued incorporating the necessary revisions in the Contract Documents with respect to the Work and the Contract Sum. If the parties are unable to agree to the amount of an appropriate decrease in the Contract Sum, Owner may deduct from monies due Contractor, all claims, costs, losses, damages, expenses and liabilities attributable to the Defective Work. If Contractor disagrees with Owner's calculations, Contractor may make a claim as provided in Article 12 of this Document 00 7200. If Owner accepts any Defective Work after final payment, Contractor shall pay to Owner, an appropriate amount as determined by Owner.
- B. Owner may correct and remedy deficiency if, after five (5) Calendar Days of written notice to Contractor, Contractor fails to correct Defective Work or to remove and replace rejected Work; or provide a plan for correction of Defective Work acceptable to Owner; or perform Work in accordance with Contract Documents. In connection with such corrective and remedial action, Owner may exclude Contractor from all or part of the Site; take possession of all or part of Work and suspend Contractor's Work related thereto; and incorporate in Work any materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, its representatives, agents, employees, and other contractors and Project Manager/Engineer's consultants' access to the Site to enable Owner to exercise the rights and remedies under this Paragraph. Contractor shall be responsible for all claims, costs, losses, damages, expenses and liabilities incurred or sustained by Owner in exercising such rights and remedies. A Change Order may be issued incorporating the necessary revisions in the Contract Documents with respect to Work and the Contract Sum. If the parties are unable to agree to the amount of an appropriate decrease in the Contract Sum, Owner may deduct from monies due Contractor, all claims, costs, losses and damages caused by or resulting from the correction or removal. If Contractor disagrees with Owner's calculations, Contractor may make a claim as provided in Article 12 of this Document 00 7200.

9.5 Rights Upon Inspection, Correction Or Acceptance

- A. Contractor shall not be allowed an extension of Contract Time because of any delay in the performance of Work attributable to the exercise by Owner of its rights and remedies under this Article. Where Owner exercises its rights under this Article, it retains and may still exercise all other rights it has by law or under the Contract Documents including, but not limited to, the right to terminate Contractor's right to proceed with the Work under the Contract Documents for cause and/or make a claim or back charge where a Change Order cannot be agreed upon.
- B. Inspection by Owner or its authorized agents or representatives shall not relieve Contractor of its obligation to have furnished material and workmanship in accordance with Contract Documents. Payment for Work completed through periodic progress payments, final payment or otherwise shall not operate to waive Owner's right to require full compliance with Contract Documents and shall in no way be deemed as acceptance of any defective Work paid therefor. Contractor's obligation to complete the Work in accordance with Contract Documents shall be absolute, unless Owner agrees otherwise in writing.

9.6 Proof Of Compliance Of Contract Provisions

- A. In order that Owner may determine whether Contractor has complied or is complying with requirements of Contract Documents not readily enforceable through inspection and tests of Work and materials, Contractor shall at any time, when requested, submit to Owner properly authenticated documents or other satisfactory proofs of compliance with all applicable requirements.
- B. Before commencing any portion of Work, Contractor shall inform Owner in writing as to time and place at which Contractor wishes to commence Work, and nature of Work to be done, in order that proper provision for inspection of Work may occur, and to assure measurements necessary for record and payment. Information shall be given to Owner a reasonable time in advance of

time at which Contractor proposes to begin Work, so that Owner may complete necessary preliminary work without inconvenience or delay to Contractor.

9.7 Correction Period And Project Warranty Period:

- A. If within one year after the Date of Completion as identified on the recorded Notice of Completion, or such longer period of time as may be prescribed by laws, regulations or by the terms of Contract Documents or any extended warranty or guaranty, any Work (completed or incomplete) is found to be Defective, Contractor shall promptly without cost to Owner and in accordance with Owner's written instructions, correct such Defective Work. Contractor shall remove any Defective Work rejected by Owner and replace it with Work that is not Defective, and satisfactorily correct and remove and replace any damage to other Work or the work of others resulting therefrom. If Contractor fails to promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the Defective Work corrected or the rejected Work removed and replaced. Contractor shall pay for all claims, costs, losses and damages caused by or resulting from such removal and replacement. Where Contractor fails to correct Defective Work, or defects are discovered outside the correction period, Owner shall have all rights and remedies granted by law.
- B. In special circumstances where a part of the Work is occupied or a particular item of equipment is placed in continuous service before the date of completion as identified in the recorded Notice of Completion of all the Work, the correction period for that part of Work or that item may start to run from an earlier date if so provided by Change Order.
- C. Where Defective Work or rejected Work (and damage to other Work resulting therefrom) has been corrected, removed, or replaced under this provision after the commencement of the correction period, the correction period hereunder with respect to such Work shall be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

9.8 No Waiver

- A. Neither recordation of the Notice of Completion nor final certificate for payment nor provision of the Contract nor partial or entire use or occupancy of premises by Owner shall constitute acceptance of Work not done in accordance with Contract Documents nor relieve Contractor of liability in respect to express warranties or responsibility for faulty materials or workmanship.
- B. If, after installation, operation, or use of materials or equipment to be provided under Contract proves to be unsatisfactory to Owner, Owner shall have right to operate and use materials or equipment until said materials and equipment can, without damage to Owner, be taken out of service for correction or replacement. Period of use of Defective materials or equipment pending correction or replacement shall in no way decrease guarantee period required for acceptable corrected or replaced items of materials or equipment.
- C. Nothing in the Contract Documents shall be construed to limit, relieve, or release Contractor's, Subcontractors', and equipment suppliers' liability to Owner for damages sustained as result of latent defects in materials or equipment caused by negligence of Contractor, its agents, suppliers, employees, or Subcontractors.

ARTICLE 10 - MODIFICATIONS OF CONTRACT DOCUMENTS

10.1 Owner's Right To Direct Changed Work.

- A. Owner may, without notice to the sureties and without invalidating the Contract, make changes in the Work ("Changed Work"), including without limitation: alterations, deviations, additions to, or deletions from Contract Documents; increase or decrease the quantity of any item or portion of the Work; expand, reduce or otherwise change the Contract Time; delete any item or portion of the Work; and require extra Work. Contractor shall perform such Work under applicable provisions of the Contract Documents, unless specifically provided otherwise at the time the change is ordered.
- B. If Changed Work is of such a nature as to increase or decrease the time or cost of any part of Work, price fixed in Contract shall be increased or decreased by amount as the Contractor and Owner may agree upon as reasonable and proper allowance for increase or decrease in cost of

Work using the cost guidelines set forth in this Article, and absent such agreement, then as Owner may direct (with Contractor retaining its rights under Article 12 herein).

10.2 Required Documentation For Changed Work

- A. Changes affecting the Contract Time or Contract Sum of the Work shall be set forth in a written Change Order that shall specify:
 - 1. The Work performed in connection with the change to be made;
 - 2. The amount of the adjustment of the Contract Sum, if any, and the basis for compensation for the Work ordered; and
 - 3. The extent of the adjustment in the Contract Time, if any.
- B. A Change Order will become effective when signed by Owner, notwithstanding that Contractor has not signed it. A Change Order will become effective without Contractor's signature, provided Owner indicates same thereon (by indicating it as a "unilateral change order").

10.3 Procedures And Pricing Of Changed Work

- A. Procedures for changed work and pricing of changed work, claims and all forms of extra compensation, are set forth in Section 01 2050 (Modification Procedures).

ARTICLE 11 - TIME ALLOWANCES

11.1 Time Allowances

- A. Time is of the essence. Contract Time may only be changed by Change Order, and all time limits stated in the Contract Documents are to mean that time is of the essence.

11.2 Excusable Delay And Inexcusable Delay Defined.

- A. Excusable Delay. Subject to the provisions on Notice of Delay below, Contract Time may be adjusted in an amount equal to the time lost due to:
 - 1. Changes in the Work ordered by Owner ("**Changes**");
 - 2. Acts or neglect by Owner, Architect/Engineer, any Owner Representative, utility owners or other contractors performing other work, not permitted or provided for in the Contract Documents, provided that Contractor has performed its responsibilities under the Contract Documents (including but not limited to pre-bid investigations) ("**Acts or Neglect**"); or
 - 3. Fires, floods, epidemics, abnormal weather conditions beyond the parameters otherwise set forth in this Article, earthquakes, civil or labor disturbances, or acts of God (together, "force majeure events"), provided damages resulting therefrom are not the result of Contractor's failure to protect the Work as required by Contract Documents ("**Force Majeure**").
- B. Inexcusable Delay. Contract Time shall not be extended for any period of time where Contractor (and/or any Subcontractor) is delayed or prevented from completing any part of the Work due to a cause that is within Contractor's risk or responsibility under the Contract Documents. Delays attributable to or within the control of a Subcontractor, or its subcontractors, or supplier, are deemed delays within the control of Contractor.
- C. Float. Float shall be treated as a Project resource. Contractor shall not be entitled to a time extension for impacts that consume float, but do not impact the critical path.

11.3 Notice Of Delay

- A. Within five (5) Working Days of the beginning of any delay (excepting adverse weather delays), Contractor shall notify Owner in writing, by submitting a notice of delay that shall describe the anticipated delays resulting from the delay event in question. If Contractor requests an extension of time, Contractor shall submit a TIE within seven (7) Working Days of the notice of delay. Owner will determine all claims and adjustments in the Contract Time. No claim for an adjustment in the Contract Time will be valid and such claim will be waived if not submitted in accordance with the requirements of this subparagraph. In cases of substantial compliance with the seven-day notice requirement here (but not to exceed fifteen (15) Working Days from the

beginning of the delay event), Owner may in its sole discretion recognize a claim for delay accompanied with the proper TIE, provided Contractor also shows good faith and a manifest lack of prejudice to Owner from the late notice.

11.4 Compensable Time Extensions

- A. Subject to other applicable provisions of the Contract Documents, Contractor may be entitled to adjustment in Contract Sum in addition to Contract Time for:
 - 1. Excusable delay caused solely by Changes in the Work ordered by Owner, as provided above, and/or
 - 2. Excusable delay caused solely by Acts or Neglect by Owner or other person, as provided above.

11.5 Non-Compensable Time Extensions

- A. Subject to other applicable provisions of the Contract Documents, Contractor may be entitled to adjustment in Contract Time only, without adjustment in Contract Sum, for
 - 1. Periods of excusable delay caused solely by weather or Force Majeure events as provided above in this Article, or
 - 2. Periods of concurrent delay, where delay results from two or more causes, one of which is compensable (resulting from Changes or Acts or Neglect as set forth above in this Article), and the other of which is non-compensable or inexcusable, such as: acts or neglect of Contractor, Subcontractors or others for whom Contractor is responsible; other acts, omissions and conditions which would not entitle Contractor to adjustment in Contract Time; adverse weather; and/or actions of Force Majeure as provided above in this Article.

11.6 Adverse Weather

- A. If the Contractor is delayed in the performance of the Work because of acts of God, fire, strikes, unavailability of materials or similar occurrences beyond his control, the Owner may grant such extension of time to complete the contract as he deems appropriate, providing the contractor has notified the Owner in writing of the causes of the delay within five (5) Working Days of the beginning of the delay.
- B. Requests for extensions of time to complete the contract based on delays in the performance of the work due to inclement weather must be submitted in writing to the Owner with appropriate justification on the number of days of delay. The Contractor and Owner will review the inclement weather days weekly. The Contractor will not be entitled to payment for costs incurred as a result of taking such actions.
- C. During unfavorable weather, wet ground, or other unsuitable construction conditions, Contractor shall employ best practices to protect the Work, manage the construction site and rainwater during inclement weather and provide requirements of implemented SWPPP and BMP's. Persons performing the Work shall examine surfaces to receive their Work and shall report in writing to Contractor, with copy to Owner representative and the Architect/Engineer conditions detrimental to the Work. Failure to examine and report discrepancies makes the Contractor responsible, at no increase in Contract Sum, for corrections Owner may require. Commencement of Work constitutes acceptance of surface.

11.7 Liquidated Damages

- A. Time is of the essence. Execution of Contract Documents by Contractor shall constitute its acknowledgement that Owner will actually sustain damages in the form of Contract administration expenses (such as Project management and consultant expenses) in the amount fixed in the Contract Documents for each and every Day during which completion of Work required is delayed beyond expiration of time fixed for completion plus extensions of time allowed pursuant to provisions hereof.

ARTICLE 12 - CLAIMS BY CONTRACTOR

12.1 Obligation to File Claims for Disputed Work

- A. Should it appear to Contractor that the Work to be performed or any of the matters relative to the Contract Documents are not satisfactorily detailed or explained therein, or should any questions arise as to the meaning or intent of the Contract Documents, or should any dispute arise regarding the true value of any work performed, work omitted, extra work that the Contractor may be required to perform, time extensions, payment to the Contractor during performance of this Contract, performance of the Contract, and/or compliance with Contract procedures, or should Contractor otherwise seek extra time or compensation FOR ANY REASON WHATSOEVER, then Contractor shall first follow procedures set forth in the Contract (including but not limited to other Articles of this Document 00 7200 and Section 01 2050). If a dispute remains, then Contractor shall give written notice to Owner that expressly invokes this Article 12. Owner shall decide the issue in writing within 15 Working Days; and Owner's written decision shall be final and conclusive. If Contractor disagrees with Owner's decision, or if Contractor contends that Owner failed to provide a decision timely, then Contractor's SOLE AND EXCLUSIVE REMEDY is to promptly file a written claim setting forth Contractor's position as required herein.

12.2 Form And Contents Of Claim

- A. Contractor's written claim must identify itself as a "Claim" under Article 12 and must include the following: (1) a narrative of pertinent events; (2) citation to contract provisions; (3) theory of entitlement; (4) complete pricing of all cost impacts; (5) a time impact analysis of all time delays that shows actual time impact on the critical path; (6) documentation supporting items 1 through 5; a verification under penalty of perjury of the claim's accuracy. The Claim shall be submitted to Owner within thirty (30) Calendar Days of receiving Owner's written decision, or the date Contractor contends such decision was due, and shall be priced like a change order according to Section 01 2050, and must be updated monthly as to cost and entitlement if a continuing claim. Routine contract materials, for example, correspondence, RFI, Change Order requests, or payment requests shall not constitute a claim. Contractor shall bear all costs incurred in the preparation and submission of a claim.

12.3 Administration During/After Claim Submission

- A. Owner may render a final determination in writing based on the Claim or may in its discretion conduct an administrative hearing on Contractor's claim, in which case Contractor shall appear, participate, answer questions and inquiries, and present any further evidence or analysis requested by Owner prior to rendering a final determination in writing. Should Owner take no action on the Claim within 45 Calendar Days of submission, it shall be deemed denied. The parties may extend this 45 day period by mutual agreement upon submission of a claim.
- B. Notwithstanding and pending the resolution of any claim or dispute, Contractor shall diligently prosecute the disputed work to final completion in accordance with Owner's determination.
- C. After their submission, claims that total less than \$375,000 in the aggregate at Contract closeout shall also be subject to the Local Agency Disputes Act.
- D. Owner shall issue payment on any undisputed portion of the Claim within 60 days of Owner's final determination in writing. Failure by Owner to issue a written statement shall result in the claim being rejected in its entirety. A Claim that is denied by reason of Owner's failure to respond shall not constitute an adverse finding with regard to the merits of the Claim

12.4 Informal Conference and Mediation

- A. If the Contractor disputes the Owner's written statement, or if the Owner fails to respond to a Claim issued pursuant to this Article within the time prescribed, the Contractor may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the Owner shall schedule a meet and confer conference within thirty (30) calendar days of the demand.
- B. Within ten (10) business days following the conclusion of the meet and confer conference, if the Claim or any portion of the Claim remains in dispute, the Owner shall provide the Contractor with a written statement identifying the portion of the Claim that remains in dispute and the portion that

is undisputed. Any payment due on an undisputed portion of the Claim shall be made within sixty (60) days after the Owner issues this written statement.

- C. Any remaining disputed portion of the Claim, as identified by the Contractor in writing, shall be submitted to nonbinding mediation, with the Owner and the Contractor sharing the associated costs equally. The Owner and Contractor shall mutually agree to a mediator within ten (10) business days after the disputed portion of the Claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator, and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the Claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of a neutral mediator.
- D. Mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this Article.
- E. If mediation is unsuccessful, the parts of the Claim remaining in dispute shall be subject to applicable procedures outside this Article.
- F. Unless otherwise agreed to by the Owner and the Contractor in writing, the mediation conducted pursuant to this Article shall excuse any further obligation under Section 20104.4 of the Public Contract Code to mediate after litigation has been commenced.
- G. The Claim resolution procedures in this Article do not preclude Owner from requiring arbitration of disputes under private arbitration if mediation under this Article does not resolve the parties' dispute.
- H. Amounts not paid in a timely manner as required by this Article shall bear interest at 7 percent per annum.

12.5 Claims by Subcontractors

- A. If a Subcontractor or a lower tier Subcontractor lacks legal standing to assert a Claim against Owner because privity of contract does not exist, the Contractor may present to the Owner a Claim on behalf of a Subcontractor or lower tier Subcontractor. A Subcontractor may request in writing, either on his or her own behalf, or on behalf of a lower tier Subcontractor, that the Contractor present a Claim for work which was performed by the Subcontractor or by a lower tier Subcontractor on behalf of the Subcontractor. The Subcontractor requesting that the Claim be presented to Owner shall furnish reasonable documentation to support the Claim. Within forty-five (45) days of receipt of this written request, the Contractor shall notify the Subcontractor in writing as to whether the Contractor presented the Claim to the Owner and, if the original Contractor did not present the Claim, provide the Subcontractor with a statement of the reasons for not having done so.

12.6 Compliance

- A. The provisions of this Article 12 constitute a non-judicial claim settlement procedure that, pursuant to Section 930.2 of the California Government Code, shall constitute a condition precedent to submission of a valid Government Code Section 910 Claim under the California Government Code. Contractor shall bear all costs incurred in the preparation, submission and administration of a claim. Any claims presented thereafter in accordance with the Government Code must affirmatively indicate Contractor's prior compliance with the claims procedure herein and the previous dispositions under Paragraph 12.03 above of the claims asserted. Pursuant to Government Code Section 930.2, the one-year period in Government Code section 911.2 shall be reduced to 150 Calendar Days from either accrual of the cause of action, substantial completion or termination of the contract, whichever occurs first; in all other respects, the requirements of the Government Code shall apply unchanged, including, without limitation, Contractor's obligation to file a Government Code Section 910 Claim.
- B. Failure to submit and administer claims as required in Article 12 shall waive Contractor's right to claim on any specific issues not included in a timely submitted claim. Claim(s) or issue(s) not

raised in a timely protest and timely claim submitted under this Article 12 may not be asserted in any subsequent litigation, Government Code Section 910 Claim, or legal action.

- C. Owner shall not be deemed to waive any provision under this Article 12, if at Owner's sole discretion, a claim is administered in a manner not in accord with this Article 12. Waivers or modifications of this Article 12 may only be made a signed change order approved as to form by legal counsel for both Owner and Contractor; oral or implied modifications shall be ineffective.

12.7 Civil Actions; Consistency with Public Contract Code Section 9204 and 20104 et seq.

- A. If the Government Code claim is denied, Contractor may file an action in court. Such action shall be subject to Public Contract Code sections 9204 or 20104.4. This Section applies only to Claims subject to Public Contract Code Sections 9204 or 20104; if a Claim is not subject to those sections, the Contractor's rights to file a civil action shall be as otherwise provided by law.
- B. If any Claim arising under this Contract is subject to the provisions of Public Contract Code sections 9204 or 20104 et seq., and if the provisions of that article require a procedure or procedural element different from that established herein, then the provisions of that article shall apply in place of the conflicting procedure or procedural element established herein.

ARTICLE 13 - UNDERGROUND CONDITIONS

13.1 Contractor To Locate Underground Facilities.

- A. During construction, Contractor shall comply with Government Code Sections 4216 to 4216.9, and in particular Section 4216.2 which provides, in part: "Except in an emergency, every person planning to conduct any excavation shall contact the appropriate regional notification center at least two (2) Working Days, but no more than ten (10) Working Days, prior to commencing that excavation, if the excavation will be conducted in an area which is known, or reasonably should be known, to contain subsurface installations other than the underground facilities owned or operated by the excavator, and, if practical, the excavator shall delineate with white paint or other suitable markings the area to be excavated. The regional notification center shall provide an inquiry identification number to the person who contacts the center and shall notify any member, if known, who has a subsurface installation in the area of the proposed excavation."
- B. Contractor shall contact Underground Service Alert (USA) or the appropriate regional notification center and schedule the Work to allow ample time for the center to notify its members and, if necessary, for any member to field locate and mark its facilities. Contractor is charged with knowledge of all subsurface conditions reflected in underground utility records. Contractor shall advise Owner of any conflict between information provided in Document 00 3100 (Geotechnical Data and Existing Conditions), the Drawings and that provided by underground utility records. Contractor's excavation shall be subject to and comply with the Contract Documents.
- C. Contractor shall also investigate the existence of existing service laterals, appurtenances or other types of utilities, indicated by the presence of an underground transmission main implied by the presence of visible facilities, such as buildings, new asphalt, meters and junction boxes, on or adjacent to the Site, even if not shown or indicated in Document 00 3100 (Geotechnical Data and Existing Conditions), or the Drawings or that provided by underground utility records. Contractor shall immediately secure all such available information and notify Owner and the utility owner, in writing, of its discovery.

13.2 Contractor To Protect Underground Facilities.

- A. At all times during construction, all operating Underground Facilities shall remain in operation, unless the Contract Documents expressly indicate otherwise. Contractor shall maintain such Underground Facilities in service where appropriate; shall repair any damage to them caused by the Work; and shall incorporate them into the Work, including reasonable adjustments to the design location (including minor relocations) of the existing or new installations. Contractor shall take immediate action to restore any in service installations damaged by Contractor's operations.
- B. Prior to performing Work at the Site, Contractor shall lay out the locations of Underground Facilities that are to remain in service and other significant known underground installations indicated by the Underground Facilities Data. Contractor shall further locate, by carefully

excavating with small equipment, potholing and principally by hand, all such utilities or installations that are to remain and that are subject to damage. If additional utilities whose locations are unknown are discovered, Contractor shall immediately report to Owner for disposition of the same. Additional compensation or extension of time on account of utilities not shown or otherwise brought to Contractor's attention, including reasonable action taken to protect or repair damage, shall be determined as provided in this Document 00 7200.

- C. If during construction, an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated in the materials supplied by Owner for bidding or in information provided through USA or otherwise reasonably available to Contractor, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby (and in no event later than five (5) Working Days), and prior to performing any Work in connection therewith (except in an emergency), identify the owner of such Underground Facility and give written notice to Underground Facility owner and Owner. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. The cost of all of the following will be included in the Contract Sum and Contractor shall have full responsibility for (a) reviewing and checking all available information and data including, but not limited to, information made available for bidding and information provided through USA; (b) locating all Underground Facilities shown or indicated in the Contract Documents, available information, or indicated by visual observation including, but not limited to, and by way of example only, engaging qualified locating services and all necessary backhoeing and potholing; (c) coordination of the Work with the owners of such Underground Facilities during construction; and (d) the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.
- E. Consistent with California Government Code §4215, as between Owner and Contractor, Owner will be responsible for the timely removal, relocation, or protection of existing main or trunk line utility facilities located on the Site only if such utilities are not identified in the Contract Documents or information made available for bidding. Owner will compensate for the cost of locating and repairing damage not due to Contractor's failure to exercise reasonable care, removing and relocating such main or trunk line utility facilities not indicated in the Contract Documents or information made available for bidding with reasonable accuracy, and equipment on the Project necessarily idled during such Work. Contractor shall not be assessed liquidated damages for delay in completion of the Project, when such delay was caused by the failure of Owner or the utility to provide for removal or relocation of such utility facilities.

13.3 Concealed Or Unknown Conditions

- A. If either of the following conditions is encountered at Site when digging trenches or other excavations that extend deeper than four feet below the surface, Contractor shall give a written Notice of Differing Site Conditions to Owner promptly before conditions are disturbed, except in an emergency as set forth in this Document 00 7200, and in no event later than five (5) Working Days after first observance of:
 - 1. Subsurface or Latent physical conditions which differ materially from those indicated in the Contract Documents; or
 - 2. Unknown physical conditions of an unusual nature or which differ materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents.
- B. In response to Contractor's Notice of Differing Site Conditions under this Paragraph, Owner will investigate the identified conditions, and if they differ materially and cause increase or decrease in Contractor's cost of, or time required for, performance of any part of the Work, Owner will negotiate the appropriate change order following the procedures set forth in the Contract Documents. If Owner determines that physical conditions at the Site are not Latent or are not materially different from those indicated in Contract Documents or that no change in terms of the Contract Documents is justified, Owner will so notify Contractor in writing, stating reasons (with Contractor retaining its rights under Article 12 of this Document 00 7200.)
- C. Contractor shall not be entitled to any adjustment in the Contract Sum or Contract Time regarding claimed Latent or materially different Site conditions (whether above or below grade) if Contractor

knew or should have known of the existence of such conditions at the time Contractor submitted its Bid, failed to give proper notice, or relied upon information, conclusions, opinions or deductions of the kind that the Contract Documents preclude reliance upon.

- D. Regarding Underground Facilities, Contractor shall be allowed an increase in the Contract Sum or an extension of the Contract Time, or both, to the extent that they are attributable to the existence of any Underground Facility that is owned and was built by Owner only where the Underground Facility:
1. Was not shown or indicated in the Contract Documents or in the information supplied for bidding purposes or in information provided through USA; and
 2. Contractor did not know of it; and
 3. Contractor could not reasonably have been expected to be aware of it or to have anticipated it from the information available. (For example, if surface conditions such as pavement repairs, valve covers, or other markings, indicate the presence of an Underground Facility, then an increase in the Contract Sum or an extension of the Contract Time will not be due, even if the Underground Facility was not indicated in the Contract Documents, in the information supplied to Contractor for bidding purposes, information provided through USA, or otherwise reasonably available to Contractor.)
- E. Contractor shall bear the risk that Underground Facilities not owned or built by Owner may differ in nature or locations shown in information made available by Owner for bidding purposes, in information provided through USA, or otherwise reasonably available to Contractor. Underground Facilities are inherent in construction involving digging of trenches or other excavations on Owner's Project, and Contractor is to apply its skill and industry to verify the information available.
- F. Contractor's compensation for claimed Latent or materially different Site conditions shall be limited to the actual, reasonable, incremental increase in cost of that portion of the Work, resulting from the claimed Latent or materially different Site conditions. Such calculation shall take into account the estimated value of that portion of the Work and the actual value of that portion of the Work, using for guidance Contractor's or its subcontractor's bid amount and actual amounts incurred for that portion of the Work and the reasonable expectation (if any) of differing or difficult site conditions in the Work area based on the available records and locale of the Work. For example, if Contractor excavates in an area unexpected, then such costs would be recoverable entirely; while if Contractor extends an existing excavation, then such costs would be recoverable if the resulting excavation costs in that work area exceeded the reasonable expectations therefore.

13.4 Notice Of Hazardous Waste Or Materials Conditions

- A. Contractor shall give a written Notice of Hazardous Materials Condition to Owner promptly, before any of the following conditions are disturbed (except in an emergency as set forth in this Document 00 7200), and in no event later than 24 hours after first observance of any:
1. Material that Contractor believes may be hazardous waste or hazardous material, as defined in Section 25117 of the Health and Safety Code (including, without limitation, Asbestos, lead, PCBs, petroleum and related hydrocarbons, and radioactive material) that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law ("hazardous material"); or
 2. Other material that may present an imminent substantial danger to persons or property exposed thereto in connection with Work at the Site ("other materials").
- B. Except as otherwise provided in the Contract Documents or as provided by applicable law, Contractor shall not be required to give any notice for the disturbance or observation of any such hazardous materials or other materials where such matter is disturbed or observed as part of the scope of Work under the Contract Documents (such as hazardous waste or hazardous material investigation, remediation or disposal activities which are identified as the subject of Work under the Contract Documents), where Contractor complies with all requirements in the Contract Documents and applicable law respecting such materials.
- C. Contractor's Notice of Hazardous Materials Condition shall indicate whether the hazardous materials or other materials were shown or indicated in the Contract Documents to be within the

- scope of Work, and whether the hazardous materials or other materials were brought to the Site by Contractor, its Subcontractors, suppliers, or anyone else for whom Contractor is responsible.
- D. Contractor shall not be entitled to any adjustment in the Contract Sum or Contract Time regarding claimed hazardous waste or materials if:
1. Contractor knew of the existence of such hazardous materials or other materials at the time Contractor submitted its Bid; or
 2. Contractor should have known of the existence of such hazardous material or other materials as a result of its having the responsibility to obtain additional or supplementary examinations, investigation, explorations, tests, studies, and data concerning the conditions at or contiguous to the Site prior to submitting its Bid; or
 3. Contractor failed to give the written notice within the required timeframe set forth below.
- E. If Owner determines that conditions involve hazardous materials or other materials and that a change in Contract Document terms is justified, Owner may issue either a Request for Proposal or Construction Change Order under the procedures described in the Contract Documents. If Owner determines that conditions do not involve hazardous materials or other materials or that no change in Contract Document terms is justified, Owner will notify Contractor in writing, stating the reasons for its determination.
- F. In addition to the parties' other rights under this Document 00 7200, if Contractor does not agree to resume Work based on a reasonable belief that it is unsafe, or does not agree to resume Work under special conditions, Owner may order the disputed portion of Work deleted from the Work, or performed by others, or Owner may invoke its right to terminate Contractor's right to proceed under the Contract Documents in whole or in part, for convenience or for cause as the facts may warrant.
- G. If Contractor does not agree with any Owner determination of any adjustment in the Contract Sum or Contract Time under this Article, Contractor may make a claim as provided in Article 12 of this Document 00 7200.

ARTICLE 14 - LEGAL AND MISCELLANEOUS

14.1 Laws And Regulations

- A. Contractor shall keep fully informed of and shall comply with all laws, ordinances, regulations and orders of any properly constituted authority affecting the Contract Documents, Work and persons connected with Work, and shall protect and indemnify Owner and its officers, employees, consultants and agents against any claim or liability, including attorney's fees, arising from or based on violation of law, ordinance, regulation or order, whether by Contractor or by Subcontractors, employees or agents. Authorized persons may at any time enter upon any part of Work to ascertain compliance of all applicable laws, ordinances, regulations and orders.

14.2 Permits And Taxes

- A. Contractor shall procure all permits and licenses applicable to the Work (including environmental matters to the extent applicable); pay all charges and fees, including fees for street opening permits; comply with, implement and acknowledge effectiveness of all permits; initiate and cooperate in securing all required notifications or approvals therefore, and give all notices necessary and incident to due and lawful prosecution of Work, unless otherwise provided herein. Owner will pay applicable building permits, sanitation and water fees for the completed construction, except as otherwise provided in the Contract Documents. Contractor shall pay all sales and/or use taxes levied on materials, supplies, or equipment purchased and used on or incorporated into Work, and all other taxes properly assessed against equipment or other property used in connection with Work, without any increase in the Contract Sum. Contractor shall make necessary arrangements with proper authorities having jurisdiction over roads, streets, pipelines, navigable waterways, railroads, and other works in advance of operations, even where Owner may have already obtained permits for the Work.

14.3 Communications And Information Distribution

- A. All communications recognized under the Contract Documents shall be in writing, in the form of a serialized document, by type of communication. For example, RFI's shall be serialized beginning with RFI No. 1; payment applications shall be serialized beginning with Payment Application No. 1, submittals shall be serialized per specification section and transmitted with transmittal sheets beginning with Transmittal No. 1; and correspondence shall be serialized beginning with letter No. 1. Contractor may propose other record management and identification systems or protocols, intended to facilitate orderly transmittal of project information, storage and retrieval of such information, which Owner will review consistent with these stated objectives, and accept or reject in its sole discretion.
- B. Documents Requiring Signatures. All documents requiring signatures for approval prior to implementing action, as stipulated in other portions of Contract Documents, shall require a manually signed, serialized letter delivered to the other party at its address for notice otherwise specified in the Contract Documents, either personally or by mail.
- C. Electronic data transfer of such correspondence will serve to expedite preliminary concurrence of information, only. Receipt of "hard copy" signature on forms is required prior to implementing action or work as the conditions may require. For example, change orders and authorizations for extra cost, require signatures. A party may acknowledge receipt of portable document file (PDF) copies of required correspondence by e-mail, but in the absence of such acknowledgment, mail or personal delivery is required.
- D. All emails shall be copied to Owner's and Contractor's Project Representative. Owner reserves the right to preclude e-mail communication, in whole or in part, as Project needs may require. Communication between Owner and Contractor shall not be via Twitter, Facebook, or other types of instant text message systems. Any such communications shall be inadmissible for any purpose related to this Contract.

14.4 Suspension Of Work

- A. Owner may, without cause, order Contractor in writing to suspend, delay or interrupt Work in whole or in part for such period of time as Owner may determine. An adjustment shall be made for increases in cost of performance of Work of the Contract Documents caused by any such suspension, delay or interruption, calculated using the measures set forth in Section 01 2050 (Modification Procedures). No adjustment shall be made to extent that performance is, was or would have been so suspended, delayed or interrupted by another cause for which Contractor is responsible.

14.5 Termination Of Contract For Cause

- A. The Contractor shall be in default of the Contract Documents and Owner may terminate the Contractor's right to proceed under the Contract Documents, for cause, in whole or in part, should the Contractor commit a material breach of the Contract Documents and not cure such breach within ten (10) Calendar Days of the date of notice from Owner to the Contractor demanding such cure; or, if such breach is curable but not curable within such ten (10) day period, within such period of time as is reasonably necessary to accomplish such cure. (In order for the Contractor to avail itself of a time period in excess of ten (10) Calendar Days, the Contractor must provide Owner within the ten (10) day period with a written plan acceptable to Owner that demonstrates actual resources, personnel and a schedule to promptly to cure said breach, and then diligently commence and continue such cure according to the written plan).
- B. In the event of termination by Owner for cause as provided herein, the Contractor shall deliver to Owner possession of the Work in its then condition, including but not limited to, all designs, engineering, Project records, cost data of all types, plans and specifications and contracts with vendors and subcontractors, all other documentation associated with the Project, and all construction supplies and aids dedicated solely to performing the Work which, in the normal course of construction, would be consumed or only have salvage value at the end of the construction period. The Contractor shall remain fully liable for the failure of any Work completed and materials and equipment provided through the date of such termination to comply with the provisions of the Contract Documents. The provisions of this Section shall not be interpreted to diminish any right which Owner may have to claim and recover damages for any breach of the Contract Documents or otherwise, but rather, the Contractor shall compensate Owner for all loss,

cost, damage, expense, and/or liability suffered by Owner as a result of such termination and/or failure to comply with the Contract Documents.

- C. In the event a termination for cause is later determined to have been made wrongfully or without cause, then the termination shall be treated as a termination for convenience, and the Contractor shall have no greater rights than it would have had following a termination for convenience. Any Contractor claim arising out of a termination for cause shall be made in accord with Article 12 herein. No other loss, cost, damage, expense or liability may be claimed, requested or recovered by the Contractor.

14.6 Termination Of Contract For Convenience

- A. Owner may terminate performance of the Work under the Contract Documents in accordance with this clause in whole, or from time to time in part, whenever Owner shall determine that termination is in Owner's best interest. Termination shall be effected by Owner delivering to the Contractor notice of termination specifying the extent to which performance of the Work under the Contract Documents is terminated, and the effective date of the termination.
- B. Contractor shall comply strictly with Owner's direction regarding the effective date of the termination, the extent of the termination, and shall stop work on the date and to the extent specified.
- C. Contractor shall be entitled to a total payment on account of the Contract work so terminated measured by (i.) the actual cost to Contractor of Work actually performed, up to the date of the termination, with profit and overhead limited to twelve percent (12%) of actual cost of work performed, up to but not exceeding the actual contract value of the work completed as measured by the Schedule of Values and Progress Schedule, (ii.) offset by payments made and other contract credits. In connection with any such calculation, however, Owner shall retain all rights under the Contract Documents, including but not limited to claims, indemnities, or setoffs.
- D. Under no circumstances may Contractor recover legal costs of any nature, nor may Contractor recover costs incurred after the date of the termination or lost profits on terminated Work.

14.7 Remedies

- A. Subject to Contract Documents provisions regarding Contractor claims, claim review, and claim resolution, and subject to the limitations therein, the exclusive jurisdiction and venue for resolving all claims, counter claims, disputes and other matters in question between Owner and Contractor arising out of or relating to Contract Documents, any breach thereof or the Project shall be the applicable court of competent jurisdiction located in the State and County where the Project is located.
- B. All Owner remedies provided in the Contract Documents shall be taken and construed as cumulative and not exclusive; that is, in addition to each and every other remedy herein provided; and in all instances Owner shall have any and all other equitable and legal rights and remedies which it would have according to law.

14.8 Contract Integration and Non-Waiver

- A. The Contract Documents, any Contract Modifications and Change Orders, shall represent the entire and integrated agreement between Owner and Contractor regarding the subject matters hereof and thereof and shall constitute the exclusive statement of the terms of the parties' agreement. The Contract Documents, and any Contract Modifications and Change Orders, shall supersede any and all prior negotiations, representations or agreements, written or oral, express or implied, that relate in any way to the subject matter of the Contract Documents or written Modifications. Owner and Contractor represent and agree that, except as otherwise expressly provided in the Contract Documents, they are entering into the Contract Documents and any subsequent written Modification in sole reliance upon the information set forth or referenced in the Contract Documents or Contract Modifications; the parties are not and will not rely on any other information, which shall be inadmissible in any proceeding to enforce these documents.
- B. Either party's waiver of any breach or failure to enforce any of the terms, covenants, conditions or other provisions of the Contract Documents at any time shall not in any way affect, limit, modify or waive that party's right thereafter to enforce or compel strict compliance with every term,

covenant, condition or other provision hereof, any course of dealing or custom of the trade or oral representations notwithstanding.

- C. Neither acceptance of the whole or any part of Work by Owner nor any verbal statements on behalf of Owner or its authorized agents or representatives shall operate as a waiver or modification of any provision of the Contract Documents, or of any power reserved to Owner herein nor any right to damages provided in the Contract Documents.

14.9 Interpretation

- A. Should any part, term or provision of this Agreement or any of the Contract Documents, or any document required herein or therein to be executed or delivered, be declared invalid, void or unenforceable, all remaining parts, terms and provisions shall remain in full force and effect and shall in no way be invalidated, impaired or affected thereby. If the provisions of any law causing such invalidity, illegality or unenforceability may be waived, they are hereby waived to the end that this Agreement and the Contract Documents may be deemed valid and binding agreements, enforceable in accordance with their terms to the greatest extent permitted by applicable law. In the event any provision not otherwise included in the Contract Documents is required to be included by any applicable law, that provision is deemed included herein by this reference (or, if such provision is required to be included in any particular portion of the Contract Documents, that provision is deemed included in that portion).
- B. Contract Documents shall not be construed to create a contractual relationship of any kind between (1) Project Manager or any Owner's representative and Contractor; (2) Owner and/or its Representatives and a Subcontractor, sub-Subcontractor, or supplier of any Project labor, materials, or equipment; or (3) between any persons or entities other than Owner and Contractor.

14.10 Patents

- A. Fees or claims for any patented invention, article or arrangement that may be used upon or in any manner connected with performance of the Work or any part thereof shall be included in the Bid price for doing the Work. Contractor shall defend, indemnify and hold harmless Owner and each of its officers, employees, consultants and agents, including, but not limited to, the Board and each Owner's Representative, from all damages, claims for damages, costs or expenses in law or equity, including attorney's fees, arising from or relating to any claim that any article supplied or to be supplied under the Contract Documents infringes on the patent rights, copyright, trade name, trademark, service mark, trade secret or other intellectual property right of any person or persons or that the person or entity supplying the article does not have a lawful right to sell the same. Such costs or expenses for which Contractor agrees to indemnify and hold harmless the above indemnities include but are not limited to any and all license fees, whether such fees are agreed by any indemnitee or ordered by a court or administrative body of any competent jurisdiction.

14.11 Substitution For Patented And Specified Articles

- A. Except as noted specifically in the instructions to Bidders or in Contract Documents, whenever in Specifications, material or process is designated by patent or proprietary name or by name of manufacturer, such designation shall be deemed to be used for purpose of facilitating description of material and process desired, and shall be deemed to be followed by the words "or Approved Equal" and Contractor may offer any substitute material or process that Contractor considers "equal" in every respect to that so designated and if material or process offered by Contractor is, in opinion of Owner, Equal in every respect to that so designated, its use will be approved. However, Contractor may utilize this right only by timely submitting Document 01 6000-A (Substitution Request Form) as provided in Document 00 2113 (Instructions to Bidders). A substitution will be approved only if it is a true "or equal" item in every aspect of its design and quality, including but not limited to its dimensions, weights, materials of construction, service requirements, durability, functioning, impact on contiguous construction elements, overall schedule and design.

14.12 Interest Of Public Officers

- A. No representative, officer, or employee of Owner no member of the governing body of the locality in which the Project is situated, no member of the locality in which Owner was activated, and no

other public official of such locality or localities who exercises any functions or responsibilities with respect to the Project, during the tenure of the official or for one year thereafter, shall, as principal, agent, attorney or otherwise, be directly or indirectly interested, in the Contract Documents or the proceeds thereof.

14.13 Limit Of Liability

- A. OWNER, AND EACH OF ITS OFFICERS, BOARD MEMBERS, EMPLOYEES, CONSULTANTS AND AGENTS INCLUDING, BUT NOT LIMITED TO, PROJECT MANAGER AND EACH OTHER OWNER REPRESENTATIVE, SHALL HAVE NO LIABILITY TO CONTRACTOR FOR SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, EXCEPT TO THE LIMITED EXTENT THAT THESE CONTRACT DOCUMENTS OR APPLICABLE PUBLIC CONTRACTING STATUTES MAY SPECIFY THEIR RECOVERY.

ARTICLE 15 - WORKING CONDITIONS AND PREVAILING WAGES

15.1 Use Of Site/Sanitary Rules

- A. All portions of the Work shall be maintained at all times in neat, clean and sanitary condition. Contractor shall furnish toilets for use of Contractor's and Subcontractors' employees on the Site where needed, and their use shall be strictly enforced. All toilets shall be properly secluded from public observation, and shall be located, constructed and maintained subject to Owner's approval.
- B. Contractor shall confine construction equipment, the storage of materials and equipment and the operations of workers to the Site and land areas identified in and permitted by Contract Documents and other land and areas permitted by applicable laws and regulations, rights of way, permits and easements or as designated by Owner, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, any improvement located thereon, or to Owner or occupant thereof resulting from the performance of Work.
- C. During the progress of the Work, Contractor shall keep the Site and the Project free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work, Contractor shall clean the site, remove all waste materials, rubbish and debris from and about the Site as well as all tools, appliances, construction equipment and machinery and surplus materials. Contractor shall leave the premises clean and ready for occupancy by Owner at Completion of Work. Contractor shall restore to original condition all property not designated for alteration by Contract Documents.
- D. Contractor shall not load nor permit any part of any structure or pavement to be loaded in any manner that will endanger the structure or pavement, nor shall Contractor subject any part of Work or adjacent property to stresses or pressures that will endanger it. Contractor shall conduct all necessary existing conditions investigation regarding structural, mechanical, electrical or any other system existing, shall perform Work consistent with such existing conditions, and shall have full responsibility for insufficiencies or damage resulting from insufficiencies of existing systems, equipment or structures to accommodate performing the Work.

15.2 Protection Of Work, Persons, And Property

- A. Contractor shall be responsible for initiating, maintaining and supervising all safety and site security precautions and programs in connection with Work, and shall develop and implement a site security and safety plan throughout construction. Contractor shall comply with all safety requirements specified in any safety program established by Owner, or required by state, federal or local laws and ordinances. Contractor shall be responsible for remedying all theft or damage to Work, property or structures, and all injuries to persons, either on the Site or constituting the Work (e.g., materials in transit), arising from the performance of Work of the Contract Documents from a cause.
- B. Contractor shall comply with all applicable laws and regulations of any public body having jurisdiction for safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owners of adjacent property and of Underground Facilities and utility Owners when

prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property.

- C. Contractor shall remedy all damage, injury or loss to any property referred to above in this Article, caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, supplier, or any other person or organization directly or indirectly employed by any of them to perform or furnish any Work or anyone for whose acts any of them may be liable. Contractor's duties and responsibility for safety and for protection of Work shall continue until such time as all the Work is completed and Final Acceptance of the Work. Owner and its agents do not assume any responsibility for collecting any indemnity from any person or persons causing damage to Contractor's Work.
- D. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.
- E. Owner may, at its option, retain such moneys due under the Contract Documents as Owner deems necessary until any and all suits or claims against Contractor for injury to persons or property shall be settled and Owner receives satisfactory evidence to that effect.
- F. Work within the right-of-way lines of the city and/or Owner and/or State shall be done in accordance with the standards and specifications of the controlling agency. Permit for such work shall be obtained and paid for by the Contractor before executing the work within such right-of-ways.

15.3 Responsibility For Safety And Health

- A. Contractor shall ensure that its and each tier of Subcontractors' employees, agents and invitees comply with applicable health and safety laws while at the Site. These laws include the Occupational Safety and Health Act of 1970 and rules and regulations issued pursuant thereto, and Owner's safety regulations as amended from time to time. Contractor shall comply with all Owner directions regarding protective clothing and gear.
- B. Contractor shall be fully responsible for the safety of its and its Subcontractors' employees, agents and invitees on the Site. Contractor shall notify Owner, in writing, of the existence of hazardous conditions, property or equipment at the Site that are not under Contractor's control. Contractor shall be responsible for taking all the necessary precautions against injury to persons or damage to the property of Contractor, Subcontractors or persons from recognized hazards until the responsible party corrects the hazard.
- C. Contractor shall confine all persons acting on its or its Subcontractors' behalf to that portion of the Site where Work under the Contract Documents is to be performed, Owner-designated routes for ingress and egress thereto, and any other Owner-designated area. Except those routes for ingress and egress over which Contractor has no right of control, within such areas, Contractor shall provide safe means of access to all places at which persons may at any time have occasion to be present.

15.4 Emergencies

In emergencies affecting the safety or protection of persons or Work or property at the Site or adjacent thereto, Contractor, without special instruction or authorization from Owner, is obligated to act to prevent threat and damage, injury or loss, until directed otherwise by Owner. Contractor shall give Owner prompt written notice of actions taken due to emergency.

15.5 Use Of Roadways And Walkways

- A. Contractor shall not unnecessarily interfere with use of any roadway, walkway or other facility for vehicular or pedestrian traffic. Before beginning any interference and only with Owner's prior concurrence, Contractor may provide detour or temporary bridge for traffic to pass around or over the interference, which Contractor shall maintain in satisfactory condition as long as interference continues. Unless otherwise provided in the Contract Documents, Contractor shall bear the cost of these temporary facilities.

15.6 Nondiscrimination

- A. No person or entity shall discriminate in the employment of persons upon public works because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sexual preference, or gender of such persons, except as provided in Section 12940 of the California Government Code. Every contractor for public works violating the provisions of Section 1735 of the California Labor Code is subject to all the penalties imposed for a violation of Chapter 1, Part 7, Division 2 of the California Labor Code.

15.7 Prevailing Wages And Working Hours

- A. Contractor shall pay to persons performing labor in and about Work provided for in the Contract Documents an amount equal to or more than the general prevailing rate of per diem wages for (1) work of a similar character in the locality in which the Work is performed and (2) legal holiday and overtime work in said locality. The per diem wages shall be an amount equal to or more than the stipulated rates contained in a schedule that has been ascertained and determined by the Director of the State Department of Industrial Relations and Owner to be the general prevailing rate of per diem wages for each craft or type of workman or mechanic needed to execute this Contract. Contractor shall also cause a copy of this determination of the prevailing rate of per diem wages to be posted at each Site. The Director's schedule of prevailing rates is on file and open for inspection at Rosamond Community Services District, 3179 35th Street West, Rosamond, California 93560, and is incorporated herein by this reference.
- B. Contractor shall forfeit, as a penalty to Owner, Fifty Dollars (\$50.00) for each laborer, workman, or mechanic employed in performing labor in and about the Work provided for in the Contract Documents for each Day, or portion thereof, that such laborer, workman or mechanic is paid less than the said stipulated rates for any Work done under the Contract Documents by him or her or by any Subcontractor under him or her, in violation of Articles 1 and 2 of Chapter 1 of Part 7 of Division II of the California Labor Code. The sums and amounts which shall be forfeited pursuant to this Paragraph and the terms of the California Labor Code shall be withheld and retained from payments due to Contractor under the Contract Documents, pursuant to this Document 00 7200 and the California Labor Code, but no sum shall be so withheld, retained or forfeited except from the final payment without a full investigation by either the State Department of Industrial Relations or by Owner. The Labor Commissioner pursuant to California Labor Code §1775 shall determine the final amount of forfeiture.
- C. Contractor shall insert in every subcontract or other arrangement which Contractor may make for performance of Work or labor on Work provided for in the Contract, provision that Subcontractor shall pay persons performing labor or rendering service under subcontract or other arrangement not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the Work is performed, and not less than the general prevailing rate of per diem wages for holiday and overtime work fixed in the California Labor Code.
- D. Contractor stipulates that it shall comply with all applicable wage and hour laws, including without limitation, California Labor Code §§ 1776 and 1810-1815. Failure to so comply shall constitute a default under this Contract.
- E. Contractor and its Subcontractors shall be responsible for compliance with Labor Code §§ 1810-1815.
 - 1. Eight hours of labor performed in execution of the Contract constitutes a legal day's work. The time of service of any workman employed on the Project is limited and restricted to 8 hours during any one calendar day, and 40 hours during any one calendar week.
 - 2. Contractor and its Subcontractors shall keep an accurate record showing the name of and actual hours worked each calendar day and each calendar week by each worker employed by him or her in connection with the Project. The record shall be kept open at all reasonable hours for inspection by Owner and the Division of Labor Standards Enforcement.
 - 3. Contractor or its Subcontractors shall, as a penalty to Owner, forfeit twenty-five dollars (\$25) for each worker employed in the execution of the Contract Documents by the respective Contractor or Subcontractor for each calendar day during which the worker is required or permitted to work more than 8 hours in any one calendar day and 40 hours in any one calendar week in violation of the provisions of Labor Code §§ 1810-1815.

4. Work performed on the Project by employees of Contractor or its Subcontractors in excess of 8 hours per day, and 40 hours during any one week, shall be permitted upon compensation for all hours worked in excess of 8 hours per day at not less than 1 1/2 times the basic rate of pay.
- F. Contractor and its Subcontractors shall be responsible for compliance with Labor Code Section 1776.
1. Contractor and Subcontractors must keep accurate payroll records, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the Work of the Contract Documents. Each payroll record shall contain or be verified by a written declaration as required by Labor Code Section 1776.
 2. The payroll records enumerated above must be certified and shall be available for inspection at all reasonable hours at the principal office of the Contractor as required by Labor Code Section 1776.
 - a. Contractor shall inform Owner of the location of records enumerated above, including the street address, city and county, and shall, within five (5) Working Days, provide a notice of a change of location and address.
 - b. Contractor or Subcontractor has ten (10) Working Days in which to comply subsequent to receipt of a written notice requesting the records enumerated above. In the event that the Contractor or Subcontractor fails to comply with the ten-day period, he or she shall, as a penalty to Owner on whose behalf the contract is made or awarded, forfeit \$25.00 for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due. Contractor is not subject to a penalty assessment pursuant to this Paragraph due to the failure of a Subcontractor to comply with this Paragraph.
 3. Contractor shall also deliver certified payrolls to Owner with each Application for Payment as set forth above in this Document 00 7200 (General Conditions).
 4. This project may be subject to monitoring and enforcement by the Department of Industrial Relations (DIR), including the obligation to submit certified payroll records directly to the DIR Compliance Monitoring Unit (CMU) at least monthly in a format prescribed by the Labor Commissioner. The contractor must post job site notices as prescribed by DIR regulation.

15.8 Environmental Controls

- A. Contractor shall comply with all rules, regulations, ordinances, and statutes that apply to any Work performed under the Contract Documents including, without limitation, any toxic, water, stormwater management and soil pollution controls and air pollution controls specified in California Government Code §11017. Contractor shall be responsible for insuring that Contractor's Employees, Subcontractors, and the public are protected from exposure to airborne hazards or contaminated water, soil, or other toxic materials used during or generated by activities on the Site or associated with the Project.

15.9 Shoring Safety Plan

- A. Any conflict between this Paragraph and Division 2 or Division 31 of the Specifications shall be resolved in favor of the most stringent requirement.
- B. At least five (5) Working Days in advance of any excavation five feet or more in depth, Contractor shall submit to Owner a detailed plan showing the shoring, bracing and sloping design (including calculations) and other provisions to be made for worker protection from the hazard of caving ground during the excavation, as required by California Labor Code §6705. A civil or structural engineer registered in California shall prepare and sign any plan that varies from the shoring system standards established by the State Construction Safety Orders.

- C. During the course of Work, Contractor shall be responsible for determining where sloping, shoring, and/or bracing is necessary and the adequacy of the design, installation, and maintenance of all shoring and bracing for all excavation, including any excavation less than five feet in depth. Contractor will be solely responsible for any damage or injuries that may result from excavating or trenching. Owner's acceptance of any drawings showing the shoring or bracing design or Work schedule shall not relieve Contractor of its responsibilities under this Paragraph.
- D. Appoint a qualified supervisory employee who shall be responsible for determining the sloping or shoring system to be used depending on local soil type, water table, stratification, depth, etc.

15.10 Required Registration with the State of California Department of Industrial Relations

- A. Pursuant to California Labor Code 1725.5, all contractors and subcontractors must be registered with the Department of Industrial Relations (DIR) in order to be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code or engage in the performance of any public work contract. Detailed information about contractor's responsibilities and online registration may be obtained on the State of California Department of Industrial Relations, Public Works website, <http://www.dir.ca.gov/Public-Works/PublicWorks.html>.

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**DOCUMENT 00 7280
APPRENTICESHIP PROGRAM**

ARTICLE 1 - COMPLIANCE REQUIRED

- 1.01** Contractor and Subcontractors shall comply with the requirements of California Labor Code §§1776, 1777.5, and 1777.6 concerning the employment of apprentices by Contractor or Subcontractors. Willful failure to comply may result in penalties, including loss of the right to Bid on or receive public works contracts.

ARTICLE 2 - CERTIFICATION OF APPROVAL

- 2.01** California Labor Code §1777.5, as amended, requires a Contractor or Subcontractor employing tradespersons in any apprenticeable occupation to apply to the joint apprenticeship committee nearest the site of a public works project and which administers the apprenticeship program in that trade for a certification of approval. The certificate shall also fix the ratio of apprentices to journeypersons that will be used in performance of the Contract. The ratio of work performed by apprentices to journeypersons in such cases shall not be less than one *hour* of apprentices work for every five *hours* of labor performed by journeypersons (the minimum ratio for the land surveyor classification shall not be less than one apprentice for each five journeypersons), except:
- A. When unemployment for the previous three-month period in the area exceeds an average of 15 percent;
 - B. When the number of apprentices in training in the area exceeds a ratio of one to five;
 - C. When a trade can show that it is replacing at least 1/30 of its membership through apprenticeship training on an annual basis state-wide or locally; or
 - D. Assignment of an apprentice to any work performed under a public works contract would create a condition which would jeopardize his or her life or the life, safety, or property of fellow employees or the public at large or if the specific task to which the apprentice is to be assigned is of such a nature that training cannot be provided by a journeyperson.

ARTICLE 3 - FUND CONTRIBUTIONS

- 3.01** Contractor is required to make contributions to funds established for administration of apprenticeship programs if Contractor employs registered apprentices or journeypersons in any apprenticeable trade on such contracts and if other contractors on the public works site are making such contributions.

ARTICLE 4 - APPRENTICESHIP STANDARDS

- 4.01** Information relative to apprenticeship standards, wage schedules, and other requirements may be obtained from the Director of the California Department of Industrial Relations, or from the Division of Apprenticeship Standards and its branch offices.

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DOCUMENT 00 7300
SUPPLEMENTARY CONDITIONS – INSURANCE AND INDEMNIFICATION

ARTICLE 1 - INSURANCE

- 1.01** At or before the date specified in Document 00 2113 (Instructions to Bidders), Contractor, in order to protect the Rosamond Community Services District (“Owner”) and its board members, officials, agents, officers, and employees against all claims and liability for death, injury, loss and damage as a result of Contractor’s actions in connection with the performance of Contractor’s obligations, as required in the Contract Documents, shall secure and maintain insurance as described below. Contractor shall not perform any work under the Contract Documents until Contractor has obtained all insurance required under this section and the required certificates of insurance and all required endorsements have been filed with Owner. Receipt of evidence of insurance that does not comply with all applicable insurance requirements shall not constitute a waiver of the insurance requirements set forth herein. The required documents must be signed by the authorized representative of the insurance company shown on the certificate. Upon request, Contractor shall supply proof that such person is an authorized representative thereof, and is authorized to bind the named underwriter(s) and their company to the coverage, limits and termination provisions shown thereon. Contractor shall promptly deliver to Owner a certificate of insurance, and all required endorsements, with respect to each renewal policy, as necessary to demonstrate the maintenance of the required insurance coverage for the term specified herein. Such certificates and endorsements shall be delivered to Owner prior to the expiration date of any policy and bear a notation evidencing payment of the premium thereof if so requested. Contractor shall immediately pay any deductibles and self-insured retentions under all required insurance policies upon the submission of any claim by Contractor or Owner as an additional insured.
- A. Workers’ Compensation and Employers Liability Insurance Requirement -- In the event Contractor has employees who may perform any services pursuant to the Contract Documents, Contractor shall submit written proof that Contractor is insured against liability for workers’ compensation in accordance with the provisions of section 3700 of the California Labor Code.

By signing the Agreement, Contractor makes the following certification, required by section 1861 of the Labor Code:

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

Contractor shall require any sub-contractors to provide workers’ compensation for all of the subcontractors’ employees, unless the sub-contractors’ employees are covered by the insurance afforded by Contractor. If any class of employees engaged in work or services performed under this Agreement is not covered by California Labor Code section 3700, Contractor shall provide and/or require each sub-contractor to provide adequate insurance for the coverage of employees not otherwise covered.

Contractor shall also maintain employer’s liability insurance with limits of one million dollars (\$1,000,000) for bodily injury or disease.

- B. General Liability Insurance Requirements – Contractor shall maintain in full force and effect, at all times during the term of the Agreement Commercial General Liability Insurance including, but not limited to, Contractual Liability Insurance (specifically concerning the indemnity provisions of the Contract Documents), Products-Completed Operations Hazard, Personal Injury (including bodily

injury and death), and Property Damage for liability arising out of Contractor's performance of work under the Agreement. Contractor shall maintain the Products-Completed Operations Hazard coverage for the longest period allowed by law following termination of the Agreement. The amount of said insurance coverage required by the Contract Documents shall be the policy limits, which shall be at least five million dollars (\$5,000,000) each occurrence. Commercial General Liability Insurance shall continue coverage for a minimum of five (5) years after completion of the Work.

- C. Automobile Liability Insurance Requirements – Contractor shall maintain Automobile Liability Insurance against claims of Personal Injury (including bodily injury and death) and Property Damage covering any vehicle and/or all owned, leased, hired and non-owned vehicles used in the performance of services pursuant to the Contract Documents with coverage equal to the policy limits, which shall be at least one million dollars (\$5,000,000) each occurrence.
- D. Builder's Risk (Course of Construction) – Contractor shall maintain insurance utilizing an "All Risk" (Special Perils) coverage form, with limits equal to the completed value of the project and no coinsurance penalty provisions.
- 1.02** The Commercial General Liability and Automobile liability Insurance required in sub-paragraphs B. and C. above shall include an endorsement naming the Rosamond Community Services District and District's board members, officials, officers, agents, employees and volunteers as additional insureds for liability arising out of the Agreement and any operations related thereto. Said endorsement shall be provided using one of the following three options: (i) on ISO form CG 20 10, CG 11 85; or (ii) both ISO form CG 20 10, CG 20 26, CG 20 33, or CG 20 38 and CG 20 37.
- 1.03** Self-insured retentions shall be declared to and approved by the Owner. The Owner may require the Contractor to purchase coverage with a lower retention or provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or Owner. The CGL and any policies, including Excess liability policies, shall not be subject to a self-insured retention (SIR) or deductible that exceeds \$25,000 unless approved in writing by Owner. Any and all deductibles and SIRs shall be the sole responsibility of Contractor or subcontractor who procured such insurance and shall not apply to the Indemnified Additional Insured Parties. Owner may deduct from any amounts otherwise due Contractor to fund the SIR/deductible. Policies shall NOT contain any self-insured retention (SIR) provision that limits the satisfaction of the SIR to the Named Insured. The policy shall also provide that Defense costs, including the Allocated Loss Adjustment Expenses, will satisfy the SIR or deductible. Owner reserves the right to obtain a copy of any policies and endorsements for verification.
- 1.04** If any coverage required is written on a claims-made coverage form:
1. The retroactive date shall be shown, and this date must be before the execution date of the contract or the beginning of contract work.
 2. Insurance shall be maintained and evidence of insurance must be provided for at least five (5) years after completion of contract work.
 3. If coverage is cancelled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the contract effective, or start of work date, the Contractor shall purchase extended reporting period coverage for a minimum of five (5) years after completion of contract work.
 4. A copy of the claims reporting requirements shall be submitted to the Owner for review.
 5. If the services involve lead-based paint or asbestos identification/remediation, the Contractors Pollution Liability policy shall not contain lead-based paint or asbestos exclusions. If the services involve mold identification/remediation, the Contractors

Pollution Liability policy shall not contain a mold exclusion, and the definition of Pollution shall include microbial matter, including mold.

- 1.05** Cancellation of Insurance -- The above stated insurance coverages required to be maintained by Contractor shall be maintained until the completion of all of Contractor's obligations under the Contract Documents except as otherwise indicated herein. Each insurance policy supplied by Contractor shall not be suspended, voided, modified, canceled, or reduced in coverage or in limits except after ten (10) days notice by Contractor in the case of non-payment of premiums, or on thirty (30) days prior written notice in all other cases. This notice requirement does not waive the insurance requirements stated herein. Contractor shall immediately obtain replacement coverage for any insurance policy that is terminated, canceled, non-renewed, or whose policy limits have been exhausted or upon insolvency of the insurer that issued the policy.
- 1.06** The Contractor may use Umbrella or Excess Policies to provide the liability limits as required in this agreement. This form of insurance will be acceptable provided that all of the Primary and Umbrella or Excess Policies shall provide all of the insurance coverages herein required, including, but not limited to, primary and non-contributory, additional insured, Self-Insured Retentions (SIRs), indemnity, and defense requirements. The Umbrella or Excess policies shall be provided on a true "following form" or broader coverage basis, with coverage at least as broad as provided on the underlying Commercial General Liability insurance. No insurance policies maintained by the Additional Insureds, whether primary or excess, and which also apply to a loss covered hereunder, shall be called upon to contribute to a loss until the Contractor's primary and excess liability policies are exhausted.
- 1.07** All insurance shall be issued by a company or companies admitted to do business in California and listed in the current "Best's Key Rating Guide" publication with a minimum rating of A: VII. Any exception to these requirements must be pre-approved by the Owner.
- 1.08** Waiver of Subrogation – Contractor hereby agrees to waive rights of subrogation which any insurer of Contractor may acquire from Contractor by virtue of the payment of any loss. Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation. The Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of the Owner for all work performed by the Contractor, its employees, agents and subcontractors.
- 1.09** If Contractor is, or becomes during the term of the Agreement, self-insured or a member of a self-insurance pool, Contractor shall provide coverage equivalent to the insurance coverages and endorsements required above. Owner will not accept such coverage unless Owner determines, in its sole discretion and by written acceptance, that the coverage proposed to be provided by Contractor is equivalent to the above-required coverages.
- 1.10** All insurance afforded by Contractor pursuant to the Contract Documents shall be primary to and not contributing to any other insurance or self-insurance maintained by Owner. An endorsement shall be provided on all policies which shall waive any right of recovery (waiver of subrogation) against Owner. A waiver of right of recovery (waiver of subrogation) is only required when Contractor's personnel deliver services or perform service for the Owner while on Owner property.
- 1.11** Insurance coverages in the minimum amounts set forth herein shall not be construed to relieve Contractor for any liability, whether within, outside, or in excess of such coverage, and regardless of solvency or insolvency of the insurer that issues the coverage; nor shall it preclude Owner from taking such other actions as are available to it under any other provision of the Contract Documents or otherwise in law.
- 1.12** Failure by Contractor to maintain all such insurance in effect at all times required by the Contract Documents shall be a material breach of the Contract by Contractor. Owner, at its sole option,

may terminate the Contract and obtain damages from Contractor resulting from said breach. Alternatively, Owner may purchase such required insurance coverage, and without further notice to Contractor, Owner shall deduct from sums due to Contractor any premiums and associated costs advanced or paid by Owner for such insurance. If the balance of monies obligated to Contractor pursuant to the Contract are insufficient to reimburse Owner for the premiums and any associated costs, Contractor agrees to reimburse Owner for the premiums and pay for all costs associated with the purchase of said insurance. Any failure by Owner to take this alternative action shall not relieve Contractor of its obligation to obtain and maintain the insurance coverages required by the Contract Documents.

- 1.13** If injury occurs to any employee of Contractor, Subcontractor or sub-subcontractor for which the employee, or the employee's dependents in the event of employee's death, is entitled to compensation from Owner under provisions of the Workers' Compensation Insurance and Safety Act, as amended, or for which compensation is claimed from Owner, Owner may retain out of sums due Contractor under the Contract Documents, an amount sufficient to cover such compensation, as fixed by the Workers' Compensation Insurance and Safety Act, as amended, until such compensation is paid, or until it is determined that no compensation is due. If Owner is compelled to pay compensation, Owner may, in its discretion, either deduct and retain from the Contract Sum the amount so paid, or require Contractor to reimburse Owner.
- 1.14** Nothing herein shall be construed as limiting in any way the extent to which Contractor or any Subcontractor may be held responsible for payment of damages resulting from their operations.
- 1.15** All Subcontractors shall maintain the same insurance required to be maintained by Contractor with respect to their portions of the Work unless otherwise indicated in the Contract Documents, and Contractor shall cause the Subcontractors to furnish proof thereof to Owner within ten Days of Owner's request.

ARTICLE 2 - RESPONSIBILITY OF CONTRACTOR AND INDEMNIFICATION

- 2.01** Owner and each of its officers, employees, consultants and agents including, but not limited to, the Board, Project Manager and each Owner's Representative, shall not be liable or accountable in any manner for loss or damage that may happen to any part of the Work; loss or damage to materials or other things used or employed in performing the Work; injury, sickness, disease, or death of any person; or damage to property resulting from any cause whatsoever except their sole negligence, willful misconduct or active negligence, attributable to performance or character of the Work, and Contractor releases all of the foregoing persons and entities from any and all such claims.
- 2.02** To the furthest extent permitted by law (including without limitation California Civil Code §2782), Contractor shall assume defense of, and indemnify and hold harmless, Owner and each of its officers, employees, consultants and agents, including but not limited to the Board, Project Manager and each Owner's Representative, from claims, suits, actions, losses and liability of every kind, nature and description, including but not limited to claims and fines of regulatory agencies and attorney's fees of counsel retained by Owner, expert fees, costs of staff time, and investigation costs, directly or indirectly arising out of, connected with or resulting from performance of the Work, failure to perform the Work, or condition of the Work which is caused in whole or part by any act or omission of Contractor, Subcontractors, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, resulting from any cause whatsoever.
- 2.03** With respect to third-party claims against Contractor, Contractor waives any and all rights to any type of express or implied indemnity against Owner and each of its officers, employees, consultants and agents including, but not limited to Owner, the Board, Project Manager and each Owner's Representative. Owner shall provide timely notice to Contractor of any third-party claim relating to the Contract Documents, in accordance with Section 9201 of the California Public Contract Code.

- 2.04** Approval or purchase of any insurance contracts or policies shall in no way relieve from liability nor limit the liability of Contractor, its Subcontractors of any tier, or the officers or agents of any of them.
- 2.05** To the furthest extent permitted by law (including, without limitation, Civil Code §2782), the indemnities, releases of liability and limitations of liability, claims procedures, and limitations of remedy expressed throughout the Contract Documents shall apply even in the event of breach of Contract, negligence (active or passive), fault or strict liability of the party(ies) indemnified, released, or limited in liability, and shall survive the termination, rescission, breach, abandonment, or completion of the Work or the terms of the Contract Documents. If Contractor fails to perform any of these defense or indemnity obligations, Owner may in its discretion back charge Contractor for Owner's costs and damages resulting therefrom and withhold such sums from progress payments or other Contract moneys which may become due.
- 2.06** The indemnities in the Contract Documents shall not apply to any indemnified party to the extent of its sole negligence or willful misconduct; nor shall they apply to Owner or other indemnified party to the extent of its active negligence.

END OF DOCUMENT

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DOCUMENT 00 9111

ADDENDUM NO. _____
Date: _____

ROSAMOND COMMUNITY SERVICES DISTRICT

TANK 3 RECOAT PROJECT
3179 35th Street West, Rosamond, CA 93560
Project No. 12512

Item No. 1:

Item No. 2:

Item No. 3:

The following Addenda were issued, modifying the Project Manual:

Addendum No. ____, issued on _____.

Amanda C. Parra, PE
Engineer

Contractor

Signature

Date

Name/Title

END OF DOCUMENT

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DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 1000

SUMMARY OF THE WORK

PART 1 – GENERAL

1.01 SUMMARY

- A. Section includes Summary of Work and Work Restrictions including:
1. Work Covered By Contract Documents
 2. Base Bid
 3. Work Under Other Contracts
 4. Future Work
 5. Work Days and Hours
 6. Cooperation of Contractor and Coordination with Other Work
 7. Partial Occupancy/Utilization Requirements
 8. Contractor Use of Site
 9. Air Quality Standards
 10. Construction Staking and Monument Protection
 11. Protection of Existing Structures and Underground Facilities
 12. Permits

1.02 WORK COVERED BY CONTRACT DOCUMENTS

- A. Work comprises of the construction of the Rosamond Community Services District (hereinafter "Owner") Work comprises of the construction of the Rosamond Community Services District (hereinafter "Owner") Tank 3 Recoat Project. The project in general, consists of refurbishment of Tank 3 interior and exterior coatings. The Tank is located just west of 30th Street and north of Felsite Ave, west of Sierra Highway. The repair includes but not limited of tank recoating and repair of corroded equipment, as well as modifications to the inlet piping and suction manifold piping.
- B. Contract Documents fully describe the Work.
- C. The Work of this Contract comprises construction of all the Work indicated, described in the Specifications, or otherwise required by the Contract Documents. Unless provided otherwise in the Contract Documents, all risk of loss to Work covered by Contract Documents shall rest with Contractor until Final Acceptance of the Work. Cost of maintenance of systems and equipment prior to Final Acceptance will be considered as included in prices Bid and no direct or additional payment will be made therefore.
- D. For all Bid items, furnish and install all Work, including connections to existing systems, indicated and described in Specifications and all other Contract Documents. Work and requirements applicable to each individual Bid item, or unit of Work, shall be deemed incorporated into the description of each Bid item (whether Lump Sum or Unit Price). Any Bid item may be deleted from the Work and Contract Sum, in total or in part, prior to or after award of Contract without compensation in any form or adjustment of other Bid items or prices therefore.
- E. Modifications to allowance Work dollar values shall be done as Change Orders and as specified in Section 00 2050 (Modification Procedures). Identify Allowance Items (See Document 00 4100 Bid Form) work on the Progress Schedules and on Applications for Payment. The Amount given on Document 00 4100 (Bid Form) under each Allowance Item is the sum of money set aside for each Allowance Item. These amounts shall be included in the Contract Sum on the Bid Form. If the cost of Work done under any Allowance Item is less than the amount given on the Bid Form under that Allowance Item, the Contract Sum shall be reduced by the difference between the amount given in the Bid Form and the cost of Work actually done.

1.03 BASE BID

- A. Descriptions of Base Bid Item: Provide all necessary machinery, tools, apparatus and other means of construction, and to do all the work and furnish all the materials specified in the contract, in the manner and time therein prescribed, and according to the requirements as therein set forth.

1.04 WORK SEQUENCE

- A. Construct Work in stages and at times to accommodate Owner operation requirements during the construction period; coordinate construction schedule and operations with Owner.

1.05 WORK DAYS AND HOURS

- A. Work Days and hours: Monday-Friday inclusive, **7:00 a.m.-5:00 p.m.** local time or as allowed by permit requirements from the County of Kern.
- B. Work at the Site on weekends or holidays is not permitted, unless Contractor requests otherwise from Owner in writing at least 48 hours in advance and Owner approves in its sole discretion. Any work performed outside normal work days and hours will cause the contractor to pay all overtime inspection and testing costs, as determined by the Owner.

1.06 SHUTDOWN FOR DISCOVERY OF CULTURAL RESOURCES

- A. If discovery is made of items of historical archaeological or paleontological interest, immediately cease all Work in the area of discovery. Archaeological indicators may include, but are not limited to, dwelling sites, locally darkened soils, stone implements or other artifacts, fragments of glass or ceramics, animal bones, human bones, and fossils. After cessation of excavation, immediately contact Owner. Do not resume Work until authorization is received from Owner. When resumed, excavation or other activities shall be as directed by Owner.

1.07 COOPERATION OF CONTRACTOR AND COORDINATION WITH OTHER WORK

- A. Coordinate with Owner and any Owner forces, or other contractors and forces, as required by 00 7200 (General Conditions).
- B. Contractor shall review Contract Documents, submittals, changes, and prepare overlay drawings as necessary to avoid conflicts, errors, omissions and untimely construction.

1.08 PARTIAL OCCUPANCY/UTILIZATION REQUIREMENTS

- A. Allow Owner to take possession of and use any completed or partially completed portion of the Work during the progress of the Work as soon as is possible without interference to the Work.
- B. Possession, use of Work, and placement and installation of equipment by Owner shall not in any way evidence the completion of the Work or any part of it.
- C. Contractor shall not be held responsible for damage to the occupied part of the Work resulting from Owner occupancy.
- D. Use and occupancy by Owner prior to acceptance of Work does not relieve Contractor of its responsibility to maintain insurance and bonds required under the Contract until entire Work is completed and accepted by Owner.
- E. Prior to date of recordation of the Notice of Completion, all necessary repairs or renewals in Work or part thereof so used, not due to ordinary wear and tear, but due to Defective materials or workmanship or to operations of Contractor, shall be made at expense of Contractor, as required in Document 00 7200 (General Conditions).
- F. Use by Owner of Work or part thereof as contemplated by this Section 01 1000 shall in no case be construed as constituting acceptance of Work or any part thereof. Such use shall neither relieve Contractor of any responsibilities under Contract, nor act as waiver by Owner of any of the conditions thereof.

1.09 CONTRACTOR USE OF SITE

- A. **Project Site: The Project is located west of 30th Street and north of Felsite Ave, west of Sierra Highway, Rosamond, CA 93560. Work area is private and fenced around.**

- B. Confine operations at Project Site to areas permitted by Contract Documents, permits, ordinances, and laws. Do not unreasonably encumber Project Site with materials or equipment.
- C. Assume full responsibility for protection and safekeeping of products stored on premises. Move any stored products that interfere with operations of Owner or other contractor.
- D. The Contractor is responsible for securing parking, storage, staging, and Work areas. Comply with Kern County encroachment permit requirements.
- E. Prior to commencement of Work or excavation, Contractor and Owner shall jointly survey the area adjacent to the Project Site making permanent note and record of such existing damage such as cracks, sags or other similar damage. Contractor shall supplement record with photographs indexed on a key map or drawing. This record and photographs shall serve as a basis for determination of subsequent damage to structures, conditions or other existing improvements due to Contractor's operations. All parties making the survey shall sign the official record of existing damage. Cracks, sags or damage of any nature to the adjacent Project area, not noted in the original survey but subsequently noted, shall be reported immediately to Owner.
- F. The Contractor shall follow all applicable county and local jurisdictional ordinances in force during the duration of this Contract.
- G. It is essential that the Contractor perform the Work with as little interference and disturbance as possible to the surrounding neighborhoods.
- H. When suspect materials, outside the scope of Work, are encountered during the Work or restoration process, the Contractor shall immediately contact the Owner or Owner's representative for evaluation and approval of the methods for dealing with the material.

1.010 AIR QUALITY STANDARDS

- A. Ensure that idling time for all heavy equipment is minimized to reduce on-Site emissions.
- B. Maintain equipment in good mechanical condition.
- C. Cover the loads of trucks hauling dirt.
- D. Limit work generating dust emissions during periods of high winds (greater than 15 miles per hour).
- E. Replace ground cover in disturbed areas as soon as possible.
- F. Enclose, cover, water, or apply soil binders to exposed stockpiles.
- G. Remove earth tracked onto neighboring paved roads at least once daily.
- H. Limit equipment speed to 10 miles per hour in unpaved areas.
- I. Implement Storm Water Pollution Prevention Plan as required.
- J. Follow applicable air district requirements.

1.011 CONSTRUCTION STAKING AND MONUMENT PROTECTION

- A. **Contractor** shall provide engineering surveys to establish construction stakes that in Owner's judgment are necessary to enable Contractor to proceed with the Work.
- B. Contractor shall be responsible for laying out the Work, shall protect and preserve the established construction stakes and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Whenever Contractor knows or reasonably should know that any Work activity is likely to damage or destroy any construction stakes or property monuments, or require relocation because of necessary changes in grades or locations, provide at least 2 Business Days advance notice to Owner. In any event, notify Owner whenever any construction stakes or property monuments are lost or destroyed or require relocation because of necessary changes in grades or locations. Contractor shall employ a registered professional to replace or repair construction stakes or property monuments at Contractor's expense.
- C. When Contractor performs construction staking, provide Owner with Contractor's survey staking information in writing within 3 Working Days after it becomes available to Contractor.

1.012 GEOTECHNICAL DATA AND EXISTING CONDITIONS (NOT USED)

1.013 PROTECTION OF EXISTING STRUCTURES AND UNDERGROUND FACILITIES

A. The Drawings may indicate existing above- and below-grade structures, drainage lines, storm drains, sewers, water lines, gas lines, electrical lines, and other similar items and underground facilities that are known to Owner. The owner operates potable water and sewer facilities within the District. At least 2 Business Days, or as otherwise noted, prior to commencement of excavation, notify the Owner and the representatives of the following Underground Facilities in addition to contacting Underground Service Alert.:

1. **Power: Southern California Edison**
2. **Gas: Southern California Gas**
3. **Water: Rosamond Community Services District**
4. **Sewer: Rosamond Community Services District**
5. **Fiber Optic: AT&T**

B. Attention is directed to power and telephone lines where overhead service to a structure, known to receive service, does not exist, then underground service shall be assumed to exist.

C. Perform pot-holing by hand within 24 inches (in any direction) of the Underground Facilities. This may be done on an area-by-area basis, but shall be accomplished at least 7 Days in advance of the date of construction within such area.

D. No attempt has been made to locate private utilities on private property such as sprinkler irrigation systems or electrical conduits. Verify with the facility operator prior to construction.

E. In addition to reporting, if a utility is damaged, Contractor must take appropriate action as provided in Document 00 7200 (General Conditions).

F. Additional compensation or extension of time on account of utilities not indicated or otherwise brought to Contractor's attention including reasonable action taken to protect or repair damage shall be determined as provided in 00 7200 (General Conditions).

1.014 PERMITS

A. All permits that may be required, such as air district, electrical, mechanical, fire prevention, irrigation, grading, slope protection, tree cutting, etc., have not been applied for and shall be obtained by Contractor. Applicable permit fees will be reimbursed to the extent specified in Document 00 7200 (General Conditions).

1.015 ACTUAL DAMAGES FOR PERMIT VIOLATIONS

A. Contractor shall be liable for and shall pay Owner the amount of any actual losses due to permit violations, in addition to liquidated damages or other remedies provided by the Contract Documents.

B. The amount of liquidated damages provided in Document 00 5200 (Agreement) and Document 00 7200 (General Conditions) is not intended to include, nor does the amount include, any damages incurred by Owner for reasons other than those listed in that paragraph. Any money due or to become due to Contractor may be retained by Owner to cover both the liquidated and the actual damages described above and, should such money not be sufficient to cover such damages, Owner shall have the right to recover the balance from Contractor or its sureties.

PART 2 –

2.01 OWNER-FURNISHED PRODUCTS

A. Owner's Responsibilities:

1. Arrange for and deliver Owner-reviewed Shop Drawings, Product Data, and Samples, to Contractor.
2. Arrange and pay for delivery to Site.
3. On delivery, inspect products jointly with Contractor.
4. Submit claims for transportation damage and replace damaged, Defective, or deficient items.
5. Arrange for manufacturers' warranties, inspections, and service.

B. Contractor's Responsibilities:

1. Review Owner-reviewed Shop Drawings, and Product Data, and Samples.
2. Receive products at Site; inspect for completeness or damage jointly with Owner.
3. Install and finish products.
4. Repair or replace items damaged after receipt.
5. Install into Project per Contract Documents.

PART 3 – EXECUTION – NOT USED

END OF SECTION

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SECTION 01 2000

PRICE AND PAYMENT PROCEDURES

PART 1 – GENERAL

1.01 SUMMARY

- A. Section includes description of requirements and procedures for determining amount of Work performed and for obtaining payment for Work performed.

1.02 REFERENCES

- A. A current version of the following shall be used:
 - 1. California Public Contract Code
 - 2. Code of Civil Procedures
 - 3. Government Code

1.03 COMPOSITION AND SCOPE OF CONTRACT SUM

A. Scope of Contract Sum

- 1. The Contract Sum for performance of the Work under Contract Documents, or under any Bid item, allowance, or Alternate, shall include full compensation for all Work required under the Contract Documents, including without limitation, all labor, materials, taxes, transport, handling, storage, supervision, administration, and all other items necessary for the satisfactory completion of the Work, whether or not expressly specified or indicated, incidental work and expenses, and all terms, conditions, requirements and limitations set forth in the Contract Documents.
- 2. Contract Sum may be expressed as lump sum, unit price, allowance, or combination thereof.

B. Unit Price items

- 1. Quantity of Work to be paid for under any item for which a unit price is fixed in Contract Documents shall be determined by Owner based on, so far as practicable, actual number of units satisfactorily completed, as certified by Contractor, and reviewed by Owner, within prescribed or ordered limits, and no payment will be made for Work unsatisfactorily performed or done outside of limits.

C. Lump Sum Items

- 1. When estimated quantity for specific portion of Work is not indicated and/or Work is designated as lump sum, payment will be on a lump sum basis for Work satisfactorily completed in accordance with Contract Documents.
- 2. Payment for lump sum Work, or items of Work subject to a lump sum (e.g. without limitation, change order work), shall be made on the basis of satisfactory completion of such Work or work item, earned in progressive stages in accordance with the Contract Documents, up to but not exceeding 95% of the Contractor's percentage completion of the Work or item.
- 3. Lump sum items shall be paid based upon the approved Schedule of Values, which shall be used to measure progressive payments based upon satisfactory progress towards completion of the item.

1.04 PAYMENT PROCEDURES

A. Schedule of Values:

1. Within ten Days from issuance of Notice of Award and prior to the Contractor's first Application for Payment, Contractor shall submit a detailed breakdown of its Bid by scheduled Work items and/or activities, in the accepted Owner format, including coordination responsibilities and Project Record Documents responsibilities. Where more than one Subcontractor comprises the work of a Work item or activity, the Schedule of Values shall show a separate line item for each subcontract. Contractor shall furnish such breakdown of the total Contract Sum by assigning dollar values (cost estimates) to each applicable Progress Schedule network activity, which cumulative sum equals the total Contract Sum. This breakdown shall be referred to as the Schedule of Values.
2. Along with each applicable Progress Schedule network activities, General Conditions, scheduling, record documents and quality assurance control shall be separate line items in the Schedule of Values, which cumulative sum equals the total Contract value. Owner will review the breakdown in conjunction with the Progress Schedule to ensure that the dollar amounts of this Schedule of Values are, in fact, reasonable cost allocations for the Work items listed. Upon favorable review by Owner, Owner will accept this Schedule of Values for use. Owner shall be the sole judge of fair market cost allocations.
3. Owner will reject any attempt to increase the cost of early activities, i.e., "front loading," resulting in a complete reallocation of moneys until such "front loading" is corrected. Repeated attempts at "front loading" may result in suspension or termination of the Work for default, or refusal to process progress payments until such time as the Schedule of Values is acceptable to Owner.

B. Contractor's Requests for Progress Payments

1. If requested by Contractor, progress payments will be made monthly, under the following conditions:
2. On or before the 25th Day of each monthly billing cycle, Contractor shall submit to Owner an Application for Payment for the cost of the Work put in place during the period from the last Day of the previous month to the end of the current month, along with one copy of an updated Progress Schedule. Such Applications for Payment shall be for the expected total value of activities completed or partially completed, based upon Schedule of Values prices (or Bid item prices if unit price) of all labor and materials incorporated in the Work up until midnight of the last Day of that one month period, less the aggregate of previous payments. Accumulated retainage shall be shown as separate item in payment summary. Owner and Contractor will reconcile any differences in the field, based on the reconciled monthly report sheets. Except as otherwise provided in a labor compliance program applicable to the Work (if any) or as otherwise required by Owner, concurrently with each Application for Payment, Contractor shall submit to the Owner the Contractor's and its Subcontractors' certified payroll records required to be maintained pursuant to Labor Code Section 1776 for all labor performed during pay periods ending during the period covered by the Application for Payment.
3. No progress payment will be processed prior to Owner receiving all requested, acceptable schedule update information, updated as-built drawings, and certified payrolls, and in Owner's sole and absolute discretion, Owner may deny the entire Application for Payment for noncompliance.
4. Each Application for Payment shall list each Change Order executed prior to date of submission, including the Change Order Number, and a description of the Work activities, consistent with the descriptions of original Work activities. Contractor shall submit a monthly Change Order status log to Owner.
5. If Owner requires substantiating data, Contractor shall submit information requested by Owner, with cover letter identifying Project, Application for Payment number and date, and

detailed list of enclosures. Contractor shall submit one copy of substantiating data and cover letter for each copy of Application for Payment submitted.

6. If Contractor fails or refuses to participate in monthly Work reconciliations or other construction progress evaluation with Owner, Contractor shall not receive current payment until Contractor has participated fully in providing construction progress information and schedule update information to Owner.

C. Owner's Review of Progress Payment Applications

1. Owner will review Contractor's Application for Payment. If adjustments need to be made to percent of completion or completed quantities of each activity, Owner will make appropriate notations and return to Contractor. Contractor shall revise and resubmit. All parties shall update percentage of completion values in the same manner, i.e., express value of an accumulated percentage of completion to date.
2. If Owner determines that portions of the Application for Payment are not proper or not due under the Contract Documents, then Owner may approve the other portions of the Application for Payment, and in the case of disputed items or Defective Work not remedied, may withhold up to 150 percent of the disputed amount from the progress payment.
3. Pursuant to California Public Contract Code §20104.50, if Owner fails to make any progress payment within 30 Days after receipt of an undisputed and properly submitted Application for Payment from Contractor, Owner shall pay interest to the Contractor equivalent to the legal rates set forth in subdivision (a) of Section 685.010 of the California Code of Civil Procedure. The 30-Day period shall be reduced by the number of Days by which Owner exceeds the seven-Day return requirement set forth herein.
4. As soon as practicable after approval of each Application for Payment for progress payments, Owner will pay to Contractor in manner provided by law, an amount equal to 95 percent of the amounts otherwise due as provided in the Contract Documents, or a lesser amount if so provided in Contract Documents and by law, provided that payments may at any time be withheld if, in judgment of Owner, Work is not proceeding in accordance with Contract, or Contractor is not complying with requirements of Contract, or to comply with labor compliance, stop notices or to offset liquidated damages accruing or expected.
5. Before any progress payment or final payment is due or made, Contractor shall submit satisfactory evidence that Contractor is not delinquent in payments to employees, Subcontractors, suppliers, or creditors for labor and materials incorporated into Work. This specifically includes, without limitation, conditional lien release forms for the current progress payment and unconditional release forms for past progress payments. This also includes copies of certified payroll from contractor and subcontractors for the current payment period.

D. Payment for Material and Equipment Not Yet Incorporated Into the Work

1. No payment shall be made for materials or equipment not yet incorporated into the Work, except as specified elsewhere in the Contract Documents or as may be agreed to by Owner in its sole discretion. Where Contractor requests payment on the basis of materials and equipment not incorporated in the Work, Contractor must satisfy the following conditions:
2. The materials and/or equipment shall be delivered and suitably stored at the Site or at another local location agreed to in writing, for example, a mutually acceptable bonded and insured warehouse.
3. Full title to the materials and/or equipment shall vest in Owner at the time of delivery to the Site, warehouse or other storage location. Obtain a negotiable warehouse receipt, endorsed over to Owner for materials and/or equipment stored in an off-site warehouse. No payment will be made until such endorsed receipts are delivered to Owner.
4. Stockpiled materials and/or equipment shall be available for Owner inspection, but Owner shall have no obligation to inspect them and its inspection or failure to inspect shall not relieve Contractor of any obligations under the Contract Documents. Materials and/or equipment shall be segregated and labeled or tagged to identify these specific Contract

Documents.

5. After delivery of materials and/or equipment, if any inherent or acquired defects are discovered, defective materials and/or equipment shall be removed and replaced with suitable materials and/or equipment at Contractor's expense.
6. At Contractor's expense, ensure the materials and/or equipment against theft, fire, flood, vandalism, and malicious mischief, as well as any other coverages required under the Contract Documents.
7. Contractor's Application for Payment shall be accompanied by a bill of sale, invoice or other documentation warranting that Owner has received the materials and equipment free and clear of all liens and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect Owner interest therein, all of which must be satisfactory to Owner. This documentation shall include, but not be limited to, conditional releases of mechanics' liens and stop notices from all those providing materials and equipment as to which the Application for Payment relates, as well as unconditional releases of the same from the same as to the previous Application for Payment for which they have not already been provided. Amounts previously paid for materials and equipment prior to incorporation into the Work shall be deducted from amounts otherwise due Contractor as they are incorporated.

1.05 FINAL PAYMENT

A. Final Payment

1. As soon as practicable after all required Work is completed in accordance with Contract Documents, including punchlist, testing, record documents and Contractor maintenance after Final Acceptance, Contractor shall submit its Application for Final Payment.
2. Provided Contractor has met all conditions required for Final payment, Owner will pay to Contractor, in manner provided by law, unpaid balance of Contract Sum of Work (including, without limitation, retentions), or whole Contract Sum of Work if no progress payment has been made, determined in accordance with terms of Contract Documents, less sums as may be lawfully retained under any provisions of Contract Documents or by law.

B. Final Accounting

1. Prior progress payments and change orders shall be subject to audit and correction in the final payment.
2. Contractor and each assignee under an assignment in effect at time of final payment shall execute and deliver at time of final payment, and as a condition precedent to final payment, Document 00590 (Agreement and Release of Claims).

1.06 SUBSTITUTION OF SECURITIES

A. Public Contract Code Section 22300. In accordance with the provisions of Public Contract Code Section 22300, substitution of securities for any moneys withheld under Contract Documents to ensure performance is permitted under following conditions:

1. At request and expense of Contractor, securities listed in Section 16430 of the Government Code, bank or savings and loan certificates of deposit, interest bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by Contractor and Owner which are equivalent to the amount withheld under retention provisions of Contract shall be deposited with Controller or with a state or federally chartered bank in California, as the escrow agent, who shall then pay such moneys to Contractor. Upon satisfactory completion of Contract, securities shall be returned to Contractor.
2. Alternatively, Contractor may request and Owner shall make payment of retentions earned directly to the escrow agent at the expense of Contractor. At the expense of Contractor, Contractor may direct the investment of the payments into securities and receive the interest earned on the investments upon the same terms provided for securities deposited by Contractor. Upon satisfactory completion of the work of the Contract Documents, Contractor shall receive from escrow agent all securities, interest, and payments received by the escrow agent from Owner. Contractor shall then pay to each Subcontractor, not

later than seven (7) Days after receipt of the payment, the respective amount of interest earned, net of costs attributed to retention withheld from each Subcontractor, on the amount of retention withheld to insure the performance of Contractor.

3. Contractor shall be beneficial owner of securities substituted for moneys withheld and shall receive any interest thereon.
4. Contractor may enter into an escrow agreement, form included in Contract Documents, as authorized under Public Contract Code Section 22300, specifying amount of securities to be deposited, terms and conditions of conversion to cash in case of default of Contractor, and termination of escrow upon completion of Contract Documents.
5. Public Contract Code Section 22300, in effect on Bid Day, is hereby incorporated in full by this reference and shall supersede anything inconsistent therewith.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION – NOT USED

END OF SECTION

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ATTACHMENT 01 2000-A
PERIODIC ESTIMATE FOR PARTIAL PAYMENT

Invoice or Estimate
No. _____

PROJECT: _____

CONTRACTOR: _____

PROJECT NO: _____ PERIOD: _____ TO: _____

ITEM NO.	DESCRIPTION	SCHEDULED VALUE	PREVIOUS ESTIMATE	COMPLETED THIS PERIOD	TOTAL TO DATE	%
1			0.00	0.00	0.00	
2			0.00	0.00	0.00	
3			0.00	0.00	0.00	
4			0.00	0.00	0.00	
5			0.00	0.00	0.00	
6			0.00	0.00	0.00	
7			0.00	0.00	0.00	
8			0.00	0.00	0.00	
9			0.00	0.00	0.00	
10			0.00	0.00	0.00	
11			0.00	0.00	0.00	
12			0.00	0.00	0.00	
13			0.00	0.00	0.00	
14			0.00	0.00	0.00	
15			0.00	0.00	0.00	
16			0.00	0.00	0.00	
17			0.00	0.00	0.00	
18			0.00	0.00	0.00	
19			0.00	0.00	0.00	
20			0.00	0.00	0.00	
SUBTOTAL ORIGINAL CONTRACT		\$0.00	\$0.00	\$0.00	\$0.00	
CO1		0.00	0.00	0.00	0.00	
CO2		0.00	0.00	0.00	0.00	
CO3		0.00	0.00	0.00	0.00	
CO4		0.00	0.00	0.00	0.00	
TOTAL ADJUSTED CONTRACT		\$0.00	\$0.00	\$0.00	\$0.00	

- A. Notice to Proceed Date (Enter as text, i.e.: January 1, 2023) _____
- B. Original Contract Time (Working Days) (Enter as number) _____ 0 Days
- C. Additional Contract Time due to Change Orders (Working Days) (Enter number) _____ 0 Days
- D. Contract Completion Date _____ <Completion Date Calculated Here>

SUMMARY OF VALUE OF COMPLETED WORK

1. Value of work completed to date	_____	\$0.00
2. Less: Retention - 5%	_____	\$0.00
3. Less: Deductions/Labor Non-Compliance	_____	\$0.00
4. Net amount payable on work performed to date	_____	\$0.00
5. Less: Amount of previous payment requests	_____	\$0.00
6. Amount due this payment	_____	\$0.00

Approved by Contractor: _____ Date: _____

Approved by Owner: _____ Date: _____

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ATTACHMENT 01 2000B: REQUEST FOR PAYMENT CERTIFICATION

1. CERTIFICATION BY CONTRACTOR:

According to the best of my knowledge and belief, I certify that all items and amounts shown on the attached Periodic Estimate for Partial Payment are correct; that all work has been performed in accordance with the terms and conditions of the contract between the Rosamond Community Services District and _____, dated _____.

I further certify that all just and lawful bills against the undersigned have been paid, or will be paid from funds received from this payment, in full accordance with the terms and conditions of said contract.

By _____
Contractor (Name of Company)

By _____
Authorized Agent (Signature)

Date _____

Title _____

2. CERTIFICATION BY OWNER:

I certify that I have reviewed the attached Periodic Estimate for Partial Payment No. _____ for the period ending _____; that to the best of my knowledge and belief it is a true statement of value of work performed to date and that such work has been performed in full accordance with Plans and Specifications and the terms and conditions of the construction contract. I further certify that all work included in the Periodic Estimate for Partial Payment has been inspected by a duly authorized representative and/or qualified staff. I therefore approve the amount of \$_____ as the balance due this payment.

Rosamond Community Services District

By: _____

Date _____

Title: _____

THIS SECTION FOR USE WITH FEDERALLY FUNDED PROJECTS

3. CERTIFIED PAYROLL AUDIT CERTIFICATION

I hereby certify that I have reviewed the weekly payroll forms and related material for this project and find them to be up-to-date, satisfactory and in compliance with the monitoring regulations included in OMB A-87, A-102 and CRF24.

I hereby certify that I have reviewed the weekly payroll forms and related material for this project and find them to contain discrepancies. A sufficient amount has been withheld to cover any problems that may arise. In addition, the final retention will be held until all discrepancies are resolved.

I hereby certify that weekly payroll forms for the subject project are not required to be submitted.

By: _____

Signature _____

Title: _____

Date _____

END OF DOCUMENT

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SECTION 01 2050

MODIFICATION PROCEDURES

PART 1 – GENERAL

1.01 SUMMARY

- A. Section includes requirements that supplement the paragraphs of Document 00 7200 (General Conditions).
- B. Description of procedures for modifying the Contract Documents and determining costs for changes in contract amounts.
- C. Contractor shall submit construction related documentation in accordance with Section 01 3000.

1.02 PROCEDURES FOR CONTRACTOR INITIATED CHANGES

- A. Contractor-Initiated Request for Information (“RFI”) Procedures, Requirements and Limitations:
 - 1. Contractor may submit RFIs for clarifications in Owner-prepared Contract Documents, which may result in a change in Work, Contract Price, or Contract Time.
 - 2. Whenever Contractor requires information regarding the Project or Owner-prepared Contract Documents, or receives a request for such information from a Subcontractor, Contractor may prepare and deliver an RFI to Owner. Contractor shall use the RFI format provided by Owner. Contractor shall not issue an RFI to Owner solely to clarify Owner-prepared Construction Documents. Contractor must submit time critical RFIs at least 30 days before scheduled start date of the affected Work activity. Contractor shall reference each RFI to an activity of Progress Schedule and shall note time criticality of the RFI, indicating time within which a response is required. Contractor’s failure to reference RFI to an activity on the Progress Schedule and note time criticality on the RFI shall constitute Contractor’s waiver of any claim for time delay or interruption to the Work resulting from any delay in responding to the RFI.
 - 3. Contractor shall be responsible for its costs to implement and administer RFIs throughout the Contract duration. Regardless of the number of RFIs submitted, Contractor shall not be entitled to additional compensation for the effort required to submit the RFIs. Contractor shall be responsible for Owner’s administrative costs for answering RFIs where the answer could reasonably be found by reviewing the Contract Documents, as determined by Owner; at Owner’s discretion, such costs may be deducted from progress payments or final payment.
 - 4. Owner will provide a written response in the form of an Instruction Bulletin (“IB”) to Contractor within 14 days from receipt of RFI. Contractor shall distribute the response to all appropriate Subcontractors.
 - 5. If Contractor is satisfied with the response and does not request a change in Contract Sum or Contract Time, then the response shall be executed without a change.
 - 6. If Contractor believes the response is incomplete, Contractor shall issue another RFI (with the same RFI number with the letter “A” indicating it is a follow-up RFI) to Owner clarifying original RFI. Contractor shall reference the IB issued by the Owner. Additionally, Owner may return the RFI requesting additional information if the original RFI is inadequate in describing the condition.
- B. Contractor Cost Proposal:
 - 1. Contractor may initiate changes by submitting a Cost Proposal (“CP”) in response to an Instruction Bulletin.
 - 2. Whenever Contractor elects or is entitled to submit a CP, Contractor shall prepare and submit to Owner for consideration a CP using the form included in this Project Manual. All CPs must contain a complete breakdown of costs or credits, deducts and extras; itemizing materials, labor, taxes, markup and any requested changes to Contract Time. All

Subcontractor Work shall be so indicated. Individual entries on the CP form shall include applicable Schedule of Values code, with all amounts determined as provided herein. After receipt of a CP with a detailed breakdown, Owner will act promptly through issuance of an Instruction Bulletin.

3. If Owner accepts a CP, Owner will prepare a Change Order for Owner and Contractor signatures.
4. If CP is not acceptable to Owner because Owner does not agree with Contractor's proposed cost and/or time, Owner will provide comments. Contractor will then, within seven Days (except as otherwise provided herein), submit a revised CP.
5. The Contractor will forfeit compensation for costs and/or time for proceeding with changes to the Work without written authorization from the Owner. The Contractor shall notify the Owner in writing and request an evaluation whenever it appears a change is necessary. The written notice shall be made within 24 hours of such discovery. If the Owner concurs with the Contractor's request for a change to the Work, the Owner will follow the procedures described above.

C. Time Requirements:

1. If Contractor believes that an Owner response to an RFI, submittal, or other Owner direction, results in change in Contract Sum or Contract Time, Contractor shall notify Owner with the issuance of a preliminary CP within seven Days after receiving Owner's response or direction, and in no event after starting the disputed work or later than the time allowed under Article 12 of Document 00 7200 (General Conditions). If Contractor also requests a work time extension, or has issued a notice of delay or otherwise requests a time extension with a CP, then Contractor shall submit the TIE as described in Section 01 3216 concurrently with the CP and in no event later than ten Days after providing the notice of delay.
2. If Contractor requires more time to accurately identify the required changes to the Contract Sum or Contract Time, Contractor may submit an updated and final CP and TIE within 14 Days of submitting the preliminary CP.
3. If Owner agrees with Contractor's CP and/or TIE, then Owner will prepare a Change Order. If Owner disagrees with Contractor, then Contractor may give notice of potential claim as provided in Article 12 of Document 00 7200 (General Conditions), and proceed thereunder.
4. Contractor must submit CPs, notices of potential claim, or Claims within the required time periods. Any failure to do so waives Contractor's right to submit a CP or file a Claim.

D. Cost Estimate Information:

1. Contractor and subcontractors shall, upon Owner's request, permit inspection of the original unaltered cost estimates, subcontract agreements, purchase orders relating to the change, and documents substantiating all costs associated with its CP or Claims arising from changes in the Work.

1.03 PROCEDURES FOR OWNER INITIATED CHANGE ORDERS

A. Owner Initiated Changes

1. Owner may initiate changes in the Work or Contract Time by issuing an Instruction Bulletin. Owner may issue an IB to Contractor. Any IB will detail all proposed changes in the Work and may request a quotation of changes in Contract Sum and Contract Time from Contractor.
2. In response to an IB, Contractor shall furnish a CP within 21 Days. For time sensitive changes and upon Owner's approval of CP, Owner may direct contractor to proceed with extra work in writing ahead of inclusion in a Change Order. Upon approval of CP, Owner may issue an Instruction Bulletin directing Contractor to proceed with extra Work.
3. If the parties agree on price and time for the Work, the Owner will issue a Contract Change Order. If the parties do not agree on the price or time for a CP, Owner may either issue an Instruction Bulletin, order the work done by force account or decide the issue per Article 12 of Document 00 7200 (General Conditions). Contractor shall perform the changed Work notwithstanding any claims or disagreements of any nature.

B. Force Account

1. The Contractor, provided he received an order for force account work, shall proceed with the work on a force account basis as defined in Section 9 of the Standard Specifications and as modified by this Section 01 2050.
2. A daily time and material record of all force account work shall be kept by the Contractor, as directed by the Owner. The daily record shall be signed by the Contractor and submitted daily to the Owner.
3. In any case, the Owner shall certify to the amount, including markup, due to the Contractor and any subcontractor submitting for extra under the proposed change. For this purpose, markup shall include, but not be limited to overhead, profit, home office overhead, bonds, insurance, labor pool, remobilization, and escalation. In no instance shall mark up to Contractor be more than 15%. Pending final determination of value, payments on account of changes shall be made on the Contractor's estimate.

1.04 **PROCEDURES THAT APPLY TO CONTRACTOR- AND OWNER-INITIATED CHANGES**

A. Adjustment of Schedules to Reflect Change Orders:

1. Contractor shall revise Schedule of Values and Application for Payment forms to record each authorized Change Order ("CO") as a separate line item and adjust the Contract Sum as shown thereon prior to the next monthly pay period.
2. Contractor shall revise the Progress Schedules prior to the next monthly pay period, to reflect CO.
3. Contractor shall enter changes in Project Record Documents prior to the next monthly pay period.

B. Required Documentation for Adjustments to Contract Amounts:

1. For all changes and cost adjustments requested, Contractor shall provide documentation of change in Contract Amounts asserted, with sufficient data to allow evaluation of the proposal.
2. In all requests for compensation, cost proposals, estimates, claims, and any other calculation of costs made under the Contract Documents, Contractor shall break out and quantify costs of labor, equipment and materials identified herein, for Contractor and subcontractors of any tier.
3. Contractor shall, on request, provide additional data to support computations for:
 - a. Quantities of products, materials, labor, and equipment.
 - b. Taxes, insurance, and bonds.
 - c. Justification for any change in Contract Time and new Progress Schedule showing revision due, if any.
 - d. Credit for deletions from Contract, similarly documented.
4. Contractor shall support each claim or computation for additional cost, with additional information including:
 - a. Origin and date of claim or request for additional compensation.
 - b. Dates and times Work was performed and by whom.
 - c. Time records and wage rates paid.
 - d. Invoices and receipts for products, materials, equipment and subcontracts, similarly documented.
 - e. Credit for deletions from Contract, similarly documented.

C. Responses and Disputes:

1. For all responses for which the Contract Documents do not provide a specific time period, recipients shall respond within a reasonable time.
2. For all disputes arising from the procedures herein, Contractor shall follow Article 12 of Document 00 7200 (General Conditions).

1.05 **COST DETERMINATION FOR CHANGES IN CONTRACT AMOUNTS**

A. Calculation of Total Cost of Extra Work:

1. Total cost of changed Work, extra Work, or of Work omitted shall be the sum of three components defined immediately below as: Component 1 (Direct Cost(s)); Component 2 (Markup); and, Component 3 (bonds, insurance, taxes)
2. Component 1: Direct Cost(s) of labor, equipment and materials, is calculated based upon actually incurred (or omitted) labor costs, material costs and equipment rental costs, as defined herein;
3. Component 2: Markup on such actually incurred Direct Costs, is applied in the percentages identified below; and
4. Component 3: Actual additional costs for any additionally required insurance, bonds, and/or taxes, defined herein, is calculated without Markup.

1.06 **MEASUREMENT OF DIRECT COST OF CONSTRUCTION (COST COMPONENT NO. 1)**

A. Composition of Component 1 (Direct Cost of Construction):

1. Component 1 has four subcomponents, also referred to as “LEMS”:
 - a. Labor (Component 1A)
 - b. Equipment (Component 1B)
 - c. Materials (Component 1C)
 - d. Subcontractors (Component 1D)

B. Measurement of Cost of Labor (Component 1A):

1. Cost of Labor shall be calculated as: Cost of labor for workers (including forepersons when authorized by Owner) used in actual and direct performance of the subject work, whether employer is Contractor, Subcontractor, or other forces, in the sum of the following:
 - a. Actual Wages: Actual wages paid shall include any employer payments to or on behalf of workers for health and welfare, pension, vacation, and similar purposes.
 - b. Labor surcharge: Payments imposed by local, county, state, and federal laws and ordinances, and other payments made to, or on behalf of, workers, other than actual wages as defined, such as worker's compensation insurance. Such labor surcharge shall not exceed generally accepted standards in the State for labor rates in effect on date upon which extra Work is accomplished.
 - c. Cost of Labor shall include no other costs, fees or charges.
2. Labor cost for operators of equipment owned and operated by Contractor or any Subcontractor, shall be no more than rates of such labor established by collective bargaining agreements for type of worker and location of Work, whether or not owner-operator (i.e., Contractor or Subcontractor) is actually covered by such an agreement.
3. Cost of Labor shall be recorded and documented in certified payroll records, maintained in the form customary and/or required in the State, delivered to Owner weekly.

C. Measurement of Cost of Equipment (Component 1B):

1. Measurement of Component 1B (Cost of Equipment). Cost of Equipment shall be calculated as: Cost of Equipment used in actual and direct performance of the subject Work, whether by Contractor, Subcontractor, or other forces. Cost of Equipment shall be calculated as herein described.
2. For rented equipment, cost will be based on actual rental invoices, appropriate for the use and duration of the Work. Equipment used on extra Work shall be of proper size and type. If, however, equipment of unwarranted size or type and cost is used, cost of use of equipment shall be calculated at rental rate for equipment of proper size and type, as determined by Owner.
3. Equipment rental cost for Contractor or Subcontractor-owned equipment, shall be determined by reference to, and not in excess of, the generally accepted standards in the State for equipment rental rates in effect on the date upon which extra Work is accomplished. If there is no applicable rate for an item of equipment, then payment shall

- be made for Contractor- or Subcontractor-owned equipment at the rental rate listed in the most recent edition of the CalTrans Standard Schedules and Specifications, and absent a rental rate therein, then the Association of Equipment Distributors (AED) book.
4. In all cases, rental rates paid shall be deemed to cover cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals.
 5. Unless otherwise specified, manufacturer's ratings, and manufacturer-approved modifications, shall be used to classify equipment for determination of applicable rental rates. Individual pieces of equipment or tools not listed in said publication and having a replacement value of \$100 or less, whether or not consumed by use, shall be considered to be small tools and no payment will be made therefor as payment is included in payment for labor. Rental time will not be allowed while equipment is inoperative due to breakdowns.
 6. For equipment on Site, rental time to be paid for equipment shall be the time that equipment is in operation on extra Work being performed or on standby as approved by Owner. The following shall be used in computing rental time of equipment:
 - a. When hourly rates are listed, less than 30 minutes of operation shall be considered to be ½ hour of operation.
 - b. When daily rates are listed, less than four hours of operation shall be considered to be ½ Day of operation.
 - c. Rates shall correspond to actual rates paid by Contractor, i.e., if Contractor pays lower weekly or monthly rates, then same shall be charged to Owner.
 7. For equipment that must be brought to Site to be used exclusively on extra Work, cost of transporting equipment to Site and its return to its original location shall be determined as follows:
 - a. Owner will pay for costs of loading and unloading equipment.
 - b. Cost of transporting equipment in low bed trailers shall not exceed hourly rates charged by established haulers.
 - c. Cost of transporting equipment shall not exceed applicable minimum established rates of California Public Utilities Commission or appropriate State Dept. of Transportation.
 - d. Owner will not make any payment for transporting and loading and unloading equipment if equipment is used on Work in any other way than upon extra Work.
 - e. Rental period may begin at time equipment is unloaded at Site of extra Work and terminate at end of the performance of the extra Work or Day on which Owner directs Contractor to discontinue use of equipment, whichever first occurs. Excluding Saturdays, Sundays, and Owner legal holidays, unless equipment is used to perform extra Work on such Days, rental time to be paid per Day shall be four hours for zero hours of operation, six hours for four hours of operation and eight hours for eight hours of operation, time being prorated between these parameters. Hours to be paid for equipment that is operated less than eight hours due to breakdowns, shall not exceed eight less number of hours equipment is inoperative due to breakdowns.
 8. Employee vehicles are not part of Component 1A, rather, are included within Component 2 (Markup).
 9. Equipment costs shall include no other costs, fees, or charges.
- D. Measurement of Cost of Material (Component 1C):
1. Cost of material shall be calculated as herein described. Cost of such materials will be cost to purchaser (Contractor, Subcontractor, or other forces) from supplier thereof, except as the following are applicable:
 2. If cash or trade discount by actual supplier is offered or available to purchaser, it shall be credited to Owner notwithstanding fact that such discount may not have been taken.
 3. For materials salvaged upon completion of Work, salvage value of materials shall be deducted from cost, less discounts, of materials.

4. If cost of a material is, in opinion of Owner, excessive, then cost of material shall be deemed to be lowest current wholesale price at which the material is available in quantities concerned delivered to Site, less any discounts as provided in this Paragraph 1.06.
5. Material costs shall include no other costs, fees, or charges.

E. Measurement of Cost of Subcontractors (Component 1D):

1. Where reimbursed or calculated per the terms of the Contract Documents, Change Order, , cost of Subcontractors shall be calculated as amounts earned by Subcontractors procured in compliance with the Contract Documents and approved by the Owner, provided such subcontractor-earned amounts meet the following requirements:
 - a. Such amounts are earned under the terms of the Subcontracts and the Work complies with the terms of the Contract Documents;
 - b. Such amounts are properly requested, documented and permitted under the terms of the Subcontract(s) and the Contract Documents.
 - c. Total cost to Owner of Direct Costs of Construction (labor, equipment, materials), Markup, and costs of bonds, insurance, and taxes, conform to contract limitations (i.e., totals paid by Owner do not exceed the 20% Markup limitation.).

1.07 **MEASUREMENT AND PAYMENT OF MARKUP (COST COMPONENT 2)**

A. Markup Percentages for Changed Work (Component 2):

1. Markup on Direct Cost of labor and materials for extra Work shall be 15%. Markup on Direct Cost of equipment for extra Work shall be 15%.
2. When extra Work is performed by Subcontractors, regardless of the number of tiers, total Markup on "Component 1" Direct Costs shall not exceed 20%. Contractor and its Subcontractors shall divide the 20% as they may agree.
3. Under no circumstances shall the total Markup on any extra Work exceed 20 percent, stated as a percent of the Direct Cost of labor, equipment, and materials. This limitation shall apply regardless of the actual number of subcontract tiers.
4. On proposals covering both increases and decreases in Contract Sum, Markup shall be allowed on the net increase only as determined above. When the net difference is a deletion, no percentage for Markup shall be allowed, but rather an appropriate percentage deduction shall be issued in the amount of the net difference.

B. Measurement and Payment of MarkUp (Component 2):

1. Mark Up (Component 2) provides complete compensation to Contractor for:
 - a. All Contractor profit;
 - b. All Contractor home-office overhead;
 - c. All Contractor assumption of risk assigned to Contractor under the Contract Documents;
 - d. Subject to the qualifications below regarding self-performed work, all General Conditions and General Requirements.
2. Profit. Compensation for profit included within Component 2 (Mark Up), includes without limitation: Fees of all types, nature and description; and Profit and margins of all types, nature and description.
3. Home Office Expenses. Compensation for home office expenses included within Component 2 (Mark Up), includes without limitation: Salaries and other compensation of any type of Contractor's personnel (management, administrative, and clerical), and all direct and indirect operating, travel, payroll, safety, storage, quality control, maintenance, and overhead costs of any nature whatsoever, incurred by Contractor at any location other than the Project-specific site office, including without limitation, Contractor's principal or branch offices; insurance premiums other than those for Project-specific insurance directed by the Owner in a change order; all hardware, software, supplies and support personnel necessary or convenient for Contractor's capture, documentation and maintenance of its costs and cost accounting data and cost accounting and control systems and work progress reporting.

4. Assumption of Risk. Compensation for Contractor's assumption of risk under the Contract Documents, included within Component 2 (Mark Up), includes without limitation loss, cost, damage, expense, or liability resulting directly or indirectly from any of the following causes ("**Unallowable Costs**"), for Contractor and subcontractors of any tier: noncompliance with the Contract Documents, fault or negligence, defective or non-comforming Work, by Contractor or any Subcontractor or Vendor of any tier or anyone directly or indirectly employed by any of them, or for whose acts or omissions any of them are responsible or liable at law or under the Contract Documents; cost overruns of any type; costs in excess of any lump sum, not to exceed amount or Guaranteed Maximum Price (GMP); costs resulting from bid or "buy out" errors, unallocated scope, or incomplete transfer of scope or contract terms to subcontractors; any costs incurred by Contractor relating to a Change in the Work without a Change Order in accordance with the Contract Documents; costs for work or materials for which no price is fixed in the Contract Documents, unless it is expressly specified that such work or material is to be paid for as extra Work.
5. General Conditions and Division 01 General Requirements. Compensation for Contractor's General Conditions and General Requirements Costs included within Component 2 (Mark Up), includes compensation to Contractor for: Contractor's direct costs, without overhead or profit, for salaries and related forms of compensation and employer's costs for labor and personnel costs, of Contractor's employees and Subconsultant's employees (if any), while and only to the extent they are performing Work at the Project Site. Personnel and Work compensated by this Component include without limitation: All required Project management responsibilities; all on-site services; monthly reporting and scheduling; routine field inspection of Work; general superintendence; general administration and preparation of cost proposals, schedule analysis, change orders and other supporting documentation as necessary; salaries of project superintendent, project engineers, project managers, safety manager, other manager, timekeeper, and secretaries; all cost estimates and updates; development, validation, and updates to the project schedule; surveying; and estimating. Compensation for Contractor's General Requirements Costs included within Component 2 (Mark Up), compensates Contractor for its "General Requirements" Costs, including without limitation: all scheduling hardware, software, licenses, equipment, materials, and supplies; purchase, lease or rental, build out, procurement, supporting equipment and maintenance of temporary on-Site facilities, Project field and office trailers and other temporary facilities, office equipment and supporting utilities; platforms, fencing, cleanup and jobsite security; temporary roads, parking areas, temporary security or safety fencing and barricades; all Contractor's motor vehicles used by any Contractor's personnel, and all costs thereof; all health and safety requirements, required by law or Owner procedures; all surveying; all protection of Work; handling and disposal fees; final cleanup; repair or maintenance; other incidental Work; all items, activities and function similar to any of those described above; all travel, entertainment, lodging, board.
6. Personnel compensated by the Markup Component do not include workers of foreman level or below in the case of self-performed work; rather, such personnel shall be treated as a Direct Cost of Construction. Costs compensated by the Markup component do not include temporary measures specifically required by the changed work, not otherwise required or ongoing in the prosecution of the Work, that commence specifically to support the changed work and conclude with the completion of the changed work. Such costs shall be treated as Direct Costs of Construction. Examples of General Requirements costs that this component may not cover are the following: temporary barricades or fencing of specific areas required specifically for the changed work; cranes required specifically for the changed work; extra security required specifically for the changed work.

1.08 **MEASUREMENT AND PAYMENT OF BONDS INSURANCE TAXES (COMPONENT 3)**

A. Measurement of Bonds, Insurance, Taxes (Component 3):

1. Component 3 (Bonds, Insurance, Taxes) consists of the cost of bonds, insurance and taxes, also referred to as "**BIT**". All State sales and use taxes, applicable County and applicable City sales taxes, shall be included. Federal and Excise tax shall not be included.

2. There is no mark up on BIT.

1.09 **EFFECT OF PAYMENT**

A. Change Order Compensation is All Inclusive.

1. Except as provided expressly below regarding changes that extend the Contract Time, payment of calculated cost of extra work constitutes full and complete compensation for costs or expense arising from the extra Work, and is intended to be all inclusive.
2. Payment for Direct Cost of Construction (Component 1 or LEMS) is intended to be all-inclusive. Any costs or risks not delineated within cost of labor, equipment, or materials herein, shall be deemed to be within the costs and risks encompassed by the applicable Markups and unallowable in any separate amount.
3. Payment of Markup (Component 2) is intended to be all-inclusive. Contractor waives claims for any further or different payment of cost and risk items delineated herein, other than the allowable percentage markup on costs set forth in the Contract Documents; such separate, further or different cost or risk items shall be unallowable, waived and liquidated within the allowable percentage markup.
4. Contractor shall recover no other costs or markups on extra work of any type, nature or description.

B. Exception for Changes Extending the Contract Time.

1. Where a change in the Work extends the Contract Time, Contractor may request and recover additional, actual direct costs, provided Contractor can demonstrate such additional costs are (i.) actually incurred performing the Work, (ii.) not compensated by the Markup allowed, and (iii) directly result from the extended Contract Time. Contractor shall make such request and provide such documentation following all required procedures, documentation and time requirements in the Contract Documents, and subject to all contract limitations of liability. Contractor may not seek or recover such costs using formulas (e.g., Eichleay).

C. Limits of Liability / Accord and Satisfaction.

1. The foregoing limits of compensation apply in all cases of claims for changed Work, whether calculating Cost Proposals or Change Orders, or calculating claims and/or damages of all types, and applies even in the event of fault, negligence, strict liability, or tort claims of all kinds, including strict liability or negligence. Contractor may recover no other costs arising out of or connected with the performance of extra Work, of any nature.
2. Under no circumstances may Contractor claim or recover special, incidental, or consequential damages against Owner, its representatives or agents, whether arising from breach of contract, negligence, strict liability or other tort or legal theory, unless specifically and expressly authorized in the Contract Documents.
3. No change in Work shall be considered a waiver of any other condition of Contract Documents. No claim shall be made for anticipated profit, for loss of profit, for damages, or for extra payment whatever, except as expressly provided for in Contract Documents.
4. Accord and Satisfaction: Every Change Order and accepted CP shall constitute a full accord and satisfaction, and release, of all Contractor (and if applicable, Subcontractor) claims for additional time, money or other relief arising from or relating to the subject matter of the change including, without limitation, impacts of all types, cumulative impacts, inefficiency, overtime, delay and any other type of claim. Contractor may elect to reserve its rights to disputed claims arising from or relating to the changed Work at the time it signs a Change Order or approves a CP, but must do so expressly in a writing delivered concurrently with the executed Change Order or approved CP, and must also submit a Claim for the reserved disputed items pursuant to Article 12 of Document 00 7200 (General Conditions) no later than 30 days after Contractor's first written notice of its intent to reserve rights. Execution of any Change Order or CP shall constitute Contractor's representation of its agreement with this provision.

1.010 **MISCELLANEOUS REQUIREMENTS**

- A. Owner-Furnished Materials.
 - 1. Owner reserves right to furnish materials as it deems advisable, and Contractor shall have no claims for costs and Markup on such materials.
- B. Records And Certification.
 - 1. All charges shall be recorded daily and summarized in Cost Proposal form attached hereto. Contractor or authorized representative shall complete and sign form each day. Contractor shall also provide with the form: the names and classifications of workers and hours worked by each; an itemization of all materials used; and a list by size type and identification number of equipment and hours operated.
 - 2. Owner shall have the right to audit all records in possession of Contractor relating to activities covered by Contractor's claims for modification of Contract, including CP Work. This right shall be specifically enforceable, and any failure of Contractor to voluntarily comply shall be deemed an irrevocable waiver and release of all claims then pending that were or could have been subject to Article 12 of Document 00 7200 (General Conditions).

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION – NOT USED

END OF SECTION

COST PROPOSAL AND RFI FORMS INCLUDED ON FOLLOWING PAGES
(Electronic forms are available upon request)

COST PROPOSAL (CP)

Project Name _____
Project Number _____

CP Number: _____
Date: _____
In Response To _____
IB#, etc.

To: Rosamond Community Services District
Attention: [_____]
3179 35th Street West
Rosamond, California 93560
Phone: (661) 256-3411
Fax: (661) 256-2557

From: [Insert Contractor's Name/Address]

This Cost Proposal is in response to the above-referenced _____ [Insert RFP, etc. as applicable].
Brief description of change(s): _____

ITEM DESCRIPTION	PRIME CONTRACTOR	SUB 1	SUB 2	SUB 3	SUB 4	TOTAL
LABOR						
EQUIPMENT						
MATERIAL						
Other (Specify)						
TOTAL COST						
Subcontractor's Overhead & Profit 15 percent max.						
Contractor's Overhead & Profit 15 percent max.						
Overhead & Profit to Contractor for Subcontractor's Work						
(percent of Total Cost above not including any Overhead & Profit – may not exceed 20%)						
GRAND TOTAL						
REQUESTED CHANGE IN CONTRACT TIME (DAYS) (Time Impact Evaluation Enclosed)						

By Contractor: _____ Signature: _____ Date: _____

REQUEST FOR INFORMATION (RFI)

PROJECT: TANK 3 RECOATING PROJECT **RFI NO.:**

OWNER: Rosamond Community Services District **DATE:**
3179 35th Street West
Rosamond, CA 93560

CONTRACTOR:

PROJECT NO.:

Send all RFI's to Owner's Representative

DRAWING REFERENCE:	SPECIFICATION REFERENCE:
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BRIEF TITLE:

DESCRIPTION OF CLARIFICATION REQUIRED (attach sheets as necessary):

CONTRACTOR'S PROPOSED SOLUTION:

INITIATOR:	SIGNATURE:
-------------------	-------------------

DATE RESPONSE REQUIRED:

OWNER ACTIONS

RECEIVED ON: _____

FORWARDED TO: _____ **DATE:** _____

RESPONSE: _____

REFER TO INSTRUCTION BULLETIN NO. _____ **ATTACHED.**

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SECTION 01 2100

ALLOWANCES

PART 1 – GENERAL

1.01 SUMMARY

- A. To provide adequate budget and bonding to cover items not precisely determined by the Owner prior to bidding, allow within the proposed Contract Sum the amounts described in this Section.

1.02 RELATED DOCUMENTS

Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 00 and Division 01 Specification Sections, apply to the Work of this Section.

1.03 ALLOWANCE

- A. An allowance of monies for the items listed hereinafter in this Section shall be provided for in the Contractor's base bid for the Work of this project.

1.04 DESCRIPTION

- A. The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Item covered by the Allowance shall be supplied for such amounts and by such person or entities as the Architect/Engineer may direct, but the Contractor shall not be required to employ persons or entities against which the Contractor makes reasonable objection.

1.05 SELECTION OF ITEMS BY THE OWNER

- A. Selected materials and equipment are specified in the Contract Documents by Allowances. In some cases, these allowances include installation. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.

1.06 COSTS INCLUDED IN ALLOWANCES

- A. The direct costs of materials delivered at the site and labor to install the materials.

1.07 COSTS AND OTHER ITEMS INCLUDED IN THE CONTRACT SUM

- A. All direct and indirect project costs for this Work not included in Paragraph 1.05 above, including General Contractor Supervisory activities, Office Expenses, Bonds, Insurance, and Overhead and Profit, shall be included in the Contract Sum and not in Allowance.

1.08 ADJUSTMENT OF CONTRACT SUM AND/OR CONTRACT TIME

- A. Whenever costs are more or less than allowances, adjust the Contract Sum accordingly by Change Order. The amount of Change Order shall reflect the difference between actual costs and allowances under "Cost included in allowances" above. Adjustment of Contract Time, if any, shall be determined by the Owner.

- B. In the event Owner and Contractor cannot agree who will be employed for Work covered under any allowance, the Owner shall have the right to employ separate contractors to do that Work and shall deduct the amount of the allowance or any portion thereof from monies due the Contractor.

1.09 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the contract, advise the Architect/Engineer of the date when the final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At the Architect/Engineer's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and system selected by the Engineer/Architect from the designated supplier.

1.10 SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
- B. Submit invoices or delivery slips to show the actual quantities of materials delivered to the site for use in fulfillment of each allowance.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine products covered by an allowance promptly upon delivery for damage or defects.

3.02 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related Work.
- B.

3.03 SCHEDULE OF ALLOWANCES

- A. Bid Item No. 9 is anticipated to cover unforeseen conditions. Allowance for work is to be done under a negotiated time and materials price.

END OF SECTION

SECTION 01 3000

ADMINISTRATIVE REQUIREMENTS

PART 1 – GENERAL

1.01 SUMMARY

- A. Section includes description of requirements and procedures for submittals, project meetings and other project documentation requirements.

1.02 SUBMITTALS

A. Schedule of Submittals.

1. Contractor shall prepare a schedule of submittals (also referred to as a submittal register) required to complete the Work for Owner review and use. Schedule of submittals will include, for each submittal: the specification or drawing reference requiring the submittal, if applicable; the material, item, or process for which the submittal is required; the submittal number and identifying title of the submittal; and a preliminary submission schedule.
2. The technical specifications may list several individual items required to be submitted for Owner review. The Schedule of Submittals shall list each individual item required to be submitted so that all required submittals can be tracked by Contractor and Owner.
3. Preparation by Contractor of schedule of submittals does not excuse Contractor of obligation to supply, schedule and coordinate all submittals required by the Contract Documents.
4. Schedule of Submittals shall be provided in Microsoft Excel format or, if Contractor utilizes Project Management software platform, through said software platform. Contractor shall provide Owner access to the platform at no additional cost to the Owner.

B. Contractor to Submit Shop Drawings, Product Data and Submittals

1. Contractor shall review for compliance with Contract Documents, approve and submit to Owner Shop Drawings, Product Data, Samples and similar submittals required by Contract Documents. Contractor shall provide documents electronically, by providing an electronic copy in portable document format (pdf) for Owner for review, unless otherwise directed by Owner. Samples submitted for Owner's consideration shall be delivered to Owner in accordance with the individual Technical Specifications. Submittals and re-submittals shall be transmitted via electronic mail, unless otherwise directed by Owner.
2. Contractor's approval shall be indicated by a stamp or written statement on the cover sheet of the submittal with submittal identifying number clearly labeled: "This submittal is approved by <Contractor's Name> for conformance with the contract requirements for <project name>". Approval shall be signed and dated by Contractor's representative.
3. Contractor shall schedule and submit concurrently submittals covering component items forming a system or items that are interrelated. Contractor shall include certifications to be submitted with the pertinent drawings and product information at the same time.
4. Contractor shall coordinate scheduling, sequencing, preparing and processing of all submittals with performance of work so that work will not be delayed by submittal processing.
5. Submittals shall specifically identify any work depicted that does not conform to the Contract Documents with and explanation for the deviation on a separate sheet entitled "Submittal Exceptions to Contract Documents."

C. Owner Review of Shop Drawings, Product Data and Submittals

1. Schedule submittals at least 3 weeks before dates reviewed submittals will be needed. Except as may be provided in other specification sections, a submittal will be returned in no more than 21 calendar days, as each is accepted or not accepted. When a submittal cannot be returned within that period, Owner will, within a reasonable time after receipt of submittal, give notice of the date by which that submittal will be returned.
2. After review by Owner of each submittal, Owner will return an electronic scan in portable document format (pdf) of the reviewed submittal via electronic mail to Contractor with actions defined as follows:
 - a. NO EXCEPTIONS TAKEN - Accepted subject to its compatibility with general design concept of the Work, future Submittals and additional partial Submittals for any portions of the Work not covered in this Submittal. Does not constitute acceptance or deletion of specified or required items not shown on the Submittal.
 - b. MAKE CORRECTIONS NOTED (NO RESUBMISSIONS REQUIRED) - Same as item (a) above, except that minor corrections as noted shall be made by Contractor.
 - c. REVISE AS NOTED AND RESUBMIT - Rejected because of major inconsistencies or errors that shall be resolved or corrected by Contractor prior to subsequent review by Owner.
 - d. REJECTED - RESUBMIT - Submitted material does not conform to drawings and/or specifications in major respect, i.e.: wrong size, model, capacity, or material.

Contractor shall print out and distribute reviewed submittals at his discretion. Contractor shall also provide a hard copy of submittals designated "NO EXCEPTIONS TAKEN" and "MAKE CORRECTIONS NOTED" to Owner or Owner's representative at the project site for reference. An electronic copy of the reviewed submittal may be provided to Owner or Owner's representative in lieu of a hard copy if it can be demonstrated that retrieval can be facilitated at the job site.

3. Favorable review will not constitute acceptance by Owner of any responsibility for the accuracy, coordination, or completeness of the Submittals. Accuracy, coordination, and completeness of Submittals shall be sole responsibility of Contractor, including responsibility to back-check comments, corrections, and modifications from Owner's review before fabrication. Contractor, subcontractors, or suppliers may prepare submittals, but Contractor shall ascertain that submittals meet requirements of Contract Documents, while conforming to structural space and access conditions at point of installation. Owner's review will be only to assess if the items covered by the Submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed project as indicated by the Contract Documents. Favorable review of Submittal, method of work, or information regarding materials and equipment Contractor proposes to furnish shall not relieve Contractor of responsibility for errors therein and shall not be regarded as assumption of risks or liability by Owner, or any officer or employee thereof, and Contractor shall have no claim under Contract Documents on account of failure or partial failure or inefficiency or insufficiency of any plan or method of work or material and equipment so accepted. Favorable review shall be considered to mean merely that Owner has no objection to Contractor using, upon Contractor's own full responsibility, plan or method of work proposed, or furnishing materials and equipment proposed.
4. Unless otherwise specified, Owner's review will not extend to the means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
5. Contractor shall perform no portion of the Work for which the Contract Documents require Submittal and review of Shop Drawings, Product Data, Samples or similar submittals until

the respective submittal has been favorably reviewed by the Owner; otherwise, any such work is at Contractor's sole risk."

1.03 PROJECT MEETINGS

- A. Preconstruction Conference. Owner will call for and administer Preconstruction Conference at time and place to be announced (usually the week prior to start of Work at the Site). Contractor shall attend Preconstruction Conference and shall invite Subcontractor's at Contractor's discretion. Agenda may include, but not be limited to, the following items:
1. Schedules
 2. Personnel and vehicle permit procedures
 3. Use of premises
 4. Location of the Contractor's on-Site facilities
 5. Security
 6. Housekeeping
 7. Submittal and RFI procedures
 8. Inspection and testing procedures, on-Site and off-Site
 9. Utility shutdown procedures
 10. Control and reference point survey procedures
 11. Injury and Illness Prevention Program
 12. Contractor's Initial Progress Schedule
 13. Contractor's Schedule of Values
 14. Contractor's Schedule of Submittals
 15. Jurisdictional agency requirements
 16. Owner will distribute copies of minutes to attendees. Attendees shall have 7 Days to submit comments or additions to minutes. Minutes will constitute final memorialization of results of Preconstruction Conference.
- B. Periodic Project Meetings. Contractor shall coordinate and administer biweekly progress meetings throughout duration of Work unless otherwise directed by Owner. Meetings shall be held at the project site, unless otherwise specified in Contract Documents.
1. Contractor shall prepare agenda and distribute it 4 Calendar Days in advance of meeting to Owner and anticipated meeting participants.
 2. Participants with agenda items shall present them.
 3. The Architect/Engineer and other responsible entities shall attend meetings unless otherwise specified in Contract Documents or provided by Owner.
 4. Contractor shall record and distribute the meeting minutes. Minutes shall be distributed by the Contractor to the Owner and attendees within 3 Working Days after the meeting. Contractor shall distribute the minutes to those affected by decisions made at meeting. Attendees shall have five (5) Working Days to submit comments or additions to the minutes. .
 5. Progress meetings shall be attended by Contractor's personnel, Owner, and others as appropriate to agenda topics for each meeting.
 6. Agenda may contain, but not be limited to the following items, as appropriate:
 - a. Review, revise as necessary, and approve previous meeting minutes
 - b. Review of Work progress since last meeting
 - c. Status of Progress Schedule, delivery schedules, adjustments
 - d. Submittal, RFI, Instruction Bulletin and Change Order status
 - e. Review of the Contractor's safety program activities and results, including report on all serious injury and/or damage accidents
 - f. Other items affecting progress of Work
- C. Progress Schedule And Billing Meetings
1. A meeting will be held on approximately the 20th of each month to review the schedule

- update submittal and progress payment application.
2. At this meeting, at a minimum, the following items will be reviewed:
 - a. Percent complete or quantity installed of each activity;
 - b. Time impact evaluations for Change Orders and Time Extension Request;
 - c. Actual and anticipated activity sequence changes;
 - d. Actual and anticipated duration changes; and
 - e. Actual and anticipated Contractor delays.
 3. These meetings are considered a critical component of overall monthly schedule update submittal and Contractor shall have appropriate personnel attend. At a minimum, Contractor's General Superintendent and Scheduler shall attend these meetings.

D. Pre-Installation Conferences

1. When required by a Technical Specification Section, schedule an on-site meeting prior to the actual installation. Attending shall be the Contractor, Installers and others whose Work may be affected by the installation. The Owner will schedule attendees as appropriate.
2. Notify Owner at least four (4) Working Days in advance of meeting date.
3. Contractor shall prepare the agenda and conduct the meeting to cover the following topics:
 - a. Review in detail manufacturer's requirements, Specifications, Drawings, installation details, relationships with other components, and other related Work. Anticipated or discovered conflicts, incompatibilities, and inadequacies shall be reviewed and resolved at the meeting.
 - b. Review in detail job conditions, environmental requirements, schedule, construction sequence, coordination with other Work, requirements for installation and quality of completed Work, and protection of adjacent Work and property.
 - c. Review in detail the means of protecting the completed Work during the remainder of the construction period.
4. The Contractor shall take meeting notes and distribute them within two (2) Working Days after the pre-installation conference to participants, with three (3) copies to the Owner, conference attendees and those affected by decisions made. Attendees taking exception to anything in the meeting notes shall state it in writing to Contractor within five (5) Working Days following receipt of meeting notes.

1.04 PROGRESS REPORTS

A. Daily Log

Contractor shall document the daily construction activities in a daily log. The log shall include, but not be limited to, the following items:

1. Date
2. Observed Weather Conditions (sunrise time, rain/sunny/cloudy, wind speed, temperature, humidity)
3. Scheduled Work (tie to schedule)
4. Daily Construction Report
5. Manpower – Contractor forces and subcontractor forces identified by company name
6. Equipment
7. Deliveries
8. Visitors
9. Productivity including quantities completed
10. Inspections and Testing
11. Accidents and Safety Violations
12. Delays
13. Notes
14. Photographs

B. Monthly Report

Contractor shall combine daily logs in a monthly report summarizing construction progress and submit with monthly progress payment application.

1.05 CONSTRUCTION PHOTOGRAPHS

A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1. Date and Time: Include date and time in file name for each image.
2. Maintain one set of images accessible at Project site, available at all times for reference. Identify images in the same manner as those submitted to Owner's Representative.

C. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Owner's Representative

1. Flag construction limits before taking construction photographs.
2. Take 20 photographs to show existing conditions adjacent to property before starting the Work.
3. Take 20 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

D. Periodic Construction Photographs: Take photographs daily, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.

E. Directed Construction Photographs: From time to time, Owner's Representative will instruct Contractor about number and frequency of photographs and general directions on vantage points. Select actual vantage points and take photographs to show the status of construction and progress since last photographs were taken.

F. Time-Lapse Sequence Construction Photographs: Take photographs as indicated, to show status of construction and progress since last photographs were taken.

1. Frequency: Take photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment.
2. Vantage Points: Following suggestions by Owner's Representative, Contractor to select vantage points. During each of the following construction phases, take not less than two of the required shots from same vantage point each time to create a time-lapse sequence.

G. Final Completion Construction Photographs: Take photographs after date of Substantial Completion for submission as project record documents. Owner's Representative will inform Contractor of desired vantage points.

1. Do not include date stamp.

- H. Additional Photographs: Owner's Representative may request photographs in addition to periodic photographs specified.
1. Three days' notice will be given, where feasible.
 2. In emergency situations, take additional photographs within 24 hours of request.
 3. Circumstances that could require additional photographs include, but are not limited to, the following:
 - a. Special events planned at Project site.
 - b. Immediate follow-up when on-site events result in construction damage or losses.
 - c. Substantial Completion of a major phase or component of the Work.
 - d. Extra record photographs at time of final acceptance.
 - e. Owner's request for special publicity photographs.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION – NOT USED

END OF SECTION

SECTION 01 3216

CONSTRUCTION AND PROGRESS SCHEDULES

PART 1 – GENERAL

1.01 SUMMARY

- A. Section includes description of requirements and procedures for submitting Critical Path Method (“CPM”) progress schedules.
- B. Contractor shall follow the requirements of Section 8 of the Standard Specifications.

1.02 CONTRACTOR TO SUBMIT PROGRESS SCHEDULES

- A. Contractor shall submit proposed Baseline Progress Schedule within 14 days after execution of the Agreement. Within 28 days after execution of the Agreement Contractor shall submit Baseline Progress Scheduling addressing Owner provided comments.
- B. Baseline Progress Schedule shall show Contractor’s construction and procurement activities, including but not limited to, equipment procurement and delivery (Contractor and Owner supplied), activities with Subcontractors and suppliers, major submittal reviews, commissioning of systems, use of major equipment on site, and necessary interface with Owner and third parties required to complete the Work in a timely manner and in accordance with Contract Time.

1.03 SCHEDULE REQUIREMENTS.

- A. Unless Owner agrees in writing otherwise, progress schedule shall be produced with Microsoft Project or Primavera P6, as Owner may specify, which Contractor shall prepare and supply to Owner, with all datapoint entries completed for start dates, necessary work activities, durations (not longer than 21 calendar days), and logic ties. There shall be no activities without predecessors, successors, and logic ties other than start of construction and completion.
- B. Contractor’s progress schedule shall be in the form of a CPM Gantt diagram or, if Owner, in its sole discretion, agrees in writing, an arrow diagram. The hard copies of the schedule supplied to Owner shall indicate the critical path of the Work in red and shall show a logical progression of the Work through completion within Contract Time.
- C. Unless Owner agrees in writing otherwise, progress schedule shall also show early and late start and finish dates and total available float (float to the successor activity’s late start date) for each activity. The contract completion date shall be shown as the final completion date on the Contractor’s CPM schedule. Owner has no obligation to accept an early completion schedule.

1.04 MONTHLY UPDATES

- A. Contractor’s progress schedule shall be updated monthly to reflect actual progress. The schedule shall be subject to Owner’s review and acceptance for use in monitoring Contractor’s Work and evaluating Applications for Payment.
- B. Contractor shall supply Owner with an electronic copy of the updated progress schedule with each monthly payment application. Contractor shall provide Owner with two-week lookahead schedules weekly, showing in detail any activities and resources scheduled for the immediate two-week period.

1.05 RECOVERY SCHEDULE

- A. Owner may request a recovery schedule if Contractor falls 21 or more Days behind any schedule Milestone. The recovery schedule shall show Contractor’s plan and resources committed to retain Contract completion dates.
- B. The recovery schedule shall show the intended critical path. If Owner requests, Contractor shall also:
 - 1. Secure and demonstrate appropriate Subcontractor and supplier consent to the recovery schedule.

- C. Submit a narrative explaining trade flow and construction flow changes and man-hour loading assumptions for major Work activities and/or Subcontractors. All costs associated with development and implementation of the recovery schedule, including inspection outside of normal working hours, shall be at the Contractor's expense.

1.06 TIME IMPACT EVALUATION ("TIE") FOR CHANGE ORDERS, TIME EXTENSIONS AND DELAYS:

- A. When Contractor requests a time extension for any reason, Contractor shall submit a TIE that includes both a written narrative and a schedule diagram depicting how the changed Work or other impact affects other schedule activities. The schedule diagram shall show how Contractor proposes to incorporate the changed Work or other impact in the schedule and how it impacts the current Schedule update critical path or otherwise. Contractor is also responsible for requesting time extensions based on the TIE's impact on the critical path. The diagram shall be tied to the main sequence of scheduled activities to enable Owner to evaluate the impact of changed Work to the scheduled critical path.
- B. Contractor is responsible for all costs associated with the preparation of TIEs, and the process of incorporating TIEs into the current schedule update. Contractor shall provide Owner with four copies of each TIE.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION – NOT USED

END OF SECTION

SECTION 01 4000
QUALITY REQUIREMENTS

PART 1 – GENERAL

1.01 SUMMARY

- A. This Section describes Testing and Inspecting to be provided by the Contractor, plus cooperation required from the Contractor with the Owner's selected testing agency and others responsible for testing and inspecting the Work.

1.02 SECTION INCLUDES

- A. Related documents.
- B. Quality Assurance.
- C. Related Work.
- D. References.
- E. Samples.
- F. Mock-up.
- G. Selection of testing laboratory.
- H. Contractor's convenience testing.
- I. Code compliance testing.
- J. Manufacturers' field services and reports.
- K. Submittals.
- L. Air Balance Contractor.
- M. Tests and Inspections.

1.03 RELATED DOCUMENTS

Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 00 and Division 01 Specification Sections, apply to Work of this Section.

1.04 QUALITY ASSURANCE – CONTROL OF INSTALLATION

- A. Contractor shall be present at the Project Site at all times during the execution of the Work.
- B. Contractor shall monitor the quality of Work performed by his own forces and subcontractors and shall monitor suppliers, manufacturers, products, services, and site conditions to produce Work of specified quality in accordance with the requirements of the Contract Documents.
- C. Work shall be performed by qualified, skilled, and experienced workers.
- D. Contractor shall be responsible for the coordination of the Work for all trades and subcontractors under this Contract.

- E. Inspection: Inspect each items of materials or equipment immediately prior to installation. Reject damaged and defective items.
- F. Dimensions: Recheck measurements and dimensions of the Work, as an integral step of starting each installation.
- G. Manufacturers' Instructions: Unless specified otherwise, comply fully with Manufacturers' printed instructions, following each requirement and step in proper sequence. Do not omit any preparatory steps or installation procedures unless specifically modified or exempted in writing. Should manufacturer's instructions conflict with Contract Documents, request written interpretation of requirements from the Architect/Engineer before proceeding.
- H. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- I. Secure products in place with position anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.05 RELATED WORK

- A. Requirements for testing may be described in various Sections of these Specifications.
- B. Where no testing requirements are described, but the Owner decides that testing is required, the Owner may require such testing to be performed under current pertinent standards for testing. Payment for such testing will be made as described in this Section.

1.06 REFERENCES

- A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the Reference Standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to the latest edition of Reference Standards as specified in the individual Specification Sections, except where a specific date is established by codes.
- C. Obtain copies of Reference Standards where required by product Specification Sections.
- D. No Contractual relationship, duty, or responsibility of the parties in Contract, nor those of the Architect/Engineer, shall be altered from the Contract Documents by mention or inference otherwise in any reference documents.

1.07 SAMPLES

- A. Take field Samples at the site as required by individual Specifications Sections for review.
- B. Acceptable Samples represent a quality level for the Work.
- C. Where field Samples are specified in individual Sections to be removed, clear area after field Sample has been accepted by Architect/Engineer.
- D. Report samples taken but not tested and special sampling operations as required.

1.08 MOCK-UP

- A. Schedule construction and review of the Mock-ups so as not to delay the progress of the Work.

- B. Materials and finish shall be as specified in appropriate Sections and Divisions.
- C. Test will be performed under provisions identified in this Section and identified in the respective product Specification Section.
- D. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- E. Accepted Mock-ups are representative of the quality required for the Work.
- F. Where Mock-up has been accepted by the Architect/Engineer and is specified in product Specification Sections to be removed; remove mock-up and clear area when directed to do so.
- G. Protect and maintain Mock-ups in clean, undamaged condition until such time as it is incorporated in the Work or removed from the Site.

1.09 SELECTION OF TESTING LABORATORY

- A. Owner will appoint, employ and pay for specified initial services of an independent firm to perform inspecting and testing on earthwork, concrete, steel, welding, grout, anchors, bolts and any other items as deemed necessary.
- B. The independent firm will perform inspections, tests and other services specified in individual Specification Sections and as required by Architect/Engineer or the Owner.
- C. Inspecting, testing, and source quality control may occur on or off the project site. Provide access for off-site inspecting or testing as required by the specifications. Any off-site testing requested to be performed outside normal business hours, Saturday, Sunday or Contract Holidays (unless specified) will cause the Contractor to pay all overtime inspection and testing costs, as determined by the Owner.
- D. Reports will be submitted by the independent firm to the Architect/Engineer and Contractor, in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
- E. Cooperate with independent firm; furnish samples of materials, concrete design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
 - 1. Notify Architect/Engineer and independent firm 48 hours prior to expected time for operations.
 - 2. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.
 - 3. Provide access to the Work at all times and at all locations where the Work is in progress.
 - 4. Provide facilities for access to enable the laboratory to perform its functions properly.
- F. Testing or inspecting does not relieve the Contractor of the responsibility to perform the Work to Contract requirements.
- G. Retesting required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the Architect/Engineer. Payment for retesting will be charged to Contractor by deducting inspecting or testing charges from the Contract Sum/Price.
- H. Unnecessary tests and inspections costs due to Contractor's poor scheduling will be deducted by the Owner from the Contract Sum.

- I. The Owner and Architect/Engineer reserve the right to demand for tests, or special examination, any material, item or workmanship or part thereof to assure compliance with specifications and may reject for satisfactory replacement any material, Work or part judged defective or nonconforming as a result thereof. If such tests or examinations indicate the Work does not comply, then the cost of these tests and examinations shall be paid by the Contractor.
- J. Limitations of authority of testing laboratory; Laboratory is not authorized to:
 - 1. Release, revoke, alter or enlarge on requirements of Contract Documents.
 - 2. Approve or accept any portion of Work.
 - 3. Perform any duties of Contractor.

1.10 CONTRACTOR'S CONVENIENCE TESTING

- A. Inspecting and testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor, including payment of convenience testing.

1.11 CODE COMPLIANCE TESTING

- A. Inspections and tests required by codes or ordinances and which are made by a legally constituted authority, shall be the responsibility of and shall be paid for by the Contractor, unless otherwise provided in the Contract Documents.

1.12 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. When specified in individual Specification Sections, require material or product suppliers of manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up equipment, test, and adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of Observer to the Architect/Engineer 15 days in advance of required observation. Observer is subject to approval of the Architect/Engineer.
- C. Report observations and site decisions or instructions given to applications or installers that are supplemental or contrary to manufacturers written instructions.
- D. Submit report in duplicate within 30 days of observation to the Architect/Engineer for information.

1.13 SUBMITTALS

- A. The independent testing agency will furnish copies of licensed Civil Engineer signed test reports to Architect/Engineer, Contractor and Owner's Representative, indicating sampling and testing in accordance with Title 24 and stipulating whether results comply or do not comply with Contract Documents, noting actual results compared to specified design strength.
- B. Test Report Content:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address and telephone number of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals making the inspection or test.
 - 6. Designation of the Work and test method.
 - 7. Identification of product and Specification Section.
 - 8. Complete inspection or test data.
 - 9. Test results and interpretations of test results.
 - 10. Ambient conditions at the time of sample taking and testing

11. Comments or professional opinion as to whether inspected or tested Work complies with Contract Document requirements and the requirements CCR.T24.
12. Name and signature of laboratory Inspector
13. Recommendations on testing.

1.14 AIR BALANCE CONTRACTOR

- A. If required by the project, an air balance-testing agency acceptable to the Architect/Engineer on this project shall be hired by the Contractor to conduct air balance testing on the complete Work of the Contractor. Provide information to Architect/Engineer for his review concerning air balance testing agency credentials.
- B. HVAC Subcontractor on this project shall not perform or select that Air Balancing testing Contractor or be associated financially with Air Balance Contractor.

1.15 TEST AND INSPECTIONS

- A. Provide all tests and inspections required by government agencies having jurisdiction, required by provisions of the Contract Documents, and such other tests and inspections as are directed by the Architect/Engineer.
- B. Reports: Shall be executed immediately upon conclusion of each procedure and forwarded to Architect/Engineer, Owner, Contractor, Sub-Contractor, and Governing Agency

PART 2 – PRODUCTS

(Not applicable)

PART 3 – EXECUTION

3.01 INSPECTION

- A. The Work of construction in all stages of progress shall be subject to the personal observation of the Owner's Representative. The Owner's Representative shall have free access to any or all parts of the Work at any time. The Contractor shall furnish the Owner's Representative reasonable facilities for obtaining such information as may be necessary to keep the Owner's Representative fully informed respecting the progress and manner of the Work and the character of the material. Owner's Representative observation of the Work shall not relieve the Contractor from any obligations to fulfill this Contract.

3.02 TESTING

- A. Cooperation with Testing Laboratory: Representatives of the Testing Laboratory shall have access to the Work at all times. Provide facilities for such access in order that the laboratory may properly perform its functions.
- B. Schedules for Testing:
 1. Establishing schedule:
 - a. By advance discussion with Testing Laboratory selected by Owner, determine the time required for the laboratory to perform its tests and to issue each of its findings.
 - b. Provide all required time within the Construction schedule.
 2. Revising Schedule: When changes of construction schedule are necessary during construction, coordinate all changes of schedule with Testing Laboratory as required.

3. Adherence to Schedule: When the Testing Laboratory is ready to test according to the incompleteness of the Work, all extra costs for testing attributable to the delay will be deducted by Owner from the Contract Sum.
- C. Taking Specimens: All specimens and samples for testing, unless otherwise provided in these Contract Documents, will be taken by the Testing Laboratory or the Owner.
- D. Testing at the Source of Supply:
 1. Contractor shall notify the Owner a sufficient time in advance of the manufacture of material to be supplied by the Contractor under the Contract Documents, which by terms of Contract must be tested, so Owner may arrange for testing material at source of supply.
 2. Any material shipped by Contractor from the source of supply prior to having satisfactorily passed such testing and inspection or prior to the receipt of notice from said representative that such testing and inspection will not be required shall not be incorporated in the job.

3.03 SOIL INSPECTING AND TESTING

- A. The testing laboratory will perform required inspections and tests including, but not necessarily limited to:
 1. Visually inspect on-site and imported fill and backfill, making such tests and retests as necessary to determine compliance Contract requirement compliance and suitability.
 2. Make field density tests on samples from in-place material as required.
 3. Inspect and test the scarifying and recompacting of cleaned subgrade; inspect the progress of excavating, filling, and grading; make density tests and backfills; and verify compliance with provisions of the Contract Documents and governmental agencies having jurisdiction.
- B. Make and distribute necessary reports and certificates.

3.04 CONCRETE INSPECTING AND TESTING

- A. Portland cement (Provided by concrete supplier):
 1. Provide cement manufacturer Certificates of Compliance and deliver to testing lab
 2. The Certificates of Compliance shall positively identify cement as to production lot, bin or silo number, dating and routing of shipment, and compliance with specified standards.
 3. If so required by the Architect/Engineer, promptly provide such other specific physical and chemical data as requested.
- B. Aggregate (Provided by concrete supplier):
 1. Provide one test unless character of material changes, material is substituted, or additional test is requested by the Architect/Engineer.
 2. Sample from conveyor belts and batching gates at the ready-mix plant:
 - a. Sieve analysis to determine compliance with specified standards and grading;
 - b. Specific gravity test for compliance with specified standards.
- C. Laboratory design mix (Provided by concrete supplier):
 1. After approval of aggregate, and whenever character or source of materials is changed, provide mix design in accordance with ACI 613.
 2. Provide designs for all mixes prepared by a licensed Civil Engineer.
- D. Molded concrete cylinders (Performed by Testing Lab):

1. Provide 3 test cylinders for each 50 cu. yds, or fraction thereof, of each class of concrete of each day's placement.
2. Test 1 cylinder at 7 days, 1 at 28 days, and 1 when so directed.
3. Report the mix, slump, gage, location of concrete in the structure, and test results.
4. Take specimens and make tests in accordance with the applicable ASTM Standard Specifications.

E. Core Tests (Performed by Testing Lab):

1. Provide only when specifically so directed by the Architect/Engineer because of low cylinder test results, per Section 2-2604, (d), Title 24.
2. Cut from locations directed by the Architect/Engineer, securing in accordance with ASTM C42, and prepare and test in accordance with ASTM C39.

F. Placement Inspections (Performed by Testing Lab):

1. On concrete over 2000 psi, provide continuous or other inspection as required by governmental agencies having jurisdiction.
2. Throughout progress of concrete placements, make slump tests to verify conformance with specified slump.
3. Using all required personnel and equipment, throughout progress of concrete placement Contractor shall verify that finished concrete surfaces will have the level of slope that is required by the Contract Documents.

3.05 CONCRETE REINFORCEMENT INSPECTING AND TESTING

A. Prior to use, test all reinforcement steel bars for compliance with Specific Standards (provided by steel supplier).

1. Material identified by mill test report, and certified by the testing laboratory, does not require additional testing. Require the supplier to furnish mill test reports to the testing laboratory for certification.
2. Tag identified steel at the supplier's shop. When steel arrives at the job site without such tags, test it as unidentified steel.

B. Unidentified Steel (performed by testing lab):

1. Testing laboratory shall select two samples, each 18 in. long of each size.
2. Testing laboratory shall make one tensile test and one bend test for each 2-1/2 tons or fraction thereof of each size of unidentified steel.

C. Provide continuous inspection for all welding of reinforcement steel.

3.06 STRUCTURAL STEEL INSPECTING AND TESTING

A. Prior to use, test all structural steel for compliance with the specified standards (performed by steel supplier).

1. Material identified by mill test reports, and certified by the testing laboratory, does not require additional testing. Require the supplier to furnish mill test reports to the laboratory for certification.
2. Tag identified steel at the suppliers shop. When steel arrives at the job site without such tags, Owner may require that it is tested as unidentified steel by the testing lab.

B. Unidentified steel:

1. The testing laboratory shall make one tensile test and one bend test for each 5 tons of fraction thereof of each shape and size of unidentified structural steel.

C. Shop Welding (inspection provided by testing lab):

1. Provide qualified testing laboratory inspector approved by Owner.
2. On single pass welds, inspect after completion of welding and prior to painting.
3. On multiple pass welds, and on butt welds with cover pass on the back side, provide continuous inspection.

D. Field Welding (inspection provided by testing lab): Provide continuous inspection by a qualified testing laboratory inspector approved by Owner.

3.07 POWDER DRIVEN CONCRETE FASTENERS

A. Use of Powder Driven Concrete Fasteners for tension loads is limited is limited to support of minor loads like acoustical ceilings, duct work, conduit.

B. Allowable loads:

1. In general, loads should be limited to less than 100 pounds. Greater loads may be permitted for special cases when approved by the checking supervisor or field engineer.

C. Testing:

1. The operator, tool, and fastener shall be pre-qualified by the Owner's Representative, who shall observe the testing of the first 10 fastener installations. A test "pull-out" load of not less than twice the design load, or 200 pounds, whichever is greater, shall be applied to the pin in such a manner as not to resist the spalling tendency of the concrete surrounding the pin. Thereafter, random test under the Owner's Representative supervision shall be made of approximately 1 in 10 pins, except that when the design load exceeds 100 pounds, one half of the pins shall be tested. Should failure occur on any pin tested, all installations must be tested and any pins failing shall be replaced and retested.

3.08 REJECTED WORK

A. The Owner and its representatives shall at all times have access for the purpose of inspection to all parts of the Work and the shops wherein the Work is in preparation.

B. The Owner and its representatives shall have the right to reject materials and workmanship which are defective or to require their correction.

C. The Owner and its representatives, at any time prior to final acceptance of the entire Work, may make an examination of completed Work by requesting the Contractor to furnish all necessary facilities, labor and materials to remove or tear out completed Work.

D. Work found meeting the requirements of the Contract after removal or tearing out, shall result in additional costs for labor and material being paid by the Owner.

E. Rejected workmanship shall be removed for the project, without charge to the Owner, for examination, reconstruction, and removal.

E. Rejected workmanship not corrected by the Contractor within a reasonable time, fixed by written notice, may be corrected by Owner and expense will be deducted by the Owner from the Contract Sum.

3.09 REPAIR AND PROTECTION

- A. Comply with requirements of Section 01705 Cutting and Patching.
- B. Upon completion of inspection, testing, sample-taking and similar services repair damaged construction and restore substrates and finishes to eliminate deficiencies.
- C. Protect repaired construction and Work exposed by or for quality control service activities.
- D. Repair and protection is the Contractors responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.
- F. Work performed by the Contractor which is not in accordance with the Contract Documents and which requires remedial action or changing of the final locations of parts of the Work shall require the following action steps:
 - 1. Contractor confirms finding of Owner within seven days after receipt of Owner's notice.
 - 2. Contractor hires an independent Consultant to review the construction problem and propose an alternated solution within 14 days after step number 1.
 - 3. Contractor agrees to compensate the Owner for any expense the Owner incurs to evaluate the proposed solution.
 - 4. Contractor makes the correction or accepts a negotiated reduction in the Contract sum upon Owner's approval of non-conforming Work.

3.10 UNCOVERING AND CORRECTION OF WORK

- A. If a portion of the Work is covered contrary to the Architect/Engineer's request or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Architect/Engineer, be uncovered for the Architect/Engineer's observation and be replaced at the Contractor's expense without change in the Contract sum or time.
- B. Contractor shall promptly correct Work rejected by the Architect/Engineer and bear costs of correcting such rejected Work, including additional testing and inspections and compensation for the Architect/Engineer's services and expenses made necessary due to the correction.

END OF SECTION

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SECTION 01 4100
REGULATORY REQUIREMENTS

PART 1 – GENERAL

1.01 SUMMARY

A. Section includes:

1. Regulatory requirements applicable to Contract Documents
2. Required provisions under Local Agency Disputes Act
3. Required references under federal law

1.02 GENERAL

A. Compliance with Laws

1. Conform to all applicable codes, Laws, ordinances, rules, and regulations, which shall have full force and effect as though printed in full in these Specifications. Codes, laws, , rules, regulations, and ordinances (“**Regulatory Requirements**”) are not furnished to Contractor, because Contractor is assumed to be familiar with these requirements.
2. Any listing of Regulatory Requirements for Work in the Contract Documents is supplied to Contractor as a courtesy and shall not limit Contractor’s responsibility for complying with all applicable Regulatory Requirements having application to the Work. Where conflict among the Regulatory Requirements or with these Specifications occurs, the most stringent requirements shall be used.
3. Specific reference in the Specifications to applicable Laws and Regulatory Requirements shall mean the latest adopted edition by the regulatory agency in effect at the time of the opening of Bids, except as may be otherwise specifically stated in the Contract Documents.

B. Precedence

1. Where specified requirements differ from Regulatory Requirements, the more stringent requirements shall take precedence. Where Drawings or Specifications require or describe products or execution of better quality, higher standard, or greater size than required by Regulatory Requirements, then Drawings and Specifications shall take precedence so long as such increase is in compliance with Laws and Regulatory Requirements. Where no requirements are identified on Drawings or in Specifications, Contractor shall comply with all Regulatory Requirements of governing authorities having jurisdiction.
2. Should any conditions develop not covered by the Contract Documents wherein the finished Work will not comply with current codes, a Change Order detailing and specifying the required Work shall be submitted to and approved by Owner before proceeding with the Work.

1.03 REGULATORY REQUIREMENTS

A. Applicable Codes

1. Codes that apply to Contract Documents include all current Codes adopted by the Rosamond Community Services District and the County of Kern Building Inspection Department or authority having jurisdiction, applicable to construction, including, but not limited to, the following:
 - a. California Building Code (as amended by applicable local ordinances for all construction work.

- b. California Green Building Standards Code as amended by applicable local ordinances for all construction work.
- c. California Electrical Code as amended by applicable local ordinances for all construction work.
- d. California Plumbing Code as amended by applicable local ordinances for plumbing, sewage disposal, and health requirements.
- e. California Mechanical Code as amended by applicable local ordinances for all construction work.
- f. International Fire Code as amended by applicable local ordinances for all construction work.
- g. California Administrative Code Titles 15, 19 and 24 (with California amendments), and Americans with Disabilities Act (ADA) accessibility guidelines, whichever is more stringent.
- h. All State laws and City and County Ordinances, rules of the State or City or County Health Departments, rules of the National Board of Fire Underwriters and National Fire Protection Associations, and local utility company regulations for mechanical and electrical work.

B. Applicable Laws, Statutes, Ordinances, Rules, And Regulations

1. During prosecution of Work to be done under Contract Documents, Contractor shall comply with applicable codes, laws, orders, ordinances, rules, and regulations, including, but not limited to, the following:
 - a. Federal:
 - 1) Americans With Disabilities Act of 1990
 - 2) 29 CFR, Section 1910.1001, Asbestos
 - 3) 40 CFR, Subpart M, National Emission Standards for Asbestos
 - 4) Executive Order 11246
 - 5) Federal Endangered Species Act
 - 6) Clean Water Act
 - b. State of California:
 - 1) California Code of Regulations, Titles 5, 8, 17, 19, 21, 22, 24 and 25
 - 2) California Public Contract Code
 - 3) California Health and Safety Code
 - 4) California Government Code
 - 5) California Labor Code
 - 6) California Civil Code
 - 7) California Code of Civil Procedure
 - 8) CPUC General Order 95, Rules for Overhead Electric Line Construction
 - 9) CPUC General Order 128, Rules for Construction of Underground Electric Supply and Communications Systems
 - 10) Cal/OSHA
 - 11) OSHA: Hazard Communications Standards
 - 12) California Endangered Species Act
 - 13) Water Code
 - 14) Fish and Game Code
 - c. State of California Agencies:
 - 1) Regulatory Requirements of State and Consumer Services Agency
 - 2) Regulatory Requirements of Office of the State Fire Marshall
 - 3) Regulatory Requirements of Office of Statewide Health Planning and Development
 - 4) Regulatory Requirements of Department of Fish and Game

- 5) Regulatory Requirements of all Air Quality Management Districts with jurisdiction
- 6) Regulatory Requirements of Department of Water Resources
- 7) Regulatory Requirements of all Regional Water Quality Control Boards with jurisdiction
- 8) Regulatory Requirements of the Division of the State Architect (if having jurisdiction)

d. Regulatory Requirements of all Local Agencies with jurisdiction (including, without limitation, cities, counties, and fire departments)

C. Change Orders and Claims:

1. The California Public Contract Code, including but not limited to Section 7105(d)(2), and the California Government Code section 930.2 et seq., apply to all contract procedures for changes, time extensions, change orders (time or compensation), and claims. Federal law (*U.S. v. Holpuch* 326 U.S. 234) shall supplement California law on the enforceability of these requirements.
2. Any change, waiver, or omission to implement contract change order and claim procedures shall have no legal effect unless expressly permitted in a fully executed change order approved by Contractor and Owner and approved as to form by their respective legal counsel.

D. Required Provisions On Contract Claim Resolution

1. The California Public Contract Code specifies required provisions on resolving contract claims less than \$375,000, which are set forth below, and constitute a part of this Contract.
2. For the purposes of this Section 01 4100, “**Claim**” means a separate demand by Contractor of \$375,000 or less for (1) a time extension, (2) payment or money or damages arising from Work done by or on behalf of Contractor arising under the Contract Documents and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or (3) an amount the payment of which is disputed by Owner. In order to qualify as a Claim, the written demand must state that it is a Claim submitted under paragraph 12 of Document 00 7200 (General Conditions) and be submitted in compliance with all requirements of Document 00 7200 (General Conditions), paragraph 12. Separate Claims which total more than \$375,000 do not qualify as a “separate demand of \$375,000 or less,” as referenced above, and are not subject to this Section 01 4100,.
3. A voucher, invoice, payment application, or other routine or authorized form of request for payment is not a Claim for purposes of this Section 01 4100. If such request is disputed as to liability or amount, then the disputed portion of the submission may be converted to a Claim under this Section 01 4100, by submitting a separate Claim in compliance with Contract Documents claim submission requirements.
4. Caution. This Section 01 4100, does not apply to tort claims and nothing in this Section 01 4100, is intended nor shall be construed to change the time periods for filing tort claims or actions specified by Chapter 1 and Chapter 2 of Part 3 of Division 3.6 of Title 1 of the California Government Code.
5. Procedure:
 - a. The Claim must be in writing, submitted in compliance with all requirements of Document 00 7200 (General Conditions), paragraph 12, including, but not limited to, the time prescribed by and including the documents necessary to substantiate the Claim, pursuant to Document 00 7200 (General Conditions), paragraph 12.3. Claims must be filed on or before the day of final payment. Nothing in this Section 01 4100, is intended to extend the time limit or supersede notice requirements for the filing of claims as set forth in Document 00 7200 (General Conditions), paragraph 12 or elsewhere in the Contract Documents.

- b. For Claims of \$50,000 or less, Owner shall respond in writing within 45 days of receipt of the Claim, or Owner may request in writing within 30 days of receipt of the Claim, any additional documentation supporting the Claim or relating to any defenses or claims Owner may have against claimant. If additional information is thereafter required, it shall be requested and provided in accordance with this Section 01 4100, upon mutual agreement of Owner and claimant. Owner's written response to the Claim, as further documented, shall be submitted to claimant within 15 days after receipt of further documentation or within a period of time no greater than taken by claimant in producing the additional information, whichever is greater.
- c. For Claims over \$50,000 and less than or equal to \$375,000: Owner shall respond in writing within 60 days of receipt of the Claim, or Owner may request in writing within 30 days of receipt of the Claim, any additional documentation supporting the Claim or relating to any defenses or claims Owner may have against claimant. If additional information is thereafter required, it shall be requested and provided in accordance with this Section 01 4100, upon mutual agreement of Owner and claimant; Owner's written response to the Claim, as further documented, shall be submitted to claimant within 30 days after receipt of further documentation or within a period of time no greater than taken by claimant in producing the additional information, whichever is greater.
- d. Meet and Confer: If claimant disputes Owner's written response, or Owner fails to respond within the time prescribed above, claimant shall notify Owner, in writing, either within 15 days of receipt of Owner's response or within 15 days of Owner's failure to timely respond, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon demand Owner will schedule a meet and confer conference within 30 days for settlement of the dispute.
- e. Following the meet and confer conference, if the Claim or any portion remains in dispute, claimant may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the California Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time claimant submits its written claim as set forth herein, until the time that Claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

E. Compliance With Americans With Disabilities Act

- 1. Contractor acknowledges that, pursuant to the Americans with Disabilities Act ("ADA"), programs, services and other activities provided by a public entity to the public, whether directly or through a Contractor, must be accessible to the disabled public. Contractor shall provide the services specified in the Contract Documents in a manner that complies with the ADA and any and all other applicable federal, state, and local disability rights legislation. Contractor agrees not to discriminate against disabled persons in the provision of services, benefits, or activities provided under the Contract Documents and further agrees that any violation of this prohibition on the part of Contractor, its employees, agents, or assigns shall constitute a material breach of the Contract Documents.

F. Compliance With IRCA

- 1. Contractor acknowledges that Contractor, and all subcontractors hired by Contractor to perform services under this Agreement, are aware of and understand the Immigration Reform and Control Act ("IRCA"). Contractor is and shall remain in compliance with the IRCA and shall ensure that any subcontractors hired by Contractor to perform services under this Agreement are in compliance with the IRCA. In addition, Contractor agrees to indemnify, defend, and hold harmless Owner, its agents, officers and employees, from any liability, damages, or causes of action arising out of or relating to any claims that Contractor's employees, or employees of any subcontractor hired by Contractor, are not authorized to work in the United States for Contractor or its subcontractor and/or any other claims based upon alleged IRCA violations committed by Contractor or Contractor's

subcontractors.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION – NOT USED

END OF SECTION

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SECTION 01 4216

DEFINITIONS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Reference standards, abbreviations, symbols, and definitions used in Contract Documents.
2. Full titles are given in this Section for standards cited in other Sections of Specifications.

1.02 REFERENCE TO STANDARDS AND SPECIFICATIONS OF TECHNICAL SOCIETIES; REPORTING AND RESOLVING DISCREPANCIES

A. References

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, code, or laws or regulations in effect at the time of opening of Bids, except as may be otherwise specifically stated in the Contract Documents.
2. If during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any such law or regulation applicable to the performance of the Work or of any such standard, specification, manual, or code or of any instruction of any supplier, Contractor shall report it in writing at once to Owner's Representative and Architect/Engineer, and Contractor shall not proceed with the Work affected thereby until consent to do so is given by Owner.

B. Precedence

1. Except as otherwise specifically stated in the Contract Documents or as may be provided by Change Order or Instruction Bulletin, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
 - a. The provisions of any such standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
 - b. The provisions of any such laws or regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such law or regulation).
2. No provision of any standard, specification, manual, code, or instruction shall be effective to change the duties and responsibilities of Owner, Owner's Representative, Architect/Engineer or Contractor, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents, nor shall it be effective to assign to Owner, Architect/Engineer, or any of their consultants, agents, representatives, or employees any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

C. Referenced Grades, Classes, and Types:

1. Where an alternative or optional grade, class, or type of product or execution is included in a reference but is not identified in Drawings or in Specifications, Contractor shall provide

the highest, best, and greatest of the alternatives or options for the intended use and prevailing conditions.

D. Edition Date of References:

1. When an edition or effective date of a reference is not given, it shall be understood to be the current edition or latest revision published as of the date of opening Bids.
2. All amendments, changes, errata and supplements as of the effective date shall be included.

E. AWWA, ASTM and ANSI References: Specifications and Standards of the American Water Works Association, American Society for Testing and Materials (ASTM) and the American National Standards Institute (ANSI) are identified in the Drawings and Specifications by abbreviation and number only and may not be further identified by title, date, revision, or amendment. It is presumed that Contractor is familiar with and has access to these nationally- and industry-recognized specifications and standards.

1.03 DEFINITIONS

A. Meaning of Words and Phrases

Wherever any of the words or phrases defined below, or a pronoun used in place thereof, is used in any part of the Contract Documents, it shall have the meaning here set forth. Where abbreviations and symbols are used, such abbreviations and symbols shall be given their common meaning in the construction industry. In the Contract Documents, the neuter gender includes the feminine and masculine, and the singular number includes the plural.

While Owner has made an effort to identify all defined terms with initial caps, the following definitions shall apply regardless of case unless the context otherwise requires:

1. **Addenda:** Written or graphic instruments issued prior to the opening of Bids, which clarify, correct, or change the bidding requirements or the Contract Documents. Addenda shall not include the minutes of the Pre-Bid Conference and/or Site Visit.
2. **Agreement (Document 00 5200):** Agreement is the basic Contract Document that binds the parties to construction Work. Agreement defines relationships and obligations between Owner and Contractor and by reference incorporates Conditions of Contract, Drawings, and Specifications and contains Addenda and all Modifications subsequent to execution of Contract Documents.
3. **Alternate:** Work added to or deducted from the base Bid, if accepted by Owner.
4. **Application for Payment:** Written application for monthly or periodic progress or final payment made by Contractor complying with the Contract Documents.
5. **Approved Equal:** Approved in writing by Owner as being of equivalent quality, utility and appearance.
6. **Architect/Engineer:** If used elsewhere in the Contract Documents, "Architect/Engineer" shall mean a person (or that person's firm) holding a valid California State Architect's or Engineer's license representing the Owner in the administration of the Contract Documents. Architect/Engineer may be an employee of or an independent consultant to Owner. When Architect/Engineer is referred to within the Contract Documents and not an employee of Owner, Architect/Engineer shall be construed to include employees of Architect/Engineer and/or employees that Architect/Engineer supervises. When the designated Architect/Engineer is an employee of Owner, his or her authorized representatives on the Project will be included under the term Architect/Engineer. If Architect/Engineer is an employee of Owner, Architect/Engineer is the beneficiary of all Contractor obligations to Owner, including without limitation, all releases and indemnities. Architect/Engineer may also be referred to as Architect or Engineer.

7. Asbestos: Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by OSHA or Cal/OSHA.
8. Bid: The offer or proposal of the Bidder submitted on the prescribed form(s) setting forth the prices for the Work to be performed.
9. Bidder: One who submits a Bid.
10. Bidding Documents: All documents comprising the Project Manual (including all documents and Specification Sections listed in Document 00 0110 [Table of Contents]), including documents supplied for bidding purposes only and Contract Documents.
11. BIT – Component 3 of a Cost Proposal addressing Measurement and Payment of Bonds, Insurance and Taxes. See Document 01 2050 Modification Procedures.
12. BMP (Best Management Practices) – Related to implementation of a SWPPP, the measures and methods undertaken to implement a Stormwater Pollution and Prevention Plan on a project site.
13. Board: The governing body of the Owner.
14. Business or Working (Work) Day: Any Day other than Saturday, Sunday, and the following days that have been designated as holidays by Owner. If a holiday falls on a Saturday, the preceding Friday will be the holiday. If a holiday falls on a Sunday, the following Monday will be the holiday.
 - a. New Year's Day, January 1;
 - b. Martin Luther King Jr.'s Birthday, third Monday in January;
 - c. Lincoln's Birthday, February 12;
 - d. Presidents' Day, third Monday in February;
 - e. Cesar Chavez Day, March 31;
 - f. Memorial Day, last Monday in May;
 - g. Independence Day, July 4;
 - h. Labor Day, first Monday in September;
 - i. Columbus Day, second Monday in October;
 - j. Veterans' Day, November 11;
 - k. Thanksgiving Day, as designated by the President;
 - l. The Day following Thanksgiving Day;
 - m. Christmas Day, December 25; and
 - n. Each day appointed by the Governor of California and formally recognized by the Governing Board as a day of mourning, thanksgiving, or special observance.
15. By Others: Work that is outside scope of Work to be performed by Contractor under this Contract, which will be performed by Owner, other contractors, or other means.
16. By Owner: Work that will be performed by Owner or its agents at the Owner's expense.
17. Change Order ("**CO**"): A written instrument prepared by Owner and signed by Owner and Contractor, stating their agreement upon all of the following:
 - a. a change in the Work;
 - b. the amount of the adjustment in the Contract Sum, if any; and
 - c. the amount of the adjustment in the Contract Time, if any.
18. Code: All Codes specified by law or applicable governing agency.
19. Code Inspector: A local or state agency responsible for the enforcement of applicable codes and regulations.
20. Concealed: Work not exposed to view in the finished Work, including within or behind various construction elements.
21. Contract Amount: a change order price, line item price, Contract Sum, or other price assigned to a scope of work.

22. Contract Conditions or Conditions of the Contract: Consists of two parts: General Conditions and Supplementary Conditions.
 - a. General Conditions are general clauses that are common to the Owner Contracts, including Document 00 7200 (General Conditions).
 - b. Supplementary Conditions modify or supplement General Conditions to meet specific requirements for Contract Documents.
23. Contract Documents and Contract: Contract Documents and Contract shall consist of the documents identified as the Contract Documents in Document 00 5200 (Agreement), plus all changes, Addenda, and modifications thereto.
24. Contract Modification: Either:
 - a. a written amendment to Contract signed by Contractor and Owner; or
 - b. a Change Order; or
 - c. a written directive for a minor change in the Work issued by Owner.
25. Contract Sum: The sum stated in the Agreement and, including authorized adjustments, the total amount payable by Owner to Contractor for performance of the Work and the Contract Documents. The Contract Sum is also sometimes referred to as the Contract Price or the Contract Amount.
26. Contract Time: The number or numbers of Days or the dates stated in the Agreement to achieve Final Completion of the Work or designated Milestones; and/or to achieve Final Completion of the Work so that it is ready for final payment and is accepted.
27. Contractor: The person or entity identified as such in the Agreement and referred to throughout the Contract Documents as if singular in number and neutral in gender. The term "Contractor" means the Contractor or its authorized representative.
28. Contractor's Employees: Persons engaged in execution of Work under Contract as direct employees of Contractor, as Subcontractors, or as employees of Subcontractors.
29. Cost Proposal: A cost estimate for an increase or decrease in Contract Sum relative to a Contract Modification. All cost proposals shall be submitted on the form included in Document 01 2050.
30. Day: One calendar day of 24 hours measured from midnight to the next midnight, unless the word "day" is specifically modified to the contrary.
31. Defective: An adjective which, when modifying the word "Work," refers to Work that is unsatisfactory or unsuited for the use intended, faulty, or deficient, that does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents (including but not limited to approval of Samples and "or equal" items), or has been damaged prior to final payment (unless responsibility for the protection thereof has been assumed by Owner). Unapproved substitutions are defective. Owner is the judge of whether Work is Defective.
32. Division of State Architect: A division of the State of California providing, design and construction oversight for K-12 schools and community colleges, and developing and maintaining accessibility standards and codes utilized in public and private buildings throughout the State of California.
33. Drawings: The graphic and pictorial portions of Contract Documents, wherever located and whenever issued, showing the design, location, and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.
34. Equal: Equal in opinion of Owner. Burden of proof of equality is responsibility of Contractor.
35. Exposed: Work exposed to view in the finished Work, including behind louvers, grilles, registers and various other construction elements.
36. Final Acceptance or Final Completion: Owner's acceptance of the Work as satisfactorily completed in accordance with Contract Documents. Requirements for Final Acceptance/Final Completion include, but are not limited to:

- a. Final cleaning is completed.
 - b. All systems having been tested and accepted as having met requirements of Contract Documents.
 - c. All required instructions and training sessions having been given by Contractor.
 - d. All Project Record Documents having been submitted by Contractor, reviewed by Owner, and accepted by Owner.
 - e. All punch list Work, as directed by Owner, having been completed by Contractor.
 - f. Generally all Work, except Contractor maintenance after Final Acceptance/Final Completion, having been completed to satisfaction of Owner.
37. Force Account: Work directed to be performed without prior agreement as to lump sum or unit price cost thereof, and which is to be billed at cost for labor, materials, equipment, taxes, and other costs, plus a specified percentage for overhead and profit.
 38. Furnish: Supply only, do not install.
 39. Indicated: Shown or noted on the Drawings.
 40. Install: Install or apply only, do not furnish.
 41. Instruction Bulletin (“**IB**”): A document consisting of supplementary details, instructions, or information issued by Owner that clarifies or supplements Contract Documents, and with which Contractor shall comply. Instruction Bulletins may also order alterations or Modifications that do not result in change in Contract Sum or Contract Time, and do not substantially change Drawings or Specifications. Instruction Bulletins do not constitute changes in Contract Sum or Contract Time except as otherwise agreed in writing by Owner.
 42. Latent: Not apparent by reasonable inspection, including but not limited to, the inspections and research required as a condition to bidding under Document 00 7200 (General Conditions).
 43. Law: Unless otherwise limited, all applicable laws including without limitation all federal, state, and local laws, statutes, standards, rules, regulations, ordinances, and judicial and administrative decisions.
 44. LEMS: Component 1 of a Cost Proposal addressing Measurement and Payment of Labor, Equipment, Material and Subcontractors. See Document 01 2050 Modification Procedures.
 45. Material: This word shall be construed to embrace machinery, manufactured articles, materials of construction (fabricated or otherwise), and any other classes of material to be furnished in connection with Contract, except where a more limited meaning is indicated by context.
 46. Milestone: A principal event specified in Contract Documents relating to an intermediate completion date or time prior to Final Completion of all Work.
 47. Modification: Same as Contract Modification.
 48. Not in Contract or “NIC”: Work that is outside the scope of Work to be performed by Contractor under Contract Documents.
 49. Notice of Completion: Shall have the meaning provided in California Civil Code §3093, and any successor statute.
 50. Off Site: Outside geographical location of the Project.
 51. Owner: Owner is defined in Document 00 5200 (Agreement).
 52. Owner-Furnished, Contractor Installed: Items furnished by Owner at its cost for installation by Contractor at its cost under Contract Documents.
 53. Owner’s Representative(s): See Document 00 5200 (Agreement).
 54. Partial Utilization: Use by Owner of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Final Completion of all of the Work.
 55. PCBs: Polychlorinated biphenyls.

56. Phase: A specified portion of the Work (if any) specifically identified as a Phase in Document 00 5200 (Agreement) or Document 01 1000 (Summary).
57. Product Data: That information (brochures, catalog sheets, manufacturer's cut sheets, etc.) supplied by vendors having technical and commercial characteristics of the supplied equipment or materials and accompanying commercial terms such as warranties, instructions, and manuals.
58. Progress Report: A periodic report submitted by Contractor to Owner with progress payment invoices accompanying progress schedule. See Document 00 7200 (General Conditions).
59. Progress Schedule (schedule):
 - a. Baseline Progress Schedule: The first progress schedule submittal from the Contractor and reviewed by Owner, with no exceptions taken.
 - b. Progress Schedule: All subsequent schedule submissions after the Baseline Progress Schedule.
60. Project: Total construction of which Work performed under Contract Documents may be whole or part.
61. Project Manager: If used elsewhere in the Contract Documents, "Project Manager" shall mean a person representing the Owner in the administration of the Contract Documents. Project Manager may be an employee of or an independent consultant to Owner. When Project Manager is referred to within the Contract Documents and no Project Manager has in fact been designated, then the matter shall be referred to Owner. The term Project Manager shall be construed to include employees of Project Manager and/or employees that Project Manager supervises. When the designated Project Manager is an employee of Owner, his or her authorized representatives on the Project will be included under the term Project Manager. If Project Manager is an employee of Owner Project Manager is the beneficiary of all Contractor obligations to Owner, including without limitation, all releases and indemnities.
62. Project Manual: Project Manual consists of Bidding Requirements, Agreement, Bonds, Certificates, Contract Conditions, Drawings, and Specifications.
63. Project Record Documents: All Project deliverables required under the Contract Documents, including without limitation, as built drawings; Installation, Operation, and Maintenance Manuals; and Machine Inventory Sheets.
64. Provide: Furnish and install.
65. Request for Information ("**RFI**"): A document prepared by Contractor requesting information regarding the Project or Contract Documents. The RFI system is also a means for Owner to submit Contract Document clarifications or supplements to Contractor.
66. Samples: Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
67. Shop Drawings: All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
68. Shown: As indicated on Drawings.
69. Site: The particular geographical location of Work performed pursuant to the Contract Documents.
70. Specifications: The written portion of the Contract Documents consisting of requirements for materials, equipment, construction systems, standards, and workmanship for the Work; performance of related services.
71. Specified: As written in Specifications.

72. Standard Specifications: The most recent edition of the Standard Specifications of the State of California, Business and Transportation Agency, Department of Transportation, insofar as the same may apply and in accordance with the Specifications.
73. Subcontractor: A person or entity that has a direct contract with Contractor to perform a portion of the Work at the Site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and neutral in gender and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.
74. SWPPP (Storm Water Pollution and Prevention Plan) – Plan to mitigate storm water quality and discharges from the construction site.
75. Testing and special inspection agency: An independent entity engaged to inspect and/or test the workmanship, materials, or manner of construction of buildings or portions of buildings, to determine if such construction complies with the Contract Documents and applicable codes.
76. Time Impact Evaluation ("TIE"): An evaluation of the impact of an issue to the project schedule.
77. Underground Facilities: All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities that have been installed underground to furnish any of the following services or materials: Electricity, gases, chemicals, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems, or water.
78. Unit Price Work: Shall be the portions of the Work for which a unit price is provided in Document 00 5200 (Agreement) or Section 01 1000 (Summary).
79. Work: The entire completed construction, or the various separately identifiable parts thereof, required to be furnished under the Contract Documents within the Contract Time. Work includes and is the result of performing or furnishing labor and furnishing and incorporating materials and equipment into the construction, and performing or furnishing services and furnishing documents, all as required by the Contract Documents including everything shown in the Drawings and set forth in the Specifications. Wherever the word "work" is used, rather than the word "Work," it shall be understood to have its ordinary and customary meaning.

B. Other Defined Terms

The following terms are not necessarily identified with initial caps; however they shall have the meaning set forth below:

1. Wherever words "as directed," "as required," "as permitted," or words of like effect are used, it shall be understood that direction, requirements, or permission of Owner is intended. Words "sufficient," "necessary," "proper," and the like shall mean sufficient, necessary, or proper in judgment of Owner. Words "approved," "acceptable," "satisfactory," "favorably reviewed," or words of like import, shall mean approved by, or acceptable to, or satisfactory to, or favorably reviewed by Owner.
2. Wherever the word "may" or "ought" is used, the action to which it refers is discretionary. Wherever the word "shall" or "will" is used, the action to which it refers is mandatory.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

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SECTION 01 5000

TEMPORARY FACILITIES AND CONTROLS

PART 1 – GENERAL

1.01 SUMMARY

- A. This Section describes construction facilities and temporary controls required for the Work.

1.02 SECTION INCLUDES

- A. Temporary Utilities
- B. Construction Facilities: sanitary facilities, parking, progress cleaning.
- C. Dust control.
- D. Noise control.
- E. Pollution control.
- F. Protect installed Work.
- G. Security.
- H. Nothing in this Section is intended to limit types and amount of temporary Work required. No omission from this Section will be recognized by Architect/Engineer that such activity is not required for successful completion of the Work and compliance with requirements of Contract Documents

1.03 RELATED DOCUMENTS

Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 00 and Division 01 Specification Sections, apply to Work of this Section.

1.04 TEMPORARY UTILITIES

- A. Temporary Sanitary Facilities:
 - 1. Provide and maintain required facilities and enclosures. Comply with all minimum requirements of all public agencies having jurisdiction in regards to temporary restroom and hand wash stations.

1.05 TEMPORARY CONTROLS

- A. Barriers:
 - 1. Provide barricades, scaffolds, tarpaulins, canopies, warning signs, steps, etc., and other temporary construction required by governing authorities to comply with pertinent safety and other regulations.
- B. Fencing, as required to secure Project Area:
 - 1. Construction: Commercial grade chain link fence.

C. Protection of Installed Work:

1. Provide temporary and removable protection for installed Products. Control activity in immediate Work area to minimize damage.

1.06 CONSTRUCTION FACILITIES

A. Access Roads: Where required.

1. Construct and maintain temporary roads accessing public thoroughfares to serve construction area.
2. Extend and relocate as Work progress requires. Provide detours necessary for unimpeded traffic flow.
3. Provide and maintain access to fire hydrants, free of obstructions.

B. Parking:

1. Coordinate with County of Kern regarding available parking location.
2. Do not allow vehicle parking on constructed pavement.

C. Progress Cleaning:

1. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition on a daily basis.
2. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
3. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust. Remove waste material, debris, and rubbish from site periodically and dispose off-site.

1.09 DUST CONTROL

A. Conduct construction operations to minimize the generation of dust and dirt, and prevent dust and dirt from interfering with the progress of the Work and from accumulation in Work and adjacent areas as required by authorities having jurisdiction.

B. Provide positive means to prevent air-borne dust from dispersing into atmosphere and into existing facility. This facility is to remain operation during the construction.

1. Periodically water construction areas to minimize the generation of dust and dirt.
2. To additionally minimize the generation of dust and dirt, hauling equipment and trucks carrying loads of soil and debris shall have their loads sprayed with water or covered with tarpaulins.
3. Prevent dust and dirt from accumulating on walks, roadways, parking areas, and planting, and from washing into sewer and storm drain systems.

C. Dust and debris that may be generated during construction will be mitigated in accordance with the standards established by the Kern County Air Pollution Control District (KCUAPCD), Rule 42 Fugitive Dust/PM₁₀ pertaining to construction and demolition activities for the control of Fugitive Dust of fine particulate matter (PM₁₀).

1.10 NOISE CONTROL

- A. Provide methods, means, and facilities as required to minimize noise from the Work and noise produced by construction operations.

1.12 POLLUTION CONTROL

- A. Comply with applicable regulatory requirements and anti-pollution ordinances during the conduct of construction and disposal operations.

1.13 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection where specified where specified in individual Specification Sections.
- B. Provide temporary and removable protection for installed products. Control activity in immediate Work area to prevent damage.

1.15 PROGRESS CLEANING AND WASTE REMOVAL

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition on a daily basis.
- B. Collect and remove waste materials, debris, and rubbish from site daily and dispose offsite.

1.16 MAINTENANCE

- A. Maintain temporary facilities and controls as long as needed for safe and proper completion of the Work.

PART 2 – PRODUCTS

(Not applicable)

PART 3 – EXECUTION

3.01 REMOVAL

- A. Maintain all temporary facilities and controls as long as needed for the safe and proper completion of the Work.
- B. Remove all such temporary facilities and controls prior to final payment.

3.02 CONTRACTOR'S OPERATIONS

- A. During the course of construction, do not interfere with other buildings or portions of buildings, which are to remain, occupied. Maintain free and safe passage to and from other buildings which are occupied
- B. In occupied areas, attempt to do all jackhammer and other particularly noisy Work after normal working hours and on weekends. In all cases, schedule this Work in advance with the Owner's Representative. Minimize construction noise by adequate mufflers and other means.

END OF SECTION

SECTION 01 6000
PRODUCT REQUIREMENTS

PART 1 – GENERAL

1.1 SUMMARY

- A. Product requirements, transportation and handling of products, storage and protection of products, product options, and substitutions procedures.

1.2 SECTION INCLUDES

- A. Definitions.
- B. Products.
- C. Transportation and handling.
- D. Storage and protection.
- E. Product options.
- F. Substitutions.

1.3 RELATED DOCUMENTS

Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 00 and Division 01 Specification Sections, apply to Work of this Section.

1.4 DEFINITIONS

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.
- B. Named products: Items identified by manufacturer's product name, including make and model as identified in published product literature current as of Contract Document date.
- C. Materials: Products substantially shaped, cut or worked or otherwise fabricated, processed, or installed to form a part of the Work.
- D. Equipment: Product with operational parts, motorized or manual, that requires service connections.

1.5 PRODUCTS

- A. New and in a condition acceptable to the Owner and the Architect/Engineer. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- B. In conformance with EPA Codes and Regulations.
- C. No material or equipment shall be used for any purpose other than that for which it is designed or specified.

- D. Provide interchangeable components of the same manufacture, for components being replaced.
- E. No material shall contain asbestos or polychlorinated biphenals (PCBs).
- F. No materials or products shall contain formaldehyde in excess of the amount recommended by OSHA Regulations (Standards -29 CFR).
- G. No lead containing powder driven anchors are permitted. Wherever powder driven anchors are Indicated or Specified, provide equivalent strength non-lead containing powder driven anchors.
- H. Pursuant to the Resource Conservation & Recovery Act (RCRA) 6002 and to the extent that new recyclable material maybe utilized for construction of the building expansion with the approval of Architect/Engineer.

1.6 TRANSPORTATION AND HANDLING

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Deliver manufactured products in the manufacturer's original, unbroken containers or packaging, with identifying labels intact and legible.
- C. Immediately on delivery, inspect shipments to assure compliance with the requirements of the Contract Documents and accepted Submittals, quantities are correct and to verify that products are properly protected and undamaged.
- D. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damaging the product and their packaging.
- E. Promptly remove damaged and defective products from the Site and replace at no increase in Contract Sum.
- F. Provide protection for finished floor surfaces in traffic areas prior to allowing equipment or materials to be moved over such surfaces.
- G. Protect finished surfaces, including jambs and soffits and openings used as passageways, through which equipment and material are handled.
- H. Schedule delivery to minimize long term storage at the site and to prevent overcrowding of construction storage space.
- I. Coordinate delivery with installation time to minimize holding time for flammable, hazardous, easily damaged, or other losses.
- J. Inspect products upon delivery to ensure compliance with Contract Documents, products are not damaged and they are properly protected.

1.7 STORAGE AND PROTECTION

- A. Except as otherwise approved by the Architect/Engineer, store and protect products in accordance with manufacturers' instructions, with seals and labels intact and legible.
- B. Store products that are subject to damage by the elements, under cover in a weather-tight, climate controlled enclosures.
- C. Maintain temperature and humidity within the ranges required by manufacturers.

- D. For exterior storage of fabricated products, place on sloped supports, above ground, to prevent soiling and staining.
- E. Provide off-site storage and protection when site does not permit on-site storage or protection.
- F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation or potential degradation of product.
- G. Store less granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of products to permit access for inspection. Periodically inspect products to ensure that products are maintained under specified condition and free from damaged and deterioration.
- J. In event of damage to the product, promptly replace to the approval of the Architect/Engineer and at no additional cost to the Owner.
- K. Additional time required to secure replacements will not be considered by the Architect/Engineer for any extension in the contract time of completion.
- L. Protection after Installation:
 - 1. Provide substantial coverings as necessary to protect installed products from damage from traffic and construction operations. Remove coverings when no longer needed.
 - 2. Maintain temperature and humidity conditions for interior equipment and finish products in accordance with the manufacturers' printed instruction.

1.8 PRODUCT OPTIONS

- A. For products Indicated or Specified by Reference Standards or by descriptive requirements only, select any product by any manufacturer meeting description and that is recommended by manufacturer for the application Indicated.
- B. For products Indicated or Specified by Performance Requirements only, select any product by any manufacturer meeting requirements and that is recommended by manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application. Manufacturer's recommendations may be contained in published literature or by manufacturer's written certification of performance.
- C. For products Indicated or Specified by Naming One Product and Manufacturer: Products of manufacture named and meeting specifications, no options or substitution are allowed. This option shall only apply to products matching others in use on a particular public improvement either completed or in the course of completion.
- D. For products indicated or specified by naming several products or manufactures select, any one of the products or manufacturers named which complies with the Specified requirements. When the naming of one or more products is followed by "or accepted equal", a substitute product may be offered for consideration. Submit a request for substitution for any manufacturer not named in accordance with the following articles.

1.9 SUBSTITUTIONS

- A. Refer to Section 00 2113 (Instruction to Bidders), Article 6, Paragraph 6.07.

- END OF SECTION-

DOCUMENT 01 6000-A

SUBSTITUTION REQUEST FORM

To: The Rosamond Community Services District, Owner

(661) 256-3411

PROJECT: Tank 3 Recoat Project	Contractor:
Owner Project No:	

Substitution Request By:	Firm:
--------------------------	-------

Transmittal Record	Attn:	Firm:	Date Sent:	Date Rec'd:	Date Due:
Contractor to Owner					
Contractor to Architect					
Owner / Architect to Consultant					
Architect to Owner Representative					
Owner Representative to Contractor					

We hereby submit for your consideration the following product instead of the specified item for the Project:

Section / Drawing	Article	Specified Item
Proposed Substitution:		

We have (a) attached manufacturer's literature, including complete technical data and laboratory test results, if applicable, (b) attached an explanation of why proposed substitution is a true equivalent to specified item, (c) included complete information on changes to Contract Documents that the proposed substitution will require for its proper installation, and (d) filled in the blanks below:

Contractor to complete questions that follow and certifies to the accuracy of all answers:

A.	Does the substitution affect dimensions shown on Drawings? Yes ___ / No ___. If Yes, please explain proposed mitigation and why substitution is equivalent to originally specified item:
B.	Will the undersigned pay for changes to the design, including engineering and detailing costs caused by the requested substitution? Yes ___ / No ___. If No, please state reasons explain why substitution is equivalent to originally specified item:
C.	What effect does the substitution have on other trades? No effect: ___ / Some effect ___. If substitution will affect other trades, please explain the effect and why substitution is equivalent to originally specified item:
D.	Will substitution cause change to Project Schedule, or to critical delivery dates? Add? Shorten? If the substitution will add to schedule dates or affect critical activities, please explain why substitution is equivalent to originally specified item:
E.	Please describe differences between proposed substitution and specified item? Please explain and identify any and all differences, and please explain why substitution is equivalent to originally specified item:
F.	What is the Cost Differential to Contractor in original specified item and proposed substitution including all mark-ups? [If substitution requested during bid period, skip this question.]
G.	Are Manufacturer's guarantees for the proposed item the same as for item specified? Yes ____; No _____. If No, please explain why substitution is equivalent to originally specified item:

H. Contractor accepts full responsibility for delays caused by redesign of other items of the Work necessitated by substitution? Yes ___ / No ___. If No, please state reasons and explain why substitution is equivalent to originally specified item:

I. Contractor states that the function, appearance and quality are equivalent or superior to the specified item? Yes ___ / No ___. If No, please explain why substitution is equivalent to originally specified item:

We certify that the function, appearance, and quality of the proposed substitution are equivalent or superior to those of the specified item, except as we may specifically state otherwise in this request.

Contractor:

Submitted by: _____ Signature: _____

Firm: _____ Date: _____

Address: _____ Phone/ Fax: _____

Remarks: _____

Proposed Substitution Manufacturer

Submitted by: _____ Signature: _____

Firm: _____ Date: _____

Address: _____ Phone/ Fax: _____

Remarks: _____

Consultant Response:

- Accepted
- Not Accepted
- Accepted As Noted
- Received Too Late

Owner Representative Response:

- Accepted
- Not Accepted
- Accepted As Noted
- Received Too Late

Remarks: _____

Remarks: _____

By: _____

By: _____

END OF DOCUMENT

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SECTION 01 7000
CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 SUMMARY

A. Section describes requirements and procedures for:

1. Preparation for Contract Closeout
2. Punch List Development.
3. Final Completion
4. Warranties

1.02 PREPARATION FOR CONTRACT CLOSEOUT

A. Removal of Temporary Construction Facilities and Project Cleaning.

1. Prior to closeout procedures: remove temporary materials, equipment, services, and construction; clean all areas affected by the Work; clean and repair damage caused by installation or use of temporary facilities; restore permanent facilities used during construction to specified condition.

B. Equipment and Systems.

1. Prior to closeout procedures, Contractor shall start up, run for periods prescribed by Owner, operate, adjust and balance all manufactured equipment and Project systems, including but not limited to, mechanical, electrical, safety, fire, and controls.
2. Contractor shall perform all required scheduled maintenance throughout the duration of the Project.
3. Demonstrate that such equipment and systems conform to contract standards and manufacturer's guarantees. Where applicable, use testing protocols specified, and if the contract is silent, then consistent with manufacturer's recommendations and industry standards.
4. Where required by the technical specifications, provide training of Owner's personnel using Operation and Maintenance Manuals as described in Paragraph 1.02.C.

C. Operation and Maintenance Manuals.

1. Provide Operation and Maintenance manuals for all equipment in accordance with Section 01 3000.
2. Submit two (2) sets of fully reviewed operating/maintenance manuals prior to requesting the Final Walk, bound in 8-1/2 x 11 inch three ringside binders with durable plastic covers with identification on, or readable through, front cover stating general nature of manual.
3. Provide separate volume for each system, with table of contents and index tabs for each volume; all material neatly typewritten with each volume containing the following:
 - a. Part 1: Directory, listing names, addresses and telephone numbers of Owner's Representative, Contractor and, as appropriate, Subcontractor and/or Equipment Supplier.
 - b. Part 2: Completed Preventative Maintenance and Operating Requirement Sheets, a blank and sample of which are included at the end of this Section for each piece of equipment in the system. The following information shall also be included, as appropriate:
 - 1) Appropriate Design Criteria
 - 2) List of equipment

- 3) Parts list; including complete nomenclature, current costs, and names and addresses of nearest parts vendor.
 - 4) Detailed operating instructions
 - 5) Detailed maintenance instructions
 - 6) Shop drawings and product data, including changes made during construction.
 - 7) Copies of Guaranties/Warranties
4. Final versions of Operation and Maintenance manuals shall be provided in electronic format and submitted with Project Record Documents as described in Paragraph 1.04.B.2 of this Specification Section.

D. Permitting and Reporting.

1. Prior to closeout procedures, Contractor shall demonstrate or provide evidence that all outstanding permit requirements have been met, including reporting, certifications, and commissioning. Where Owner is required to certify to any permit compliance, Contractor shall prepare such certification documents for Owner execution.
2. Contractor shall schedule all necessary site visits from all authorities having jurisdiction to meet permit compliance.
3. Contractor shall provide all required commissioning documents and reports as required by Laws and Regulatory Requirements.

1.03 PUNCH LIST DEVELOPMENT

A. Punch List Readiness Determination.

1. When Contractor considers Work or designated portion of the Work as ready for punch list review, Contractor shall submit written notice to the Owner to review Project readiness with Inspector. Contractor and Inspector shall review the Work and, if Inspector identifies items needing correction prior to punch list review, Contractor shall make such corrections prior to scheduling the punch list walk.

B. Punch List Walk and Corrections.

1. When Contractor considers Work or designated portion of the Work as ready for punch list walk, submit written notice to Owner. Within reasonable time, Owner will schedule the punch list walk to determine status of completion. The attendees for the punch list walk will include the Architect/Engineer, Inspector, Owner, and Owner's Representatives. Consultant disciplines may schedule individual punch list walks as necessary. Contractor shall attend the punch list walk with personnel he deems necessary to accomplish Final Completion.
2. Should Owner determine that status of Work does not meet the Contract requirements for Final Completion, Owner will promptly notify Contractor in writing, listing all defects and omissions (the "**Punch List**").
3. Contractor shall be aware that the generation of a Punch List does not limit the Owner's ability to identify other deficiencies not previously identified on the Punch List and that the Contractor is responsible for all corrections required to meet the Contract requirements.
4. Contractor shall remedy deficiencies to the satisfaction of the Owner. Contractor shall provide Project Record Documents and evidence that all permit requirements have been satisfied.

C. Final Walk.

1. After Contractor performs all corrections identified on the Punch List, performs corrections of subsequent items added after the punch list walk and provides Project Record Documents and evidence of permit compliance, Contractor shall submit written notice to Owner. Within a reasonable time, Owner will schedule the final walk to determine status of completion. Owner's attendees will be personnel involved in Punch List generation. Contractor shall provide all personnel he deems necessary to accomplish Project Completion.

2. The Punch List examination will be performed at the final walk. One follow-up review of Punch List items for each discipline will be provided. If further site visits are required to review Punch List items due to incompleteness of the Work by Contractor, Contractor will reimburse Owner for costs associated with these visits.
3. If Owner deems work has been completed in accordance with the Contract requirements, or in Owner's judgment minor corrections may be completed which do not hinder Final Completion, Contractor shall prepare for Final Completion.

1.04 FINAL COMPLETION

A. Requirements

1. Final Completion occurs when Work meets requirements for Owner's Final Acceptance.

B. Procedure

1. When Contractor and Owner consider Work to be Complete, Contractor shall submit written certification that:
 - a. Contractor has inspected Work for compliance with Contract Documents, and all Punch List requirements have been met.
 - b. Except for Contractor maintenance after Final Acceptance, Work has been completed in accordance with Contract Documents and deficiencies listed in the Punch List have been corrected. Equipment and systems have been tested in the presence of Owner, and are operative.
2. Project Record Documents are completed and turned over to Owner, Work is complete and certificate of occupancy is obtained. (3) copies of Project Record Documents shall be provided in PDF format on electronic media to the Owner.
3. In addition to submittals required by Contract Documents, provide submittals required by governing authorities and submit final statement of accounting giving total adjusted Contract Sum, previous payments, and sum remaining due.
4. Upon Contractor completion of all closeout procedures and Owner's Final Acceptance, Owner will file the Notice of Completion.

C. Final Adjustments of Accounts:

1. Submit a final statement of accounting to Owner, showing all adjustments to the Contract Sum and complete and execute Document 00 5200 (Agreement and Release of Claims).
2. If so required, Owner shall prepare a final Change Order for submittal to Contractor, showing adjustments to the Contract Sum that were not previously made into a Contract Modification.

D. Turn-In. Contract Documents will not be closed out and final payment will not be made until all keys issued to Contractor during prosecution of Work and letters from property owners, pursuant to Contract Documents, are turned in to Owner.

E. Release of Claims. Contract Documents will not be closed out and final payment will not be due or made until Document 00 5200 (Agreement and Release of Claims) is completed and executed by Contractor and Owner.

F. Fire Inspection Coordination. Coordinate fire inspection and secure sufficient notice to Owner to permit convenient scheduling (if applicable).

G. Building Inspection Coordination. Coordinate with Owner a final inspection for the purpose of obtaining an occupancy certificate (if applicable).

1.05 WARRANTIES

A. Warranty Documents

1. Contractors shall assemble and provide warranty documents, executed or supplied by Subcontractors, suppliers, and manufacturers. Provide table of contents and assemble in 8½ inches by 11 inches three-ring binder with durable plastic cover, appropriately separated and organized. Assemble in specification section order. Additionally, Contractor shall provide to Owner all documents in the warranty document package in an electronic file, portable document format (pdf). Provide one copy on four individual flash drives.
2. Submit warranty documents in accordance with Document 01 3000 (Administrative Requirements) and prior to final Application for Payment. For equipment put into use with Owner's permission during construction, submit warranty documents within 14 Days after first operation. For items of Work delayed materially beyond the date of Final Completion, provide updated warranty documents within 14 Days after acceptance, listing date of acceptance as start of warranty period.
3. Warranty Forms: Submit drafts to Owner for review prior to execution. Forms shall not detract from or confuse requirements or interpretations of Contract Documents. Warranty shall be countersigned by manufacturers. Where specified, warranty shall be countersigned by Subcontractors and installers.
4. Rejection of Warranties: Owner reserves right to reject unsolicited and coincidental product warranties that detract from or confuse requirements or interpretations of Contract Documents.
5. Term of Warranties: For materials, equipment, systems, and workmanship, warranty period shall be one year minimum from date of Final Completion of entire Work except where:
 - a. Detailed Specifications for certain materials, equipment or systems require longer warranty periods.
 - b. Materials, equipment or systems are put into beneficial use of Owner prior to Final Completion as agreed to in writing by Owner.
 - c. Materials, equipment, or systems delayed from beneficial use of Owner as of the date of Notice of Completion, as agreed to in writing by Owner.

B. Warranty of Title:

1. No material, supplies, or equipment for Work under Contract shall be purchased subject to any chattel mortgage, security agreement, or under a conditional sale or other agreement by which an interest therein or any part thereof is retained by seller or supplier. Contractor warrants good title to all material, supplies, and equipment installed or incorporated in Work and agrees upon completion of all Work to deliver premises, together with improvements and appurtenances constructed or placed thereon by Contractor, to Owner free from any claim, liens, security interest, or charges, and further agrees that neither Contractor nor any person, firm, or corporation furnishing any materials or labor for any Work covered by Contract shall have right to lien upon premises or improvement or appurtenances thereon. Nothing contained in this paragraph, however, shall defeat or impair right of persons furnishing materials or labor under bond given by Contractor for their protection or any rights under law permitting persons to look to funds due Contractor in hands of Owner.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

Preventive Maintenance and Operating Requirement Sheets

Preventive Maintenance Program	Equipment Record Number	
EQUIPMENT DESCRIPTION	ELECTRICAL OR MECHANICAL DATA	
Name:	Size:	
Serial No.:	Model:	
Vendor:		
Vendor Address:	Type:	
	Mfr.:	
Vendor Rep:	Voltage:	Amps:
Phone:	Phase:	rpm:
Maintenance Work to be Done	Frequency*	
OPERATING REQUIREMENTS AND REFERENCE		

*D - Daily; W - Weekly; B - Biweekly; M - Monthly; Q - Quarterly;
 S - Semiannually; A - Annually.

SAMPLE

Preventive Maintenance and Operating Requirement Sheets

Preventive Maintenance Program	Equipment Record Number	
EQUIPMENT DESCRIPTION	ELECTRICAL OR MECHANICAL DATA	
Name: Influent Pump No. 1 Tag No.: P01-1	Size: 15 hp	
Serial No.: 123456ABC	Model: 140T Frame Serial No. 987654ZY Class F Insulation W/Space Heater	
Vendor: ABC Pump Co.		
Vendor Address: 1111 Pump Circle Newport Beach, CA 92663	Type:	
	Mfr.: DEF Motors, Inc.	
Vendor Rep: XYZ Equipment, Inc.	Voltage: 460	Amps: 20
Phone: 714/752-0505	Phase: 3	rpm: 1,800
Maintenance Work to be Done		Frequency*
1. Operate all valves and check such things as a) bearing temperature, b) changes in running sound, c) suction and discharge gauge readings, d) pump discharge rate, and e) general condition of the drive equipment.		D
2. Check packing.		D
3. Checking pumping unit for any dust, dirt, or debris.		W
(Continued on attached sheet)		
OPERATING REQUIREMENTS AND REFERENCE		
For manufacturer's instructions regarding installation, operation, maintenance, and trouble shooting of this equipment, see Volume _____, Section _____.		

*D - Daily; W - Weekly; B - Biweekly; M - Monthly; Q - Quarterly;
S - Semiannually; A - Annually.

SAMPLE

Preventive Maintenance and Operating Requirement Sheets

Preventive Maintenance Program		Equipment Record Number	
EQUIPMENT DESCRIPTION		ELECTRICAL OR MECHANICAL DATA	
Name:		Size:	
Serial No.:		Model:	
Vendor:			
Vendor Address:		Type:	
		Mfr.:	
Vendor Rep:		Voltage:	Amps:
Phone:		Phase:	rpm:
Maintenance Work to be Done			Frequency*
4. Lubricate bearing frame and motor bearings (consult manufacturer's instructions for type of grease or oil).			Q
5. Disassemble and change or repair the following: a) impeller, b) shafts, c) shaft sleeve, d) rotary seals, and e) sleeve bearings.			A
OPERATING REQUIREMENTS AND REFERENCE			

*D - Daily; W - Weekly; B - Biweekly; M - Monthly; Q - Quarterly;
S - Semiannually; A - Annually.

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SECTION 01 7050
CUTTING AND PATCHING

PART 1 – GENERAL

1.01 SUMMARY

- A. This Section establishes General Requirements pertaining to cutting (including excavating), fitting, and patching of the Work required to:
1. Make the several parts fit properly.
 2. Uncover Work to provide for installing, inspection, or both, of ill-timed Work.
 3. Remove and replace Work not conforming to requirements of the Contract Documents.
 4. Remove and replace defective Work.
- B. Requirements and limitations for cutting and patching of Work.

1.02 RELATED DOCUMENTS

Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 0 and Division 1 Specification Sections, apply to Work of this Section.

1.03 QUALITY ASSURANCE

- A. Requirements for Structural Work: Do not cut and patch structural Work in a manner that would result in a reduction of load carrying capacity or of load deflection ration. Obtain approval of the cutting and patching proposal before cutting and patching the following structural elements:
1. Foundation construction.
 2. Structural concrete.
 3. Stair systems.
 4. Miscellaneous structural metals.
 5. Exterior curtain wall construction.
 6. Equipment supports.
 7. Piping, ductwork, vessels and equipment.
- B. Operational and Safety Limitations: Do not cut and patch operational elements or safety related components in a manner that would result in a reduction of their capacity to perform in the manner intended, to increase maintenance, or to decrease operational like or safety.
- C. Visual Requirements:
1. Do not cut and patch construction exposed on the exterior or in its occupied spaces, without consulting the Engineer/Architect.
 2. Remove and replace Work cut and patched in a visually unsatisfactorily manner.
- D. Employ skilled workers for cutting and patching. Wherever practicable, employ original installer or fabricator providing Work under this Contract to perform cutting and patching for new:
1. Weather-exposed and moisture-resistant products.
 2. Fireproofing.
 3. Finished surfaces exposed to view.
- E. Individual Product Specification Sections:

1. Cutting and patching incidental to Work of the Section.
2. Advance notification to other Sections of openings required in Work of those Sections.
3. Limitations on cutting structural members.

1.04 SUBMITTALS

A. Submit written request in advance of cutting or alteration which affects:

1. Structural integrity of any element of Project.
2. Integrity of weather exposed or moisture resistant element.
3. Efficiency, maintenance, or safety of any operational element.
4. Visual qualities of sight exposed elements.
5. Work of Owner or separate contractor.
6. Cost estimate and type of reimbursement review by Architect/Engineer. Review does not waive Architect/Engineer's right to later require complete removal and replacement of any part of Work found to be unsatisfactory.

B. Include in Request:

1. Identification of Project.
2. Location and description of affected Work.
3. Necessity for cutting or alteration.
4. Description of proposed Work, entities to perform Work, products to be used, dates when Work is to be performed.
5. Alternatives to cutting and patching.
6. Effect on Work of Owner or separate Contractor.
7. Written permission of affected separate Contractor.
8. Describe anticipated results in terms of changes to existing construction.
9. List utilities to be disturbed or relocated or temporarily out of service. Indicate length of service disruption.
10. Where Work involves addition of reinforcement to structural elements, submit details and engineering calculations showing how new reinforcement integrates with original structure.
11. Date and time Work will be executed, to provide for Engineering/Architect observation.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Primary Products: Those required for original installation.
- B. Product Substitution: Refer to Section 00 2113 (Instruction to Bidders), Article 6, Paragraph 6.07.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine existing conditions prior to commencing Work, including elements subject to damage or movement during cutting, excavating, patching and backfilling.
- B. After uncovering the Work, inspect conditions affecting of new Work.
- C. If uncovered conditions are not as anticipated, immediately notify the Architect/Engineer and secure needed directions.
- D. Do not proceed until unsatisfactory conditions are corrected.

- E. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Provide required temporary supports including, but not necessarily limited to, shoring, bracing, and support to maintain structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.
- B. Prior to cutting, employ a competent private utility locating service capable of locating positions and depths of underground and concealed structural reinforcements and utilities including, but not limited to electrical conduits, plumbing lines, and other utilities in the vicinity of the construction to be cut.
- C. Perform cutting and patching using methods so as not to void existing warranties.
- D. Provide protection from elements for areas which may be exposed by uncovering Work.
- E. Maintain excavations free of water.

3.03 CUTTING

- A. Perform required cutting and fitting to complete the Work under pertinent other Sections of these Specifications.
- B. Perform required excavating and backfilling as required under pertinent other Sections of these Specifications.
- C. Perform cutting and demolition by methods which will prevent damage to other portions of the Work and provide proper surfaces to receive installation of repair and new Work.
- D. Do not cut or alter structural members without prior consultation with the Engineer/Architect unless specifically indicated. Do not damage reinforcing or structural steel to remain.
- E. Do not damage electrical conduits, plumbing lines, and other utilities to remain.
- F. Cut existing construction to provide for installation of Work. Make new openings neat, as close as possible to profiles indicated and only to extent necessary for new Work.
- G. Uncover Work to install improperly sequenced Work.
- H. Remove and replace defective or non-conforming Work.
- I. Remove samples of installed Work for testing when requested.
- J. Provide openings in the Work for penetration of mechanical and electrical Work.
- K. At concrete, masonry, paving, and other materials where edges of cuts and holes will remain exposed in the completed Work, make cuts using power-sawing and power-coring equipment; do not overcut at corners of cut openings. Saw overruns shall not be permitted. Pneumatic tools not allowed without prior approval.
- L. Upon completion of cutting and coring, clean remaining surfaces of loose particles and dust.

3.04 PATCHING

- A. Execute patching to complement adjacent Work.

- B. Patch existing construction by filling repairing, refinishing, closing up and similar operations. Patching includes the insertion of projection of other products in or from a surface.
- C. Perform fitting and adjusting of products together to integrate with other Work with the specified tolerance and finishes.
- D. Perform Work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.
- E. Restore Work with new Products in accordance with requirements of Contract Documents.
- F. Fit Work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- G. Patch weather-exposed components in a manner that restores them to a weathertight condition.
- H. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material, to full thickness of the penetrated element.
- I. Finish or refinish, as required, cut and patched surfaces to provide an even surface of uniform finish, color, texture, and appearance, matching existing adjacent. Finish complete surface plane, unless otherwise indicated. Over patched wall or ceiling surfaces, finish to nearest cutoff line for entire surface, such as intersection with adjacent wall or ceiling, beam, pilasters or to nearest opening frame, unless otherwise indicated. Finished surfaces shall not present a spotty, touched-up appearance. For an assembly, refinish entire unit.

3.05 PERFORMANCE

- A. Execute Work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.
- B. Employ original subcontractor to perform cutting and patching for weather exposed and moisture resistant elements.
- C. Cut materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- D. Restore Work with new products in accordance with requirements of Contract Documents.
- E. Fit Work tightly to pipes, sleeves, ducts, conduit, and other penetrations through surfaces, caulking where necessary to create water and air resistive barriers.
- F. At penetrations of fire-rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400 (Firestopping) and Section 07 9200 (Joint Sealers), to full thickness of the penetrated element.
- G. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

3.06 PAYMENT FOR COSTS

- A. In accordance with Section 00 7200 (General Conditions) and Section 01 2000 (Price and Payment Procedures).

END OF SECTION

ROSAMOND COMMUNITY SERVICE DISTRICT
TANK 3 RECOAT PROJECT

TECHNICAL SPECIFICATIONS

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S050520	BOLTS, WASHERS, ANCHORS, AND EYEBOLTS
S051210	MISCELLANEOUS STRUCTURAL STEEL
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S099761	FUSION-BONDED EPOXY LININGS AND COATINGS
S331300	DISINFECTION OF PIPING AND STRUCTURES
S400500	GENERAL PIPING REQUIREMENTS
S400515	PRESSURE TESTING OF PIPING
S400520	MANUAL, CHECK, AND PROCESS VALVES
S400722	FLEXIBLE PIPE COUPLINGS AND EXPANSION JOINTS
S400764	PIPE SUPPORTS
S402001	GENERAL REQUIREMENTS FOR STEEL PIPING
S402050	FABRICATED STEEL SPECIALS
S402057	FUSION EPOXY-LINED AND- COATED STEEL PIPE

APPENDIX A – TANK NO. 3 COATING SPECIFICATIONS FOR THE INTERIOR AND EXTERIOR TANK PREPARED BY BAY AREA COATING, INC.

APPENDIX B – TANK NO. 3 EXTERIOR AND INTERIOR COATING EXHIBITS (EXHIBITS 1 – 9)

SECTION 05 0520

BOLTS, WASHERS, ANCHORS, AND EYEBOLTS

PART 1 - GENERAL

1.01 DESCRIPTION

This section describes materials and installation of anchor bolts, connecting bolts, washers, drilled anchors, screw anchors, eyebolts, and stainless steel fasteners.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Miscellaneous Structural Steel and Aluminum: 051210.
- B. Pipe Hangers and Supports: 400764.

1.03 DESIGN CRITERIA

Structural Connections: AISC Specification for Structural Steel Buildings (March 9, 2005), except connection details are shown in the contract drawings.

1.04 SUBMITTALS

- A. Submit shop drawings in accordance with the General Provisions and Section 013300.
- B. Submit manufacturer's catalog data and ICC reports for bolts, washers, and concrete anchors. Show dimensions and reference materials of construction by ASTM designation and grade.

PART 2 - MATERIALS

2.01 ANCHOR BOLTS

Steel anchor bolts shall conform to ASTM A307, Grade A, B, or C.

2.02 CONNECTION BOLTS

- A. Steel connection bolts shall conform to ASTM A307. Connection type shall be N per the AISC handbook.
- B. Provide galvanized bolts where shown in drawings. Galvanizing of bolts, nuts, and washers shall be in accordance with ASTM F2329.

2.03 STAINLESS STEEL BOLTS

Stainless steel bolts shall be ASTM F593, Type 316. Nuts shall be ASTM F594, Type 316. Use ASTM A194 nuts with ASTM A193 bolts; use ASTM F594 nuts with ASTM F593 bolts. Provide washer for each nut and bolthead. Washers shall be of the same material as the nuts.

2.04 LUBRICANT FOR STAINLESS STEEL BOLTS AND NUTS

Lubricant shall be chloride free and shall be RAMCO TG-50, Anti-Seize by RAMCO, Specialty Lubricants Corporation Husky™ Lube O'Seal, or equal.

2.05 HARDENED STEEL WASHERS

Washers for American Standard beams and channels shall be square or rectangular, tapered in thickness, smooth, and conforming to ASTM F436.

2.06 DRILLED ANCHORS

- A. Where indicated in the drawings, drilled anchors shall be Type 304 stainless steel heavy-duty wedge anchors suitable for dynamic loading. Anchors shall be HSL-3 heavy-duty wedge anchor by Hilti, Power-Bolt by Rawlplug Company, or equal. For metric anchors, use the size that is closest to, but no smaller than, the required English size.

PART 3 - EXECUTION

3.01 STORAGE OF MATERIALS

Store material, either plain or fabricated, above ground on platforms, skids, or other supports. Keep material free from dirt, grease, and other foreign matter and protect from corrosion.

3.02 GALVANIZING

Zinc coating for bolts, anchor bolts, and threaded parts shall be in accordance with ASTM F2329.

3.03 INSTALLING CONNECTION BOLTS

- A. Use steel bolts to connect structural steel members. Use stainless steel bolts to connect structural aluminum members.
- B. Install ASTM A325 bolts per the AISC "Specification for Structural Joints Using ASTM A325 or A490 Bolts."
- C. Install washers per AISC Specification for ASD.
- D. Bolt holes in structural members shall be 1/16 inch in diameter larger than bolt size. Measure cast-in-place bolt locations in the field before drilling companion holes in structural steel beam or assembly.
- E. Slotted holes, if required in the drawings, shall conform to AISC Specifications, Chapter J, Section J3, Table J3.1.
- F. Drive bolts accurately into the holes without damaging the thread. Protect boltheads from damage during driving. Boltheads and nuts or washers shall rest squarely against the metal. Where bolts are to be used on beveled surfaces having slopes greater than 1 in 20 with a plane normal to the bolt axis, provide beveled washers to give full bearing to the head or nut. Where self-locking nuts are not furnished, bolt threads shall be upset to prevent the nuts from backing off.

- G. Bolts shall be of the length that will extend entirely through but not more than 1/4 inch beyond the nuts. Draw boltheads and nuts tight against the work. Tap boltheads with a hammer while the nut is being tightened.

3.04 INSTALLING ANCHOR BOLTS

- A. Preset bolts and anchors by the use of templates. For mechanical equipment (pumps, compressors, and blowers), do not use concrete anchors set in holes drilled in the concrete after the concrete is placed.
- B. For static items (storage tanks and heat exchangers), use preset anchor bolts.
- C. After anchor bolts have been embedded, protect projecting threads by applying grease and having the nuts installed until the time of installation of the equipment or metalwork.
- D. Minimum depth of embedment of drilled mechanical anchors shall be as recommended by the manufacturer, but no less than that shown in the drawings.
- E. Prepare holes for drilled anchors in accordance with the anchor manufacturer's recommendations prior to installation.

3.05 INSTALLATION OF STAINLESS STEEL BOLTS AND NUTS

Prior to assembly, coat threaded portions of stainless steel bolts and nuts with lubricant.

END OF SECTION

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SECTION 05 1210

MISCELLANEOUS STRUCTURAL STEEL

PART 1 - GENERAL

1.01 DESCRIPTION

This section describes materials, fabrication, and installation of structural steel, stainless steel plate and members, and steel tubing.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Bolts, Washers, Anchors, and Eyebolts: 050520.

1.03 DESIGN CRITERIA

Structural Connections and Framing: AISC Specification for Structural Steel Buildings (March 9, 2005), except connection details are shown in the contract drawings.

1.04 SUBMITTALS

- A. Submit shop drawings in accordance with the General Provisions and Section 013300.
- B. Submit placing or erection drawings that indicate locations of fabricated items. Reproductions of contract documents will not be accepted for this purpose.

PART 2 - MATERIALS

2.01 STRUCTURAL STEEL

Material for all-purpose bolted or welded construction shall conform to the following:

- A. ASTM A992: W shapes (rolled wide flange shapes).
- B. ASTM A36 or A572, Grade 50: S, M, HP, and channels.
- C. ASTM A36: Angles and plates.

2.02 BOLTS AND WASHERS

See Section 050520.

2.03 STEEL PIPE COLUMNS

Conform to ASTM A53, Grade B.

2.04 HOLLOW STRUCTURAL STEEL (HSS) TUBING

- A. Steel: Conform to ASTM A500, Grade B.

2.05 STAINLESS STEEL PLATE AND MEMBERS

Except where otherwise specified, stainless steel plate shall be Type 316, ASTM A240. Stainless steel pipe shall conform to ASTM A312, Grade TP316. Wrought stainless steel fittings shall conform to ASTM A403, Class WP316.

2.06 WELDING ELECTRODES

- A. Welding electrodes for structural steel shall conform to AWS A5.5. Use electrodes in the E-70 series.
- B. Welding electrodes for aluminum shall be ER4043 filler metal.
- C. Welding electrodes for stainless steel shall conform to AWS A5.4. Use electrodes as follows:

Stainless Steel Material	Welding Electrode Material
Type 304	E 308
Type 304L	E 347
Type 316	E 316
Type 316L	E 318

PART 3 - EXECUTION

3.01 STORAGE OF MATERIALS

Store structural material, either plain or fabricated, above ground on platforms, skids, or other supports. Keep material free from dirt, grease, and other foreign matter and protect from corrosion.

3.02 FABRICATION AND ERECTION

- A. Fabricate miscellaneous metal items to straight lines and true curves. Drilling and punching shall not leave burrs or deformations. Continuously weld permanent connections along the entire area of contact. Exposed work shall have a smooth finish with welds ground smooth. Joints shall have a close fit with corner joints coped or mitered and shall be in true alignment. Unless specifically indicated in the drawings, there shall be no bends, twists, or open joints in any finished member nor any projecting edges or corners at intersections. Conceal fastenings wherever possible. Built-up parts shall be free of warp. Exposed ends and edges of metal shall be slightly rounded. member
- B. Clean the surfaces of metalwork to be in contact with concrete of rust, dirt, grease, and other foreign substances before placing concrete.
- C. Set embedded metalwork accurately in position when concrete is placed and support rigidly to prevent displacement or undue vibration during or after the placement of concrete. Unless otherwise specified, where metalwork is to be installed in recesses in formed concrete, said recesses shall be made, metalwork installed, and recesses filled with dry-pack mortar in conformance with Section 030500.

3.03 GALVANIZING FOR STEEL PLATES, PIPE, AND TUBING

Zinc coating shall be in accordance with ASTM A123.

3.04 WELDING

- A. Perform welding on steel by the SMAW process. Welding shall conform to the AWS D1.1-2008, except as modified in AISC Section J2.
- B. Perform welding on aluminum by the gas metal arc (MIG) or gas tungsten arc (TIG) process. Welding shall conform to the AWS D1.2-2003.
- C. Perform welding on stainless steel by the TIG process. All welds shall be full penetration and smooth unless otherwise indicated in the drawings. Provide inert gas on the inside of pipe during welding to reduce oxidation.
- D. Provide a minimum of two passes for metal in excess of 5/16-inch thickness.
- E. Produce weld uniform in width and size throughout its length with each layer of weldment smooth; free of slag, cracks, pinholes, and undercuttings; and completely fused to the adjacent weld beads and base metal. Avoid irregular surface, nonuniform bead pattern, and high crown. Form fillet welds of the indicated size of uniform height and fully penetrating. Accomplish repair, chipping, and grinding of welds in manner that will not gouge, groove, or reduce the base metal thickness.

3.05 BOLTING

See Section 050520.

3.06 CONTROL OF FLAME CUTTING

Do not use a gas-cutting torch in the field for correcting fabrication errors on any member in structural framing. Use a gas-cutting torch only on minor members when the member is not under stress.

3.07 REPAIR OF GALVANIZED SURFACES

Repair or replace metal with damaged galvanized surfaces at no additional cost to the Owner. Repair galvanized surfaces per **Appendix A**.

3.08 PAINTING AND COATING OF STRUCTURAL STEEL

Coat nongalvanized structural steel surfaces per **Appendix A**.

END OF SECTION

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SECTION 09 9000
PAINTING AND COATING

PART 1 - GENERAL

1.01 DESCRIPTION

This section includes materials and application of painting and coating systems for the following surfaces:

- A. Submerged metal.
- B. Buried metal.
- C. Fusion-bonded epoxy coated steel.

It does not include coating steel water tanks and reservoirs. Additionally, for aboveground piping and other appurtenances, please refer to Appendix A. If a conflict exists between this section (Section 099000) and Appendix A, Appendix A is to take precedence.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Fusion-Bonded Epoxy Linings and Coatings: 099761.

1.03 SUBMITTALS

- A. Submit shop drawings in accordance with the General Provisions and Section 013300.
- B. Submit manufacturer's data sheets showing the following information:
 - 1. Percent solids by volume.
 - 2. Minimum and maximum recommended dry-film thickness per coat for prime, intermediate, and finish coats.
 - 3. Recommended surface preparation.
 - 4. Recommended thinners.
 - 5. Statement verifying that the specified prime coat is recommended by the manufacturer for use with the specified intermediate and finish coats.
 - 6. Application instructions including recommended equipment and temperature limitations.
 - 7. Curing requirements and instructions.
- C. Submit color swatches.
- D. Submit certificate and supplier's data sheets identifying the type and gradation of abrasives used for surface preparation. The certificate or data sheets shall specifically identify that the abrasives comply with federal and state of California regulations for materials to be used for abrasive blasting for surface preparation for paints and coatings.

- E. Submit material safety data sheets for each coating.

PART 2 - MATERIALS

2.01 PAINTING AND COATING SYSTEMS

The following index lists the various painting and coating systems by service and generic type:

PAINT COATINGS SYSTEM INDEX

No.	Title	Generic Coating
Submerged Metal Coating Systems		
7.	Submerged Metal, Potable or Nonpotable Water	Epoxy
10.	Exposed Metal, Corrosive Environment	High-build epoxy (two-coat system) with polyurethane topcoat
Buried Metal Coating Systems		
21.	Buried Metal	Epoxy
22.	Buried Metal	Polyurethane
24.	Buried Metal	Corrosion-resisting grease

These systems are specified in detail in the following paragraphs. For each coating, the required surface preparation, prime coat, intermediate coat (if required), topcoat, and coating thicknesses are described. Mil thicknesses shown are minimum dry-film thicknesses.

2.02 SUBMERGED METAL COATING SYSTEMS

- A. System No. 7--Submerged Metal, Potable or Nonpotable Water:

Type: Epoxy.

Service Conditions: For use with structures, valves, piping, or equipment immersed in potable or nonpotable water.

Surface Preparation: SSPC SP-10.

Coating System: Apply the manufacturer's recommended number of coats to attain the specified minimum dry-film coating thickness. Products: Devoe Bar-Rust 233H, Tnemec 100, Scotchkote 323, or equal; 20 mils total. Color of topcoat: white. Each coat shall be different color than the one preceding it.

2.03 EXPOSED COATING SYSTEMS

- A. System No. 10--Exposed Metal, Corrosive Environment:

Type: High-build epoxy

Service Conditions: For use with metal structures or pipes subjected to water condensation; chemical fumes, such as hydrogen sulfide; salt spray; and chemical contact

Surface Preparation: SSPC SP-10.

Prime Coat: Self-curing, two-component inorganic zinc-rich coating recommended by the manufacturer for overcoating with a high-build epoxy finish coat. Minimum zinc content shall be 12 pounds per gallon. Apply to a thickness of 3 mils. Products: Tnemec

90E-92, Devoe Catha-Coat 304 or 304V, International Interzinc 22HS, PPG Dimetcote 9HS, Carboline Carbozinc 11HS, Sherwin-Williams Zinc-Clad II Plus, PPG METALHIDE® 28 Inorganic Zinc-Rich Primer 97-672, or equal.

Intermediate Coat: Tnemec 104, Devoe Devran 224HS or 231, International Interseal 670HS, PPG Amercoat 385, Carboline Carboguard 890, Sherwin-Williams Macropoxy 646 B58-600, PPG PITT-GUARD® Direct-to-Rust Epoxy Mastic Coating 97-145 series, or equal; 5 mils

Finish Coat: Two-component pigmented acrylic or aliphatic polyurethane recommended by the manufacturer for overcoating a high-build epoxy coating. Apply to a thickness of at least 2 mils. Products: Tnemec Series 1075, Devoe Devthane 379, International Interline 990HS, PPG Amercoat 450HS, Carboline 134HG, Sherwin-Williams Hi-Solids Polyurethane B65-300, PPG PITTHANE® Ultra Gloss Urethane Enamel 95-812 series, or equal.

2.04 BURIED METAL COATING SYSTEMS

A. System No. 21--Buried Metal:

Type: High solids epoxy or phenolic epoxy having a minimum volume solids of 80% (ASTM D2697).

Service Conditions: Buried metal, such as valves, flanges, bolts, nuts, structural steel, and fittings.

Surface Preparation: SSPC SP-10.

Coating System: Apply three or more coats of PPG Amerlock 400 or 400VOC, Tnemec 104HS or 80, Devoe Bar-Rust 233H, Carboline 890LT, Sherwin-Williams Tank Clad HS B62-80 series, or equal; 30 mils total. Maximum thickness of an individual coating shall not exceed the manufacturer's recommendation.

B. System No. 22- Buried Metal:

Type: Two-component polyurethane having the following characteristics:

1. Hardness (ASTM D2240, Shore "D"): 65 to 85.
2. Abrasion Resistance (ASTM D4060, Taber CS-17): 20 mg (maximum) loss per 1,000 cycles or a maximum loss of 65 mg per ASTM C501.

Service Conditions: Buried metal, such as valves, flanges, bolts, nuts, structural steel, and fittings.

Surface Preparation: SSPC SP-10.

Coating System: Madison Chemical Industries, Inc. Corrocote II TX or Futura Coatings, Inc., Futura-Thane 527, or equal. Apply to a total thickness of 30 mils.

C. System No. 24--Buried Metal:

Type: Corrosion-resisting grease.

Service Conditions: Buried metal, such as bolts, bolt threads, tie rods, and nuts.

Surface Preparation: SSPC SP-3 or SP-6.

Coating: NO-OX-ID GG-2 as manufactured by Sanchem, Inc. Apply to a minimum thickness of 1/4 inch.

2.05 ABRASIVES FOR SURFACE PREPARATION

- A. Abrasives used for preparation of ferrous (excluding stainless steel) surfaces shall be one of the following:
 - 1. 16 to 30 or 16 to 40 mesh silica sand or mineral grit.
 - 2. 20 to 40 mesh garnet.
 - 3. Crushed iron slag, 100% retained on No. 80 mesh.
 - 4. SAE Grade G-40 or G-50 iron or steel grit.
- B. In the above gradations, 100% of the material shall pass through the first stated sieve size and 100% shall be retained on the second stated sieve size.

PART 3 - EXECUTION

3.01 WEATHER CONDITIONS

- A. Do not paint in the rain, wind, snow, mist, and fog or when steel or metal surface temperatures are less than 5°F above the dew point.
- B. Do not apply paint when the relative humidity is above 85%.
- C. Do not paint when temperature of metal to be painted is above 120°F.
- D. Do not apply alkyd, inorganic zinc, silicone aluminum, or silicone acrylic paints if air or surface temperature is below 40°F or expected to be below 40°F within 24 hours.
- E. Do not apply epoxy, acrylic latex, and polyurethane paints on an exterior or interior surface if air or surface temperature is below 60°F or expected to drop below 60°F in 24 hours.

3.02 SURFACE PREPARATION PROCEDURES

- A. Remove oil and grease from metal surfaces in accordance with SSPC SP-1. Use clean cloths and cleaning solvents and wipe dry with clean cloths. Do not leave a film or greasy residue on the cleaned surfaces before abrasive blasting.
- B. Remove weld spatter and weld slag from metal surfaces and grind smoothly rough welds, beads, peaked corners, and sharp edges including erection lugs in accordance with SSPC SP-2 and SSPC SP-3. Grind 0.020 inch (minimum) off the weld caps on pipe weld seams. Grind outside sharp corners, such as the outside edges of flanges, to a minimum radius of 1/4 inch.

- C. Do not abrasive blast or prepare more surface area in one day than can be coated in one day; prepare surfaces and apply coatings the same day. Remove sharp edges, burrs, and weld spatter.
- D. Do not abrasive blast PVC, CPVC, or FRP piping or equipment. Do not abrasive blast epoxy- or enamel-coated pipe that has already been factory coated, except to repair scratched or damaged coatings.
- E. For carbon steel, do not touch the surface between the time of abrasive blasting and the time the coating is applied. Apply coatings within two hours of blasting or before any rust bloom forms.
- F. Surface preparation shall conform with the SSPC specifications as follows:

Solvent Cleaning	SP-1
Hand Tool Cleaning	SP-2
Power Tool Cleaning	SP-3
White Metal Blast Cleaning	SP-5
Commercial Blast Cleaning	SP-6
Brush-Off Blast Cleaning	SP-7
Pickling	SP-8
Near-White Blast Cleaning	SP-10
Power Tool Cleaning to Bare Metal	SP-11
Surface Preparation and Cleaning of Steel and Other Hard Materials by High- and Ultrahigh-Pressure Water Jetting Prior to Recoating	SP-12
Surface Preparation of Concrete	SP-13

- G. Wherever the words “solvent cleaning,” “hand tool cleaning,” “wire brushing,” or “blast cleaning” or similar words are used in these specifications or in paint manufacturer’s specifications, they shall be understood to refer to the applicable SSPC (Society for Protective Coatings), surface preparation specifications listed above.
- H. Dust blasting is defined as cleaning the surface through the use of very fine abrasives, such as siliceous or mineral abrasives, 80 to 100 mesh. Apply a fine etch to the metal surface to clean the surface of any contamination or oxide and to provide a surface profile for the coating.
- I. For carbon steel surfaces, after abrasive blast cleaning, the height of the surface profile shall be 2 to 3 mils. Verify the surface profile by measuring with an impresser tape acceptable to the Owner’s Representative. Perform a minimum of one test per 100 square feet of surface area. Testing shall be witnessed by the Owner’s Representative. The impresser tape used in the test shall be permanently marked with the date, time, and locations where the test was made. Test results shall be promptly presented to the Owner’s Representative.
- J. Do not apply any part of a coating system before the Owner’s Representative has reviewed the surface preparation. If coating has been applied without this review, if directed by the Owner’s Representative, remove the applied coating by abrasive blasting and reapply the coat in accordance with this specification.

3.03 ABRASIVE BLAST CLEANING

- A. Use dry abrasive blast cleaning for metal surfaces. Do not use abrasives in automatic equipment that have become contaminated. When shop or field blast cleaning with handheld nozzles, do not recycle or reuse blast particles.
- B. After abrasive blast cleaning and prior to application of coating, dry clean surfaces to be coated by dusting, sweeping, and vacuuming to remove residue from blasting. Apply the specified primer or touch-up coating within the period of an eight-hour working day. Do not apply coating over damp or moist surfaces. Reclean prior to application of primer or touch-up coating any blast cleaned surface not coated within said eight-hour period.
- C. Keep the area of the work in a clean condition and do not permit blasting particles to accumulate and constitute a nuisance or hazard.
- D. During abrasive blast cleaning, prevent damage to adjacent coatings. Schedule blast cleaning and coating such that dust, dirt, blast particles, old coatings, rust, mill scale, etc., will not damage or fall upon wet or newly coated surfaces.

3.04 PROCEDURES FOR ITEMS HAVING SHOP-APPLIED PRIME COATS

- A. After application of primer to surfaces, allow coating to cure for a minimum of two hours before handling to minimize damage.
- B. When loading for shipment to the project site, use spacers and other protective devices to separate items to prevent damaging the shop-primed surfaces during transit and unloading. If wood spacers are used, remove wood splinters and particles from the shop-primed surfaces after separation. Use padded chains or ribbon binders to secure the loaded items and minimize damage to the shop-primed surfaces.
- C. Cover shop-primed items 100% with protective coverings or tarpaulins to prevent deposition of road salts, fuel residue, and other contaminants in transit.
- D. Handle shop-primed items with care during unloading, installation, and erection operations to minimize damage. Do not place or store shop-primed items on the ground or on top of other work unless ground or work is covered with a protective covering or tarpaulin. Place shop-primed items above the ground upon platforms, skids, or other supports.

3.05 FIELD TOUCH-UP OF SHOP-APPLIED PRIME COATS

- A. Remove oil and grease surface contaminants on metal surfaces in accordance with SSPC SP-1. Use clean rags wetted with a degreasing solution, rinse with clean water, and wipe dry.
- B. Remove dust, dirt, salts, moisture, chalking primers, or other surface contaminants that will affect the adhesion or durability of the coating system. Use a high-pressure water blaster or scrub surfaces with a broom or brush wetted with a solution of trisodium phosphate, detergent, and water. Before applying intermediate or finish coats to inorganic zinc primers, remove any soluble zinc salts that have formed by means of scrubbing with a stiff bristle brush. Rinse scrubbed surfaces with clean water.
- C. Remove loose or peeling primer and other surface contaminants not easily removed by the previous cleaning methods in accordance with SSPC SP-7. Take care that remaining primers are not damaged by the blast cleaning operation. Remaining primers shall be firmly bonded to the steel surfaces with blast cleaned edges feathered.

- D. Remove rust, scaling, or primer damaged by welding or during shipment, storage, and erection in accordance with SSPC SP-10. Take care that remaining primers are not damaged by the blast cleaning operation. Areas smaller than 1 square inch may be prepared per SSPC SP-11. Remaining primers shall be firmly bonded to the steel surfaces with cleaned edges feathered.
- E. Use repair procedures on damaged primer that protects adjacent primer. Blast cleaning may require the use of lower air pressure, smaller nozzles, and abrasive particle sizes, short blast nozzle distance from surface, shielding, and/or masking.
- F. After abrasive blast cleaning of damaged and defective areas, remove dust, blast particles, and other debris by dusting, sweeping, and vacuuming; then apply the specified touch-up coating.
- G. Surfaces that are shop primed shall receive a field touch-up of the same primer used in the original prime coat.

3.06 PAINTING SYSTEMS

- A. All materials of a specified painting system, including primer, intermediate, and finish coats, shall be produced by the same manufacturer. Thinners, cleaners, driers, and other additives shall be as recommended by the paint manufacturer for the particular coating system.
- B. Deliver paints to the jobsite in the original, unopened containers.

3.07 PAINT STORAGE AND MIXING

- A. Store and mix materials only in areas designated for that purpose by the Owner's Representative. The area shall be well-ventilated, with precautionary measures taken to prevent fire hazards. Post "No Smoking" signs. Storage and mixing areas shall be clean and free of rags, waste, and scrapings. Tightly close containers after each use. Store paint at an ambient temperature from 50°F to 100°F.
- B. Prepare multiple-component coatings using all of the contents of the container for each component as packaged by the paint manufacturer. Do not use partial batches. Do not use multiple-component coatings that have been mixed beyond their pot life. Provide small quantity kits for touch-up painting and for painting other small areas. Mix only the components specified and furnished by the paint manufacturer. Do not intermix additional components for reasons of color or otherwise, even within the same generic type of coating.

3.08 PROCEDURES FOR THE APPLICATION OF COATINGS

- A. Conform to the requirements of SSPC PA-1. Follow the recommendations of the coating manufacturer including the selection of spray equipment, brushes, rollers, cleaners, thinners, mixing, drying time, temperature and humidity of application, and safety precautions.
- B. Stir, strain, and keep coating materials at a uniform consistency during application. Power mix components. For multiple component materials, premix each component before combining. Apply each coating evenly, free of brush marks, sags, runs, and other evidence of poor workmanship. Use a different shade or tint on succeeding coating applications to indicate coverage where possible. Finished surfaces shall be free from defects or blemishes.
- C. Do not use thinners unless recommended by the coating manufacturer. If thinning is allowed, do not exceed the maximum allowable amount of thinner per gallon of coating material. Stir coating materials at all times when adding thinner. Do not flood the coating material surface with thinner prior to mixing. Do not reduce coating materials more than is absolutely necessary to obtain the proper application characteristics and to obtain the specified dry-film thicknesses.

- D. Remove dust, blast particles, and other debris from blast cleaned surfaces by dusting, sweeping, and vacuuming. Allow ventilator fans to clean airborne dust to provide good visibility of working area prior to coating applications. Remove dust from coated surfaces by dusting, sweeping, and vacuuming prior to applying succeeding coats.
- E. Apply coating systems to the specified minimum dry-film thicknesses as determined per SSPC PA-2.
- F. Apply primer immediately after blast cleaning and before any surface rusting occurs, or any dust, dirt, or any foreign matter has accumulated. Reclean surfaces by blast cleaning that have surface colored or become moist prior to coating application.
- G. Apply a brush coat of primer on welds, sharp edges, nuts, bolts, and irregular surfaces prior to the application of the primer and finish coat. Apply the brush coat prior to and in conjunction with the spray coat application. Apply the spray coat over the brush coat.
- H. Before applying subsequent coats, allow the primer and intermediate coats to dry for the minimum curing time recommended by the manufacturer. In no case shall the time between coats exceed the manufacturer's recommendation.
- I. Each coat shall cover the surface of the preceding coat completely, and there shall be a visually perceptible difference in applied shade or tint of colors.
- J. Applied coating systems shall be cured at 75°F or higher for 48 hours. If temperature is lower than 75°F, curing time shall be in accordance with printed recommendations of the manufacturer, unless otherwise allowed by the Owner's Representative.
- K. Assembled parts shall be disassembled sufficiently before painting or coating to ensure complete coverage by the required coating.

3.09 SURFACES NOT TO BE COATED

Do not paint the following surfaces unless otherwise noted in the drawings or in other specification sections. Protect during the painting of adjacent areas:

- A. Concrete walkways.
- B. Mortar-coated pipe and fittings.
- C. Stainless steel.
- D. Metal letters.
- E. Glass.
- F. Roofings.
- G. Fencing.
- H. Electrical fixtures except for factory coatings.
- I. Nameplates.
- J. Grease fittings.

- K. Brass and copper, submerged.
- L. Buried pipe, unless specifically required in the piping specifications.
- M. Fiberglass items, unless specifically required in the FRP specifications.
- N. Aluminum handrail, stairs, and grating.

3.10 PROTECTION OF SURFACES NOT TO BE PAINTED

Remove, mask, or otherwise protect hardware, lighting fixtures, switch plates, aluminum surfaces, machined surfaces, couplings, shafts, bearings, nameplates on machinery, and other surfaces not intended to be painted. Provide drop cloths to prevent paint materials from falling on or marring adjacent surfaces. Protect working parts of mechanical and electrical equipment from damage during surface preparation and painting process. Mask openings in motors to prevent paint and other materials from entering the motors.

3.11 SURFACES TO BE COATED

The exact coating to be applied in any location is not designated by the descriptive phrases in the coating system titles such as "corrosive environment," "buried metal," or "submerged metal." Coat surfaces with the specific coating systems as described below:

- A. Coat mechanical equipment, such as pumps, blowers, clarifier mechanisms, as described in the various mechanical equipment specifications. Color of finish coat shall match the color of the connecting piping.
- B. Coat aboveground and exposed piping or piping in vaults and structures as described in the various piping specifications. Color of finish coat shall be as directed by the Owner's Representative.
- C. Coat valves as described in the various valve specifications. Aboveground valves, or valves in vaults and structures, shall match the color of the connecting piping.
- D. Coat buried flanges, nuts and bolts, valves, flexible pipe couplings, exposed rebar in thrust blocks, and valve boxes per System No. 21. Coat buried bolt threads, tie bolt threads, and nuts per System No. 24.
- E. Coat aboveground structural steel or structural steel located in vaults and structures as described in Section 051210. Color of finish coat shall be as directed by the Owner's Representative.

3.12 DRY-FILM THICKNESS TESTING

- A. Measure coating thickness specified for carbon steel surfaces with a magnetic-type dry-film thickness gauge in accordance with SSPC PA-2. Provide certification that the gauge has been calibrated by a certified laboratory within the past six months. Provide dry-film thickness gauge as manufactured by Mikrotest or Elcometer.
- B. Test the finish coat of metal surfaces (except zinc primer and galvanizing) for holidays and discontinuities with an electrical holiday detector, low-voltage, wet-sponge type. Provide measuring equipment. Provide certification that the gauge has been calibrated by a certified laboratory within the past six months. Provide detector as manufactured by Tinker and Rasor or K-D Bird Dog.

- C. Check each coat for the correct dry-film thickness. Do not measure within eight hours after application of the coating.
- D. For metal surfaces, make five separate spot measurements (average of three readings) spaced evenly over each 100 square feet of area (or fraction thereof) to be measured. Make three readings for each spot measurement of either the substrate or the paint. Move the probe or detector a distance of 1 to 3 inches for each new gauge reading. Discard any unusually high or low reading that cannot be repeated consistently. Take the average (mean) of the three readings as the spot measurement. The average of five spot measurements for each such 100-square-foot area shall not be less than the specified thickness. No single spot measurement in any 100-square-foot area shall be less than 80%, nor more than 120%, of the specified thickness. One of three readings which are averaged to produce each spot measurement may underrun by a greater amount as defined by SSPC PA-2.
- E. Perform tests in the presence of the Owner's Representative.

3.13 REPAIR OF IMPROPERLY COATED SURFACES

If the item has an improper finish color or insufficient film thickness, clean and topcoat the surface with the specified paint material to obtain the specified color and coverage. Sandblast or power-sand visible areas of chipped, peeled, or abraded paint, feathering the edges. Then prime and finish coat in accordance with the specifications. Work shall be free of runs, bridges, shiners, laps, or other imperfections.

3.14 CLEANING

- A. During the progress of the work, remove discarded materials, rubbish, cans, and rags at the end of each day's work.
- B. Thoroughly clean brushes and other application equipment at the end of each period of use and when changing to another paint or color.
- C. Upon completion of painting work, remove masking tape, tarps, and other protective materials, using care not to damage finished surfaces.

END OF SECTION

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SECTION 09 9754

POLYETHYLENE SHEET ENCASUREMENT (AWWA C105)

PART 1 - GENERAL

1.01 DESCRIPTION

This section includes materials and installation of a polyethylene sheet encasement for buried iron pipe, fittings, and valves.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Cold-Applied Wax Tape Coating: 099752.
- B. Trenching, Backfilling, and Compacting: 312316.
- C. General Piping Requirements: 400500.
- D. Flexible Pipe Couplings and Expansion Joints: 400722.
- E. Ductile-Iron Pipe: 402040.

1.03 SUBMITTALS

- A. Submit shop drawings in accordance with General Provisions Section 013300.
- B. Submit manufacturer's catalog literature and product data sheets describing the physical, chemical, and electrical properties of the encasement material.

PART 2 - MATERIALS

2.01 POLYETHYLENE WRAP

- A. The encasement shall consist of low-density polyethylene wrap of at least 8-mil thickness conforming to AWWA C105. Color: Black.
- B. Polyethylene encasement for ductile-iron pipe shall be supplied as a flat tube meeting the dimensions of Table 1 in AWWA C105 and shall be supplied by the ductile-iron pipe manufacturer.

2.02 PLASTIC ADHESIVE TAPE

- A. Tape shall consist of polyolefin backing and adhesive which bonds to common pipeline coatings including polyethylene.
- B. Minimum Width: 2 inches.
- C. Products: Canusa Wrapid Tape; Tapecoat 35; Polyken 934; AA Thread Seal Tape, Inc.; or equal.

PART 3 - EXECUTION

3.01 APPLICATION OF MOLDABLE MASTIC FILLER TO IRREGULAR ADJACENT SURFACES

When the adjacent joints are bell-and-spigot or mechanical joints and any associated welding specifications do not require an external full fillet weld, apply a moldable mastic filler (per Section 400500) at the step-down area prior to the application of the sheet encasement and tape.

3.02 APPLYING SHEET COATING TO BURIED PIPING AND FITTINGS

- A. Apply wrapping per AWWA C105 as modified herein.
- B. Apply a single wrapping.
- C. Install the polyethylene to completely encase the pipe and fittings to provide a watertight corrosion barrier. Continuously secure overlaps and ends of sheet and tube with polyethylene tape. Make circumferential seams with two complete wraps, with no exposed edges. Tape longitudinal seams and longitudinal overlaps, extending tape beyond and beneath circumferential seams.
- D. Wrap bell-spigot interfaces, restrained joint components, and other irregular surfaces with wax tape or moldable sealant prior to placing polyethylene encasement.
- E. Minimize voids beneath polyethylene. Place circumferential or spiral wraps of polyethylene tape at 2-foot intervals along the barrel of the pipe to minimize the space between the pipe and the polyethylene.
- F. Overlap adjoining polyethylene tube coatings a minimum of 1 foot and wrap prior to placing concrete anchors, collars, supports, or thrust blocks. Hand wrap the polyethylene sheet, apply two complete wraps with no exposed edges to provide a watertight corrosion barrier, and secure in place with 2-inch-wide plastic adhesive tape.

3.03 APPLYING SHEET COATING TO BURIED VALVES

- A. Wrap flanges and other irregular surfaces with wax tape or moldable sealant. Press tightly into place leaving no voids underneath and a smooth surface under coating for polyethylene sheet.
- B. Wrap with a flat sheet of polyethylene. Place the sheet under the valve and the flanges or joints with the connecting pipe and fold in half. Extend the sheet to the valve stem and secure the sheet in place with 2-inch-wide plastic adhesive tape. Apply a second layer and secure with tape. Make two complete wraps, with no exposed edges, to provide a watertight corrosion barrier. Secure the sheets with tape around the valve stem below the operating nut and around the barrel of the connecting pipe to prevent the entrance of water and soil. Place concrete anchor and support blocks after the wrap has been installed.

3.04 APPLYING SHEET COATING TO BURIED FLEXIBLE PIPE COUPLINGS

- A. Wrap irregular surfaces with wax tape or moldable sealant. Press tightly into place leaving no voids underneath and a smooth surface under coating for polyethylene sheet.
- B. Apply two layers or wraps around the coupling. Overlap the adjoining pipe or fitting a minimum of 1 foot and secure in place with tape. Provide sufficient slack in polyethylene to allow backfill to be placed around fitting without tearing polyethylene. Apply tape around the entire circumference of the overlapped section on the adjoining pipe or fitting in two complete wraps, with no exposed edges, to provide a watertight corrosion barrier.

3.05 REPAIR OF POLYETHYLENE MATERIAL

Repair polyethylene material that is damaged during installation. Use polyethylene sheet, place over damaged or torn area, and secure in place with 2-inch-wide plastic adhesive tape.

3.06 APPLYING SHEET COATING TO EXISTING BURIED PIPING

When connecting polyethylene-encased pipe or fittings to existing pipe, expose existing pipe, thoroughly clean the surface, and securely tape the end of the polyethylene to the existing as specified above. When the existing pipe is polyethylene encased, wrap new polyethylene encasement over the existing, with overlap of at least 2 feet. Tape securely as specified above.

3.07 BACKFILL FOR POLYETHYLENE-WRAPPED PIPE, VALVES, AND FITTINGS

Place sand backfill within 1 foot of the pipe, valves, and fittings wrapped with polyethylene encasement per Section 312316.

3.08 INSTALLATION AND REPAIR OF POLYETHYLENE AT SERVICE TAPS

- A. Wrap two or three layers of polyethylene adhesive tape completely around the pipe to cover the area where the tapping machine and chain will be mounted.
- B. Mount the tapping machine on the pipe area covered by the polyethylene tape. Then make the tap and install the corporation stop directly through the tape and polyethylene.
- C. After making the direct service connection, inspect the entire circumferential area for damage and make repairs.
- D. To minimize the possibility of dissimilar metal corrosion at service connections, wrap the corporation stop a minimum clear distance of 3 feet of copper service pipes with polyethylene or dielectric tape.

END OF SECTION

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SECTION 09 9761

FUSION-BONDED EPOXY LININGS AND COATINGS

PART 1 - GENERAL

1.01 DESCRIPTION

This section includes materials, application, and testing of one-part, fusion-bonded, heat-cured, thermosetting, 100% solids epoxy linings and coatings on steel, cast-iron, and ductile-iron equipment, for valves, flexible pipe couplings, and structural steel, and steel pipe. If a conflict exists between this Section (Section 099761) and Appendix A, the information outlined in Appendix A is to take precedence.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Painting and Coating: 099000.
- B. Flexible Pipe Couplings and Expansion Joints: 400722.

1.03 SUBMITTALS

- A. Submit shop drawings in accordance with the General Provisions and Section 013300.
- B. Submit manufacturer's catalog literature and product data sheets, describing the physical and chemical properties of the epoxy coating. Describe application and curing procedure.
- C. Submit coating application test records for measuring coating thickness and holiday detection for each item or pipe section and fitting. Describe repair procedures used.

PART 2 - MATERIALS

2.01 PIPING AND EQUIPMENT SURFACES

- A. The Contractor shall require the equipment suppliers to provide equipment that is free of salts, oil, and grease to the coating applicator.
- B. The Contractor shall require pipe suppliers to provide bare pipe that is free of salts, oil, and grease to the coating applicator.

2.02 SHOP-APPLIED EPOXY LINING AND COATING

Lining and coating shall be a 100% solids, thermosetting, fusion-bonded, dry powder epoxy resin: Scotchkote 134 or 206N, Valspar "Pipeclad 1500 Red," or equal. Epoxy lining and coating shall meet or exceed the following requirements:

Hardness (minimum)	Barcol 17 (ASTM D2583) Rockwell 50 ("M" scale)
Abrasion resistance (maximum value)	1,000 cycles: 0.05 gram removed
	5,000 cycles: 0.115 gram removed
	ASTM D1044, Tabor CS 17 wheel, 1,000-gram weight
Adhesion (minimum)	3,000 psi (Elcometer)
Tensile strength	7,300 psi (ASTM D2370)
Penetration	0 mil (ASTM G17)
Adhesion overlap shear, 1/8-inch steel panel, 0.010 glue line	4,300 psi, ASTM D1002
Impact (minimum value)	100 inch-pounds (Gardner 5/8-inch diameter tup)

2.03 FIELD-APPLIED EPOXY COATING FOR PATCHING

Use a minimum 80% solids liquid epoxy resin, such as Scotchkote 306 or 323.

2.04 PAINTING AND COATING OF GROOVED-END AND FLEXIBLE PIPE COUPLINGS

Line and coat couplings the same as the pipe. Color shall match the color of the pipe fusion epoxy coating.

PART 3 - EXECUTION

3.01 SHOP APPLICATION OF FUSION-BONDED EPOXY LINING AND COATING--GENERAL

- A. Grind surface irregularities, welds, and weld spatter smooth before applying the epoxy. The allowable grind area shall not exceed 0.25 square foot per location, and the maximum total grind area shall not exceed 1 square foot per item or piece of equipment. Do not use any item, pipe, or piece of equipment in which these requirements cannot be met.
- B. Remove surface imperfections, such as slivers, scales, burrs, weld spatter, and gouges. Grind outside sharp corners, such as the outside edges of flanges, to a minimum radius of 1/4 inch.
- C. Uniformly preheat the pipe, item, or piece of equipment prior to blast cleaning to remove moisture from the surface. The preheat shall be sufficient to ensure that the surface temperature is at least 5°F above the dew point temperature during blast cleaning and inspection.
- D. Sandblast surfaces per SSPC SP-5. Protect beveled pipe ends from the abrasive blast cleaning.
- E. Apply lining and coating by the electrostatic spray or fluidized bed process. Minimum thickness of lining or coating shall be 15 mils. Heat and cure per the epoxy manufacturer's recommendations. The heat source shall not leave a residue or contaminant on the metal surface. Do not allow oxidation of surfaces to occur prior to coating. Do not permit surfaces to flash rust before coating.

3.02 SHOP APPLICATION OF FUSION-BONDED EPOXY LINING AND COATING TO PIPE--ADDITIONAL REQUIREMENTS

- A. Apply lining and coating per AWWA C213 except as modified herein.

- B. Grind 0.020 inch (minimum) off the weld caps on the pipe weld seams before beginning the surface preparation and heating of the pipe.

3.03 SHOP APPLICATION OF FUSION-BONDED EPOXY LINING AND COATING TO JOINT AREAS OF DUCTILE-IRON AND CAST-IRON FITTINGS--ADDITIONAL REQUIREMENTS

Limit the protective coating thickness in the joints of ductile-iron and cast-iron fittings to maintain a leak-proof joint. However, the coating thickness in the joint area shall not be less than 4 mils.

3.04 QUALITY OF LINING AND COATING APPLICATIONS

The cured lining or coating shall be smooth and glossy, with no graininess or roughness. The lining or coating shall have no blisters, cracks, bubbles, underfilm voids, mechanical damage, discontinuities, or holidays.

3.05 FACTORY TESTING OF COATING--GENERAL

- A. Test linings and coatings with a low-voltage wet sponge holiday detector. Test pipe linings and coatings per AWWA C213, Section 5.3.3. If the number of holidays or pinholes is fewer than one per 20 square feet of coating surface, repair the holidays and pinholes by applying the coating manufacturer's recommended patching compound to each holiday or pinhole and retest. If the number of pinholes and holidays exceeds one per 20 square feet of coating surface, remove the entire lining or coating and recoat the item or pipe.
- B. Measure the coating thickness at three locations on each item or piece of equipment or pipe section using a coating thickness gauge calibrated at least once per eight-hour shift. Record each measured thickness value. Where individual measured thickness values are less than the specified minimum thickness, measure the coating thickness at three additional points around the defective area. The average of these measurements shall exceed the specified minimum thickness value, and no individual thickness value shall be more than 2 mils below or 3 mils above the specified minimum value. If a section of the pipe, item, or piece of equipment does not meet these criteria, remove the entire lining or coating and recoat the entire item or piece of equipment.

3.06 FACTORY INSPECTION OF LINING AND COATING OF PIPE--ADDITIONAL REQUIREMENTS

Check for coating defects on the weld seam centerlines. There shall be no porous blisters, craters, or pimples lying along the peak of the weld crown.

3.07 SHIPPING, STORAGE, AND HANDLING

- A. When loading piping, fittings, couplings, or other coated items for shipment to the project site, use spacers and other protective devices to separate pipes or other coated items to prevent damaging the coated surfaces during transit and unloading. If wood spacers are used, remove wood splinters and particles from the coated surfaces after separation. Use padded chains or ribbon binders to secure the loaded pipe or other coated items and minimize damage.
- B. Do not load or unload pipe, fittings, couplings, or other coated items by inserting forklift tines or lifting chains inside the pipe or item. Use nonmetallic slings, padded chains, or padded forklift tines to lift pipe or other coated items.
- C. Cover piping or other coated items 100% with protective coverings or tarpaulins to prevent deposition of road salts, fuel residue, and other contaminants in transit.

- D. Provide stulls, braces, and supports for piping during shipping and storage such that out-of-roundness or deflection does not exceed 0.5% of the pipe diameter.
- E. Handle piping and other coated items with care during the unloading, installation, and erection operations to minimize damage. Do not place or store pipe or other coated items on the ground or on top of other work unless ground or work is covered with a protective covering or tarpaulin. Place pipe or other coated items above the ground upon platforms, skids, or other supports.
- F. Store piping or other coated items at the site on pallets to prevent direct contact with ground or floor. Cover pipe or coated items during storage with protective coverings or tarpaulins to prevent deposition of rainwater, salt air, dirt, dust, and other contaminants.
- G. Do not allow piping or other coated items to contact metal, concrete, or other surfaces during storage, handling, or installation and erection at the site that could damage or scratch the coating.

3.08 FIELD REPAIRS

Patch scratches and damaged areas incurred while installing fusion-bonded epoxy coated items with a two-component, 80% solids (minimum), liquid epoxy resin. Wire brush or sandblast the damaged areas per SSPC SP-10. Lightly abrade or sandblast the coating or lining on the sides of the damaged area before applying the liquid epoxy coating. Apply an epoxy coating to defective linings and coatings to areas smaller than 20 square inches. Patched areas shall overlap the parent or base coating a minimum of 0.5 inch. If a defective area exceeds 20 square inches, remove the entire lining and coating and recoat the entire item or piece of equipment. Apply the liquid epoxy coating to a minimum dry-film thickness of 15 mils.

END OF SECTION

SECTION 33 1300

DISINFECTION OF PIPING AND STRUCTURES

PART 1 - GENERAL

1.01 DESCRIPTION

This section includes materials and procedures for disinfection of water mains by the continuous feed method and by the slug method and disinfection of structures. Disinfect piping in accordance with AWWA C651 and disinfect structures in accordance with AWWA C652, except as modified below.

1.02 RELATED WORK DESCRIBED ELSEWHERE

Pressure Testing of Piping: 400515.

1.03 JOB CONDITIONS

- A. Discharge of chlorinated water into watercourses or surface waters is regulated by the National Pollutant Discharge Elimination System (NPDES). Disposal of the chlorinated disinfection water and the flushing water is the Contractor's responsibility.
- B. Use potable water for chlorination.
- C. Submit request for use of water from waterlines of Owner 48 hours in advance.

PART 2 - MATERIALS

2.01 LIQUID CHLORINE

Inject with a solution feed chlorinator and a water booster pump. Follow the instructions of the chlorinator manufacturer.

2.02 CALCIUM HYPOCHLORITE (DRY)

Dissolve in water to a known concentration in a drum and pump into the pipeline at a metered rate.

2.03 SODIUM HYPOCHLORITE (SOLUTION)

Further dilute in water to desired concentration and pump into the pipeline at a metered rate.

2.04 CHLORINE RESIDUAL TEST KIT

For measuring chlorine concentration, supply and use a medium range, drop count, DPD drop dilution method kit per AWWA C651, Appendix A.1. Maintain kits in good working order available for immediate test of residuals at point of sampling.

2.05 DECHLORINATION MATERIALS

If dechlorination is required and the Contractor elects to use a means of chemical dechlorination, use one of the chemicals described in AWWA C655.

PART 3 - EXECUTION

3.01 CONTINUOUS FEED METHOD FOR PIPELINES

Introduce potable water into the pipeline at a constant measured rate. Feed the chlorine solution into the same water at a measured rate. Proportion the two rates so that the chlorine concentration in the pipeline is maintained at a minimum concentration of 25 mg/L. Check the concentration at points downstream during the filling to ascertain that sufficient chlorine is being added.

3.02 SLUG METHOD FOR PIPELINES

Introduce the water in the pipeline at a constant measured rate. At the start of the test section, feed the chlorine solution into the pipeline at a measured rate so that the chlorine concentration created in the pipeline is 100 mg/L. Feed the chlorine for a sufficient period to develop a solid column or "slug" of chlorinated water that will, as it passes along the line, expose all interior surfaces to a concentration of at least 100 mg/L for at least three hours.

3.03 DISINFECTION OF VALVES, BLIND FLANGES, AND APPURTENANCES

During the period that the chlorine solution or slug is in the section of pipeline, open and close valves to obtain a chlorine residual at hydrants and other pipeline appurtenances. Swab exposed faces of valves and blind flanges prior to bolting flanges in place with a 1% sodium hypochlorite solution.

3.04 DISINFECTION OF CONNECTIONS TO EXISTING PIPELINES

Disinfect isolation valves, pipe, and appurtenances per AWWA C651, Section 4.7. Flush with potable water until discolored water, mud, and debris are eliminated. Swab interior of pipe and fittings with a 1% sodium hypochlorite solution. After disinfection, flush with potable water again until water is free of chlorine odor.

3.05 CONFIRMATION OF RESIDUAL IN PIPING

- A. After the chlorine solution applied by the continuous feed method has been retained in the pipeline for 24 hours, confirm that a chlorine residual of 25 mg/L minimum exists along the pipeline by sampling at air valves and other points of access.
- B. With the slug method, confirm by sampling as the slug passes each access point and as it leaves the pipeline that the chlorine concentration in the slug is at least 50 mg/L.

3.06 PIPELINE FLUSHING

After confirming the chlorine residual, flush the excess chlorine solution from the pipeline until the chlorine concentration in the water leaving the pipe is within 0.5 mg/L of the replacement water.

3.07 SAMPLING AND BACTERIOLOGIC TESTING

- A. There shall be no water in trenches up to the connection for sampling. The sampling piping shall be clean, disinfected, and flushed prior to sampling.
- B. Collect two sets of samples per AWWA C651, Section 5.1, deliver to a certified laboratory within six hours of obtaining the samples, and obtain a bacteriologic quality test to demonstrate the absence of coliform organisms in each separate section of the pipeline and in each structure after chlorination and refilling. Collect at least one set of samples from every 1,200 feet of the new water main, plus one set from the end of the pipeline and at least one set from each branch. At each connection to an existing pipeline, take two additional samples.

3.08 PIPING TEST FACILITY REMOVAL

After satisfactory disinfection, disinfect and replace air valves, restore the pipe coating, and complete the pipeline where temporary disinfection or test facilities were installed.

3.09 PIPING TO BE DISINFECTED

- A. Disinfect all piping except:
 - 1. Sewers, reclaimed water, and drainage piping.
 - 2. Storm drain piping.
 - 3. Reinforced concrete and vitrified clay pipe.
- B. Disinfect (internally and externally) any piping inside the following structures:
 - 1. 2.0 Million Gallon Reservoir.

3.10 DISINFECTION OF STRUCTURES

- A. Disinfect per AWWA C652, Method 1,2, or 3 and AWWA C653.
- B. Disinfect the interior of the following structures:
 - 1. 2.0 Million Gallon Reservoir.
- C. The Owner will provide potable water at no cost to the Contractor for the first disinfection effort. If bacteriological testing shows that the first disinfection effort was not successful, the Contractor will be charged the cost of additional water at the Owner's current rates.

3.11 REPETITION OF PROCEDURE

If the initial chlorination fails to produce required residuals and bacteriologic tests, repeat the chlorination and retesting until satisfactory results are obtained.

3.12 DECHLORINATION

Dechlorinate per AWWA C655. Perform testing of residual chlorine before discharge of water into the environment.

END OF SECTION

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SECTION 40 0500

GENERAL PIPING REQUIREMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

This section describes the general requirements for selecting piping materials; selecting the associated bolts, nuts, and gaskets for flanges for the various piping services in the project; and miscellaneous piping items.

1.02 SUBMITTALS

- A. Submit shop drawings in accordance with the General Provisions and Section 013300.
- B. Submit affidavit of compliance with referenced standards (e.g., AWWA, ANSI, ASTM, etc.).
- C. Submit certified copies of mill test reports for bolts and nuts, including coatings if specified. Provide recertification by an independent domestic testing laboratory for materials originating outside of the United States.
- D. Submit manufacturer's data sheet for gaskets supplied showing dimensions and bolting recommendations.

1.03 DEFINITIONS OF BURIED AND EXPOSED PIPING

- A. Buried piping is piping buried in the soil, commencing at the wall or beneath the slab of a structure. Where a coating is specified, provide the coating up to the structure wall. Unless detailed otherwise, coating shall penetrate wall no less than 1 inch. Piping encased in concrete is considered to be buried. Do not coat encased pipe.
- B. Exposed piping is piping in any of the following conditions or locations:
 - 1. Above ground.
 - 2. Inside buildings, vaults, or other structures.
 - 3. In underground concrete trenches or galleries.

1.04 PIPING SERVICE

Piping service is determined by the fluid conveyed, regardless of the pipe designation. For example, pipes designated "Air Low Pressure," "Air High Pressure," and "Air" are all considered to be in air service.

PART 2 - MATERIALS

2.01 MATERIALS SELECTION AND ALTERNATIVE MATERIALS

The Piping Schedule in the drawings lists the material and specification for each piping service in the project. In locations where the piping material referenced on the Piping Schedule is not appropriate, the piping material is indicated in the drawings. Materials called out in the drawings shall govern over materials stated in the Piping Schedule.

2.02 THREAD FORMING FOR STAINLESS STEEL BOLTS

Form threads by means of rolling, not cutting or grinding.

2.03 BOLTS AND NUTS FOR FLANGES FOR STEEL AND DUCTILE-IRON PIPING.

- A. Bolts and nuts for Class 125 or 150 flanges (including AWWA C207, Class D) located indoors, outdoors above ground, and in vaults and structures shall be carbon steel, ASTM A307, Grade B, hot-dipped galvanized per ASTM F2329.
- B. Bolts and nuts for buried or submerged Class 125 or 150 flanges and Class 125 or 150 flanges located outdoors above ground or in vaults and structures shall be Type 316 stainless steel conforming to ASTM A193, Grade B8M for bolts and ASTM A194, Grade 8M for nuts.
- C. Hex head machine bolts for use with lugged valves shall comply with ASTM A193, Grade B7.
- D. Fit shall be Classes 2A and 2B per ASME B1.1 when connecting to cast-iron valves having body bolt holes.
- E. Bolts used in flange insulation kits shall conform to ASTM A193 (Grade B7). Nuts shall conform to ASTM A194 (Grade 2H).
- F. Provide washers for each nut. Washers shall be of the same material as the nuts.

2.04 BOLTS AND NUTS FOR FLANGES FOR FRP, PVC, CPVC, AND PVDF PIPE

- A. Bolts and nuts for flanges located indoors, outdoors above ground, and in vaults and structures shall be carbon steel, ASTM A307, Grade B, hot-dipped galvanized per ASTM F2329.
- B. Bolts for piping in sodium hypochlorite service shall be made of titanium, per ASTM F467, Grade Ti1 or Ti7. Nuts shall conform to ASTM F467, same material as the bolts.
- C. Bolts and nuts for buried and submerged flanges and flanges located outdoors above ground or in vaults and structures shall be Type 316 stainless steel conforming to ASTM A193, Grade B8M for bolts and ASTM A194, Grade 8M for nuts or Type 304 stainless steel conforming to ASTM A193, Grade B8 for bolts and ASTM A194, Grade 8 for nuts.
- D. Provide a washer under each nut and under each bolt head. Washers shall be of the same material as the nuts.

2.05 BOLTS AND NUTS FOR FLANGES FOR COPPER TUBING (SPECIFICATION SECTIONS 402020)

- A. Connect to flanged valves and fittings with bronze flanges conforming to ASME B16.24, Class 125 or Class 150, to match the connecting flange. Use solder end companion flanges.

- B. When both aboveground adjoining flanges are bronze, use bronze bolts and nuts. Bolts shall conform to ASTM F468, Grade C65100 or C63000. Nuts shall conform to ASTM F467, Grade C65100 or C63000.
- C. When only one of the aboveground adjoining flanges is bronze, use Type 316 stainless steel bolts and nuts conforming to ASTM A193 (Grade B8M) for bolts and ASTM A194 (Grade 8M) for nuts.
- D. Connect to buried ferrous flanges with flange insulation kits. Bolts used in flange insulation kits shall conform to ASTM A193, Grade B7. Nuts shall comply with ASTM A194, Grade 2H. If the adjoining buried flange is bronze, use bronze bolts and nuts as described above, without a flange insulation kit.
- E. Provide washers for each nut. Washers shall be of the same material as the nuts.

2.06 LUBRICANT FOR STAINLESS STEEL BOLTS AND NUTS

Lubricant shall be chloride free and shall be RAMCO TG-50, Anti-Seize by RAMCO, Specialty Lubricants Corporation Husky™ Lube O'Seal, or equal.

2.07 GASKETS FOR FLANGES FOR STEEL PIPING IN WATER SERVICE

Gaskets for potable water service shall be NSF 61 certified.

Gaskets for flat face and raised face flanges shall be 1/8-inch thick and shall be one of the following nonasbestos materials:

1. Aramid fiber-inserted rubber, with a Shore "A" hardness of 75 to 85. Gaskets shall be suitable for a pressure of 200 psi at a temperature of 180°F. Products: Garlock Multi-Swell 3760-U or equal.
2. PTFE with inert filler, 1/8 inch thick, bound with nitrile. Gaskets shall be suitable for a pressure of 500 psi at a temperature of 400°F. Products: Garlock Gylon Style 3505 or equal..

2.08 GASKETS FOR FLANGES FOR DUCTILE-IRON PIPING AND FITTINGS IN AIR AND WATER SERVICE

Gaskets for potable water service shall be NSF 61 certified.

Gaskets shall be full face, 1/8-inch thick, aramid fiber-inserted rubber, with a Shore "A" hardness of 75 to 85. Gaskets shall be suitable for a water pressure of 200 psi at a temperature of 180°F. Gaskets shall have "nominal" pipe size inside diameters not the inside diameters per ASME B16.21. Products: Garlock Multi-Swell 3760-U or equal..

2.09 GASKETS FOR FLANGES FOR DUCTILE-IRON PIPING AND FITTINGS IN WATER SERVICE (SPECIFICATION SECTIONS 402040)

Gaskets for potable water service shall be NSF 61 certified.

Gaskets shall be full face, 1/8-inch thick, cloth-inserted rubber, with a Shore "A" hardness of 75 to 85. Gaskets shall be suitable for a water pressure of 200 psi at a temperature of 180°F. Gaskets shall have "nominal" pipe size inside diameters not the inside diameters per ASME B16.21. Products: Products: Garlock Multi-Swell 3760-U or equal.

Acrylic or aramid fiber bound with nitrile. Products: Garlock "Bluegard," Klinger "Klingersil C4400," or equal. Gaskets shall be suitable for a pressure of 500 psi at a temperature of 400°F.

2.10 FLANGE INSULATION KITS

- A. Flange insulation kits shall consist of insulating gasket, an insulating stud sleeve for each bolt, insulating washers for each bolt, and a steel washer between each insulating washer and the nut. The sleeves shall be one piece, integral with the insulating washer. Provide double sleeve and washer sets for each bolt.
- B. Gasket material shall be phenolic, 1/8 inch thick. The flange insulating gasket shall be full diameter (full face) of the flange with a nitrile O-ring on each side of the gasket. Dielectric strength shall be not less than 500 volts per mil and a compressive strength of not less than 24,000 psi.
- C. Insulating flange bolt sleeves shall be spiral-wrapped mylar having a minimum dielectric strength of 4,000 volts per mil.
- D. Insulating flange bolt washers shall be high-strength phenolic a minimum thickness of 1/8 inch. Dielectric strength shall be not less than 500 volts per mil and a compressive strength of not less than 25,000 psi.
- E. Steel flange bolt washers for placement over the insulating washers shall be a minimum thickness of 1/8 inch and be zinc plated or stainless steel.
- F. Flange insulation kits shall be as manufactured by Advance Product Systems, PSI, Central Plastics Company, or equal.

2.11 INSULATING UNIONS

Insulating unions shall consist of a molded nylon sealing sleeve mounted in a three-piece malleable-iron (ASTM A47 or A197) body. Ends shall be threaded (ASME B1.20.1) when connecting to steel piping and copper solder joint when connecting to copper piping. Minimum working pressure shall be 150 psi. Unions shall be as manufactured by Central Plastics Company, Capital Insulation, or equal.

2.12 GASKETS FOR FLANGES FOR PVC PIPING (SPECIFICATION SECTION 402090)

Gaskets for flanged joints shall be full faced, 1/8-inch thick, having a hardness of 50 to 70 durometer A. Gasket material for other than sodium hypochlorite service shall be EPR. Gasket material for sodium hypochlorite service shall be Viton ETP.

PART 3 - EXECUTION

3.01 INSTALLING PIPE SPOOLS IN CONCRETE

Install pipes in walls and slabs before placing concrete. See Sections 033000 and 400762.

3.02 RAISED FACE AND FLAT FACE FLANGES

Where a raised face flange connects to a flat-faced flange, remove the raised face of the flange.

3.03 INSTALLING ABOVEGROUND OR EXPOSED PIPING

- A. Provide pipe hangers and supports as detailed in the drawings and as specified in Section 400764.

- B. Install pipe without springing, forcing, or stressing the pipe or any adjacent connecting valves or equipment.

3.04 INSTALLING FLANGED PIPING

- A. Set pipe with the flange bolt holes straddling the pipe horizontal and vertical centerline. Install pipe without springing, forcing, or stressing the pipe or any adjacent connecting valves or equipment. Before bolting up, align flange faces to the design plane within 1/16 inch per foot measured across any diameter. Align flange bolt holes within 1/8-inch maximum offset.
- B. Inspect each gasket to verify that it is the correct size, material, and type for the specified service and that it is clean and undamaged. Examine bolts or studs, nuts, and washers for defects such as burrs or cracks and rust and replace as needed.
- C. Clean flanges by wire brushing before installing flanged fittings. Clean flange bolts and nuts by wire brushing, lubricate carbon steel bolts with oil and graphite, and tighten nuts uniformly and progressively.
- D. Bolt lengths shall extend completely through their nuts. Any that fail to do so shall be considered acceptably engaged if the lack of complete engagement is not more than one thread.
- E. Do not use more than one gasket between contact faces in assembling a flanged joint.
- F. Tighten the bolts to the manufacturer's specifications, using the recommended cross bolt pattern in multiple steps of increasing torque, until the final torque requirements are achieved. Do not over torque.
- G. If flanges leak under pressure testing, loosen or remove the nuts and bolts, reset or replace the gasket, reinstall or retighten the bolts and nuts, and retest the joints. Joints shall be watertight.

3.05 INSTALLING BLIND FLANGES

- A. At outlets not indicated to be connected to valves or to other pipes and to complete the installed pipeline hydrostatic test, provide blind flanges with bolts, nuts, and gaskets.
- B. Coat the inside face of blind flanges per Section 099000, System No. 7.

3.06 INSTALLING GROOVED-END PIPING

- A. Install grooved-end pipe and fittings in accordance with the coupling manufacturer's recommendations and the following.
- B. Clean loose scale, rust, oil, grease, and dirt from the pipe or fitting groove before installing coupling. Apply the coupling manufacturer's gasket lubricant to the gasket exterior including lips, pipe ends, and housing interiors.
- C. Fasten coupling alternately and evenly until coupling halves are seated. Use torques as recommended by the coupling manufacturer.
- D. Provide separate hangers and supports at both sides of flexible joints; see Section 400764.

3.07 INSTALLATION OF STAINLESS STEEL BOLTS AND NUTS

Prior to assembly, coat threaded portions of stainless steel bolts and nuts with lubricant.

END OF SECTION

SECTION 40 0515

PRESSURE TESTING OF PIPING

PART 1 - GENERAL

1.01 DESCRIPTION

This section specifies the cleaning and hydrostatic and leakage testing of pressure piping for pumping stations, water treatment plants, and water distribution and transmission mains.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Disinfection of Piping and Structures: 331300.
- B. Manual, Check, and Process Valves: 400520.

1.03 SUBMITTALS

- A. Submit shop drawings in accordance with the General Provisions and Section 013300.
- B. Submit test bulkhead locations and design calculations, pipe attachment details, and methods to prevent excessive pipe wall stresses.
- C. Submit six copies of the test records to the Owner's Representative upon completion of the testing.

1.04 TEST PRESSURES

Test pressures for the various services and types of piping are shown in the subsection on "Test Pressure and Test Fluids" in Part 3.

1.05 TESTING RECORDS

Provide records of each piping installation during the testing. These records shall include:

- A. Date and times of test.
- B. Identification of process, pipeline, or pipeline section tested or retested.
- C. Identification of pipeline material.
- D. Identification of pipe specification.
- E. Test fluid.
- F. Test pressure at low point in process, pipeline, or pipeline section.
- G. Remarks: Leaks identified (type and location), types of repairs, or corrections made.
- H. Certification by Contractor that the leakage rate measured conformed to the specifications.

PART 2 - MATERIALS

2.01 VENTS AND DRAINS FOR ABOVEGROUND PIPING

Install vents on the high points of aboveground piping, whether shown in the drawings or not. Install drains on low points of aboveground piping, whether shown in the drawings or not. Provide a valve at each vent or drain point. Valves shall be 3/4 inch for piping 3 inches and larger and 1/2 inch for piping smaller than 3 inches. Valves shall be as specified in Section 400520, Type 100 or 300, unless otherwise shown in the drawings.

2.02 MANUAL AIR-RELEASE VALVES FOR BURIED PIPING

Provide temporary manual air-release valves for pipeline test. Construct the pipe outlet in the same manner as for a permanent air valve and after use, seal with a blind flange, pipe cap, or plug and coat the same as the adjacent pipe.

2.03 TEST BULKHEADS

Design and fabricate test bulkheads per Section VIII of the ASME Boiler and Pressure Vessel Code. Materials shall comply with Part UCS of said code. Design pressure shall be at least 2.0 times the specified test pressure for the section of pipe containing the bulkhead. Limit stresses to 70% of yield strength of the bulkhead material at the bulkhead design pressure. Include air-release and water drainage connections.

2.04 TESTING FLUID

- A. Testing fluid shall be water.
- B. For potable water pipelines, obtain and use only potable water for hydrostatic testing.
- C. Submit request for use of water from waterlines of Owner 48 hours in advance.
- D. The Contractor may obtain the water from the Owner at no charge.

2.05 TESTING EQUIPMENT

Provide calibrated pressure gauges, pipes, bulkheads, pumps, chart recorder, and meters to perform the hydrostatic testing.

PART 3 - EXECUTION

3.01 TESTING PREPARATION

- A. Pipes shall be in place, backfilled, and anchored before commencing pressure testing.
- B. Conduct pressure tests on exposed and aboveground piping after the piping has been installed and attached to the pipe supports, hangers, anchors, expansion joints, valves, and meters.
- C. For buried piping, the pipe may be partially backfilled and the joints left exposed for inspection during an initial leakage test. Perform the final pressure test, however, after completely backfilling and compacting the trench.
- D. Provide any temporary piping needed to carry the test fluid to the piping that is to be tested. After the test has been completed and demonstrated to comply with the specifications, disconnect and

remove temporary piping. Do not remove exposed vent and drain valves at the high and low points in the tested piping; remove any temporary buried valves and cap the associated outlets. Plug taps or connections to the existing piping from which the test fluid was obtained.

- E. Provide temporary drain lines needed to carry testing fluid away from the pipe being tested. Remove such temporary drain lines after completing the pressure testing. Drain the pipes after they have been tested.
- F. Prior to starting the test, the Contractor shall notify the Owner's Representative. Provide a 48-hour advance notice.

3.02 CLEANING

- A. Before conducting hydrostatic tests, flush pipes with water to remove dirt and debris. Maintain a flushing velocity of at least 3 fps for water testing . Flush pipes for time period as given by the formula

$$T = \frac{2L}{3}$$

in which:

T = flushing time (seconds)
L = pipe length (feet)

- B. For pipelines 24 inches or larger in diameter, acceptable alternatives to flushing are use of high-pressure water jet, sweeping, or scrubbing. Water, sediment, dirt, and foreign material accumulated during this cleaning operation shall be discharged, vacuumed, or otherwise removed from the pipe.

3.03 TESTING AND DISINFECTION SEQUENCE FOR POTABLE WATER PIPING

- A. Perform required disinfection after hydrostatic testing, except when pipeline being tested is connected to a potable waterline.
- B. Locate and install test bulkheads, valves, connections to existing pipelines, and other appurtenances in a manner to provide an air gap separation between existing potable water pipelines and the pipeline being tested. Disinfect water and pipeline being tested before hydrostatic testing when connected to a potable waterline.

3.04 INITIAL PIPELINE FILLING FOR HYDROSTATIC TESTING

Maximum rate of filling shall not cause water velocity in pipeline to exceed 1 fps. Filling may be facilitated by removing automatic air valves and releasing air manually.

3.05 TESTING NEW PIPE WHICH CONNECTS TO EXISTING PIPE

Prior to testing new pipelines that are to be connected to existing pipelines, isolate the new line from the existing line by means of test bulkheads, spectacle flanges, or blind flanges. After successfully testing the new line, remove test bulkheads or flanges and connect to the existing piping.

3.06 HYDROSTATIC TESTING OF ABOVEGROUND OR EXPOSED PIPING

- A. Open vents at high points of the piping system to purge air while filling the pipe with water. Venting during system filling may also be provided by temporarily loosening flanges.
- B. Subject the piping system to the test pressure indicated. Maintain the test pressure for a minimum of four hours. Examine joints, fittings, valves, and connections for leaks. The piping system shall show zero leakage or weeping. Correct leaks and retest until zero leakage is obtained.

3.07 HYDROSTATIC TESTING OF BURIED PIPING

- A. Where any section of the piping contains concrete thrust blocks or encasement, do not perform the pressure test until at least 10 days after placing the concrete. When testing mortar-lined or PVC piping, fill the pipe to be tested with water and allow it to soak for at least 48 hours to absorb water before conducting the pressure test.
- B. Apply and maintain the test pressure by means of a positive displacement hydraulic force pump.
- C. Maintain the test pressure for the following duration by restoring it whenever it falls an amount of 5 psi:

Pipe Diameter (inches)	Hours
18 and less	4
20 to 36	8
Greater than 36	24

- D. After the test pressure is reached, use a meter to measure the additional water added to maintain the pressure. This amount of water is the loss due to leakage in the piping system. The allowable leakage volume is defined by the formula

$$L = \frac{HND(P)^{1/2}}{C}$$

in which:

- L = allowable leakage (gallons)
- H = specified test period (hours)
- N = number of rubber-gasketed joints in the pipe tested
- D = diameter of the pipe (inches)
- P = specified test pressure (psig)
- C = 7,400

- E. The allowable leakage for buried piping having threaded, brazed, or welded (including solvent welded) joints shall be zero.
- F. Repair and retest any pipes showing leakage rates greater than that allowed in the above criteria.

3.08 REPETITION OF TEST

If the actual leakage exceeds the allowable, locate and correct the faulty work and repeat the test. Restore the work and all damage resulting from the leak and its repair. Eliminate visible leakage.

3.09 BULKHEAD AND TEST FACILITY REMOVAL

After a satisfactory test, remove the testing fluid, remove test bulkheads and other test facilities, and restore the pipe coatings.

3.10 TEST PRESSURE AND TEST FLUIDS

A. Testing and design shall be as listed below:

Pipe Service	Pipe Material	Testing Fluid	Test Pressure
Water	Steel	Water	150 PSI

END OF SECTION

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SECTION 40 0520

MANUAL, CHECK, AND PROCESS VALVES

PART 1 - GENERAL

1.01 DESCRIPTION

This section includes materials, testing, and installation of butterfly valves.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Painting and Coating: 099000.
- B. Fusion-Bonded Epoxy Linings and Coatings: 099761.
- C. General Piping Requirements: 400500.
- D. Pressure Testing of Piping: 400515.

1.03 SUBMITTALS

- A. Submit shop drawings in accordance with the General Provisions and Section 013300.
- B. Submit manufacturer's catalog data and detail construction sheets showing all valve parts. Describe each part by material of construction, specification (such as AISI, ASTM, SAE, or CDA), and grade or type.
- C. Show valve dimensions including laying lengths. Show port sizes. Show dimensions and orientation of valve actuators, as installed on the valves. Show location of internal stops for gear actuators. State differential pressure and fluid velocity used to size actuators. For worm-gear actuators, state the radius of the gear sector in contact with the worm and state the handwheel diameter.
- D. Show valve linings and coatings. Submit manufacturer's catalog data and descriptive literature.
- E. Submit six copies of a report verifying that the valve interior linings and exterior coatings have been tested for holidays and lining thickness. Describe test results and repair procedures for each valve. Do not ship valves to project site until the reports have been returned by the Owner's Representative and marked "Resubmittal not required."
- F. For butterfly valves, show the clear diameter or size of the port. Show the actual area of the port as a percentage of the area as calculated for the nominal valve size.

PART 2 - MATERIALS

2.01 GENERAL

- A. Valves are identified in the drawings by size and type number.
- B. Valves shall have the name of the manufacturer and the size of the valve cast or molded onto the valve body or bonnet or shown on a permanently attached plate.

- C. For buried locations, valves with mechanical joint ends may be substituted for the flanged ends specified provided the mechanical joint ends are compatible with the pipe ends.

2.02 BOLTS AND NUTS FOR FLANGED VALVES

Bolts and nuts for flanged valves shall be as described in Section 400500.

2.03 GASKETS FOR FLANGES

Gaskets for flanged end valves shall be as described in Section 400500.

2.04 PAINTING AND COATING

- A. Coat metal valves located above ground or in vaults and structures the same as the adjacent piping. Finish coat shall match the color of the adjacent piping. Coat handwheels the same as the valves.
- B. Coat buried metal valves at the place of manufacture per Section 099000, System No. 21.
- C. Line the interior metal parts of metal valves 4 inches and larger, excluding seating areas and bronze and stainless steel pieces, per Section 099000, System No. 7. Apply lining at the place of manufacture.
- D. Alternatively, line and coat valves with fusion-bonded epoxy per Section 099761.
- E. Test the valve interior linings and exterior coatings at the factory with a low-voltage (22.5 to 80 volts, with approximately 80,000-ohm resistance) holiday detector, using a sponge saturated with a 0.5% sodium chloride solution. The lining shall be holiday free.
- F. Measure the thickness of the valve interior linings per Section 099000. Repair areas having insufficient film thickness per Section 099000.
- G. Coate fusion epoxy coated steel pipe per Section 099761.

2.05 PACKING, O-RINGS, AND GASKETS

Unless otherwise stated in the detailed valve specifications, packing, O-rings, and gaskets shall be one of the following nonasbestos materials:

- A. Teflon.
- B. Kevlar aramid fiber.
- C. Acrylic or aramid fiber bound by nitrile. Products: Garlock "Bluegard," Klinger "Klingersil C4400," or equal.
- D. Buna-N (nitrile).

2.06 RUBBER SEATS

Rubber seats shall be made of a rubber compound that is resistant to free chlorine and monochloramine concentrations up to 10 mg/L in the fluid conveyed.

2.07 VALVES

A. Butterfly Valves:

1. Thrust Bearings for Butterfly Valves (Types 200, 205, 210, 220, 230, 240, and 260):

Provide thrust bearings to hold the valve disc in the center of the valve seat. No bearings shall be mounted inside the valve body within the waterway. Do not use thrust bearings in which a metal bearing surface on the disc rubs in contact with an opposing metal surface on the inside of the body.

2. Bronze Components in Butterfly Valves (Types 200, 210, 220, 230, and 240):

Bronze components in contact with water shall comply with the following requirements:

Constituent	Content
Zinc	7% maximum
Aluminum	2% maximum
Lead	8% maximum
Copper + Nickel + Silicon	83% minimum

3. Port Sizes for Butterfly Valves (Types 200, 205, 210, 220, and 240):

For valves 24 inches and smaller, the actual port diameter shall be at least 93% of the nominal valve size. For valves larger than 24 inches, the port diameter shall not be more than 1.25 inches smaller than the nominal valve size. The dimension of the port diameter shall be the clear waterway diameter plus the thickness of the rubber seat.

4. Corrosion-Resistant Materials in Butterfly Valves (Types 200, 210, 220, 230, and 240):

Where AWWA C504 requires "corrosion resistant" material, such material shall be one of the following:

- a. Bronze as described above.
- b. Type 304 or 316 stainless steel.
- c. Monel (UNS N04400).
- d. Synthetic nonmetallic material.

5. Seating Surfaces in Butterfly Valves (Types 200, 210, 220, and 240):

Seating surfaces shall be stainless steel or nickel-copper per AWWA C504 or nickel-chromium alloy containing a minimum of 72% nickel and a minimum of 14% chromium.

6. Factory Leakage Testing (Types 200, 205, 210, 220, and 240):

Perform factory leakage tests per AWWA C504 on both sides of the seat.

7. Type 210—Flanged, Rubber-Seated Butterfly Valves 4 Through 72 Inches, Class 75A:

Butterfly valves shall be short body, flanged type, conforming to AWWA C504, Class 75A or 75B. Minimum working differential pressure across the valve disc shall be 75 psi. Flanged ends shall be Class 125, ASME B16.1. Valve shafts shall be stub shaft or one-piece units extending completely through the valve disc. Materials of construction shall be as follows:

Component	Material	Specification
Body	ductile iron	AWWA C504
Exposed body cap screws and bolts and nuts	Stainless steel	ASTM A276, Type 304 or 316
Discs	Cast iron, ductile iron, or Ni-Resist	AWWA C504
Shafts, disc fasteners, seat retention segments, and seat fastening devices	Stainless steel	ASTM A276, Type 304 or 316
Seat material	Buna-N	—

Where the rubber seat is applied to the disc, it shall be bonded to a stainless steel seat retaining ring which is clamped to the disc by Type 304 or 316 stainless steel screw fasteners or secured to a stainless steel seat by a combination of cap screws, a serrated disc retaining ring, and molded shoulders in the seat mating with machined registers in the disc. Valves shall be Pratt, DeZurik Series BAW, M&H, Val-Matic, or equal.

3.01 VALVE SHIPMENT AND STORAGE

- A. Provide flanged openings with metal closures at least 3/16-inch thick, with elastomer gaskets and at least four full-diameter bolts. Install closures at the place of valve manufacture prior to shipping. For studded openings, use all the nuts needed for the intended service to secure closures. Alternatively, ship flanged valves 3 inches and smaller in separate sealed cartons or boxes.
- B. Provide threaded openings with steel caps or solid-shank steel plugs. Do not use nonmetallic (such as plastic) plugs or caps. Install caps or plugs at the place of valve manufacture prior to shipping. Alternatively, ship valves having threaded openings or end connections in separate sealed cartons or boxes.
- C. Store resilient seated valves in sealed polyethylene plastic enclosures with a minimum of one package of desiccant inside. Store resilient seated valves in the open or unseated position. Valves with adjustable packing glands shall have the packing gland loosened prior to storage. Inspect valves at least once per week, replace desiccant if required and repair damaged storage enclosures. Do not store valves with resilient seats near electric motors or other electrical equipment.
- D. Inspect valves on receipt for damage in shipment and conformance with quantity and description on the shipping notice and order. Unload valves carefully to the ground without dropping. Use forklifts or slings under skids. Do not lift valves with slings or chain around operating shaft, actuator, or through waterway. Lift valves with eyebolts or rods through flange holes or chain hooks at ends of valve parts.

- E. Protect the valve and actuators from weather and the accumulation of dirt, rocks, and debris. Do not expose rubber seats to sunlight or ozone for more than 30 days. Also, see the manufacturer's specific storage instructions.
- F. Make sure flange faces, joint sealing surfaces, body seats, and disc seats are clean. Check the bolting attaching the actuator to the valve for loosening in transit and handling. If loose, tighten firmly. Open and close valves having manual or power actuators to make sure the valve operates properly and that stops or limit switches are correctly set so that the valve seats fully. Close valve before installing.

3.02 FACTORY PRESSURE TESTING

- A. Hydrostatically test the valve pressure-containing parts at the factory per the valve specification or per the referenced standard. If no testing requirement is otherwise specified or described in the referenced standards, then test with water for 30 minutes minimum at a pressure of 1.5 times the rated pressure but not less than 20 psig. Test shall show zero leakage. If leaks are observed, repair the valve and retest. If dismantling is necessary to correct valve deficiencies, then provide an additional operational test and verify that the valve components function.
- B. The chloride content of liquids used to test austenitic stainless steel materials shall not exceed 50 ppm. To prevent deposition of chlorides as a result of evaporative drying, remove residual liquid from tested parts at the conclusion of the test.

3.03 INSTALLING VALVES—GENERAL

- A. Remove covers over flanged openings and plugs from threaded openings, after valves have been placed at the point to which the valves will be connected to the adjacent piping. Do not remove valves from storage cartons or boxes until they are ready to be installed.
- B. Handle valves carefully when positioning, avoiding contact or impact with other equipment, vault or building walls, or trench walls.
- C. Clean valve interiors and adjacent piping of foreign material prior to making up valve to pipe joint connection. Prepare pipe ends and install valves in accordance with the pipe manufacturer's instructions for the joint used. Do not deflect pipe-valve joint. Do not use a valve as a jack to pull pipe into alignment. The installation procedure shall not result in bending of the valve/pipe connection with pipe loading.
- D. Make sure valve ends and seats are clean. Check exposed bolting for loosening in transit and handling and tighten to manufacturer's recommendations. Open and close the valve to make sure it operates properly and that stops or limit switches are correctly set so that the vane, ball, gate, needle, diaphragm, disc, plug, or other seating element seats fully. Close the valve before installing. Check coatings for damage and repair. Handle valves carefully when positioning, avoiding contact or impact with other equipment or structures.

- E. Prior to assembly, coat threaded portions of stainless steel bolts and nuts with lubricant.

3.04 INSTALLING EXPOSED VALVES

- A. Unless otherwise indicated in the drawings, install valves in horizontal runs of pipe having centerline elevations 4 feet 6 inches or less above the floor with their operating stems vertical. Install valves in horizontal runs of pipe having centerline elevations between 4 feet 6 inches and 6 feet 9 inches above the floor with their operating stems horizontal.

- B. Install valves on vertical runs of pipe that are next to walls with their stems horizontal, away from the wall. Valves on vertical runs of pipe that are not located next to walls shall be installed with their stems horizontal, oriented to facilitate valve operation.

3.05 INSTALLING BURIED VALVES

- A. Connect the valve, coat the flanges, apply tape wrapping or polyethylene encasement, and place and compact the backfill to the height of the valve stem.
- B. Place block pads under the extension pipe to maintain the valve box vertical during backfilling and repaving and to prevent the extension pipe from contacting the valve bonnet.
- C. Mount the upper slip pipe of the extension in midposition and secure with backfill around the extension pipe. Pour the concrete ring allowing a depression so the valve box cap will be flush with the pavement surface.
- D. In streets without concrete curbs and in open areas, install the valve box as for a paved area with concrete curb except include a marker post. Cut the marker post from 4-inch by 4-inch dense structural grade Douglas fir No. 2 surfaced on four sides to a length of 5 feet. Chamfer the top. Set the post in concrete, 2 feet into the ground, away from traffic, and to the side of the pipeline. Coat with a seal and finish coat of white alkyd exterior paint. On the side facing the valve, letter in black the word "VALVE" and the distance in feet from the marker post to the valve box cap.

3.06 FIELD COATING BURIED VALVES

- A. Coat flanges of buried valves and the flanges of the adjacent piping, and the bolts and nuts of flanges and mechanical joints, per Section 099000, System No. 24.

3.07 ASSEMBLING JOINTS

- A. Bolt holes of flanged valves shall straddle the horizontal and vertical centerlines of the pipe run to which the valves are attached. Clean flanges by wire brushing before installing flanged valves. Clean flange bolts and nuts by wire brushing, lubricate threads with oil and graphite, and tighten nuts uniformly and progressively. If flanges leak under pressure testing, loosen or remove the nuts and bolts, reseal or replace the gasket, reinstall or retighten the bolts and nuts, and retest the joints. Joints shall be watertight.
- B. Clean threaded joints by wire brushing or swabbing. Apply Teflon joint compound or Teflon tape to pipe threads before installing threaded valves. Joints shall be watertight.
- C. Install lug-type valves with separate hex head machine bolts at each bolt hole and each flange (two bolts per valve bolt hole).
- D. Install grooved-end couplings for valves in accordance with Section 400500.

3.08 VALVE FIELD TESTING

- A. Test valves for leakage at the same time that the connecting pipelines are hydrostatically tested. See Section 400515 for pressure testing requirements. Protect or isolate any parts of valves, actuators, or control and instrumentation systems whose pressure rating is less than the pressure test. Valves shall show zero leakage. Repair or replace any leaking valves and retest.
- B. Operate manual valves through three full cycles of opening and closing. Valves shall operate from full open to full close without sticking or binding. Do not backfill buried valves until after

verifying that valves operate from full open to full closed. If valves stick or bind, or do not operate from full open to full closed, repair or replace the valve and repeat the tests.

END OF SECTION

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SECTION 40 0722

FLEXIBLE PIPE COUPLINGS AND EXPANSION JOINTS

PART 1 - GENERAL

1.01 DESCRIPTION

This section includes materials and installation of flexible gasketed sleeve-type compression pipe couplings for steel pipe; flexible expansion joints; and couplings for connecting different pipe materials.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Painting and Coating: 099000.
- B. Fusion-Bonded Epoxy Linings and Coatings: 099761.
- C. General Piping Requirements: 400500.
- D. Pressure Testing of Piping: 400515.
- E. Pipe Hangers and Supports: 400764.
- F. General Requirements for Steel Piping: 402001.

1.03 SUBMITTALS

- A. Submit shop drawings in accordance with the General Provisions and Section 013300.
- B. Submit manufacturer's catalog data on flexible pipe couplings, and expansion joints. Show manufacturer's model or figure number for each type of coupling or joint for each type of pipe material for which couplings and joints are used. Show coatings.
- C. Submit manufacturer's recommended torques to which the coupling bolts shall be tightened for the flexible gasketed sleeve-type compression pipe couplings.
- D. Show materials of construction by ASTM reference and grade. Show dimensions.
- E. Show number, size, and material of construction of tie rods and lugs for each thrust harness on the project.

PART 2 - MATERIALS

2.01 COUPLING SYSTEM DESIGN AND COMPONENT UNIT RESPONSIBILITY

The coupling manufacturer shall furnish the gaskets, bolts, nuts, glands, end rings, and hardware for pipe couplings of all types and shall design these components as an integral system. Design the gaskets for the coupling and appropriately size to provide a watertight seal at the design pressure and temperature. Ship gaskets, bolts, nuts, glands, end rings, and hardware for pipe couplings with the pipe coupling and clearly label indicating the origin of the material,

including place and date of manufacture. Package the manufacturer's printed installation instructions with each pipe coupling.

2.02 CARBON STEEL FLEXIBLE PIPE COUPLINGS AND FLANGED COUPLING ADAPTERS

- A. Steel couplings shall have center sleeves and end rings made of carbon steel conforming to AWWA C219, Section 4. Minimum center sleeve length shall be 5 inches for pipe sizes 3/4 inch through 4 1/2 inches, 7 inches for pipe sizes 5 inches through 24 inches, and 10 inches for pipe sizes larger than 24 inches.
- B. Sleeve bolts in exposed service shall be carbon steel per AWWA C219, Section 4. Sleeve bolts in buried or submerged service shall be Type 316 stainless steel per AWWA C219, Section 4.
- C. End rings shall be cast, forged, or hot rolled in one piece. Do not use rings fabricated from two or more shapes.
- D. Wall thickness of sleeve shall be at least that specified for the size of pipe in which the coupling is to be used.

2.03 JOINT HARNESSSES

- A. Tie bolts or studs shall be as shown in the following table. Bolt or stud material shall conform to ASTM A193, Grade B7. Nuts shall conform to ASTM A194, Grade 2H. Lug material shall conform to ASTM A36, ASTM A283, Grade B, C, or D, or ASTM A285, Grade C. Lug dimensions for steel pipe shall be as shown in AWWA Manual M11 (2004 edition), Figure 13-20, using the number and size of lugs as tabulated below.
- B. Lugs for steel pipe shall be Type P for pipes 6 through 10 inches and Type RR for pipes 12 inches and larger.

TIE BOLTS OR STUD REQUIREMENTS FOR FLEXIBLE PIPE COUPLINGS FOR STEEL PIPE				
Nominal Pipe Size (inches)	Tie Bolt or Stud Minimum Requirements			
	150 psi		300 psi	
	No. Bolts or Studs and Size (inches)	Minimum Pipe Wall Thickness (inches)	No. Bolts or Studs and Size (inches)	Minimum Pipe Wall Thickness (inches)
16	2 x 1	0.250	4 x 1 1/8	0.250
18	2 x 1 1/8	0.250	4 x 1 1/8	0.250
20	2 x 1 1/4	0.250	4 x 1 1/8	0.250
24	4 x 7/8	0.250	4 x 1 1/8	0.250

- C. Select number and size of bolts based on the test pressure shown in Section 400515. Stagger bolts equally around pipe circumference. Where odd number is tabulated, place odd bolt at top. For test pressures less than or equal to 150 psi, use the 150-psi design in the table above. For test pressures between 150 and 300 psi, use the 300-psi design in the table above.
- D. Provide washer for each nut. Washer material shall be the same as the nuts. Minimum washer thickness shall be 1/8 inch.

2.04 FLEXIBLE PIPE COUPLINGS FOR PLAIN-END STEEL PIPE

Couplings shall be steel, Dresser Style 38, Smith-Blair Type 411, Baker Series 200, or equal.

2.05 TRANSITION COUPLINGS

Couplings for connecting different pipes having different outside diameters shall be steel: Dresser Style 62 or 162, Smith-Blair Series 413, Baker Series 212 or 220, or equal. Couplings shall have an internal full circumference ring pipe stop at the midpoint of the coupling. Inside diameter of coupling pipe stop shall equal inside diameter of smaller diameter pipe.

2.06 FLANGED COUPLING ADAPTERS FOR STEEL PIPE

Adapters for steel pipe shall be steel: Dresser Style 128, Smith-Blair Type 913, or equal. Flange ends shall match the flange of the connecting pipe; see detail piping specifications.

2.07 FLANGED COUPLING ADAPTERS FOR CAST- AND DUCTILE-IRON PIPE

- A. Adapters for cast- and ductile-iron pipe 12 inches and smaller shall be cast iron: Dresser Style 127, Smith-Blair Series 912, or equal.
- B. Adapters for cast- and ductile-iron pipe larger than 12 inches shall be steel: Dresser Style 128, Smith-Blair Type 913, or equal.
- C. Flange ends shall match the flange of the connecting pipe; see detail piping specifications.

2.08 DISMANTLING JOINTS

- A. The dismantling joint shall consist of a flanged steel spigot piece, a flanged sleeve, and a follower ring containing a gasket through which the spigot piece slides into the sleeve. The joint shall accommodate up to 2 inches of longitudinal movement. The longitudinal adjustability shall be provided by a telescopic action of a flanged spigot and associated sleeve, which inserts into the spigot. A system of tie bolts or rods shall connect the end flange on the sleeve to the end flange on the spigot piece. Provide washers and nuts on the tie bolts on both sides of the sleeve and flange and the spigot end flange to allow for adjustment of the extension length for the sleeve.
- B. The minimum design pressure shall be the same as the adjacent piping. Design stresses shall not exceed 40% of the yield strength of the materials. Minimum factory test pressure shall be 150% of the design pressure.
- C. The gasket shall be compressed by a separate bolting and gland system, independent of the tie bolts. Gasket shall be EPDM.
- D. Fabrication, assembly, and erection shall comply with Section 402001.
- E. Dismantling joints shall have a spigot piece made of steel conforming to ASTM A36, A53 (Type E or S), or A283, Grade C having a minimum yield strength of 30,000 psi and a flange adapter and follower ring made of ductile iron conforming to ASTM A536, Grade 65-45-12.
- F. Sleeve and follower ring bolts shall have a minimum yield strength of 105,000 psi, a minimum tensile strength of 125,000 psi, and shall conform to ASTM A193, Grade B7.

- G. Steel flanges and gasket follower rings shall be cast, forged, or hot rolled in one piece. Do not use flanges or rings fabricated from two or more shapes. Flanges shall conform to ANSI Classes 125 and 150.
- H. Wall thickness of spigot piece and sleeve shall be at least that specified for the size of pipe in which the coupling is to be used.
- I. Flanges: See Section 402001.
- J. Manufacturers: Romac Industries Style DJ400 or equal.

2.09 TYPE 6 EXPANSION JOINTS: FLEXIBLE EXPANSION JOINTS

- A. Each flexible expansion joint shall consist of two ball joints and two expansion sleeves. Each expansion sleeve shall allow an expansion capability of at least 4 inches. Material of construction shall be ductile iron conforming to the material requirements of AWWA C153. Minimum deflection shall be 15 degrees in both vertical and horizontal planes. Minimum pressure rating of the flexible coupling joint assembly shall be 350 psi. Provide stop collars on the sleeves to restrain the lateral travel. Provide synthetic rubber gaskets in sleeves and balls. Ends of assembly shall be flanged or mechanical joint to match the connecting piping.
- B. Line flexible expansion joint assemblies with fusion bonded epoxy per Section 099761. Coat exposed assemblies the same as the lining. Color of finish coat shall match the connecting piping.
- C. Flexible expansion joints shall be EBAA Iron, Inc., "Flex-Tend"; Romac Industries "FlexiJoint"; or equal.

2.10 BOLTS AND NUTS FOR FLANGES

See Section 400500.

2.11 THREADED CAPS FOR PROTECTION OF NUTS AND BOLT THREADS

See Section 400500.

PART 3 - EXECUTION

3.01 SHIPMENT AND STORAGE OF FLEXIBLE PIPE COUPLINGS, DISMANTLING JOINTS, EXPANSION JOINTS, AND FLEXIBLE HOSE CONNECTORS

- A. Inspect on receipt for damage in shipment and conformance with quantity and description on the shipping notice and order. Unload carefully to the ground without dropping. Do not load or unload by inserting forklift tines or lifting chains inside the waterway. Use nonmetallic slings, padded chains, or padded forklift tines to lift items. Lift with eyebolts or rods through flange holes or chain hooks at ends.
- B. Protect from weather and the accumulation of dirt, rocks, and debris. Do not expose rubber seats to sunlight or ozone for more than 30 days. Also, see the manufacturer's specific storage instructions.
- C. Make sure flange faces, joint sealing surfaces, body seats, and disc seats are clean.

- D. Do not allow stainless steel couplings or other items to contact carbon steel surfaces during storage, handling, or installation and erection at the site.

3.02 INSTALLATION OF FLEXIBLE PIPE COUPLINGS, SEGMENTED SLEEVE COUPLINGS, DISMANTLING JOINTS, AND EXPANSION JOINTS

- A. Clean oil, scale, rust, and dirt from pipe ends. Clean gaskets in flexible pipe couplings before installing.
- B. Install expansion joints per manufacturer's recommendations, so that 50% of total travel is available for expansion and 50% is available for contraction.
- C. Do not spring flanges or ends of connecting piping into position. Separately work connecting piping system into position to bring the piping flanges or ends into alignment with the matching coupling flanges or joints. Do not move couplings to achieve piping alignment.
- D. Line up pipe flange bolt holes with coupling or joint flange bolt holes within 1/16 inch maximum offset from the center of the bolt hole to permit insertion of bolts without applying any external force to the piping.
- E. Flange face separation shall be within the gasket spacing $\pm 1/16$ inch. Use only one gasket per flanged connection.
- F. Lubricate bolt threads with graphite and oil prior to installation.
- G. Install threaded nut and bolt thread protection caps after completing the bolt, nut, and gasket installation. Install on exposed flexible pipe couplings, transition couplings, flanged coupling adapters, dismantling joints, and segmented restrained sleeve couplings.
- H. Thoroughly clean contact surfaces of gaskets and pipe ends of flexible pipe couplings just prior to assembly for a distance equal to center-sleeve length plus 2 inches. Install flexible pipe couplings such that the center sleeves are centered over the gap between the ends of the pipes being joined. Install centerline gaps per AWWA C219, Table 5 unless otherwise indicated. Install harnessed flexible pipe couplings in straight-run piping such that 50% of the total travel of the center sleeve or permissible centerline gap is available for expansion and 50% of the travel is available for contraction. In assembling the bolted or studded harnesses of flexible pipe couplings, tighten the nuts gradually and equally at diametrically opposite sides until snug. Do not misalign the harness bolts or studs. Tighten such that bolts or studs carry equal loads. Do not use wrenches or power fastening tools to tighten the nuts.

3.03 PAINTING AND COATING

- A. Coat buried flexible pipe couplings (including joint harness assemblies), transition couplings, segmented sleeve couplings, and flanged coupling adapters per Section 099000, System No. 21. Coat buried bolt threads, tie bolt threads, and nuts per Section 099000, System No. 24. Then wrap the couplings with wax tape with polyethylene wrap per Section 099754.
- B. Coat flexible pipe couplings (including joint harness assemblies), transition couplings, segmented sleeve couplings, and flanged coupling adapters located indoors, in vaults and structures, and above ground as specified per Spec 099000 System No.10.
- C. Line flexible pipe couplings and segmented sleeve couplings per Spec 099000 System No.7.
- A. Coat, expansion joints, located above ground or in vaults and structures per Spec 099000 System No.10.

3.04 HYDROSTATIC TESTING

Hydrostatically test flexible pipe couplings, expansion joints, segmented sleeve couplings, and expansion compensators in place with the pipe being tested. Test in accordance with Section 400515.

3.05 PIPE HANGERS AND SUPPORTS FOR EXPANSION JOINTS AND EXPANSION COMPENSATORS (TYPES 1, 2, AND 3)

- A. At each expansion compensator or bellows-type expansion joint located on horizontal piping runs, provide a pipe alignment guide within four pipe diameters of each end of the expansion joint or compensator. Provide a second pipe alignment guide within 14 pipe diameters of each end of the expansion joint or compensator.
- B. Mount pipe alignment guides on wall brackets or steel channels as manufactured by Anvil International, B-Line, or equal.

END OF SECTION

SECTION 40 0764

PIPE SUPPORTS

PART 1 - GENERAL

1.01 DESCRIPTION

This section includes materials and installation of pipe supports including accessory items, such as anchor bolts and screws.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Painting and Coating: 099000.
- B. Flexible Pipe Couplings and Expansion Joints: 400722.

1.03 SUBMITTALS

- A. Submit shop drawings in accordance with the General Provisions and Section 013300.
- B. Provide line drawings of each piping system to the scale shown in the drawings, locating each support. Identify each type of support by the manufacturer's catalog number or figure.
- C. Provide installation drawings and manufacturer's catalog information on each type of support used. Clearly indicate the actual pipe outside diameter (not just nominal pipe size) that is used for the hangers and supports.

PART 2 - MATERIALS

2.01 DESIGN CRITERIA

- A. Not all pipe supports required are shown in the drawings. Provide pipe supports for every piping system installed. Support piping by pipe support where it connects to pumps or other mechanical equipment.
- B. Pipe support components shall withstand the dead loads imposed by the weight of the pipes, fittings, and valves (all filled with water), plus valve actuators and any insulation, and shall have a minimum safety factor of five based on material ultimate strength.

2.02 HANGER AND SUPPORT SYSTEMS

- A. Pipe supports shall be as manufactured by Anvil, Unistrut, B-Line, Superstrut, or equal.
- B. Pipe supports shall comply with MSS SP-58 for the standard types referenced in the drawings. Construct special hangers and supports if detailed in the drawings. Type numbers for standard supports shall be in accordance with MSS SP-58 as listed below:

Type Number	Description	Manufacturer and Model (or Equal)
1	Adjustable steel clevis	Anvil Fig. 590 or 260, B-Line B3100 or B3102
3	Steel double-bolt pipe clamp	Anvil Fig. 295A or 295H, B-Line B3144 or B3144A
4	Steel pipe clamp (pipes smaller than 3 inches)	Anvil Fig. 212, B-Line B3140
4	Steel pipe clamp (pipes 3 inches and larger)	Anvil Fig. 216, B-Line 3142
5	Pipe hanger	B-Line B3690
6	Adjustable swivel pipe ring	Anvil Superstrut 714, Anvil Fig. 104
7	Adjustable steel band hanger	B-Line B3172
8	Extension pipe or riser clamp	Anvil Fig. 261, B-Line B3373
9	Adjustable band hanger	Anvil Fig. 97
10	Adjustable swivel ring band hanger	Anvil Fig. 70, B-Line B3170 NF
11	Split pipe ring with adjustable turnbuckle	Anvil Fig. 108, B-Line B3173
13	Steel turnbuckle	Anvil Fig. 230, B-Line B3202
14	Steel clevis	Anvil Fig. 299, B-Line B3201
15	Swivel turnbuckle	Anvil Fig. 114, B-Line B3224
16	Malleable iron socket	Anvil Fig. 110R, B-Line B3222
17	Steel weldless eye nut	B-Line B3200
18	Steel or malleable iron concrete insert	Anvil Fig. 281, Superstrut 452
19	Top beam C-clamp	Anvil Fig. 92, B-Line B3033
20	Side I-beam or channel clamp	Anvil Fig. 14 or 217
21	Center I-beam clamp	Anvil Figure 134
22	Welded attachment type	Anvil Fig. 66 B-Line B3083
23	C-clamp	Anvil Fig. 86, B-Line B3036L
24	U-bolt	Anvil Fig. 137, B-Line B3188
26	Clip	Anvil Fig. 262, B-Line B3180
28	Steel I-beam clamp with eye nut	Anvil Fig. 228
29	Steel wide flange	Anvil Fig. 228 clamp with eye nut
30	Malleable iron beam clamp with extension piece	Superstrut CM-754, B-Line B3054
31	Light welded steel bracket	Anvil Fig. 194, B-Line B3063
32	Medium welded steel bracket	Anvil Fig. 195, B-Line B3066
33	Heavy welded steel bracket	Anvil Fig. 199, B-Line B3067
34	Side beam bracket	Anvil Fig. 202, B-Line B3062
36	Pipe saddle support	Anvil Fig. 258, B-Line B3095
37	Pipe stanchion saddle	Anvil Fig. 259, B-Line B3090
38	Adjustable pipe saddle support	Anvil Fig. 264, B-Line B3089

Type Number	Description	Manufacturer and Model (or Equal)
39	Steel pipe covering	Anvil Fig. 160, 161, 162, 163, 164, or 165; Superstrut A 789; B-Line B3160/B3165
40	Insulation protection shield	Anvil Fig. 167, B-Line B3151
41	Single pipe roll	Anvil Fig. 171, B-Line B3114
43	Adjustable roller hanger with swivel	Anvil Fig. 181, B-Line B3110
44	Pipe roll, complete	Anvil Fig. 271, B-Line B3117SL

- C. Pipe supports shall be hot-dipped galvanized per ASTM A153 carbon steel (ASTM A36, A575, or A576). Bases, rollers, and anchors shall be steel as described above or may be cast iron (ASTM A48). Pipe clamps shall be steel as described above or may be malleable iron (ASTM A47).

2.03 STEEL CHANNEL FRAMING SYSTEM

- A. Steel channel frames shall be 1 5/8 inches wide by 1 5/8 or 3 1/4 inches high by 12-gauge metal thickness, unless otherwise shown in the drawings. Material shall conform to ASTM A36, A570 (Grade 33 minimum), or A653 unless stainless steel is indicated in the drawings. Stainless steel shall be Type 304. One side of the channel shall have a continuous open slot with in-turned clamping ridges. Maximum allowable stress under any combination of applied uniformly distributed loads and concentrated loads shall not exceed those recommended in the AISC or AISI. Deflection shall not exceed 1/240 of span. Use multiple back-to-back channels to achieve these criteria if single channels are not sufficient. Products: Unistrut P1000 or P5000 Series, B-Line B11 or B22 Series, or equal.
- B. Steel channels shall be hot-dipped galvanized per ASTM A153.
- C. Nuts shall be machined and case hardened. Provide rectangular nuts with the ends shaped to permit a quarter turn crosswise in the framing channel. Provide two serrated grooves in the nut to engage the in-turned edges of the channel.
- D. Pipe clamps (including attachment screws and nuts) shall be Unistrut P1100 or P2000 Series, B-Line B2000 Series, or equal. Material shall be Type 304 stainless steel.
- E. Hanger rods for trapezes shall be carbon steel (ASTM A36, A575, or A576) unless stainless steel is indicated in the drawings. Stainless steel hanger rod material shall comply with ASTM A276, Type 304.
- F. Accessory fittings and brackets shall be the same material as the channel or trapeze. Provide coating on carbon steel fittings and brackets as specified for the channels and frames.
1. Flat Plate Fittings: Unistrut P1065, P1066, P1925; Superstrut AB-206, AB-207; or equal.
 2. Post Bases: Unistrut P2072A, Superstrut AP-232, or equal.
 3. 90-Degree Brackets: Unistrut P1326, P1346; Superstrut AB-203; or equal.
 4. Rounded-End Flat Plate Fittings: Unistrut P2325, Superstrut X-240, or equal.
- G. Glass fiber reinforced composites and plastic products shall have a flame spread rating of 25 or less when tested per ASTM E84.

- H. Channel framing shall be 1 5/8 inches deep by 1 5/8 inches wide and shall be made using vinylester resin equal to Derakane 411, Ashland Hetron 922, or Reichhold Dion 9800. It shall have a nexus polyester surfacing veil over 100% of the surface which, along with a filler system, will protect against degradation from ultraviolet light. Channel shall be supplied with integral notches 1 inch on center. Notches shall be located on the interior flange to prevent slippage of pipe clamps and fittings after installation. In place of notched channel, unnotched channel may be used if the vertical channel sections supporting the horizontal piping are provided with stop lock hardware at each pipe clamp to prevent slippage. Channel framing shall be Aickinstrut G.R.P. Type V 200 series or equal.
- I. Channel framing connections shall be made with vinylester glass fiber composite nuts, bolts, all-threaded rods, channel fittings, bases, and hanger assemblies. Nuts, bolts, and rods shall be Aickinstrut 4200 series, Strut Tech PVCG, or equal. Channel fittings shall be Aickinstrut 2800 style or equal.
- J. Load-bearing pipe clamps and nonload-bearing pipe straps shall be nonmetallic and nonconductive and shall be made by the injection molding process using polyurethane base resin. Pipe clamps and straps shall be Aickinstrut 3100 series or equal.
- K. Clevis hangers shall be made with vinylester glass fiber and be Aickinstrut 1500 series or equal.

2.04 ANCHOR BOLTS AND SCREWS

Anchor bolts and screws for attaching pipe supports to floors shall be Type 316 stainless steel, ASTM A276 or F593. Nuts shall be Type 316 stainless steel, ASTM A194, Grade 8M or ASTM F594, Type 316 stainless steel.

PART 3 - EXECUTION

3.01 PIPE SUPPORT SPACING FOR SUPPORTS ON TOP OF SLABS OR GRADE

Install pipe supports on horizontal runs at the spacing shown or detailed in the drawings. Provide supports of the type shown or detailed in the drawings. If no spacings are given in the drawings or in the specifications for a particular piping system, use the following:

- A. Pipe Support Spacing for Steel and Ductile-Iron Pipe:

Pipe Size (inches)	Maximum Support Spacing (feet)
3/8 and smaller	4
1/2 through 1	6
1 1/4 through 2	8
2 1/2 and 3	10
3 1/2 and 4	10
6	12
8	12
10 and 12	14
14 and 16	16
18	16
20 through 24	18
30	18

3.02 INSTALLING PIPE SUPPORTS

- A. Provide separate supports at each valve. Provide one support around each end of the valve body or on the adjacent connecting pipe within one pipe diameter of the valve end. Provide additional supports to relieve eccentric loadings imposed by offset valve actuators.
- B. Provide separate supports at each pipe elbow, tee, or fitting. Provide separate supports on both sides of each nonrigid joint or flexible pipe coupling.
- C. Install leveling bolts beneath support baseplates. Provide 3/4-inch thick grout pad beneath each base.
- D. Install piping without springing, forcing, or stressing the pipe or any connecting valves, pumps, and other equipment to which the pipe is connected.

3.03 INSTALLING STEEL AND FRP CHANNEL FRAMES

- A. Use 1-5/8-inch-high channel frames unless 3-1/4-inch is needed to provide clearance from walls. Use multiple back-to-back channels if additional clearance is needed.
- B. Seal the ends of cut FRP channel frames with the channel manufacturer's sealant or resin.

3.04 INSTALLING NEOPRENE ISOLATING SLEEVES

Install a sleeve around each metal pipe 6 inches and smaller at the point of bearing or contact with the pipe hanger or support.

3.05 PAINTING AND COATING

- A. Grind welds of fabricated steel pipe supports smooth, prepare surface by sandblasting, and apply coating system.
- B. Paint exposed pipe supports to match the color of the adjacent wall per **Appendix A**. If the adjacent wall is not painted, paint the hangers and supports to match color code of the largest pipe on the support.

END OF SECTION

SECTION 40 2001

GENERAL REQUIREMENTS FOR STEEL PIPING

PART 1 - GENERAL

1.01 DESCRIPTION

This section includes general requirements for materials, fabrication, installation, and testing of steel pipe.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Painting and Coating: 099000.
- B. Fusion-Bonded Epoxy Linings and Coatings: 099761.
- C. General Piping Requirements: 400500.
- D. Pressure Testing of Piping: 400515.
- E. Flexible Pipe Couplings and Expansion Joints: 400722.
- F. Pipe Hangers and Supports: 400764.
- G. Fusion Epoxy- Lined and -Coated Steel Pipe: 402057.

1.03 SUBMITTALS

- A. Submit shop drawings in accordance with the General Provisions and Section 013300.
- B. Submit materials list showing material of pipe and fittings with ASTM reference and grade. Submit manufacturer's certification of compliance with referenced standards, e.g., ASTM A53, A135, and A587 and AWWA C200. Provide recertification by an independent domestic testing laboratory for materials originating outside of the United States. Show piping service (fuel oil, gasoline, water, air, etc.).
- C. For piping 6 inches and larger, submit piping layout drawings showing location and dimensions of pipe and fittings. Include laying lengths of valves, meters, in-line pumps, and other equipment determining piping dimensions. Label or number each fitting or piece of pipe and provide the following information for each item:
 - 1. Material of construction, with ASTM or API reference and grade.
 - 2. Wall thickness of steel cylinder.
 - 3. Mortar lining thickness (if pipe has been specified to have a mortar lining).
 - 4. Mortar coating thickness, where mortar coating is required.
 - 5. Paint prime coating, where prime coat is required.

6. Manufacturer's certificates of compliance with referenced pipe standards, e.g., ASTM A53, ASTM A135, API 5L, AWWA C200.
 7. Show weld sizes and dimensions of grooved-end collars, flanges, reinforcing collars, wrapper plates, and crotch plates.
- D. Submit coating application test records for field measuring paint coating thickness and holiday detection for each pipe section and fitting. Describe repair procedures used.

1.04 NDT QUALIFICATION

Personnel performing NDT shall meet the requirements of AWWA C200, Section 5 or shall be qualified as an AWS Certified Welding Inspector (CWI or SCWI) or shall hold a current AWS Radiographic Interpreter Certification.

PART 2 - MATERIALS

2.01 STEEL PIPE CYLINDERS

- A. The yield strength of the steel for pipe and fabricated fittings having grooved-end joints shall be minimum 35,000 psi.
- B. Straight runs of pipe upstream of flowmeters shall be smooth. The inside diameters of such pipes shall match the inside diameters of the flowmeters.
- C. Provide seamless pipe or pipe having straight longitudinal weld seams where pipe passes through rubber annular sealing devices. Alternatively, grind the exterior weld seams of spiral welded pipe flush with the exterior pipe surface where the pipe passes through the rubber annular sealing devices.

2.02 FITTINGS

See Section 402050.

2.03 JOINTS

- A. Where pipes connect to grooved-end butterfly valves, provide AWWA C606, Type "D" collars for use with Victaulic Style 44 couplings.
- B. Provide plain-end pipe where flexible pipe couplings are to be provided. Provide lugs for thrust harnesses where shown in the drawings, per Section 400722.
- C. Where piping connects to wall pipes, meters, valves, or other equipment, the pipe ends shall match the ends of the wall pipes, meters, valves, or equipment.

2.04 OUTLETS AND NOZZLES

- A. Outlets of size 3 inches and smaller shall be of the throdolet type, per MSS SP-97 and AWWA Manual M11 (2004 edition), Figure 13-26. Outlets shall be 3,000-pound WOG forged steel per ASTM A105 or ASTM A216, Grade WCB. Threads shall comply with ASME B1.20.1. Outlets shall be Bonney Forge Co. "Thredolet," Allied Piping Products Co. "Branchlet," or equal.
- B. Alternatively, threaded openings not less than 2 inches or more than 3 inches in nominal size shall be a flat-bottom half-coupling conforming to ASME B16.11, Class 3000 and AWWA Manual

M11 (2004 edition), Figure 13-25. Where the mounting surface is curved to a diameter of 36 inches or less, the mounting diameter shall be the same as that of the surface upon which it is to be mounted. Forge the threaded outlet and its plug from steel conforming to ASTM A105 or ASTM A181, Class 70.

- C. For outlets larger than 3 inches, use a tee with a flanged outlet.

2.05 GROOVED-END COUPLINGS

- A. Grooved-end couplings shall be ductile iron, ASTM A536, Grade 60-40-18 or 65-45-12. Gaskets shall conform to ASTM D2000 and be of the following materials:

Piping Service	Gasket Material
Water	EPDM

- B. Bolts in exposed service shall conform to ASTM A193, Grade B8M, Class 2. Bolts in buried or submerged service shall be ASTM A193, Grade B8M, Class 2.
- C. Couplings for connecting to grooved-end valves shall be Victaulic Style 44 or 77 to match the valve ends.
- D. Grooved-end adapter flanges for pipe 18 inches and smaller having a maximum test pressure of 200 psi shall comply with ASME B16.1, Class 125 dimensions. Flanges shall be Victaulic Style 741 or 742, Gustin-Bacon Figure 154, or equal.

2.06 FLANGES

- A. Forged flange material shall conform to ASTM A105, A 181, or A 182. Steel flange material shall conform to ASTM A283 (Grade C or D), A285 (Grade C), or A36.
- B. Class 150 flanges shall comply with AWWA C207, Class D or E as follows. Use welding neck flanges conforming to ASME B16.5 where connecting to wrought steel elbows and tees. Flanges shall be flat faced. Use the following pressure classes of flanges based on the specified test pressures:

Test Pressure (psi)	Pipe Size (inches)	Flange Pressure Class
175 and less	4 to 12	Class D
175 to 200	4 to 12	Class E
150 and less	14 to 144	Class D
150 to 200	14 to 144	Class E

- C. Flanges 24 inches and smaller with flat faces shall comply with AWWA C207, Class F or ASME B16.5. Flanges 30 inches through 48 inches with flat faces shall comply with AWWA C207, Class F.
- D. Provide flat-faced flanges as described above where connecting to cast-iron flanges and where otherwise indicated.
- E. Blind flanges shall comply with AWWA C207, Table 7.

2.07 BOLTS, NUTS, AND GASKETS FOR FLANGES

See Section 400500.

2.08 LUBRICANT FOR STAINLESS STEEL BOLTS AND NUTS

See Section 400500.

PART 3 - EXECUTION

3.01 FABRICATION, ASSEMBLY, AND ERECTION

- A. Beveled ends for butt-welding shall conform to ASME B16.25. Remove slag by chipping or grinding. Surfaces shall be clean of paint, oil, rust, scale, slag, and other material detrimental to welding. When welding the reverse side, chip out slag before welding.
- B. Fabrication shall comply with ASME B31.3, Chapter V. Welding procedure and performance qualifications shall be in accordance with Section IX, Articles II and III, respectively, of the ASME Boiler and Pressure Vessel Code.
- C. The minimum number of passes for welded joints shall be as follows:

Steel Cylinder Thickness (inch)	Minimum Number of Passes for Welds
Less than 0.1875	1
0.1875 through 0.25	2
Greater than 0.25	3

Welds shall be full penetration.

- D. Use the shielded metal arc welding (SMAW) submerged arc welding (SAW), gas-shielded flux-cored arc welding (FCAW), or gas-metal arc welding (GMAW) process for shop welding. Use the SMAW process for field welding.
- E. Welding preparation shall comply with ASME B31.3, paragraph 328.4. Limitations on imperfections in welds shall conform to the requirements in ASME B31.3, Table 341.3.2 and paragraph 341.4 for visual examination.
- F. Identify welds in accordance with ASME B31.3, paragraph 328.5.
- G. Clean each layer of deposited weld metal prior to depositing the next layer of weld metal, including the final pass, by a power-driven wire brush.
- H. Welding electrodes for carbon steel piping shall comply with AWS A5.1, A5.17, A5.18, A5.20, or A5.23. Carbon steel flux cored wire shall have a maximum boron content of 0.006%.

3.02 REINFORCEMENT FOR SPECIALS

See Section 402050.

3.03 SHOP TESTING OF FABRICATED OR WELDED COMPONENTS

- A. After completion of fabrication and welding in the shop and prior to the application of any lining or coating, test each component according to the referenced standards. Test fabricated fittings per AWWA C200. Test the seams in fittings that have not been previously shop hydrostatically tested by the dye penetrant method as described in ASME Boiler and Pressure Vessel Code Section VIII, Appendix 8 and Section V, Article 6. In lieu of the dye penetrant method of testing, completed fittings may be hydrostatically tested. Use the field hydrostatic test pressure or 125% of the design pressure, whichever is higher.

3.04 PRODUCT MARKING

Plainly mark each length of straight pipe and each special and fitting at the bell end to identify the design pressure or head, the steel wall thickness, the date of manufacture, and the proper location of the pipe item by reference to the layout schedule. For beveled pipe, show the degree of bevel and the point on the circumference to be laid uppermost.

3.05 INSTALLING FLANGED PIPING

See Section 400500.

3.06 INSTALLATION OF STAINLESS STEEL BOLTS AND NUTS

See Section 400500.

3.07 INSTALLING GROOVED-END PIPING

See Section 400500.

3.08 INSTALLING ABOVEGROUND OR EXPOSED PIPING

See Section 400500.

3.09 INSTALLING BURIED PIPING

- A. When installing piping in trenches, do not deviate more than 1 inch from line or 1/4 inch from grade. Measure for grade at the pipe invert.

3.10 FIELD HYDROSTATIC TESTING

Hydrostatically test pipe and fittings in the field in accordance with Section 400515. See Section 400515 for test pressures.

3.11 PAINTING AND COATING

- A. Coat pipe located above ground or in vaults and structures per 099000, System No.10.
- B. Pipe that is to be encased in concrete shall have no coating, unless shown otherwise in the drawings.
- C. Coat the ends of plain-end buried pipe where flexible pipe couplings are to be installed per Section 099000, System No. 7. Apply coating in shop.
- D. Coat submerged pipe (including bolts and nuts) per Section 099000, System No 21.

- E. The coating thickness on pipe ends having grooved-end joints (gasket seating surface and the entire groove) and on the coupling key, shoulder, gasket pocket, and bolt pad mating surfaces of the groove-end couplings shall be per 099000.
- F. Coat exposed grooved-end couplings per 099000, System No.10.
- G. Line and coat submerged grooved-end couplings per 099000, System No.7.
- H. Coat the interior metal surfaces of blind flanges per 099000, System No.7.

3.12 COATING BURIED AND SUBMERGED BOLTS, NUTS, AND TIE RODS

- A. Coat buried bolts, nuts, and tie rods per Section 099000, System No. 24.
- B. Coat submerged bolts, nuts, and tie rods per 099000, System No.7.

3.13 FIELD THICKNESS MEASUREMENT AND REPAIR OF PAINT COATINGS FOR STEEL PIPE

- A. Field repair shop applied prime coats per 099761.
- B. Test linings and coatings per ASTM G62, Method B, with a holiday detector set at 125 volts per mil coating thickness. Repair holidays and pinholes by applying the prime, intermediate, and finish coatings to each holiday or pinhole and retest.
- C. Measure the lining and coating thickness on each pipe section using a calibrated coating thickness gauge. Make five separate spot measurements (average of three readings) spaced evenly over every 15 linear feet (or fraction thereof) to be measured. Make three gauge readings for each spot measurement of either the substrate or the paint. Move the probe a distance of 1 to 3 inches for each new gauge reading. Discard any unusually high or low gauge reading that cannot be repeated consistently. Take the average (mean) of the three gauge readings as the spot measurement. The average of five spot measurements for each area shall not be less than the specified thickness. No single spot measurement in any area shall be less than 80%, or more than 120%, of the specified thickness
- D. . One of three readings that are averaged to produce each spot measurement may underrun by a greater amount. If a section of the pipe, item, or piece of equipment does not meet these criteria, remove the entire lining or coating and recoat the
- E. entire item or piece of equipment.
- F. Thickness determination shall meet the following requirements:
 1. No individual reading shall be below 75% of specified thickness.
 2. Individual spot readings (consisting of three point measurements within 3 inches of each other) shall have an average not less than 80% of specified thickness.
 3. The average of all spot readings shall be equal to or greater than nominal thickness specified.
- G. Thickness determinations shall be conducted using a Type 1 magnetic thickness gauge as described in SSPC PA2 specification.
- H. If the item has an insufficient film thickness, clean and topcoat the surface with the specified finish coatings to obtain the specified coverage. Sandblast or power-sand visible areas of

chipped, peeled, or abraded coating, feathering the edges. Then coat in accordance with the specifications. Work shall be free of runs, bridges, shiners, laps, or other imperfections.

END OF SECTION

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SECTION 40 2050

FABRICATED STEEL SPECIALS

PART 1 - GENERAL

1.01 DESCRIPTION

This section includes materials and fabrication of steel pipe specials of sizes 4 through 120 inches, in accordance with AWWA C200, C205, and C208 and the following options and restrictions, for use in manifold piping facilities, such as pumping stations, metering structures, and other piping associated with mechanical equipment.

1.02 SPECIALS

A special is defined as any piece of pipe other than a normal full-length straight section. This includes but is not limited to elbows, manhole sections, short pieces, reducers, adapter sections with special ends, sections with outlets, etc.

1.03 RELATED WORK SPECIFIED ELSEWHERE

- A. Painting and Coating: 099000.
- B. Fusion-Bonded Epoxy Linings and Coatings: 099761.
- C. General Piping Requirements: 400500.
- D. Pressure Testing of Piping: 400515.
- E. General Requirements for Steel Piping: 402001.

1.04 SUBMITTALS

- A. Submit shop drawings in accordance with the General Provisions and Section 013300.
- B. Submit drawings for fabricated steel specials showing dimensions, wall thickness, reinforcing at openings, type of coating, and lining. Label or number each special and provide the following information:
 - 1. Material of construction, with ASTM or API reference and grade.
 - 2. Paint primer coating, where primer coat is required.
 - 3. Weld sizes and dimensions of grooved-end collars, flanges, reinforcing collars, wrapper plates, and crotch plates.
- C. Submit affidavit of compliance with referenced standards (e.g., AWWA C208, ASTM A53, etc.).
- D. Submit welding procedure specifications (WPS) and procedure qualification records (PQR) for each welding process and welder qualification records (WQR) for each welder and welding operator.

- E. Submit certified original copies of mill test reports on each heat from which steel is rolled. Tests shall include physical and chemical properties. Submit certified original copies of mill test reports for flanges including details of stress relief used. Manufacturer's certificates of compliance with referenced pipe standards, e.g., ASTM A53, ASTM A135, API 5L. Provide recertification by an independent domestic testing laboratory for materials originating outside of the United States.
- F. Submit dimensional check reports on each steel pipe special after fabrication.
- G. Submit manufacturer's certificates of welding consumables used for shop and field welding.

PART 2 - MATERIALS

2.01 FITTINGS AND SPECIALS

- A. Provide fusion-bonded epoxy lined and coated for buried service.
- B. Provide fabricated or wrought steel butt-welding fittings fusion-bonded epoxy-lined and coated steel fittings for exposed service.
- C. Ends of the fittings shall be compatible with the pipe joint for the particular type of pipe to which the steel fittings or specials connect.

2.02 STEEL FITTINGS

- A. A fitting is defined as a special piece of pipe other than a normal straight section. Elbows, tees, crosses, manhole sections, reducers, and sections with outlets are fittings.
- B. Unless stated otherwise in the detailed pipe specifications, fittings shall comply with ASME B16.9 or AWWA C208, as follows:
 - 1. Specials and wrought steel butt-welded fittings 4 through 10 inches shall comply with ASME B16.9. Wall thickness shall be standard weight per ASME B36.10. Material for carbon steel fittings shall comply with ASTM A234, Grade WPB. Elbows shall be of the long-radius type unless otherwise shown in the drawings.
 - 2. For tees and crosses, comply with ASME B16.9 or AWWA C208, Figure 1 and Table 1. Minimum wall thickness for fittings 12 inches and larger shall be 0.375.
 - 3. For reducing tees, laterals, wyes, reducers, and tangent outlets, comply with AWWA C208, Section 4. Reducers complying with ASME B16.9 may also be used. Minimum wall thickness for fittings smaller than 12 inches shall be standard weight per ASME B36.10. Minimum wall thickness for fittings 12 inches and larger shall be 0.375.
 - 4. For mitered elbows 42 inches and smaller, provide a minimum radius of 2.5 times the pipe diameter (2.5D) unless otherwise indicated. Provide the number of pieces and wall thicknesses "t" as tabulated below:

Class A (degrees)	Class B (degrees)	No. of Pieces
0 to 30	0 to 22.5	2
31 to 60	22.5 to 45	3
61 to 90	45 to 67.5	4
	67.5 to 90	5

Pipe Nominal Diameter (inches)	Design Internal Pressure (psi)		
	125 or Less	More Than 125 but Less Than or equal to 200	More Than 200 but Less Than or equal to Pmax
20 and less	Class A (t = 0.375 in.)	Class A (t = 0.375 in.)	Class A (Pmax = 300 psi) (t = 0.375 in.)

- C. If no design pressure is shown in the drawings, assume the design pressure to be 25 psi less than the test pressure, with a minimum design pressure of 150 psi.
- D. Material for fabricated carbon steel fittings 12 through 30 inches in diameter shall be the same as the pipe or shall comply with ASTM A283 (Grade C or D), ASTM A285 (Grade C), ASTM A36, ASTM A572 (all grades), ASTM A1011, or ASTM A1018. Material for fabricated fittings larger than 30 inches shall be the same as the pipe or shall comply with ASTM A572 (all grades), ASTM A1011, or ASTM A1018. Carbon content: 0.25% maximum.
- E. Maximum circumferential stress at the design pressure: 40% of minimum yield stress. Minimum wall thickness of steel fittings other than mitered elbows shall be the same as the pipe of same size per ASME B36.10.

2.03 FLANGES

See Section 402001.

2.04 BOLTS, NUTS, AND GASKETS FOR FLANGES

See Section 400500.

2.05 OUTLETS AND NOZZLES IN STEEL SPECIALS

See Section 402001.

PART 3 - EXECUTION

3.01 FABRICATION, ASSEMBLY, AND ERECTION OF STEEL SPECIALS

See Section 402001.

3.02 REINFORCEMENT FOR FITTINGS 42 INCHES AND SMALLER

- A. The requirement for additional reinforcement of fabricated fittings at branches and openings shall be determined by the procedure given in ASME B31.3, paragraph 304.3 and Appendix H. If additional reinforcement is required, it shall be accomplished as described below.

B. Select the type of reinforcement for fittings with outlets from the following table:

$$R = \frac{\text{ID outlet}}{\text{ID main run} \times \sin B}$$

where B = Angle between the longitudinal axis of the main run and the branch

R	Type of Reinforcement
Maximum of 0.5	Collar
Maximum of 0.7	Wrapper Plate
No limit	Crotch Plate

When outlets are located opposite each other in a special (i.e., a cross), the limiting values of "R" shall be 0.25 and 0.35, respectively.

3.03 REINFORCEMENT FOR FITTINGS LARGER THAN 42 INCHES

A. Design and fabricate specials with outlets in accordance with the following table:

$$R = \frac{\text{ID outlet}}{\text{ID cyl.} \times \sin B}$$

Where B = Angle between the longitudinal axis of the main run and the branch

Max. R	Main Run Max. ID	Type Fabrication
0.3	No limit	Outlet reinforcing collar welded to steel cylinder. Use $F = 0.5 \times F_y$.
0.5	No limit	Outlet reinforcing collar welded to steel cylinder. Use $F = 0.4 \times F_y$.
0.7	48 inches	Steel special with rein-forcing wrapper plate. Use $F = 0.4 \times F_y$.
No limit	No limit	Steel special with crotch plate. Use $F = 0.4 \times F_y$.
Where: F = Allowable design stress F _y = Minimum yield stress of steel		

When outlets are located opposite each other in a special (i.e., a cross), the limiting values of "R" shall be 0.15, 0.25, and 0.35, respectively.

3.04 COLLAR REINFORCEMENT

A. For collar reinforcement, select an effective shoulder width "W" of a collar from the inside surface of the steel outlet to the outside edge of the collar, measured on the surface of the cylinder of the main run, such that:

$$W = (1/3 \text{ to } 1/2) \times \frac{\text{ID outlet}}{\sin B}$$

- B. For collar reinforcement of tangential outlets, use

$$\sin B = \sqrt{\frac{\text{OD outlet}}{\text{OD main run}}}$$

- C. The minimum thickness "T" of the collar is determined by:

$$T = \frac{P \times \text{ID main run} \times \text{ID outlet} \times (2 - \sin B)}{4 \times F \times W \times \sin B}$$

where:

- P = Design pressure
 F = Allowable design stress
 = 40% of minimum yield stress
 B = As in Part 2 above.

- D. Collars may be oval in shape or rectangular with rounded corners.

3.05 WRAPPER PLATE REINFORCEMENT

For a wrapper plate, use the above collar formula except that the wrapper is of thickness "T," its total width is $(2W + \text{ID outlet}/\sin B)$, and it extends entirely around the main pipe diameter portion of the steel fitting.

3.06 CROTCH PLATE REINFORCEMENT

Base crotch plate design on Swanson, H.S. et al., *Design of Wye Branches for Steel Pipes*, summarized in AWWA M11 (2004 edition), Chapter 13.

3.07 SHOP TESTING OF FABRICATED SPECIALS

See Section 402001.

3.08 HYDROSTATIC, RADIOGRAPHIC, ULTRASONIC, SOAP AND COMPRESSED AIR, LIQUID PENETRANT, AND MAGNETIC PARTICLE TEST METHODS

See Section 402001.

3.09 FIELD HYDROSTATIC TESTING

See Section 402001.

END OF SECTION

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SECTION 40 2057

FUSION EPOXY-LINED AND -COATED STEEL PIPE

PART 1 - GENERAL

1.01 DESCRIPTION

This section includes materials, fabrication, installation, and testing of fusion-bonded epoxy-lined and -coated steel pipe in potable water service having a maximum design pressure of 300 psi for manifold piping in facilities, such as pumping stations, metering structures, flow control and pressure-reducing stations, and other piping associated with mechanical equipment. Sizes are 2 through 36 inches.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Painting and Coating: 099000.
- B. Fusion-Bonded Epoxy Linings and Coatings: 099761.
- C. General Piping Requirements: 400500.
- D. Pressure Testing of Piping: 400515.
- E. Flexible Pipe Couplings and Expansion Joints: 400722.
- F. General Requirements for Steel Piping: 402001.
- G. Fabricated Steel Specials: 402050.

1.03 SUBMITTALS

Submit shop drawings in accordance with Section 402001.

PART 2 - MATERIALS

2.01 GENERAL

- A. Apply fusion-bonded epoxy lining and coating to steel pipe per AWWA C213 except as modified herein. The pipe or fitting size in inches refers to the pipe size per ASME B36.10.
- B. The Contractor shall require the pipe supplier to provide bare pipe that is free of salts, oil, and grease to the coating applicator.

2.02 STEEL PIPE CYLINDERS

- A. Steel pipe 18 inches and smaller in diameter shall be API 5L, Grade B; ASTM A53 (Type E or S), Grade B; ASTM A106, Grade B; or ASTM A135, Grade B.
- B. Steel pipe larger than 18 inches in diameter shall be API 5L, Grade B; ASTM A106, Grade B; ASTM A135, Grade B; ASTM A134; or AWWA C200 or shall comply with the requirements of

ASTM A53, Grade B. Pipe conforming to ASTM A134 or to AWWA C200 shall be made of steel conforming to ASTM A283, Grade C or D, or ASTM A285, Grade C.

- C. Pipes shall be standard weight per ASME B36.10.
- D. See Section 402001 for additional requirements.

2.03 SHOP- AND FIELD-APPLIED EPOXY COATINGS

See Section 099761.

2.04 FITTINGS

- A. A fitting is defined as a special piece of pipe other than a normal straight section. Elbows, manhole sections, reducers, and sections with outlets are fittings. See Sections 402001 and 402050.
- B. Fittings 2 through 12 inches shall be flanged, conforming to ASME B16.9 or grooved-end, steel (ASTM A53, Grade B). Material for flanged steel fittings shall conform to ASTM A234, Grade WPB. Wall thickness (except for grooved ends) shall be the same as the pipe.
- C. Grooved-end fittings smaller than 24 inches shall be square-cut grooved, flexible type, with the groove dimensions as shown in AWWA C606, Table 3. Grooved-end fittings 24 inches and larger shall have AWWA C606 Type "D" collars for use with the grooved-end couplings.

2.05 JOINTS

- A. Joints for aboveground, exposed, or submerged pipe shall be flanged or grooved end, except where flanged joints are required to connect to valves, pumps, and other equipment.
- B. Buried joints shall be plain end with flexible pipe couplings per Section 400722, except where flanged joints are required to connect to valves and other items.
- C. Grooved-end joints for pipes 20 inches and smaller shall be flexible, square-cut grooved, per AWWA C606, Table 3. Grooved-end joints for pipes 24 inches and larger shall have AWWA C606 Type "D" collars.
- D. Do not field weld to join pipe and fittings. If connections in addition to those shown in the drawings are required to field join pieces, use either flanged or grooved-end joints.
- E. See Section 402001 for additional requirements.

2.06 OUTLETS AND NOZZLES

See Section 402001.

2.07 GROOVED-END COUPLINGS

- A. See Section 402001.
- B. Couplings for pipe smaller than 24 inches shall be flexible type, square-cut grooved, per AWWA C606: Victaulic Style 77, Gustin-Bacon Figure 100, or equal. Use Victaulic Style 44 couplings, or equal, for pipe 24 inches and larger having AWWA C606 Type "D" collars.

- C. Line and coat grooved-end couplings the same as the pipe. Color shall match the color of the pipe fusion epoxy coating.

2.08 FLANGES

See Section 402001.

2.09 BOLTS AND NUTS FOR FLANGES

See Section 400500.

2.10 LUBRICANT FOR STAINLESS STEEL BOLTS

See Section 400500.

2.11 GASKETS FOR FLANGES

See Section 400500.

PART 3 - EXECUTION

3.01 FABRICATION, ASSEMBLY, AND ERECTION

See Section 402001.

3.02 REINFORCEMENT

See Section 402001.

3.03 SHOP TESTING OF FABRICATED OR WELDED COMPONENTS

See Section 402001.

3.04 SHOP APPLICATION OF FUSION EPOXY LINING AND COATING

- A. Apply lining and coating per AWWA C213 and Section 099761.

3.05 FACTORY TESTING OF LINING AND COATING

- A. Test lining and coating with a low-voltage wet sponge holiday detector in accordance with AWWA C213, Section 5.3.3 and Section 099761. If the number of holidays or pinholes exceeds one per 20 square feet for pipe smaller than 14-inch outside diameter or one per 6 linear feet of pipe length for pipe 12 inches and smaller, remove the entire pipe lining and coating and recoat the entire pipe or fitting.

3.06 QUALITY OF LINING AND COATING APPLICATION

The cured lining or coating shall be smooth and glossy, with no graininess or roughness. The lining or coating shall have no blisters, cracks, bubbles, underfilm voids, mechanical damage, discontinuities, or holidays.

3.07 SHOP REPAIR OF DEFECTIVE COATINGS AND LININGS

- A. Apply a two-part epoxy coating to defective linings and coatings to areas smaller than 20 square inches. Patched areas shall overlap the parent or base coating a minimum of 0.5 inch. If a defective area exceeds 20 square inches, remove the entire lining and coating and recoat.
- B. Prepare the defective area per SSPC SP-10 or SP-11T. Lightly abrade or sandblast the pipe coating and lining on either side of the area before applying the liquid epoxy coating. Apply the liquid epoxy coating to a minimum dry-film thickness of 20 mils.

3.08 SHIPPING, STORAGE, AND HANDLING

- A. When loading piping, fittings, couplings, or other coated items for shipment to the project site, use spacers and other protective devices to separate pipes or other coated items to prevent damaging the coated surfaces during transit and unloading. If wood spacers are used, remove wood splinters and particles from the coated surfaces after separation. Use padded chains or ribbon binders to secure the loaded pipe or other coated items and minimize damage.
- B. Do not load or unload pipe, fittings, couplings, or other coated items by inserting forklift tines or lifting chains inside the pipe or item. Use nonmetallic slings, padded chains, or padded forklift tines to lift pipe or other coated items.
- C. Cover piping or other coated items 100% with protective coverings or tarpaulins to prevent deposition of road salts, fuel residue, and other contaminants in transit.
- D. Provide stulls, braces, and supports for piping during shipping and storage such that out-of-roundness or deflection does not exceed 0.5% of the pipe diameter.
- E. Handle piping and other coated items with care during the unloading, installation, and erection operations to minimize damage. Do not place or store pipe or other coated items on the ground or on top of other work unless ground or work is covered with a protective covering or tarpaulin. Place pipe or other coated items above the ground upon platforms, skids, or other supports.
- F. Store piping or other coated items at the site on pallets to prevent direct contact with ground or floor. Cover pipe or coated items during storage with protective coverings or tarpaulins to prevent deposition of rainwater, salt air, dirt, dust, and other contaminants.
- G. Do not allow piping or other coated items to contact metal, concrete, or other surfaces during storage, handling, or installation and erection at the site that could damage or scratch the coating.

3.09 INSTALLING FLANGED PIPING

See Section 400500.

3.10 INSTALLATION OF STAINLESS STEEL BOLTS AND NUTS

See Section 400500.

3.11 INSTALLING GROOVED-END PIPING

See Section 400500.

3.12 INSTALLING ABOVEGROUND OR EXPOSED PIPING

See Section 400500.

3.13 INSTALLING BURIED PIPING

- A. Install in accordance with Sections 402001 and as follows. Inspect the interior and exterior protective coating, and repair damaged areas in the field with the coating manufacturer's field repair kit.
- B. Use only fabric straps to lift pipe; do not use chains or cables.

3.14 FIELD PRESSURE TESTING

See Section 402001.

3.15 PAINTING EXPOSED PIPING

Coat per Section 099000, System No. 10.

3.16 COATING BURIED AND SUBMERGED BOLTS, NUTS, AND TIE RODS

See Section 402001.

END OF SECTION

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**APPENDIX A – TANK NO. 3 COATING
SPECIFICATIONS FOR THE INTERIOR AND EXTERIOR
TANK PREPARED BY BAY AREA COATING, INC.**

**Rosamond Community Service District
Specification for the Coating Rehabilitation of Tank No. 3**

PART 1 – General

1.1 Location and Description of work

- A. The work is located in the Community of Rosamond, California. The work covers the rehabilitation of one 2 million gallon (MG) welded steel potable water tank. The Tank is owned and operated by Rosamond Community Service District (RCSD). The Contractor shall provide all labor, materials, equipment, and incidentals necessary to remove the existing interior coatings and repaint the interior components of Tank No. 3, including the shell, rafters, floor, ladder, overflow, interior roof plates, roof, inlet, drain piping, and all other miscellaneous steel surfaces. The interior will be coated with an NSF/UL-certified lining system, specifically designed for potable water service. The coating system used shall comply with the NSF/UL 61-600 standard for potable water contact. The entire exterior roof will be abrasive blasted and the shell and appurtenances will be overcoated. At all times, dust and fumes generated during the work shall be confined within the boundaries of the tank.

Tank No. 3

Year Built: 1990

Diameter: 115'

Shell Height: 32'

Capacity: 2.0MG

Type: AWWA D100 Welded Carbon Steel Tank

1.2 General scope of work

- A. Remove existing coating system by abrasive blasting from tank interior, including all appurtenances located in the tank, as well as the appurtenances located on the tank interior shown on the Drawings. The Contractor should expect that the entire surface under the existing coatings to be corroded or having mill scale and shall provide for such conditions, accordingly, including complete removal of such materials down to bare steel and providing "White Metal Blast Cleaning" (SSPC SP 5 White Metal Blast Cleaning) to allow for proper adhesion of the interior coating system.
- B. Provide scaffolding or other equipment needed to accomplish the Work and make the equipment available to the OWNER's inspector.

Rosamond Community Service District
Specification for the Coating Rehabilitation of Tank No. 3

- C. The district will drain the tank to the 1' level. The contractor shall be responsible for removing the remaining water and silt. The Contractor shall be responsible for removing any existing silt and water after the reservoir is drained.
- D. The Contractor shall remove the existing center roof vent and provide and install a new Center roof vent.
- E. At least two days prior to start of work, the Contractor shall arrange with the OWNER for a pre-preparation conference at the job site to ensure that all parties are familiar with the entire project, including specifications and the manufacturer's printed application instructions.
- F. Vapor space - Furnish new coating system consisting of an NSF/UL 61-600 two coat system applied in the vapor space of the tank interior, including those appurtenances located in the vapor space/above the water line.
- G. Immersion area -Furnish new coating system consisting of a NSF/UL 61-600 100% solids epoxy including any appurtenances in the immersion zone.
- H. The shell to roof interface and roof/floor support pedestals shall be caulk with Sika 1-A.
- I. The interior roof, rafters and shell shall be completely coated, tested and repaired prior to any abrasive blasting on the floor. No dust from abrasive blasting can remain on the shell prior to coating the floor.
- J. Remove interior safety climb and replace.
- K. Prepare and coat Stainless Steel ladder with same material as specified for the shell.
- L. The Contractor shall dispose of all wastes from abrasive blasting and any other wastes or debris generated during work. The Contractor shall sample, and test wastes as required by applicable regulatory agencies, and as necessary for classification of wastes prior to disposal. The Contractor shall bear all costs for waste sampling, testing, accumulation, transport, and disposal, including the cost for wastes classified as hazardous and non-hazardous.
- M. When the new interior coating has completely cured, the Contractor shall clean and disinfect the reservoir.
- N. After filling the reservoir, the OWNER shall test the reservoir water for bacteriologic and volatile organic contamination, and for aesthetic quality. The OWNER shall not accept the project until the reservoir water meets California State Water Resource Control Board

**Rosamond Community Service District
Specification for the Coating Rehabilitation of Tank No. 3**

Division of Drinking Water (DDW) and federal drinking water standards. In addition, the tank will not be accepted until the coating system is free of taste and odor associated with the coating product and does not impart any adverse aesthetic quality to OWNER's water.

- O. The OWNER shall conduct a one-year anniversary inspection, and the Contractor shall provide floor protection, lighting, and scaffolding during the inspection. The Contractor shall be present at the inspection and to disinfect the reservoir after repairs are complete.
- P. The Contractor shall remove all existing exterior coatings from the roof section and shall coat the exterior roof section with a new three coat system consisting of a high-performance epoxy and a polysiloxane finish coat.
- Q. The exterior shell, ladder, vents, piping and other appurtenances shall be prepared per this specification and overcoated with a full coat of sealing epoxy and a polysiloxane finish coat. Any bare steel areas shall be spot primed with a surface tolerant high-performance epoxy.
- R. The Contractor shall provide and install new screens for the tank vents, new gaskets for the manways and hatches.

1.3 Governing Standards

- A. The following standards (including the most recent update or version) shall govern the work unless specified otherwise in these specifications:

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Specification for the Coating Rehabilitation of Tank No. 3**

SSPC-Vol.1,	Steel Structures Painting Manual, Good Painting Practice.
SSPC-Vol.2,	Steel Structures Painting Manual, Systems and Specifications.
SSPC-SP 1	Solvent Cleaning
SSPC-SP 2	Hand Tool Cleaning
SSPC-SP 3	Power Tool Cleaning
SSPC-SP 5	White Metal Blast Cleaning
SSPC-SP Guide 11	Stripe Coating
SSPC-SP 7	Brush-Off Blast Cleaning
SSPC-SP 10	Near White Blast Cleaning
SSPC-SP 11	Power Tool Cleaning to Bare Metal
SSPC-AB 1	Mineral and Slag Abrasives
SSPC-PA 1	Shop, Field and Maintenance Painting
SSPC-PA Guide 3	Guide to Safety in Paint Application
SSPC-PA Guide 12	Lighting
SSPC-SP0-188-24	Discontinuity (Holiday) Testing of New Protective Coatings
SSPC-Guide to Vis 1-89	Visual Standard for Abrasive Blast Cleaned Steel
SSPC-V15 (3-93)	Visual Standard for Power & Hand-Tool Cleaned Steel
AWWA D102-21	Standard for Painting Steel Water-Storage Tanks
AWWA C652	Disinfection of Water Storage Facilities.
ISO-8502-3	Preparation of Steel Substrates Cleanliness (Class 2)
ASTM D4214-07	Evaluating the Degree of Chalking on Exterior Paint Films
All applicable State and Federal OSHA safety standards.	

1.4 Submittals

A. Product Data:

- a. The CONTRACTOR shall submit list of materials to be used including, but not limited to coatings, thinners, solvents, inhibitors, abrasive media, and sealants.
- b. Submit manufacturer’s current specifications, technical information, and product safety data sheets (PSDS). Acceptance of the submittal does not relieve the CONTRACTOR from the responsibility to conduct the work in strict accordance with the requirements of this Specification, or to adequately protect the environment, health and safety of all workers involved in the project including any members of the public who may be affected by the project.
- c. Submit certification from manufacturer that coating system materials provided comply with this specification.

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Specification for the Coating Rehabilitation of Tank No. 3

- d. Submit manufacturer's batch numbers and dates of manufacture for coating system materials to be provided under this contract.

- e. Submit the manufacturer's documented results for the following data for coating system materials to be provided under this contract determined in accordance with the listed ASTM standard.
 - i. Weight in pounds/gallon – ASTM D 2196.
 - ii. Specific gravity – ASTM D 1475.
 - iii. Percent solids by volume – ASTM D 2369.
 - iv. Percent solids by weight – ASTM D 2369
 - v. Air cure dry to recoat time – ASTM D 1640.
 - vi. Minimum adhesion to steel substrate – ASTM D-4541 using a type II instrument (Minimum acceptable adhesion shall be 800 p.s.i)
 - vii. Minimum adhesion between coats – ASTM D 4541.
 - viii. Letter from dehumidification manufacturer that the equipment has been properly sized as per the specification requirements
 - ix. The Contractor shall submit the NSF listing for all interior coatings
 - x. Abrasive blast media

- B. The Contractor shall include technical data documenting that the material to be provided complies with these specifications. Submittals will not be accepted until all requirements of this specification have been confirmed.

- C. The CONTRACTOR shall submit the manufacturer's recommended handling and installation instructions for the proposed paint system submittal, which shall include the following data:
 - i. Storage – including maximum and minimum storage temperatures
 - ii. Surface preparation
 - iii. Coating repair
 - iv. Application equipment
 - v. Mixing and application of coating system – including a table of minimum and maximum time to re-coat as a function of temperature.
 - vi. Curing – including curing time required before holiday testing, and curing time required before immersion as function of temperature and coating thickness. Minimum and maximum re-coat times
 - vii. Ventilation and Containment System
 - viii. Acceptable temperature range at the time of application

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- D. CONTRACTOR shall submit the manufacturer's batch numbers and dates of manufacture for materials to be furnished as part of this project and keep a log of all batch numbers and dates for each product used.
- E. Dehumidification and ventilation operation:
- a. Submit details of dehumidification and ventilation operation showing all equipment and materials to be used. Submittals shall clearly show compliance with all requirements specified. Submit a letter of compliance from the manufacturer that the dehumidification equipment to be used is properly sized for this project.
- F. Heater equipment and containment:
- a. Submittal shall consist of all heating equipment CONTRACTOR intends to use with accompanying secondary containment for all fuels.
 - b. Necessary fire prevention equipment in accordance with all OSHA rules and regulations. Contractors shall have equipment on site at all times.
- G. Coating Equipment Submittal:
- a. Details of vacuum system for removing dust and abrasive from abrasive blast cleaned surfaces. Include:
 - i. Maximum cfm withdrawal rate,
 - ii. Operating pressure and size of airline.
 - iii. Submit for one-or two-operator systems.
 - b. The manufacturer's latest written operation instructions include recommendations for air filter maintenance and change interval for air compressors used for work.
 - c. Submit plural component pump type and equipment with the name of individuals who will operate the plural component pump for the duration for the job and their certification by the pump manufacturer to operate the specific equipment for this project.
- H. Report Submittal:
- a. Actual weight of blast cleaning abrasive used for field abrasive blast cleaning, submitted within 24 hours after blasting is completed.

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- b. Quantity of coating material used for each coat, submitted within 24 hours after completion of each coat.
 - c. Name of laboratories proposed to be used to test waste and reservoirs water prior to testing any materials.
 - d. Laboratory test results for representative waste samples prior to removing any waste materials from the job site. At a minimum, the samples shall be tested for total concentrations of the 17 metals identified in Title 22, for comparison to Total Threshold Limit Concentrations (TTLC) values. The California Waste Extraction Test (WET) shall be performed for each analyte of each sample for which the total concentration exceeds 10 times the STLC value, if any, as specified in Title 22. Toxic Characteristic Leaching Procedure (TCLP) testing shall be performed for each analyte of each sample for which the total concentration exceeds 20 times the TCLP values, if any, specified in the Federal Resource Conservation and Recovery Act. Reactivity, corrosively, and Ignitability testing shall be performed as required by Title 22 and/or the OWNER or representative of the disposal facility.
 - e. Receipts from disposal site for all waste. Receipts shall identify disposed material and source, show quantity of disposed material in tons or cubic yards, and show method used for final disposition as buried, incinerated, and chemically treated and/or other means.
 - f. Quantity of thinner used for each coat and total amount used.
- I. The Contractor shall include the following data in the disposal plan submittal:
- a. Certification that the materials disposal plan complies with all applicable requirements of the Federal Resource Conservation and Recovery Act; Title 22 and Title 26 of the California Administrative Code; and other applicable regulations of local, state and federal agencies having jurisdiction over the disposal of spent abrasive blast media, removed coating materials, and other waste, whether hazardous or non-hazardous.
 - b. The name and Environmental Laboratory Accreditation Program Certificate number of laboratories that will sample and test spent abrasive blast media and removed coating materials. Include statement of the laboratory's certified testing areas and analyses that the laboratory is qualified to perform.
 - c. Written permission to dispose of material from disposal site representative. Include name, address, and telephone number of disposal site and of representative.

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- d. The OWNER shall provide written acceptance of the disposal plan prior to disposal of any wastes.

- g. The Contractor shall have a current California C-33 license. The Contractor shall submit five projects within the last two years using plural component equipment and NSF-61 100% solids epoxy on the interior of potable water storage tanks. The information shall include Name of project, size of project, name and phone number of owner or Engineer.

1.5 Quality Control:

- A. Quality control procedures and practices shall be used to monitor all phases of surface preparation, application, and inspection throughout the duration of the Work. Procedures or practices not specifically defined herein may be used, provided they meet recognized and acceptable professional standards and are approved by the ENGINEER.

- B. All materials furnished, and all work accomplished shall be subject to inspection by the ENGINEER. The CONTRACTOR shall be held strictly to the true intent of the Specifications in regard to quality of materials, workmanship, and diligent execution of the specification.

- C. Workmanship: Conform to standards and recommendations of SSPC Vol. 1, especially Chapters 5.1 and 6.

- D. Job-site conference:
 - a. Arrange a job-site conference prior to work under this Section with the coating applicator, coating supplier, dehumidification supplier, and the ENGINEER to review specification requirements and job-site conditions
 - b. Give the ENGINEER two work weeks minimum notification of the meeting

- E. Testing:
 - c. Magnification: The Engineer may use magnification in the inspection of surface preparation and coatings.

 - d. Ultraviolet light: The Engineer may use ultraviolet (black) light in the inspection of surface preparation.

 - e. Testing of coating: The Engineer may, in the event of disagreement about coating application, coating curing or coating failures, use destructive test instruments to evaluate the condition of the coating. The Contractor shall repair the coating at the areas of destructive testing.

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- f. The Coating Inspector shall examine all materials, tools, and equipment to be used in the blasting and coating operations and shall have the authority to direct the Contractor to remove, replace, or repair any materials, tools, or equipment found not to be in conformance with the Contract Documents including the approved shop drawings and manufacturer's recommendations. The Contractor shall be fully responsible for compliance with all safety measures, hazardous and toxic materials regulations, and site security. The observation of or failure to observe any safety efforts of the Contractor by the Inspector shall not relieve the Contractor of this responsibility nor shall any liability transfer from the Contractor to the OWNER or the Inspector. The Contractor shall indemnify, defend, and save harmless the OWNER and the coating Inspector from all liability associated therewith.

F. Coating inspector Authority:

- g. The Coating Inspector shall have authority to direct the Contractor to suspend operations when environmental conditions fall outside the manufacturer's recommended parameters.
- h. The Contractor shall comply with directions and shall not proceed until the Coating Inspector determines environmental conditions are sufficient to proceed. Failure to suspend coating operations as directed or restarting work without the direction of the Coating Inspector shall be cause for rejection of work so performed.
- i. The Contractor shall immediately remove and replace all such work in accordance with these Project Special Provisions and directions of the Coating Inspector.
- j. No additional compensation will be allowed for work resulting from failure to comply with the tank inspector or for surfaces not otherwise conforming to the provisions of these Project Special Provisions.

G. Inspection Assistance:

- k. The Contractor shall afford the Coating inspector all reasonable facilities and assistance in monitoring the coating operations.
- l. The Contractor shall provide weekly copies of their daily work reports to the Coating Inspector. Such reports shall include, but not be limited to, the day and date of work performed, the relevant weather conditions, the type and amount

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of work performed, all work related to the safety of the operation, and personnel assigned to work actually performed.

- m. To facilitate adequate inspection of all surfaces, the Contractor shall provide scaffolding necessary for the Coating Inspector to perform visual blast inspection, dry film thickness readings, and visual holiday inspection as required by these specifications and reference standards. The Contractor shall provide personnel to move scaffolding at the instructions of the Coating Inspector.

H. Acceptability for Paint Application:

- n. The SSPC-Vis1 pictorial surface standards along with dry film and wet film thickness gauges will be used by the Coating Inspector to determine acceptability of the paint application.
- o. The Contractor shall provide necessary testing equipment to perform the above-mentioned tests.

I. Materials handling and use:

- p. Coating materials shall be labeled and used in accordance with SSPC-PA 1, Paragraphs 5.1.1 through 5.1.5.
- q. Except: All coating system materials shall be delivered and used within six months of the original date of manufacture.
- r. Except: Certification, from any source, that coating system materials are still suitable for use beyond the stated shelf life or beyond the six-month period specified in 1.a. above will not be accepted.

1.6 Delivery, Storage and Handling:

A. The contractor shall deliver the materials as follows:

- a. Deliver abrasive grit in moisture-proof bags or airtight bulk containers.
- b. Delivery of coating system materials shall be in original, unopened containers with seals unbroken and labels intact. Labels shall identify type of material, color, and batch number. No material shall exceed six months from the original batch manufacturing date (No exceptions).

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- B. The contractor shall store the material as follows:
 - c. Store materials in a single, approved location.
 - d. Store coating materials in enclosed, secure, and ventilated structures, and maintain temperature inside the structure within the temperature range recommended by the manufacturer.
 - e. Keep storage location clean, neat, and free of fire hazards.
 - f. All operating equipment shall be placed into secondary containment to prevent accidental spills.

- C. The contractor shall handle materials as follows:
 - g. Avoid spilling thinners, solvents, paint products or other materials that contain toxic substances. All compressors and operating equipment shall be placed in secondary containment. All sewer or site drains shall be covered.
 - h. Remove discarded thinners, solvents, and paint products from the jobsite daily.

1.7 Safety:

- A. The Contractor shall provide a safe work environment at all times. In the event the Coating Inspector notes any safety deficiencies, the Contractor shall immediately rectify noted deficiencies.

- B. The Contractor shall be fully responsible for compliance with all safety measures, hazardous and toxic materials regulations, and site security. Observation of or failure to observe any safety deficiencies of the Contractor by the Coating Inspector shall not relieve the Contractor of this responsibility nor shall any liability transfer from the Contractor to the OWNER or the Coating Inspector.

- C. The Contractor shall save harmless the OWNER and the Coating Inspector from all liability associated therewith.

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- D. The Contractor shall comply with all Federal, State, and Local applicable safety regulations and requirements. All scaffolding shall be equipped with interior stairways. No exterior ladders will be allowed on scaffolding.
- E. The CONTRACTOR shall provide and require use of personal protective life saving equipment for all persons working in or about the project site.
- F. Access Facilities: all ladders, scaffolding and rigging shall be designed for their intended uses. Ladders and scaffolding shall be erected where requested by ENGINEER to facilitate inspection and be moved by the CONTRACTOR to locations requested by the ENGINEER.
- G. This project is subject to all applicable Safety and Health regulations and Industry Safety Standards.
- H. The Contractor shall submit a notarized letter signed by a principal officer certifying the Contractor fully complies with the California Code of Safety Regulations and the Federal Code of Regulations pertaining to the scope of this project, but not limited to the following, as well as any other applicable orders, codes, ordinances, laws, State, Federal, and Local. (GISO-General Industry Safety Orders, CSO-Construction Safety Orders, CFR-Code of Federal Regulations).

Title	Code Regulation	Section
Illness Injury Prevention Program	CSO/GISO	1508-3203
Hazard Communication	GISO	5194
Safety Instructions for Employees	CSO	1510
Dust, Fumes, Mist, Vapors, and Gases	CSO	1528
Metal Scaffolding	CSO	1644
General Industry Standards	29 CFR	1910.1025
Respiratory Protection	CSO/GISO	1531-5144

- I. The Contractor shall exercise extreme care when handling or disposing of materials or substances listed in Section 8-339 of Division 4 (California Code of Occupational Safety and Health Regulations) of Title 26 (Toxics) of the California Code of Regulations, or as evidenced by the M.S.D.S.
- J. The Contractor shall immediately notify the OWNER's Engineer of any spill of material that is a hazardous substance in accordance with the appropriate jurisdiction.

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1.8 Existing Interior Coatings:

- A. The OWNER assumes the existing coating system (Epoxy) is the original coating system provided at the time of tank erection and fabrication.
- B. The Contractor shall bear all costs associated with shipping, handling, storing, testing, transport, and disposal of all waste. It shall be the Contractors responsibility to estimate the quantity and classification of waste associated with work.

1.9 Warranty:

- A. Anniversary inspection requirements and failure criteria shall be in accordance with AWWA D-102, Section 9, except as modified herein. The total warranty period shall be two years from the final acceptance date.
- B. The OWNER will conduct a first anniversary warranty inspection approximately one year following final acceptance of the work, including inspection of the interior of the tank. The OWNER will establish the date of the inspection and will notify the Contractor at least thirty (30) calendar days in advance of the inspection.
- C. Failure:
 - a. Failure criteria shall be in accordance with AWWA D102-21, Section 5, except as modified herein.
 - b. All surfaces of the coating systems shall be visually inspected. All defective coatings, as well as damage or rusting spots of the tank, shall be satisfactorily repaired by and at the sole expense of the CONTRACTOR.
 - c. Defective coating shall be any of those defined by SSPC's Visual Comparison Manual
 - d. OWNER shall consider photographs or reports of the coating imperfections or failures as acceptable evidence of failure.
 - e. Any location where coating is defined as defective shall be considered to be a failure of the system at that location. The CONTRACTOR shall make repairs at all points where failures are observed by removing the deteriorated coating, cleaning the surface, and recoating with the same system specified herein. Any spot repairs to defective areas will require feathering at least 3 inches into sound adjacent coating. Repaired spots shall be demarcated by masking.

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D. Remedial Work:

- a. Repair all failures by removing the deteriorated coating, cleaning the surface, and recoating with the same system in accordance with this Section.
- b. The Contractor shall be liable for all remedial work including repair of all failures by removing the deteriorated coating, cleaning the surface, and recoating with the same system in accordance with this Section.
- c. The OWNER may allow surface preparation of small failures (areas less than 1 sq ft.) by cleaning to bare metal in accordance with appropriate SSPC-SP standards; however, the method of repair is at the sole discretion of the OWNER.

E. Extensive Failure:

- d. If the area of failure exceeds 25 percent of the area of a portion of the reservoir surface, then that portion shall be recoated in accordance with this Section, including dehumidification for failed interior surfaces.
- e. For determining the need for complete recoating, the following shall each be considered a separate portion:
 - i. Roof and rafters
 - ii. Shell (including columns and appurtenances)
 - iii. Floor

F. Schedule of Remedial Work:

G. The OWNER will establish a starting date and a reasonable time of completion for remedial work.

- a. Upon failure of the CONTRACTOR to commence remedial work within ten calendar days after the starting date established by the OWNER, the OWNER may at its option, retain another CONTRACTOR to perform the remedial work. The CONTRACTOR shall be liable for the actual cost of all such remedial work plus a 20 percent OWNER administrative cost.

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- b. The CONTRACTOR shall bear the expense of all warranty inspections of the remedial work required by the OWNER. The CONTRACTOR shall clean and wash down the tank after the inspection and repairs. The CONTRACTOR shall be responsible for disinfection after repair work is complete.

H. Extended warranty:

- a. All remedial work performed shall be guaranteed under the terms of the General Conditions for defects of material and workmanship for two years from completion of the remedial work.

- b. The OWNER may conduct a first anniversary warranty inspection of remedial work and require repair of failures under the terms of this Article.

- i. Cost of Inspection

- I. The first anniversary warranty inspection will be at the expense of the CONTRACTOR, including the labor and materials which the CONTRACTOR is responsible for furnishing and installing as specified herein

- J. Warranty inspections of remedial work shall be at the expense of the CONTRACTOR; this shall include but not be limited to expenses related to repair work and providing all necessary access for the OWNER to review the warranty repairs.

- K. Requirements for the warranty inspection of remedial work shall be the same as the first anniversary warranty inspection

PART 2 – Products

Products for Interior Coating System Materials

2.1 Abrasives

- A. Abrasive grit for field abrasive blast cleaning:

- a. Conform to SSPC-AB 1. Type I or Type II, Class A.
 - b. Angular and properly graded to produce the specified profile.
 - c. New, clean and free of contaminants, and containing no hazardous materials.
 - d. Conform to all applicable requirements of the local Air Quality Management District.

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- e. Do not use silica sand, recycled glass or nickel slag.

- B. Surface preparation will be based upon comparison with: "Pictorial Surface Preparation Standards for Painting Steel Surfaces," SSPC-Vis 1 and/or SSPC-Vis 3 as described herein. The anchor profile for prepared surfaces shall be measured by using a nondestructive instrument such as a Testex Press-0-Film System in accordance with ASTM D4417 Method C. Temperature and dewpoint requirements noted above and herein shall apply to all surface preparation operations, except low and high temperature limits. The CONTRACTOR shall use abrasive grit for field blast cleaning conforming to the following:

- C. Produce a sharp and angular surface profile of 3.0 to 4.0 mils for the floor, shell, roof supports, ladder, and overflow.

- D. Produce a sharp and angular surface profile of 1.5 to 2.5 mils above the overflow/vapor space

- E. New, clean and free of contaminants, and containing no hazardous materials. Certified by California Air Resources Board, Executive Order G-23-231

- F. Conform to all applicable requirements of the Local Air Quality District.

- G. Kleen blast or approved equal

2.2 Thinner and Solvents:

- A. Use of thinners and solvents shall be permitted for cleaning only.

- B. Products shall be as specified in the coating system manufacturer's technical data. No substitutions shall be permitted

2.3 Coating System:

- A. General:
 - a. Materials for immersed surfaces of the tank must appear on the current National Sanitation Foundation (ANSI/NSF) Standard 61-2024, They shall conform to the regulations and applicable requirements of local, state, and federal air pollution and health regulatory agencies.

 - b. All products of the coating system shall be of the same manufacturer.

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- c. The coating system for the vapor zone shall be consistent with the minimum requirements of the AWWA Standard D102-21 Inside Coating System No. (ICS 1).
- d. The Contractor shall provide the following new interior coating systems consisting of a thin film epoxy on the rafters, roof plates, and down 6" the shell. Sherwin Williams Sherplate 600 or Tnemec Series 21.
- e. The Contractor shall provide the color as follows: (Thin Film Epoxy: Sherwin Williams 600 Or Tnemec Series 22)
 - 1. First Coat: Buff
 - 2. Second Coat: White
- f. The floor, shell, ladder, roof supports, and overflow shall be coated with Sherwin Williams Sherplate PW 100% solids epoxy or Tnemec Series 22 (or equal) recommended for corrosion protection of steel water storage tanks.
- g. The Contractor shall provide color as follows: (Thick Film Epoxy: Sherwin Williams Sherplate PW or Tnemec Series 22).
 - 1. White
- h. The Contractor shall not use or allow to come in contact with any portion of the tank interior, any coating system and/or any thinners or additives which have not been approved and listed by the National Sanitation Foundation, Standard 61 (NSF 61) for use in potable water reservoirs. The interior roof, rafters, and shell shall be completely coated, caulked, and tested prior to abrasive blasting on the floor plates.
- i. The Contractor shall provide coating "certified non-lead" (less than 0.06 percent lead by weight in the dried film) as defined in Part 1303 of the Consumer Products Safety Act.
- j. Surface preparation for all surfaces of the tank interior shall be SSPC SP 5 and shall meet all requirements of this specification.
- k. The coating on the shell should terminate 2' before the floor. The coating on the floor the extend 2' up onto the shell and tie into the coating on the shell at least 6"
- l. Joint sealant shall be a flexible polysulfide product similar or equal to Sikaflex 1a

B. Interior coating system:

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- a. The Contractor shall provide a Dry Film Thickness (DFT) as follows: (Thin Film Epoxy)
 - 1. Vapor Zone (Sherwin Williams Sherplate 600 or Tnemec Series 21)
 - 1. Primer – 6.0-8.0 mils DFT
 - 2. Finish – 6.0-8.0 mils DFT
 - 3. Minimum total DFT: 12 mils
 - 4. Maximum total DFT: 16 mils
 - 5. An independent stripe coat shall be applied before the prime coat and before the finish coat.
- b. Or approved ICS-1 Equal.
- c. The Contractor shall provide a Dry Film Thickness (DFT) as follows: (Thick Film Epoxy)
 - 1. Immersion Area (Sherwin Williams Sherplate PW or Tnemec Series 22)
 - 1. First Coat: 25.0 mils minimum to 30.0 mils minimum
 - 2. Minimum total DFT: 25.0 mils
 - 3. Maximum total DFT: 30.0 mils
- d. Or approved equal.

PART 3 - Execution

3.1 General

- A. All surface preparation and coating applications shall conform to applicable standards of SSPC and the manufacturer's printed instructions. Material applied prior to approval of the surface by the ENGINEER shall be removed and reapplied to the satisfaction of the ENGINEER at the expense of the CONTRACTOR.
- B. All work shall be performed by skilled craftsmen qualified to accomplish the required work in a manner comparable with the best standards of practice. Continuity of personnel shall be maintained, and transfer of key personnel shall be coordinated with the OWNER.
- C. The CONTRACTOR shall provide a supervisor to be at the work site during cleaning, application, and disinfection operations. The supervisor shall have the authority to sign any

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change orders, coordinate work and make other decisions pertaining to the fulfillment of their contract.

- D. Dust, dirt, oil, grease, or any foreign matter which will affect the adhesion or durability of the finish must be removed by washing with clean rags dipped in an approved commercial cleaning solvent, rinsed with clean water and wiped dry with clean rags.

3.2 Control of Visible Emissions:

- A. Visible emissions from dust producing operations or equipment are restricted to no greater than Level 1 (1% of workday) as defined in SSPC Guide 6 from the full containment (regulated) area. Assess visible emissions in accordance with 40 CFR 60, App A, Method 22.
- B. Do not permit any visible emissions to extend beyond containment or the regulated area(s). Visible emissions extending beyond the regulated area are cause for immediate project shut down until the cause of the emissions is corrected. Immediately cleanup and properly dispose of visible dust and debris that extends beyond the regulated or protected areas.
- C. The CONTRACTOR shall conduct all operations so as to confine abrasive blasting debris and coating overspray to within the bounds of the containment. The CONTRACTOR shall take all precautions necessary to prevent adverse off-site consequences of coating operations. Any complaints received by the OWNER relating to any such potential offsite problems will be immediately delivered to the CONTRACTOR. The CONTRACTOR shall immediately halt work and shall take appropriate corrective action required to mitigate any such problems. All costs associated with protection of off-site properties and/or correction of damage to property as a result of coating operations shall be borne directly by the CONTRACTOR at no additional expense to the OWNER.

3.3 Surface preparation (General)

- A. The latest revision of the following surface preparation specifications of SSPC shall form a part of this specification. (Note: an element of surface area is defined as any given 9 square inches of surface)
 - a. White Metal Blast Cleaning (SSPC-SP5): Blast cleaning until the surface, previously painted or unpainted, is to a white metal condition. Surface should, without magnification, be free of all visible oil, grease, dust, dirt, mill scale, rust, coating, oxides, corrosion products, and foreign matter; surface should be white or grey in appearance.

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- b. The Contractor shall provide blast cleaning including: removal of existing coating, under film corrosion, corrosion, and other corrosion products from all areas to be coated; and, preparation of all surfaces to be coated by abrasive blast cleaning to SSPC-SP 5 white metal with a surface profile of 3.5 to 4.5 mils for the 100% solids epoxy (immersion) and 1.5 to 2.5 mils for the thin film epoxy (vapor space).
 - c. The Contractor shall provide exhaust air dust collectors to prevent discharge of dust to outside air. No dust socks are allowed.
 - d. Prevent blast media, paint, or any other foreign material from entering open piping.
 - e. For openings greater than 2" diameter use an expandable seal placed inside the pipe. Protect seal from damage
 - f. All exterior roof vents shall be sealed from the outside prior to abrasive blasting and remain sealed through the entire coating operation.
 - g. During blast cleaning operations, inlet, outlet, overflow, and drain openings in bottom shall be covered with plywood bulkheads, or other approved barriers, to prevent entry of spent abrasive, removed coating or other foreign materials.
 - h. Slag, weld spatter, or sharp edges such as those created by flame cutting and shearing not previously removed by the tank fabricator, erector or installer shall be removed by chipping and grinding. All sharp edges shall be rounded, ground, or otherwise blunted as required by the ENGINEER in accordance with NACE SP0178. The rolled edges of angles, channels, and wide flange beams do not normally require further rounding unless specifically directed by the ENGINEER.
- B. Limiting environmental Conditions:
- a. The Contractor shall apply coatings only when conditions are within the limits prescribed by the manufacturer and shall not apply coatings when the following conditions exist:
 - b. Metal temperature is less than 55 degrees F.
 - c. Relative humidity is greater than 45 percent.
 - d. Contractor shall not abrasively blast or apply coatings when air temperature is less than 5 degrees F above dew point.

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- e. Do not apply material when surface temperatures will exceed 120 degrees F.

- C. Abrasive Blasting Equipment:
 - a. Abrasive blasting nozzles shall be equipped with "deadman" emergency shut-off nozzles. Blast nozzle pressure shall be a minimum of 95 P.S.I. and shall be verified by using an approved nozzle pressure gage at each start-up period or as directed by the ENGINEER. The number of nozzles used during all blast cleaning operations must be sufficient to ensure timely completion of project as approved and directed by the ENGINEER.

 - b. All blast hose connections shall be connected with external couplings. These connections shall be taped with duct tape prior to pressurizing. All taped connections shall be visually inspected for leaks within five minutes after start of blast cleaning operations and at the end of blast cleaning operations. Leaking connections shall be immediately repaired to prevent further damage.

- D. Particle size of abrasives used in blast cleaning shall be that which will produce a surface profile or anchor pattern specified herein, or in accordance with recommendations of the manufacturer of the specified coating system to be applied, subject to approval of the ENGINEER.

- E. Abrasive used in blast cleaning operations shall be new, washed, graded and free of contaminants, which would interfere with adhesion of coatings and shall not be reused unless specifically approved by the OWNER.

- F. Abrasives shall be certified for unconfined dry blasting pursuant to the California Administrative Code, Section 92520 of Subchapter 6, title 17, and shall appear on the current listing of approved abrasives.

- G. The CONTRACTOR shall select an abrasive media that is proper for the quality of surface preparation specified

- H. Should it be determined that the production rate and quality of the surface preparation is less than required, it shall be the CONTRACTOR's responsibility to use other types and/or sizes of abrasive to meet the requirements of this contract. At no time shall considerations of extra-effort be considered by the ENGINEER unless, in the opinion of the ENGINEER the CONTRACTOR has explored all alternative means of abrasive blasting during their operations.

- I. Blast cleaning from rolling scaffolds shall only be performed within the confines of the interior perimeter of the scaffold. Reaching beyond the limits of the perimeter will be

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allowed only if blast nozzle is maintained in a position, which will produce a profile acceptable to the ENGINEER.

- J. The CONTRACTOR shall keep the area of work in a clean condition and shall not permit blasting materials to accumulate as to constitute a nuisance or hazard to the prosecution of the work or the operation of the existing facilities.
- K. Spent abrasives and other debris shall be removed at the CONTRACTOR's expense as directed by the ENGINEER. If waste is determined to be hazardous, disposal by CONTRACTOR shall meet requirements of all regulatory agencies for handling such wastes. The CONTRACTOR shall provide all disposal tickets with each invoice related to blasting prior to the OWNER approving payment.
- L. Blast cleaned surfaces shall be cleaned prior to the application of specified coatings through a combination of blowing with clean dry air, brushing/brooming and/or vacuuming as directed by the OWNER. Air hose for blowing shall be at least 1/2" in diameter and shall be equipped with a shut-off device.
- M. The surfaces of any non-carbon steel substrates, or specialty items (i.e. galvanized, anodized, etc.) shall be properly treated and prepared prior to any coating operations in accordance with the coating manufacturer's written recommendations, subject to approval of the ENGINEER.

3.4 Surface Preparation Specific

- A. All interior surfaces shall be abrasively blast cleaned to "White Blast Cleaning" in conformance to SSPC's Surface Preparation Specification No. 5 (SSPC-SP5).
- B. The center vent hood shall be removed, and all accessible surfaces of the interior surfaces shall be properly cleaned and coated. Antennas for internet will need to be relocated and reinstalled.
- C. Special care shall be made to only prepare the interior surfaces of internal piping that can be properly recoated. Special care to not damage surfaces that cannot be coated shall be a priority.

3.5 Wedging

- A. All interior rafter/roof interface areas are to be wedged. Wedging will be performed for the purpose of removing all existing coatings, corrosion, and other foreign related materials via abrasive blasting. The surface preparation requirements shall be that of the vapor zone and shall be verified for compliance by the OWNER or their representative. If, during the wedging process the CONTRACTOR identifies any areas as inaccessible, the locations must be brought

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to the attention of and agreed upon by the OWNER or their designated Representative. Wedging is required to be utilized throughout all phases of work, i.e., surface preparation, coating application, and verification of all phases prior to final acceptance.

3.6 Welding repairs (line item)

- A. After completion of interior abrasive blasting operation, the ENGINEER shall inspect the tank for any holes or seams that may have developed as a result of the blasting. The Contractor shall weld plates as replacement for areas of severe corrosion. The Contractor shall repair areas at the direction of the OWNER's Engineer
 - a. All repairs shall be seal welded in conformance to AWWA D103-19, Section 6 and AWWA D100-21, Section 8, whichever is more stringent will govern work.
 - b. All repair welds shall be radius as per NACE SP0-178 then abrasive blast cleaned to SSPC SP-5 White Metal Cleaning.

3.7 Application

- A. General
 - a. Mix and apply all coating in accordance with the manufacturer's recommendations and instructions, the applicable requirements of SSPC-PA 1, and as specified herein.
 - b. Thinning shall only be permitted as recommended by the manufacturer and approved by the ENGINEER and shall not exceed the limits set by applicable regulatory agencies.
 - c. If the CONTRACTOR applies any coatings which have been modified or thinned to such a degree as to cause them to exceed established maximum VOC levels, CONTRACTOR shall be responsible for any fines, costs, remedies, or legal action and costs which may result.
 - d. The CONTRACTOR shall adhere to general application requirements as follows:
 - I. Obtain ENGINEER's evaluation and approval of steel surface preparation immediately prior to application of first coat.
 - II. Obtain ENGINEER's evaluation and approval of cleanliness of previous coat immediately prior to application of a subsequent coat.
 - III. CONTRACTOR shall provide ratio testing at the beginning and completion of each application.

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- IV. Scaffolding or other support system shall be free of abrasive blast media, dirt, and other foreign matter prior to coating application.

- V. Finish coat shall be uniform in color and gloss over the entire surface. Finish coat shall be smooth to touch with no sags, runs, dry spray, overspray, cracks, pinholes or other surface defects and must be even in color and appearance. When coating is applied, the previously coated area will be masked off to prevent overspray onto newly painted surfaces.

- VI. Coating should not be applied closer than 6 inches from an unprepared surface.

- VII. Shell must be free of any dust before application on the floor per ISO8502-3 Level 2.

B. Application of Coats

- a. Each application of coating shall be applied evenly with a uniform appearance. The system shall be free of brush marks, unfeathered edges, sags, runs, and evidence of poor workmanship, or any aesthetic defects, as defined by SSPC. Care should be exercised to avoid lapping on glass or hardware. Coating shall be sharply cut to clean, defined lines. Finish surfaces shall be uniform in appearance and shall be free from defects or blemishes. Coating shall be uniform in color and gloss over the entire surface.

- b. Apply all coatings by plural component spray except:
 - i. Areas of less than 24 square inches may be brushed.

 - ii. Roof & rafters (vapor space shall be airless applied)

 - iii. Required brush striping of welds, nuts, bolts, and edges. Do not thin for interior coating. Stripe coat must be independent.

- c. Application of the first coat shall follow immediately after surface preparation and cleaning within an eight-hour working day. Any cleaned areas not receiving prime coat within an eight-hour period shall be re-cleaned prior to application of first coat.
 - i. If dehumidification equipment is used, cleaned areas may have the first coat applied during the last shift of the week, provided dehumidification

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equipment has run continuously during the complete week and surface meets all requirements of the specification.

- d. Complete coating all surfaces above floor prior to coating floor.
 - e. After each coat and immediately prior to application of a subsequent coat, clean surface as required to remove dirt, dust, overspray, and other contaminants that may affect adhesion of the subsequent coat.
 - f. Each coat shall be a different color than the preceding coat. Additional coats, where required, shall be tinted to provide color contrast but the final coat shall be color specified.
 - g. All attachments, accessories, and appurtenances to be coated shall be prepared and finished in the same manner as specified for adjacent tank sections.
 - i. After holiday detection in the vapor space, as specified, and repairs have been completed all void areas shall be filled with a joint sealant as specified under 2.3 "Coating System". Joint sealant may be applied by caulking gun, trowel or other approved method. Sealant shall be pressed firmly into voids
 - ii. to insure 100% filling/sealing. Sealant shall be a material as specified under 2. "Coating System" and shall include Sikaflex 1A or approved equal
- C. Protect adjacent surfaces:
- a. Protective coverings or drop cloths shall be used to protect floors, concrete, fixtures, equipment, prepared surface and applied coatings.
 - b. Personnel entering tank shall take precautions to prevent damage or contamination of coated surfaces.
 - c. Care shall be exercised to prevent coating from being spattered onto surfaces, which are not to be coated.
 - d. Surfaces from which such material cannot be removed satisfactorily shall be replaced or recoated as required to produce a finish satisfactory to the ENGINEER.
- D. Irregular surfaces and welds:

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- a. All welds and irregular surfaces, as defined by the ENGINEER shall receive a brush coat of the specified product prior to application of each complete coat. Coating shall be brushed in multiple directions to ensure penetration and coverage, as directed by the ENGINEER
- b. These areas include, but are not limited to welds, roof lap seams, nuts, bolts, ends, and flanges of rafters, etc.

E. Application Equipment and Operating Criteria:

- a. The CONTRACTOR's coating equipment shall be designed for the application of materials specified and shall be maintained in first class working conditions.
 - i. The CONTRACTOR shall certify that the pumps meet the manufacturer's original operational specifications and are only operated by skilled and trained craftsmen who have been certified by the coating manufacturer.
 - ii. The applicator shall at all times monitor his material application using a wet film gauge as recommended by the manufacturer.
 - iii. The CONTRACTOR shall at all times have a quality control operator managing the plural component equipment maintaining the proper mixing ratio, operation temperatures and pressures according to the Manufacturer's application technical data. The operator shall be trained and certified by the coating and equipment manufacturer to the satisfaction of the ENGINEER.
 - iv. The CONTRACTOR shall monitor the accuracy of the pump flow controls by performing a ratio proportioning test using the coating components. A minimum of one gallon of each component shall be pumped through the spray lines into separate containers to verify proper proportioning. The permissible variation in component ratios shall be as stated in the manufacturer's printed technical literature. Two successful, successive ratio proportioning tests shall be performed prior to the start of daily painting operations and every four hours thereafter in the presence of the ENGINEER. If coating equipment problems develop, the ENGINEER shall have the right to direct the CONTRACTOR to perform the proportioning test immediately.

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- v. The CONTRACTOR shall monitor daily the coating for the proper degree of cure by obtaining a sample of the coating and having it tested by an approved independent coating laboratory for fingerprinting to match the manufacturer's specimen that has been determined to be a representative sample of the coating material. The manufacturer shall have submitted a quality control specimen prior to starting the job for approval by the ENGINEER.

 - vi. Compressors shall have suitable traps and filters to remove water and oils from the air.
- F. CONTRACTOR's equipment shall meet the criteria below and be subject to approval of the OWNER.
- a. Use airless spray pump with a minimum 45:1 pressure ratio. Pump shall have moisture trap, anti-freeze device, and fluid filter

 - b. Use fluid tip size recommended by manufacturer.

 - c. Use clean fluid lines not previously used to apply zinc-rich or water-based coating materials.

 - d. Clean equipment using only products recommended by the coating manufacturer.

 - e. Blow lines with compressed air to completely remove all thinners prior to painting.

 - f. For plural component systems, all fluid lines shall be insulated or maintained as recommended by the coating manufacturer.

 - g. Cleanliness of compressed air supply shall be verified daily, and as deemed necessary by the ENGINEER, by directing a stream of air, without abrasive, from the blast nozzle or approved opening downstream from separator onto a white blotter or cloth for twenty seconds in accordance with ASTM D4285. If air contamination is evident, change filters, clean traps, add moisture separators or filters, or make adjustments as necessary to achieve clean, dry air.

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G. Repairs:

- a. Touch up or refinish all chipped, abraded, or otherwise unsatisfactory portions of the work in accordance with the manufacturer's recommendations, except that in no case shall thinner be used for interior coatings.
 - i. Any coatings found to be sticky, partially cured, or not fully cured after the manufacturer's recommended cure time shall be removed.
- b. Re-coating or touch-up of areas that have cured beyond the maximum time recommended by the manufacturer require the following special preparation:
 - i. Sweep blast area and 3-inches into the surrounding area. Sweep blast under low pressure to uniformly abrade surface and feather edges. Feather edges by sanding or other means acceptable to the Inspector. Alternatively, the CONTRACTOR may power tool (SP-3) or hand tool (SP-2) once abrasive blast is complete to the acceptance of the Inspector.
 - ii. Remove abrasive blast residue from blasted area with special attention to marginal areas of intact coating.
 - iii. All repairs will be masked off.
 - iv. Clean area with a bond solvent recommend by the manufacturer.

3.8 Ambient Conditions

- A. Coating application shall only occur in ambient conditions defined by the manufacturer, or as stated herein.
- B. No coating shall be applied when the surrounding air temperature or the temperature of the surface to be coated is below 55 degrees F. No coatings shall be applied at temperatures above 110 degrees F.
 - a. No coatings shall be applied to wet or damp surfaces or in rain, snow, fog or mist, when the temperature is less than 5 degrees F above the dewpoint, or when it is expected the air temperature will drop below 50 degrees F prior to the coating drying.

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- b. Dewpoint shall be measured using an instrument such as a Sling Psychrometer in conjunction with U.S. Department of Commerce Weather Bureau Psychrometer Tables or equivalent in accordance with ASTM E337
- c. If unacceptable conditions are prevalent coating application shall be delayed or postponed until conditions are favorable.

- d. The day's coating application shall be completed in time to permit the film sufficient drying time prior to damage from atmospheric conditions.

3.9 Dehumidification (Line item)

- A. Dehumidification (DH) shall be used to control the environment within the tank space 24 hours a day during blast cleaning, coating application and final cure. If the work is completed in the summer season and conditions can be maintained a D/H will not be necessary. The contractor will be responsible for the proper air movement and ventilation. The system shall be similar or equal to the following requirements.

- B. The OWNER shall not provide a time extension for weather delay.

- C. The CONTRACTOR shall bear all cost and liability for work resulting from dehumidification equipment failure, breakdown, power failure, or down time.

- D. The CONTRACTOR is responsible for operating within County, local and homeowner's association sound ordinances.

3.10 Operation Criteria:

- A. The tank shall be continuously dehumidified 24 hours per day, 7 days per week during blasting, coating, between applications of coating, unless approved in writing by the ENGINEER.

- B. Maintain the dehumidification system at all times. Only ventilation equipment, not dehumidification equipment is required throughout final cure period.

- C. Dehumidification equipment shall also provide the necessary ventilation for the removal of solvent vapors during the coating and final cure phase.

- D. At all times, maintain the concentration of solvent vapors in all parts of the tank at 10-percent below the lower explosive limit (LEL).

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- E. Ducting shall be a minimum of 18 inches in diameter, airtight and reinforced with spirally-wound wire to prevent collapse. Size of ducting shall be larger if deemed necessary by the CONTRACTOR in order to comply with these specifications or any local, state, or federal safety regulations.
- F. Sizing of the ducting, ventilation, and dehumidification equipment shall be the sole responsibility of the CONTRACTOR. Provide an appropriate connecting device between the 18-inch duct and designated opening. All bends in duct work shall have a minimum radius of 2 X ID of the ducting (i.e. 18" ID = 36" minimum radius).
- G. The CONTRACTOR shall design and submit for review a dehumidification and ventilation plan, which provides for a minimum cross-draft velocity of 100 feet per minute in the vicinity of the work area. The cross-draft velocities shall be obtained with the use of a portable blower or fans.
- H. The areas adjacent to the surface that are to be blasted and coated shall not be exposed to a relative humidity over thirty-five percent (35%). Furthermore, these areas shall not have a surface temperature that is less than 15 degrees F above dew point at any time during cleaning and coating phases.
- I. The CONTRACTOR shall provide and maintain 24-hour strip chart recorder for humidity and temperature and place humidity and temperature measuring devices inside tank at the start of abrasive blasting operations.

3.11 Dehumidification equipment:

- A. Dehumidification equipment shall be a solid desiccant (not liquid, granular, or loose lithium chloride) design having a single rotary desiccant bed capable of continuous operation, fully automatic, with drip-proof automatic electrical controller.
- B. The equipment shall be capable of making two complete air changes every sixty minutes unless the 100 feet per minute cross-draft velocity requirement requires a larger volume.
- C. The processed air from the dehumidification unit must maintain a relative humidity of eleven percent or less.
- D. During the coating phase, dehumidification units shall have auxiliary heaters capable of maintaining a constant air temperature inside the tank.
- E. Air heaters are not acceptable as substitutes for dehumidification units.

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- F. Air chillers, heaters, or air conditioners may be used downstream of the dehumidifiers if they are approved for use by the manufacturer of the dehumidification equipment and the ENGINEER.

3.12 Hours of Operation:

- A. Dehumidification equipment shall be operating continuously, 24 hours a day, seven days per week from the time abrasive blasting begins, through to completion of all lining application. Equipment shall be turned off only for regular service or fueling of climate control equipment or generator(s).
- B. Equipment can be turned off during periods when there is no demand for dehumidification only if automatic controls are installed that perform the following:
 - C. Activates and deactivates the equipment by determining the difference between the coldest surface temperature and the dew point temperature in the tank.
 - D. Measures and logs surface temperature, inside air temperature, inside dew point temperature and equipment run time at 1-minute intervals. Copies of this data will be delivered to the OWNER's representative.
 - E. Climate control equipment equipped with a monitoring and control device, including complete control module, sensor module, and web-based support such that notifies a capable technician of any failure of the equipment or power source, by cellular phone.

3.13 Interior cure and cleaning:

- A. Special care shall be made to ensure that the previous coat is properly cured and free of amine blush before applying any epoxy overcoats.
- B. The Contractor should be fully aware that most 100% epoxies can produce amine blush which must be removed prior to succeeding coats and disinfection.
- C. The Contractor shall ensure curing of all coatings by forced air ventilation for a minimum of 72 (ventilating) hours at seventy degrees, or longer if recommended by the manufacturer after coating application and repairs are completed. Curing shall include providing ventilation at a rate of at least one complete air change every four hours.
- D. Equipment shall have a time recorder that provides a cumulative record of operating time.

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- E. Deliver air from ventilating fan to center of reservoir through continuous flexible duct that is not reduced in area from the fan outlet exhausting to the exterior of the tank.
- F. Prior to re-installation of roof vent covers removed during forced air ventilation, the Contractor shall ensure cleaning as follows:
- G. Clean dust and abrasive-blasting residue from the roof ventilation screens and top of rafter lips
- H. The Contractor shall have the OWNER flush the inlet line prior to cleaning operations. Thoroughly wash down with water all interior surfaces, including but not limited to, roof, rafters, walls, floor, piping and supports. All amine blush must be removed prior to disinfection. The Contractor shall steam clean surfaces where necessary.
- I. The contractor shall provide a written letter prior to disinfection stating that the coatings are fully cured and ready to be placed into potable water service.

3.14 Shell to roof junction and rafter caulking

- A. Prior to the finish coat is cured (fingernail depression test), the Contractor shall completely fill and seal all voids, bolt holes, voids and around the entryways and the floor roof pedestals with Sikaflex-1A caulking or approved substitute to provide a tightly adherent, smooth and continuous seam of caulk. This application may be performed after the application of epoxy or as directed by the manufacturer.

3.14 Gasket Replacement

- A. The CONTRACTOR shall furnish and install new gaskets for any interior or exterior tank appurtenance that came into contact with abrasive blast media. Gaskets shall be NSF approved. The vent screens shall be replaced with new vent screens at per AWWA D-100 and AWWA M42

3.15 Disposal of existing coatings and spent abrasive blast media

- A. The CONTRACTOR shall dispose of spent abrasive blast media and removed coating materials in accordance with an OWNER approved disposal plan. CONTRACTOR shall submit plan of disposal prior to start of work.
- B. The CONTRACTOR shall coordinate and pay all costs for sampling and testing of spent abrasive blast media in order to document waste class.

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- C. Hazardous waste during demolition of the existing coating systems are not expected to be encountered. However, if generated from the Work, prior to removal of hazardous wastes off-site, the CONTRACTOR shall allow adequate time for OWNER to review laboratory test results, as well as the time required to obtain a Hazardous Waste Generator's U.S. EPA ID Number, if required the OWNER will provide the CONTRACTOR with written notice to dispose of all or a portion of the spent abrasive blast media and/or removal coating materials as hazardous waste, if so determined by the OWNER that such disposal is required.
- D. The CONTRACTOR shall be responsible for all costs associated with accumulating, transporting, and disposing of spent abrasive blast media and removed coating materials.

3.16 Reservoir Disinfection:

- A. Upon complete curing, the Contractor shall submit in writing to the OWNER certifying that the coating is fully cured and ready to be placed into service for disinfection and testing. Reservoir cleaning and disinfection shall not commence without written certification. All amine blush must be removed prior to disinfection.
- B. After all other work has been completed, the Contractor shall ensure that the interior of the Reservoir is thoroughly cleaned and disinfected in accordance with the most current edition of AWWA C652, Disinfection of Water Storage Facilities. The Contractor shall ensure the reservoir is disinfected in accordance with Chlorination Method 2, which requires spray wash of the Reservoir interior with a 200-mg/ml chlorine solution. The OWNER will assist the Contractor in filling the Reservoir and the Contractor shall allow three (3) consecutive working days for the owner to fill the Reservoir.
- C. The Contractor shall furnish all cleaning and disinfection materials and all equipment and labor necessary for the cleaning and disinfecting operations.
- D. After the first 24 hours have elapsed once the tank is full, the OWNER will take a sample of the water to be used for bacteriological contaminants. If the results of this test are negative, the tank will be considered satisfactorily disinfected. If the results are positive, the tank shall be drawn down to that depth that will permit the addition of sodium hypochlorite to a final concentration of 10-mg/L. This depth will be determined upon an evaluation of the chlorine residual provided for in this Section of these Project Special Provisions.
- E. The Contractor shall ensure that any water used in cleaning and in disinfection of the Reservoir, is discharged in a manner acceptable to the OWNER and the appropriate water pollution control agency. The Contractor shall ensure all water discharged is de-chlorinated.

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3.17 Soak period & Testing for volatile organic compounds

- A. The Contractor shall ensure that water in the Reservoir is allowed to soak for five (5) days after the Reservoir has been filled to the over-flow level and disinfected.
- B. After the five-day soak period the OWNER will sample and submit a single sample to a certified laboratory to test the water for presence of organic chemical contaminants (e.g. TCE, PCE, etc.) possibly having leached from the new paint system. The sample is to be tested in accordance with EPA Method 524.2. The water sample will be collected by the OWNER in the presence of the Contractor and should be a true representation of the water in the Reservoir at the time.
- C. The Contractor shall be liable for all cost associated with re-testing water if reservoir water draining and refilling is necessary.
- D. The OWNER's Engineer shall evaluate and determine acceptability of the aesthetic quality of the water as a condition of final acceptance of the work. Constituent levels found from sample results which are at or below regulated maximum contaminant levels specified by state and federal standards shall not be the sole basis for tank acceptance.
- E. The OWNER's Engineer may reject all work, or a portion thereof based on any adverse taste or odor detected or other conditions affecting the aesthetic quality of the water.

3.18 Clean up:

- A. Upon completion of the work, the Contractor shall make a detailed inspection of all work.
- B. The Contractor shall be solely responsible for all paint over-spray or fugitive dust fallout claims.
- C. The Contractor shall remove all spattering, spits, and blemishes.
- D. Upon completion, of work, the Contractor shall remove all staging, tarps, scaffolding, and containers from the site, including but not limited to: paint and thinner containers and excess paint and thinner (to be disposed of in conformance to all current regulations); paint spots removed and the entire job site cleaned; all damage to surfaces resulting from the work from this section to be cleaned, repaired or refinished to the complete satisfaction of the OWNER. All clean up shall be completed within 7 calendar days starting at the last day of holiday testing of the reservoir. The Contractor shall allow adequate time for OWNER for

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review of laboratory test results, as well as the time required to obtain a Hazardous Waste Generator's U.S. EPA ID Number if required.

- E. The OWNER will provide the Contractor with written notice to dispose of all or a portion of the spent abrasive blast media and/or removed coating materials, as required.
- F. The Contractor shall bear all costs associated with site cleanup.
- G. All cleanup shall be completed within 7 calendar days starting at the last day of holiday testing of the tank. The CONTRACTOR shall bear all costs associated with site cleanup.

3.15 Omissions

- A. Care has been taken on the Drawings to delineate those surfaces to be coated. However, if coating requirements have been inadvertently omitted from this section or any other section of the specifications, it is intended that all metal surfaces, unless specifically exempted herein, shall receive a first-class protective coating equal to that given the same type surface pursuant to these specifications.

PART 4 – Inspection

4.1 Quality Assurance

- A. The OWNER has retained a coating inspection firm to oversee all quality control related to coating operations. The inspector will report directly to the OWNER and shall act with the OWNER's authority in all matters related to construction. The Inspector will be an AMPP Certified Coating Inspector, who will inspect any or all phases of work to be performed as outlined herein. The inspector shall be in addition to the OWNER's Inspector; authority shall be limited to coating related work only. The OWNER's Inspector shall remain the primary observer for all work on the project. The inspector shall work for and report to the OWNER. The CONTRACTOR shall not rely upon the coating inspector for documentation of environmental conditions and assuring compliance with plans and specifications.
- B. The CONTRACTOR shall notify the OWNER in advance (48 hours minimum) of all surface preparation or paint application in order to perform a preliminary examination and provide acceptance of the surface preparation and each coat prior to application of the next coat.
- C. Upon completion of the interior coating operations and after the required curing intervals, holiday detection shall be accomplished on all coated surfaces below the overflow.
 - a. Holiday detection within the vapor zone shall be completed per SPO-188-24

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- b. High Voltage Holiday detection shall be completed in the immersion zone per SPO-188-24
 - c. All holiday detection of coatings shall be performed in the presence of the ENGINEER.
 - d. Brush electrode shall be in like new condition.
 - e. Re-test after coating repairs.
- D. The OWNER may use any testing method deemed necessary by the OWNER's Coating Inspector to verify quality of work. The OWNER may, but is not required to, monitor the quality of work pursuant to this section.
- E. The CONTRACTOR shall perform the necessary quality assurance in accordance with an approved plan. The CONTRACTOR will supply all inspection equipment. The OWNER reserves the right to use their equipment at any time.
- F. CONTRACTOR shall furnish, until final acceptance of coating, inspection devices in good working condition for detection of holidays and measurement of dry-film thickness of coatings.
- a. They shall also furnish National Institute of Standards and Technology/National Bureau of Standards (NIST/NBS) certified thickness calibration plates to test accuracy of thickness gauges.
 - b. Dry film thickness gauges and holiday detectors shall be available at all times until final acceptance of application.
 - c. Inspection devices shall be operated by, or in the presence of the ENGINEER with location and frequency basis determined by the ENGINEER.
 - d. The ENGINEER is not precluded from furnishing his own inspection devices and rendering decisions based solely upon these quality assurance tests
 - e. Should in the opinion of the ENGINEER a 24-hour, continuous reading surface temperature gauge be required to ensure that maximum recoat windows are observed, the CONTRACTOR shall provide a working calibrated instrument to meet

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this need. The gauge shall be digital and capable of providing instantaneous average measurements of the temperatures recorded.

- G. Acceptable devices for ferrous metal surfaces include but are not limited to Tinker Rasor Models AP and AP-W holiday detectors and SSPC, Type II units for dry film thickness gauging. Inspection devices shall be calibrated and operated in accordance with specified requirements. Any high-voltage testing shall require the CONTRACTOR to obtain written acceptance from the lining manufacturer for detection within the Vapor Zone. Should the manufacturer not approve of the use of a high-voltage testing device for the Vapor Zone, a 67.5-volt device Tinker and Rasor M-1 device shall be used.

4.2 Quality Control

- A. The CONTRACTOR shall provide adequate lighting, without shadows, during all phases of work to ensure that work is performed as specified and that the entire work area is illuminated.
- B. The CONTRACTOR shall provide ground supported scaffolding and lighting (SSPC Guide12), as determined by the Inspector, to facilitate visual and instrument inspection by the Inspector of each phase of the work and of the completed work, as so placed as directed to minimize glare and shadows. Work will be rejected if proper lighting is not achieved for a proper inspection. All scaffolding shall be equipped with internal stairways, no exterior ladders.
- C. The CONTRACTOR shall provide personnel to move scaffolding and provide other assistance to OWNER's Inspectors as required.
- D. The OWNER's Coating Inspector will examine surfaces after abrasive blast cleaning to verify that all deposits of contaminants have been removed as per surface clean as per ISO 8502 (Class 2). The CONTRACTOR shall blow down and vacuum all surfaces prior to OWNER's inspection. Tank floors shall be vacuumed.
- E. The CONTRACTOR shall verify at a minimum of two times daily that air supply is free of oil and moisture contamination (ASTM D-4285). The CONTRACTOR shall use effective oil and water separators in all main compressor airlines and shall be placed as close as practicable to the equipment. Prior to using compressed air, the CONTRACTOR shall test the quality of air downstream of the separators at suitable outlets by blowing the air on clean white blotter for 2 minutes to check for any contamination, oil, or moisture
- F. The CONTRACTOR shall perform the following daily: measure air temperature, humidity, relative humidity, and metal surface temperature, and determine dew point and relative

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- humidity prior to abrasive blasting or painting. The CONTRACTOR shall provide portable temperature & humidity recorders to provide continuous permanent hard copy of the tank conditions and repeat measurements and determination of dew point as often as the OWNER's Inspector deems necessary but not less often than every four hours at the start of preparation operations and run constantly until final cure.
- G. The CONTRACTOR shall maintain a written record of measurements and dew points, and at the time that measurements were taken, keep such record on-site, and make records available to OWNER's Inspector on request.
 - H. The CONTRACTOR shall furnish 1 roll of Testex tape 1.5 to 4.5 mils X-course prior to the start of abrasive blasting. The OWNER's Coating Inspector may evaluate surface preparation using field abrasive blasting standards, and Testex tape. Evaluation may include inspection of blasted surfaces for dust and abrasive residue, using clear adhesive coated tape. Evaluation will be made immediately prior to coating application.
 - I. The CONTRACTOR shall verify cleanliness of all spray application equipment prior to, or no later than, time of mixing coating material.
 - J. The CONTRACTOR shall measure wet film thickness during coating application of coating to ensure adequate coating thickness, taking at least one measurement for each 100 square feet of application area. The CONTRACTOR shall measure dry film thickness after each coat using a non-destructive magnetic dry film thickness gauge.
 - K. The OWNER's Coating Inspector may, but is not required to, also measure coating thickness, at random locations, after each coat. SSPC –PA 2 (Level 1) is only to be used for the calibration of dry film thickness gauges. This is a minimum maximum dry film thickness specification. Dry film thickness readings will not be averaged. All inspection equipment shall be supplied by the Contractor. All equipment shall have current calibration certificates. The OWNER reserves the right to use their own equipment at any time.
 - L. The OWNER's Coating Inspector will evaluate cleanliness of coated surface immediately prior to application of a subsequent coat.
 - M. The CONTRACTOR shall test all coated surfaces for pinholes. Coating integrity of all interior coated surfaces shall be tested with an approved inspection device in accordance with NACE SP0-188-24. All pinholes shall be repaired in accordance with the manufacturer's printed recommendations and retested. No pinholes or other irregularities will be permitted in the final coating.
 - a. Perform testing in the presence of the OWNER's Coating Inspector.

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- b. Perform testing after coating has cured as recommended by the manufacturer.
- c. Re-test after coating repairs.
- d. The CONTRACTOR shall, at no cost to the OWNER, provide a qualified technical representative of the coating system manufacturer at the jobsite as required by the OWNER to resolve problems related to the coating system or the application of the system.

4.3 Acceptability for coating application

- A. The SSPC-Vis1 pictorial surface standards along with dry film and wet film thickness gauges will be used by the Coating Inspector to determine acceptability of the paint application. The CONTRACTOR shall provide necessary testing equipment to perform the above-mentioned tests.

4.4 Reporting

- A. The CONTRACTOR shall provide weekly copies of daily work reports to the coating inspector. Such reports shall include, but not be limited to, the day and date of work performed, the type and amount of work performed, all work related to the safety of the operation, and personnel assigned to work actually performed.

4.5 Safety

- A. The CONTRACTOR shall provide a safe work environment at all times. In the event the Coating Inspector notes any safety deficiencies, the CONTRACTOR shall immediately rectify noted deficiencies.
- B. The CONTRACTOR shall be fully responsible for compliance with all safety measures, hazardous and toxic materials regulations, and site security. Observation of or failure to observe any safety deficiencies of the CONTRACTOR by the Coating Inspector shall not relieve the CONTRACTOR of this responsibility nor shall any liability transfer from the CONTRACTOR to the OWNER or the Coating Inspector.
- C. The CONTRACTOR shall save harmless the OWNER and the Coating Inspector from all liability associated therewith.

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4.6 Final Inspection and Report

- A. At the completion of all coating work, the Contractor shall provide a written request for final inspection to the Engineer. The final inspection shall be conducted by the Contractor, the Sub-Contractor, the Coating Manufacturer, and the Engineer to establish that all Work has been completed in accordance with the Contract Documents. Any deficiencies found shall be documented and corrected before final acceptance of the Work will be granted. The Contractor shall thoroughly document the conditions of each area of the work at the time of the final inspection using video and still photography which will be catalogued by panel numbers. A copy of the photographs and video report shall be provided to the Engineer electronically. The photographs and video shall be the basis of evaluation of the condition of the coating system at the warranty inspection.

4.7 Clean up

- A. Remove from the premises all surplus paint materials, equipment, rubbish, and debris resulting from work under this section.

END OF SECTION

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PART 5 – Coating of Reservoir Exterior

Section 1 – Scope

1. The Contractor shall properly prepare all exterior surfaces of the water storage tank which includes the roof plates, shell, ladder, ladder cage and all piping, appurtenances. The Contractor shall apply the coating system as indicated herein and, in a manner, prescribed by these specifications and the manufacturers printed application instructions. The interior coating system must be completed prior to coating work on the exterior. An internet tower located on the center vent will need to be temporally removed.
2. The Contractor shall remove all existing exterior coatings from the entire roof section and shall coat the exterior roof section with a new three coat system consisting of a high-performance epoxy and a polysiloxane finish coat. Contractor must provide a barrier system or other method approved by Engineer and Owner to contain debris from abrasive blasting and paint overspray. At no time shall fugitive dust or overspray be allowed beyond site boundaries or to enter drainages.
3. The Contractor shall over coat the exterior coating of the tank exterior shell, ladder, vents, and all associated piping and appurtenances. The exterior shell of the tank shall be to remove all existing chalking. No water will be allowed to leave the boundaries of the site. Drains shall have filter fabric installed to prevent any cleaning debris from entering the site drainage system. At no time shall fugitive dust or overspray be allowed beyond the site boundaries. The contractor shall remove any existing caulking at the base of the tank and shall completely re-caulk the exterior shell to concrete chime after application of the finish coat.
4. At least two days prior to the start of work, the Contractor shall arrange with the District for a pre-preparation conference at the job site to ensure that all parties involved are familiar with the entire project, including all specifications, safety codes, and job site conditions

Section 2 – Materials

1. The district provides the following protective coatings Manufacturer, as specified herein, as a standard of quality, or equal. All finish colors shall be colored at the factory as a dry grind only, no quick colors shall be accepted.
 - a. Sherwin Williams or Equal

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2. Reference Standards: The Contractor shall comply with the requirements of the Steel Structures Painting Council Painting Manual, Volume 1 and 2, Good Painting Practices, including the National Association of Corrosion Engineers, American Society of Testing and Materials, and American Water Works Association D-102-21, for application and surface preparation, and all applicable OSHA and safety standards.
3. The Contractor shall consult the District Engineer regarding any situations not covered by the reference standards or this specification; however, it is the Contractor not the District that is ultimately responsible for proper exterior coating application.

Section 3 – Submittals

1. The Contractor shall submit the manufacturers latest written product data sheets on each product to be used, and current manufacturer’s safety data sheets (M.S.D.S.) on all materials to be used in the surface and coating operations including abrasives, thinners, cleaning fluids, and solvents.
2. The Contractor shall submit, for the District Engineer’s acceptance, a written program detailing measures for full containment, and equipment and dust and overspray control.
3. The Contractor shall always maintain on the job site M.S.D.S. and product data sheets. The Contractor shall post required signage for lead work.
4. The Contractor shall include the following data in the manufacturer’s recommended handling and installation instructions for the proposed paint system submittal:
 - a. Storage – including maximum and minimum storage temperatures
 - b. Surface preparation
 - c. Coating repair
 - d. Application equipment
 - e. Mixing and application of coating system – including a table of minimum and maximum recoat times as a function of temperature
 - f. Curing – minimum and maximum re-coat times.
 - g. Acceptable temperatures at the time of application
 - h. The Contractor shall include the following data in the report submittal: Quantity of coating material used for each coat, submitted within 24 hours after completion of each coat.
 - i. Containment plan and equipment and dust collection system.
 - j. Fire prevention plan.

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Section 4 – Delivery

1. The Contractor shall assure that all materials delivered to the job site are in their original unopened containers.
2. The Contractor shall not use any product older than twelve months from the original manufacturer’s factory batch date as listed on the container.

Section 5 – Storage

1. The Contractor shall submit, for the District Engineer’s acceptance, a specified material storage area and store all materials in the approved location.
2. The Contractor shall maintain material storage areas in a clean condition, free of solvent rags, and wastepaper. The Contractor shall remove debris and other fire hazards and dispose of such items in accordance with all the applicable regulations at the end of each workday.

Section 6 – Safety

1. This project is subject to all applicable Safety and Health regulations and Industry Safety Standards.
2. The Contractor shall submit a notarized letter signed by a principal officer certifying the Contractor fully comply with the California Code of Safety Regulations and the Federal Code of Regulations pertaining to the scope of this project, but not limited to the following, as well as any other applicable orders, codes, ordinances, or laws, State, Federal, and Local. (GISO-General Industry Safety Orders, CSO-Construction Safety Orders, CFR-Code of Federal Regulations).

Title	Code Regulation	Section
Illness Injury Prevention Program	CSO/GISO	1508-3203
Hazard Communication	GISO	5194
Safety Instructions for Employees	CSO	1510
Dust, Fumes, Mist, Vapors and gases	CSO	1528
Metal Scaffolding	CSO	1644
General Industry Standards	29 CFR	1910-1025
Respirator Protection	CSO/GISO	1531-5144

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Section 7 – Hazardous Substance

1. The Contractor shall exercise extreme care when handling or disposing of materials or substances listed in Section 8-339 of Division 4 (California Code of Occupational Safety and Health Regulations) of Title 26 (Toxics) of the California Code of Regulations, or as evidenced by the M.S.D.S.
2. The Contractor shall immediately notify the District Engineer of any spill of material that is a hazardous substance in accordance with the appropriate jurisdiction.

Section 8 – Dust and Overspray Control

1. The Contractor shall be solely responsible for all claims resulting from dust and overspray control from the coating and surface preparation operations or any damage or nuisance to property or persons.

Section 9 - Workmanship

1. The Contractor shall provide written evidence to the District Engineer that workers furnished have performed quality work and possess experience and knowledge in surface preparation and the application of high-performance industrial coatings.
2. The Contractor shall provide written evidence to the District Engineer that the Contractor has a minimum of five years' experience in the painting of water storage tanks and a current list of water tank painting projects for the past five years (five minimum).
3. The Contractor shall conform to all the standards of craftsmanship as discussed in the Steel Structures Painting Council's Painting Manual, Volume 1, Good Painting Practice. These techniques include but are not limited to multiple passes of the spray gun, with each pass overlapped 50%, and "cross hatching" successive coats of paint. A stripe (Brush coat) is required on all welds prior to the finish coat.
4. Finish coats shall be uniform in color and gloss over the entire surface. Finish coat shall be smooth to touch with no sags, runs, dry spray, over-spray, cracks, pinholes, or other surface defects and must be even in color and appearance. When coating is applied, the previously coated area will be masked off to prevent overspray onto newly painted surfaces.

Section 10 – Equipment

1. The Contractor shall use properly functioning equipment capable of performing the task required herein.

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Section 11 – Degree of Cleanliness

1. The Contractor shall provide blast cleaning of the entire roof, including removal of all existing coatings, under film corrosion, corrosion, and other corrosion by products from the roof and knuckle section; and prepare all surfaces of the roof section by abrasive blast cleaning to SSPC SP-10 near white metal cleaning with a 1.5.0-2.5 mil anchor profile. The Contractor shall utilize a blast trac, vapor blasting or wet abrasive blasting with a halo tip and rust inhibitor, or other City approved method, to minimize dust. The Contractor shall ensure complete abrasive blast cleaning of metal prior to application of coating system.
2. The Contractor shall water blast the exterior shell of the reservoirs at 5,000 P.S.I. minimum (SSPC/WJ-4) with Devoe Dev-prep #88 or Great Lakes Extra Muscle Detergent. At no time shall cleaning detergents be allowed to dry on the exterior surfaces. The Contractor shall remove all chalking with a result equal to ASTM D-4214 result #8.
3. The entire existing exterior coatings on the shell shall be pole sanded to remove any existing debris in the coating and provide a mechanical bond. The Contractor shall power tool clean all areas of visual corrosion as per SSPC SP 3 and as per SSPC SP 11. All broken edges shall be feathered to a smooth transition. All bare metal shall be spot primed.
4. The exterior shell to concrete chime shall be completely caulked with Sika 2-C after application of the finish coat.

Section 13 – Air Compressors

1. The Contractor shall remove from the work site air compressors that are undersized or will not supply enough air for the coating operations. All operating equipment shall be placed into secondary containment to prevent accidental spills.
2. The Contractor shall check air stream a minimum of twice daily for moisture and oil contamination as per ASTM D-4285. All equipment shall have moisture and oil separators.

Section 14 - Environmental Conditions

1. No coating or paint shall be applied: when the surrounding air temperature or the temperature of the surface to be coated or painted is outside of the published material manufacturers recommendations to wet or damp surfaces or in rain, snow, fog or mist; when the temperature is less than 5 degrees F above the dew point; when it is expected the air temperature will drop below manufacturers recommendations, or less than 5 degrees F above the dew point within

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eight hours after application of coating or paint. Dew point shall be measured by use of an instrument such as an electronic Psychrometer in conjunction with U.S. Department of Commerce Weather Bureau Psychrometric Tables or equivalents.

Section 14 – Application Procedures

1. The Contractor shall apply all coatings in accordance with the manufacturer’s latest written recommendations and the best state of the art techniques that will result in a finish that is free of runs, sags, pinholes, dry spray, orange peel, be in even in color and appearance. The exterior welds shall be stripe coated with the epoxy primer prior to the application of the urethane finish coat.
2. The Contractor shall bring all materials to the job site in the original factory sealed containers. The Contractor shall not use any material until the Engineer has inspected the contents and obtained the information from the containers or labels. All materials shall be mixed as full kits only. Materials shall only be thinned with the manufacturer’s recommended thinners and will be thinned as required to adjust for viscosity for temperature variations, proper atomization, and flow. Thinning shall not exceed the Local, State, or Federal V.O.C. limits. Any catalyzed material remaining at the end of each day shall be properly discarded. The entire primer application shall be complete before the finish coat is applied.
3. To prevent the degradation or contamination of cleaned surfaces, the first coat of paint shall be applied immediately after the surfaces have been cleaned and approved by the Engineer. Succeeding coats shall be applied before contamination of the under surface occurs.

Section 16 – Curing

1. Each coat of paint shall be allowed to either dry or cure for the amount of time recommended by the coating manufacture before successive coats of paint are applied.
2. All successive coats of paint shall be applied within the re-coat threshold time as recommended by the manufacturer.

Section 17 – Color Scheme

1. The exterior topcoat color shall be as per the District’s Engineer’s instructions. The shell and piping, and ladders finish coat shall be a color selected by the District.
2. The Contractor shall submit color chips at least 3-inches by 5-inches in dimension within five (5) days prior to the start of application of the exterior topcoat. The Contractor shall order final

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coating materials only after receiving written approval from the Engineer. Failure to obtain the District’s approval prior to ordering shall not be the cause for additional compensation.

Section 18 – Exterior Surfaces – Coating Systems

1. The Contractor shall spot prime, seal coat and finish coat all exterior surfaces including, shell, ladders, railings, and all associated piping. The Contractor shall apply a new three coat system consisting of a high-performance epoxy and a polysiloxane finish coat to the roof.
2. The following coating system is approved by the District or equal.

- a. Sherwin Williams (Overcoating exterior shell)

Spot Prime Coat	Full Prime Coat	Finish Coat
Product: Macropoxy 646 DFT: 4.0 – 6.0 mils	Product: Macropoxy 5000 DFT: 1.0 – 2.0 mils	Product: Sher-loxane 800 DFT: 4.0 – 6.0 mils

- b. Sherwin Williams (Exterior roof)

Prime Coat	Finish Coat	Total system
Product: 2 Cts. S&W Macropoxy 646 DFT: 4.0 – 6.0 mils per coat	Product: Sher-loxane 800 DFT: 4.0 – 6.0 mils	8.0 – 18.0 mils DFT

3. Bare steel locations of the shell, ladder, piping and other appurtenances shall first be spot primed with 1 coat of Macropoxy 646 at 4.0 minimum and 6.0 maximum mils DFT, prior to application of the full seal coat and finish coat for a total system DFT of 9.0 mils minimum and 14 mils maximum at bare steel locations and 5.0 to 8.0 mils on the overcoated areas.
4. The color and sheen (Gloss) shall be submitted to the District and approved in writing by the District prior to Contractor ordering material.

Section 19 – Film Thickness

1. The Coating Inspector shall inspect film thickness with a non-destructive dry film thickness gauge (e.g., Elcometer 456). The Contractor shall provide to the District upon request U.S. Department of Commerce, Bureau of Standards calibration plates to verify accuracy.

Section 20 – Coating Repairs

**Rosamond Community Service District
Specification for the Coating Rehabilitation of Tank No. 3**

1. If it is necessary to touch-up or re-coat damaged areas after the coatings have cured beyond the maximum re-coat time, the Contractor shall prepare surfaces prior to applying touch-up paint. The Contractor shall mask off and spray designated areas only. All repairs will be masked off.

Section 21 – Contractors Responsibility

1. The Contractor shall dispose of any residual waste from surface preparation operations in compliance with all Federal, State, and Local regulations. The Contractor shall ensure that all openings are covered and protected to prevent over-spray from entering the Reservoir. The Contractor will be responsible for all costs in the event of contamination of the water inside the Reservoir. Site Restoration.
2. Upon completion of the work, the Contractor shall restore the site to the original condition, including removing all trash and other debris from the site.

Section 22 – Clean up

1. Upon completion of the work, the Contractor shall make a detailed inspection of all work.
2. The Contractor shall be solely responsible for all paint over-spray or dust fallout claims. The Contractor restore the site to its original condition.
3. The Contractor shall remove all spattering, spits, and blemishes.
4. Upon completion, of work, the Contractor shall remove all staging, tarps, scaffolding, and containers from the site, including but not limited to: paint and thinner containers and excess paint and thinner (to be disposed of in conformance to all current regulations); paint spots removed and the entire job site cleaned; all damage to surfaces resulting from the work from this section to be cleaned, repaired or refinished to the complete satisfaction of the District. All clean up shall be completed within 7 calendar days starting at the last day of holiday testing of the reservoir. No abrasive residual may be left on the ground and must be removed.
5. The Contractor shall bear all costs associated with site clean up.

Section 23 – Steel Tank 11 Month Inspection

1. At the time of tank acceptance for service, the District Engineer shall schedule the first anniversary inspection provided for in AWWA D102-22. The inspection of the tank shall be scheduled for a date between the first day of the eleventh month and the thirtieth day of the thirteenth month following acceptance. This schedule for the inspection shall be considered

**Rosamond Community Service District
Specification for the Coating Rehabilitation of Tank No. 3**

tentative and the Contractor will be notified of the inspection schedule no later than the first day of the tenth month following acceptance of the tank.

2. Upon completion of this inspection, the inspecting firm will prepare a report that includes but is not limited to, the methods used in the inspection, the equipment, and personnel on hand at the time of the inspection, a summary of findings, photographs of all deficiencies found, and any other information relevant to the condition and maintenance of the tank.
3. The Contractor shall have a representative on site at the time of inspection to authorize any minor repairs the inspection subcontractor is willing to perform during or directly after the inspection.

Section 24 – Omissions

1. Care has been taken to delineate those surfaces to be coated. However, if the coating requirements have been inadvertently omitted from this section or any other section of the specifications, it is intended that all metal surfaces unless specifically exempted herein, shall receive a first-class protective system equal to that given the same type of surface pursuant to these specifications.

PART 6 Contractor/Coating Inspector Interaction and Compliance

Section 1 – Inspection

1. The District has retained a coating inspection firm to oversee all quality control related to coating operations. The tank inspector will report directly to the District Engineer and shall act with the Engineer's authority in all matters related to tank construction. The Inspector will be an AMPP Certified Coating Inspector, who will inspect any or all phases of work to be performed as outlined herein. The tank inspector shall be an addition to the District Inspector; authority shall be limited to tank related work only. The District Inspector shall remain the primary observer for all work on the project. The tank inspector shall work for and report to the District. The Contractor shall not rely upon the tank inspector for documentation of environmental conditions and assuring compliance with plans and specifications.
2. The Contractor shall notify the District Engineer in advance (48 hours minimum) of all surface preparation or paint application in order to perform a preliminary examination and provide acceptance of the surface preparation and each coat prior to application of the next coat.
3. The Coating Inspector shall examine all materials, tools, and equipment to be used in the blasting and coating operations and shall have the authority to direct the Contractor to remove, replace, or repair any materials, tools, or equipment found not to be in conformance with the

Rosamond Community Service District
Specification for the Coating Rehabilitation of Tank No. 3

Contract Documents including the approved shop drawings and manufacturer's recommendations. The tank inspector will also observe the Contractor's safety activities throughout blasting and coating operations and the Contractor shall immediately rectify any deficiencies noted in that observation. The Contractor shall be fully responsible for compliance with all safety measures, hazardous and toxic materials regulations, and site security. Observation of or failure to observe any safety efforts of the Contractor by the Tank Inspector shall not relieve the Contractor of this responsibility nor shall any liability transfer from the Contractor to the District or the Tank Inspector. The Contractor shall indemnify, defend, and save harmless the District and the Tank Inspector from all liability associated therewith.

4. The SSPC-Vis1 pictorial surface standards along with dry film and wet film thickness gauges will be used by the Coating Inspector to determine acceptability of the paint application. The Contractor shall provide necessary testing equipment to perform the above-mentioned tests.
5. The Contractor shall afford the tank inspector all reasonable facilities and assistance in monitoring the coating and priming operations. The Contractor shall provide weekly copies of their daily work reports to the tank Coating Inspector. Such reports shall include, but not be limited to, the day and date of work performed, the relevant weather conditions, the type and amount of work performed, all work related to the safety of the operation, and personnel assigned to work actually performed.
6. To facilitate adequate inspection of all surfaces, the Contractor shall provide scaffolding or rigging and people to move the scaffolding as necessary for the Coating Inspector to perform dry film thickness readings, and visual holiday inspection as required by these specifications and reference standards. The Contractor shall provide personnel to move scaffolding or rigging at the instructions of the Engineer.
7. The Coating Inspector shall have authority to direct the Contractor to suspend operations when environmental conditions fall outside the manufacturer's recommended parameters. The Contractor shall comply with these directions and shall not proceed until the tank Coating Inspector determines environmental conditions are sufficient to proceed. Failure to suspend coating operations as directed or restarting work without the direction of the tank Coating Inspector shall be cause for rejection of work so performed.
8. The Contractor shall immediately remove and replace all such work in accordance with these Project Special Provisions and directions of the tank inspector. No additional compensation will be allowed for work resulting from failure to comply with the tank inspector or for surfaces not otherwise conforming to the provisions of these Project Special Provisions.

Section 2 – Coating Inspector Authority

Rosamond Community Service District
Specification for the Coating Rehabilitation of Tank No. 3

1. The Coating Inspector shall have authority to direct the Contractor to suspend operations when environmental conditions fall outside the manufacturer’s recommended parameters.
2. The Contractor shall comply with directions and shall not proceed until the tank Coating Inspector determines environmental conditions are sufficient to proceed. Failure to suspend coating operations as directed or restarting work without the direction of the tank Coating Inspector shall be cause for rejection of work so performed.
3. The Contractor shall immediately remove and replace all such work in accordance with these Project Special Provisions and directions of the Coating Inspector.
4. No additional compensation will be allowed for work resulting from failure to comply with the tank inspector or for surfaces not otherwise conforming to the provisions of these Project Special Provisions.

Section 3 -Safety

1. The Contractor shall provide a safe work environment at all times. In the event the Coating Inspector notes any safety deficiencies, the Contractor shall immediately rectify noted deficiencies.
2. The Contractor shall be fully responsible for compliance with all safety measures, hazardous and toxic materials regulations, and site security. Observation of or failure to observe any safety deficiencies of the Contractor by the Coating Inspector shall not relieve the Contractor of this responsibility nor shall any liability transfer from the Contractor to the District or the Coating Inspector.
3. The Contractor shall save harmless the District and the Coating Inspector from all liability associated therewith.

Section 4 – Inspection Assistance

1. To facilitate adequate inspection of all surfaces, the Contractor shall provide scaffolding or rigging necessary for the Coating Inspector to perform dry film thickness readings, and visual holiday inspection as required by these specifications and reference standards.
2. The Contractor shall provide personnel to move scaffolding or rigging at the instructions of the Coating Inspector.
- 3.

**Rosamond Community Service District
Specification for the Coating Rehabilitation of Tank No. 3**

Section 5 – Notification

1. The Contractor shall notify the Coating Inspector in advance (48 hours minimum) of all surface preparation or paint application in order to perform a preliminary examination and provide acceptance of the surface preparation and each coat prior to application of the next coat.

Section 6 – Acceptability for Coating Application

1. The SSPC-Vis1 pictorial surface standards along with dry film and wet film thickness gauges will be used by the Coating Inspector to determine acceptability of the paint application.
2. The Contractor shall provide necessary testing equipment to perform the abovementioned tests.

Section 7 – Reporting

1. The Contractor shall afford the Coating Inspector all reasonable facilities and assistance in monitoring the coating and priming operations.
2. The Contractor shall provide weekly copies of daily work reports to the tank Coating Inspector. Such reports shall include, but not be limited to, the day and date of work performed, the type and amount of work performed, all work related to the safety of the operation, and personnel assigned to work actually performed.

END OF SECTION

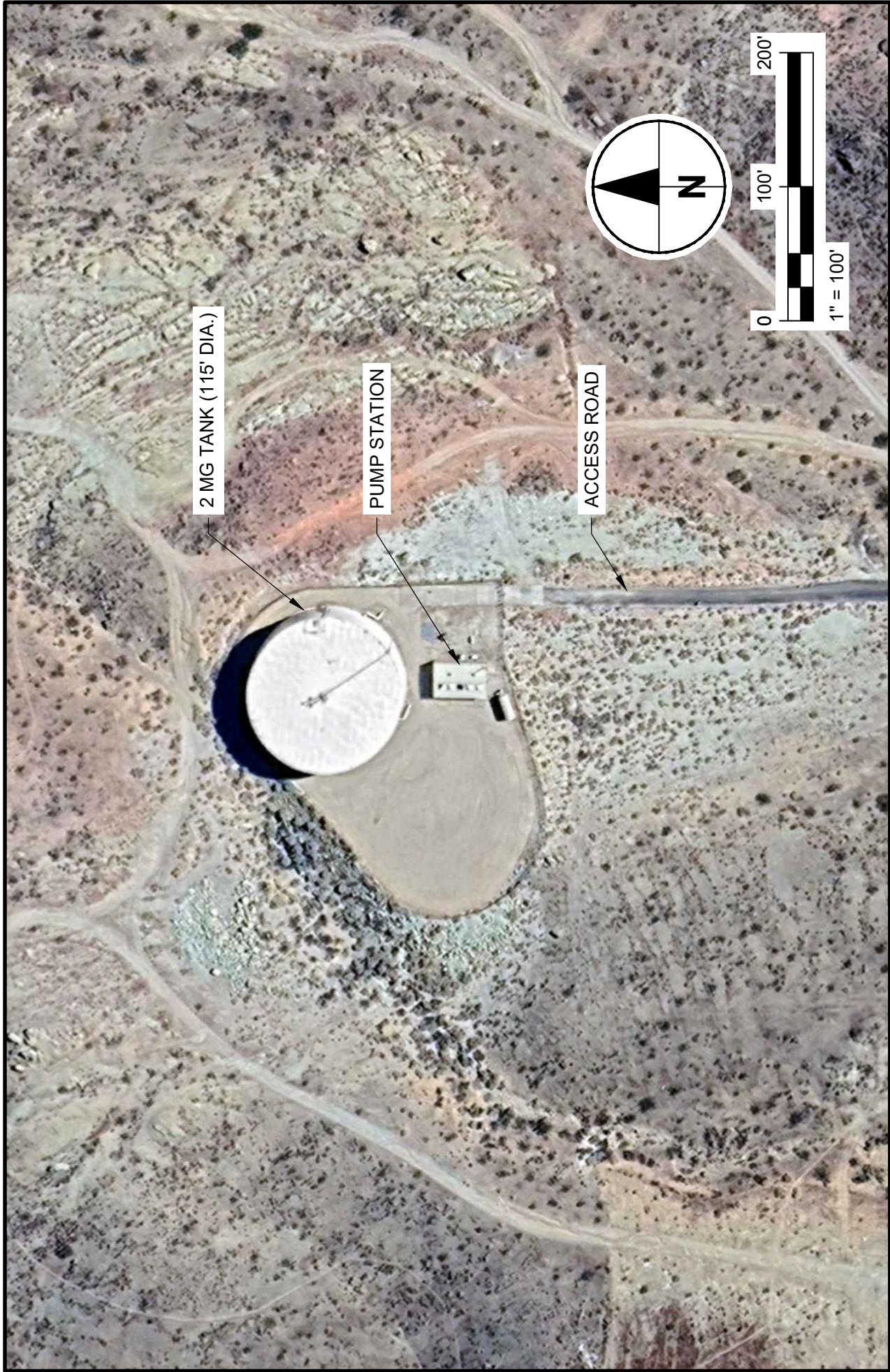
**APPENDIX B – TANK NO. 3 EXTERIOR AND INTERIOR
COATING EXHIBITS (EXHIBITS 1 – 9)**

Rosamond Community Services District

Tank No. 3 Recoat Project

Notes for Figures:

1. Prepare surface and recoat tank exterior including walls, roof, manways, attached piping, ladders, railings and appurtenances.
 2. Prepare surface and recoat piping and flanges from tank to ground level including supports.
 3. Remove peeling coating (typical for all peeling coating).
 4. Remove and replace in kind the existing gauge board.
 5. Relabel Tank.
 6. Telemetry appurtenances to be left as is.
 7. Prepare surface and recoat tank interior including walls, roof, manways, attached piping, ladders, railings, and appurtenances.
 8. Access hatch to remain in place.
- X. Do not recoat foundation.



TANK 3 RECOAT PROJECT
ROSAMOND COMMUNITY SERVICES DISTRICT
Project No.: 60741263 Date: 09/29/2025

TANK 3 SITE PLAN
(30TH STREET WEST)

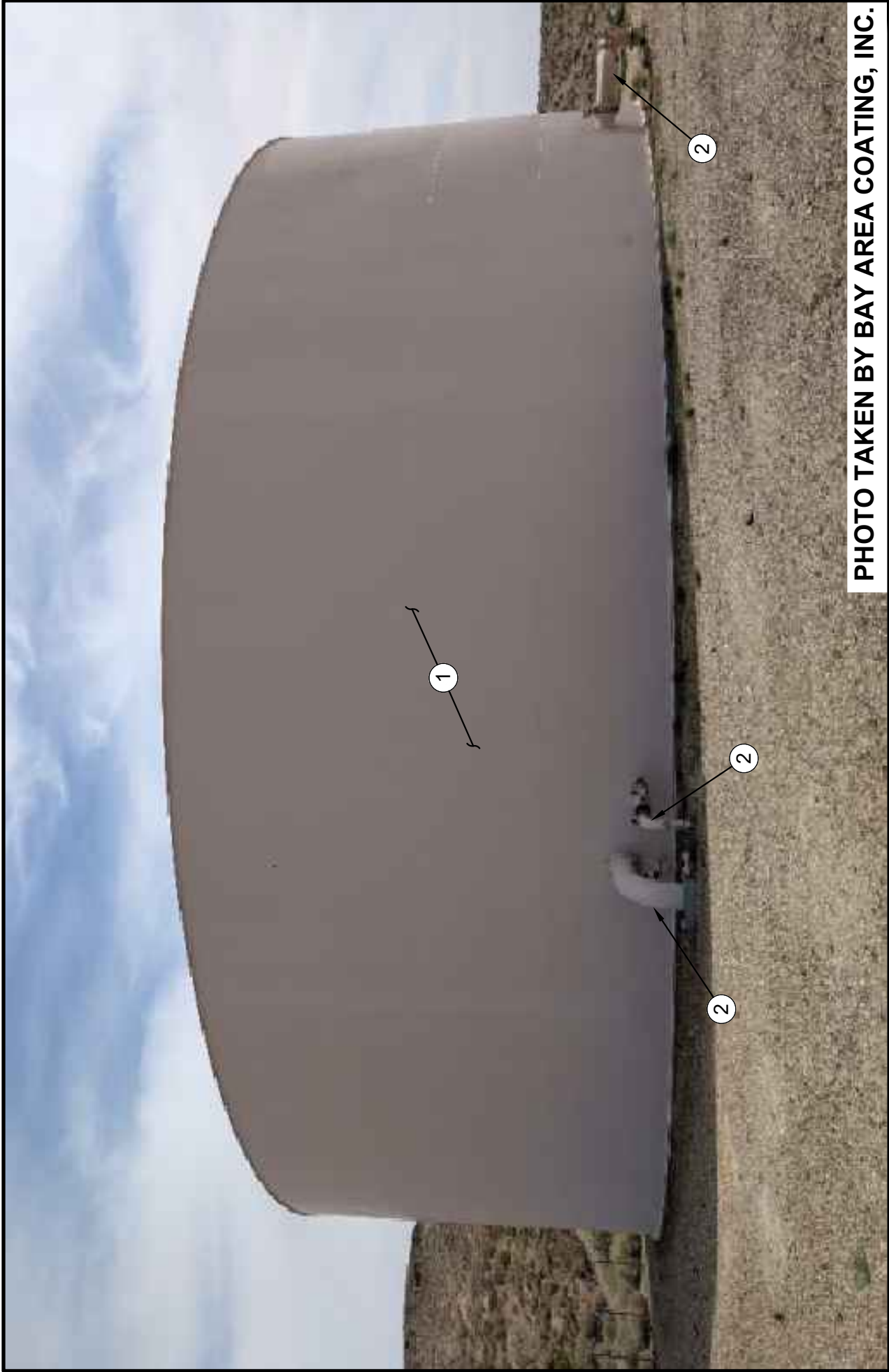


PHOTO TAKEN BY BAY AREA COATING, INC.

TANK 3 RECOAT PROJECT

TANK 3 EXTERIOR

ROSAMOND COMMUNITY SERVICES DISTRICT
Project No.: 60741263 Date: 09/29/2025



Exhibit: 2



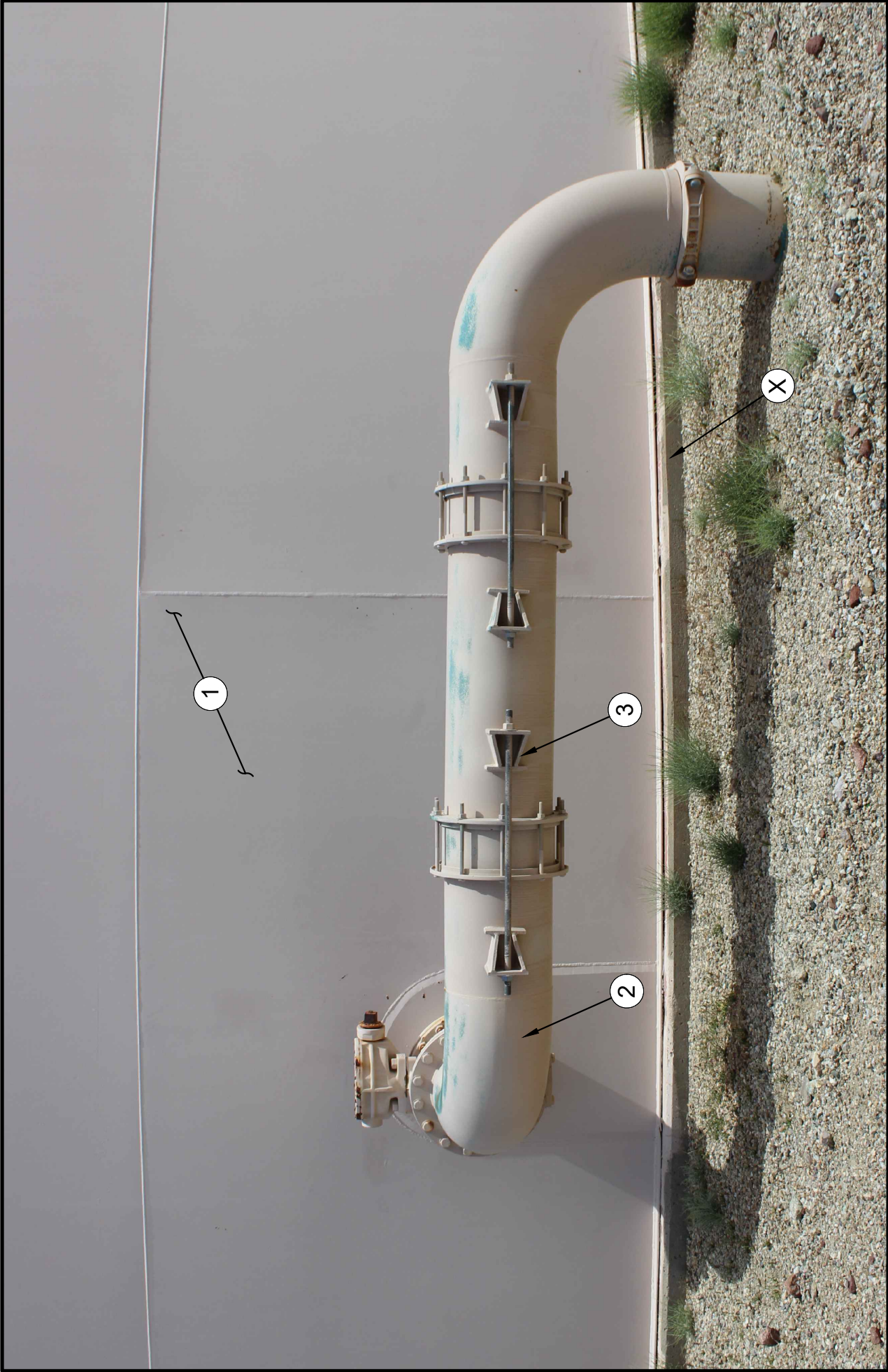
TANK 3 RECOAT PROJECT

ROSAMOND COMMUNITY SERVICES DISTRICT
Project No.: 60741263 Date: 09/29/2025

**TANK 3 EXTERIOR
SITE GAUGE**



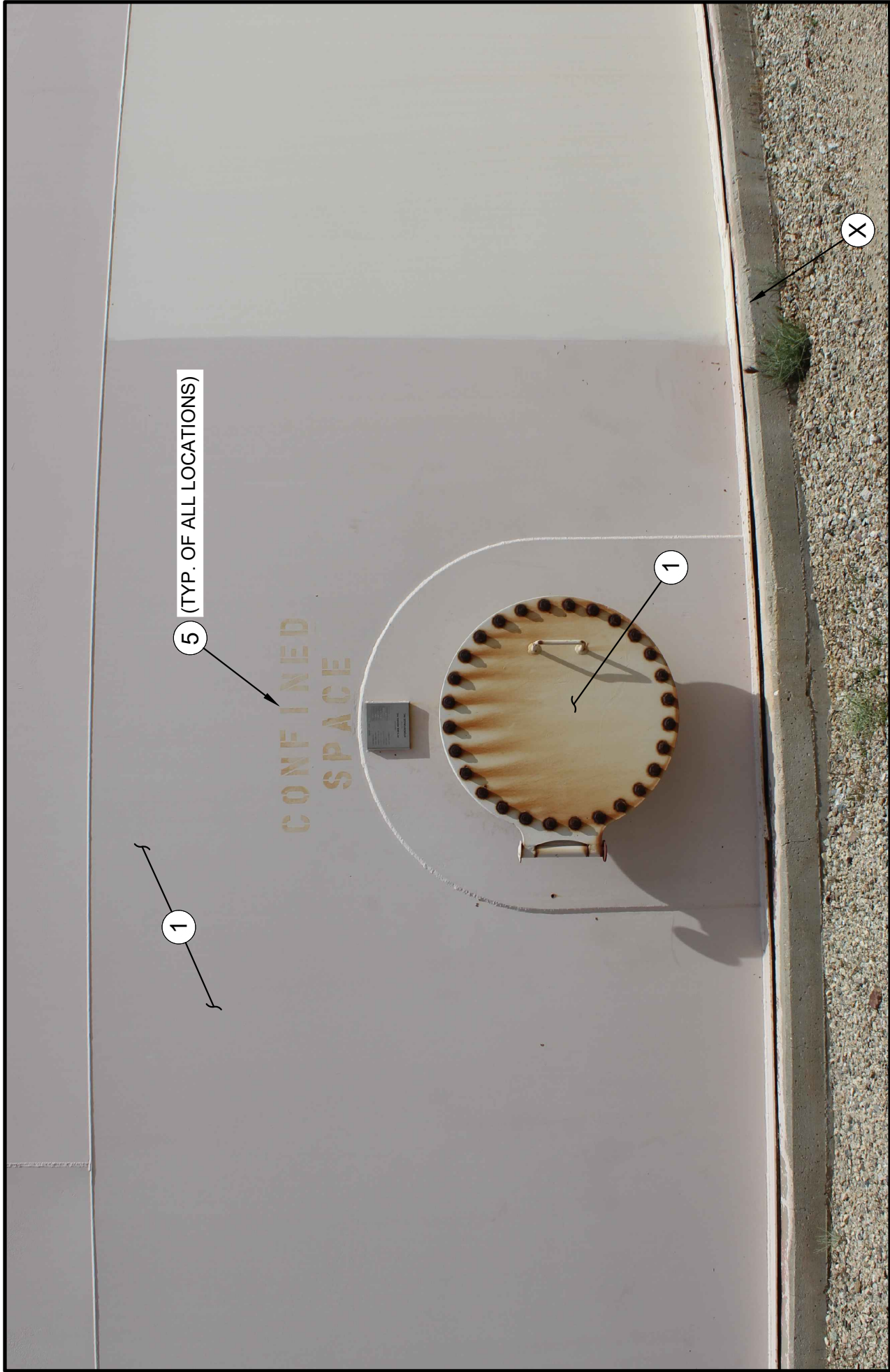
Exhibit: 3



TANK 3 RECOAT PROJECT

**TANK 3
OUTLET PIPING**

ROSAMOND COMMUNITY SERVICES DISTRICT
Project No.: 60741263 Date: 09/29/2025





TANK 3 RECOAT PROJECT

**TANK 3 EXTERIOR
ACCESS LADDER**

ROSAMOND COMMUNITY SERVICES DISTRICT
Project No.: 60741263 Date: 09/29/2025



Exhibit: 6



PHOTO TAKEN BY BAY AREA COATING, INC.

TANK 3 RECOAT PROJECT

**TANK 3 EXTERIOR
TOP OF TANK**

ROSAMOND COMMUNITY SERVICES DISTRICT
Project No.: 60741263 Date: 09/29/2025



Exhibit: 7

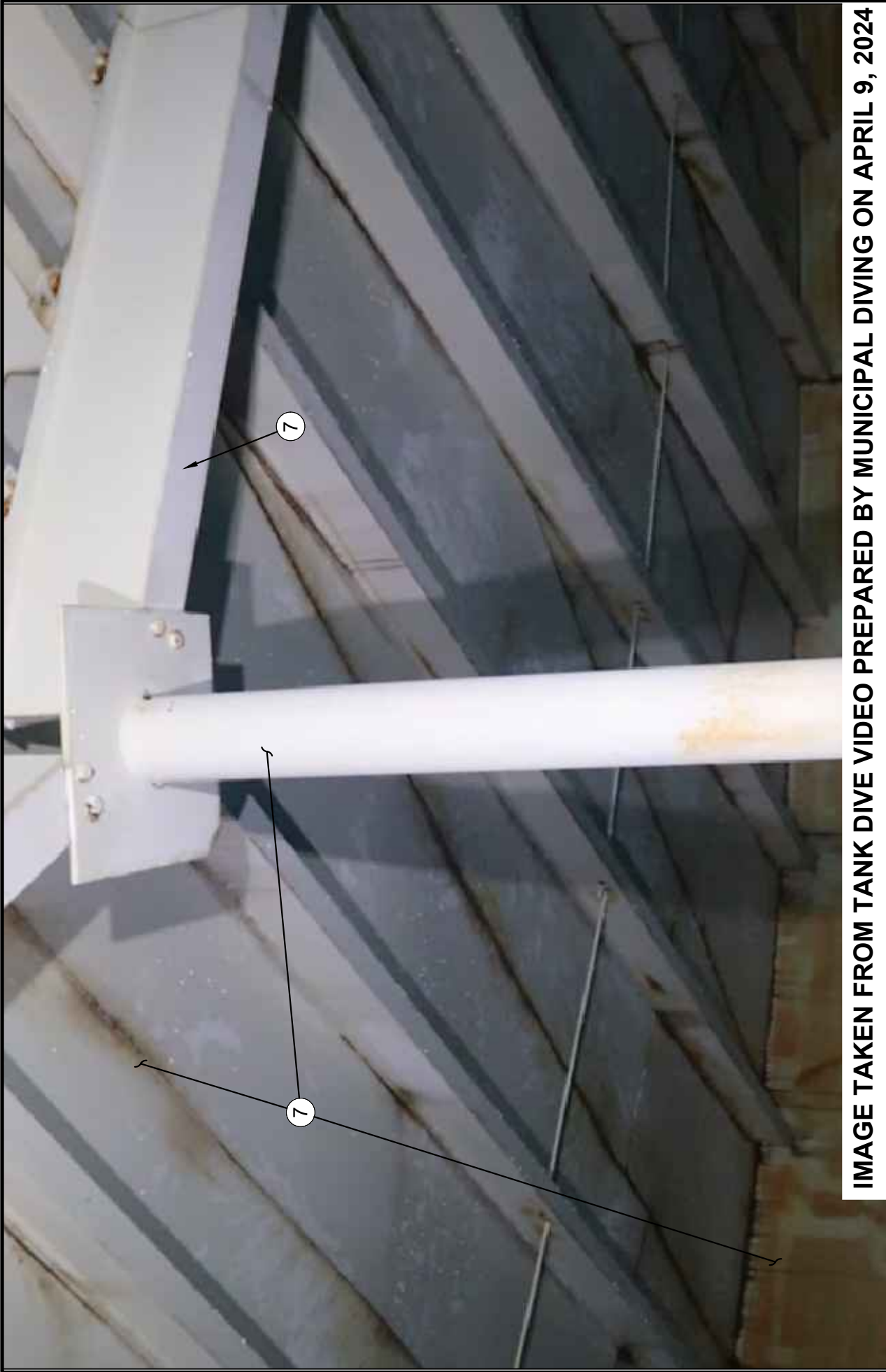


IMAGE TAKEN FROM TANK DIVE VIDEO PREPARED BY MUNICIPAL DIVING ON APRIL 9, 2024

TANK 3 RECOAT PROJECT

**TANK 3 INTERIOR
TOP OF COLUMN**

ROSAMOND COMMUNITY SERVICES DISTRICT

Project No.: 60741263

Date: 09/29/2025



Exhibit: 8



IMAGE TAKEN FROM TANK DIVE VIDEO PREPARED BY MUNICIPAL DIVING ON APRIL 9, 2024

TANK 3 RECOAT PROJECT

**TANK 3 INTERIOR
COLUMN BASE**

ROSAMOND COMMUNITY SERVICES DISTRICT

Project No.: 60741263

Date: 09/29/2025

CONSTRUCTION PLANS FOR:

ROSAMOND COMMUNITY SERVICES DISTRICT

TANK 3 RECOAT PROJECT

KERN COUNTY, CALIFORNIA

JUNE 2026



ROSAMOND COMMUNITY SERVICES DISTRICT (RCS D)
3179 35TH STREET WEST
ROSAMOND, CA 93560

SHEET INDEX	
SHT. NO.	TITLE
GENERAL	
G01	COVER SHEET & SHEET INDEX
G02	GENERAL NOTES, ABBREVIATIONS, AND SYMBOLS
CIVIL	
C01	EXIST. PIPING DEMOLITION PLAN AND NEW PIPING LAYOUT PLAN
C02	CIVIL DETAILS

PROJECT
TANK 3 RECOAT PROJECT

APPROVED BY
RCS D BOARD OF DIRECTORS

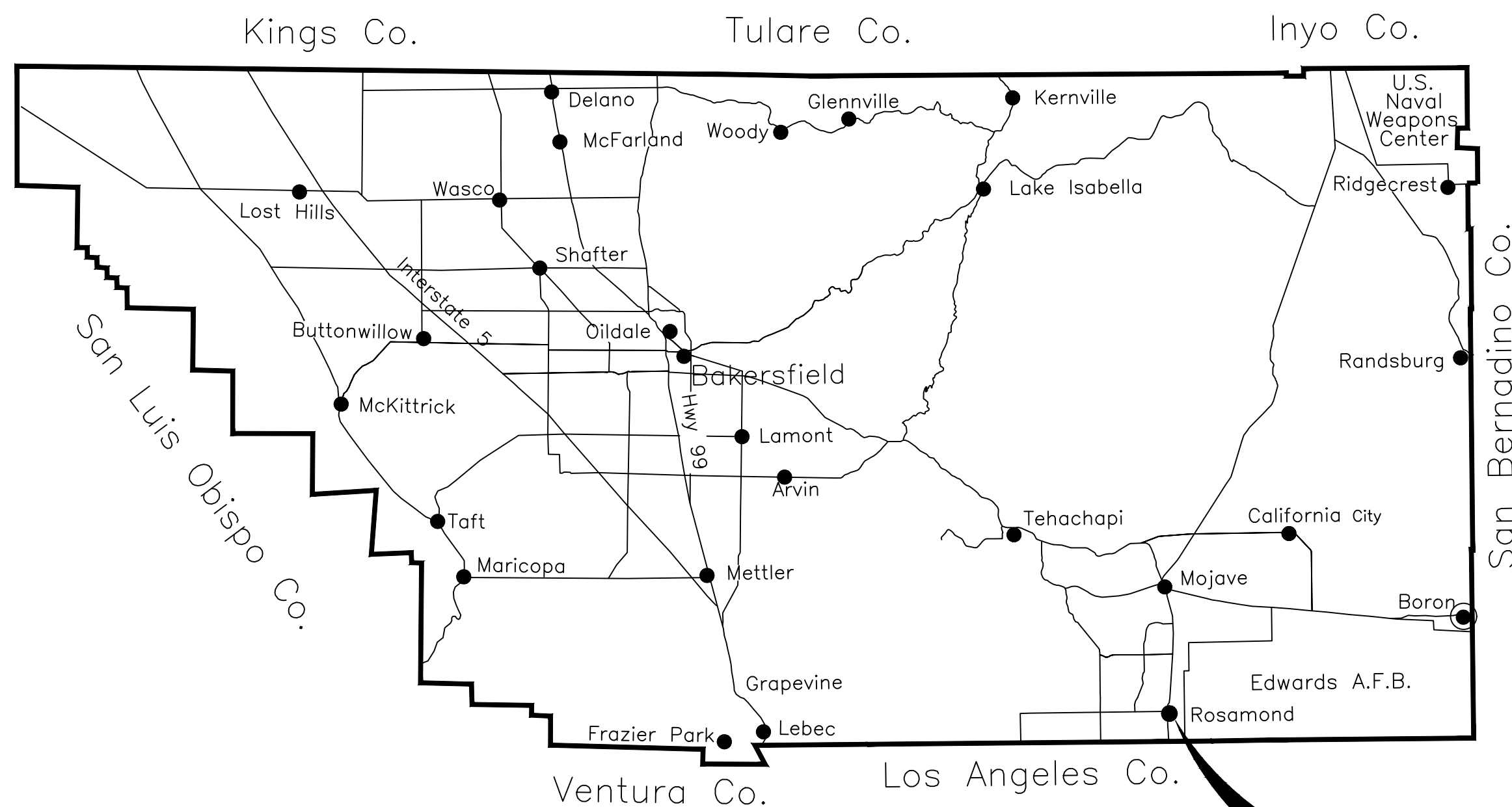
PRESIDENT, BOARD OF DIRECTORS DATE

RECOMMENDED FOR APPROVAL

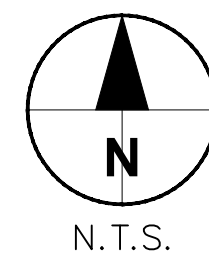
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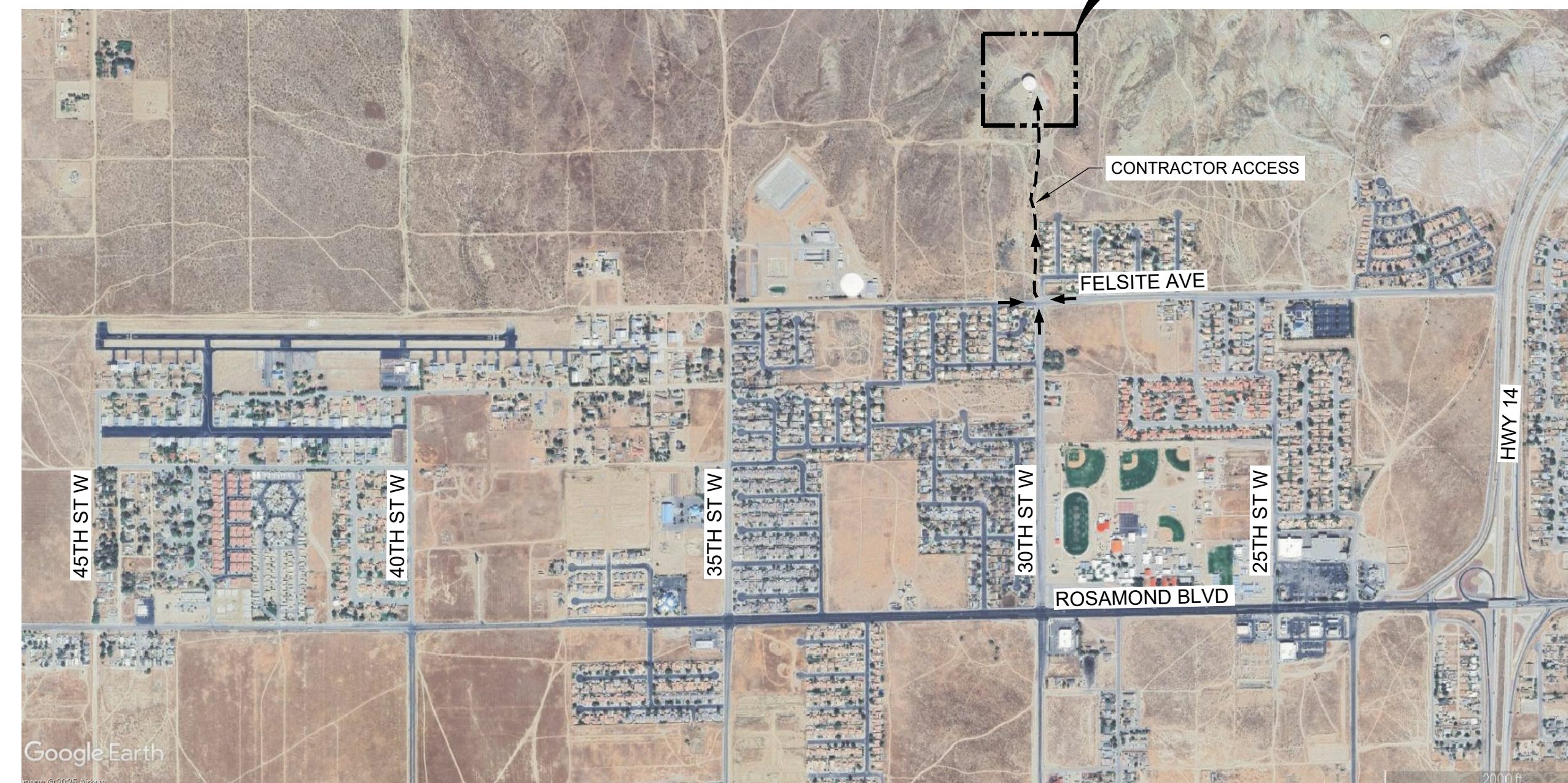
AECOM
5001 E. Commercenter Dr. Suite 100
Bakersfield, CA 93309
661.283.2323 tel
www.aecom.com



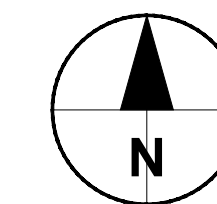
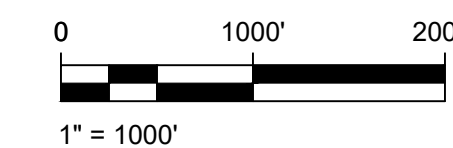
COUNTY OF KERN
VICINITY MAP



PROJECT LOCATION



LOCATION MAP



CONSULTANT STAMP



DATE	REV	DESCRIPTION
6/1/26	A	ISSUED FOR BID

DATE 04/21/2025	SHEET NO.
DESIGNED BY AP	G01
DRAWN BY DG	
CHECKED BY -	
JOB NO. 60741263	DRAWING FILE 60741263-G01.dwg

COVER SHEET & SHEET INDEX

GENERAL NOTES

- THE ROSAMOND COMMUNITY SERVICES DISTRICT (R.S.C.D.), ALSO KNOWN AS THE PROJECT REPRESENTATIVE, SHALL BE NOTIFIED AT LEAST TWO (2) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION. TELEPHONE (661) 256-3411.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION. THE OWNER'S REPRESENTATIVE SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES.
- INFORMATION SHOWN ON THE DRAWINGS RELATED TO EXISTING CONDITIONS REPRESENTS THE PRESENT KNOWLEDGE, BUT WITHOUT GUARANTEE OF ACCURACY. REPORT CONDITIONS THAT CONFLICT WITH THE CONTRACT DOCUMENTS TO THE OWNER'S REPRESENTATIVE. DO NOT DEVIATE FROM THE CONTRACT DOCUMENTS WITHOUT WRITTEN DIRECTION FROM THE OWNER'S REPRESENTATIVE.
- DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DRAWINGS. DRAWINGS SHALL NOT BE SCALED.
- NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NOTES AND DETAILS ON DRAWINGS AND THESE GENERAL NOTES AND TYPICAL DETAILS CONFLICT WITH THE PROJECT SPECIFICATIONS THE MOST STRINGENT SHALL APPLY. CONDITIONS NOT SPECIFICALLY SHOWN SHALL BE CONSTRUCTED AS SHOWN FOR SIMILAR WORK.
- ALL WORK SHALL CONFORM TO THE STANDARDS OF THE FOLLOWING:
THE WATER FACILITIES TO BE DEDICATED TO THE R.C.S.D. SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE R.C.S.D. AND ANY OTHER REGULATING AGENCIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK, INCLUDING BUT NOT LIMITED TO KERN COUNTY, CAL/OSHA, DIVISION OF OCCUPATIONAL SAFETY AND HEALTH, AWWA, AND THOSE CODES AND STANDARDS LISTED IN THE CONTRACT DOCUMENTS.
- SPECIFICATIONS, CODES, AND STANDARDS NOTED IN THE CONTRACT DOCUMENTS SHALL BE OF THE LATEST APPROVED ISSUE, INCLUDING SUPPLEMENTS, UNLESS OTHERWISE NOTED. MATERIAL SPECIFICATIONS SHALL COMPLY WITH ASTM REFERENCED STANDARDS LATEST EDITION.
- MANUFACTURED MATERIALS SHALL REQUIRE APPROVAL BY R.C.S.D. PRIOR TO THEIR USE.
- CONTRACTOR SHALL CAREFULLY REVIEW THE DRAWINGS TO IDENTIFY THE EXTENT OF THE SCOPE OF WORK. VISIT THE SITE TO RELATE THE SCOPE OF WORK TO EXISTING CONDITIONS AND DETERMINED THE EXTENT TO WHICH THOSE CONDITIONS AND PHYSICAL SURROUNDINGS WILL IMPACT THE WORK WITHOUT PRIOR WRITTEN APPROVAL.
- THE CONTRACTOR SHALL RESOLVE ANY CONFLICTS ON THE CONSTRUCTION DOCUMENTS WITH THE OWNER'S REPRESENTATIVE FOR REVIEW/APPROVAL BEFORE PROCEEDING WITH THE WORK. SUBSTITUTIONS OF PRODUCTS OR MATERIALS SPECIFIED ON THE CONSTRUCTION DOCUMENTS ARE NOT ALLOWED.
- THE CONTRACT DOCUMENTS REPRESENT THE FINISHED PROJECT. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE MEANS, METHOD, TECHNIQUES, SEQUENCE, AND PROCEDURE OF CONSTRUCTION AS REQUIRED. SITE VISITS PERFORMED BY THE OWNER'S REPRESENTATIVE DO NOT INCLUDE INSPECTIONS OF MEANS AND METHODS OF CONSTRUCTION PERFORMED BY CONTRACTOR.
- SECURE ALL EXCAVATIONS AND WORK AREAS DURING NON-WORK HOURS WITH TEMPORARY FENCING OR PLATING.
- CONTRACTOR SHALL FIELD VERIFY AND FAMILIARIZE HIMSELF/HERSELF WITH THE EXISTING CONDITIONS OF THE PROJECT PRIOR TO DEMOLITION WORK AS NOT ALL OBSTRUCTIONS MAY BE ILLUSTRATED ON THESE DRAWINGS. ANY OBSTRUCTIONS THAT MAY INTERFERE WITH THE WORK NEED TO BE ADDRESSED BY AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL CONTACT UTILITY COMPANIES AND AGENCIES WITH SERVICES IN THE AREA PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES AND COORDINATE WITH THE UTILITY FACILITIES AFFECTED BY THE CONSTRUCTION. THE CONTRACTOR SHALL CONTACT DIG ALERT (811) 48 HOURS PRIOR TO PERFORMING ANY EXCAVATION, FOR UNDERGROUND UTILITY LOCATION SERVICES.
- REPLACE IN KIND, IF APPLICABLE, EXISTING CONCRETE PAVEMENT DAMAGED DURING CONSTRUCTION IN ACCORDANCE WITH THE SPECIFICATIONS AND OWNER.
- ALL EXISTING IMPROVEMENTS OR UTILITIES OUTSIDE OF THE LIMITS OF WORK ARE TO BE PRESERVED OR PROTECTED. OFFSITE IMPROVEMENTS THAT ARE REMOVED, DAMAGED, OR UNDERCUT FROM CONSTRUCTION ACTIVITIES, SHALL BE REPAIRED, OR REPLACED AS DIRECTED BY THE OWNER AT CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO PREVENT A DUST NUISANCE FROM ORIGINATING AT THE SITE AS A RESULT OF ITS OPERATIONS. THE CONTRACTOR SHALL OBTAIN A DUST CONTROL PERMIT IF REQUIRED FROM THE REGIONAL AIR DISTRICT AND CONFORM TO REQUIREMENTS THEREIN.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING THE SITE AT ALL TIMES. OWNER SHALL NOT BE RESPONSIBLE FOR LOSS OR DAMAGE OF CONTRACTOR'S EQUIPMENT OR MATERIAL DURING THE COURSE OF THE PROJECT.

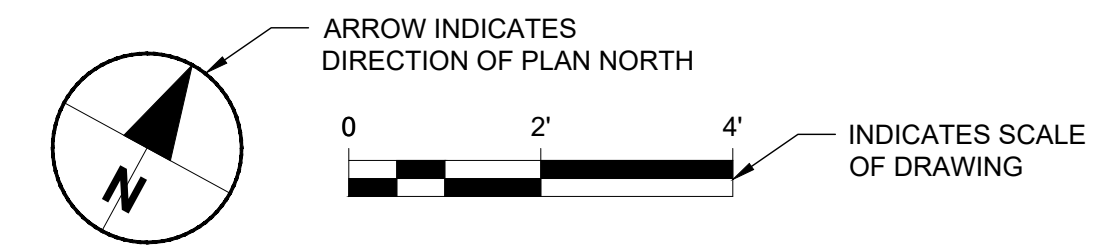
CONSTRUCTION NOTES

- DESIGN INTENT:** THE OVERALL DESIGN INTENT IS TO PROVIDE A REPAIR PLAN AND COATING SYSTEMS NEEDED TO ADDRESS THE TANK 3 IMPROVEMENTS NEEDED. THE WORK WILL CONSIST OF RECOATING THE EXTERIOR AND INTERIOR OF A 2-MILLION-GALLON, WELDED STEEL WATER STORAGE TANK.
- ONSITE UTILITIES:** VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES THAT MAY BE IMPACTED BY CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT. PRESERVE AND PROTECT UTILITIES IN PLACE THROUGH THE DURATION OF THE PROJECT. ANY DAMAGE TO EXISTING UTILITIES THAT IS A DIRECT RESULT OF CONSTRUCTION ACTIVITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSED.
- DEMOLITION NOTES:**
 - TRENCH AREA WHERE NEW BYPASS VALVE IS TO BE LOCATED, AND EXCAVATE DOWN TO EXISTING 24-INCH WATER LINE AS REQUIRED FOR INSTALLATION OF PIPING, VALVES, AND APPURTENANCES. DISPOSE OF REMOVED MATERIAL OFFSITE.
 - REMOVE EXISTING ABOVE GROUND PIPING AS INDICATED ON THE PLANS. DISPOSE OF EXISTING PIPING AND APPURTENANCES OFFSITE.
- EARTHWORK:** CLEAR EXISTING DEBRIS, PLANT MATERIAL AND OTHER ITEMS WITHIN THE LIMITS OF WORK AS DIRECTED BY THE ENGINEER. SCARIFY, MOISTURE CONDITION, COMPACT SOIL, AND TEST FOR COMPACTION IN ACCORDANCE WITH ASTM D 1557. THE FOLLOWING PERCENTAGES OF MAXIMUM DRY DENSITY SHALL APPLY:
 - PIPELINE TRENCH AND PIPE ZONE: 90% (NON-PAVED AREAS)
 - PIPELINE TRENCH ZONE: 95% (PAVED AREAS)
 - SELECT MATERIAL OR SAND ABOVE PIPE (12" MIN): 90%
 - TOP 12" OF SUBGRADE IN PAVED AREAS TO BE 95%
 - AGGREGATE BASE IN PAVED AREAS TO BE 95%
- PIPELINE TRENCH AND PIPE ZONE: CONFORM TO PLANS AND SPECIFICATIONS. SEE DETAIL 2, SHEET C02.
- WATER SERVICE DISINFECTING:** ALL NEW OR REPAIRED WATER SERVICE PIPES SHALL BE COMPLETELY DISINFECTED IN ACCORDANCE WITH "PROCEDURES FOR DISINFECTING WATER MAINS, AWWA C601" AND ANY ADDITIONAL REQUIREMENTS AS REQUIRED BY THE STATE OF CALIFORNIA WATER RESOURCES CONTROL BOARD, DIVISION OF DRINKING WATER.
- CLASS 2 AGGREGATE BASE:** AGGREGATE BASE SHALL CONFORM TO THE PROVISIONS OF SECTION 39 OF THE CALTRANS SPECIFICATIONS FOR TYPE "A" OR "B" 3/4-INCH MAXIMUM AGGREGATE.
- EXISTING PIPE LOCATIONS:** FIELD VERIFY ALL EXISTING PIPE LOCATIONS FOR POINTS OF CONNECTION TO VALIDATE PLAN AND REPORT ANY DIFFERENCES TO ENGINEER. APPROVAL TO CONSTRUCT WILL BE BY DIRECTION FROM ENGINEER IN THE FIELD.
- NOTIFICATION OF PROJECT REPRESENTATIVE:** NOTIFY PROJECT REPRESENTATIVE AT LEAST TWO WORKING DAYS IN ADVANCE OF ANY WORK AND IN PARTICULAR WORK AFFECTING EXISTING IMPROVEMENTS.
- JOB SITE CONDITIONS:** CONTRACTOR ASSUMES SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS SHALL ALSO INCLUDE EXCAVATION RELATED SAFETY. CONTRACTOR SHALL NEVER LEAVE THE SITE WITHOUT PROPERLY SAFEGUARDING THE PUBLIC FROM INJURY RELATED TO CONSTRUCTION OPERATIONS. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
- UNAUTHORIZED CHANGES AND USES:** THE ENGINEER WHO PREPARED THESE PLANS WILL NOT BE RESPONSIBLE OR LIABLE FOR UNAUTHORIZED CHANGES TO PLANS OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS SHALL BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.
- NEATNESS TO BE MAINTAINED:** KEEP SITE AND ADJACENT AREAS AFFECTED BY THE PROJECT, IN A NEAT AND ORDERLY MANNER WITH A MINIMUM OF CONSTRUCTION DEBRIS. WET DOWN DRY MATERIALS AND RUBBISH TO PREVENT BLOWING DUST. AT THE CLOSE OF EVERY BUSINESS DAY, ENSURE THAT ALL DEBRIS AND RUBBISH IS GATHERED AND DISPOSED OF AS DIRECTED BY THE PROJECT REPRESENTATIVE. AT PROJECT COMPLETION, PROVIDE FINAL CLEANING AS DIRECTED BY THE PROJECT REPRESENTATIVE. FINAL CLEANING SHALL INCLUDE BUT NOT BE LIMITED TO SWEEPING, GREASE REMOVAL, PATCHING, POLISHING, REPAIR, TOUCH UP MARRED SURFACES, RAKING, REMOVAL OF MATERIALS AND WASHDOWN.
- PREPARE SURFACE AND RECOAT TANK EXTERIOR INCLUDING WALLS, ROOF, MANWAYS, ATTACHED PIPING, LADDERS, RAILINGS, AND APPURTENANCES.
- PREPARE SURFACE AND RECOAT PIPING AND FLANGES FROM TANK TO GROUND LEVEL INCLUDING SUPPORTS.
- PREPARE SURFACE AND RECOAT TANK INTERIOR INCLUDING WALLS, ROOF, MANWAYS, ATTACHED PIPING, LADDERS, RAILINGS, AND APPURTENANCES.
- RELABEL TANK.
- DO NO RECOAT FOUNDATION, METERS, AND INSTRUMENTS.
- THE DISTRICT WILL EMPTY THE TANK IN PREPARATION FOR THE CONTRACTOR TO PERFORM THE WORK. THE DISTRICT WILL NOTIFY THE CONTRACTOR WHEN WORK CAN COMMENCE.
- PRESSURE TESTING PIPING: SEE SPECIFICATION 400515 FOR PRESSURE TESTING REQUIREMENTS.

ABBREVIATIONS

A.B.	ANCHOR BOLT
BOT.	BOTTOM
DIA.	DIAMETER
(E)	EXISTING
FLG	FLANGED
MAX.	MAXIMUM
MFR.	MANUFACTURER
MIN.	MINIMUM
O.C.	ON CENTER
SQ.	SQUARE
TOT.	TOTAL
TYP.	TYPICAL

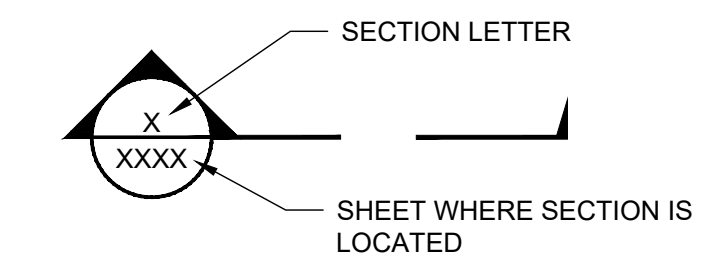
GENERAL SYMBOLOGY



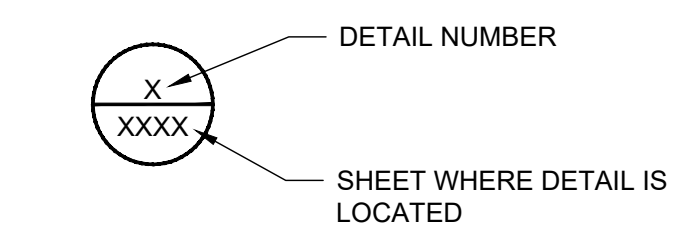
PLAN NORTH AND SCALE



PLAN/DETAIL TITLE



SECTION CUT MARKER



DETAIL CALLOUT BUBBLE

CLIENT



ROSAMOND COMMUNITY SERVICES DISTRICT (RCSD)
3179 35TH STREET WEST
ROSAMOND, CA 93560

PROJECT

TANK 3 RECOAT PROJECT

APPROVED BY
RCSD BOARD OF DIRECTORS

PRESIDENT, BOARD OF DIRECTORS DATE

RECOMMENDED FOR APPROVAL

GENERAL MANAGER DATE



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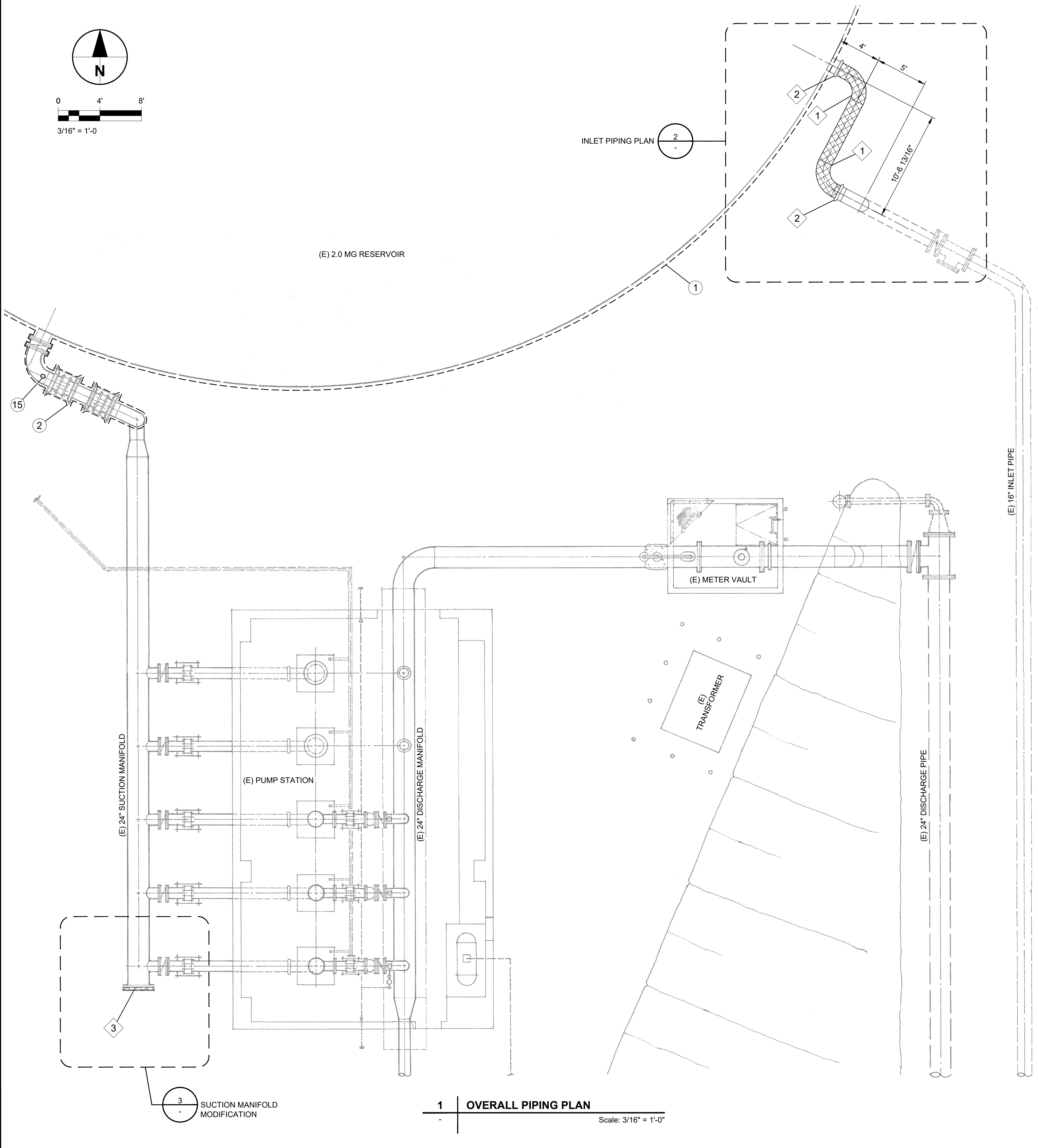
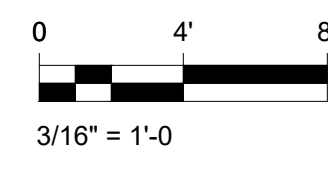
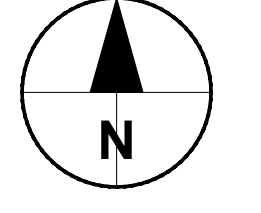
CONSULTANT STAMP



DATE	REV	DESCRIPTION
6/1/26	A	ISSUED FOR BID

DATE 04/21/2025	SHEET NO. G02
DESIGNED BY AP	
DRAWN BY DG	
CHECKED BY -	
JOB NO. 60741263	DRAWING FILE 60741263-G02.dwg

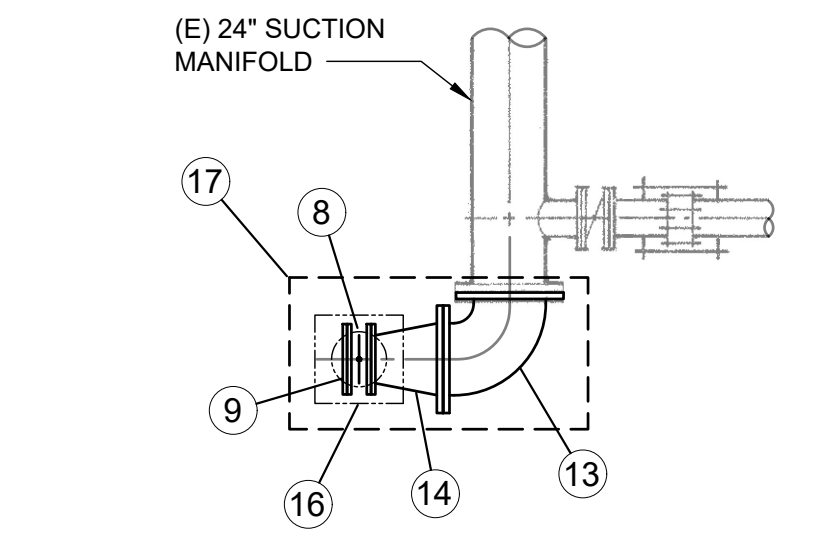
GENERAL NOTES, ABBREVIATIONS, AND SYMBOLS



1 OVERALL PIPING PLAN
Scale: 3/16" = 1'-0"

2 INLET PIPING PLAN
Scale: 3/16" = 1'-0"

2 INLET PIPING PLAN
Scale: 3/16" = 1'-0"



3 SUCTION MANIFOLD MODIFICATION
Scale: 3/16" = 1'-0"

NOTES:
1. NEW PIPE SHALL BE FBEL&C STD. WT. STEEL PIPE.

DEMOLITION NOTES	
NO.	DESCRIPTION
1	REMOVE (E) 16-INCH STEEL PIPE
2	(E) 16-INCH GROOVED END COUPLING TO BE REUSED. REPLACE HARDWARE IF DETERMINED TO BE NECESSARY
3	(E) 24-INCH BLIND FLANGE TO BE REMOVED

CONSTRUCTION NOTES		
NO.	DESCRIPTION	DETAIL
1	RECOAT (E) TANK. REFER TO APPENDIX A AND B OF THE SPECIFICATIONS FOR PREPARATION AND COATING REQUIREMENTS, AND SEE DETAIL	4 CD-01
2	RECOAT (E) 16-INCH STEEL PIPE AND FITTINGS	
3	NEW 16-INCH BUTTERFLY VALVE (GROOVED ENDS)	
4	NEW 16-INCH STEEL LONG RADIUS ELBOW	
5	NEW 16-INCH WELD NECK FLANGE	
6	NEW 16-INCH EBBA IRON INC. FLEXIBLE EXPANSION JOINT	
7	NEW 16-INCH STEEL TEE	
8	NEW 16-INCH BUTTERFLY VALVE (FLG x FLG)	
9	NEW 16-INCH BLIND FLANGE	
10	NEW 16-INCH STEEL PIPE	
11	NEW 16-INCH GROOVED END COUPLING	
12	NEW PIPE SUPPORT, SEE DETAIL	1 C02
13	NEW 24-INCH ELBOW (FLG x FLG)	
14	NEW 24-INCH x 16-INCH ECCENTRIC REDUCER (FLG x FLG)	
15	1-INCH TAP AND SS BALL VALVE	
16	VALVE BOX ASSEMBLY	3 C02
17	WATER PIPE BEDDING AND BACKFILL DETAILS	2 C02



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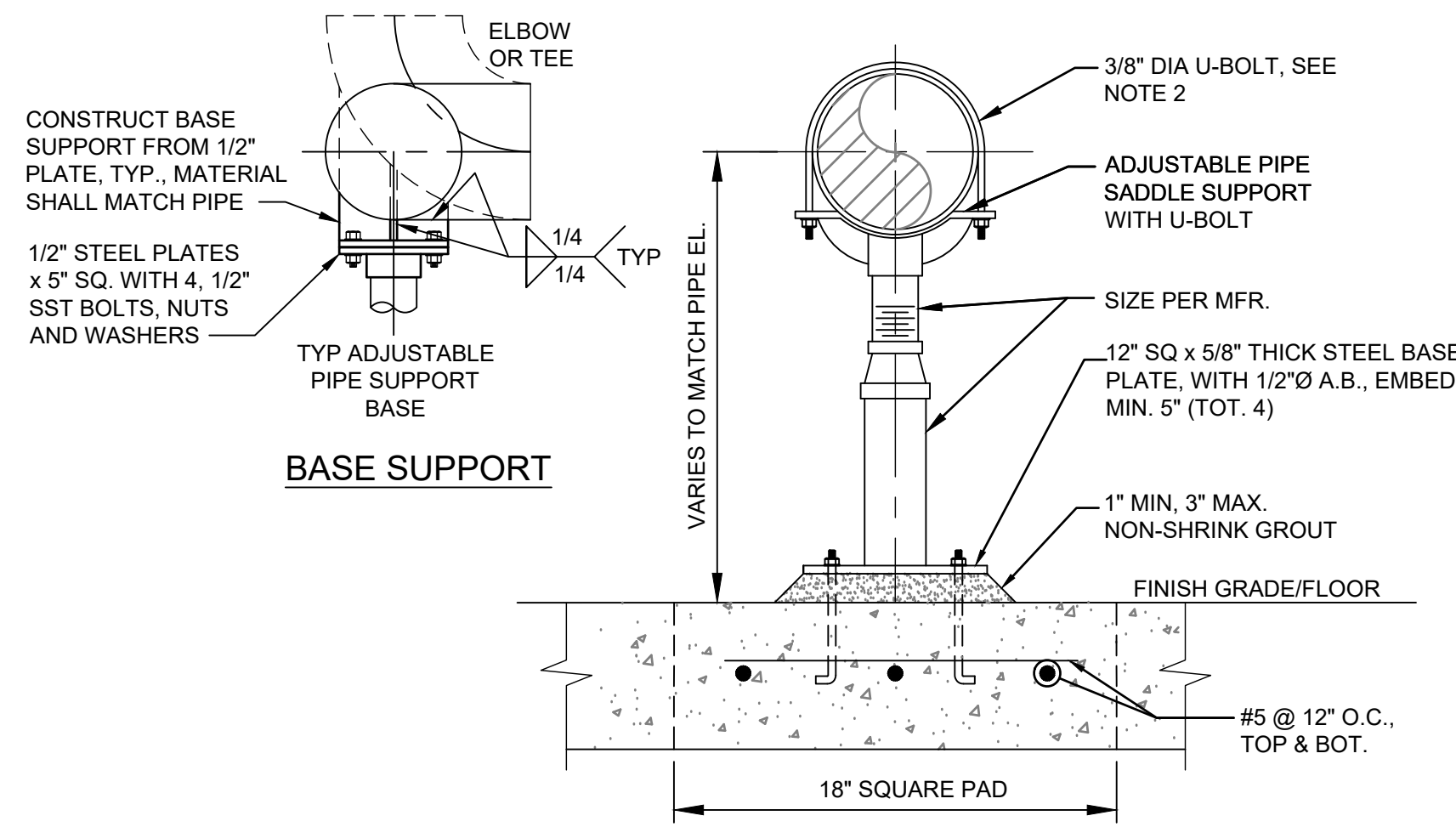
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EXISTING PIPING DEMOLITION PLAN AND NEW PIPING LAYOUT PLAN

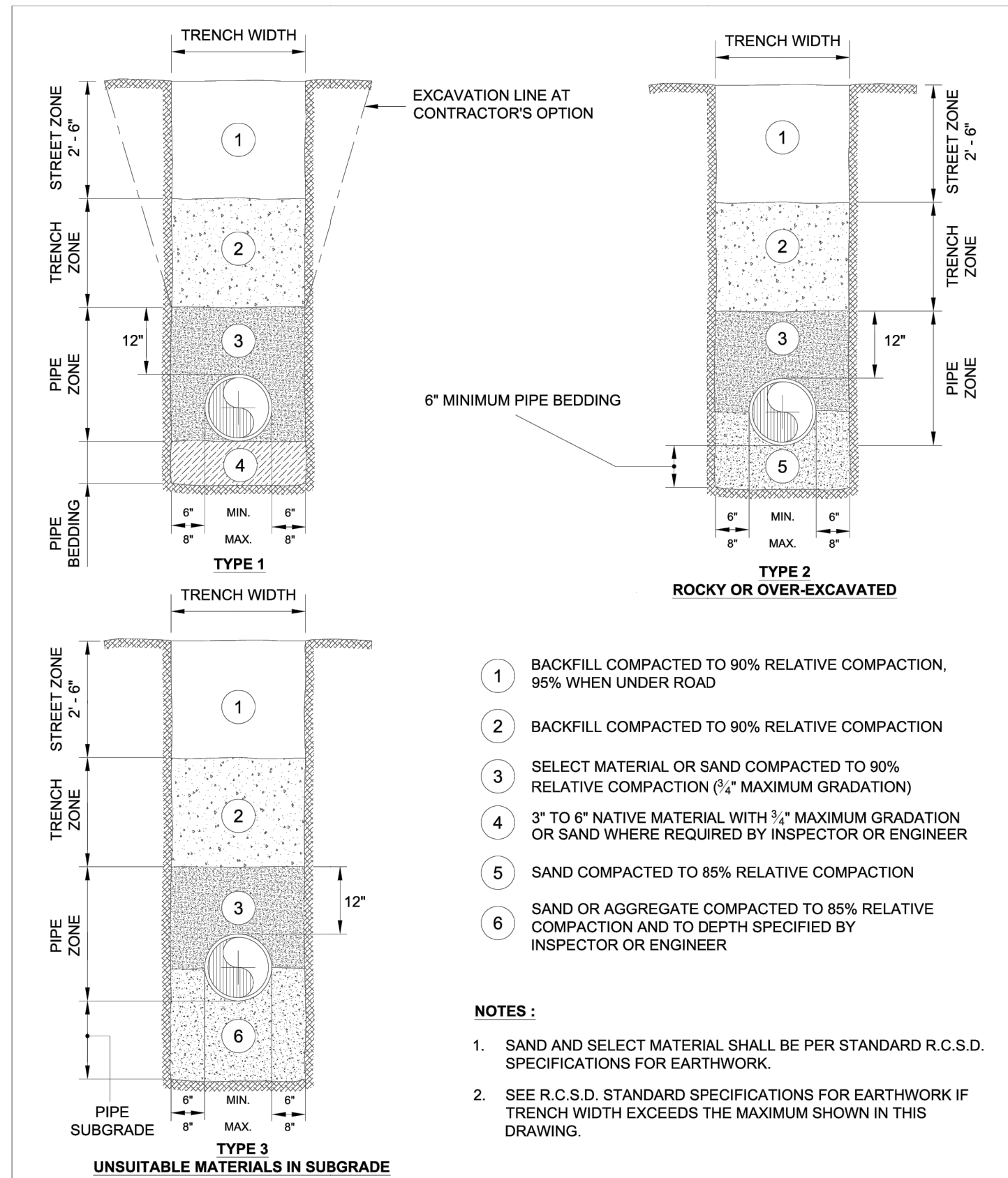


NOTES:

- ADJUSTABLE PIPE SUPPORT, GRINNELL FIGURE 264, B-LINE B3093/3089 OR EQUAL WITH A PIPE STANCHION AND U-BOLT, GRINNELL FIGURE 259, B-LINE B3090 OR EQUAL. ALL SUPPORTS SHALL BE COATED PER THE LINING AND COATING SPEC FOUND UNDER APPENDIX A.
- U-BOATS SHALL HAVE 1/4-INCH CLEARANCE BETWEEN PIPE AND U-BOLT TO ALLOW MOVEMENT WHEN SUPPORTING EXPANSION JOINTS.
- PROVIDE 1/8-INCH TEFLON PAD BETWEEN PIPE AND SADDLE.

1 | ADJUSTABLE PIPE SUPPORT

NOT TO SCALE



- BACKFILL COMPACTED TO 90% RELATIVE COMPACTION, 95% WHEN UNDER ROAD
- BACKFILL COMPACTED TO 90% RELATIVE COMPACTION
- SELECT MATERIAL OR SAND COMPACTED TO 90% RELATIVE COMPACTION (3/4" MAXIMUM GRADATION)
- 3" TO 6" NATIVE MATERIAL WITH 3/4" MAXIMUM GRADATION OR SAND WHERE REQUIRED BY INSPECTOR OR ENGINEER
- SAND COMPACTED TO 85% RELATIVE COMPACTION
- SAND OR AGGREGATE COMPACTED TO 85% RELATIVE COMPACTION AND TO DEPTH SPECIFIED BY INSPECTOR OR ENGINEER

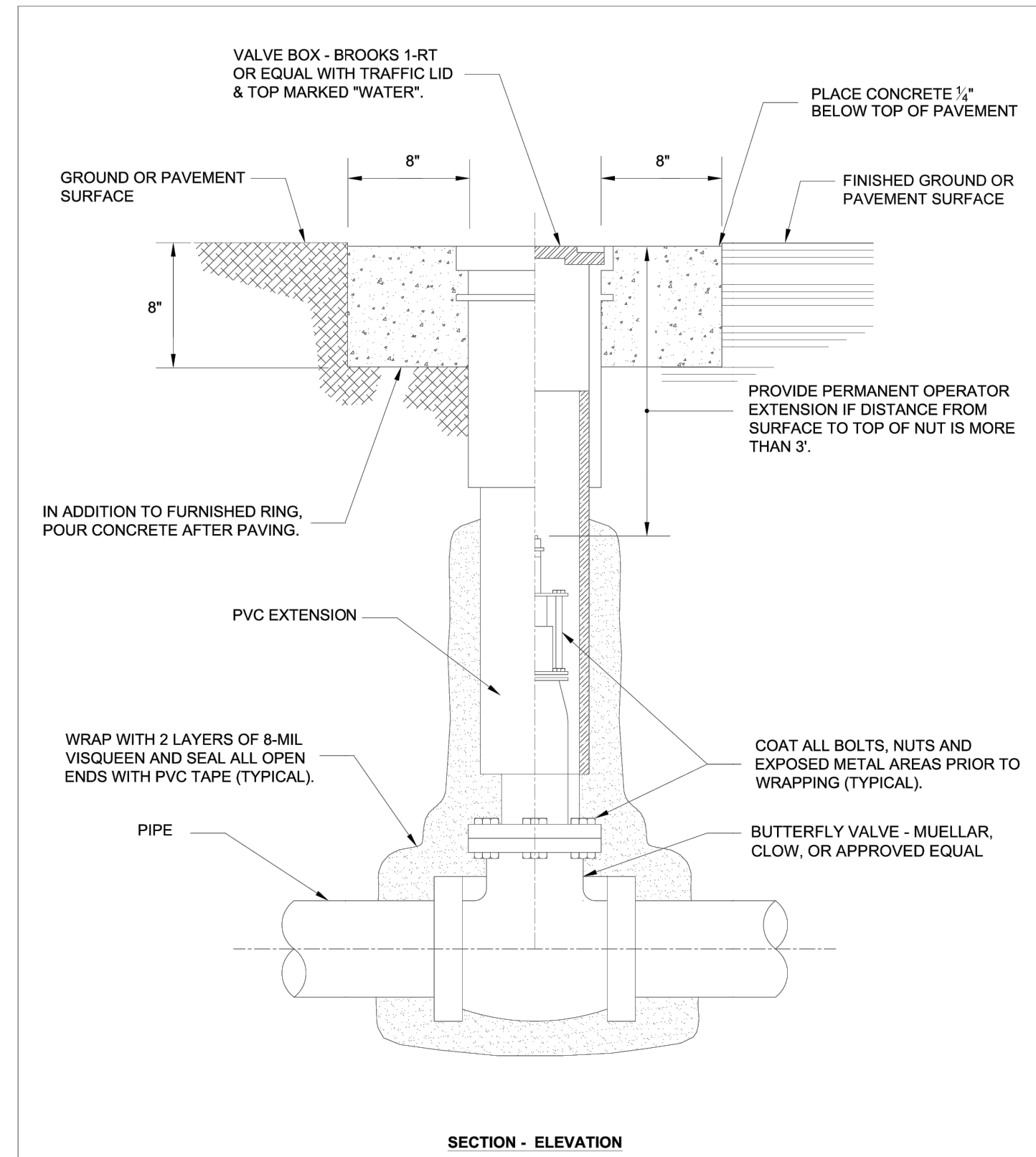
NOTES:

- SAND AND SELECT MATERIAL SHALL BE PER STANDARD R.C.S.D. SPECIFICATIONS FOR EARTHWORK.
- SEE R.C.S.D. STANDARD SPECIFICATIONS FOR EARTHWORK IF TRENCH WIDTH EXCEEDS THE MAXIMUM SHOWN IN THIS DRAWING.

STANDARD SPECIFICATIONS AND DRAWING DETAILS		Rosamond Community Services District	
DATE DRAWN 11/07	WATER PIPE BEDDING AND BACKFILL DETAILS	SHEET NO. W-2	
R.C.S.D. ENGINEERING DEPARTMENT	REVISION NO. 002-03088	DRAWN BY: EVAN R. CRABTREE	APPROVED BY: ..

2 | WATER PIPE BEDDING AND BACKFILL DETAILS

NOT TO SCALE

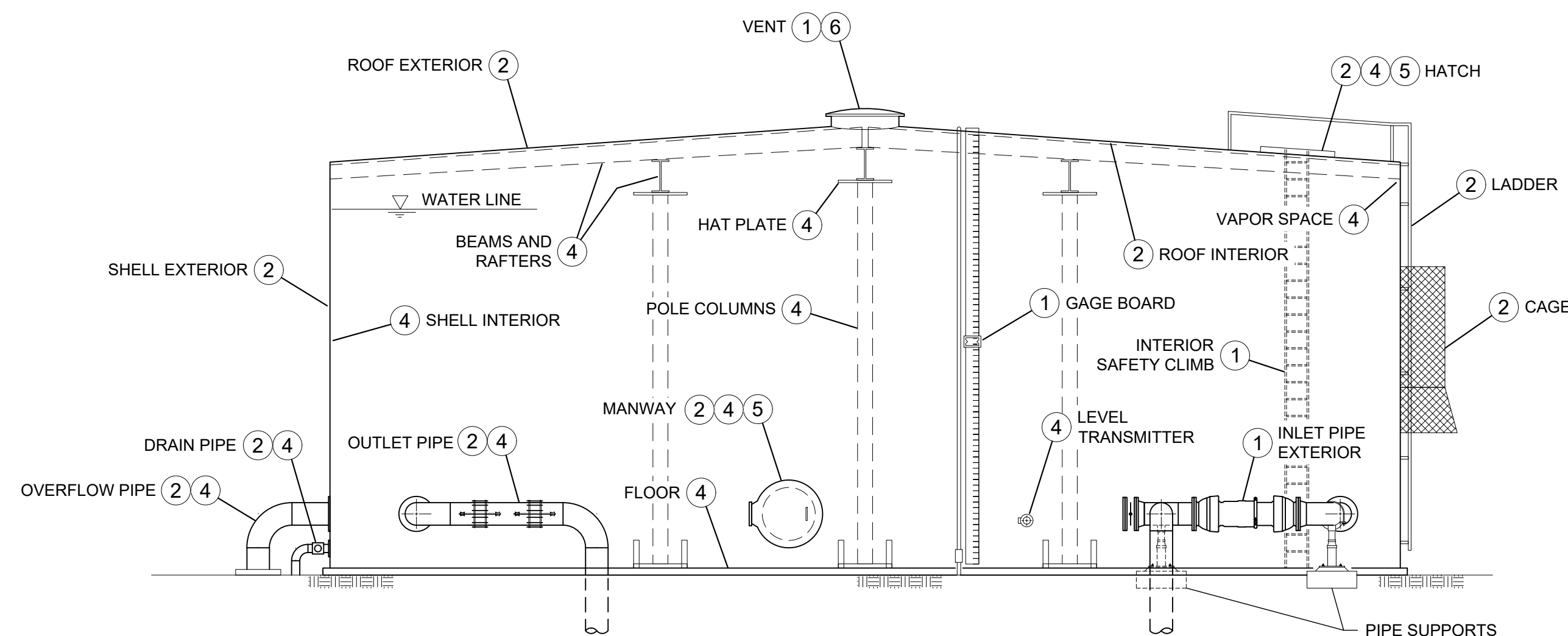


NOTE: PROVIDE ADJUSTABLE VALVE BOXES FOR ALL VALVES 4" OR LARGER.

STANDARD SPECIFICATIONS AND DRAWING DETAILS		Rosamond Community Services District	
SHEET NO. W-9	VALVE BOX ASSEMBLY	DATE DRAWN 11/07	
R.C.S.D. ENGINEERING DEPARTMENT	REVISION NO. 002-03088	DRAWN BY: EVAN R. CRABTREE	APPROVED BY: ..

3 | VALVE BOX ASSEMBLY

NOT TO SCALE



LEGEND	
NO.	DESCRIPTION
1	REMOVE AND REPLACE
2	PREPARE AND RECOAT
3	REMOVE COATING AND RECOAT
4	INTERIOR SURFACE: REMOVE COATING AND RECOAT
5	REMOVE AND REPLACE GASKET
6	REMOVE AND REPLACE IN KIND SCREEN

NOTES:

- FOR REFERENCE ONLY. APPURTENANCES AND LOCATION OF ITEMS RELATIVE TO INTERIOR AND EXTERIOR OF TANK ARE TO BE FIELD VERIFIED.
- REFER TO APPENDIX A AND B, FOUND IN THE SPECIFICATIONS FOR PREPARATION AND COATING REQUIREMENTS, AS THEY RELATE TO THE INTERIOR AND EXTERIOR OF THE TANK.

4 | TANK ELEVATION DETAIL

NOT TO SCALE

CLIENT



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CIVIL DETAILS