MONTECITO WATER DISTRICT

SANTA BARBARA COUNTY, CALIFORNIA

CONTRACT DOCUMENTS

FOR

RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR PARK LANE RESERVOIR

PROJECT NO. P132

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PROJECT NO. P132

Engineer of Record:

Tetra Tech

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APRIL 2025

APPROVALS:



Adam Kanold, P.E. April 2025

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ENGINEER OF WORK:

The engineering technical specifications contained herein have been prepared by or under the direction of the following Registered Engineer(s).



Man Hong Eric Yuen, S.E. April 22, 2025

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MONTECITO WATER DISTRICT

NOTICE INVITING BIDS

For the construction of the Reservoir Seismic Retrofit and Replacement Project for Park Lane Reservoir located within the Montecito Water District ("District") located in Santa Barbara County, California.

Unless otherwise defined herein, capitalized terms used in this Notice Inviting Bids shall have the same meaning given to them in the "General Conditions" adopted by District. Each Bidder must submit all of the items described in Section I-1 of the Instructions to Bidders provided by District (the "Instructions to Bidders") and all of those items shall collectively constitute the "Bid."

N-1. Bid Submittal and Opening

District hereby invites sealed Bids for constructing reservoir seismic retrofits in accordance with District's Contract Documents for Project No. P132. Bids shall be submitted electronically via email to Adam Kanold, PE at akanold@montecitowater.com at or before 12:00 PM on June 5, 2025 at which time all Bids will be opened electronically and declared publicly at District's main office, at 583 San Ysidro Road, Santa Barbara, California 93108. Bidders, their representatives, and other interested parties, are invited to be present at the opening either in person or via teleconference at: https://us06web.zoom.us/j/89462311213?pwd=E9OQwQuPgNawX22gTbwN3vJNcp8IrC.1#success. The meeting ID is 894 6231 1213 with the Passcode: 107761.

It is the sole responsibility of the Bidder to see that the Bid is submitted and received on time and to be able to submit verification of same upon request. Bids submitted after the time specified will be rejected pursuant to California Government Code Section 53068.

N-2. Description of Work

The Work generally involves the seismic retrofit of the Park Lane Reservoir consisting of the replacement of the existing reservoir structure with a new reinforced concrete structure constructed within the footprint of the existing reservoir. Work includes demolition, reinforced concrete installation, construction of piping and appurtenant improvements, and site improvements.

N-3 Location of Work

The work site is located as follows:

Park Lane Reservoir – 900 Block of Park Lane, Santa Barbara, CA 93108.

N-4. Mandatory Pre-Bid Meeting and Site Visit

A mandatory pre-bid meeting and site visit (the "Mandatory Pre-Bid Meeting and Site Visit") will be held at the District's office on May 13th, 2025 10:00 AM. If Bidders cannot attend the meeting above, they may request an alternative date to visit the Site with District staff. Any alternative Site visit requests must be made via email to Adam Kanold at akanold@montecitowater.com by 5:00 PM on May 23rd, 2025.

At the Mandatory Pre-Bid Meeting and Site Visit, Bidders will have the opportunity to visit the Site and ask questions regarding the local conditions, construction, labor difficulties and restrictions related to the performance of the Work under the Contract.

In order for a Bid to qualify for consideration in making an award, the Bidder shall have a responsible representative present for the entire duration of the Mandatory Pre-Bid Meeting and Site Visit. Bids received from Bidders not represented at the Mandatory Pre-Bid Meeting and Site Visit will be considered non-responsive and will not be evaluated for award.

N-5. Contract Documents

Contract Documents are available for download form the District's website at https://www.montecitowater.com/our-water/capital-projects-rfp/. Contract Documents are provided to potential Bidders specifically for bid consideration and preparation purposes. The Contract Documents are the property of District and receipt of those documents by potential Bidders does not confer any property right to potential Bidders. Potential Bidders shall not post or share the Contract Documents in any publicly available location on the internet or elsewhere. Potential Bidders are permitted to share Contract Documents with potential Subcontractors and/or potential material Suppliers related to the Work, solely for the preparation of a Bid for the Work. Posting or sharing of the Contract Documents for any purpose other than those set forth herein may result in disqualification of any Bid submitted, and such determination shall be in the sole discretion of District.

N-6. Bid Security

Each Bid must be accompanied by cash, a cashier's check or certified check made payable to "Montecito Water District," or a Bidder's Bond as specified in the Instructions to Bidders (the "Bidder's Security") as a guaranty that the Bidder shall, if awarded the Contract, (i) execute the Contract in accordance with the Bid as accepted by the District, (ii) furnish the required payment and performance bonds and bonding company documentation, (iii) provide satisfactory evidence that the Bidder's Superintendent, Project Manager, and all other designated employees meet the experience and certification requirements in this Notice Inviting Bids, and (iv) provide satisfactory evidence that all required insurance coverages have been secured. The Bidder's Security shall be in an amount that is at least ten percent (10%) of the aggregate amount of the Bidder's Bid.

N-7. Performance Bond, Payment Bond and Warranty

The Bidder that is awarded the Contract (the "Successful Bidder") shall be required to obtain the insurance required by the Contract Documents and furnish a faithful performance bond and a payment bond. The amount of each bond shall be at least 100% of the total amount payable by the terms of the Contract. The faithful performance bond shall provide that it shall remain in full force and effect during the life of any guarantee or warranty required under the Contract.

N-8. Prevailing Wages

The Successful Bidder and its agents, employees and subcontractors shall comply with the provisions of the California Labor Code, including those relating to the payment of prevailing wage rates. A schedule of prevailing wage rates may be found at http://www.dir.ca.gov/dlse/dlsePublicWorks.html. The Successful Bidder shall be required to pay at least the wage rates set forth in that schedule. The Successful Bidder shall be required to pay the higher of the wage rates set forth in that schedule and the schedule of Federal Prevailing Wages as set forth in Section N-15, below.

N-9. Bidder's Licenses and Experience

Each Bidder shall be licensed by the California Contractors State License Board as a Class A General Engineering Contractor at the time of submitting the Bid or the Bid will be rejected. If a Bid is submitted on behalf of a joint venture, each participant in the joint venture shall possess a valid Class A California contractor's license at the time the Bid is submitted. If the Successful Bidder is a joint venture, the Successful Bidder must obtain an appropriate license in the name of the joint venture within 15 Calendar Days of the date District mails the notice of the award to the Successful Bidder. Failure of the Successful Bidder to obtain proper and adequate licensing in a timely manner shall constitute a failure by the Successful Bidder to execute the Contract and shall result in forfeiture of the Bidder's Security.

In order for a Bid to be considered, the Bidder shall have the minimum experience as required by Specification Section 01400 – Quality and Experience Requirements.

N-10. Fabricators' and Manufacturers' Experience

Fabricators and manufacturers of materials and equipment to be supplied are required to have successfully and regularly provided similar products of comparable size and type that have been in satisfactory service for at least 5 years. If required by the Specifications, manufacturers of equipment to be supplied shall have a local service representative and sufficient local inventories of spare parts.

N-11. Requests for Information or Clarification (RFI/RFC)

All requests for information or clarification shall be submitted via email to Adam Kanold at akanold@montecitowater.com. No questions will be answered after 5:00 p.m. seven Calendar Days in advance of the bid opening date.

If a response is made which modifies the Contract Documents, it will be posted electronically on the District's website at https://montecitowater.com/our-water/capital-projects-rfp/ as an addendum for the benefit of all prospective registered Bidders and without identification of the source of the inquiry.

N-12. Substitution of Securities

Subject to the requirements of California Public Contract Code Section 22300, the Successful Bidder shall be permitted to substitute securities for money that would otherwise be withheld by District under the Contract.

N-13. Offensive Conduct

If any representative of a Bidder, potential Subcontractor, or potential Supplier engages in hostile or harassing behavior, uses abusive or offensive language, attempts to intimidate by words or actions, or otherwise engages in offensive or disorderly conduct at any time during the bid period, District may declare that Bidder, Subcontractor and/or Supplier to be disqualified and ineligible to bid or otherwise participate in the project. If this type of conduct occurs at the Mandatory Pre-Bid Meeting and Site Visit or during any Site visit, the representative may be asked to leave. Each Bidder acknowledges that any Bid received from a disqualified Bidder will be deemed non-responsive, and any Bid that includes a disqualified Subcontractor or Supplier will be deemed non-responsive and will not be evaluated for award.

N-14. District's Rights

District reserves the right to reject any and all Bids, waive minor informalities or irregularities not affecting substantial rights, reject one part of a Bid and accept the other, and delay award of the Contract for a period of up to 60 Calendar Days after the bid opening date.

N-15. Federally Assisted Construction

Bidders are advised that federal funds will be used for construction, which carries certain federal contract requirements found within the Instructions to Bidders and Contract Documents, including the Special Conditions. The Bidders' attention is specifically directed to the Special ASADRA and Federal Provisions and Specifications in the Contract Documents which include Federal Prevailing Wage Requirements. Current federal prevailing rates of wages may be found at:
https://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/davisbacon.html

N-16. Labor Compliance

In accordance with the requirements of the Labor Code, the Contractor is notified as follows:

- This project is subject to California prevailing wages. The applicable California prevailing wage rate(s) can be found at www.dir.ca.gov and are on file with District's principal office, which shall be available to any interested party upon request. The Contractor is also required to have a copy of the applicable wage determination posted and/or available at each jobsite.
- The District, public entity for which Work is being performed, or the California Department of Industrial Relations may impose penalties upon Contractors and/or Subcontractors for failure to comply with prevailing wage requirements. These penalties are up to $200 per day per worker for each wage violations identified; $100 per day per work for failure to provide the required paperwork and documentation requested within a 10 day window; and $25 per day per worker for any overtime violation.
- No Contractor or Subcontractor may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)].
- No Contractor or Subcontractor may be awarded a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. Contractors MUST be a registered "public works contractor" with the DIR AT THE TIME OF BID. Where the prime contract is less than $15,000 for maintenance work or less than $25,000 for construction alternation, demolition or repair work, registration is not required.
- This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

MONTECITO WATER DISTRICT

Dated: April 22, 2025



Adam Kanold, PE
Assistant General Manager and Engineering Manager

MONTECITO WATER DISTRICT

INSTRUCTIONS TO BIDDERS

I-1. Form of Bid

Items 1 through 8, when completed, shall constitute the Bid:

1. Bid Proposal

2. Executed Bidder's Declaration

3. Executed Non-Collusion Declaration

4. Information Required of the Bidder (including Subcontractor List)

5. Bid Security. One of the following:

   a. Bidder's Bond - A scan of the Bidder's Bond shall be emailed with the Bidder's proposal to Adam Kanold at akanold@montecitowater.com and the original bond shall be delivered to the District no later than 48 hours after the bid opening.

   b. Cash, certified check, or cashier's check - The cash, certified check or cashier's check must be received by the District by the time of the bid opening.

6. Documentary evidence demonstrating the authority of the signatory(ies) to execute the Contract Documents on behalf of the Bidder.

7. Executed Declaration of Compliance with California Air Resources Board (CARB) In-Use Off-Road Diesel-Fueled Fleets Regulation

8. Certifications, including:

   a. Certification of Bidder Regarding Equal Employment Opportunity

   b. Certification by Proposed Subcontractor Regarding Equal Employment Opportunity.

   c. Certifications Regarding Debarment, Suspension and Other Responsibility Matters, Drug Free Workplace Requirements and Lobbying.
   d. Contractor's Certification Concerning Labor Standards and Prevailing Wage Requirements.
   e. Subcontractor's Certification Concerning Labor Standards and Prevailing Wage Requirements

If the Bidder's submittal does not contain all of the documents listed, or if any of the documents have been improperly executed or modified by the Bidder, District may, in its sole discretion, consider the Bid to be non-responsive and the Bid may be removed from consideration.

The Bidder's signature on the Bid shall constitute the Bidder's certification that the Bidder has read, understands, and agrees to these Instructions.

Unless otherwise defined in these Instructions, all capitalized terms used in these Instructions shall have the meaning given to them in the General Conditions.

I-2. Address and Marking of Bid Security

Item 5 (Bid Security) from I-1, which must be submitted in hardcopy, shall be enclosed in a sealed envelope addressed to the Engineering Manager, Montecito Water District, 583 San Ysidro Road, Santa Barbara CA, 93108. The envelope shall be plainly marked in the upper left-hand corner with the name and address of the Bidder and bear the words "Bid Security for," followed by the number and title of the project. It is the sole responsibility of the Bidder to ensure that the Bid Security is delivered and received at the correct location and on time in accordance with the requirements of I-1 and to be able to submit verification of same upon request.

I-3. Execution of Bid

The same person(s) shall sign all Bid forms that require a signature, as follows:

By Individual. If the Bidder is an individual, the Bid shall be signed by the individual.

By Partnership. If the Bidder is a partnership, the Bid shall be signed in the name of the partnership by a duly authorized general partner of the firm.

By Corporation. If the Bidder is a corporation, the Bid shall be signed by two duly authorized officers. The officers signing the Bid must include the President or any Vice President and the Secretary, Assistant Secretary, Chief Financial Officer, Treasurer, or Assistant Treasurer of the corporation.

By Joint Venture. If the Bidder is a joint venture, the Bid shall be signed on behalf of the joint venture by each participant in the joint venture ("Joint Venture Participant") and shall include a complete copy of the agreement establishing the joint venture.

By Limited Liability Company. If the Bidder is a limited liability company (LLC), the Bid shall be signed by the duly authorized manager(s) of the LLC, or if there is no manager by the duly authorized member(s).

A partnership, corporation, joint venture, or limited liability company to which an award is made may be required, before the Contract is formally executed, to furnish evidence of its legal existence, and/or its right to do business in California.

Each Bidder is also required to furnish with the Bid a resolution or other documentary evidence satisfactory to District that demonstrates the authority of the Bidder to execute the Bid.

I-4. Local Conditions

1. Bidder's Due Diligence. Bidders shall read the Specifications, examine the Drawings, and make their own estimates of the existing facilities and the difficulties that will attend the execution of the Work called for by the Contract, including local conditions, uncertainty of weather, and all other contingencies. Bidders shall satisfy themselves by personal examination of the location of the proposed Work, and by such other means as they may choose, as to actual conditions and requirements. Information derived from Specifications or Drawings, or from the Engineer or any personnel, employees, agents, or representatives of District shall not relieve the Bidder of this responsibility. District assumes no responsibility for conclusions or interpretations made by the Bidder based on the information that District makes available. District assumes no responsibility for, and the Bidder may not rely upon, any statement understanding, or representation made by any personnel, employees, agents, or representatives of District before execution of the Contract, unless that understanding or representation is expressly stated in the Contract Documents.

2. Further Acknowledgements and Obligations of Bidder. By submitting a Bid, the Bidder acknowledges that it has ascertained the nature and location of the Work, and that it has investigated and assured itself as to the general and local conditions that can affect the Work and the cost of the Work. By submitting the Bid, the Bidder also acknowledges that it is satisfied as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered so far as this information can be reasonably ascertained from an inspection of the site, review of any exploratory work done by or on behalf of District, as well as from the Bidder's review of the Drawings and Specifications. Failure of the Bidder to review information provided by District and/or to conduct its own verification of information provided by District and/or to conduct its own independent investigation will not relieve the Bidder from responsibility for estimating properly the difficulty and cost of successfully completing the Work, and for proceeding to successfully complete the Work without additional cost to District.

   By submitting the Bid, the Bidder acknowledges that the Drawings for the Work show conditions as they are supposed or believed by the Engineer to exist, but do not constitute a representation by District or the Engineer that such conditions actually exist. The Bidder must take into account in conducting its investigation and making its Bid that, except as expressly set forth in the General Conditions,

the Bidder shall not be relieved of liability under the Contract and will bear the risk of any loss as a result of any variance between conditions as shown on the Drawings and the actual conditions revealed during site inspections, the progress of the Work, or otherwise. District does not assume any responsibility whatsoever with respect to the sufficiency or accuracy of any test borings, soils reports, or any other reports, logs, investigations or inspections relating to subsurface materials or of the interpretation of those items. District does not expressly or impliedly warrant or guarantee that the conditions indicated by any such investigations, borings, logs, soils reports, permits, or other information are representative of those existing throughout the Site or any part thereof or that unforeseen developments may not occur. In no event shall District be liable for, nor shall the Bidder be entitled to, any time extension or additional compensation, should the conditions encountered differ in any respect from that depicted in the documents provided to the Bidder, except as mandated by Public Contract Code Section 7104 or expressly provided in the Contract Documents.

I-5. Quantities

The quantities of work or material stated in the unit-price items of the Bid Schedule are supplied only to give an indication of the general scope of the Work and for Bid comparison purposes. The actual amount of work or material may be different. District reserves the right to increase the amount of any unit-price item of the Work by an amount up to and including 25% of any Bid item(s), or to omit some or all of such work as may be deemed necessary or expedient by District or the Engineer without a change in the unit price.

I-6. Licenses

The Bidder shall be licensed in accordance with the provisions of Division 3, Chapter 9, of the California Business and Professions Code and the Notice Inviting Bids. Unless an exception applies pursuant to Business & Professions Code section 7028.15(a), a bid submitted to a public agency by a contractor who is not licensed in accordance with the foregoing provisions shall be considered nonresponsive and shall be rejected by District.

I-7. Preparation of the Bid

1. General

a. All blank spaces in the Bid documents must be properly completed.

b. The Bid must be typewritten or printed legibly in ink, executed as required under Section I-3 of these Instructions,[1] and emailed to Adam Kanold at akanold@montecitowater.com.

[1] Any section reference herein refers to these Instructions to Bidders unless otherwise specified.

c. District reserves the right, in its sole discretion, to reject any Bid that it deems to be conditional, incomplete, illegible, irregular, ambiguous, and/or where any alteration or modification made to any Bid document is deemed by District to constitute a material change to such document.

d. No correction fluid, erasures, or deletions may appear in any Bid document, except that District may, in its sole discretion, consider a legible handwritten notation if initialed by the Bidder.

e. District shall not consider any alternative or additional Bid(s) submitted by a Bidder, unless specifically requested by District.

f. Bids shall be submitted via email to Adam Kanold at akanold@montecitowater.com and shall not be modified once the bids have been opened

g. All Bids must include the appropriate form of Bid Security as described in subsection 4 of this Section I-7.

2. Requests for Information or Clarification (RFI/RFC). Requests for Information/Clarification shall be made in writing via email to Adam Kanold at akanold@montecitowater.com and in accordance with the procedures designated in the Notice Inviting Bids.

3. Bid Schedule(s). The Bidder shall state in the Bid Schedule the unit or lump sum prices for the supply of all labor, equipment, materials, and incidentals necessary for the Bidder to complete each and every item of the Work required to be completed under the Contract Documents in the manner and within the time required under the Contract.

   The prices quoted by the Bidder shall include all applicable taxes and duties and the Bidder shall pay all applicable taxes and duties. In accordance with 26 U.S.C. Section 4221, prices quoted by the Bidder shall not include federal excise taxes as District is exempt as a political subdivision of the State under Federal law.

4. Bid Security. Each Bidder shall submit in accordance with the requirements of I-1, at no cost to District, one of the following forms of bidder's security (the "Bid Security") in an amount of at least 10% of the aggregate amount of the Bid, as a guarantee that the Bidder shall, if awarded the Contract, promptly execute a Contract in the required form, secure the payment of workers' compensation, furnish satisfactory bonds and insurance, and provide evidence that the Bidder's Superintendent, Project Manager, and all other designated employees meet the experience requirements, as described in these Instructions:

   a. Cash

b. A cashier's check or certified check payable to "Montecito Water District" and drawn on a solvent state or national bank

c. A Bidder's Bond payable to "Montecito Water District". The bond shall be on the form provided by District and the Bidder shall name in the Bid, in the space provided, the surety or sureties that have agreed to furnish the bond. The surety must have a current A.M. Best's rating of no less than A-: VII or equivalent. Each bond shall be signed by both the Bidder and the surety, and the signature of the authorized agent of the surety shall be notarized.

The Bid Security of the Successful Bidder will be returned to that Bidder after all of the acts for which the Bid Security is required are fully performed. Except for any Bid Security that is forfeited as provided in these Instructions, the Bid Security of each unsuccessful Bidder shall be returned to that Bidder in a reasonable time but no more than 60 Calendar Days from the date the Contract is awarded. The liability of District in connection with the Bid Security shall be limited to the return of the Bid Security.

If the Successful Bidder fails or refuses to execute the Contract, secure the payment of all required workers' compensation, furnish the required bonds and insurance, and provide satisfactory evidence that the Successful Bidder's Superintendent, Project Manager, and all other designated employees as required under the Notice Inviting Bids meet the experience requirements, all within the required time, the moneys represented by the Bid Security shall become and remain the property of District. By submitting its Bid Security, the Bidder acknowledges and agrees that it would be impractical or extremely difficult to establish the damages District would sustain as a result of the Bidder's failure or refusal to comply with these requirements. Accordingly, the Bidder hereby consents and agrees with District that in the event of such a default by the Bidder, it would be reasonable at such time to award District liquidated damages equal to the amount represented by the Bid Security.

5. Information Required of Bidders

a. Names, Titles and Addresses. Names, titles, and address information for the Bidder shall be provided in the Bid, as follows:

Individual. If the Bidder is an individual, the Bid shall include his or her full name and street address.

Partnership. If the Bidder is a partnership, the Bid shall include the name and street address of the partnership and the name and the street address of each general partner of the partnership.

Corporation. If the Bidder is a corporation, the Bid shall include the name of the corporation and its street address and the names and titles of all officers of the corporation.

Joint Venture. If the Bidder is a joint venture, the Bid shall include the name and street address of the joint venture and the name and street address of each Joint Venture Participant.

Limited Liability Company. If the Bidder is an LLC, the Bid shall include the name and street address of the LLC and the name and the street address of each Manager and Member of the LLC.

b. Performance of Comparable Work. On the form entitled "Information Required of Bidders," Bidders are required to present information evidencing successful performance of work meeting the requirements set forth in the Notice Inviting Bids.

c. Subcontractors List. Pursuant to sections 4100-4114 of the California Public Contract Code, Bidders are required to enter the information requested on the Subcontractors List for each subcontractor who will perform work or labor or render service to the Bidder in or about the construction of the Work and for each subcontractor licensed by the State of California who, under subcontract to the Bidder, will specially fabricate and install a portion of the Work according to the details contained in the Drawings and Specifications, in an amount in excess of 0.5% of the Bidder's total Bid. Bidders shall not list, solicit bids from, or award work to a subcontractor who is ineligible to perform work on a public works project pursuant to California Labor Code sections 1777.1 or 1777.7.

For each Subcontractor listed, Bidders are required to enter the applicable number(s) of the California Air Resources Board Certificate of Reported Compliance for the Subcontractor's fleets and any rental fleet equipment. See Item 7 below.

6. Non-collusion Declaration. Bidders are required to execute the Non-collusion Declaration in the form attached.

7. Declaration of Compliance with CARB In-Use Off-Road Diesel-Fueled Fleets Regulation. This project is subject to the requirements of California Code of Regulations, Title 13, Article 4.8, Chapter 9, Sections 2449, 2449.1 and 2449.2, involving the use of off-road diesel-fueled vehicles. Bidders shall provide evidence of their current and valid California Air Resources Board Certificate of Reported Compliance (Certificate) for their fleets, any rental fleet equipment, and all subcontractors that are listed in their Bid.

I-8. Withdrawal or Modification of Bid

A Bidder may modify or withdraw its Bid via a written email request to Adam Kanold at akanold@montecitowater.com before the time designated for opening Bids. The withdrawal of a Bid before the time designated for opening Bids does not prejudice the right of a Bidder to submit a timely new Bid. Any Bid withdrawn after the time designated for opening bids shall subject the Bidder to forfeiture of the Bidder's Security as liquidated damages as if the Bidder failed to comply with any of the requirements described in subsection 4 of Section I-7.

I-9. Award of Contract - Selection of Lowest Responsible Bidder

All Bids will be opened and declared publicly. Bidders, their representatives, and other interested parties are invited to view the opening via videoconference.

District reserves the right, in its sole discretion, to reject any and all Bids, waive minor informalities or irregularities not affecting substantial rights, reject one part of a Bid and accept the other, clarify and/or negotiate unbalanced bids, and/or delay the award of the Contract for the number of days set forth in the Notice Inviting Bids.

The Contract shall be awarded to the lowest responsible Bidder submitting a responsive Bid, contingent on the Bidder's submittal of an executed Contract in the required form, satisfactory bonds and insurance and associated documentation, and evidence that the Bidder's designated employees meet the experience requirements (the "Successful Bidder"). In selecting the Successful Bidder, consideration will be given not only to the price bid, but also to the general competency of the Bidder for the performance of the Work. In addition to the information contained in the Bid documents, Bidders may be required to submit other evidence satisfactory to District that the Bidder is competent to manage the proposed undertaking and to carry it forward to a successful conclusion. Professional integrity and honesty of purpose are essential. District may require the Bidder to provide evidence that it has adequate financial resources to complete the Work, although proof of adequate finances will not alone determine that the Bidder is competent to undertake the Work. District shall have absolute discretion as to the evaluation of whether a Bidder is responsible and a Bid is responsive, and District' decision in regards thereto shall be deemed correct and shall be conclusive and binding.

The Contract shall not be awarded to a Bidder who is listed by the California Labor Commissioner as ineligible to bid, work on, or be awarded a public works project.

I-10. Execution of Contract and Other Requirements of the Lowest Responsible Bidder

Notice of Award of the Contract shall be mailed and emailed to the addresses provided by the Successful Bidder on the Information Required of Bidders form. Within 15 Calendar Days from the date of mailing and emailing of the Notice of Award, the Successful Bidder shall:

1. Return to District the Contract duly executed by the Successful Bidder in accordance with the requirements of Section I-3.

2. Furnish the Faithful Performance Bond, Payment Bond and required surety information described in Section I-11 of these Instructions.

3. Provide evidence satisfactory to District that the Successful Bidder has secured the appropriate workers' compensation insurance pursuant to Labor Code § 1761 as more fully described in Section I-12.

4. Provide District with evidence of insurance coverage, including, but not limited to, certificates of insurance and policy endorsements, as required by Sections I-12 and I-13.

5. Submit copies of certifications and/or references demonstrating the qualifications of any other individuals to be employed by the Successful Bidder or its subcontractors or suppliers as required in the Notice Inviting Bids.

6. If builder's risk insurance is required in the Special Conditions, provide an accurate summary of the policy's coverages, conditions, exclusions, and endorsement before work begins, and a copy of the policy itself within 10 Calendar Days after the Successful Bidder receives it.

If the Successful Bidder fails or refuses to meet all of these requirements, the Bid Security shall become the property of District, the award may be annulled, and District may either re-bid the project or make an award to the next lowest responsible Bidder who has submitted a responsive Bid. In the event that the Contract is awarded to the next lowest responsible Bidder submitting a responsive Bid, that Bidder shall fulfill every requirement contained herein as if that Bidder were the party to whom the first award was made.

District may, in its sole discretion, allow the Successful Bidder additional time to complete items 1 through 7 above; provided, however, that the Successful Bidder hereby acknowledges that such additional time will be deducted from the Time for Completion of the Work under the Contract. If the Successful Bidder's Bid Security was in the form of a bond, the Successful Bidder shall submit a statement from the surety that the bond has been extended for the same period.

District may, in its sole discretion, require the Successful Bidder to submit documentary evidence satisfactory to District that demonstrates the authority of each person executing the Contracts and Bonds.

I-11. Bonds Required of Successful Bidder

1. Faithful Performance Bond. The Successful Bidder shall furnish a bond conditioned upon the faithful performance of the Successful Bidder of all

covenants and stipulations in the Contract. The bond shall be on the form provided by District in an amount of at least 100% of the total amount payable by the terms of the Contract. The faithful performance bond furnished under the Contract shall provide that it shall remain in full force and effect during the life of any guarantee or warranty required under the Contract.

2. Payment Bond. The Successful Bidder shall also furnish a labor and materials payment bond on the form provided by District and in an amount of at least 100% of the total amount payable by the terms of the Contract. The payment bond shall comply with all of the provisions of Section 9554 of the California Civil Code.

3. Naming of Surety. The Successful Bidder shall name in the space provided, the surety or sureties that have agreed to furnish the bonds required under these Instructions or otherwise to be provided by the Successful Bidder.

4. Form of Bond and Required Surety Information. The bonds shall be issued by a surety approved by District and shall be submitted on the forms provided by District. The surety must have a current A.M. Best's rating of no less than A-: VII or equivalent unless otherwise approved by District. Each bond shall incorporate the Contract by reference and shall be signed by both the Successful Bidder and the surety, and the signature of the authorized agent of the surety shall be notarized. All required bonds shall be accompanied by the following documents: (1) The original, or a certified copy, of the unrevoked appointment, power of attorney, bylaws, or other instrument entitling or authorizing the person who executed the bond to do so; and (2) a current printout of information obtained from the website of the California Department of Insurance confirming that the surety is an admitted surety insurer.

I-12. Workers' Compensation and Employer's Liability Insurance Required of the Contractor

At all times during the entire period of performance under the Contract, including throughout the warranty period(s) required under the Contract, the Contractor and all Subcontractors shall maintain workers' compensation and employer's liability insurance covering all persons employed directly by them or through subcontractors in carrying out the Work, all in accordance with California law including the California "Workers' Compensation and Insurance Act" and any amendments thereto. Workers' compensation insurance shall not be required for contracts to furnish materials and equipment only. The commercial umbrella and/or employer's liability limits shall not be less than $1,000,000 each accident for bodily injury by accident or $1,000,000 each employee for bodily injury by disease.

Before the Contract is executed on behalf of District, the Successful Bidder shall furnish evidence satisfactory to District that such workers' compensation insurance and employer's liability insurance is in place.

Contractor waives all rights against District, the Engineer, the public and private owners of all properties where the Work will be performed, the individuals or entities required in the Special Conditions to be named as additional insureds, and their respective directors, officers, employees, agents and/or volunteers for recovery of damages to the extent these damages are covered by the workers' compensation and employer's liability or commercial umbrella liability insurance obtained by Contractor pursuant to the Contract. Contractor shall obtain an endorsement equivalent to WC 00 03 13 to effect this waiver.

I-13. Liability Insurance Required of the Contractor

The Contractor shall, at its sole cost and expense, obtain and maintain at all times during the entire period of performance under the Contract, including the warranty period, the liability insurance as outlined in this Section. Before the Contract is executed on behalf of District, and throughout the period that such insurance is required, the Contractor shall (i) file with District a certificate or certificates of insurance, with all required additional policy endorsements, signed by the insurer's representative evidencing that such insurance coverage is in effect, and (ii) provide District with such other documents and/or instruments requested by District evidencing the Contractor's compliance with this Section I-13.

1. General Liability

Contractor shall obtain insurance of the types and in the amounts described below.

a. Commercial General Liability (CGL) and Umbrella Liability Insurance

Contractor shall maintain commercial general liability (CGL) with a limit of not less than $10,000,000 each occurrence. CGL may be supplemented with commercial umbrella insurance to attain the required limit. If such CGL insurance contains a general aggregate limit, it shall apply separately to this project by including ISO Designated Construction Project(s) General Aggregate Limit endorsement CG 25 03 or a substitute providing equivalent coverage. CGL insurance shall be written on ISO occurrence form CG 00 01 12 07 (or a substitute form providing equivalent coverage) and shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal and advertising injury, and liability assumed under an insured contract, including the tort liability of another assumed in a business contract. Umbrella Liability Insurance shall provide additional insured coverage and per project status as required for the CGL Insurance.

The Additional Insureds are defined as District (and its agents, directors, employees, officers and servants), the State Water Board (and its agents, officers, employees and servants), the public and private owners of all properties where the Work will be performed, the individuals or entities

required in the Special Conditions to be named as additional insureds, (and each of their respective agents, directors, employees, officers, and servants) The Additional Insureds shall be included as insureds under the commercial umbrella, if any, and under teh CGL, using ISO additional insured endorsements CG 2010 and CG 2037 or substitutes providing equivalent coverage. ISO endorsement CG 20 37 shall include coverage for the Additional Insureds with respect to liability arising out of the completed operations of Contractor, and which coverage shall be maintained in effect for the benefit of the Additional Insureds for a period of 2 years following the issuance of the Statement of Acceptance by District pursuant to General Conditions Section 6.4.1. Additional insured coverage as required in this subparagraph shall apply as primary insurance with respect to any other insurance or self-insurance programs afforded to the Additional Insureds. There shall be no endorsement or modification of the CGL to make it excess over other available insurance; alternatively, if the CGL states that it is excess or pro rata, the policy shall be endorsed to be primary with respect to the additional insured. Any insurance, self-insurance, or other coverage, if any, maintained by the Additional Insureds shall be non-contributory.

There shall be no endorsement or modification of the CGL limiting the scope of coverage for liability assumed under a contract, or liability arising from explosion, collapse, or underground property damage.

Coverage under the policy shall include bodily injury and property damage arising from equipment that District has temporarily placed in the custody of Contractor.

Waiver of Subrogation. Contractor waives all rights against the Additional Insureds for recovery of damages to the extent these damages are covered by the commercial general liability or commercial umbrella liability insurance maintained pursuant to this Section I-13.1.a

b. Continuing Completed Operations Liability Insurance

Contractor shall maintain CGL and, if necessary, commercial umbrella liability insurance with a limit of not less than $10,000,000 each occurrence for a least 2 years following the issuance of the Statement of Acceptance by District pursuant to General Conditions Section 6.4.1. Continuing CGL insurance shall be written on ISO occurrence form CG 00 01 12 07 (or a substitute form providing equivalent coverage) and shall, at a minimum, cover liability arising from products-completed operations and liability assumed under an insured contract. Continuing CGL insurance shall have a products-completed operations aggregate of at least two times its each occurrence limit. Continuing commercial umbrella

coverage, if any, shall include liability coverage for damage to the insured's completed work equivalent to that provided under ISO form CG 00 01 12 07.

2. Automobile Liability

a. Business Auto and Umbrella Liability Insurance

Contractor shall maintain business auto liability and, if necessary, commercial umbrella liability insurance with a limit of not less than $5,000,000 each accident.

Such insurance shall cover liability arising out of any auto (including owned, hired, and non-owned autos) used by Contractor.

Business auto coverage shall be written on ISO form CA 00 01 or a substitute form providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage equivalent to that provided in the 1990 and later editions of CA 00 01. The policy shall not possess any endorsements that in any manner whatsoever restrict coverage as it pertains to the Additional Insureds.

If the Work involves transportation of hazardous materials, pollution liability coverage equivalent to that provided under the ISO pollution liability-broadened coverage for covered autos, endorsement (CA 99 48) shall be provided, and the Motor Carrier Act endorsement (MCS 90) shall be attached.

Contractor waives all rights, if any, against District (and its agents, directors, employees, officers and servants), the State Water Board (and its agents, officers, employees and servants), the public and private owners of all properties where the Work will be performed, the individuals or entities required in the Special Conditions to be named as additional insureds (and each of their respective agents, directors, employees, officers, and servants) for recovery of damages to the extent such damages are covered by the business auto liability or commercial liability insurance obtained by Contractor pursuant to these Instructions, or under any applicable auto physical damage coverage.

3. Additional Requirements: With respect to all insurance required to be maintained by the Contractor, the Contractor shall comply, or ensure compliance, with all of the following:

a. The Contractor must provide District with a certificate or certificate(s) of insurance (ACORD Form 25 or its equivalent) and such other evidence satisfactory to District establishing that such coverage applies separately and exclusively to the Work.

b. Failure of District to demand such certificate or other evidence of full compliance with these insurance requirements, and/or failure of District to identify a deficiency from evidence that is provided, shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

c. District shall have the right, but not the obligation, of prohibiting Contractor or any Subcontractor from entering the project site until such certificates or other evidence that insurance has been placed in complete compliance with these requirements is received and approved by District. Contractor shall not be entitled to any extension of time for completion of the Work due to Contractor's failure to provide evidence of insurance as provided herein.

d. Failure to maintain the required insurance may result in termination of the Contract at the option of District.

e. If Contractor fails to maintain the insurance as set forth herein, District shall have the right, but not the obligation, to purchase said insurance at Contractor's expense.

f. Any failure to comply with reporting or other provisions of any insurance policy, including, without limitation, breaches of warranties, shall not affect the coverage provided to the Additional Insureds.

g. The Contractor's insurance shall apply separately to each of the Additional Insureds against whom a claim is made or suit is brought, except with respect to the limits of the insurer's liability. If Contractor's liability policies do not contain the standard ISO separation of insureds provision, or a substantially similar clause acceptable to District, such policies shall be endorsed to provide cross-liability coverage acceptable to District.

h. The Contractor shall notify District at least 30 Calendar Days prior to any changes made to any of the insurance policies required herein that would result in the Contractor's insurance program no longer meeting the insurance requirements as outlined in this Section.

i. All of the insurance shall be provided on policy forms satisfactory to District.

j. Any deductible or self-insured retention must be declared to and approved by District in writing. District may, in its sole discretion, require Contractor to cause the insurer to reduce or eliminate such deductibles or self-insured retentions.

k. Insurance is to be placed with insurers having a current A.M. Best's rating of no less than A-: VII or equivalent unless otherwise approved by District.

l. Contractor shall provide certified copies of all insurance policies required above within 10 Calendar Days of written request by District.

m. In the event that the Contractor employs Subcontractors as part of the services covered by the Contract, it shall be the Contractor's responsibility to require and confirm that each Subcontractor meets the minimum insurance requirements specified herein or such other insurance requirements approved by District. When requested by District, the Contractor shall furnish copies of certificates of insurance evidencing coverage for each Subcontractor.

n. With respect to completed operations insurance maintained in compliance with Section I-13.1.b., Contractor shall promptly provide, and/or shall cause Subcontractor(s) to promptly provide, additional certificates of insurance evidencing such coverage whenever requested by District.

o. By requiring insurance herein, District does not represent that coverage and limits will necessarily be adequate to protect Contractor, and such coverage and limits shall not be deemed as a limitation on Contractor's liability under the indemnities granted to District in this Contract.

p. Contractor shall notify District immediately if any aggregate insurance limit is exceeded at any point during the Contract period, including during the warranty period. In such a case, Contractor shall purchase additional insurance coverage to meet the requirements of the Contract.

I-14. Loss or Damage to the Work During the Course of Construction

Contractor shall be responsible for delivering to District the completed Work in accordance with the Contract, except as expressly provided in Section 7105 of the Public Contract Code. Should the Work be damaged by fire or other causes before acceptance of the completed Work by District, it shall be replaced by the Contractor, in accordance with the Specifications without additional expense to District. District does not carry "Course of Construction" or "Builder's Risk" insurance. It is the Contractor's responsibility to arrange its own insurance to protect its interests.

END OF INSTRUCTIONS TO BIDDERS

_____
Bidder's Name

PROPOSAL

FOR THE CONSTRUCTION OF
Reservoir Seismic Retrofit and Replacement Project for Park Lane Reservoir
PROJECT NO. P132

PROPOSALS RECEIVED UNTIL 12:00 P.M., June 5th, 2025

Unless otherwise defined herein, capitalized terms used in this proposal shall have the same meaning given to them in the "General Conditions" adopted by Montecito Water District ("District").

To the Board of Directors of the District:

The undersigned bidder (the "Bidder") hereby declares as follows:

1. The Bidder is submitting this Bid on its own behalf and not in the interest of, on behalf of, or in collusion with any other person, partnership, corporation, limited liability company, association or organization.
2. No director, officer, or employee of District has any proprietary interest in the Bidder, this proposal, or in the profits to be derived from the Contract.
3. The Bid is in all respects fair and without collusion or fraud.
4. The Bidder has read the Notice Inviting Bids and the Instructions to Bidders and agrees to all of the terms and stipulations contained therein.
5. The Bidder has examined the Site of the Work, and has read all of the Contract Documents approved by the District, including without limitation all of the Specifications and Drawings referenced therein.
6. The Bidder proposes and agrees that if the Bid submitted in the attached Bid Schedule is accepted by the District, the Bidder shall contract in the form approved by the District to perform and complete all of the Work under the Contract within the time and by the dates stipulated therein.
7. The Bidder shall accept, in full payment, the prices quoted by the Bidder in the Bid Schedule. Said prices shall include and cover the supply of all labor, equipment, materials, and incidentals necessary or proper for the Bidder to complete each and every item of the Work required to be completed under the Contract Documents in the manner and within the time required under the Contract Documents.
8. The address provided by the Bidder in this proposal is the address to which the District may direct any and all notices or other communications to the Bidder.

Upon receipt of written Notice of Award from the District of the acceptance of the Bidder's Bid, the Bidder shall, within fifteen (15) Calendar Days from the date the District mails such notice, or within such additional time as may be expressly allowed by the District in writing, (i) execute the Contract in accordance with the Bid as accepted by the District, (ii) furnish the required payment and performance bonds and bonding company documentation, (iii) provide satisfactory evidence that the Bidder's Superintendent, Project Manager, and all other designated employees meet the experience and certification requirements in the Notice Inviting Bids, and (iv) provide satisfactory evidence that all required insurance coverages have been secured. The Bidder further acknowledges and agrees that if the Bidder refuses or otherwise fails to complete all of these requirements within the required time, then the check or bond accompanying this Bid, and the money payable thereon, shall be forfeited to and become the property of the District as liquidated damages for such failure or refusal. If the Bidder complies with all of the above referenced requirements within the required time, then the Bidder's check shall be returned within three (3) Working Days or the bidder's bond shall become void, as the case may be.

BIDDER'S DECLARATION

The undersigned Bidder acknowledges receipt of the following addenda:

Addendum No.	Description	Date Received

Failure to acknowledge receipt of all Addenda will cause rejection of the Bid as non-responsive.

BIDDER'S DECLARATION

The Bidder declares that the surety or sureties named below have agreed to furnish bonds and bonding company documentation, in the form and aggregate amounts set forth in the accompanying Notice Inviting Bids and the Instructions to Bidders, if the Contract is awarded to the Bidder on the basis of this proposal.

The Bidder declares that the license listed below is the Bidder's license, is current and valid, and is in a classification appropriate to the Work to be undertaken.

Contractor's License No._____

License Expiration Date_____

Contractor's License No._____
(Complete if submitting bid as a joint venture)

License Expiration Date_____
(Complete if submitting bid as a joint venture)

The Bidder declares under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Dated:_____, 20__

_____

_____
(Print Full Name of Bidder)

By_____*
(Signature)

_____
(Print Name and Title of Signatory)

By:_____*
(Signature)

_____
(Print Name and Title of Signatory)

Name of Surety or Sureties:

_____

_____

***Refer to Instructions to Bidders I-3 for authorized signatories and documentation to be included with the Bid to demonstrate establishment of a joint venture, if applicable. Documentation demonstrating authority of signatories must be included with the Bid.**

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PROPOSAL

BIDDER'S BOND

(Not necessary when certified or cashier's check accompanies Bid)

We, the undersigned principal (the "Bidder") and surety, acknowledge and agree that we are jointly and severally bound to the Montecito Water District (the "District") in the amount of ten percent (10%) of the aggregate amount of the Bid, which amount is to be paid to the District if the Bid of the undersigned Bidder for construction of the Reservoir Seismic Retrofit and Replacement Project for Park Lane Reservoir as Project No. P132 is accepted by the District and the proposed contract awarded to the Bidder, and the Bidder shall refuse or otherwise fail to do any of the following within the time required: (1) execute the Contract in accordance with the Bid as accepted by the District; (2) furnish the required payment and performance bonds and bonding company documentation; (3) provide satisfactory evidence that the Bidder's Superintendent, Project Manager, and all other designated employees meet the experience and certification requirements in the Notice Inviting Bids; or (4) provide satisfactory evidence that all required insurance coverage has been secured.

WITNESS our hands this _____ day of_____, 20__

_____
(Print Name of Bidder)

By _____
(Signature)

_____
(Print Name and Title of Bidder's Signatory)

By _____
(Signature)

_____
(Print Name and Title of Bidder's Signatory)

_____
(Print Name of Surety)

By _____
(Signature)

_____
(Print Name and Title of Surety's Signatory)

_____

_____
(Print Address of Surety)

Surety's Telephone No._____

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PROPOSAL

RESERVOIR SEISMIC RETROFIT AND REPLACEMENT PROJECT FOR PARK LANE RESERVOIR
PROJECT NO. P132

The Bidder proposes to construct the Reservoir Seismic Retrofit and Replacement Project for Park Lane Reservoir in accordance with the Contract Documents for Project No. P132 for the unit and lump sum prices indicated herein below.

BID SCHEDULE

Item No.	Quantity	Unit	Item Description	Unit Price (Figures)	Extended Total (Figures)
1	1	LS	Mobilization and Demobilization	$	$
2	1	LS	Storm Water Pollution Prevention Plan	$	$
3	1	LS	Cleaning and Disinfecting	$	$
4	1	LS	Demolition of Existing Roof, Column and Concrete Pedestals	$	$
5	1	LS	Concrete Walls	$	$
6	1	LS	Concrete Wall Footing and Floor Slab	$	$
7	1	LS	Concrete Columns and Column Footings	$	$
8	1	LS	Concrete Roof Slab	$	$
9	1	LS	Hatches and Vents	$	$
10	1	LS	Ladders and Guardrails	$	$
11	1	LS	Site Security Fencing and Gates	$	$
12	1	LS	Piping, Site and Drainage Modifications	$	$
13	1	LS	Concrete Swale	$	$
14	1	LS	Crushed Aggregate Base Site Installation	$	$
15	1	LS	GPR Floor Slab Scan	$	$
16	8	Hrs	Small Void Remediation	$	$
17	20	Hrs	Large Void Remediation	$	$

TOTAL FOR BASE BID
Sum of Bid Items 1 through 17: $ _____
(Figures)

_____

_____Dollars
(Spell out Dollar Figure)

NOTES:

1. The determination of the lowest responsible bidder will be based on the base bid.
2. The District reserves the right to reject any or all proposals and/or to clarify and negotiate unbalanced bid items.
3. All extensions of unit prices will be subject to verification by the District.
4. All prices shall include all taxes, insurance, licenses, transportation, delivery and handling charges and duties, etc. and construction complete and in place.
5. The total bid price shall include all Work described in the Contract Documents. If no separate bid item is provided for any portion of the Work, the price thereof shall be considered to be included in the bid item which most closely applies to that portion of the Work.

PROPOSAL

INFORMATION REQUIRED OF THE BIDDER

1. Name _____

2. Address _____

3. Telephone _____

4. Email Address _____

5. Type of firm - Corporation, Partnership, Individual, Joint Venture, or Limited Liability Company

   _____

5. Organized under laws of the State of _____

6. Names, titles and addresses as required for the type of firm in the Instructions to Bidders I-7.5.a.

   _____

   _____

   _____

   _____

   _____

7. For the Park Lane Reservoir, list at least three (3) projects meeting the experience requirements as specified in Section N-9 of the Notice Inviting Bids and Section 01400 – Quality and Experience Requirements. Include reference information for these projects and contact persons as shown in the table below. Fill in all of the spaces. Attach additional sheets if necessary. Replies to these inquiries must be full and explicit. All contact information must be current.

Park Lane Reservoir Qualifying Experience

Client: _____

Project: _____

Project Location: _____

Project Description: _____

_____

Completion Date: _____ Contract Amount: $_____

Contact Person: _____ Telephone No: _____

Park Lane Reservoir Qualifying Experience

Client: _____

Project: _____

Project Location: _____

Project Description: _____

_____

Completion Date: _____ Contract Amount: $_____

Contact Person: _____ Telephone No: _____

Park Lane Reservoir Qualifying Experience

Client: _____

Project: _____

Project Description: _____

_____

Completion Date: _____ Contract Amount: $_____

Contact Person: _____ Telephone No: _____

PROPOSAL

INFORMATION REQUIRED OF THE BIDDER (continued)

8. When, by whom, and in what manner was the site of this proposed work inspected on behalf of the Bidder.

9. The Bidder shall herein set forth the name and the location of the place of business of each subcontractor who will perform work or labor or render service to the General Contractor in or about the construction of the Work in an amount in excess of one-half (1/2) of one percent (1%) of the General Contractor's total bid, and the portion of the Work which will be done by each such subcontractor. (See Section 5.12.2 of the General Conditions.) Attach additional sheets if necessary.

Name of Subcontractor	Subcontractor License No.	Location of Place of Business	Portion (Type) of Work to be Done	CARB Certificate Compliance No.**

**Enter "N/A" for a subcontractor if this requirement does not apply.

DECLARATION OF COMPLIANCE WITH
CALIFORNIA AIR RESOURCES BOARD (CARB)
IN-USE OFF-ROAD DIESEL-FUELED FLEETS REGULATION

This project is subject to the requirements of California Code of Regulations, Title 13, Article 4.8, Chapter 9, Sections 2449, 2449.1 and 2449.2, , involving the use of off-road diesel-fueled vehicles. The Contractor shall provide evidence of their current and valid California Air Resources Board Certificate of Reported Compliance (Certificate) for their fleets, any rental fleet equipment, and all subcontractors that are listed in their bid.

All CARB Certificates must be obtained prior to the bid opening and must be submitted with the bid In the sole discretion of the District, failure to submit the CARB Certificates will disqualify the Bidder and any bid submitted by the disqualified Bidder will be deemed non-responsive and any bid that includes a disqualified Subcontractor will be deemed non-responsive and will not be evaluated for award.

The undersigned declares:

I am the _____ of _____, the party making the foregoing bid.
[Title] *[Firm]*

I hereby certify that I am aware of the requirements set forth in California Code of Regulations, Title 13, Article 4.8, Chapter 9, Sections 2449, 2449.1 and 2449.2, and:

☐ **Option A**: There will **NOT** be any use of off-road diesel vehicles subject to California Code of Regulations, Title 13, Article 4.8, Chapter 9, Sections 2449, 2449.1 and 2449.2, as part of the Work.

☐ **Option B**: There will be use of off-road diesel vehicles as part of the Work.
Bidder's CARB Certificate of Reported Compliance Number: _____
List all Subcontractors' Certificate of Reported Compliance Numbers in Section 9 above.

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

_____
(Print Name and Title of Signatory for Bidder)

_____
(Print Name of Bidder and Type of Entity)

_____
(Signature)

NONCOLLUSION DECLARATION

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

The undersigned declares:

I am the _____ of _____, the party making the foregoing bid.
[Title] *[Firm]*

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

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

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

_____
(Print Name and Title of Signatory for Bidder)

_____
(Print Name of Bidder and Type of Entity)

_____
(Signature)

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CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY

INSTRUCTIONS

This certification is required pursuant to Executive Order 11246 (30 F. R. 12319-25). The implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven calendar days after bid opening. No contract shall be awarded unless such report is submitted.

CERTIFICATION BY BIDDER

NAME AND ADDRESS OF BIDDER *(Includes ZIP Code)*

1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause.
   ☐ Yes ☐ No

2. Compliance reports were required to be filed in connection with such contract or subcontracts.
   ☐ Yes ☐ No

3. Bidder has filed all compliance reports due under applicable instructions, including SF-100.
   ☐ Yes ☐ No ☐ None Required

4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246 as amended?
   ☐ Yes ☐ No

NAME AND TITLE OF SIGNER *[Please type]*

SIGNATURE	DATE

CERTIFICATION BY PROPOSED SUBCONTRACTOR REGARDING EQUAL EMPLOYMENT OPPORTUNITY

NAME OF PRIME CONTRACTOR	PROJECT NUMBER

INSTRUCTIONS

This certification is required pursuant to Executive Order 11246 (30 F. R. 12319-25), and its implementing rules and regulations which provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the Equal Opportunity Clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the subcontractor has not filed a compliance report due under applicable instructions, such proposed subcontractor shall be required to submit a compliance report before the owner approves the subcontract or permits work to begin under the subcontract.

SUBCONTRACTOR'S CERTIFICATION

NAME AND ADDRESS OF SUBCONTRACTOR *(Include ZIP Code)*

1. Proposed subcontractor has participated in a previous contract or subcontract subject to the Equal Opportunity Clause.
   ☐ Yes ☐ No
2. Compliance reports were required to be filed in connection with such contract or subcontract.
   ☐ Yes ☐ No
3. Proposed subcontractor has filed all compliance reports due under applicable instructions, including SF-100.
   ☐ Yes ☐ No ☐ None Required
4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246 as amended?
   ☐ Yes ☐ No

NAME AND TITLE OF SIGNER *[Please type]*

SIGNATURE	DATE

U.S. Department of the Interior

Certifications Regarding Debarment, Suspension and Other Responsibility Matters, Drug-Free Workplace Requirements and Lobbying

Persons signing this form should refer to the regulations referenced below for complete instructions:

Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions - **The prospective primary participant further agrees by submitting this proposal that it will include the clause titled, "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.** See below for language to be used or use this form certification and sign. (See Appendix A of Subpart D of 43 CFR Part 12.)

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions - (See Appendix B of Subpart D of 43 CFR Part 12.)

Certification Regarding Drug-Free Workplace Requirements - Alternate I. (Grantees Other Than Individuals) and Alternate II. (Grantees Who are Individuals) - (See Appendix C of Subpart D of 43 CFR Part 12)

Signature on this form provides for compliance with certification requirements under 43 CFR Parts 12 and 18. The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of the Interior determines to award the covered transaction, grant, cooperative agreement or loan.

PART A: Certification Regarding Debarment, Suspension, and Other Responsibility Matters-Primary Covered Transactions

CHECK____IF THIS CERTIFICATION IS FOR A PRIMARY COVERED TRANSACTION AND IS APPLICABLE.

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

PART B: Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions

CHECK____IF THIS CERTIFICATION IS FOR A LOWER TIER COVERED TRANSACTION AND IS APPLICABLE.

(1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

(2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

This form was electronically produced by Elite Federal Forms, Inc.

DI-2010
June 1995
(This form replaces DI-1953, DI-1954, DI-1955, DI-1956 and DI-1963)

PART C: Certification Regarding Drug-Free Workplace Requirements

CHECK___IF THIS CERTIFICATION IS FOR AN APPLICANT WHO IS NOT AN INDIVIDUAL.

Alternate I. (Grantees Other Than Individuals)

A. The grantee certifies that it will or continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about--
(1) The dangers of drug abuse in the workplace;
(2) The grantee's policy of maintaining a drug-free workplace;
(3) Any available drug counseling, rehabilitation, and employee assistance programs; and
(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will --
(1) Abide by the terms of the statement; and
(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;

(e) Notifying the agency in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted --

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a) (b), (c), (d), (e) and (f).

B. The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance (Street address, city, county, state, zip code)

Check___if there are workplaces on files that are not identified here.

PART D: Certification Regarding Drug-Free Workplace Requirements

CHECK___IF THIS CERTIFICATION IS FOR AN APPLICANT WHO IS AN INDIVIDUAL.

Alternate II. (Grantees Who Are Individuals)

(a) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant;

(b) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to the grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

PART E: Certification Regarding Lobbying
Certification for Contracts, Grants, Loans, and Cooperative Agreements

CHECK____IF CERTIFICATION IS FOR THE AWARD OF ANY OF THE FOLLOWING AND THE AMOUNT EXCEEDS $100,000: A FEDERAL GRANT OR COOPERATIVE AGREEMENT; SUBCONTRACT, OR SUBGRANT UNDER THE GRANT OR COOPERATIVE AGREEMENT.

CHECK___IF CERTIFICATION FOR THE AWARD OF A FEDERAL LOAN EXCEEDING THE AMOUNT OF $150,000, OR A SUBGRANT OR SUBCONTRACT EXCEEDING $100,000, UNDER THE LOAN.

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify accordingly.

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

As the authorized certifying official, I hereby certify that the above specified certifications are true.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL

TYPED NAME AND TITLE

DATE

DI-2010
June 1995
(This form replaces DI-1953, DI-1954, DI-1955, DI-1956 and DI-1963)

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CONTRACTOR'S CERTIFICATION
CONCERNING LABOR STANDARDS AND PREVAILING WAGE REQUIREMENTS
(Required by 29 CFR 5.6)

TO *(Appropriate Recipient)*	DATE
	PROJECT NUMBER (If any)
C/O	PROJECT NAME

1. The undersigned, having executed a contract with _____ for the construction of the above-identified project acknowledges that:

   (a) The Labor Standards provisions or 29 CFR 5.5(a) and the appropriate wage determination of the Secretary of Labor are included in the aforesaid contract:

   (b) Correction of any infractions of the aforesaid provisions, including infractions by any subcontractors and any lower tier subcontractors, is Contractor's responsibility:

2. Contractor certifies that:

   (a) Neither Contractor nor any person, firm, corporation, partnership or association in which Contractor has a substantial interest or which has a substantial interest in Contractor is designated as an ineligible contractor by the Comptroller General of the United States pursuant to Section 5.12(a)(1) of the Regulations of the Secretary of Labor, Part 5 (29 CFR, Part 5) or pursuant to Section (a) of the Davis-Bacon Act, as amended (40 U.S.C. 276a-2(a)).

   (b) No part of the aforementioned contract has been or will be subcontracted to any subcontractor if such subcontractor or any person, firm, corporation, partnership or association in which such subcontractor has a substantial interest or which has a substantial interest in subcontractor is designated as an ineligible contractor pursuant to any of the aforementioned regulatory or statutory provisions.

3. Contractor agrees to obtain and forward to the aforementioned recipient within ten days after the execution of any subcontract, including those executed by Contractor's subcontractors and lower tier subcontractors, a Subcontractor's Certification Concerning Labor Standards and Prevailing Wage Requirements executed by the subcontractors.

4. Contractor certifies that:

   (a) The legal name and the business address of the undersigned are:

   _____

   (b) The undersigned is

   ☐ A SINGLE PROPRIETORSHIP ☐ A CORPORATION ORGANIZED IN THE STATE OF _____

   ☐ A PARTNERSHIP ☐ OTHER ORGANIZATION (Describe)_____

The penalty for making false statements is prescribed in U.S. Criminal Code U.S.C. § 1001

NAME AND TITLE OF SIGNER *[Please type]*

SIGNATURE	DATE

SUBCONTRACTOR'S CERTIFICATION
CONCERNING LABOR STANDARDS AND PREVAILING WAGE REQUIREMENTS
(Required by 29 CFR 5.6)

TO *(Appropriate Recipient)*	DATE
	PROJECT NUMBER (If any)
C/O	PROJECT NAME

1. The undersigned, having executed a contract with _____
(Contractor or Subcontractor)

for _____ in the amount of $_____
(Nature of Work)

in the construction of the above-identified project, certifies that:

(a) The Labor Standards Provisions of *29 CFR 5.5(a)* and the appropriate wage determination of the Secretary of Labor are included in the aforesaid contract.

(b) Neither subcontractor nor any firm, corporation, partnership or association in which subcontractor has a substantial interest or which has a substantial interest in subcontractor is designated as an ineligible contractor by the Comptroller General of the United States pursuant to Section 5.12(a)(1) of the Regulations of the Secretary of Labor, Part 5 *(29 CFR, Part 5)*, or pursuant to Section (a) of the Davis-Bacon Act, as amended *(40 U.S.C. 276a-2(a))*.

(c) No part of the aforementioned contract has been or will be subcontracted to any subcontractor if such subcontractor or any firm, corporation, partnership or association in which such subcontractor has a substantial interest or which has a substantial interest in subcontractor is designated as an ineligible contractor pursuant to the aforesaid regulatory or statutory provisions.

2. Subcontractor agrees to obtain and forward to the contractor, for transmittal to the Recipient, within ten days after the execution of any lower tier subcontract, a Subcontractor's Certification Concerning Labor Standards and Prevailing Wage Requirements, executed by the lower tier subcontractor, in duplicate.

(a) The workmen will report for duty on or about _____.
(Date)

3. Subcontractor certifies that:

(a) The legal name and the business address of the undersigned are:

_____

(b) The undersigned is

☐ A SINGLE PROPRIETORSHIP ☐ A CORPORATION ORGANIZED IN THE STATE OF _____

☐ A PARTNERSHIP ☐ OTHER ORGANIZATION (Describe)_____

The penalty for making false statements is prescribed in U.S. Criminal Code U.S.C. § 1001

NAME AND TITLE OF SIGNER *[Please type]*	
SIGNATURE	DATE

AGREEMENT

THIS AGREEMENT (the "Contract") is entered into on _____, 20_____ between Montecito Water District, a special district organized and existing under the County Water District Law ("District") and _____ *(Contractor Name)* a _____ *(type of entity)* the "Contractor").

IN CONSIDERATION of the covenants and agreements contained herein, the parties agree as follows:

1. As used herein, the "Contract Documents" means this Contract and the Notice Inviting Bids, the Instructions to Bidders, the Bid, the General Conditions, the Special Conditions, the Technical Specifications, the Drawings, and the Bonds, all of which are attached to this Contract and made a part hereof, and any supplements, appendices, addenda or amendments to these documents.

2. In conformance with, and pursuant to, the Contract Documents for Project No. P132 the Contractor shall construct seismic retrofits of the Park Lane Reservoir consisting of the replacement of the existing reservoir structure with a new reinforced concrete structure constructed within the footprint of the existing reservoir. Work includes demolition, reinforced concrete installation, construction of piping and appurtenant improvements, and site improvements. In connection therewith, the Contractor shall (a) perform and complete in good and workmanlike manner all the work pertaining thereto as shown and described in the Contract Documents, (b) do everything required under the Contract Documents, and (c) furnish, at the Contractor's sole cost and expense, all tools, equipment, labor and materials necessary to perform such obligations with the sole exception of those materials that District has expressly agreed to furnish in the Contract Documents.

3. District shall pay to the Contractor the amount of *(Written Value)* ($_____), as set forth in the Bid, as full and final consideration and compensation to the Contractor for (a) the Contractor performing all of its obligations under the Contract Documents, including without limitation furnishing all materials, labor, tools and equipment; furnishing and removing all plant, temporary works or structures; and doing all of the Work contemplated by this Contract; (b) all loss and damage arising out of the nature of the Work, or from the action of the elements, or from any unforeseen difficulties which may arise or be encountered in the prosecution of the Work until its acceptance by District; (c) all risks of every description connected with the Work; (d) all expense incurred by Contractor; and (e) the Contractor well and faithfully completing the Work and the whole thereof, in the manner shown and described in the Contract Documents and in accordance with the requirements of District pursuant to the Contract Documents.

4. This Contract is binding upon and shall inure to the benefit of each party and its respective successors and assigns. Notwithstanding the foregoing, the Contractor agrees that it shall not assign any of its rights or obligations under this Contract without the prior written consent of District, which consent may be withheld by District in its sole and absolute discretion.

IN WITNESS WHEREOF: The parties hereto have caused this Contract to be executed the day and year first above written.

MONTECITO WATER DISTRICT

By_____
President, Board of Directors

Attest:

_____
Secretary, Board of Directors

CONTRACTOR

_____
(signature of first Contractor signatory)

By_____
(*type or print name of first Contractor signatory)*

Its:_____

_____
(signature of second Contractor signatory)

By_____
(type or print name of second Contractor signatory)

Its:_____
(If the bidder is a partnership, corporation, joint venture, or limited liability company, the Contract shall be signed above by each person required to sign for such entity in accordance with Section I-3 of the Instructions to Bidders)

Approved as to Form:

FAITHFUL PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS:

That we, _____

_____

(hereinafter "Contractor") as principal, and _____

_____

_____

as surety, a corporation duly organized under the laws of the State of _____

and duly authorized to conduct a surety business in California, are held firmly bound unto Montecito Water District (hereinafter "District"), in the sum of _____

_____

dollars ($_____), lawful money of the United States of America, for the payment whereof the Contractor and the surety bind themselves, their successors and assigns, jointly and severally firmly by these presents.

The condition of the above obligation is such that:

WHEREAS, the Contractor has been awarded and is about to enter into the annexed Agreement (the "Contract") with District to construct _____ _____in conformance with, and pursuant to, the Contract Documents (as defined in the Contract) for Project No._____, and is required by District to give this bond in connection with the execution of said Contract;

NOW, THEREFORE, the condition of the above obligation is such that if the Contractor shall well and truly do and perform all of the undertakings, covenants, agreements, terms, and conditions of the Contract on its part to be kept and performed during the original term of the Contract and any extensions thereof that may be granted by District, with or without notice to the surety, and during the life of any guarantee or warranty required under the contract, and shall also well and truly keep and perform all the undertakings, covenants, agreements, terms, and conditions of any and all duly authorized modifications, alterations, changes, or additions to this contract that may hereafter be made, notice to the surety of such modifications, alternations, changes, or additions or partial or full release of retained sums to the Contractor being hereby waived, then this obligation shall become null and void, otherwise it shall be and remain in full force and effect.

Whenever the Contractor is declared by District to be in default under the Contract, and District has not terminated the performance of the Contractor or the authority of the Contractor to proceed with the work, the surety shall promptly cause the default to be remedied.

IN THE EVENT that the Contract or any work thereunder is abandoned by the Contractor, or whenever under the provisions of the Contract District terminates the performance of the Contractor or the authority of the Contractor to continue the Work, the surety hereby further agrees that it shall, if requested in writing by District, promptly and expeditiously take such action as is necessary to complete the Contract by engaging persons other than the Contractor, unless otherwise agreed by District in writing.

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

WITNESS our hands this _____ day of _____, 20____

Contractor:_____

_____ _____
(signature of first Contractor signatory) *(signature of second Contractor signatory)*

By:_____ By:_____
(type or print name of first Contractor signatory) *(type or print name of second Contractor signatory)*

Title: _____ Title: _____

(If the bidder is a partnership, corporation, joint venture, or limited liability company, the Contract shall be signed above by each person required to sign for such entity in accordance with Section I-3 of the Instructions to Bidders)

Surety: _____

Surety's bond number: _____

Address: _____

_____

Telephone number: _____

_____
(signature of surety)

By: _____

Title: _____

APPROVED:
Montecito Water District

_____
Nicholas Turner, General Manager

APPROVED AS TO FORM:

_____
Walter E. Wendelstein, Wendelstein Law Group, PC
General Counsel, Montecito Water District

Note: Execute, notarize, and submit this document in accordance with Section I-11 of the "Instructions to Bidders" and furnish an endorsed and executed Power of Attorney.

PAYMENT (LABOR AND MATERIALS) BOND

KNOW ALL PERSONS BY THESE PRESENTS:

That we,_____

_____

as principal, and _____

_____

as surety, a corporation duly organized under the laws of the State of _____ and duly authorized to conduct a surety business in California, are held and firmly bound unto the Montecito Water District (hereinafter "District"),

in the sum of _____

_____

Dollars ($_____), lawful money of the United States of America, for the

payment of which sum, well and truly to be made, we bind ourselves, jointly and

severally, firmly by these presents.

The condition of the above obligation is such that:

WHEREAS, said principal has been awarded and is about to enter into the annexed Agreement (the "Contract") with District to construct _____ _____ in conformance with, and pursuant to, the Contract Documents (as defined in the Contract) for Project No. _____, and is required by District to give this bond in connection with the execution of said Contract;

NOW, THEREFORE, if said principal as Contractor in said Contract, or said principal's subcontractors, fails to pay for any materials, provisions, or other supplies, or equipment, used in, upon, for or about the performance of the Work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Act with respect to such work or labor, said surety will pay for the same, in an amount not exceeding the sum specified above, and also, in case suit is brought upon this bond, a reasonable attorney's fee, to be fixed by the court. This bond shall inure to the benefit of any and all persons entitled to file claims under Civil Code Section 3181 of the State of California.

PROVIDED, that any alterations in the Work to be done, or the material to be furnished, which may be made pursuant to the terms of said Contract, shall not in any way release either the Contractor or the surety thereunder, nor shall any extensions of time granted under the provisions of said Contract release either the Contractor or the surety, and notice of such alterations or extensions of the Contract is hereby waived by the surety.

WITNESS our hands this _____ day of _____, 20____

Contractor:_____

_____ _____
(signature of first Contractor signatory) *(signature of second Contractor signatory)*

By:_____ By:_____
(type or print name of first Contractor signatory) *(type or print name of second Contractor signatory)*

Title: _____ Title: _____

(If the bidder is a partnership, corporation, joint venture, or limited liability company, the Contract shall be signed above by each person required to sign for such entity in accordance with Section I-3 of the Instructions to Bidders)

Surety: _____

Surety's bond number: _____

Address: _____

_____

Telephone number: _____

_____
(signature of surety)

By: _____

Title: _____

APPROVED:
Montecito Water District

_____
Nicholas Turner, General Manager

APPROVED AS TO FORM:

_____
Walter E. Wendelstein, Wendelstein Law Group, PC
General Counsel, Montecito Water District

Note: Execute, notarize, and submit this document in accordance with Section I-11 of the "Instructions to Bidders" and furnish an endorsed and executed Power of Attorney.

GENERAL CONDITIONS

1. TERMS, DEFINITIONS AND PRELIMINARY MATTERS

1.1. The Contract Documents Defined. "**Contract"** refers to the written Agreement between Montecito Water District (District) and the Contractor covering the Work. "**Contract Documents"** refer to the Contract, the Notice Inviting Bids, the Instructions to Bidders, the Bid as defined in the Instructions to Bidders, the Bonds, the General Conditions, all Special Conditions and the Technical Specifications, the Drawings (or Plans), and any supplements, appendices, addenda, or amendments to these documents. The Contract Documents represent the entire and integrated agreement between District and the Contractor and supersede prior negotiations, representations, or agreements, either written or oral.

1.1.1. References to Specifications, Standards, and Codes. Reference in these Contract Documents to standards, specifications, manuals, or codes of any technical society, organization, or association, including, but not limited to, American National Standards Institute (ANSI), the American Society for Testing and Materials (ASTM), the American Waterworks Association (AWWA), or other recognized body, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest edition or amendment of the 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. When a referenced code section has been renumbered, the reference shall be deemed a reference to the renumbered code section.

No provision of any referenced standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of District, the Contractor, or Engineer, or any of their Subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to District, Engineer, or any of their respective consultants, agents, or employees, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents or impose any mandatory duty upon District.

1.1.2. Words with a Technical or Trade Meaning. Material or work described in words with a well-known technical or trade meaning shall be held to refer to such technical or trade meaning.

1.2. Supplements or Modifications to the Contract Documents. The Contract Documents may be supplemented or modified only by a written amendment duly executed by District and the Contractor or by Responses to Requests for Interpretation/Clarification, Field Orders, Work Change Directives, Change Orders, Notice of Award, and Notice to Proceed, as such terms are defined in the Contract Documents. Field Orders, Work Change Directives, and Change Orders are addressed in Section 3.

1.2.1. Request for Interpretation/Clarification. Requests for Interpretation/Clarification ("RFI/RFC") of the Contract Documents or the Work may be originated by the Contractor as necessary during the Work. RFI/RFCs shall be submitted in writing to District's Project Manager, or through District's Construction Inspector. RFI/RFC forms will be provided by District to the Contractor. All RFI/RFCs will be responded to in writing.

1.2.2. Clarifications. A clarification may be a further delineation of the Work in the form of new details or an interpretation of conflicts or omissions. District has the right to issue clarifications without affecting the Contract Amount, Bid Schedule prices, Time(s) for Completion, or any Fixed Calendar Date(s).

1.2.3. Notices. Notices may be originated by District, the Engineer, or the Contractor during the course of construction. When originated by the Contractor, notices shall be addressed to District Project Manager and shall be submitted in writing to District in one of the following manners: by e-mail to the District Project Manager Karl Meier at kmeier@woodrodgers.com and carbon copy email provided to the District Engineer at akanold@montecitowater.com. Notices to the Contractor are addressed in Section 1.9.4.

1.3. Contract Documents Complementary. The Contract Documents are complementary, and what is called for in any one Contract Document shall be as binding as if called for in all. The intention of the documents is to require a complete and finished piece of work, including all labor, materials, equipment, and transportation necessary for the proper execution of the Work, with the exception of such items as are expressly stipulated in the Contract Documents. Anything shown in the Drawings and not in the Specifications, or in the Specifications and not in the Drawings, or neither in the Specifications nor in the Drawings but necessary to properly complete the Work in accordance with the law and governmental rules and regulations, shall be performed by the Contractor as though shown in both the Drawings and the Specifications.

1.4. Order of Precedence

1.4.1. Most Restrictive Requirements Apply. If there is a conflict within the Contract Documents, the Contractor shall furnish and install the equipment, material, device, or installation which, in the opinion of District, has the highest quality, includes the largest quantity, meets the highest performance standards, and complies with the most stringent requirements. If there are differing requirements within or between the Contract Documents, regulations, ordinances, right-of-way deeds, agreements, licenses, and/or encroachment permits, the Contractor shall comply with those which, in the opinion of District, are the most stringent and restrictive.

1.4.2. Dimensions. Dimensions called out in numbers shall govern over scaled dimensions. Work not dimensioned shall be installed according to the same dimensions as similar work that is shown and dimensioned.

1.4.3. Compliance Shall Not be Considered Extra Work. Compliance with the orders of precedence set forth in this Section shall not be considered Extra Work, nor limit in any way the Contractor's responsibility for complying with all applicable regulations and ordinances.

1.5. The "Drawings" or "Plans." The Drawings or Plans are those drawings prepared specifically for the Work for the purpose of delineating the Engineer's intentions concerning the Work as conceived and designed by the Engineer. The location of the Work, its general nature and extent, the outline of the lands owned or controlled by District and the form and general dimensions of structures, pipelines, facilities, and appurtenant works are shown on the Drawings.

1.5.1. Drawings May Not Represent Actual Conditions. As set forth in the Instructions to Bidders, the Drawings show conditions as they are supposed or believed by the Engineer to exist, but it

is not intended, or to be inferred, that the conditions as shown thereon constitute a representation by District that such conditions actually exist. Except as mandated by statute, the Contractor shall not be relieved of liability under the Contract. District, the Engineer, and their respective officers, directors, agents, consultants, employees, or designated volunteers shall not be liable for any loss sustained by the Contractor as the result of any variance between conditions as shown on the Drawings and the actual conditions revealed during site inspections, the progress of the Work, or otherwise.

1.5.2. Ambiguity. Before commencing any portion of the Work, Contractor shall carefully examine the Contract Documents and other information given to Contractor as to materials for and construction of the Work. Contractor shall immediately notify District in writing of any perceived or alleged error, inconsistency, ambiguity, or lack of detail or explanation in the Contract Documents. If the Contractor, its Subcontractors, its Suppliers, or any of their officers, agents, or employees performs, permits, or causes the performance of any work under the Contract Documents that it knows or should have known to be in error, inconsistent, or ambiguous, or not sufficiently detailed or explained, Contractor shall bear any and all costs arising therefrom including, without limitation, the cost of correction thereof without any Extra Work.

1.6. Right-of-Way

1.6.1. Work Areas Furnished by District Shown in Contract Documents. Lands to be furnished by District for construction operations, roads, and other purposes are specifically shown on the Drawings or provided for in the Contract Documents. The Contractor shall adhere to all applicable stipulations and restrictions contained in the right-of-way deeds, agreements, licenses, and encroachment permits and shall restore or repair any damage which its operations may cause to property or improvements.

1.6.2. Contractor to Acquire Any Additional Work Areas. Should the Contractor desire or find it necessary to use any additional land during the Work, the Contractor shall make arrangements, pay for, and assume all responsibility for acquiring, using, and restoring any additional work areas and facilities temporarily required. The locations of any of the Contractor's storage and yard areas, other than those established by the Contract Documents, are subject to the acceptance of District. The Contractor shall submit to District all agreements and/or other written documentation establishing the Contractor's rights to use the storage and yard areas and the conditions of use.

1.6.3. Contractor Does Not Have Exclusive Use of Right-of-Way. Nothing in the Contract Documents shall be interpreted as giving the Contractor exclusive occupancy of the land provided.

1.6.3.1. District to Decide Which Contractor Shall Cease Work. When two or more contracts for District are being executed at one time on the same or adjacent land in such manner that work on one contract may interfere with that on another, District shall decide which contractor shall cease work, and which shall continue, or whether the work on both contracts shall progress at the same time, and the means of access for the execution of the contracts. District may grant such privilege of access or any other reasonable privilege to the Contractor, to the extent, amount, in the manner, and at the times permitted. No such decision as to the method or time of conducting the Work or the use of territory shall be made the basis of any claim for Extra Work, except as provided in Section 2.3.

1.6.3.2. Contractor Shall Not Unnecessarily Interfere with Other Contractors. Nothing in the Contract Documents shall entitle the Contractor to exclusive use of any street or public

right-of-way during the performance of the Work, and the Contractor shall conduct its operations in such a manner as to not interfere unnecessarily with the work of other entities being performed in such streets or public rights-of-way.

1.6.4. Contractor to Proceed with Work in Areas Where Right-of-Way has been Acquired. In the event that any right-of-way as shown in the Contract Documents is not acquired prior to the time the Contractor is ready to perform the Work, District reserves the right to suspend all or part of the Work by the Contractor until the necessary rights can be obtained and to indicate areas where the Contractor may work. The Contractor shall proceed with construction in public rights-of-way or in those areas where right-of-way has been acquired in such a manner as to minimize impact to its costs and schedule.

1.7. Definitions. Whenever the words defined in this section, or pronouns used in their stead, occur in these Contract Documents, they shall have the meanings here given.

An "**Act of God"** shall mean an Act of God as defined in Section 7105 of the Public Contract Code.

"Bidder" shall mean the person, firm, corporation, limited liability company, partnership, or joint venture submitting a Bid in response to the Notice Inviting Bids.

"Calendar Day" is a 24-hour period from midnight to midnight, including weekdays, Saturdays, Sundays, and holidays. Where the words "day" and "days" are used without capitalization, they shall be interpreted to mean "Calendar Day" and "Calendar Days," respectively.

"District" or **"District"** or **"Owner"** or **"MWD"** shall mean the Montecito Water District.

"claim" (with a small "c") shall mean a demand for something as due or an assertion of a right or an alleged right.

"Claim" (with a capital "C") shall mean a separate demand made by the Contractor in accordance with Section 8 for one or more of the following per Sections 20104 and 9204 of the Public Contract Code: (a) a time extension, including without limitation, for relief from damages or penalties for delay; (b) payment of money or damages arising from work done by, or on behalf of, the Contractor pursuant to the Contract and payment for which is not otherwise expressly provided for or to which the Contractor is not otherwise entitled; and/or (c) payment of an amount that is disputed by District.

The **"Contract Amount"** is the dollar amount written in Article II of the Contract between District and the Contractor.

"Contractor" shall mean the party contracting with District for the performance of the Work, the legal representative of said party, and/or the agent appointed to act for said party in the performance of the Work.

"Current Controlling Operation" shall mean any feature or combination of features of the Work, considered at the time by District, which, if delayed, will delay a Time for Completion or delay an operation that has a Fixed Calendar Date.

The **"Daily Work Report"** refers to a form entitled "Daily Work Report for Extra or Disputed Work" to be completed by the Contractor under certain circumstances. A copy of the form is provided as an appendix to the Specifications. These forms will be provided to the Contractor by District upon request.

"Engineer" or "**Design Engineer"** shall mean the entity that prepared the Plans and Specifications and/or any properly authorized representatives of that entity.

"Extra Work" shall mean labor, materials, and/or equipment which, during the performance of the Work shall, in the opinion of District and as provided by Section 3, become necessary or desirable for the proper completion of the Contract and, in the opinion of District, is not eligible for classification under the unit price items in the Bid Schedule or included in any item for which a lump sum is bid, and was not reasonably within the contemplation of the parties at the time of contracting.

A **"Fixed Calendar Date"** is a specific day, month, and year by which all or a specified portion of the Work must be completed. When a Fixed Calendar Date is established for completion of an activity, the Contractor shall complete that activity by that Fixed Calendar Date.

"Force Majeure" refers only to one of the following events or circumstances which is unforeseeable, beyond the control and without the fault or negligence of the party affected, and which has a materially adverse effect on the ability of the party affected to perform its obligations: (a) Acts of God (as defined in California Public Contracts Code Section 7105); (b) fire, flood, hurricane, or similar acutely severe weather conditions; (c) riot, war, and acts of terrorism; and (d) strikes, lockouts, and other labor disputes.

The **"Notice of Award"** refers to the written notice by District to the successful bidder stating that, upon compliance by the successful bidder with required conditions, District will execute the Contract.

The **"Notice to Proceed"** refers to the notice from District to the Contractor advising that the Contractor is authorized to start the Work.

"Permits" refers to the written licenses, warrants, or agreements between District or the Contractor and an authorized person, agent, or entity under which such person, agency, or entity grants permission and/or sets the conditions under which portions of the Work may be performed. Compliance with permits, where applicable, is an integral part of the Work.

"Record Drawings" shall mean a set of the Drawings marked to show all changes from the original Drawings as bid, including all Change Orders, alignment changes, changes in horizontal or vertical location of underground pipes and utilities, Field Orders, and all other items that differ from the Drawings. The intent of the Record Drawings is to accurately document facilities as observed or as constructed in the field.

"Shop Drawings" are those details and sketches prepared by the Contractor or the materials supplier(s) or fabricator(s) before beginning fabrication and submitted by the Contractor to demonstrate that materials the Contractor proposes to furnish meet the requirements of the Contract Documents. Shop Drawings are subject to review and acceptance by the Engineer.

"Site" is the geographical location of the land within the work areas shown on the Drawings and/or within which the Work is to be installed or built.

"Specifications" shall refer to the General Conditions, Special Conditions, and Technical Specifications collectively.

"Standard Drawings" or **"Standard Details"** depict details of typical District facilities. Where these terms are used, they shall mean the District Standard Drawings, unless indicated or specified otherwise. Only the District Standard Drawings specifically referenced in the Contract Documents are applicable to the Work.

"Standard Specifications" or **"Green Book"** or **"SSPWC"** shall mean the latest edition in effect at the time of opening of Bids, unless otherwise specifically stated in the Contract Documents, of the publication entitled "Standard Specifications for Public Works Construction," and applicable amendments, as written and promulgated by the Joint Cooperative Committee of the Southern California Chapter, American Public Works Association and Southern California District, Associated General Contractors of California. Only those sections of the SSPWC that are specifically referenced in the Contract Documents are applicable to the Work, the entirety of the SSPWC has not been adopted by District and is not incorporated by reference in its entirety into the Contract Documents. Where reference is made to the SSPWC, the terms "Agency" and "Engineer" used in the referenced section(s) shall mean "District" and the measurement and payment provisions shall not apply.

"Subcontractor" shall mean any person or entity performing work or providing materials or labor or rendering service under a direct contract with the Contractor or with any of the Contractor's Subcontractors in or about the construction of the Work.

"Supplier" shall mean any person or entity providing materials under a direct contract or agreement with the Contractor or with any of the Contractor's Subcontractors in or about the construction of the Work.

The **"Time for Completion"** is the number of Calendar Days set forth in the Specifications for the Contractor to complete all or any designated portion of the Work called for under the Contract in all parts and requirements. The Time for Completion of all Work under the Contract shall start on the date of the Notice to Proceed. The Times for Completion of designated portions of the Work shall start as set forth elsewhere in the Contract Documents. There may be more than one Time for Completion for various phases or portions of the Work to be performed under the Contract and there may be liquidated damages associated with each Time for Completion, as specified in the Special Conditions.

"Work" shall mean the entire completed construction required to be furnished under the Contract Documents. Work is the result of performing services, furnishing labor, and furnishing and incorporating materials and equipment into the construction, as required by the Contract Documents.

A **"Working Day"** is a 24-hour period from midnight to midnight Monday through Friday, excluding holidays observed by District.

1.8. District Personnel and Authority

1.8.1. Board of Directors. The District Board of Directors (the "District Board") has complete authority for the Work within the limits prescribed by law. The authority to perform certain functions has been delegated to District employees and consultants, as described below.

1.8.2. Project Manager. The Project Manager is the District's representative for purposes of administering the Contract. All notices to District and all written correspondence to District shall be addressed to the attention of the Project Manager as set forth in Section 1.2.3.

1.8.3. Construction Inspector. One or more Construction Inspectors will be assigned to the Work by District. The Construction Inspector has the following authority, subject to review by the Project Manager:

(1) To view and inspect the Work, sample and test materials and components (at the Site and at off-site manufacturing facilities), and to discuss the Work with the Contractor's authorized field representative; and

(2) To determine compliance with the Contract Documents, to sign District' Daily Work Reports, and to issue Field Orders, Work Change Directives, warnings of noncompliance, Stop Work Notices, and other correspondence.

1.8.4. Materials Inspector. One or more Materials Inspectors may be assigned to the Work by District. The Materials Inspector has the following authority, subject to review by the Project Manager:

(1) To view and inspect the Work, sample and test components (at the Site and at off-site manufacturing facilities), and to furnish available written test results to the Contractor's authorized field representative; and

(2) To determine compliance with the Contract Documents and to issue written notification of noncompliance with the Contract Documents.

1.8.5. Engineer. The Engineer prepares the Drawings and Specifications for the Work and has the responsibility for review and acceptance of submittals and Shop Drawings and, at the discretion of the Project Manager, responding to Requests for Interpretation/Clarification.

1.8.6. Surveyors. Surveyors hired by District shall have free access to the Site to perform their duties, but have no authority under the Contract.

1.8.7. Other Persons. Visitors or District personnel who are not involved in construction administration may be present at the Site. Such persons have no authority under the Contract and District is not responsible for their comments, suggestions, or directions.

1.8.8. Authority of District. District or, at District' request, the Engineer, shall interpret all orders and directions contemplated under the Contract; shall determine all questions in relation to the Work; and shall decide in all cases every question which may arise relative to the fulfillment of this Contract on the part of the Contractor. Should any discrepancy appear or any misunderstanding arise

as to the import of anything contained in the Contract Documents, the matter shall be referred to District, who shall decide the matter in accordance with the true intent and meaning, as construed by District, and District's decision shall be binding on the Contractor. Any differences or conflicts that may arise between the Contractor and other contractors of District in regard to their Work shall be adjusted and determined by District or by the Engineer at District's direction.

1.9. Contractor's Personnel and Authority

1.9.1. Contractor's Representatives

1.9.1.1. Contractor's Project Manager. The Contractor's Project Manager is the representative of the Contractor for the purpose of administering the Contract.

1.9.1.2. Contractor's Superintendent. The Contractor's Superintendent is the Contractor's field representative who has authority to act on behalf of the Contractor. The Superintendent provides general supervision of the Contractor's field activities.

1.9.2. Contractor's Representative to Give Personal Attention. The Contractor, either in person or by a duly authorized and competent representative, shall give personal attention constantly to the faithful prosecution of the Work, and shall be present on the Site continually during its progress, to receive directions or instructions from District. Before starting the Work, the Contractor shall designate, in writing, a field representative as the Superintendent, who shall have complete authority to act for it. An alternate Superintendent may also be designated. The alternate Superintendent must meet the same experience requirements specified for the Superintendent in the Notice Inviting Bids. The Superintendent or alternate shall be present at the Site whenever the Work is in progress or whenever actions of the elements necessitate the taking of measures necessary to protect the Work, persons, or public or private property. Any order or communication given to the Superintendent shall be deemed delivered to the Contractor. A joint venture shall designate only one Superintendent and alternate. In the absence of the Contractor or its Superintendent, necessary or desirable directions or instructions may be given by District to the Contractor's Project Manager, or to the person having charge of the specific work to which the order applies. Such orders shall be complied with promptly. In order to communicate with District, the Contractor's Superintendent and any persons having charge of specific work shall be able to speak, understand, read, and write the English language.

1.9.3. Replacement of Contractor's Project Manager/Project Superintendent. Neither the Contractor's Superintendent nor the Contractor's Project Manager shall be replaced without a reasonable basis and written notice to District. The Contractor must supply to District evidence that any replacement Superintendent or Project Manager meets the experience and qualification requirements of these Contract Documents. No Project Manager or Superintendent may be employed on the Work until District has received references and District has provided written acceptance of the Project Manager or Superintendent.

1.9.4. Notices to the Contractor. The Contractor may be given notice by mail, personal service, or e-mail.

1.9.4.1. Service by Mail. The address given in the Contractor's Bid is designated as the place to which all notices, letters and other communications to the Contractor shall be mailed. The delivering at the above named place, or the depositing in a pre-paid envelope directed to the above

place, in any post office mail box regularly maintained by the post office or any depository of Federal Express, United Parcel Service, or other courier, of any notice, letter, or other communication to the Contractor, shall be deemed sufficient service upon the Contractor and the date of said service shall be the date of such delivery or mailing. Such address may be changed at any time by a written notice signed by the Contractor and delivered to District.

1.9.4.2. Personal Service or Service by Fax or E-Mail. The service of any notice, letter, or other communication upon the Contractor personally or upon the Contractor's Project Manager or Superintendent personally shall be deemed sufficient service upon the Contractor and the date of such service shall be the date served. Service by e-mail to the e-mail address, provided by the Contractor pursuant to Section 1.9.4.3, addressed to the Contractor's Project Manager or Superintendent, shall also be deemed sufficient service upon the Contractor, and the date of said service shall be the date of such e-mail.

1.9.4.3. Contractor's Phone and Fax Numbers and E-mail Address. Before starting the Work, the Contractor shall provide District with a telephone number, a facsimile number, and an e-mail address where a duly authorized and competent representative of the Contractor can be reached during normal work hours. In addition, the Contractor shall provide District with telephone numbers where the Superintendent and Project Manager can be reached at any hour of the day or night.

1.9.4.4. One Hour Response Required for Emergencies. The Contractor or its duly authorized and competent representative must respond, in person or by telephone, within one hour of any emergency call placed by District. If District does not receive a response to an emergency call within one hour, or earlier if the circumstances otherwise warrant, then District may, at its option, take any necessary action to remedy the emergency condition. In all cases where the Contractor is obligated or responsible for the emergency condition or for responding to the emergency condition, District' response shall be at the Contractor's expense. Such expenses shall be deducted from amounts due or to become due to the Contractor under or by virtue of this Contract. In case the expense exceeds the amount due, the Contractor shall pay the amount of any excess to District promptly upon demand by District.

1.10. Specification Language and Style. Parts of the Specifications and notes on the Drawings are written in the active voice and are addressed to the Contractor. When words or phrases requiring an action or performance of a task are used, it means that the Contractor shall provide the action or perform the task. For example: provide, perform, install, furnish, erect, connect, test, operate, adjust, or similar words mean that the Contractor shall perform the referred-to action or task. When words or phrases requiring selection, acceptance, approval, review, designation, or similar actions are referred to, it means that such actions are District' or the Engineer's prerogative and that the Contractor must obtain such action before proceeding. Requirements in the Specifications and Drawings apply to all work of a similar type, kind, or class even though the word "all" or "typical" may not be stated.

2. TIME AND ORDER OF THE WORK

2.1 Time Is of the Essence. The Times for Completion and Fixed Calendar Dates contained in the Contract Documents are not mere guidelines. The time in which the various portions and the whole of the Contract are to be performed, and the Work is to be completed, is of the essence of the Contract. Failure by the Contractor to comply with the Times for Completion or Fixed Calendar Dates is a material breach of the terms of the Contract.

2.1.1. Notice to Proceed is Authorization to Begin Work. The issuance of a Notice to Proceed by District shall constitute the Contractor's authority to perform the Work. The period within which the Contractor must complete the Work (the Time for Completion) begins running on the date set forth in the Notice to Proceed.

2.1.2. Contractor Responsible for Means and Methods. The Contractor shall be solely and completely responsible for and have control over construction means, methods, techniques, sequences, procedures, and safety and for coordinating all portions of the Work.

2.1.3. Contractor Must Maintain the Required Progress. The Contractor shall at all times employ such work forces, plant, materials, equipment, and tools as will be sufficient, in the opinion of District, to prosecute the Work at not less than the rates fixed under the terms of the Contract and to complete the Work or any separable portions thereof within the time limits fixed by the Contract. If, in the opinion of District, the Contractor fails to employ sufficient work forces, plant, materials, equipment, and/or tools or to maintain adequate progress, District may require Contractor to increase progress at any point or points or to modify plans and procedures in such manner and to such extent as District may direct, at the Contractor's expense, or District may instruct the Contractor to discontinue the Work in accordance with Section 7.

2.2. Liquidated Damages - Failure to Complete on Time. The parties to the Contract agree that if the Work in all parts and requirements is not completed within the Time(s) for Completion and/or by the Fixed Calendar Date(s), damages will be sustained by District. It is also agreed by the parties that it is and will be impracticable and extremely difficult to ascertain and determine the actual damage District will sustain in the event of, and by reason of, such failure to timely complete the Work. Therefore, for each and every Calendar Day that the Contractor shall be in default of completing the Work, or any separable part thereof, the Contractor shall pay to District as liquidated damages, and not as a penalty, the sum or sums named in the Specifications, which sum or sums are by the execution of the Contract mutually agreed upon as liquidated damages which District will suffer by reason of such failure to complete the Work or part thereof. District shall have the right to deduct the amount of such liquidated damages from any monies due or to become due the Contractor under this Contract. Permitting the Contractor to continue the Work and finish the Work, or any part of it, after the Time for Completion or the Fixed Calendar Date, shall in no way act as a waiver of liquidated damages nor as a waiver of any of District' rights under this Contract.

The furnishing of documents and information, such as Record Drawings, Record Layout Sheets, Record Electrical and Instrumentation Documentation, AutoCAD or other electronic or digital files, software such as programmable logic controller (PLC) programs, and operations and maintenance manuals, is not a minor informality as such items are necessary for District to properly, safely, and fully utilize its facilities. Therefore, the Contractor acknowledges and agrees that the liquidated damages provided for in this Section 2.2 shall continue to accrue until the Contractor has completed all construction and other work required to be furnished under the Contract Documents, including all field work and punch list items, and furnished all documents and information required by the Contract Documents.

2.3. Delays

2.3.1. Delays in General. Delay, as the term is used in this Section 2.3, refers to an event that impacts the Current Controlling Operation by either extending the time of performance or disrupting the performance of the Work in some way that impacts the efficiency of the Contractor's performance whether or not it extends the time of performance. Delays include, without limitation, delays resulting from weather and Force Majeure events, as well as suspensions of the Work by District as described herein. Any and all delays shall be governed by this Section 2.3.

2.3.2. Timely Completion of the Work Required. The Contractor shall complete all or any designated portion of the Work within the Time(s) for Completion and by the Fixed Calendar Date(s). If the Contractor is delayed in one part of the Work, then the Contractor must take all steps necessary to mitigate costs and delays which can be avoided by the judicious handling of work forces, construction equipment, and plant, including, but not limited to, shifting such forces, equipment, and plant to other parts of the Work. If the Contractor is delayed in prosecution and completion of the Work by any cause beyond the Contractor's control (including as a result of any action or inaction by District), the Contractor hereby agrees that, to the fullest extent permitted by applicable law, the Contractor has no claim or right of any action whatsoever for damages from District for any such cause or delay, except as set forth in this Section 2.3.

2.3.3. No Payment or Extension of Time

The Contractor shall not be relieved from the necessity of maintaining the required progress and shall not be entitled to any Extra Work, additional compensation, or any adjustment in any Time for Completion or Fixed Calendar Date for the following types of delays to the Work:

(1) A suspended or delayed activity that is not the Current Controlling Operation.

(2) Suspensions or delays due to the failure of the Contractor or the Contractor's Subcontractors or Suppliers to carry out District's orders or to perform any provisions of the Contract.

(3) Suspension or delays resulting from the Contractor's noncompliance with the Contract.

(4) Ordinary and/or foreseeable delays and accidents.

(5) Delays that are reasonable under the circumstances and/or were within the contemplation of the parties when the Contract was awarded, including, but not limited to, delays associated with reasonable time for the Engineer or District to review and respond to RFI/RFCs and other types of Contractor submittals.

(6) Delays caused by events over which the Contractor has control or assumed responsibility, including, but not limited to, delays caused by delivery of materials and equipment ordered by the Contractor, or delays caused by the acts or omissions of Subcontractors of any tier.

(7) Delays occurring after any Time for Completion or beyond a Fixed Calendar Date on which the Contractor was to have completed all work.

The Contractor acknowledges and agrees that District is exempt from any and all liability for early completion delay damages and all related claims. To the fullest extent permitted by applicable law, the Contractor irrevocably and unconditionally waives any and all rights to request early completion delay damages.

2.3.4. Suspension of the Work by District. By written order to the Contractor, District may suspend the Work wholly or in part, for an indefinite period or for such period as it may deem necessary, for any of the following reasons:

(1) Weather conditions that are unfavorable for the prosecution of the Work.

(2) Failure of the Contractor to carry out orders given or to perform any provisions of the Contract.

(3) The convenience or benefit of District.

Suspension by District shall be effective upon receipt by the Contractor of the written order suspending the Work and shall be terminated upon receipt by the Contractor of the written order terminating the suspension. Except as otherwise specified in this Section 2.3, District shall not be liable to the Contractor for any suspension of the Work.

2.3.5. Suspension or Delay of the Work Due to Weather Conditions. In making its Bid, the Contractor must consider the probability that the Work may be delayed or suspended due to weather conditions that are unfavorable for the prosecution of the Work and the Contractor shall be deemed to have accounted for that probability in the Bid. For all portions of the Work for which a Fixed Calendar Date is indicated, if such Work is suspended by District or the Contractor due to weather conditions that are unfavorable for the prosecution of the Work, the Contractor remains obligated to timely complete such work and shall **not** receive a time extension or additional payment. For Work for which no Fixed Calendar Date is indicated, subject to compliance with Section 2.3.10, the Time for Completion may be extended by 1.4 Calendar Days for each Calendar Day the Current Controlling Operation is suspended because of weather conditions which are unfavorable for the prosecution of the Work; however, there shall be no additional compensation for delays due to weather conditions. When the Contractor is late in completing the Work and the prosecution of the Work extends beyond the Time for Completion, there shall be no extension of the Time for Completion nor any adjustment to any Fixed Calendar Date(s) due to weather conditions, nor shall there be any additional compensation for delays due to weather conditions occurring beyond the completion date of the Contract.

Should the Contractor prepare to begin work at the regular starting time at the beginning of any regular work shift on any Calendar Day on which inclement weather, or the conditions resulting from the weather, which in the judgment of District, prevents the work on the Current Controlling Operation from beginning at the usual starting time and the crew is dismissed as a result thereof, the Time for Completion may be extended by 1.4 Calendar Days, whether or not conditions change thereafter and the major portion of the Calendar Day could be considered to be suitable for such construction operations.

2.3.6. Suspension or Delay of the Work Due to Contractor's Actions. For all work suspended or otherwise delayed in whole or in part due to failure of the Contractor to carry out orders

given by District or to perform any provisions of the Contract Documents, the Contractor remains obligated to timely complete such work without a time extension or additional compensation.

2.3.7. Suspension of the Work for the Convenience or Benefit of District. If District elects to suspend the Current Controlling Operation for its convenience or benefit, for all work for which a Fixed Calendar Date is indicated, the Contractor remains obligated to timely complete such work. District and the Contractor will negotiate, however, appropriate means and compensation for completing the Work by the Fixed Calendar Date. For work for which no Fixed Calendar Date is indicated, the Time for Completion may be extended by 1.4 Calendar Days for each Calendar Day the Current Controlling Operation is suspended for the convenience or benefit of District, and the Contractor may be entitled to payment for the following costs actually incurred, subject to compliance with Section 2.3.10:

(1) Those actual necessary costs of idle time of construction equipment, idle time of workers, and moving of construction equipment and hauling of materials and equipment that are actually incurred solely by reason of the delay and which could not have been avoided by the judicious handling of work forces, construction equipment, and plant, with allowance for overhead and profit no higher than as provided in Section 3.4.

(2) Costs incurred, with the written approval of District, to mitigate the foregoing costs, with allowance for overhead and profit no higher than as provided in Section 3.4.

2.3.8. Delays Due to the Unreasonable Acts or Omission of District. An act or omission on the part of District which delays a Current Controlling Operation and which is unreasonable under the circumstances involved, and not within the contemplation of the parties or the Contract, shall be treated as a suspension of the Work for the convenience or benefit of District, subject to the Contractor's compliance with Section 2.3.10. Failure of District to furnish within Contract time requirements: access to the Work, right-of-way, Drawings, materials, or equipment for which District is responsible under the Contract, if such failure delays a Current Controlling Operation, shall be treated as a suspension of the Work for the convenience or benefit of District, subject to compliance with Section 2.3.10.

2.3.9. Delays Due to Force Majeure. In making its Bid, the Contractor shall have considered and accounted for the possibility that the Work may be delayed due to Force Majeure. Actual and demonstrable delay to the Current Controlling Operation due to Force Majeure shall be treated as follows:

(1) For all Work or portions of the Work for which a Fixed Calendar Date is indicated, the Contractor remains obligated to timely complete such work and shall not receive a time extension or additional compensation, except that the Contractor might be eligible for additional compensation for acceleration of the Work, subject to the delay, notification, claims, and other applicable provisions of the Contract Documents.

(2) For Work for which no Fixed Calendar Date is indicated, subject to compliance with Section 2.3.10, the Time for Completion may be extended by 1.4 Calendar Days for each Calendar Day the Current Controlling Operation is suspended due to Force Majeure; however, there shall be no additional compensation for delays due to Force Majeure.

(3) In no event shall the Time for Completion be extended for delays to operations that are not the Current Controlling Operation.

2.3.10. Procedure to Apply for Extension of Time and/or Payment Due to Delay

2.3.10.1. Notice Required Within One Working Day. Within one Working Day of any delay of a portion of the Work which is the Current Controlling Operation, whether such delay is caused by District, by weather, or otherwise, the Contractor shall notify District in writing of the delay to the Current Controlling Operation, and shall provide all evidence in the Contractor's possession concerning the cause(s) of delay. Written notice of delay to the Current Controlling Operation is not a mere formality but is District' tool for identifying and distinguishing critical from non-critical delays and for determining what action, if any, is necessary on its part. The Contractor shall not assume that written or actual notice on the part of District of a disruptive event constitutes knowledge of a delay to the Current Controlling Operation. District shall not assume that there has been a delay to a Current Controlling Operation absent written notice from the Contractor. If the Contractor fails to provide notice within twenty-four hours, then the Contractor shall not receive any extension of time or payment for that portion of the delay to the Current Controlling Operation that is outside the twenty-four hour notice period.

2.3.10.2. Daily Work Reports Required to Recover Costs. If the Contractor wishes to recover costs associated with a delay or suspension of the Current Controlling Operation, and such recovery of costs is authorized under the Contract Documents, then the Contractor shall maintain and submit to District complete and accurate Daily Work Reports enumerating all such costs, clearly distinguishing them from the costs of other portions of the Work. The Daily Work Reports shall be itemized and:

(1) Show names of workers, classifications, and hours worked.

(2) Describe and list quantities of materials used.

(3) Show type of equipment, size, and hours of operation, including loading and transportation if applicable.

(4) Describe other services and expenditures in such detail as District may require.

The Contractor shall attempt to reconcile the reports with District daily and the Daily Work Report shall be signed by District and the Contractor. Failure to submit the Daily Work Report by the close of the next Working Day may waive any right to recovery of costs for that Calendar Day. In the event of disagreement, pertinent notes shall be entered by each party to explain points that cannot be resolved immediately. Each party shall retain a signed copy of the Daily Work Report. Work performed by Subcontractors shall be reported on the Daily Work Report. As soon as practicable, following receipt of such Daily Work Report(s), if required, District will determine the nature and extent of such costs and will, if it finds that payment is due, issue a Change Order. If District determines that payment is not due, it will so advise the Contractor in writing. Any disputes regarding payment of costs shall then proceed in accordance with the procedures set forth in Section 8.

Except for the additional compensation provided in Section 2.3.7, neither the Contractor nor any Subcontractor of any tier shall have any claim for damages or compensation for delay. Except as set forth in Sections 2.3.7, 2.3.8 and 5.4.2, neither the Contractor nor any Subcontractor of any tier shall receive compensation for any other type of delay or hindrance to the Work, whether caused by District, a third party, or otherwise.

2.3.10.3. Time Extensions. Within 10 Calendar Days after the end of each month, District will furnish the Contractor a statement showing the original Time(s) for Completion, any time adjustments granted after receipt of the required notice by the Contractor, the number of Calendar Days elapsed, and the number of Calendar Days remaining for completion of the Contract. The Contractor shall file a written protest setting forth in what respects the Contractor's understanding differs from District within 15 Calendar Days from the issuance of the monthly statement. No protest shall be allowed for any period of time for which notice within one Working Day, as required by Section 2.3.10.1, was not provided. If no written protest is filed within 15 Calendar Days of the date of the statement, the decision of District shall be deemed to have been accepted by the Contractor as correct and no further delay claims for the period covered by the statement will be allowed or considered.

2.3.10.4. Revised Schedule of Progress. In case of any extension by District of any Time for Completion, a revised schedule of progress may be required and shall be provided to District by the Contractor upon request.

3. CHANGES TO THE WORK

3.1. Changes by District. If District finds it impracticable to comply strictly with the Contract Documents or finds it necessary to make a change in the Work, District may, at any time during the Contract, by written order, make such changes as it shall find necessary in the design, line, grade, form, location, dimension, plan, or material of any part of the Work or equipment or in the quantity or character of the Work or equipment to be furnished. Such changes to the Work shall be directed by Field Order or Work Change Directive. Changes to the Work by District are within the contemplation of the parties, even if large in value or numerous. In the event of changes to the Work or addition of Extra Work and at District' discretion, the Contractor may be required to obtain any necessary additional performance bonds or payment bonds.

3.1.1. Field Orders. A "Field Order" is written instructions or verbal instructions confirmed in writing from District to the Contractor directing minor changes in Work that do not involve a change in Contract Amount, extension of Time(s) for Completion, or adjustment of Fixed Calendar Date(s). If the Contractor believes that a Field Order constitutes Extra Work, the Contractor must, within one Working Day of receipt of the Field Order, submit a written request for an extension of time and/or payment for Extra Work in accordance with this Section 3. Failure to timely submit such a request constitutes the Contractor's acknowledgement and agreement that the Field Order does not constitute Extra Work.

3.1.2. Work Change Directives. A "Work Change Directive" is a written directive issued by District that involves an addition, deletion, or revision to the Contractor's scope of work and authorizes the Contractor to proceed with that work, unless specifically noted otherwise on the Work Change Directive. The directive itself will not change the Contract Amount, Time(s) for Completion,

or Fixed Calendar Date(s), but will serve as evidence to all parties that the addition, deletion, or revision to the scope of work may be incorporated into a Change Order following negotiation as to its effect. At District' discretion, Work Change Directives may be handled on a time and materials or on a fixed price basis.

3.1.3. Change Orders. A "Change Order" is a document issued on or after the effective date of the Contract and signed by the Contractor and District authorizing an adjustment in the Contract Amount, the Time(s) for Completion, and/or Fixed Calendar Date(s) due to addition, deletion, or revision to the Work. The Change Order shall be fully executed by both the Contractor and District prior to payment to the Contractor for work performed under the Change Order. The Change Order shall be signed by an individual with the signatory authority to execute such documents on behalf of the Contractor. All Change Orders to the Contract waive any further claim by the Contractor related to the Work for which the Change Order is issued. All Change Orders shall include the following language, which is binding upon the Contractor and the Contractor's Subcontractors and Suppliers:

"The compensation (time and cost) set forth in the Change Order comprises the total compensation due the Contractor, all Subcontractors, and all Suppliers, for the work or change defined in the Change Order, including any impact on unchanged work. By signing the Change Order, the Contractor acknowledges and agrees on behalf of himself, all Subcontractors, and all Suppliers, that the stipulated compensation includes payment for all work contained in the Change Order, plus all payment for the interruption of schedules, extended field overhead cost, delay, and all impact, ripple effect, or cumulative impact on all other work under the Contract and all other extraordinary or consequential costs arising directly or indirectly out of the work described in the Change Order. The signing of the Change Order indicates that the Change Order constitutes full mutual accord and satisfaction for the change and that the time and cost under the Change Order constitutes the total equitable adjustment owed the Contractor, all Subcontractors, and all Suppliers as a result of the change. The Contractor on the Contractor's behalf and on behalf of all Subcontractors and Suppliers agrees to waive all rights, without exception or reservation of any kind whatsoever, to file any further claim related to the Change Order. No further claim or request for equitable adjustment of any type, for any reasonably foreseeable cause, shall arise out of or as a result of this Change Order or the impact of this Change Order on the remainder of the work under this Contract."

3.2. Procedure to Apply for Extension of Time and/or Payment for Changes to Work or Extra Work. In the event of additions, deletions, or revisions to the Work requiring an adjustment in the Contract Amount and/or any Time for Completion of the Work, District may, at its discretion, either request and negotiate an adjustment in the Contract Amount from the Contractor or direct the Contractor to perform the revised or added work on a time and materials basis. If the Contractor is to perform the work for a negotiated adjustment in the Contract Amount, then the Contractor must make its proposal before the work commences or within 15 Calendar Days of the Work Change Directive, whichever is sooner. If the Contractor believes that a proposed addition, deletion, or revision in the Work requires an adjustment in any Time for Completion, then the Contractor must provide written notice to District within 15 Calendar Days of receipt of a Work Change Directive or before the work commences, whichever is sooner. If the Contractor believes that a proposed addition, deletion, or revision in the Work requires an adjustment in the Contract Amount in order to accelerate work to meet a Fixed Calendar Date or will prevent the Contractor from meeting a Fixed Calendar Date, then the Contractor must provide written notice within one Working Day of receipt of a Field Order or Work Change Directive. If the Contractor submits a timely request for payment and/or time adjustment, but District and the Contractor are unable to agree on the value of increased, decreased, or

Extra Work or on a time extension, then such work shall be paid in accordance with the provisions of Sections 3.3 and 3.4. Disputes over time extensions shall proceed in accordance with the procedures set forth in the Section 8. The Contractor shall not be excused from any Fixed Calendar Date or any Time for Completion and shall proceed with the Field Order or Work Change Directive and all other work to be performed under the Contract.

3.3. Payment for Increases and Decreases to Bid Item Quantities

3.3.1. Decreases in Bid Item Quantities. If the amount of work decreases, the total amount of work actually done or materials or equipment furnished shall be paid for according to the unit price established for such work under the Contract, wherever such unit price has been established. District reserves the right to omit portions, or all, of such work as may be deemed necessary or expedient by District without a change in the unit price. If a unit price has not been established, the provisions of Section 3.4 shall apply. A change which diminishes the quantity or amount of work to be done shall not constitute the basis for a claim by the Contractor for damages or anticipated profits on the work that may be dispensed with provided that if such changes or alterations render useless any work already done or materials already furnished or used in the Work, District shall make reasonable allowance therefore, as set forth herein.

3.3.2. Increases in Bid Item Quantities. If the amount of work increases, the total amount of work actually done or materials or equipment furnished shall be paid for according to the unit price established for such work under the Contract, wherever such unit price has been established. District reserves the right to increase the quantity of any unit-price item of the Work by an amount up to and including 25 percent of the original Bid item(s) without a change in the unit price. In the event District increases the quantity of any unit-price item of the Work by an amount which exceeds 25 percent of the original Bid item(s) [hereinafter the "excess amount"], the Contractor shall notify District in writing before performing the work that the increase in the quantity of such unit price item will materially increase the Contractor's unit cost. If District determines that a material increase in the unit cost has occurred, then the unit price on the excess amount shall be paid as provided for in Section 3.4. If the Contractor does not provide written notification before performing the work, or if in the opinion of District, the increase in the quantity of the unit price item does not result in a materially increased unit cost, then all of the work shall be paid according to the unit price established for such work under this Contract. In the event no unit prices are named in the Contract to cover an increase or alteration in the Work, the cost of such changes shall be covered as provided for in Section 3.4.

3.4. Payment for Extra Work

3.4.1. Contractor to Perform Ordered Extra Work. If during the performance of the Contract it shall, in the opinion of District, become necessary or desirable for the proper completion of the Contract to order that Extra Work be performed, the Contractor shall do and perform such Extra Work. Extra Work shall be ordered in writing by District before such work is started.

3.4.2. Extra Work Must Be Ordered in Writing. No Extra Work shall be paid for unless ordered in writing by District.

3.4.3. Payment Normally to Be Agreed in Advance. Extra Work will typically be paid for at a lump sum or unit price agreed to in writing by District and the Contractor before the Extra Work is

performed. In the negotiation of lump sum or unit prices, the agreed estimated cost of the work plus an allowance for overhead and profit, not to exceed the allowances in Section 3.4.6, shall be used.

3.4.4. Option to Use Time and Materials. At the option of District, payment may be made on the basis of time and materials as set forth in Section 3.4.6.

3.4.5. Work Comparable to Unit Price Items. Performance of any Extra Work or the furnishing of any extra material which, in the judgment of District, is of like character to and susceptible to classification under the unit-price items of the Contract shall, if directed by District, be paid for at the unit price named for such work in the Bid Schedule.

3.4.6. Time and Materials Work. Extra Work and work involving a combination of increases and decreases in the Work ordered on the basis of time and materials will be paid for at the actual necessary cost as determined by District, plus allowances for overhead and profit. For work involving a combination of increases and decreases in the Work, the actual necessary cost will be the arithmetic sum of the additive and deductive costs. The allowance for overhead and profit shall be deemed to include full compensation for project management, bond and insurance premiums, taxes (other than sales or use taxes includible in the cost of materials), office expense, and all other items of expense or cost not included in the cost of labor, materials, or equipment provided for under Sections 3.4.7, 3.4.8, and 3.4.9. Allowance for overhead and profit shall be as follows:

OVERHEAD AND PROFIT ALLOWANCE

Labor	-	20 percent
Materials	-	15 percent
Equipment	-	15 percent

The actual necessary costs for labor, materials, or equipment will be computed in accordance with Sections 3.4.7, 3.4.8, and 3.4.9, respectively. Bond and insurance premiums, taxes (other than sales or use taxes includible in the cost of materials), and other general expenses shall not be included in the computation of actual necessary cost as they are deemed included in the overhead and profit allowance.

It is understood that labor, materials, and equipment may be furnished by the Contractor or by the Subcontractor on behalf of the Contractor. When all or any part of the Extra Work is performed by a Subcontractor, the overhead and profit allowance shall be applied to the labor, materials, and equipment costs of the Subcontractor, to which the Contractor may add 10 percent for the first $5,000.00 and 5 percent to the Subcontractor's remaining total for the Extra Work. This provision applies regardless of the number of hierarchical tiers of Subcontractors and this markup may be applied one time only for each separate Extra Work transaction.

The Contractor shall furnish District Daily Work Reports covering the direct costs of labor and materials and charges for equipment, whether furnished by the Contractor, Subcontractor, or other forces. The reports shall be furnished on Daily Work Report forms provided by District and shall be signed by the Contractor or the Contractor's authorized agent and by District' Construction Inspector or Project Manager. Any Daily Work Report form not signed by District' Construction Inspector or Project Manager shall be void and any work or costs on an unsigned Daily Work Report shall be invalid and will not be allowed or paid for as Extra Work. On the Daily Work Reports, the Contractor

shall provide names or the identifications and classifications of workers and hours worked; size and type of equipment and hours operated; and materials used in performing the work. Material charges shall be substantiated by valid copies of vendor's invoices; District will not pay for materials for which valid invoices are not provided. All charges shall be substantiated by such other itemized data as District may require. When these reports are agreed upon and signed by both parties, they shall become the basis of payment for the Extra Work performed, but shall not preclude subsequent adjustment based on a later audit. District' signature on the Daily Work Report does not constitute an acknowledgement of the validity of any claim by the Contractor that work is Extra Work or that the Contractor is entitled to the amounts stated or any amount at all, but only acknowledges receipt of back up information for the Contractor's potential claim. In the event of any inconsistency between the allowances for profit and overhead or other mark-ups stated on the Daily Work Report and these General Conditions, the values stated in these General Conditions shall govern and shall be used.

3.4.7. Labor. The cost of labor used in performing the Extra Work by the Contractor, a Subcontractor, and/or other forces will be the sum of the following:

(1) The actual wages paid plus any employer payments to, or on behalf of, workers for fringe benefits, including health and welfare, pension, vacation, and similar purposes.

(2) All payment imposed by state and federal laws including, but not limited to, worker's compensation insurance and social security payments.

(3) The amount paid for subsistence and travel required by collective bargaining agreements, or in accordance with the regular practice of the Contractor, only in the event an adjustment in Time(s) for Completion is granted.

At the beginning of the Contract and as later requested by District, the Contractor shall furnish District proof of labor compensation rates being paid or that have been paid.

3.4.8. Materials. The cost of materials used in performing the Extra Work will be the actual cost to the purchaser (whether the purchaser is the Contractor, Subcontractor, or other forces) from the supplier thereof, inclusive of sales or use taxes, except as the following are applicable:

(1) Cash or trade discounts available to purchaser shall be credited to District notwithstanding the fact that such discounts may not have been taken by the Contractor.

(2) For materials secured by other than a direct purchase and direct billing to the purchaser, the cost shall be deemed to be the price paid to the actual supplier as determined by District. Markup, except for actual costs incurred in the handling of such materials, will not be allowed.

(3) Payment for materials from sources owned wholly or in part by the purchaser shall not exceed the price paid by the purchaser for similar materials from said sources on Contract items or the current wholesale price for such materials delivered to the Site, whichever price is lower.

(4) If, in the opinion of District, the cost of materials is excessive, or the Contractor does not furnish satisfactory evidence of the cost of such materials, then the cost shall be deemed to be the lowest current wholesale price for the quantity delivered to the Site less cash or trade

discount. District reserves the right to furnish materials for the Work and no claim shall be made by the Contractor for costs or profit on such materials.

3.4.9. Equipment. For equipment that the Contractor owns, the Contractor will be paid for the use of that equipment at the rental rates identified for such equipment in the edition of the State of California Department of Transportation (Caltrans) publication "Labor Surcharge & Equipment Rental Rates" in effect on the date the work is performed. Contractor acknowledges that at the time these General Conditions were last updated, the web site for these rates was http://www.dot.ca.gov/hq/construc/equipmnt.html. Contractor is responsible for keeping apprised of any change to the website for purposes of keeping informed of these rates. If equipment the Contractor owns is not listed in the Caltrans publication, the U.S. Army Corps of Engineers publication "Construction Equipment Ownership and Operating Expense Schedule" in effect on the date the work is performed shall be used to determine the rental rate. For equipment that the Contractor rents or leases, the Contractor will be paid for the use of that equipment based on actual invoices submitted to District, provided that the rental or lease rates are consistent with prevailing market rates, as determined by District.

3.4.9.1. Rental Rates to Be All Inclusive. The rental rates paid, as provided above, shall include the cost of fuel, oil, lubrication supplies, small tools, necessary attachments, repairs, and maintenance of all kinds, depreciation, storage, insurance, and all incidentals. Operators of equipment will be separately paid for as provided in Section 3.4.7.

3.4.9.2. Operating Condition of Equipment. All equipment shall, in the opinion of District, be in good working condition and suitable for the purpose for which the equipment is to be used.

3.4.9.3. Manufacturer's Ratings. Unless otherwise specified, manufacturer's ratings and manufacturer-approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment that has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer.

3.4.9.4. Small Tools. Individual pieces of equipment or tools, whether owned, leased, or rented by the Contactor or a Subcontractor, having a replacement value of $500.00 or less, whether or not consumed by use, shall be considered to be small tools and no separate payment will be made for them.

3.4.9.5. Inoperative Equipment. Rental time will not be paid for equipment during any period in which such equipment is inoperative due to breakdowns, maintenance, or other circumstances.

3.4.9.6. Idle Equipment. If the equipment is legitimately idled due to Extra Work, the Contractor will be paid for the idle equipment at the rates identified for idle equipment in the edition of the Caltrans publication "Labor Surcharge & Equipment Rental Rates" in effect on the date the equipment is idle. If that equipment is not listed in the Caltrans publication, the U.S. Army Corps of Engineers publication "Construction Equipment Ownership and Operating Expense Schedule" in effect on the date the equipment is idle shall be used to determine the rate.

3.4.9.7. Equipment Used on Extra Work. The rental time to be paid for equipment used to perform Extra Work shall be the time the equipment is in productive operation on the Extra Work and, in addition, shall include the time required to move the equipment to the location of the Extra Work and return it to the original location or to another location requiring no more time than that required to return it to its original location, except that moving time will not be paid for if the equipment is used at the site of the Extra Work on work other than the Extra Work. Loading and transporting costs will be allowed, in lieu of moving time, when the equipment is moved by means other than its own power, except that no payment will be made for loading and transportation costs when the equipment is used at the site of the Extra Work on work other than the Extra Work. The following shall be used in computing the rental time of equipment on Extra Work:

(1) When hourly rates are listed, any part of an hour less than 30 minutes of operation shall be considered to be 1/2 hour of operation, and any part of an hour in excess of 30 minutes will be considered 1 hour of operation.

(2) When daily rates are listed, any part of a day when the equipment is being operated for less than 4 hours of operation shall be considered to be 1/2 day of operation.

3.4.10. Contractor to Reach Agreement with Other Forces. When Extra Work ordered by District is performed by forces other than the Contractor's organization, the Contractor shall be responsible for reaching agreement with such other forces as to the distribution of the payment made by District for such Extra Work.

3.5. Credit for Deleted Work

If a part of the Work is entirely eliminated and no unit price is named in the Contract to cover such eliminated work, the Contractor shall submit a cost proposal for the eliminated work based upon estimates of decreased labor and material costs to be incurred by the Contractor. Allowances for overhead and profit will be added to the cost of the eliminated work, in accordance with the overhead and profit allowances in Section 3.4.6. The sum of the cost of the eliminated work plus the allowances for overhead and profit will be the amount to be deducted from the Contract Amount as a credit to District for the eliminated work. A change that diminishes the quantity or amount of work to be done shall not constitute the basis for a claim by the Contractor for damages or anticipated profits on the deleted work provided that, if such changes or alterations render useless any work already done or materials already furnished or used in the Work, District shall make reasonable allowance therefor.

3.6. Changes by the Contractor

3.6.1. Proposed "Or-Equal" Items. Whenever materials or equipment are indicated in the Contract Documents by using the name of a proprietary item or name of a particular supplier and/or manufacturer, the naming of the item is intended to establish the type, function, and quality required. Unless specifically prohibited in the Contract Documents, materials or equipment of other suppliers and/or manufacturers may be accepted if sufficient information is submitted by the Contractor to District for the Engineer's review to determine that the material or equipment proposed is equivalent or equal to that named, subject to the following requirements:

(1) The Contractor shall submit to the Engineer, in ample time to permit acceptance without delaying the Work and in no case later than 45 Calendar Days after the Notice to Proceed, a

list containing a description of each proposed "or equal" item or material. Sufficient data, drawings, samples, literature, or other detailed information shall be appended to this list as will demonstrate to the Engineer that the proposed substitute is equal in type, function, quality, efficiency, durability, cost of maintenance, and utility to the material specified. Failure of the Contractor to submit proposed substitutions for review in the manner described above and within the time prescribed shall be sufficient cause for rejection by the Engineer of any substitutions proposed.

(2) The burden of proof as to the type, function, quality, efficiency, durability, cost of maintenance, and utility of any such substitute product, material, or equipment shall be upon the Contractor.

(3) The Engineer may require the Contractor to furnish additional data about the proposed substitute at the Contractor's expense.

(4) The Engineer will be the sole judge as to the type, function, quality, efficiency, durability, cost of maintenance, and utility of any such substitute and the Engineer's decision as to whether the proposed substitute is acceptable shall be final.

(5) District may require the Contractor to furnish at the Contractor's expense a special performance guarantee or other surety with respect to any substitute.

(6) Acceptance by the Engineer of a substitute item proposed by the Contractor shall not relieve the Contractor of the responsibility for the adequacy of the substitute and/or full compliance with the Contract Documents.

(7) The Contractor shall be responsible for resultant changes, including design and construction changes, and all additional costs resulting from the changes which the accepted substitution requires to the Contractor's work and the work of its Subcontractors and of other contractors, and shall implement such changes without cost to District.

(8) If a substitute offered by the Contractor is not found to be equal to the specified materials, the Contractor shall furnish and install the specified material.

(9) The Fixed Calendar Date(s) or Time(s) for Completion shall not be affected by any circumstances developing from the provisions of this section.

3.6.2. Proposed Deviations. If the Contractor requests a deviation from the Contract Documents, that is, a change to the Work that is <u>not</u> merely the proposal of an "or equal" material, item, or equipment, then the Contractor shall pay all costs associated with review of the proposal by District and the Engineer, whether or not the request is allowed. All such costs shall be deducted by District from payments due the Contractor. Nothing in the Contract Documents grants any right to the Contractor to demand review or acceptance of proposed deviations and District may refuse to consider such deviations at its will. If District agrees to consider a proposed deviation, then:

(1) The Contractor shall submit to the Engineer, in ample time to permit acceptance without delaying the Work and no case later than 45 Calendar Days after the Notice to Proceed, a description of each proposed deviation. Sufficient data, drawings, samples, literature, or other detailed information shall be appended to this list as will demonstrate to the Engineer that the proposed

deviation is equal in type, function, quality, efficiency, durability, cost of maintenance, and utility to the material specified.

(2) The Engineer may require the Contractor to furnish additional data about the proposed deviation at the Contractor's expense.

(3) The Engineer will be the sole judge as to the type, function, quality, efficiency, durability, cost of maintenance, and utility of any such deviation and the Engineer's decision as to whether the proposed deviation is acceptable shall be final.

(4) District may require the Contractor to furnish at the Contractor's expense a special performance guarantee or other surety with respect to any deviation.

(5) The Contractor shall be responsible for resultant changes, including design and construction changes and all additional costs resulting from the changes which the accepted deviation requires to the Contractor's work and the work of its Subcontractors and of other contractors, and shall effect such changes without cost to District.

(6) If a deviation offered by the Contractor is not found to be acceptable, the Contractor shall proceed in the manner specified by the Contract Documents and it will not be considered Extra Work.

(7) Changes in specified methods of construction may be made at the Contractor's request, but must be approved in writing by District.

(8) Changes in the Drawings and Specifications, requested in writing by the Contractor, which do not materially affect the Work and which are not detrimental to the Work or to the interests of District may be granted by District to facilitate the Work, but must be approved in writing by District.

(9) If such deviations are granted, they shall be made at a reduction in cost or at no additional cost to District. In no event shall consideration, review, or acceptance of a requested deviation be grounds for an extension of any Time for Completion or any Fixed Calendar Date.

4. MATERIALS AND WORKMANSHIP

4.1. Access to Work. District, the Engineer, District's consultants, and their respective assistants, inspectors, agents, and other employees, shall at all times and for any purpose have access to the Work and the premises used by the Contractor and the Contractor shall provide safe and proper facilities. District, the Engineer, District's consultants, and their respective assistants, inspectors, and agents, shall at all times have immediate access to all places of manufacture where machinery or materials are being manufactured, produced, or fabricated for use in the Work, and shall have full rights for determining that all such machinery or materials are being made in accordance with the Contract Documents.

4.2. Workmanship. The Work, and all portions thereof, shall be done and completed in a thorough workmanlike manner and shall follow the best modern practice notwithstanding any omission from the

Contract Documents. The Work, and all portions thereof, shall be done by individuals skilled in their various trades, and wherever possible, all parts shall be made accurately to standard gauge to facilitate replacement and repair. Surfaces requiring painting or coating shall be smooth and free from sharp edges, burrs, and projections and shall have welds, edges, and corners ground smooth.

4.3. Materials

4.3.1. Materials to Be New and Conforming. All materials and articles used for permanent installation in the Work shall be new and shall conform to the Contract Documents. In the event the materials or articles are not specified in detail in the Contract Documents, the materials or articles shall conform to the best standard construction practices, as determined by District.

4.3.2. Materials Contacting Potable Water. All materials and coatings incorporated into the Work and contacting potable water shall be ANSI/NSF 61 approved.

4.3.3. Materials to Equal Accepted Samples. If samples have been submitted, all materials must be of a quality equal to the accepted sample(s).

4.3.4. Orders Shall Carry Notation. The Contractor shall furnish District, upon request, duplicate copies of all orders placed outside the Contractor's plant for materials or articles to be incorporated into the Work. In all cases, the Contractor's orders shall carry a notation to the effect that the materials and articles are subject to inspection and acceptance by District, both during manufacture and after delivery to the Site.

4.3.5. Materials Furnished By District. The Contractor shall notify District one week in advance of desired date of receipt of materials furnished by District. The Contractor shall inspect District-furnished materials prior to taking possession. The Contractor shall notify District in writing of any damage or defects noted prior to taking possession of the materials. The Contractor shall be responsible for repairs of all damage and defects not noted in writing at the time of possession. After taking receipt of delivered materials, the Contractor shall be responsible for proper transportation, storage and security of materials and equipment prior to installation and shall be responsible for repairing any damage. District-furnished materials shall be transported to the Site by the Contractor at its expense, including any necessary handling, loading, and unloading. Unless otherwise specified in the Contract Documents, the materials are to be picked up at District' property at 583 San Ysidro Road, Santa Barbara, CA 93108. The Contractor is responsible for any damage to District' facilities or property caused by loading or transportation of District-furnished materials.

4.3.6. Coordinated and Adequate Design. The Contractor shall assume full responsibility for a coordinated and adequate design of the materials and equipment furnished. Liberal factors of safety shall be applied throughout the design, especially in the design of all parts to be subjected to intermittent or alternating stresses, or to shock. The proportions and dimensions of the individual parts of the equipment to be furnished shall be such that each part will successfully withstand all of the stresses to which it may be subjected under operating or test conditions without failure, distortion, or other evidence of weakness. Any and all parts subject to periodic renewal shall be readily accessible with minimum dismantling of the equipment involved. Adequate provisions shall be made for lubrication of bearing surfaces of all moving parts. All equipment and appurtenances furnished under the Contract shall comply with the rules and regulations of the U.S. Department of Labor, OSHA, and

Cal/OSHA, as supplemented and administered by the State of California Department of Industrial Relations.

4.3.7. Care of the Work and Materials. The Contractor shall be responsible for the care of any material furnished by District and for the care of the Work until its completion and final acceptance by District. Except as set forth in Public Contract Code Section 7105, until its final acceptance by District, the Contractor shall, at the Contractor's expense, replace damaged or lost material and repair damaged parts of the Work, or if the Contractor fails to do so, District may do so at the Contractor's expense.

4.3.8. Damage or Loss - Acts of God. As provided in Section 7105 of the California Public Contract Code, the Contractor shall not be responsible for the cost of repairing or restoring damaged portions of the Work determined to have been proximately caused by an Act of God (as Act of God is defined in Section 7105) in excess of 5 percent of the Contract Amount, provided that the Work damaged was built in accordance with accepted and applicable building standards and the Contract Documents.

4.4. Inspections and Tests

4.4.1. Readiness for Inspection. All materials furnished and all work done shall be subject to inspection. The Contractor shall furnish District full information as to the progress of the Work in its various parts and shall give District notice of the Contractor's readiness for inspection. When required or desired by District, inspection will be made during the manufacture of articles. The Contractor shall furnish, without additional charge, all necessary facilities and assistance for the safe and convenient inspection and testing required by District. Whenever the Contractor arranges to work at night or at any time when work is not usually in progress, or to vary the period during which work is carried on each day, the Contractor shall give District at least 5 Working Days' advanced written notice so that inspection may be provided.

4.4.2. Mill-Test Reports. The Contractor shall promptly furnish to District complete certified copies of mill-test reports, showing chemical and physical properties of materials to be furnished under the Contract.

4.4.3. Samples, Test Specimens, or Test Pieces. The Contractor shall submit, at no cost to District, samples, specimens, or test pieces of such materials to be furnished or used in the Work as District may require. The Contractor shall also furnish, at no cost to District, such quantities of concrete, concrete aggregates, and other construction material as may be required for test purposes, and shall place at District' disposal all available facilities for, and cooperate with, District in the sampling and testing of all materials and workmanship. Sample specimens or test pieces required by the Contract Documents shall be furnished and prepared ready for testing in ample time for completion of all necessary tests and analyses before the articles or materials are to be delivered or used. When required by the Contract Documents, the Contractor shall furnish and prepare all required specimens and perform all required tests and analyses at its own expense.

4.4.4. Right to Reject Articles and/or Materials. District shall have the right at all times and places to reject articles and/or materials to be furnished which, in any respect, fail to meet the requirements of the Contract Documents, regardless of whether the defects in such articles or materials are detected at the point of manufacture or after completion of the Work. If the inspector, through an

oversight or otherwise, has accepted material or work which is defective or is contrary to the Contract Documents, such material, no matter in what stage or condition of manufacture, delivery, or erection, may be rejected by District and must be replaced, repaired, and/or corrected by the Contractor at no additional cost to District. Compliance with the Contract Documents is distinctly a duty of the Contractor and shall not be avoided by act or omission on the part of the Construction Inspector.

4.4.5. Replacement of Rejected Materials. In the event that any material at the Site is rejected on account of failure to pass inspection or test, the Contractor shall replace same promptly at no additional cost to District.

4.4.6. Inspections at Fabrication Facilities

4.4.6.1. All Materials and Equipment Subject to Factory Inspection. All materials and component equipment manufactured or assembled pursuant to the Contract Documents for incorporation into the Work shall be subject to inspection by the Materials Inspector at the place of manufacture regardless of location. Section 1.8.4 describes the role of the Materials Inspector.

4.4.6.2. Scheduling of Inspections at Fabrication Facilities. For materials being fabricated for incorporation into the Work, including but not limited to pipe, valves, fittings, pumps, and motors, or any other material or equipment that District has reserved the right to inspect during fabrication, the Contractor shall provide District with at least 10 Working Days' advanced written notice specifying the date when fabrication will begin. The Contractor shall also provide a detailed schedule for the fabrication, including the number of hours or shifts per day and the number of days per week the factory or plant will be fabricating the equipment or materials. Without detailed schedule information, fabrication will only be allowed to be performed for one shift per day, not to exceed 12 hours, Monday through Friday. If fabrication begins later than the date provided in the notice, the Contractor shall pay to District all costs for an inspector to wait on standby for the fabrication to begin, including, but not limited to, hourly wage, per diem, and expenses. Failure on the part of the Contractor to provide the required notice shall be just cause for District to reject the materials fabricated without such notice.

4.4.6.3. Safe Access to be Provided. The Contractor shall require the producer, manufacturer, or fabricator to furnish safe access and to cooperate with the Materials Inspector in the performance of his/her duties. The Materials Inspector shall have free entry at all times to the manufacturer's facilities while tests and inspections are being conducted. Adequate facilities shall be furnished free of charge to allow the Materials Inspector to perform factory and plant inspections, including taking photographs. Retain on file and make available to the Materials Inspector, upon request, copies of all specified reports, test results, and quality control documentation related to the Work.

4.5. Examination of Work Done Without Inspection. No material or article shall be used in the Work and no work shall be covered over until it has been inspected by District or District's authorized representative, and, for work associated with an encroachment permit issued by another public agency, by its authorized representative. Work done in the absence of prescribed inspection by District or by any public agency with jurisdictional authority may be required to be removed and replaced under the proper inspection, and the entire cost of removal and replacement, including the cost of all materials furnished by District and used in the work removed, shall be borne by the Contractor, regardless of whether the removed work is found to be defective or not. Work covered up without the authority of

District shall, upon order of District, be uncovered to the extent required, and the Contractor shall similarly bear the entire cost of performing all the Work and furnishing all the materials necessary for the uncovering or taking down of the Work and its subsequent replacement, as directed and approved by District.

4.6. Examination of Finished or Previously Accepted Work. The Contractor shall furnish District every reasonable facility for ascertaining whether the Work is in accordance with the requirements and intention of the Contract Documents even to the extent of uncovering or taking down portions of finished work that has been previously accepted or authorized to be covered. Should such previously accepted work thus exposed or examined prove satisfactory, the uncovering or taking down and replacing of the covering or the making good of the parts removed will be paid for under applicable Bid Items or as Extra Work, as determined by District. Should the work exposed or examined prove unsatisfactory, the uncovering, taking down, replacing, and making good shall be at the expense of the Contractor, and the Contractor shall also be charged with the cost to District of any materials furnished by District for the unsatisfactory work and its replacement.

4.7. Defective Work or Materials

4.7.1. Contractor's Payment Obligation. The Contractor shall pay to District all expenses, losses, and damages, as determined by District, incurred in consequence of any defect, omissions, or mistake of the Contractor or the Contractor's employees, or the making good thereof.

4.7.2. Inspection By District Does Not Relieve the Contractor of Obligations. The inspection of the Work shall not relieve the Contractor of any obligation under the Contract. Defective work shall be made good and unsuitable materials may be rejected, whether or not such work and materials have been previously overlooked by District and accepted or estimated for payment.

4.7.3. Responsibility for Defective Materials. If the Work, or any part thereof, shall be found defective at any time before final acceptance, the Contractor shall make good such defect, without compensation, in a manner satisfactory to District, and shall be charged with the cost to District for any material furnished by District. Subject to the Contractor's compliance with its obligations under Section 4.3.5, if District finds that a defect necessitating the repair or removal of the Work is due to the use of materials furnished by District which were, when incorporated into the Work, or have since become, unsatisfactory or unsuitable from causes for which the Contractor is not responsible, then District shall pay under applicable Bid Items or as Extra Work for the placing, tearing out, removal from the vicinity, and replacing of such defective work or for its repair as ordered, and District will furnish, without charge, satisfactory materials to replace those previously furnished by District.

4.7.4. Rejected Materials. If any materials furnished by the Contractor for use in the Work or selected for the Work by the Contractor shall be rejected by District as unsuitable or not in conformance with the Contract Documents, the Contractor shall discard such materials and remove them to a satisfactory distance from the vicinity of the Work at the expense of the Contractor. Any adjustments, corrections, or repairs found necessary after the delivery of articles or materials, including all additional handling and shipping, shall be paid for by the Contractor.

4.7.5. Failure to Make Ordered Repairs. If the Contractor shall fail or neglect to make the ordered repair of defective work or to remove rejected materials from the Work within 10 Calendar

Days after District orders the Contractor to do such repair work or remove such materials, District may make the ordered repairs or remove the rejected materials and deduct the cost from any monies due the Contractor. If the expense, loss, or damage incurred by District exceeds the amount due to the Contractor, the Contractor shall pay District the amount of such excess upon demand by District.

4.8. Acceptance of Work Not a Waiver. The acceptance by District, its employees, agents, or representatives, of any materials or work, does not operate as a waiver of any portion of this Contract, any power reserved to District, or any right to damage herein provided.

4.9. Permit Compliance Inspections. It is the Contractor's responsibility to comply with all Permit requirements. The Contractor shall arrange for compliance inspections by all agencies, persons, or entities issuing Permits for the Work. The Work shall not continue beyond mandatory inspection points or milestones without clearance from the controlling person, agency, or entity. The Contractor shall timely notify each person, agency, or entity involved in accordance with the code they enforce or in accordance with their standard operating procedures, conditions, or requirements.

4.10. Salvage. Any and all reusable materials, such as removed blind flanges, valves, useful sections of piping, and the like, shall remain the property of District. Unless the Contract Documents call for such materials to be reused on the Work, the Contractor shall deliver all such materials to District's property at 583 San Ysidro Road, Santa Barbara, CA 93108 at no additional cost to District. Materials not needed or desired by District shall become the property of the Contractor.

5. PERFORMANCE OF THE WORK

5.1. Completion of the Work

5.1.1. Contractor to Complete the Work at Prices Fixed in Contract Documents. The Contractor shall complete the Work to the satisfaction of District at the prices fixed in the Contract Documents.

5.1.2. Contractor to Furnish All Materials, Labor, and Services. The Contractor shall perform all labor and services and furnish all the materials, tools, and equipment (except as otherwise expressly provided in the Contract Documents) necessary or proper for performing and completing the Work required by the Contract Documents, in the manner and within the time stipulated in the Contract. All the labor, services, and materials shall be performed and furnished pursuant to, and in conformance with, the Contract Documents, the direction of District, and such other working drawings and documents to be furnished by District from time to time. The Contractor shall furnish, erect, maintain, and remove the construction plant and such temporary works as may be required.

5.2. Contractor to Furnish Information. Before proceeding with the erection of the construction plant(s), including sheeting, bracing, and other temporary structures, the Contractor shall furnish District with information concerning, and drawings of, all such structures as may be required by the Contract Documents or as shall be ordered by District. Drawings and prints, in such detail as may be required, of articles, machinery, or fabricated materials entering into permanent construction which are required to be furnished by the Contractor and of which detailed drawings are not furnished by District shall be submitted by the Contractor to the Engineer for acceptance and shall become the property of District. Such acceptance shall not, however, operate to waive or modify any provision or requirement contained in the Contract Documents.

5.3. Contractor to Review Contract Documents. The Contractor shall keep at the Site a copy of the Contract Documents and Permits and shall at all times give District access to these documents. The Contractor shall check all dimensions and quantities in the Contract Documents or given to the Contractor by District both prior to the bid and during the Work, and shall notify District of all errors or omissions which may be discovered by examining and checking the Contract Documents in the Contractor's capacity as a contractor and not a design professional. The Contractor shall be liable for and shall bear all losses resulting to the Contractor on account of errors, omissions, conflicts, and code violations that the Contractor observed, discovered, or should have discovered during such review. The Contractor shall not take advantage of any error or omission in the Contract Documents, as full instructions will be furnished by District should such error or omission be discovered, and the Contractor shall carry out such instructions as if originally specified.

5.4. Changed Conditions

5.4.1. Risk of Unforeseen Obstructions or Difficulties is on Contractor. Except as otherwise specifically provided in the Contract Documents or as required by statute, the Contractor shall bear all losses resulting to the Contractor on account of the amount or character of the Work or from any unforeseen obstructions or difficulties which may be encountered during the Work, or because the nature of the ground in or on which the Work is done is different from what is assumed or was expected or on account of the weather, Acts of God, or other causes.

5.4.2. Exception: Changed Conditions. Pursuant to Public Contract Code Section 7104, for any portion of the Work which involves digging trenches or other excavations that extend deeper than 4 feet below the surface, the Contractor shall promptly, and before the following conditions are disturbed, notify District in writing of any:

(1) Material that the Contractor believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, II, or III disposal site in accordance with the provisions of the law.

(2) Subsurface or latent physical conditions at the Site differing from those indicated by information about the Site made available to bidders prior to the deadline for submitting bids.

(3) Unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents.

5.4.2.1. District to Investigate. District shall promptly investigate such conditions (hereinafter called "changed conditions") and, if it finds that the conditions do materially so differ or do involve hazardous waste and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the Work, then District shall issue a Change Order under the procedures described in Section 3. If District determines that the conditions are changed conditions and will materially affect any Time for Completion, the Contractor, upon submitting a written request, shall be granted an extension of time subject to the one-day notice provisions of Section 2.3.10.1 and not the 15 Calendar Day notice provision of Section 3.2.

5.4.2.2. Contractor to Proceed with the Work. In the event a dispute arises between District and the Contractor concerning whether the conditions materially differ or involve hazardous waste or cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, the Contractor shall not be excused from any scheduled completion date provided for by the Contract, but shall proceed with the Work to be performed under the Contract. The Contractor shall retain any and all rights provided either by Contract or by law, which pertain to the resolution of disputes and protests between the parties. All such disputes shall proceed in accordance with Section 8.

5.4.2.3. HAZWOPER Training is not Extra Work. The Contractor is expected to employ workers who have completed the 40 hour training required by the OSHA Standards for Hazardous Waste Operations and Emergency Response (HAZWOPER) (20 CFR 1910.120). In the event that hazardous materials are discovered during the course of the Work, employee HAZWOPER training will not be considered Extra Work.

5.4.2.4. Failure to Give Proper Written Notice Constitutes Waiver. The Contractor's failure to give notice in writing of such changed conditions promptly upon their discovery and before they are disturbed shall constitute a waiver of all related claims.

5.5. Laws and Regulations

5.5.1. Contractor to Be Fully Informed. The Contractor shall keep fully informed of all laws, ordinances, and regulations in any manner affecting those engaged or employed on the Work, or the materials used in the Work, or in any way affecting the conduct of the Work, and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over the same.

5.5.2. Contractor to Comply with All Applicable Laws and Permit Requirements. The Contractor shall at all times observe and comply with, and shall cause all agents and employees to observe and comply with, all such applicable laws, ordinances, regulations, orders, permits, and decrees in effect or which may become effective before completion of the Work.

5.5.3. Discrepancy or Inconsistency in Contract Documents. If any discrepancy or inconsistency should be discovered in the Contract, in relation to any such law, ordinance, regulation, order, permit, or decree, the Contractor shall promptly report the discrepancy or inconsistency in writing to District.

5.5.4. Incorporation of Mandatory Terms, Provisions, and Codes. District and the Contractor agree that all mandatory statutory terms and provisions which are required by law to be a part of a public works contract entered into by District which are not expressly referenced elsewhere in the Contract Documents are incorporated by this reference. If any term or provision of the Contract Documents is held to be invalid, illegal, or unenforceable or is inconsistent with the mandatory terms and provisions required by state statute to be part of any public works contract entered into by District, then the remaining terms and provisions will continue to be valid and will be performed, construed, and enforced to the fullest extent permitted by law. Any term or provision inconsistent with a mandatory statutory term or provision will be deemed amended and limited in accordance with the intent of the statute. Any term or provision found to be invalid, illegal, or unenforceable on grounds other than inconsistency with a mandatory statutory term or provision will be deemed amended and

limited in accordance with the intent of the parties, determined from the face of the Contract, to the extent necessary to permit the maximum enforceability and/or validation of such term or provision.

5.5.5. Contractor to Pay Fines/Damages. The Contractor shall bear any losses incurred by, and pay any fines, penalties, or damages levied against, the Contractor or District, which result from the Contractor's failure or the failure of a Subcontractor of any tier to comply with all applicable permits, agreements, certifications, laws, ordinances, regulations, orders, and decrees. District will retain from any payments due the Contractor any monies necessary to pay any such losses borne by, or fines or penalties levied against, District. In the event the losses, fines, or penalties exceed the amount due, the Contractor shall pay the amount of any excess to District upon demand by District.

5.6. Contamination and Pollution. The Contractor, solely at its own cost and expense, will provide clean up of any premises, property, or natural resources contaminated or polluted due to the Contractor's activities. Any fines, penalties, or punitive or exemplary damages assigned due to contaminating or polluting activities of the Contractor will be borne entirely by the Contractor to the extent permitted by law.

5.7. Permits/Licenses/Taxes. Except as otherwise explicitly provided elsewhere in these Contract Documents, all Permits and licenses necessary for the Work shall be secured by the Contractor and complied with by the Contractor at the Contractor's expense. Contractor shall pay all taxes assessed against the Contractor's equipment or property used or required in connection with the Work.

5.8. Hazardous Materials and Hazardous Waste

5.8.1. Hazardous Substance, Hazardous Waste, or Asbestos-Related Work. In the event the Contractor encounters materials on the Site it reasonably believes to be asbestos, a hazardous substance, or hazardous waste, the presence of such asbestos, hazardous substance, or hazardous waste was not disclosed in the Contract Documents, and the asbestos, hazardous substance, or hazardous waste has not been rendered harmless, the Contractor may continue work in unaffected areas reasonably believed safe, and shall immediately cease work in the area affected and report the condition to District in writing. For purposes of this article, "asbestos-related work" is defined in Chapter 6 (commencing with Section 6500) of Part 1 of Division 5 of the Labor Code, including Section 6501.8 of the Labor Code, and involves 100 square feet or more of surface area of asbestos-containing material and is such that it requires that the Contractor who performs the work must be certified in accordance with subdivision (a) of Section 7058.5 of the Business and Professions Code. "Hazardous substance removal" has the same meaning as used in Section 7058.7 of the Business and Professions Code, and "hazardous waste" is defined in California Health & Safety Code Section 25117. Work must be performed by employees with the appropriate level of HAZWOPER training as set forth in Section 5.4.2.3.

5.8.2. Hazardous Material. The Contractor is responsible, at its sole cost and expense, for fully complying at all times with all laws, ordinances, and regulations applicable to the transportation, storage, use, removal, and disposal of hazardous materials used in the performance of the Work by the Contractor and its Subcontractors. Hazardous materials are defined by state and federal regulation. The Contractor shall be responsible for obtaining and paying for all licenses, permits, inspections, and approvals required by the use of such hazardous materials. For hazardous materials brought onto the Site by the Contractor, the Contractor shall maintain at the Site Material Safety Data Sheets, which shall be accessible to District personnel.

5.8.3. Hazardous Waste. If the Contractor is required to perform removal of hazardous waste, then hazardous waste shall be recycled if economically and technologically feasible, in accordance with the Health & Safety Code. District shall review all recycling, treatment, incineration, and landfill proposals for hazardous waste generated by the Work or otherwise encountered by the Contractor at the Site. Transportation, treatment, storage, or disposal of hazardous waste requires approval by District, and shall be performed by a state-licensed hauler and state-licensed treatment, storage, and disposal facility, as required by state and federal regulations.

5.9. Contractor's Responsibility for Defense and Indemnification

5.9.1. Definitions. As used herein:

"Indemnitees" means and includes District (and its agents, directors, employees, officers and servants), the individuals or entities required in the Contract Documents to be named as additional insureds, and their respective directors, officers, employees, agents, consultants, and authorized volunteers. Indemnitees shall also refer to the "Indemnified Parties" as defined in Section C.3.18 of the Construction Installment Agreement – Project No. 4210007-001C between District and the California State Water Resources Control Board which is included in the Contract Documents in Appendix B.

"Losses" means and includes any and all suits, claims, demands, causes of action, proceedings, damages (including, without limitation, damages to the Work itself), costs, expenses, attorneys' fees, losses, penalties, or liabilities, in law or in equity, of every kind or nature whatsoever.

5.9.2. Duty to Indemnify. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Indemnitees and each of them from and against:

(1) Any and all Losses for, injury to, or death of any person including, but not limited to, the Contractor and Indemnitees, or any of them, and any and all Losses for damages to or destruction of property of any person, including, but not limited to, the Contractor and Indemnitees, or any of them, which Losses arise out of or in any manner directly or indirectly relate to the Work, including, without limitation, any Losses arising from or relating to the Contractor's or its Subcontractors' use or occupancy of the Site, any improper materials, implements, or appliances used in construction, however caused, or from the negligence or carelessness of the Contractor, its Subcontractors, or their respective agents or employees in the performance of the Work, or in guarding or maintaining the Work, or by or on account of any act or omission of the Contractor, the Contractor's Subcontractors, or their respective agents or employees, or from the negligence or willful misconduct of the Contractor, the Contractor's Subcontractors, or their respective agents or employees.

(2) Any and all Losses arising out of, resulting from, or on account of the violation of any governmental law or regulation, compliance with which is the responsibility of the Contractor or the Contractor's Subcontractors, or their respective employees or agents.

(3) Any and all Losses arising out of, resulting from, or on account of the failure, neglect, or refusal of the Contractor, the Contractor's Subcontractors, or their respective employees or agents to faithfully perform the Work and all of the Contractor's obligations, whether expressed or implied, under the Contract.

The Contractor shall pay and satisfy any judgment, award, or decree that may be rendered against the Indemnitees, and any of them, in any and all such suits, claims, actions, or other proceedings. The Contractor's duty to indemnify shall not be affected or in any way diminished by the fact that the Indemnitees, or any of them, may have jointly caused or contributed to the liability or claim by their acts, omissions, conduct, or negligence; provided however, that nothing herein shall require the Contractor to indemnify District for liability resulting from District's sole negligence, active negligence, or willful misconduct, or for defects in design furnished by District to the extent determined in a final non-appealable judgment by a court of competent jurisdiction.

5.9.3. Duty to Defend. To the fullest extent allowed by law, the Contractor shall immediately defend, through counsel of District's choice, at the Contractor's own cost, expense, and risk, any and all such aforementioned suits, claims, demands, causes of action, proceedings, damages, costs, expenses, losses, penalties, or liabilities, or other proceedings of every kind that may be brought or instituted against the Indemnitees, and any of them, including, but not limited to, those set forth in Section 5.9.2. The Contractor's duty to defend shall not be affected or diminished by assertions or allegations that the Indemnitees, or any of them, are, or may be partially, actively, or solely negligent or may have jointly caused or contributed to the liability or claim by their acts, omissions, conduct, or negligence.

5.9.4. Reimbursement Obligation. The Contractor shall reimburse the Indemnitees, for any and all legal expenses and costs, including reasonable attorneys' fees, incurred by each of them in enforcing the defense or indemnity provisions of the Contract Documents.

5.9.5. Insurance Proceeds. The Contractor's obligation to indemnify and defend shall not be restricted to insurance proceeds, if any, received by the Indemnitees.

5.9.6. Subcontractor's Duties of Defense and Indemnity. The Contractor shall include provisions in its subcontracts requiring defense and indemnification of the Indemnitees on the same terms required.

5.10. Trespass. The Contractor shall be responsible for all damage or injury, which may be caused by trespass of the Contractor or the Contractor's agents or employees in the course of their employment, whether the trespass was committed with or without the consent or knowledge of the Contractor.

5.11. Patents and Copyrights. The Contractor shall hold and save the Indemnitees harmless from liability of any nature and kind, including costs and expenses, for or on account of any copyrighted or uncopyrighted composition, secret process, patented or unpatented invention, article, or appliance, manufactured, furnished, or used by the Contractor in the performance of this Contract, including their use by District, unless otherwise specifically stipulated in this Contract.

5.12. Subcontracts

5.12.1. Subcontracts Permitted at District's Discretion. At the discretion of District and subject to the provisions of this Section 5.12, subcontracts may be permitted to such extent, and only to such extent, as shall be shown to be necessary or definitely advantageous to the Contractor in the prosecution of the Work, and without injury to the interests of District. The resubletting of Work by a Subcontractor shall be subject to the same limitations as an original subletting. No subcontract will be

permitted which has the effect of avoiding the wage requirements or any other provisions of the Contract. Individual subcontracts or members of contracting or subcontracting organizations personally engaged in the Work, shall be subject to all the requirements of these General Conditions, and to all other conditions of the Specifications applicable to employees working for wages.

5.12.2. Public Contract Code Sections 4100 et seq. The Contractor shall comply with the provisions of Chapter 4 of Part 1, Division 2 of the Public Contract Code of the State of California, Sections 4100 et seq. The Contractor shall set forth in its Bid (a) the name and location of the place of business, and the California contractor license number of each Subcontractor who will perform work, or labor, or render service, to the Contractor in or about the construction of the Work or improvement, or any Subcontractor licensed by the State of California who, under subcontract to the Contractor, specially fabricates and installs a portion of the Work according to the details contained in the Drawings and Specifications, in an amount in excess of one-half of one percent (0.50%) of the Contractor's total Bid, and (b) the portion (type) of the Work that will be done by each Subcontractor. The Contractor shall list only one Subcontractor for each portion as is defined by the Contractor in the Contractor's Bid.

5.12.3. Subcontractor's Failure to Comply with Contract Documents. District reserves the right to order the Contractor to dismiss any Subcontractor and to terminate any subcontract if, in District's opinion, the Subcontractor fails to comply with the requirements of the Contract Documents. Such discharge shall not be the basis of any claim for compensation or damages against District, the Engineer, or their respective directors, officers, employees, agents, consultants, or designated volunteers. Moreover, nothing herein shall create any contractual relationship between any Subcontractor and District or relieve the Contractor of any liability or obligation. The Contractor shall incorporate into all subcontracts, and the Subcontractor shall incorporate into all lower tier subcontracts, all of the Contract Documents which are part of the Contract between District and the Contractor.

5.12.4. Terms of Subcontract(s) to Be Supplied to District Upon Demand. A copy of each subcontract, if in writing, or, if not in writing, then a written statement signed by the Contractor giving the name of the Subcontractor and the terms and conditions of such subcontract, shall be provided to District upon demand. All Subcontractors are subject to and bound by the terms of the Contract between District and the Contractor insofar as applicable to the Work covered by the subcontract.

5.12.5. Subcontractors to be Named. At least 10 Working Days before any second-tier or lower Subcontractor or any other Subcontractor not required to be listed in the Bid performs work, the Contractor shall submit the Subcontractor's name, Contractors State License Board number (if applicable), and Department of Industrial Relations (DIR) public works registration number to the Project Manager via e-mail. A Subcontractor shall not begin work until this information has been submitted to the Project Manager and the Project Manager has provided written confirmation that the Subcontractor's registration has been verified.

5.13. Employment of Labor

5.13.1. Contractor to Comply with Labor Laws. The Contractor, its agents, employees, and Subcontractors shall be bound by and comply with all applicable provisions of the Labor Code and with all applicable federal, state, and local laws relating to labor.

5.13.2. Character of Workers. None but skilled workers shall be employed on the Work requiring special qualifications. When required in writing by District, the Contractor or any Subcontractor shall discharge from the Work any person who:

(1) is drinking, using, or under the influence of alcohol or illegal drugs on the Site.

(2) engages in hostile or harassing behavior towards any person because of his/her race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, or sexual orientation.

(3) is, in the opinion of District, incompetent, dishonest, disorderly, unable or unwilling to perform the Work to the standards required by these Contract Documents, or otherwise unsatisfactory.

The Contractor shall not again employ such discharged person on the Work except with the written consent of District. Such discharge shall not be the basis of any claim for compensation or damages against District, the Engineer, or their respective directors, officers, employees, agents, consultants, or designated volunteers.

5.13.3. Convict Labor. No convict labor shall be directly employed by the Contractor or any Subcontractor in the performance of any work done under this Contract.

5.13.4. Employment of Apprentices. The Contractor shall be responsible for compliance with Section 1777.5 of the California Labor Code relating to employment of Apprentices on Public Works whether employed directly or through Subcontractors.

5.13.5. Labor Code Provisions to Be Included in Contracts with Subcontractors. The Contractor shall include copies of Labor Code Sections 1771, 1775, 1776, 1777.5, 1813 and 1815 in the executed contracts between the Contractor and Subcontractors.

5.14. Prevailing Wage Requirements. The Work is subject to the requirements of Section 1720 et seq. of the California Labor Code requiring the payment of prevailing wages, the training of apprentices, and compliance with other applicable requirements. Prevailing wages apply to all projects over $1,000 which are defined as a "public work" by the State of California. This includes: construction, demolition, repair alteration, maintenance and the installation of photovoltaic systems under a Power Purchase Agreement when certain conditions are met under Labor Code Section 1720.6. This include service and warranty work on public buildings and structures. Contractor and Subcontractors are notified of, and will comply with, the following:

(1) The applicable California prevailing wage rate(s) can be found at www.dir.ca.gov and are on file with the District's principal office at 583 San Ysidro Road, Santa Barbara, CA 93108, which shall be available to any interested party upon request. The Contractor is also required to have a copy of the applicable wage determination posted and/or available at each jobsite. (Labor Code Section 1771.4)

(2) Specifically, the Contractor and each Subcontractor shall comply with Labor Code Section 1774-1775 (the payment of prevailing wages and documentation of such), Section 1776 (the keeping and submission of accurate certified payrolls), and Section 1777.5 in the employment of

apprentices on public works projects. Further, overtime must be paid for work in excess of 8 hours per day or 40 hours per week pursuant to Labor Code Section 1811-1813.

(3) Special prevailing wage rates generally apply to work performed on weekends, holidays and for certain shift work. Depending on the location of the Work and the amount of travel incurred by workers on the Work, certain travel and subsistence payments may also be required. The Contractor and Subcontractors are on notice that information about such special rates, holidays, premium pay, shift work, and travel and subsistence requirements can be found at www.dir.ca.gov.

(4) Only bona fide apprentices actively enrolled in a California Division of Apprenticeship Standards approved program may be employed on the Work as an apprentice and receive the applicable apprenticeship prevailing wage rates. Apprentices who are not properly supervised and employed in the appropriate ratio shall be paid the full journeyman wages and fringe benefits for the classification of work performed.

(5) The District, for which the Work is being performed, or the California Department of Industrial Relations may impose penalties upon the Contractor and/or Subcontractors for failure to comply with prevailing wage requirements. As of the date of these General Conditions, these penalties are up to $200 per day per worker for each wage violation identified; $100 per day per worker for failure to provide the required paperwork and documentation requested within a 10-day window; and $25 per day per worker for any overtime violation.

(6) No Contractor or Subcontractor may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code Section 1722.5 (with limited exceptions from this requirement for bid purposes only under Labor Code Seciton 1771.1(a).

(7) No Contractor or Subcontractor may be awarded a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code Section 1725.5. Contractors and Subcontractors MUST be a registered "public works contractor" with the Department of Industrial Relations AT THE TIME OF BID. Where the prime contract is less than $15,000 for maintenance work or less than $25,000 for construction alternation, demolition or repair work, registration is not required. No Contractor or Subcontractor shall be allowed on the Work unless they are and remain properly registered with the DIR as a public works contractor. This includes all licensed contractors as well as professional services and other types of work for which prevailing wages are required to be paid.

(8) No Contractor or Subcontractor shall be allowed on the Work unless they are and remain property registered with the DIR as a "public works contractor". Those who fail to register and maintain their status as a "public works contractor" shall not be permitted to perform Work.

(9) This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

(10) Contractor and Subcontractors shall also comply with the Davis Bacon prevailing wage requirements included in the Special ASADRA and Federal Provisions and Specifications of this Contract. Execution of this Contract demonstrates the assent and acknowledgment of Contractor that Davis Bacon prevailing wage requirements are a component of this Contract.

5.15. Form of Payment. The Contractor's issuance as payment for wages of any evidence of indebtedness is prohibited unless the same is negotiable and payable on demand without discount. Wages must be paid at least semi-monthly on regular pay days established in advance, and shall include all amounts for labor or services performed by employees of every description.

5.16. Certified Payroll.

(1) As a condition to receiving progress payments, Final Payment, and payment of retention on the Work, the Contractor shall submit all applicable and necessary certified payrolls (for itself and all applicable subcontractors) for the Work. Certified payrolls shall be submitted monthly by the 5th of the month. The term "certified payroll" shall include all required documentation to comply with the mandates set forth in Labor Code Section 1720 et seq, as well as any additional documentation requested by the District or its designee including, but not limited to: certified payroll, fringe benefit statements and backup documentation, such as monthly benefit statements, employee timecards, copies of wage statements and cancelled checks, proof of training contributions (CAC2 if applicable), apprenticeship forms (such as DAS-140 and DAS-142), and any other documentation covered by Title 8 CCR Section 16000. DAS forms are required when a prime contract equals or exceeds $30,000

(2) In addition to submitting the certified payrolls and related documentation to District, the Contractor and Subcontractors shall submit certified payroll and related documents electronically to DIR. Failure to submit payrolls to the DIR may result in the withholding of payment. Contractors may be fined by the DIR up to $100 per day per worker for each day the electronic Certified Payroll Report (eCPRs) are late (even if the eCPRs do not show any prevailing wage violation). The Contractor and Subcontractors shall upload eCPR documents no later than 30 Calendar Days after the close of each of their pay periods.

(3) District reserves the right to require submission of certified payroll and related documents through a web-based program. No additional compensation shall be paid to the Contractor or Subcontractor for this submission process.

(4) District may withhold any portion of a payment, including the entire payment amount, until certified payroll forms and related documentation are properly submitted, reviewed, and found to be in full compliance. In the event that certified payroll forms do not comply with the requirements of Labor Code Section 1720 et seq., District may continue to hold sufficient funds to cover estimated wages and penalties.

5.17. Overtime

5.17.1. Overtime Work. Overtime work (i.e., work in excess of eight hours in any one Calendar Day or in excess of forty hours in any one calendar week, or work performed on a Saturday, Sunday, or other legal holiday) shall not entitle the Contractor to any compensation. In the case of Extra Work ordered by District, no additional payment will be made to the Contractor because of the

payment by the Contractor of overtime or legal holiday rates for such work, unless the overtime or legal holiday work is specifically ordered in writing by District.

5.17.2. Written Permission Required for Overtime and Shift Work as a Regular Procedure. Overtime and shift work may be established as a regular procedure by the Contractor only with the written permission of District. Such permission may be revoked at any time. No work other than overtime and shift work established as a regular procedure shall be done between the hours of 6:00 p.m. and 7:00 a.m., nor on Saturdays, Sundays, or legal holidays, except such work as is necessary for the proper care and protection of the work already performed or except in case of an emergency or work specifically ordered by District.

5.17.3. Overtime Inspection Costs. All District's costs for overtime inspection, except those occurring as a result of shift work established as a regular procedure with District's permission or work specifically ordered by District on an overtime basis, shall be paid by the Contractor. Overtime inspection shall include any inspection required in excess of eight hours per day or forty hours per week. Such costs will include, but will not necessarily be limited to, engineering, inspection, construction inspectors and materials inspectors, project management, general supervision, and other overhead expenses, which are directly chargeable to the overtime work. All such charges shall be deducted by District from payments due the Contractor.

5.18. Enforcement of Order. The Contractor shall be responsible for maintaining good order at all locations where work is performed under this Contract and to that end shall employ such watchpersons or take such other security measures as may be required. Unauthorized persons shall be excluded from the Site. The Contractor shall not sell, nor permit or allow the introduction or use of intoxicating liquors, narcotics, or weapons upon any of the grounds occupied or controlled by the Contractor in connection with the Work.

5.19. General Safety and Protection

5.19.1. Contractor Responsible for Safety and Protection

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. The Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent, damages, injury, or loss to:

(1) All persons on the Site or who may be affected by the Work.

(2) All the work and materials and equipment to be incorporated into the Work, whether in storage on or off the Site.

(3) Other property at the Site and adjacent property, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and underground facilities not designated for removal, relocation, or replacement in the course of construction.

Should the Contractor's means and methods of construction cause damages, injury, or loss to any of the persons, work, materials, or property listed in (1), (2) or (3) above, the Contractor shall immediately modify its means and methods to avoid further damage. Such modification shall not

be considered Extra Work and shall not limit in any manner the exercise by District of any other rights or remedies available with respect to such damages, injury, or loss.

5.19.2. Compliance with Safety Laws and Regulations. The 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.

5.19.3. Notification to Property Owners. The Contractor shall notify owners of adjacent property and of underground facilities and utilities having facilities in the vicinity of the Work when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

5.19.4. Contractor Liable for Damages, Injury, or Loss of Property. All damage, injury, or loss to any property caused, directly or indirectly, in whole or in part, by the Contractor, any Subcontractor, Supplier, or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be promptly remedied by the Contractor. In the event the Contractor damages any existing property or facility, if the Contractor fails to promptly repair the damaged property or facility, the Contractor shall bear all expense of whatever nature arising from such damage and associated replacement or repair, and District may perform the repair or hire another contractor to repair the damage and withhold the costs associated with such repair from a progress payment or Final Payment.

5.19.5. Duration of Contractor's Responsibility for Safety. The Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as District issues the Statement of Acceptance.

5.19.6. Inadequate Methods, Tools, or Equipment. If, at any time before the commencement or during the progress of the Work or any part of it, the Contractor's methods, tools or equipment appear to District to be unsafe, inefficient, or inadequate for securing the safety of the workers, the quality of work required, or the rate of progress stipulated, District may order the Contractor to increase their safety and efficiency or to improve their character and the Contractor shall comply with such orders at the Contractor's own expense. Neither the making of such demands nor the failure of District to make such demands shall relieve the Contractor of the obligation to secure the safe conduct of the Work, the quality of work required, and the rate of progress stipulated in the Contract Documents and shall not be construed as a direction concerning means and methods of work, which means and methods are entirely up to the Contractor pursuant to Section 2.1.2.

5.19.7. Sufficiency of Plant, Tools, Equipment, and Methods. The Contractor alone shall be responsible for the safety, efficiency, and adequacy of plant, tools, equipment, means, and methods and for any damage that results from their failure or their improper construction, maintenance, or operation.

5.20. Public Convenience and Safety

5.20.1. General. In maintaining traffic on public streets and ways adjacent to the Work, the Contractor shall take all necessary precautions for the protection of work and the safety of the public.

5.20.2. Signs, Barricades, Warnings, Etc. All signs, barricades, traffic cones, striping, guards, lights, barriers, temporary bridges, flagmen, watchmen, and other safety and warning devices used on the Work shall be furnished, installed, maintained, staffed, and paid for by the Contractor; however, all such devices and their manner and method of use shall be subject to the approval of the appropriate agencies having jurisdiction. All barricades and obstructions shall be adequately illuminated from sunset to sunrise.

5.20.3. Traffic Maintenance. The Contractor shall be responsible for maintaining the flow and access of vehicular traffic as set forth on the traffic control plans. In areas not under construction or where traffic control is not covered elsewhere in the Contract Documents, the Contractor shall adhere to the latest edition of the "Manual of Traffic Controls for Construction and Maintenance of Work Zones" published by the Caltrans or as required by the agency having jurisdiction.

(1) The traffic requirements shall apply for the entire duration of the Contract.

(2) Access to all driveways shall be maintained at all times unless otherwise specified by the Contract Documents. If driveway closures are allowed, and unless otherwise specified by the Contract Documents, the Contractor shall notify District in writing at least one week in advance of closing any driveway and shall allow a vehicle to pass through the driveway upon 15 minutes' notice.

5.20.4. Timing of Placement of Temporary Traffic Control Devices. All temporary traffic control devices shall be set in place immediately before they are needed for construction of the Work and removed as soon as practical after they are no longer needed for construction of the Work. Temporary traffic control devices must be removed during any suspension of work requiring such devices.

5.21. Protection of District's Facilities. The Contractor shall protect District's facilities, including pipelines and other buried facilities, from damage resulting from the Work. District's facilities damaged by, or as a result of, the Contractor's work shall be repaired or replaced as demanded by District, at the Contractor's expense.

5.22. Maintenance of Existing Improvements

5.22.1. Protection of Existing Improvements. Unless otherwise indicated by the Contract Documents or otherwise called for by District, all water, sewer, gas, oil, lighting, power, or communication lines, or other surface or sub-surface structures of any nature, shall be maintained by the Contractor and shall not be disturbed, disconnected, or damaged during the Work. The Contractor shall adequately support and protect in place existing improvements adjacent to or exposed by its construction activities. The Contractor shall take any necessary steps to protect in place any pipeline or other underground facility against any loading exceeding AASHTO H-20 loading.

5.22.2. Damage to Existing Improvements. If the Contractor disturbs, disconnects, or damages any water, sewer, gas, oil, lighting, power, or communication lines or other surface or sub-surface structures of any nature, the Contractor shall bear all expense of whatever nature arising from such disturbances or the replacement or repair. When said damage causes an unscheduled interruption of service, the Contractor shall immediately alert the utility owner and District and the Contractor shall make the necessary arrangements with the utility owner to expedite repairs. At a minimum, reconstruction shall be of the same types of materials and to the same or better quality as that which

existed prior to the start of construction and shall be to the satisfaction of the utility owner. If the affected utility owner prefers to repair the damage itself or if it is necessary for them to do so, the Contractor shall pay all associated expenses. In the event the Contractor damages any existing improvement, property, or facility, if the Contractor fails to promptly repair the damaged property or facility, District may perform the repair or hire another contractor to repair the damage and withhold the costs associated with such repair from a progress payment or Final Payment.

5.22.3. Protection and Restoration of Existing Surface Features. Except as shown in the Contract Documents, the Contractor shall not disturb nor move fences, trees, shrubbery, other planting, or other surface features without written approval from District. Any such improvements moved, disturbed, or damaged shall be restored by the Contractor to a condition at least as good as that prior to the Work, but in all cases the quality of all such restoration shall at a minimum meet the requirements of the Contract Documents.

5.22.4. Protection of Existing District Pipelines. The Contractor shall not store construction equipment or equipment which exceeds AASHTO H-20 loading or stockpile material within ten feet of the centerline of buried District pipelines.

5.22.5. Relocation of Improvements. Guy poles, wires, transformers, buried conduits and/or cables, or other utility owner improvements that interfere with the Work shall be relocated. The Contractor shall make the necessary arrangements with the appropriate utility owner for such relocations. The relocation may be by the utility owner or by the Contractor, at the utility owner's option. In either case, the cost of such relocation shall be included in the Bid.

5.23. Maintenance of Other Rights-of-Way and Structures. Except as otherwise specifically provided in the Contract Documents, the Contractor shall not do any work that would affect any facility, including, but not limited to, railway track, pipeline, telephone, communications line, electric transmission line, irrigation ditch, or other structure, nor enter upon the right-of-way or other appurtenant lands, until notified that the party responsible for securing authority has secured authority from the proper persons or entities. Thereafter and before the Contractor begins such work, the Contractor shall give said companies or parties due notice of the intention to do so, and shall give said persons or entities convenient access and every facility for removing, shoring, supporting, or otherwise protecting such tracks, lines, ditches, or structures and for replacing same. If the Contractor, while performing the Work, discovers utility facilities not indicated in the Contract Documents, the Contractor shall immediately notify District in writing within one Working Day in accordance with Section 2.3.10.1.

5.24. Protection of Existing Utilities and Structures

5.24.1. Some Information on Drawings. District and the Engineer have reviewed available records to determine the approximate location of underground lines and utilities at the Site. This information is presented on the Drawings.

5.24.2. Information on Drawings May Not Represent Current Conditions. The information provided is only for the convenience of the Bidders and the Contractor and the information and data provided is not implied or warranted to represent actual and/or present day conditions. The Contractor shall accommodate actual existing field conditions on pipe Shop Drawings and other

applicable submittals and shall be responsible for constructing facilities in place which conform to the intent of the design as shown on the Drawings.

5.24.3. Contractor Responsible for Determining Subsurface Conditions. All conclusions and deductions derived from said information shall be those of the Bidders or the Contractor. The Bidders and the Contractor are solely responsible for determining the existing subsurface conditions and making any necessary changes or revisions to accommodate the actual field conditions, and all conclusions and deductions shall be considered in the Bid. It shall be the responsibility of the Contractor to ascertain the exact location of all subsurface facilities shown on the Drawings and all existing service laterals or appurtenance whose presence can be inferred from the presence of other visible facilities. Where underground main distribution conduits, such as water, gas, sewer, electric, communications, or cable television, are shown on the Drawings, the Contractor shall assume that every parcel will be served by a service connection for each type of utility, and no Extra Work may be claimed because of any such unknown subsurface facilities encountered at the Site.

5.24.4. Contractor to Comply with Underground Service Alert Laws. The Contractor shall comply with all Underground Service Alert ("DigAlert") laws set forth in California Government Code 4216 et seq.

5.24.5. Caltrans, Railroads, and Other Nonmembers. As Caltrans is not required by Section 4216 of the California Government Code to become a member of the Regional Notification Center, when working in the vicinity of Caltrans right-of-way, the Contractor shall contact Caltrans in writing for the location of its subsurface installations. This provision shall also apply to other utilities, agencies, or entities, such as railroads, that are not required to become a member of the Regional Notification Center.

5.24.6. Utility Marking. The Contractor shall clearly paint or cause to be painted through the Underground Service Alert process the locations of all affected underground utilities on the pavement or identify the location with suitable markers if not on pavement. In addition to the locations of metallic pipes and conduits, non-metallic pipes, ducts, and conduits, if present, shall also be similarly located using surface indicators and detection tape and shall then be similarly marked.

5.24.7. Potholing. After the utility notification and marking are completed, the Contractor shall commence "potholing" to determine the actual location and elevation of all underground utilities, piping, conduit, service laterals, structures, and facilities where crossings, interferences, or connections to the new pipelines or other facilities are shown in the Contract Documents, marked by the utility companies, or indicated by surface signs or other surface markers or indications, including, but not limited to, visible facilities, such as manholes, meter boxes, junction boxes, pull boxes, curb markings, valves, valve boxes, cabinets, walls, visible utility trenches, power lines or conduits, or the like. If a utility that is required to be potholed is not found at the expected depth, the Contractor must continue to pothole deeper until either the utility is located or the pothole reaches one foot below the elevation of the bottom of the planned pipeline or structure without encountering the utility. The Contractor shall also "pothole" all utilities and structures parallel to and within 15 feet of the pipeline being constructed and within 5 feet of any structure being constructed. Parallel utilities shall be potholed at sufficient intervals to verify the location of the utility relative to the pipeline or structure being constructed. If the Contractor should fail to pothole a parallel utility at an interval sufficient to verify the location of the utility relative to the pipeline or structure being constructed before submitting pipe Shop Drawings or beginning construction other than potholing as required, the Contractor shall not be

entitled to any Extra Work due to any interference the parallel utility may pose, and the Contractor shall be liable for any and all necessary revisions to the facility being constructed or for relocating the parallel utility, as applicable, due to the location of the parallel utility.

5.24.8. Precise Alignment. Where the precise alignment, bearing, grade, or slope of an existing utility is of concern, as in cases where precise compound bends or other fittings are required for connections to existing pipelines, the Contractor shall pothole a sufficient distance on each side of the area of concern (such as the connection point) to accurately determine the exact alignment, bearing, slope, and grade of the existing facility.

5.24.9. Surveying. The Contractor shall locate and uncover existing utilities to one foot below the existing utility, including points of connection, services, conduits, manholes, valves, vaults, and other underground facilities. The Contractor shall survey the top of pipe for vertical and horizontal location (including northings/eastings). The survey shall use the same coordinates and datum as the Drawings. The surveying field report(s) shall be submitted with the Potholing Report (see Section 5.24.10).

5.24.10. Potholing Report. The Contractor shall prepare and submit to the Engineer a Potholing Report, which shall identify each underground utility or point of connection and must include the following information for each: utility type, material, condition, dimensions, diameter, bedding material, horizontal and vertical location, station where it crosses any new District pipeline, elevation of the top and the bottom of the utility with reference to finished surface elevations, and clearance between the existing utility or facility and the new District facility(ies) to be constructed. Any variation in the actual elevations and the elevations indicated on the Drawings shall be clearly marked in the Potholing Report and brought to District's attention. If the Contractor does not expose all required utilities, the Contractor shall not be entitled to additional compensation for work necessary to avoid interferences nor for repair to damaged facilities. The Contractor shall accurately show all applicable utilities and connection points on the pipe Shop Drawings and other applicable submittals, and shall be responsible for incorporating actual field conditions into the pipe Shop Drawings and other applicable submittals. The complete Potholing Report shall be submitted to the Engineer, and accepted before the Contractor prepares and submits pipe Shop Drawings. The Contractor shall provide a copy of the accepted Potholing Report to the pipe manufacturer(s) and shall coordinate any necessary revisions to pipeline alignment, profile, or grade(s) with the manufacturer(s).

5.24.11. Use of Extreme Caution. Excavations around all underground utilities, including electrical ducts and conduits and natural gas and petroleum product pipelines, shall comply with all applicable laws and shall be performed using extreme caution to prevent injury to workers or damage to the utilities. Similar precautions shall be exercised around communication and data cables.

5.25. Interference with Fire Hydrants, Highways, and Fences. The Contractor shall conduct operations as not to close or obstruct any portion of any highway, road, or street or prevent in any manner free access to fire hydrants until the Contractor has obtained permits from the proper authorities. If any highway required to be kept open shall be rendered unsafe by the Contractor's operations, the Contractor shall make such repairs or provide such temporary guards as are acceptable to the authorities having jurisdiction and to District. Any highway or street maintenance or repair work required by local authorities in connection with necessary operations under this Contract shall be performed at the Contractor's own expense and cost. Fences subject to interference shall be maintained by the Contractor until the Work is finished and then restored to their original condition.

5.26. Restoration of Streets, Roads, and Driveways

5.26.1. General. All public and private streets, roads, sidewalks, driveways, and other areas damaged or excavated by the Contractor shall be reconstructed with materials and to a degree of quality at least equal to that which existed prior to the beginning of the Work and in accordance with all Permit requirements and with the directives of applicable public agencies having jurisdiction, but in no case shall the elements of restoration be inferior to the applicable requirements set forth elsewhere in these Contract Documents. Where Permit requirements differ from the requirements set forth elsewhere in these Contract Documents, the more stringent or restrictive requirements shall govern.

5.26.2. Limits of Restored Paving. All pavement disturbed or excavated in streets or roads shall be replaced to the limits of such disturbance, but in no case shall the width of restored paving be less than 4 feet, nor shall any portion or strip of existing pavement measuring 4 feet or less in width, following trench or other excavation, be permitted to remain, but shall be removed and replaced by the Contractor as though it were a part of the excavated pavement. In the event that these requirements differ from those in a Permit or from those set forth elsewhere in these Contract Documents, the more stringent or restrictive requirement shall govern.

5.27. Dust Abatement

5.27.1. Prevention of Dust. The Contractor shall furnish all the labor, equipment, and means required and shall carry out proper and efficient measures wherever and as often as necessary to prevent operations from producing dust in amounts damaging to property or causing a nuisance to persons living nearby or occupying buildings in the vicinity.

5.27.2. Damage from Dust. The Contractor shall be held liable for any damage resulting from dust originating from the Contractor's operations. All compensation to be received for dust abatement shall be included in the prices set forth in the Bid Schedule.

5.28. Sanitation. All parts of the Work shall be maintained in a neat, clean, and sanitary condition. All wastes and refuse from sanitary facilities provided by the Contractor or from any other source relating to the Contractor's operations shall be maintained and disposed of in a sanitary manner, satisfactory to District and in accordance with applicable laws and regulations. Fixed and portable toilets shall be made inaccessible to flies and shall be provided wherever needed for use of the Contractor, District, the Engineer, and their respective employees, agents, consultants, and designated volunteers.

5.29. Coordination with Other Projects. Construction may be performed concurrently with construction of other projects. The Contractor shall coordinate all construction activities, including work areas, traffic control, and schedules, with other contractors working in the project area. The Contractor and its Subcontractors shall cooperate in the coordination of their separate activities in a manner that will provide the least interference with District's operations and other contractors and/or utility companies working in the area. If any difficulty or dispute should arise, the problem shall be brought immediately to the attention of District. All contractors working on the Site are subject to this requirement for cooperation and shall abide by District's decision in resolving project coordination problems without additional cost to District.

5.30. Clean Up and Maintenance

5.30.1. Maintenance During the Work. During the Work, the Contractor shall keep the Work area in a neat and clean condition, and free from unsightly accumulation of rubbish. The Contractor shall remove all construction debris from and sweep clean the public street and rights-of-way during work as required and, as a minimum, at the end of each work day.

5.30.2. Maintenance Upon Completion of the Work. Upon completion of the Work and before the Final Estimate (as defined in Section 6.4) is submitted, the Contractor shall, at the Contractor's sole cost and expense, satisfactorily dispose of or remove from the vicinity of the Work all plant, buildings, rubbish, unused materials, concrete forms, and other equipment and materials belonging to the Contractor or used under the Contractor's direction during construction and, in the event of a failure to do so, the same may be removed and disposed of by District at the Contractor's expense.

5.31. Record Documentation

5.31.1. Record Drawings. The Contractor shall furnish a marked-up set of Drawings indicating conditions as constructed, which shall reflect all changes made during construction and accurately document all facilities as observed or as constructed in the field. The Contractor shall maintain the Record Drawing set as work progresses.

5.31.2. Record Layout Sheets. The Contractor shall furnish "Record Layout Sheets," which are a marked-up set of pipe layout sheets indicating conditions as constructed, reflecting all changes made during construction and accurately documenting all facilities as observed or as constructed in the field. At a minimum, the Record Layout Sheets shall show specific placement of each pipe and shall indicate all changes from the accepted Shop Drawings to the pipe actually manufactured, fabricated, and installed. The Record Layout Sheets shall reflect all changes made during construction. The Contractor shall maintain and update the Record Layout Sheets as work progresses.

5.31.3. Record Electrical and Instrumentation Documentation and Software. The Contractor shall furnish "Record Electrical and Instrumentation Documentation," which is an electronic copy of all Shop Drawings, submittals, wiring diagrams and numbers, conduit field locations, and schematic diagrams for electric and instrumentation work indicating conditions as constructed, reflecting all changes made during construction and accurately documenting all facilities as observed or as constructed in the field. The Contractor shall maintain and update the Record Electrical and Instrumentation Documentation as work progresses. The Contractor shall provide the electronic copy of the Record Electrical and Instrumentation Documentation in the latest version of AutoCAD. The Contractor shall provide a licensed copy of all programs and software used to interface with mechanical, electrical, instrumentation, and control equipment and components provided under the Contract.

5.31.4. Record Drawings Precedent to Payment and Acceptance of Work. Maintenance of up to date Record Drawings, Record Layout Sheets, and Record Electrical and Instrumentation Documentation will be a condition precedent to monthly progress payments. District's receipt and acceptance of Record Drawings, Record Layout Sheets, and Record Electrical and Instrumentation Documentation shall be a condition precedent to District's issuance of a Statement of Acceptance for the Work.

5.32. Lines, Grades, and Measurements. Reference lines and grades for the Work are indicated on the Drawings. The Contractor shall provide construction surveys from the Drawings, Engineer-accepted lay sheets, and Shop Drawings and such materials and such assistance as may be required for District to verify proper installation of the Work. The construction surveyor shall be a licensed Land Surveyor in the State of California. The Contractor shall preserve all benchmarks, monuments, survey marks, and stakes, and in case of their removal or destruction by the Contractor, the Contractor shall be liable for the cost of their replacement. The Contractor shall keep District informed well in advance of the times and places at which Contractor intends to do work, in order that District may verify said construction lines and grades as may be determined necessary by District.

5.33. Services During an Emergency

5.33.1. Contractor's Obligations to Assist. The Contractor shall be obligated to provide construction assistance to District in the event of an emergency condition as determined by District.

5.33.2. Mobilization of Equipment and Personnel. The Contractor shall make available to District all mobilized equipment and personnel active on the Work and shall provide supervision of such personnel under the direction of District in order to perform required construction work to properly respond to the emergency condition.

5.33.3. Compensation. In all cases where the Contractor is not responsible for the emergency condition, the Contractor shall be compensated for such assistance in accordance with the provisions regarding compensation for Extra Work, including demobilization and remobilization at the Site. Except in the case of an emergency for which the Contractor is responsible, the Contractor shall be provided with an extension of Time(s) for Completion as necessary to offset such emergency services provided to District, provided the time spent providing such assistance actually affected the timing of the Current Controlling Operation.

6. PAYMENT FOR THE WORK

6.1. Payment Only in Accordance with the Contract. The Contractor shall not demand or be entitled to receive payment for the Work or materials or any portion thereof, except in the manner set forth in the Contract, nor unless the Contractor has performed, kept, observed, and fulfilled each and every one of the promises, agreements, stipulations, terms, and conditions in the Contract Documents, and District shall have accepted the Work.

6.2. Monies May be Retained. District may keep any monies which would otherwise be payable at any time, and apply the same, or so much as may be necessary therefore, to the payment of any expenses, losses, or damages incurred by District, for which the Contractor is liable under the Contract.

6.3. Partial Estimates and the Payment Process

6.3.1. Monthly Estimates and Payments. Except as provided in Section 6.3.8, District shall, on or about the last Working Day of each calendar month, meet with the Contractor and together they will develop a just and fair estimate of the amount and value of the Work done by the Contractor up to that time in the performance of the Contract (the "Partial Estimates"). If District and the Contractor

fail to agree upon the Partial Estimate, District shall make in writing an estimate such as in its opinion shall be just and fair upon which the Contractor shall base its partial payment request. Partial Estimates shall not be required to be made by strict measurement, but they may be made by measurement or by estimation, or partly by one method and partly by the other, and it shall be sufficient if they are approximate only. The Contractor shall provide District with its partial payment request no later than the fifth Calendar Day of the following month.

6.3.2. Unit Price Work. In the case of work for which unit prices are named in the Contract, the Partial Estimate and the Contractor's partial payment request shall be computed on the basis of those unit prices. District and the Contractor may break down those unit prices further into smaller components of the Work, if such breakdown will facilitate preparation of the Partial Estimate and is acceptable to District.

6.3.3. Lump Sum Work. Within 15 Calendar Days of the Notice to Proceed, in the case of all work for which a lump sum is named in the Bid, the Contractor shall submit a detailed schedule of each lump sum item (also known as the "Schedule of Values") in accordance with Section 7-2 "Lump Sum Work" of the SSPWC. In the case of work for which a lump sum is named in the Contract, District and the Contractor may use the prices submitted by the Contractor for purposes of making the Partial Estimate, provided, that in case the prices submitted in the breakdown do not, in the opinion of District, truly represent the actual relative costs of the different parts of the Work, or if the Contractor has not submitted such breakdown, District will prepare a schedule of prices which shall be used in estimating the value of the Work performed. The Schedule of Values shall be approved by the District. Acceptance by the District is a condition precedent to the issuance of any payment under the Contract. The Schedule of Values shall be broken down into an adequate number of elements to clearly measure progress. An unbalanced or front-end loaded schedule will not be accepted. Summation of the complete Schedule of Values representing all of the Work shall equal the Contract price. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work. Provide multiple line items for principal subcontract amounts in excess of five percent of Contract price. Provide separate line items in the Schedule of Values for each part of the Work where applications for payment may include materials or equipment purchased or fabricated and stored, but not yet installed. Round amounts to nearest whole dollar total to equal the Contract price.

6.3.4. Retention. From the beginning of work under the Contract until 100 percent of it has been completed, a deduction of 5 percent or 10 percent (for projects determined to be substantially complex), the "retained percentage," shall be made from the total. District shall deduct from the remainder any amounts due District from the Contractor for supplies or materials furnished or services rendered and any other amounts that may be due District under the terms of the Contract. From the balance, District shall deduct the amount of all previous payments and the remainder shall constitute the Partial Estimate for that month. The retained percentage shall become due and payable as set forth in Section 6.4.

6.3.5. When Materials Included in Partial Estimates. Unless otherwise specifically provided in the Contract Documents, materials shall be included in the Partial Estimates if, and only if, the materials comply with the requirements of the Contract Documents and have been incorporated into the Work in their final locations as described in the Contract Documents. For example, pipe will not be paid for until it has been laid in the trench and pipe zone backfill has been placed, and a motor will not be paid for until it has been installed, all in accordance with the requirements of the Contract Documents.

6.3.6. Partial Payment Requests. Each partial payment request from the Contractor shall be reviewed by District as soon as practical after receipt for the purpose of determining that the payment request is proper. The Contractor shall promptly provide District with any backup documentation requested by District in connection with such review. Any partial payment request determined not to be proper shall be returned to the Contractor not later than 7 Calendar Days after receipt by District's representative. Such returned requests shall be accompanied by a written explanation of the reasons why the payment request is not proper.

6.3.7. Amounts Reserved/Retained. As set forth above, District may at all times reserve and retain from such partial payments, or any of them:

(1) The retained percentage.

(2) Any sum or sums, which, by the terms of the Contract Documents, District is authorized or required to reserve or retain.

6.3.8. Partial Estimates and Payments May Be Withheld. The Partial Estimates and/or the payment thereof may, at any time, be withheld or deducted if, in the opinion of District, the Contractor is not diligently and efficiently endeavoring to comply with the intent of the Contract; has not submitted an acceptable initial or updated construction schedule; fails to provide sufficient sureties; has not maintained Record Drawings, Record Layout Sheets, and Record Electrical and Instrumentation Documentation; has incurred liquidated damages; has failed to submit or has submitted incomplete or incorrect documentation relating to the payment of prevailing wages; or fails to pay labor and material bills or sums due Subcontractors as they become due.

6.3.9. Partial Payments

6.3.9.1. Payment within 30 Calendar Days. Unless payment is withheld as provided elsewhere in the Contract, and provided the Contractor has complied with the provisions for Partial Estimates and other provisions of the Contract Documents, and provided District has determined the Contractor's payment request is proper, within 30 Calendar Days after the date each partial estimate is prepared, if District is in receipt of a partial payment request, District shall pay to the Contractor the amount stated in such estimate to be due the Contractor. No Partial Estimate or payment shall constitute an acceptance of the Work or any portion thereof.

6.3.9.2. Public Contract Code Section 20104.50. The Contractor is hereby advised as required by Section 20104.50 of the Public Contract Code that, should District fail to make a partial payment within 30 Calendar Days after receipt of an undisputed and properly submitted partial payment request from the Contractor, the Contractor is entitled to interest from District at the then prevailing legal rate set forth in Code of Civil Procedure Section 685.010. The number of days available to District to make a partial payment without incurring interest shall be reduced by the number of days by which District exceeds the 7 Calendar Days' return requirement in Section 6.3.6.

6.3.9.3. The Retained Percentage/Termination or Discontinuance of Work. In the event work under the Contract or any part thereof shall be discontinued or terminated as provided in Section 7, the retained percentage shall become the property of District to the extent necessary to repay District any excess in the cost of the Work above the Contract Amount; and after issuance of notice to

discontinue work, as provided in that section, no payment upon Partial Estimates or otherwise shall thereafter be made the Contractor for the Work covered by said notice until completion of the Work and final settlement.

6.4. Final Estimate and Payment (Retention Release)

6.4.1. Contractor's Certificate of Completion/Statement of Acceptance or Exceptions. Whenever the Contractor shall deem all work under the Contract to have been completed, the Contractor shall submit to District the Contractor's Certificate of Completion, which is included in the Specifications as an Appendix. District shall promptly ascertain whether the Work, including, but not limited to, completion of all field work, submission of Record Drawings, Record Layout Sheets, Record Electrical and Instrumentation Documentation, AutoCAD or other electronic or digital files, software such as PLC programs, and operations and maintenance manuals, and all other work required under the Contract, has been completed, and if not, shall advise the Contractor in detail and in writing of any additional work required via a written Statement of Exceptions ("Punch List"). The Contractor shall re-submit a final Certificate of Completion after all Punch List items are complete, after which District shall re-examine the Work to ascertain whether all work required under the Contract, including all Punch List items, has been completed. When the Contractor has complied with all provisions of the Contract to the satisfaction of District, District shall furnish the Contractor with a Statement of Acceptance within 5 Calendar Days.

6.4.2. Notice of Completion. Within 10 Calendar Days after the date of the Statement of Acceptance, District shall cause to be filed, in the office of the county recorder of the county or counties in which the Work is located, a Notice of Completion for the Work.

6.4.3. The Final Estimate and Payment. The Final Estimate is the ultimate version of the Partial Estimate and will be prepared by District after the Statement of Acceptance is issued. Sixty Calendar Days from the date of the Statement of Acceptance, if District has received a Release on Contract signed by persons with the appropriate authority as described in Section 6.8.2, District shall pay to the Contractor the amount remaining after deducting from the amount of the Final Estimate all such sums as shall have been paid to the Contractor under any of the provisions of the Contract, and also all sums which by the terms hereof or as set forth in Section 7107 of the Public Contract Code District is or may be authorized or required to reserve or retain. All prior estimates upon which partial payments have been made, being merely estimates, shall be subject to correction in the Final Estimate, which corrections may be made without notice to the Contractor or of the measurements upon which they are based. In the event that securities have been deposited with District by the Contractor, at the time of the Final Payment, District shall take appropriate action to release control of any such securities being held to ensure performance. In the event of a dispute between District and the Contractor, District may withhold from the Final Payment an amount not to exceed 150 percent of the disputed amount. Subject to California law, if any work remains incomplete or defective, District may withhold from the Final Payment an amount not to exceed 150 percent of the estimated cost to complete or repair the work.

6.4.4. Warranty. All warranties required to be provided by the Contract Documents shall commence running on the date of the Statement of Acceptance. The Contractor hereby guarantees that the entire Work constructed pursuant to the Contract will fully meet all requirements as to quality of workmanship and of materials furnished by the Contractor. The Contractor agrees to make at its own expense any repair or replacement made necessary by defects in materials or workmanship supplied by

the Contractor that become evident within a two-year period after the Statement of Acceptance date and to restore to full compliance with the requirements of the Contract Documents, including all test requirements, any part of the Work which during said two-year period is found to be deficient with respect to any provision of the Contract Documents. When repairing or replacing work in accordance with this section, the Contractor is responsible for all aspects of the Work, including but not limited to lockout/tagout (except to the extent that involves locking and tagging facilities operated by District), safety compliance, hazardous materials handling, removal, shipping, reinstallation, and factory and field recalibration. Nothing contained herein shall be deemed to reduce the limitations period applicable to a claim by District for defective construction.

Replacement of backfill where it has settled below the lines established by District or any other jurisdictional agency shall be considered part of such repair work. Repair of any pavement constructed by the Contractor which becomes necessary by reason of settlement shall likewise be considered part of such repair work.

The Contractor shall make all repairs and replacements promptly upon receipt of written orders for the same from District. If the Contractor fails to make repairs and replacements promptly, District may contract with others for performance of the work, and the Contractor and its surety shall be liable to District for the cost thereof.

The guarantee and agreements shall be secured by the performance bond which shall be delivered by the Contractor to District in accordance with the requirements of the Instructions to Bidders.

6.5. No Payment for Temporary Work. No direct payment will be made to the Contractor for providing transportation, light, power, tools, and equipment or for furnishings, buildings, construction plant(s), access roads, sanitary conveniences, disposal work, water supply, fire protection, guards, trestles, communications system, and other temporary works, or for the removal of all temporary structures, plant, and materials, or for medical attendance or health protection, or for watchpersons, or guards, or for any other service, thing, or material, unless payment therefore has been expressly provided. Compensation for all such services, facilities, things, or materials necessary or required to execute the Work shall be considered as having been included in the prices stipulated for the Bid items. Payment for items shown on the Drawings or required by the Contract Documents, for which no Bid item is provided, shall be considered included in the prices named for the other items shown in the Bid.

6.6. Substitution of Securities for Withheld Funds. In accordance with Section 22300 of the Public Contract Code, District will permit the substitution of securities for any monies withheld by District to ensure performance under the Contract. At the request and expense of the Contractor, securities equivalent to the amount withheld shall be deposited with District, or with a state or federally chartered bank as the escrow agent, who shall then pay such monies to the Contractor. Upon completion of the Contract, the securities shall be returned to the Contractor.

Securities eligible for investment under this section shall include those listed in Government Code Section 16430, bank or savings and loan certificates of deposit, interest-bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by the Contractor and District. The Contractor shall be the beneficial owner of any securities substituted for monies withheld and shall receive any interest thereon. Public Contract Code Section 22300 is deemed incorporated herein by reference in its entirety, as if expressly set forth. The escrow agreement to be used for the

purposes of this section is substantially similar to the form set forth in Public Contract Code Section 22300 and is included as an Appendix to the Specifications.

6.7. False or Erroneous Estimates and Certificates. At no time will District be estopped or precluded from showing that any estimate or certificate required under the Contract is untrue, incorrect, improperly made and/or that the Work and materials do not in fact conform to the Contract Documents. Any estimate or certificate required under the Contract will not operate to estop or preclude District from demanding and recovering from the Contractor such damages as District may sustain by reason of an untrue, incorrect, or improperly made estimate or certificate, and/or by reason of the Contractor's failure to comply with the Contract documents.

6.8. Termination of District's Liability

6.8.1. No Claims Except as Allowed by the Contract Documents. No claim shall be made or filed and neither District nor its Engineer, nor their respective Boards of Directors, nor any member of the Board of Directors, nor their officers, employees, designated volunteers, consultants, or agents shall be liable, or held to pay any money, except as specifically set forth in the Release on Contract Form provided as an Appendix to the Specifications.

6.8.2. No Final Payment Without Release on Contract Form Listing Unsettled Claims. District will not make a Final Payment, nor release securities on deposit, until the Contractor has executed a Release on Contract in the form included as an Appendix to the Specifications. The Release on Contract shall release and discharge District, the Engineer, and their respective Boards, officers, employees, designated volunteers, consultants, and agents, from all claims and liability to the Contractor for all manner of debts, demands, accounts, claims, and causes of action under or by virtue of the Contract except:

(1) Unsettled Claims or disputes in stated amounts listed on the Release on Contract form which have been processed in compliance with the requirements for making Claims under the Contract, including the giving of timely notice in accordance with the applicable provisions of the Contract, and compliance with the procedures set forth in the Contract Documents (reference Section 7100 of the Public Contract Code).

(2) Any claim against District for the remainder, if any, of the amounts kept or retained as required by stop payment notices or Labor Code provisions.

Acceptance of the Release on Contract by District shall not be deemed a waiver or release of District's right to contest either the substance or procedural validity of any listed unsettled Claims or disputes. When executing the Release on Contract, the Contractor shall certify that each listed claim or dispute has been processed in compliance with the requirements for making Claims under the Contract, including the giving of timely notice pursuant to the applicable provisions of the Contract Documents and compliance with the procedures for resolution of disputes or claims as set forth in the Contract Documents.

6.8.3. Stop Payment Notices. If, at any time prior to the expiration of the period for service of a stop payment notice, District is served a stop payment notice as provided in Chapter 4 of Title 15 of Part 4 of Division 3 of the Civil Code of the State of California, District shall, until the discharge thereof, withhold from the monies under its control so much of said monies due, or to become due, the

Contractor under this Contract as shall be sufficient to answer the Claim stated in the stop payment notice and to provide for the reasonable cost of any litigation. Funds shall be withheld from the next Partial Estimate, unless no Partial Estimates remain for the Work, in which case, funds shall be retained from the "retained percentage." District may, at its discretion, permit the Contractor to file with District the bond referred to in Section 9364 of the Civil Code of the State of California, in which case said monies shall not be withheld on account of such stop payment notice. The bond shall be provided by a surety other than the surety providing the Payment and Faithful Performance Bonds for the Work and must have a current A.M. Best's rating of no less than A-: VII or equivalent.

6.8.4. Disputes Over Payment. Disputes over payment shall be handled under the procedure in Section 8. The Contractor shall not be excused from performance of the Work and shall not be excused from any scheduled completion date, but shall proceed with all Work to be performed under the Contract notwithstanding such dispute.

7. DISCONTINUANCE OR TERMINATION OF THE WORK

7.1. Discontinuance of Work

7.1.1. Notice to Discontinue Work Under Contract. In addition to its right to suspend the Work as provided in Section 2, District may, by written notice (Notice of Discontinuance), instruct the Contractor to discontinue the Work, or any part thereof, under this Contract, in the following circumstances:

(1) If the Work is abandoned by the Contractor.

(2) If the Contractor makes a general assignment for the benefit of its creditors.

(3) If the Contractor files or there is filed against the Contractor any proceeding under an insolvency or bankruptcy law.

(4) If a trustee or receiver of the Contractor's business is appointed by a court of competent jurisdiction.

(5) If this Contract is assigned otherwise than as allowed herein.

(6) If at any time District determines that the performance of the Contract is unnecessarily or unreasonably delayed.

(7) If the Contractor is substantially or willfully violating any of the conditions or covenants of the Contract, or is executing the same in bad faith or not in accordance with the terms thereof.

(8) If the Contractor disregards the authority of District.

(9) If the Contractor disregards laws or regulations of any public body having jurisdiction.

(10) If the Work or a portion thereof is not fully completed within a Time for Completion or by a Fixed Calendar Date.

(11) If the Work has been damaged by an Act of God.

7.1.2. Notice to Surety. In the event of a Notice of Discontinuance arising from a default or failure to perform by the Contractor, District may serve written notice upon the Surety on its Faithful Performance Bond demanding satisfactory compliance with the Contract.

7.1.3. Process After Notice of Discontinuance. When such written notice is served, the Contractor shall immediately discontinue the Work or such part thereof as is covered by the notice, and shall not resume the Work except by written instructions from District. In any such case, except when the Work has been damaged by an Act of God, if District so demands, within 5 Working Days from the date of demand, the Surety on the Faithful Performance Bond shall assume control and perform the Work as successor to the Contractor. If the Surety assumes any part of the Work, it shall take the Contractor's place in all respects for that part, and shall be paid by District for the Work. If the Surety assumes the entire Contract, all money due the Contractor at the time of its default shall be payable to the Surety as the Work progresses, subject to the terms of the Contract.

If the Surety does not assume control and perform the Work within 5 Working Days after receiving notice or fails to continue to comply, District may exclude the Surety from the premises and District may take charge of the Work and complete it by a new contract or by force account. In so doing, District may take possession of and use any of the materials, plant, tools, equipment, supplies, and property of every kind provided by the Contractor for the purposes of the Contractor's work. District may procure other materials and provide labor for the completion of the Work, or contract therefor, and charge the expenses of completion by either method to the Contractor and the Surety. These charges shall be deducted from such monies as may be due or may at any time become due the Contractor or the Surety under this Contract. In case such expense shall exceed the amount which would have been due the Contractor under the Contract if the same had been completed by the Contractor, the Contractor or the Surety shall pay the amount of such excess to District within 5 Working Days after completion of the Work. In case such expenses shall be less than the amount which would have been payable under this Contract if it had been completed by the Contractor, neither the Contractor nor the Surety shall have any claim to the difference except to such extent as may be necessary, in the opinion of District, to reimburse the Contractor or the Surety for any expenses, properly incurred for plant, equipment, materials, supplies, and labor used in the Work, of which District shall have received the benefit and which shall not have been otherwise paid for by District. In computing such expense, so far as it relates to plant and equipment taken over by District, the salvage value of such plant and equipment, at completion of the Work, shall be deducted from the depreciated value at the time taken over by District, and the difference shall be considered as an expense. Evidence of such expense, satisfactory to District, shall be required from the Contractor and all necessary estimates and appraisements shall be made by District.

When any particular part of the Work is being carried out by District, under the provisions of this section, the Contractor or, if applicable, the Surety shall continue the remainder of the Work in conformance with the terms of the Contract, and in such manner as in no way hinders or interferes with the persons or workers employed by District to do any part of the Work or to complete the same under the provisions of this section. The provisions of this section shall be in addition to all other rights and remedies available to District by law.

7.2. Termination of Contract

7.2.1. Termination by District. If at any time before completion of the Work, District finds that reasons beyond the control of the parties render it impossible or against the interest of District to complete the Work contracted to be done; or if the Work shall have been prevented or suspended by injunction issued by a court of competent jurisdiction or by any other order of a constituted authority for a period in excess of 30 consecutive Calendar Days, District may, by written notice to the Contractor, discontinue the Work and terminate the Contract. District also reserves the right to terminate the Work for its convenience, without any cause, by written notice to the Contractor.

7.2.2. Termination by Request of Contractor. If the Work shall have been suspended for a period in excess of 100 consecutive Calendar Days, and such suspension was not contemplated by the Contract, termination may be demanded in writing by the Contractor. The Contractor's request for termination will be complied with unless District determines that the responsibility for the delay or interruption was due to the Contractor's fault or to a failure or refusal of the Contractor to comply with the Contract or a statute, rule, regulation, or decision applicable to the Work or due to other matters within the control of the Contractor.

7.2.3. Process After Notice of Termination. Upon the service on the Contractor of a notice of termination of the Contract, the Contractor shall:

(1) Discontinue the Work in such manner, sequence, and at such times as District may direct, continuing and doing after said notice only such work and only until such time or times as District may direct.

(2) Take actions necessary, or that District may direct, for the protection and preservation of the Work.

(3) Except for work that District directs to be performed prior to the effective date of termination stated in the notice, terminate all existing purchase orders and enter into no further subcontracts or purchase orders.

7.2.4. Payment upon Termination of Contract. In the event of a termination of Contract on the grounds in Sections 7.2.1 or 7.2.2, the Contractor shall be paid for, and the Final Estimate prepared by District, shall include:

(1) The Work actually performed up to the date of termination including any work ordered by District to be done.

(2) All costs of termination, including demobilization and any termination charges by vendors and Subcontractors.

(3) Fifteen percent of the Contractor's actual costs of termination for overhead and profit.

The Contractor will be paid for work performed up to the date of termination at the unit prices named in the Contract, or in the event no unit prices are named, a sum equal to that portion of

the lump sum price which the Work completed prior to the date of termination bears to the total work to be performed under the Contract, as determined by District. The Contractor shall have no claim for any other damages for discontinuance or termination of the Contract, nor shall the Contractor have any claim for anticipated profits on the Work.

8. PROTESTS AND CLAIMS

8.1. Disputes to Be Brought to District's Attention. It is the intention of this section that differences arising between the parties under the Contract be brought to the attention of District at the earliest possible time in order that such matters may be settled, if possible, or other appropriate action taken to resolve such differences. With respect to disputes or Claims, it is also the intention of this section that the Contractor shall contemporaneously with the occurrence of the event, action, or direction resulting in a Claim or dispute, document actual costs claimed to be incurred or damages claimed to be sustained through the mechanism of Daily Work Reports.

Procedures for Claims in specific situations and circumstances are provided in the following sections:

Section 2.3.10	Procedure to Apply for Extension of Time and/or Payment Due to Delay
Section 3.1.1	Field Orders
Section 3.2	Procedure to Apply for Extension of Time and/or Payment or Changes to the Work or Extra Work
Section 5.4	Changed Conditions

Compliance with the provisions of this section is required once the provisions of those sections have been exhausted. Compliance with the provisions of this section is required immediately in all other situations and circumstances.

8.2 Protest and Claims Procedure

8.2.1 Notice of Protest Required Within One Working Day. If the Contractor considers any work demanded by District to be outside the requirements of the Contract, or if the Contractor considers any decision of District or its Construction Inspector to be unfair, the Contractor shall within 1 Working Day of such work being demanded or such decision being made, submit a written protest to District's Project Manager or Construction Inspector and request written confirmation by District of such demand or decision. All protests shall contain:

(1) A brief description of the demand or decision.

(2) The name of the person making such demand or decision.

(3) The date on which it was made.

(4) The Contractor's detailed objections and the reasons therefor.

If the dispute involves a Claim for additional compensation or an extension of any Time for Completion, the protest shall also contain the following:

(5) The reasons the Contractor believes additional compensation or Time for Completion is or will be due.

(6) The nature of the cost or delay incurred.

(7) Insofar as possible, the amount of the potential Claim and the number of days by which the Time for Completion should be extended.

The Contractor's failure to timely submit a protest in accordance with this Section shall constitute a waiver of the Contractor's right to receive compensation or an adjustment to any Time for Completion for work performed under protest where such work precedes the protest by more than 1 Working Day. Except for the grounds of protest or objections as are made of record in the manner specified and within the time stated herein, the Contractor waives all grounds for protest or objections to the instructions and decisions of District or its representatives. The Contractor hereby agrees that all such instructions and decisions of District are final and conclusive.

8.2.2. Confirmation. District will consider and investigate the protest and promptly respond in writing to confirm, rescind, or modify the demand or decision disputed by the Contractor.

8.2.3. Daily Work Report Required While Performing Protested Work. Upon receipt of the written confirmation from District, the Contractor shall immediately proceed in accordance therewith. For work performed under protest for which additional compensation may be claimed, unless otherwise directed in writing by District, the Contractor shall furnish a Daily Work Report to District at the end of each day that protested work was performed. Daily Work Reports shall be submitted on forms provided by District.

Failure to submit the Daily Work Report by the close of the next Working Day may waive any right to payment of alleged additional costs for that Calendar Day. District and the Contractor shall attempt to reconcile the Daily Work Report daily and it shall be signed by District and the Contractor. In the event of disagreement, pertinent notes shall be entered by each party to explain points that cannot be resolved immediately. Each party shall sign a copy of the Daily Work Report. Costs incurred by Subcontractors shall be submitted on the Daily Work Report submitted by the Contractor.

8.2.4. Execution of Daily Work Report. The signature by the Contractor on the Daily Work Report shall constitute a representation by the Contractor that such costs as described were the costs which were actually incurred for the period in question for work performed under protest or for which additional compensation may be claimed. District's signature on the Daily Work Report shall not constitute a concession that the Contractor is entitled to recovery of such costs, but only acknowledges (unless otherwise qualified by written comments) receipt of back up information for the Contractor's potential Claim.

8.2.5. Submittal of Claim

8.2.5.1. Timing. In order to preserve its right to pursue a remedy if any protested or disputed matter remains unresolved, in addition to providing District with Daily Work Reports, the Contractor shall file a written Claim no later than 30 Calendar Days after the submission of a protest or within 30 Calendar Days of the close of the month during which extra cost or delay is claimed to have been incurred or before the date the Final Payment is due under the Contract, whichever is earlier.

8.2.5.2. Form of Claim. The Claim shall:

(1) Set forth the Contractor's factual or legal contentions upon which its objections to District's demand or decisions are based.

(2) Describe the impacts to the Contractor's operations affected by the demand or decision.

(3) Outline the general nature and extent of costs or delays involved.

(4) Set forth clearly and in detail each item of additional compensation or time adjustment claimed and the reasons for each item claimed.

(5) Reference the applicable provisions of the Contract Documents.

(6) Include copies of all supporting invoices.

(7) Contain substantiation by critical path analysis that the Current Controlling Operation was impacted.

(8) Contain all other pertinent factual data necessary to evaluate the Claim.

The Claim shall include copies of supporting documents necessary to substantiate the Claim. Daily Work Reports already submitted need not be resubmitted unless a request to resubmit is made by District. Supporting data is subject to audit in accordance with Section 8.4.

8.2.5.3. Claims on Behalf of Subcontractors. If a Subcontractor or a lower tier Subcontractor lacks legal standing to assert a claim against District because privity of contract does not exist, the Contractor may present to District a Claim on behalf of a Subcontractor or lower tier Subcontractor. A Subcontractor may request in writing, either on its 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 District shall furnish reasonable documentation to support the Claim pursuant to Section 8.2.5.2 and comply with all claim requirements set forth herein.

8.2.5.4. Certification Under Penalty of Perjury. The Contractor shall certify under penalty of perjury that the information contained in the Claim is true, that the supporting data is accurate and complete, and that the amount requested accurately reflects the Contract adjustment for which District is responsible. All Claims shall be accompanied by a cover sheet on the Contractor's letterhead which includes the following personal verification of the Claim executed in the same

manner as the Contract: "I _____[insert name], being the _____[insert title] of _____[Contractor], declare under penalty of perjury under the laws of the State of California, and do personally certify and attest that: I have thoroughly reviewed the attached Claim for additional compensation and/or extension of time, and know its contents, and said Claim is made in good faith; the supporting data is truthful and accurate; that the amount reflected accurately reflects the Contract adjustment for which the Contractor believes District is liable; and, further, that I am familiar with California Penal Code Section 72 and California Government Code Sections 12650 et seq., pertaining to false claims, and further know and understand that submission or certification of a false claim may lead to fines, imprisonment, and/or other severe legal consequences."

8.2.5.5. Substantiation Required. As set forth above, the Contractor shall submit full substantiation of its actual costs and delays with its Claim. If any claimed costs are based upon estimates then the Contractor shall provide a breakdown of the calculation used to arrive at the estimate. The Contractor shall provide the basis for each factor used in the estimate, including, but not limited to, substantiation of the costs of excess materials through purchase orders or other proof of purchase and substantiation of the costs of excess labor through payroll records. Failure to submit substantiation will be sufficient cause to deny the Claim.

8.2.5.6. Waiver of Protest or Claim. Orders or decisions of District that are protested or disputed by the Contractor shall be final and conclusive on the Contractor if the Contractor fails to submit a Claim in the manner and within the times stated above, and such failure shall constitute a waiver of the right to receive additional compensation or a time extension for that disputed or protested matter to the fullest extent permitted by applicable law.

8.2.6. Response to Claim

8.2.6.1. Timing on Claims Less than or Equal to $50,000.00. For Claims of less than or equal to $50,000.00, District will respond in writing to any written Claim within 45 Calendar Days of receipt of the Claim, or may request, in writing, within 30 Calendar Days of receipt of the Claim, any additional documentation supporting the Claim or relating to defenses to the Claim which District may have against the Contractor. If District requests further documentation, District will respond in writing within 15 Calendar Days after receipt of the further documentation or within a period no greater than that taken by the Contractor in producing the additional information, whichever is greater.

8.2.6.2. Timing on Claims Greater than $50,000.00. For Claims over $50,000.00, District shall conduct a reasonable review of the Claim and, within a period not to exceed 45 Calendar Days, shall provide the Contractor a written statement identifying what portion of the Claim is disputed and what portion is undisputed. Upon receipt of a Claim, District and Contractor may, by mutual agreement, extend this time period. District may request, in writing, within 30 Calendar Days of receipt of the Claim, any additional documentation supporting the Claim or relating to defenses to the Claim District may have against the Contractor. If District requests further documentation, District will respond in writing within 30 Calendar Days after receipt of the further documentation or within a period no greater than that taken by the Contractor in producing the additional information, whichever is greater.

8.2.6.3. Board Approval for Claims. If District needs approval from the District Board to provide the Contractor a written statement identifying the disputed portion and the undisputed portion of the Claim, and the District Board does not meet within the required time period in 8.2.6.1 or 8.2.6.2, or within the mutually agreed to extension of time following receipt of a Claim sent by registered mail or certified mail, return receipt requested, District shall have up to 3 Calendar Days following the next duly publicly noticed meeting of the District Board after the required time period in 8.2.6.1 or 8.2.6.2, or extension, expires to provide the Contractor a written statement identifying the disputed portion and the undisputed portion.

8.2.6.4. District's Failure to Respond. Failure by District to respond to a Claim from the Contractor within the time periods or to otherwise meet the time requirements of this section shall result in the Claim being deemed rejected in its entirety. A Claim that is denied by reason of District's failure to have responded to a Claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with regard to the merits of the Claim or the responsibility or qualifications of the Contractor.

8.2.6.5. Payment. Any payment due on an undisputed portion of the Claim shall be processed and made within 60 Calendar Days after District issues its written statement. If District fails to issue a written statement, Section 8.2.6.5 shall apply. Amounts not paid in a timely manner shall bear interest at 7 percent per annum.

8.2.7. Meet and Confer. The following meet and confer provisions apply to all Claims.

8.2.7.1. Contractor Must Demand Meet and Confer. If the Contractor disputes District's response, or District fails to respond within the time prescribed, the Contractor may notify District, in writing, either within 15 Calendar Days of receipt of District's response or within 15 Calendar Days of District's failure to respond within the time prescribed, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon such a demand, District will contact the Contractor within 30 Calendar Days to schedule a meet and confer conference.

8.2.7.2 Post Meet and Confer Procedures. Within 10 Working Days following the conclusion of the meet and confer conference, if the Claim or any portion of the Claim remains in dispute, District shall provide the Contractor a written statement identifying the portion of the Claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the Claim shall be processed and made within 60 Calendar Days after District issues its written statement. Any disputed portion of the claim, as identified by the Contractor in writing, shall be submitted to nonbinding mediation, with District and the Contractor sharing the associated costs equally. District and Contractor shall mutually agree to a mediator within 10 Working 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. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the Claim remaining in dispute shall be subject to applicable procedures outside Section 9204 of the Public Contract Code.

For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any

mediation utilized shall conform to the timeframes in this section. Unless otherwise agreed to by District and the Contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation to mediate after litigation has commenced.

Following the meet and confer conference, if the Claim or any portion remains in dispute, the Contractor may file a Claim pursuant to the Tort Claims Act of the Government Code ("Government Code Claim"). For purposes of those provisions, the period of time within which a Government Code Claim must be filed shall be tolled from the time the Contractor submits a written Claim pursuant to Section 8.2.5 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.

8.2.8. Procedure for Civil Actions for Claims Less than or Equal to $375,000.00. If the matter remains in dispute, this section applies to the filing of a civil action for a Claim less than or equal to $375,000.00.

8.2.8.1. Nonbinding Mediation. Within 60 Calendar Days, but no earlier than 30 Calendar Days, after the filing of responsive pleadings, the court shall submit the matter to non-binding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within 15 Calendar Days by both parties of a neutral third person as mediator, shall begin within 30 Calendar Days of the submittal, and shall be concluded within 15 Calendar Days from the start of the mediation unless the time requirement is extended by the court or by stipulation of both parties. If the parties fail to select a mediator within the 15 Calendar Day period, any party may petition the court to appoint the mediator.

8.2.8.2. Judicial Arbitration. If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Sections 1141.10 et seq. of the California Code of Civil Procedure. The Civil Discovery Act (Title 4 (commencing with Section 2016.010) of Part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this section consistent with the rules pertaining to judicial arbitration.

8.2.8.3. Fees Normally to Be Split By Parties. Arbitrators appointed shall be experienced in construction law, and, upon stipulation of the parties, mediators and arbitrators shall be paid necessary and reasonable hourly rates of pay not to exceed their customary rate, and such fees and expenses shall be paid equally by the parties, except in the case of arbitration where the arbitrator, for good cause, determines a different division.

8.2.8.4. Trial De Novo – Less Favorable Judgment – Attorney Fees Award. Any party who after receiving an arbitration award requests a trial de novo but does not obtain a more favorable judgment shall, in addition to payment of costs and fees provided under Sections 1141.10 et seq. of the California Code of Civil Procedure, pay the attorney's fees of the other party arising out of this trial de novo.

8.2.8.5. Attendance of Witnesses. The court may, upon request by any party, order any witnesses to participate in the mediation or arbitration process.

8.2.8.6. Interest on Award. In any suit filed under this section, District will pay interest at the legal rate on any arbitration award or judgment. The interest will begin to accrue on the date the suit is filed in a court of law.

8.2.8.7. Payment on Undisputed Portion of Claims. District will pay undisputed portions of Claims, except as otherwise provided in the Contract Documents.

8.3. False Claims. Pursuant to the "False Claims Act" set forth in Government Code Section 12650 et seq., a person who commits any of the acts enumerated in Government Code 12651 as related to the Contract or the Work shall be liable to District for the damages and/or penalties set forth under Government Code 12651.

8.4. Right to Audit. If the Contractor submits a claim or request to District for any Extra Work, District shall have the right, as a condition to considering the claim or request and as a basis for evaluation of the claim or request, to audit the Contractor's and Subcontractor's books and records related to the Work. The right to audit shall include the right to examine the pre-bid records and estimates, books, records, documents, and other relevant evidence and the right to examine accounting procedures and practices sufficient to determine and verify all direct and indirect costs claimed to have been incurred or anticipated to be incurred and for which a claim has been submitted. The right to audit shall include the right to inspect the Contractor's or Subcontractor's plant, or such parts thereof, as may be or have been engaged in the performance of the Work. The right to audit encompasses all Subcontractors and is binding upon Subcontractors. The right to audit shall be exercisable through such representatives as District deems desirable during the Contractor's normal business hours at the office of the Contractor. The Contractor shall make all such records available to District for inspection upon 7 Calendar Days' notice and shall provide true and correct copies of any records to District within 7 Calendar Days of any request.

8.5. Tort Claims. The Protest and Claims Procedure shall not apply to tort claims and nothing herein shall be construed to change the time periods for filing tort claims or actions specified by Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code.

8.6. Obligation to Continue the Work. The Contractor, in the event of any dispute or controversy with District over any matter whatsoever, shall not cause any delay or cessation of the Work, but shall proceed under the Contract with the performance of the Work.

9. MISCELLANEOUS

9.1. Captions. Any captions to, or headings of, the sections, subsections, paragraphs, or subparagraphs are solely for the convenience of the parties and shall not be used for the interpretation or determination of the validity of this Contract or any of its provisions.

9.2. Waiver/Estoppel. The waiver or failure to enforce any provision of these Contract Documents shall not operate as a waiver of any other provision or an estoppel as to any provision of the Contract Documents.

9.3. Partial Invalidity. The parties agree that all mandatory statutory terms and provisions, which are required by law to be a part of a public works contract entered into by District and which are not expressly referenced elsewhere in these Contract Documents, are incorporated herein by this reference. If any term or provision of the Contract Documents is held to be invalid, illegal, or unenforceable, or is

inconsistent with the mandatory provisions of any term required by statute to be a part of any public works contract entered into by District, then the remaining terms and provisions of these Contract Documents will continue to be valid and will be performed, construed, and enforced to the fullest extent permitted by law. Any term inconsistent with a statute will be deemed amended and limited in accordance with the intent of the statute. Any term or provision found to be invalid, illegal, or unenforceable on grounds other than inconsistency with a mandatory statutory provision, will be deemed amended and limited in accordance with the intent of the parties, determined from the face of the Contract Documents, to the extent necessary to permit the term or provision to be enforced or validated to the maximum extent permitted.

9.4. Contractor Acknowledges Review of Contract Documents. The Contractor acknowledges by its signature on the Contract that it has fully reviewed the Contract Documents before signing them, and the Contractor acknowledges a full and fair opportunity to seek clarification of any of the Contract Documents terms. Any rule of construction to the effect that ambiguities are to be resolved against the drafting party shall not apply in interpreting the Contract Documents.

9.5. Limitations on Engineer's Review of Shop Drawings and Submittals

9.5.1. Review Does Not Extend to Means and Methods. The Engineer's review of Shop Drawings and submittals will be only for conformance with the design concept of the Work and for compliance with the information given in the Contract Documents. The Engineer's review does not extend to means, methods, techniques, sequences, or procedures of construction (except where a specific means, method, technique, sequence, or procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs. The Engineer's review does not indicate a thorough review of all dimensions, quantities, and details of the material, equipment, device, or item covered. The review of a separate item as such will not indicate review of the assembly in which the item functions.

9.5.2. Review Does Not Relieve Contractor from Compliance with Contract Documents. The Engineer's review of submittals shall not relieve the Contractor from responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has in writing called the Engineer's attention to each such deviation at the time of submission and the Engineer has given written acceptance of each such deviation by a specific written notation incorporated in or accompanying the Shop Drawing or sample acceptance. Acceptance of submittals by the Engineer shall not relieve the Contractor from responsibility for errors or omissions in the drawings and data or from responsibility for compliance with the Contract Documents.

9.6. Antitrust Claims. By entering into this Contract, the Contractor offers and agrees to assign to District all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2, of Part 2 of Division 7 of the Business and Professions Code (commencing with Section 16700)), arising from purchases of goods, services, or materials pursuant to the Contract. The Contractor shall include in each subcontract a provision corresponding to the foregoing, binding the Subcontractor to offer and agree to assign to District such rights, title, and interest held by such Subcontractor. This assignment shall be made and become effective at the time District tenders Final Payment to the Contractor, without further acknowledgment by the parties.

9.7. Additional Surety. If during the continuance of the Contract or during the life of any guarantee or warranty required under the Contract, any of the sureties upon the faithful performance bond in the opinion of District are or become insufficient, District may require additional sufficient sureties, which the Contractor shall furnish to the satisfaction of District within 15 Calendar Days after notice. No further payment shall be deemed due or will be made under the Contract until a new surety shall qualify and be accepted by District. In the event the Contractor fails to furnish additional sufficient sureties during the construction of the Work, then the Contract may be suspended and the Work completed as provided in Section 7.1.

9.8. Assignment Forbidden. The Contractor shall not assign, transfer, convey, sublet, or otherwise dispose of this Contract, or of its right, title, or interest in or to the same or any part thereof, without the previous consent in writing of District. The Contractor shall not assign, by power of attorney or otherwise, any of the monies to become due and payable under the Contract without the previous consent in writing of District. If the Contractor should, without such previous written consent, assign, transfer, convey, sublet, or otherwise dispose of the Contract, or of its right, title, or interest therein, or of any of the monies to become due under the Contract, to any other person, company, or other corporation, District may, in its sole discretion, terminate, revoke, and/or annul the Contract, and District shall thereupon be relieved and discharged from any and all liability and obligations growing out of the same to the Contractor and to the Contractor's assignee or transferee. Any permitted assignment or other disposition of the Contract shall not relieve the Contractor from liability under the Contract. No right under the Contract, nor any right to any money to become due, shall be asserted against District in law or equity by reason of any so-called assignment of the Contract, or any part thereof, or by reason of the assignment of any monies to become due, unless authorized in writing by District.

9.9. Title to Materials Found on the Work. Unless otherwise specified in the Contract Documents, the title to all water and to the right to use of all water, soil, stone, gravel, sand, minerals, and all other materials developed or obtained in the excavation or other operations by the Contractor or any Subcontractor or any of their employees, and the right to dispose of the same, are hereby expressly reserved in District and neither the Contractor, nor any Subcontractor, nor any of their employees shall have any right, title, or interest in or to any part thereof, neither shall they, nor any of them, assert or make any claim thereto. Upon written notice by District, the Contractor may be permitted to use in the Work, without charge, any such materials that meet the requirements of the Contract Documents.

9.10. Right of Property in Materials. Nothing in this Contract shall be considered as vesting in the Contractor any right of property in materials used, after they have been attached or installed in the ground in their final location.

9.11. Use of Completed Portions of the Work. District or their assignee shall have the right to take possession of and use any completed or partially completed portion of the Work, notwithstanding the Time(s) for Completion and Fixed Calendar Date(s). Such taking possession of and use of any part of the Work shall not be deemed an acceptance of any such part of the Work, nor shall it be deemed completion or substantial completion of the Work, nor shall it entitle the Contractor to any payment except such payment as is expressly set forth herein. If such prior possession or use increases the cost of the Work, the Contractor shall be entitled to claim extra compensation within 15 Calendar Days of each occurrence. The amount of any such extra compensation shall be determined according to Section 3.4.

9.12. Audit and Access to Records

9.12.1. Definition of Record. For purposes of this article the word "record" means any form of communication or representation, including, but not limited to, letters, words, pictures, sounds, or symbols, or combinations thereof whether contained in handwritten, typewritten, printed, photocopied, photographed, or any form of electronic media, and every other means of recording.

9.12.2. Contractor to Maintain Pertinent Records. The Contractor shall maintain all records directly pertinent to the performance of the Work in accordance with generally accepted accounting principles and practices. The Contractor shall also maintain all records used in the preparation or support of any cost submissions, including the Contractor's original Bid, Extra Work, Change Orders, Claims, or other request for equitable adjustment.

9.12.3. District Has the Right to Audit. District has the right to conduct audits of books and records of the Contractor and Subcontractors that relate to the Work. District has the right to audit all costs and accounting information including, without limitation, books, documents, logs, and records (including electronic media) of the Contractor and its Subcontractors relating to this Contract or to the construction of the Work.

9.12.4. Contractor to Provide Access upon 24 Hours Notice. Upon 24 hours advance, written notice, District shall have access to these records and all other evidence for the purpose of inspection, audit, and copying during normal business hours. The Contractor shall provide proper facilities for such access, inspection, and copying.

9.12.5. Applicability of Audit Provisions. The Contractor agrees to make the provisions of this article applicable to the Contract and all Extra Work, Change Orders, Claims, or other requests for equitable adjustment affecting the Contract Amount, Bid Prices, or Time(s) for Completion or related to project performance in excess of $10,000.00.

9.12.6. Record Retention Period. Records under the provisions of this article shall be maintained and made available during the performance of the Work under the Contract until 4 years after Final Payment or until final settlement of all disputes, claims, or litigation, whichever occurs later. In addition, records that relate to the Contract, claim, Change Order, dispute, litigation, or costs or items to which an audit exception has been taken shall be maintained and made available until Final Payment or final resolution of such dispute, litigation, claim, or exception, whichever occurs later.

9.12.7. Access Not Limited to Record Retention Period. Access to records is not limited to the required retention periods. The authorized representatives of District shall have access to records at any reasonable time for as long as the records are maintained.

9.12.8. Audit Provisions Survive Contract Termination. The provisions of this article shall survive termination of the Contract.

9.12.9. Application to Subcontractors. Contractor shall include in each subcontract a provision corresponding to these provision allowing District the right to audit the Subcontractor's books and records as provided herein.

9.12.10. Supplemental Retention and Audit Requirements. Contractor and all Subcontractors shall also comply with the Specifications – Special ASADRA and Federal Provisions and Specifications.

9.13. Attorneys' Fees and Venue

9.13.1. Attorneys' Fees. If any legal action is brought to enforce or interpret the provisions of this Contract, the prevailing party shall be entitled to reasonable attorneys' fees and costs of suit in addition to any other relief to which that party may be entitled.

9.13.2. California Law and Venue. This Contract shall be governed by the laws of the State of California. Any suit, arbitration, mediation, or other legal proceeding in connection with or arising from this Contract shall be instituted in the appropriate forum in Santa Barbara County, California, which shall be the sole venue for all such actions and disputes. To the fullest extent permitted by applicable law, each party waives and agrees not to assert by way of motion, defense, or otherwise in any suit, action, or proceeding any claim that such party is not personally subject to the jurisdiction of the above-named courts, that such suit, action, or proceeding is brought in an inconvenient forum, or that the venue of such action, suit, or proceeding is improper.

9.14. Gender. The neuter gender, masculine gender, and feminine gender shall be deemed to refer to and include the masculine and the feminine gender.

END OF GENERAL CONDITIONS

SPECIFICATIONS

SPECIAL CONDITIONS

1. Completion of Work and Liquidated Damages for Delays

a. It will be impractical or extremely difficult to fix the actual damages that may result from any delays in completion of the Work or any specified segments of the Work beyond the Fixed Calendar Date(s) or Time(s) for Completion. Failure to complete the construction contract within the time specified will subject the Contractor to payment to the District of liquidated damages. It is therefore stipulated and agreed that if all Work or any segment of the Work is not completed within the Fixed Calendar Date(s) or Time(s) for Completion shown in the following table, or within such extensions of time as may be granted, the Contractor shall pay to the District in accordance with the provisions of the General Conditions, as agreed, fixed and liquidated damages for each Calendar Day's delay until said work is satisfactorily completed or until the District may reasonably procure the completion thereof by another contractor, or complete the same itself, in the amounts shown in the following table.

Work to be Completed	**Time(s) for Completion or Fixed Calendar Date(s) for Completion**	**Liquidated Damages if Work is Not Completed within Time(s) for Completion or by Fixed Calendar Date(s) for Completion**
Reservoir Seismic Retrofit and Replacement Project for Park Lane Reservoir	480 Calendar Days following Issuance of NTP	Daily damages at the legal rate of interest of 10% per annum and calculated based on the total contract amount at the time the contract is entered into. *For example if the contract amount is $1,000,000 the Liquidated Damages would be $100,000/365 days = $274 per day.*

Any liquidated damages imposed by other agencies pursuant to the terms of permits shall be withheld by the District from amount due to the Contractor.

2. Work Hours and Days

a. Work at the Site may be conducted between the hours of 7:00 a.m. and 4:30 p.m. daily, except Saturdays, Sundays, and designated holidays identified in Special

Conditions Section 3, during which no work will be allowed unless approved in advance by the District. Special permission must be requested and granted by the District for conducting work other than during hours specified. Such permission, if granted, may require the Contractor to reimburse the District for extra costs for premium pay for construction observation and other District furnished support.

3. No Work Days

a. No work will be allowed on the following days, which are District observed holidays:

New Year's Day,
Presidents Day,
Memorial Day,
Independence Day,
Labor Day,
Thanksgiving Day,
Friday following Thanksgiving Day, and
Christmas Day.

If any of the above holidays falls on a Saturday, the preceding Friday will be observed as the holiday. Holidays falling on Sunday will be observed on the following Monday.

District offices will remain open and staffed on all Federal, State or Local designated holidays not listed above.

4. Preconstruction Meeting

a. Within one month of the Notice to Proceed and at least 15 Working Days prior to beginning any construction, including potholing, the Contractor shall schedule, coordinate and attend a preconstruction meeting with the District and interested parties to review the scope of work. The Contractor shall require that the Contractor's Project Manager, Project Engineer (if applicable), and Superintendent attend this meeting. If these representatives are not present at the preconstruction meeting, the meeting will be cancelled and rescheduled at no additional cost to the District.

b. The Contractor shall submit a Preliminary Progress Schedule no later than the Preconstruction meeting per Section 01310.

5. Facility Shutdowns

a. Shutdown of District facilities shall be performed by District personnel only. The Contractor shall not operate any valves or perform any work that affects the current operating condition of District facilities. The Contractor shall provide a written request addressed to the District's Project Manager two weeks prior to the

requested facility shutdown. Failure of the Contractor to provide the proper advanced written request may result in not obtaining the Contractor's desired date of shutdown. Failure of the Contractor to properly notify the District for the shutdown will not result in the granting of Extra Work.

b. The Contractor shall have all materials required to complete the work during the shutdown on-site at the time he submits his advance written notice to the District of the desired shutdown date. These materials shall have been submitted to and favorably reviewed by the Engineer and verified by the District's Construction Inspector.

c. Every effort will be made to accommodate the Contractor on the desired dates; however, the dates of such shutdowns will be subject to the approval of the District. If shutdowns are not practical on the requested dates, thus delaying the Contractor's work, such delay will not be considered Extra Work.

d. Shutdowns of existing water facilities require closing line valves. Complete watertight closure of these valves is unlikely. The Contractor shall be prepared, at no extra cost, to handle a moderate amount of water in the existing pipeline while making tie-ins between new and existing facilities.

e. During the shutdown period, the Contractor shall perform the required work regardless of the conditions of the weather and shall provide all labor, materials, equipment, and weather protections necessary for continuous prosecution of the Work. Inclement weather will not be considered a just reason for work stoppage during the shutdown period. Any additional costs due to inclement weather that may occur shall be the responsibility of the Contractor.

f. Pipeline mortar coating shall only be removed during shutdowns after the Construction Inspector has notified the Contractor that the pipeline is depressurized.

6. Groundwater and Surface Water

a. Groundwater and surface water may be present in the vicinity of the Work. The Contractor shall determine, through his own efforts, the level and extent of such water and must assume all responsibility for the deductions and conclusions as to the effect groundwater will have upon the Work. Any expected or anticipated flows included within any permits included with these Contract Documents were provided to the applicable regulatory agency(ies) for purposes of obtaining necessary permits only, and are not to be used by the Contractor for purposes of determining the level and extent of any groundwater or surface water.

b. The Contractor shall be responsible for controlling all surface and subsurface water where water is encountered. All trenches and excavations shall be dewatered to maintain a water level at least six (6) inches below the level of the

trench bottom. All costs of groundwater and surface water control and handling required to satisfactorily complete the Work shall be included in the bid items listed in the Bid Schedule.

c. There is no permit for the disposal of water removed from excavations during dewatering operations. All such water must be put to beneficial use for dust control and irrigation. Water may be used for these purposes within the work area or at another location for which the Contractor has obtained written permission from the property owner. No water removed from an excavation shall be allowed to flow off-site.

7. Permits and Licenses

a. The Contractor shall apply for and obtain any additional permits and licenses necessary for accomplishment of the Work, including, but not limited to, a **[**business license and those required for trenching, under Section 6500 et seq. of the State Labor Code, and elsewhere as required, and he shall comply with the requirements thereof and with all applicable requirements of the District's permits. The Contractor shall pay the costs of all permits and licenses he is required to obtain. The Contractor is responsible for ensuring adequate time is given for obtaining the permit(s), including time for reviews, modifications, processing, etc. No extra time or compensation will be due the Contractor for his failure to obtain any required permits to perform the Work

b. The Contractor shall comply with all requirements of public agencies on notifications, protective signs, and other construction conditions. The requirements of these jurisdictional agencies are hereby incorporated into the Contract Documents by reference.

c. One copy of each permit obtained by the Contractor shall be submitted to the District for the District's records.

d. In all cases of differing requirements between these Specifications, permits and licenses, the Contractor is required to comply with the most restrictive requirements and regulations, as determined by the District.

8. Right of Way

a. The improvements are to be constructed on the District's property, as shown on the Drawings. Access to the District's property is via private property and roadways. The District will acquire a temporary construction easement for these areas.

b. The Work under these Contract Documents is located in Montecito within the County of Santa Barbara, California. In the performance of the Work, the Contractor shall comply with the applicable ordinances, rules, and regulations of

the authorities having jurisdiction governing excavation and other work in existing or proposed public streets and ways, including the furnishing of all required certificates of insurance.

c. Neither the terms thereof nor anything shown on the Drawings shall be construed to entitle the Contractor to conduct operations in the public right-of-way in violation of any ordinances or regulations restricting interference with watercourses and drainage channels. The Contractor shall take adequate precautions against obstructing stormwater flow in any affected watercourse or channel and shall not deposit excavated material anywhere that might interfere with or be subject to erosion from such flow.

d. Every day, after completion of work, all open trenches shall be protected with construction fencing and in accordance with the applicable permits, local regulations and state regulations or backfilled and paved temporarily. No traffic shall be allowed over any excavation which has not been backfilled and paved unless otherwise shown on the Drawings.

e. Access from adjacent properties to public roads along the pipeline alignment and construction area shall be maintained at all times, except where specifically shown to be closed on the traffic control plans. The Contractor shall perform his construction such that private, government, commercial, and other vehicles have convenient access to and from public roads where the work is being performed.

f. Unless otherwise shown on the Drawings, open trenches shall not be allowed in the traveled way unless behind protective K-Rails.

g. The Contractor shall restore or repair any damage that his operations may cause to property or improvements.

h. It shall be the Contractor's responsibility to obtain any rights-of-way additional to that specified or indicated to be provided in the Contract Documents as they may require to perform the Work required under the Contract.

i. The Contractor shall not drive vehicles into private property for any reason. This prohibition includes, but is not limited to, the use of private driveways for making u-turns.

j. Pipe and any other construction materials shall be staged and stored only as shown on the Drawings and within the Contractor's own property or right-of-ways, or within the work area behind protective k-rail of the traffic control.

9. Contractor Facilities

a. The District will make areas available within the project area and temporary construction easement area(s) dedicated to the Contractor's use for field offices

and materials and equipment storage, as noted in Specification Section 01500 – Construction Facilities and Temporary Controls. These construction yard areas will be furnished to the Contractor without cost, subject to the following conditions:

1) The Contractor shall be responsible for all site preparation, development, security, and maintenance costs associated with the use of the yard areas.

2) The Contractor shall be responsible for providing temporary security services for the construction yard area.

3) At project completion, with the District's approval, and prior to final payment, the Contractor shall remove all temporary facilities and improvements, all equipment and materials, and all construction waste and debris, and shall restore the yard area to conditions equivalent to those existing prior to construction.

10. Access to Work Areas Prior to Bid Opening

a. District Owned Areas

1) Interested bidders may enter the District owned areas for the purpose of conducting their own observations. Access into adjoining private property areas is not allowed. Access into the Site requires advance notice to the District and receipt of authorization from the District.

2) Interested bidders shall contact the District in writing via e-mail to akanold@montecitowater.com prior to entering the Site. The request for entry shall include:
   i. Date and times when access is requested
   ii. Length of time for accessing the area
   iii. Purpose for accessing the area

   Confirmation shall be provided by the District in writing.

b. Access to Public Right of Way Prior to Bid Opening

1) Interested Bidders may access and perform their own observations in the public right-of-way subject to all of the requirements of the agency(ies) having jurisdiction. The District does not have jurisdiction and cannot grant or deny permission for a Bidder to perform any work prior to Bid Opening.

11. Standard Drawings and Specifications

The Contract Documents reference the following standard drawings and specifications:

a. District Standard Drawings are included as Appendix C. Additional District Drawings, if applicable or required to complete the Work, are available at the District office.

b. Standard Specifications for Public Works Construction (SSPWC).

12. Water Supply

a. Water is available from the District in the vicinity of the work area. If the Contractor wishes to obtain construction water from the District, the Contractor must submit an Application for Temporary Water Service (available here: https://montecitowater.com/doc/6827/) and comply with the requirements therein.

13. Geotechnical Report

a. The following geotechnical report: **Geotechnical Investigation, Park Lane Reservoir Renovation, 900 Block of Park Lane, Montecito, CA dated June 14, 2021** is available for the Park Lane Reservoir Seismic Vulnerability Retrofit and can be reviewed by the Contractor at the following link at https://www.montecitowater.com/our-water/capital-projects-rfp/. Bidders shall assume full responsibility for their interpretation of the findings presented in the report. The report shall not be considered to be a part of the Contract Documents.

b. Any additional subsurface exploration required or deemed necessary by the Contractor shall be conducted at the Contractor's expense.

c. Each Bidder shall include in his Bid all costs associated with groundwater control and dewatering, rock excavation and removal, special excavation requirements, including sheeting, shoring, and bracing, as required, and of fill and compaction requirements.

d. It shall be the responsibility of the Contractor to determine, allow for, excavate, remove and dispose of, as necessary, any unsuitable rock or material encountered. All unsuitable rock or material removal and disposal for construction purposes shall be the responsibility of the Contractor and shall be paid in accordance with the appropriate bid items.

e. All unstable or unsuitable material shall be removed, disposed of, and replaced with stabilized subgrade per the recommendation of the Materials Inspector, as shown on the Drawings, in the Technical Specifications, or as directed by the District.

f. The Contractor should expect to encounter non-cohesive material in the bedding, pipe zone, and backfill of trench zones for existing utilities and facilities.

g. All grading, trenching, excavation, fill, compaction and fine grading will be performed under inspection by the District.

14. Information from Previous Projects

a. The District has not recently completed construction of any projects within the vicinity of the Site.

15. Reserved (Not Used)

16. Progress Meetings

a. The District reserves the right to hold on-site progress meetings at least weekly during periods of on-site construction activity and at other times required by the District. The Contractor and all Subcontractors active on the Site shall be represented at each meeting. The Contractor's Project Manager and Superintendent shall attend all progress meetings unless otherwise agreed to by the District's Project Manager in advance. Contractor may, at his discretion, request attendance by representatives of his suppliers, manufacturers, and other Subcontractors. Similarly, the District may also request attendance by the Engineer or others.

b. The purpose of these meetings will be to review the progress of the Work, maintain coordination of efforts, discuss changes in scheduling, and resolve other problems that may develop.

17. Damage to Existing District Facilities or Private Property

a. The Contractor is to take extra care when working around existing District facilities or private property. Any damage to existing District facilities or private property shall be promptly repaired or replaced in kind and in accordance with these Contract Documents, District Standard Drawings, and as directed by the District.

18. Additional Insureds

The following entities shall be named as additional insureds in any Contractor and Subcontractor policies of insurance covering the construction of the Project:

a. Montecito Water District (and its agents, directors, employees, officers and servants), the State Water Board (and its agents, officers, employees and servants), the public and private owners of all properties where the Work will be performed.

19. Utility Notification

a. In addition to contacting Digalert as required by law, the Contractor must notify the District's Project Manager 7 Working Days prior to any excavation at the Site to allow for the marking of District utilities and facilities.

20. Record Information

a. Appendix D contains record information for the **Park Lane Reservoir**. This information is provided as a convenience to the Contractor only, and all information contained therein shall be field verified prior to materials fabrication and construction.

21. Factory Inspection and Witnessed Factory Testing

a. All materials and component equipment manufactured or assembled pursuant to the Contract Documents for incorporation into the Work shall be subject to inspection by the Materials Inspector at the place of manufacture regardless of location. Manufacturing activities requiring inspection may include:

- Review of the proposed manufacturing plant to verify its suitability for fabrication of the required materials and appurtenances.
- Fabrication, including fittings and specials.
- Application of plant-applied pipe linings and coatings.
- Shop testing of all manufacturing processes and manufactured materials.
- Processes used to transport materials to and from each manufacturing phase to preparing materials for transport to the Site.

The Contractor shall provide the District with 10 Working Days advanced written notice of the date when the indicated factory inspection and testing activity noted above will begin, unless specified otherwise in the applicable technical specification. If the indicated factory inspection and testing activity noted above begins later than the date provided in the notice, the Contractor shall pay to District all costs for an inspector to wait on standby for the fabrication or testing to begin, including, but not limited to, hourly wage, per diem, and expenses. Failure on the part of the Contractor to provide the notice required herein shall be just cause for the District to reject the materials fabricated without such notice.

The Contractor shall provide for the producer, manufacturer or fabricator to furnish safe access and to cooperate with the Materials Inspector in the performance of his duties. The Materials Inspector shall have free entry at all times to the manufacturer's facilities while tests and inspections are being conducted. Adequate facilities shall be furnished free of charge to allow the Materials Inspector to perform its factory and plant inspections, including taking photographs. Retain on file and make available to the Materials Inspector, upon

request, copies of all specified reports, test results, and quality control documentation relating to the Work.

All pipe of each material shall be fabricated at one location in the US. Linings and coatings may be applied at separate facilities, but these must also be within the US. All valves subject to shop inspection and testing shall be manufactured in the US.

22. Builders Risk Insurance

a. Contractor shall purchase and maintain in force builders risk insurance on the Work. Such insurance shall be written on a completed value form and in an amount equal to the Contract Amount plus fifteen percent (15%), subject to subsequent modifications of the Contract Amount. The insurance shall:

   1) Apply on a replacement cost basis.

   2) Name as insured District, Contractor, and all subcontractors in the Work.

   3) Contain a provision that the insurance will not be canceled or allowed to expire until at least thirty (30) Calendar Days' prior written notice has been given to District.

   4) Cover the entire Work at the Site, including reasonable compensation for engineers' services and expenses made necessary by an insured loss. Insured property shall include temporary structures, buildings and falsework, portions of the Work located away from the Site but intended for use at the Site, and shall also cover portions of the Work in transit. The policy shall cover the cost of removing debris, including demolition as may be made legally necessary by the operation of any law, ordinance, or regulation.

   5) At a minimum, cover the same perils as insured under the ISO special causes of loss form (CP 10 30) and shall be endorsed as needed to provide full coverage for loss or damage from collapse, including consequential damage to other covered property caused by collapse resulting from design error.

   6) Be maintained in effect until the date of Statement of Acceptance.

b. Any deductible applicable to the insurance purchased in compliance with Subsection a. of this Section shall not exceed ten thousand dollars ($10,000), and any insured making a claim to which a deductible applies shall be responsible for up to ten thousand dollars ($10,000) of the loss not insured because of the deductible. If any part of a loss is not covered because of the application of a higher deductible amount, such loss shall be paid by Contractor.

c. Within the time period set forth in Section I-10 of the Instructions to Bidders, the Contractor shall provide to District a copy of the insurance policy obtained in compliance with Subsection a. of this Section. If the policy is not available, Contractor shall provide an accurate summary of the policy's coverages, conditions, exclusions, and endorsements within the time period set forth in Section I-10 of the Instructions to Bidders, and a copy of the policy itself within 10 Calendar Days after receiving it and before commencing work at the Site.

d. If District is damaged by the failure of Contractor to maintain insurance as required in this Section, the Contractor shall bear all reasonable costs properly attributable to that failure.

e. If the builders risk insurance excludes loss from mechanical or electrical breakdown, then Contractor shall purchase and maintain equipment breakdown (boiler and machinery) insurance covering insured objects during installation and until final acceptance by District. This insurance shall name as insured District, Contractor, and subcontractors and sub-subcontractors in the Work.

f. Waiver of Subrogation. District and Contractor waive all rights against each other and each of their subcontractors, sub-subcontractors, officers, directors, agents, and employees, for recovery of damages caused by fire and other perils to the extent covered by builders risk insurance purchased pursuant to the requirements of this Section, or any other property insurance applicable to the Work.

g. If the builders risk insurance and other property insurance policies purchased as required above do not allow the insured to waive rights of recovery against others prior to loss, Contractor shall cause them to be endorsed with a waiver of subrogation as required above.

h. Partial occupancy or use of the Work shall not commence until the insurance company or companies providing insurance as required in this Section have consented to such partial occupancy or use. District and Contractor shall take reasonable steps to obtain consent of the insurance company or companies, and agree to take no action, other than upon mutual written consent, with respect to occupancy or use of the Work that could lead to cancellation, lapse, or reduction of insurance.

23. <u>Retention</u>

a. This project is subject to 5 percent retention. See GC 6.3.4.

24. Graffiti Removal

a. All graffiti on the Contractor's equipment, materials, or work shall be removed within 24 hours.

25. Security

a. The location of the Work is restricted access. The Contractor shall access the Park Lane Reservoir Site off of Park Lane through private property and the designated private gate. During times when the Contractor is onsite, the Contractor's Representative (either Superintendent or Project Manager) is responsible for managing Site access for all persons working for the Contractor, his Subcontractors, or materials suppliers. The Contractor's Representative is required to note the name, employer, date, and times of entry to and exit from the Site for each such person who enters the Site. This record shall be kept with the Contractor's Representative and shall be made available if requested by the District's Inspector or Project Manager.

26. Pre-Construction Video

a. Prior to any equipment or material mobilization or construction, including potholing, the Contractor shall perform an audio-video survey of the Site and other areas that have the potential to be disturbed by the Contractor's operations to document pre-construction conditions. Specific areas to be documented include, but are not limited to:
   i. Areas of the Work.
   ii. All areas to be potentially disturbed as part of the Work.
   iii. Areas to be used as staging or storage or for field offices.
   iv. Along pipeline alignment and adjacent areas.
   v. Entire road width, including condition of pavement and striping along entire pipeline alignments and 200 feet minimum beyond furthest extent of striping modifications that will be performed due to temporary traffic controls.
   vi. Surrounding vegetation including windrows, decorative trees and bushes and agricultural crops.
   vii. Surface drainage structures and channels where construction will cross over, under or within 10 feet of excavation, including headwalls, wingwalls, interior walls, roof, and floor.
   viii. Condition of reinforced concrete boxes, internal and visible external components.
   ix. Fences, gates, rails, utility boxes, mailboxes, utility poles, control boxes, light standards, signs, and any other such surface and utility appurtenances.
   x. Paved and unpaved areas that will be entered by vehicles or equipment.
   xi. Paved and unpaved driveways near construction.
   xii. Paved and unpaved access roads and surrounding area.

xiii. Outside of all buildings within 200' of pipe alignment to the extent that they can be filmed from public right-of-way or easements.
xiv. All existing survey monuments located within the Work Area Limits.
xv. All existing surface facilities that will have to be removed and replaced as a result of construction activities.
xvi. Any facility whose condition is damaged, deteriorated or otherwise not in good condition.

b. Record the individual features of each item focusing particular on the existence of any existing faults, fractures, or defects.

c. Control pan rate, rate of travel, camera height, and zoom rate to maintain a steady clear view.

d. Limit recorded coverage to one side of any street at any one time.

e. Create a single, continuous, unedited recording that begins and ends within each portion of a particular construction area. The recording shall proceed in the direction of ascending baseline stationing.

f. Audio Content
   i. Simultaneously record audio content during videotaping.
   ii. Audio recording shall assist in viewer orientation and in any needed identification, clarification, or description of features being recorded.
   iii. Audio recording shall only consist of camera operator commentary.
   iv. Audio shall be clear and audible and not distorted nor obscured by wind or other background noise.

g. All video shall be adequate in visual detail and resolution to show the color, type and extent of all items being documented. Upon submittal, if the District, in the District's own opinion, determines that the extent or detail of the video are inadequate, the Contractor shall correct the deficiencies and resubmit the required copies to the District at no additional cost to the District.

h. The video shall be in color with a date and time stamp in the video. The video shall be in the MPEG or MPA digital file format, with a video rate not less than 128 kbps and formatted for use with the Microsoft Windows operating system. The video shall be transmitted via a cloud based service.

i. The Contractor shall submit to the District one copy of DVD(s). Should the DVD not provide adequate coverage to fully illustrate the physical condition of the Site or not be in compliance with the Specifications, all relevant areas shall be re-documented prior to the initiation of construction at Site, at no additional cost to the District.

j. The Contractor shall maintain an identical set of DVD(s) at the Site in a secure location throughout the duration of the Work.

27. Cultural and Archaeological Resources

a. Prior to the start of ground-disturbing activities, an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology shall conduct cultural and tribal cultural resources sensitivity training for all construction workers involved in ground-disturbing activities. A local Native American representative shall participate in the sensitivity training and have the opportunity to distribute information regarding cultural resources and/or protection of cultural resources.

28. Confined Space Entry

a. The Work contains one or more confined spaces or spaces that could become confined spaces due to the Contractor's activities. These include but are not limited to, the following: Park Lane Reservoir.
b. The hazards identified for this confined space including, but are not limited to, the following actual or potential hazardous atmosphere, fall hazards, or hazards introduced by the Contractor's activities.
c. The District has implemented a Confined Space Program and procedures for the protection of employees in or near the confined space described in the District's Confined Space Program available at the District's office.
d. The Contractor shall coordinate any joint entry operations when both District and Contractor personnel will be working in or near the confined space, as described below.
    1. The District will review a copy of the Contractor's Entry Permit to determine if:
        i. It is compatible with the requirements of the District's Confined Space Program for protection of District employees.
        ii. Employees will be attempting to work in the same areas at the same time.
        iii. Any operations conducted by either District employees or Contractor employees are incompatible.
        iv. Any other situations appear to have the potential to cause problems or result in increased hazards for either party.
    2. If the District determines that any circumstances exist that would create increased hazards for either District employees or Contractor personnel, the District Entry Supervisor will temporarily halt operations until the situation is analyzed and alternate procedures are put into place that will

ensure a safe environment. Such halt and alternate procedures will not constitute Extra Work.

3. If no chance of increased hazards exists, both parties will proceed with entry operations, coordinating the activities called for under each party's Confined Space Program.
4. Following the confined space entry, the District will debrief the Contractor regarding the confined space program followed and any hazards confronted or created in the confined space during entry operations.

29. CADD Files

A. CADD files prepared for the engineering design of the Park Lane Reservoir Retrofit are available for reference at the time of award and upon the Contractor's request.

B. The Contractor shall assume full responsibility for their interpretation of these files and the files shall not be considered to be a part of the Contract Documents. As used herein, the term Contractor includes the Contractor's Subcontractors and Suppliers.

C. Use of the files is subject to the following disclaimer:
The Engineer will make available to Contractor an electronic copy of certain engineering design drawings related to the Work. Contractor agrees to the following terms and conditions:

1. Engineer agrees to provide Contractor with computer aided design drafting files [CADD Files] for use by Contractor for the purpose provided below. Contractor agrees that the Engineer shall retain ownership of such original CADD Files and Contractor shall have no ownership rights whatsoever in the CADD Files.
2. Contractor understands that the electronic copy of CADD files is provided only as a convenience and shall be used only by the Contractor (and not by any other entity) for general informational purposes only.
3. Contractor's use of the CADD Files prepared by Engineer shall not in any way relieve or negate Contractor's responsibility to fully comply with the Contract Documents.
4. Contractor's use of the CADD Files prepared by Engineer shall not in any way relieve or negate Contractor's responsibility for: coordination with other trades; checking of all applicable field conditions; or taking and verification of field measurements, including, but not limited to, dimensions, details, member sizes and gages; and measuring and verifying quantities of materials as required to facilitate complete and accurate fabrication and erection.
5. Indemnity/Limit of Liability
    5.1 Any use of the CADD Files by Contractor shall be at Contractor's sole risk and without liability or legal exposure to Engineer or District.
    5.2 To the fullest extent permitted by law, Contractor shall indemnify and hold harmless Engineer, District, their officers, directors, shareholders, consultants, employees, agents, insurance carriers and their successors

and assigns from all claims, liabilities, causes of actions, judgments, fines, violations of any law, damages, losses and expenses including attorney fees arising, directly and indirectly, out of or resulting from transfer of CADD Files from Engineer to Contractor or the use of the CADD files by Contractor.

5.3 The Engineer and District, their officers, directors, shareholders, consultants, employees, agents, insurance carriers and their successors and assigns shall not be liable for any damages, including without limitation, damages for lost profits, lost savings, business interruption, loss of business information, or other pecuniary loss or other incidental or consequential damages arising out of Contractor's use or inability to use the CADD Files.

6. Conditions on the Use of Engineer CADD Files

6.1 Contractor agrees that the following conditions also apply to use of CADD Files:

6.1.1 CADD Files furnished by Engineer, pursuant to its agreement with the District or otherwise, are instruments of their services developed for the Work. Engineer does not represent the CADD Files to be suitable for use on any other project or for any other purpose.

6.1.2 Differences may exist between the CADD Files and the corresponding hard-copy Contract Documents. Neither the Engineer nor the District makes any representations regarding the accuracy or completeness of the CADD Files provided to Contractor.

6.1.3 In the event of a conflict between the signed and sealed hard-copy Contract Documents and the CADD Files, the signed and sealed hard-copy Contract Documents shall govern.

6.1.4 CADD Files furnished by the Engineer may not be reproduced or copied by anyone in any form, electronic or otherwise, for any use other than that described herein. Any other use or reuse by Contractor or by others shall be at the Contractor's sole risk and without legal liability or legal exposure to the Engineer or District.

6.1.5 Since the information developed by the Engineer on the CADD Files can be modified unintentionally or otherwise, the Engineer reserves the right to remove all indications of the Engineer’s ownership, authorship or involvement from each CADD File display, as permitted by the laws of the jurisdiction in which the Work is located.

6.1.6 Any and all drawings or documents generated by the Contractor from the CADD Files shall not bear any identification of the Engineer, its officers, agents, employees and/or subconsultants; and shall not in any way, either express or implied, be considered the work of the Engineer, its officers, agents, employees and/or subconsultants.

6.1.7 CADD Files furnished by the Engineer may contain some or all of certain computer programs that the Engineer is licensed to use. Without specific written agreement by the software licensor, the Engineer may neither transfer these program licenses to nor authorize their use by another party.

6.1.8 The Engineer makes no warranty or guarantee, express or implied, regarding CADD Files furnished by the Engineer or the device or medium in or on which the files are furnished. Without limiting the generality of the preceding statement, the Engineer makes no warranties of merchantability or fitness for a particular purpose with regard to the CADD Files. The Engineer cannot and does not warrant that the CADD Files furnished by the Engineer will not degrade over time or contain no errors, flaws or other discrepancies that may render the CADD Files unsuitable for the proposed use intended by the Contractor.

6.1.9 The Engineer shall not be responsible for the consequences of errors found to exist in standard software products.

6.1.10 The Engineer makes no representation, warranty or guarantee that the device or medium in or on which the CADD Files are furnished is compatible with, is suitable for use in or on, or will not otherwise damage or impair, Contractor's computer or other device or machine employed by Contractor to manipulate or otherwise use the CADD Files.

6.2 Breach of these terms and conditions by Contractor may give rise to the Engineer's need to pursue equitable relief to prevent a threatened or continual breach of these terms and conditions, which will cause or could cause the Engineer irreparable damage. The Engineer may pursue such equitable relief, whether it is for injunction, specific performance or other equitable remedy, without posting a bond and without having to prove actual injury as a condition for the relief requested.

7. General Provisions.

7.1 Assigns and Successors. The terms and conditions are binding on the successors and assigns of Contractor. The terms and conditions may not be assigned in whole or in part to any third parties without the written consent of both Contractor and the Engineer.

7.2 Interpretation. Interpretation and enforcement of the terms and conditions shall be in accordance with the laws of the State of California. All legal actions or proceedings related to the terms and conditions shall be brought in a court of competent jurisdiction in the County of Santa Barbara, California. Contractor waives any and all defenses of forum non convenient, improper venue or lack of personal jurisdictions of such courts.

7.3 Waivers and Severability. A waiver or breach of any term, condition, or covenant by a party shall not constitute a waiver or breach of any other term, condition or covenant. If any court of competent

jurisdiction declares a provision of the terms and conditions invalid, illegal, or otherwise unenforceable, the remaining provisions of the terms and conditions shall remain in full force and effect.

30. Valley Fever

The Contractor shall comply with the following Valley Fever mitigation measures, where applicable:

1. Where required by California Division of Occupational Safety and Health regulations, require workers to use respirators during clearing, grading, excavation, and other dust generating activities.
2. Work upwind from dust generating activities.
3. Pave or treat with environmentally-safe dust control agents the access way into the Site from adjoining paved roadways.

Implement any other hygienic recommendations by the Centers for Disease Control.

END OF SPECIAL CONDITIONS

SPECIFICATIONS

SPECIAL ASADRA AND FEDERAL PROVISIONS AND SPECIFICATIONS

1. ASADRA Funding and Federal Funding Acknowledgment

Funding for this Project has been provided in full or in part through an agreement with the State Water Resources Control Board. California's Drinking Water State Revolving Fund is capitalized through a variety of funding sources, including grants from the United States Environmental Protection Agency and state bond proceeds. The contents of the Contract Documents, or any other documents prepared attendant to the Project, do not necessarily reflect the views and policies of the foregoing, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

2. ASADRA Requirements

Contractor shall comply with, and/or assist District in complying with, all applicable duties, conditions, requirements and terms of the "Construction Installment Agreement – Project No. 4210007-001C between Montecito Water District and California State Water Resources Control Board" included in Appendix B to the Contract Documents. By entering into the Contract, Contractor acknowledges and warrants that it has reviewed the "Construction Installment Agreement – Project No. 4210007-001C between Montecito Water District and California State Water Resources Control Board" and is familiar with the duties, conditions, requirements, and terms thereof which are applicable to Work by the Contractor on the Project.

3. United States Environmental Protection Agency Requirements

(a)Contractor shall comply with, and/or assist District in complying with, all applicable duties, conditions, requirements and terms of "EPA General Terms and Conditions Effective October 1, 2022" as described in the Construction Installment Sale Agreement included in Appendix B to the Contract Documents. By entering into the Contract, Contractor acknowledges and warrants that it has reviewed the "EPA General Terms and Conditions Effective October 1, 2022" as described in the Construction Installment Sale Agreement included in Appendix B and is familiar with the duties, conditions, requirements, and terms thereof which are applicable to Work by the Contractor on the Project.

(b)Contractor and all Subcontractors agree to comply with, EPA's Scientific Integrity Policy, available at https://www.epa.gov/scientific-integrity/epas-scientific-integrity-policy when conducting, supervising, and communicating science and when using or applying the results of science. For purposes of this condition scientific activities include, but are not limited to, computer modelling, economic analysis, field sampling, laboratory experimentation, demonstrating new technology, statistical analysis, and writing a review article on a scientific issue.

4. Supplemental Retention and Audit Requirements

Contractor and all Subcontractors must maintain separate books, records and other material relative to the Project. Such books, records, and other material are subject at all reasonable times (at a minimum during normal business hours) to inspection, copying, and audit by the State Water Board, the California State Auditor, the Bureau of State Audits, the USEPA, the USEPA's Office of Inspector General, the Internal Revenue Service, the Governor, or any authorized representatives of the aforementioned. Contractor and all Subcontractors must allow interviews during normal business hours of any employees who might reasonably have information related to such records. The provisions of this section survive the term of this Agreement. [See General Conditions 9.12.10]

5. Disadvantaged Business Enterprise Requirements

The Contractor and all Subcontractors shall not discriminate on the basis of race, color, national origin or sex in the performance of this contract. The Contractor and all Subcontractors shall carry out applicable requirements of 40 CFR Part 33 in the award and administration of contracts awarded under EPA financial assistance agreements. Failure by the Contractor to carry out these requirements is a material breach of this contract which may result in the termination of this Contract or other legally available remedies. The requirements of 40 CFR Part 33 "Participation by Disadvantaged Business Enterprises in United States Environmental Protection Agency Programs" as described in the Construction Installment Sale Agreement included in Appendix B to the Contract Documents. By entering into the Contract, Contractor acknowledges and warrants that it has reviewed the "Participation by Disadvantaged Business Enterprises in United States Environmental Protection Agency Programs" as described in the Construction Installment Sale Agreement included in Appendix B and is familiar with the duties, conditions, requirements, and terms thereof which are applicable to work by the Contractor on the Project.

6. No Discrimination Requirements

(a)During the performance of this Contract, Contractor and Subcontractors must not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, ethnic group identification, sexual orientation, physical disability (including HIV and AIDS), mental disability, medical condition (cancer), age (over 40), marital status, denial of family care leave, or genetic information, gender, gender identity, gender expression, or military and veteran status.

(b)Contractor, and Subcontractors must ensure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment.

(c)Contractor, and Subcontractors must comply with the provisions of the Fair

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

(d)Contractor, and Subcontractors must comply with all applicable federal civil rights regulations, including statutory and national policy requirements. (2 CFR § 200.300). This includes, to the greatest extent practicable and to the extent permitted by law, the requirement to respect and protect the freedom of persons and organizations to engage in political and religious speech. (Executive Order 13798)

(e)Contractor, and Subcontractors must give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.

7. Executive Order No. 11246 Equal Employment Opportunity Requirements

(a)During the performance of this Contract, the Contractor agrees as follows:"(a) The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

(b)The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin

(c)The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d)The Contractor will comply with all provisions of Executive Order No. 11246 of Sept. 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(e)The Contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of

the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f)In the event of the Contractor's noncompliance with the nondiscrimination clauses of this Contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of Sept 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g)The Contractor will include the provisions of Paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of Sept. 24, 1965, so that such provisions will be binding upon each Subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, That in the event the Contractor becomes involved in, or is threatened with, litigation with a Subcontractor or vendor as a result of such direction by the contracting agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

8. Davis-Bacon Compliance

Contractor and Subcontractors agree to comply with all Davis-Bacon requirements required by the "Construction Installment Agreement – Project No. 4210007-001C between Montecito Water District and California State Water Resources Control Board" included in Appendix B to the Contract Documents and at https://www.epa.gov/grants/contract-provisions-davis-bacon-and-related-acts

(1) ***Minimum wages*** — [URLhttps://www.ecfr.gov/current/title-29/part-5/section-5.5#p-5.5(a)(1); Citation 29 CFR 5.5(a)(1)]

(i) ***Wage rates and fringe benefits.*** All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be

alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of this section, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(v) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph (a)(4) of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided,* That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (a)(1)(iii) of this section) and the Davis-Bacon poster (WH-1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii) ***Frequently recurring classifications.***

(A) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in 29 CFR part 1, a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph (a)(1)(iii) of this section, provided that:

(*1*) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(2) The classification is used in the area by the construction industry; and

(*3*) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(B) The Administrator will establish wage rates for such classifications in accordance with paragraph (a)(1)(iii)(A)(3) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

(iii) ***Conformance.***

(A) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(*1*) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is used in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(C) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to *DBAconformance@dol.gov*. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to *DBAconformance@dol.gov*, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(E) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under paragraphs (a)(1)(iii)(C) and (D) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph (a)(1)(iii)(C) or (D) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

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

(v) ***Unfunded plans.*** If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the

amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided,* That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(vi) ***Interest.*** In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

(2) ***Withholding*** —

(i) ***Withholding requirements.*** The Montecito Water District may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in paragraph (a) of this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work (or otherwise working in construction or development of the project under a development statute) all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph (a)(3)(iv) of this section, the Montecito Water District may on its own initiative and after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(ii) ***Priority to withheld funds.*** The Department has priority to funds withheld or to be withheld in accordance with paragraph (a)(2)(i) or (b)(3)(i) of this section, or both, over claims to those funds by:

(A) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(B) A contracting agency for its reprocurement costs;

(C) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(D) A contractor's assignee(s);

(E) A contractor's successor(s); or

(F) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901-3907.

(3) ***Records and certified payrolls*** —

(i) ***Basic record requirements***.

(A) ***Length of record retention.*** All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(B) ***Information required.*** Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(C) ***Additional records relating to fringe benefits.*** Whenever the Secretary of Labor has found under paragraph (a)(1)(v) of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(D) ***Additional records relating to apprenticeship.*** Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

(ii) ***Certified payroll requirements***.

(A) ***Frequency and method of submission.*** The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the Montecito Water District if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the certified payrolls to the applicant, sponsor, owner, or other entity, as the case may be, that maintains such records, for transmission to the Montecito Water District. The prime contractor is responsible for the submission of all certified payrolls by all

subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(B) ***Information required.*** The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph (a)(3)(i)(B) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (*e.g.,* the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH-347 or in any other format desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division website at *https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347/.pdf* or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the sponsoring government agency (or the applicant, sponsor, owner, or other entity, as the case may be, that maintains such records).

(C) ***Statement of Compliance.*** Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(*1*) That the certified payroll for the payroll period contains the information required to be provided under paragraph (a)(3)(ii) of this section, the appropriate information and basic records are being maintained under paragraph (a)(3)(i) of this section, and such information and records are correct and complete;

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

(*3*) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work

actually performed, as specified in the applicable wage determination incorporated into the contract.

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

(E) ***Signature.*** The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(F) ***Falsification.*** The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 3729.

(G) ***Length of certified payroll retention.*** The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

(iii) ***Contracts, subcontracts, and related documents.*** The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

(iv) ***Required disclosures and access***.

(A) ***Required record disclosures and access to workers.*** The contractor or subcontractor must make the records required under paragraphs (a)(3)(i) through (iii) of this section, and any other documents that the Montecito Water District or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the Montecito Water District or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(B) ***Sanctions for non-compliance with records and worker access requirements.*** If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to

§5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under 29 CFR part 6 any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(C) ***Required information disclosures.*** Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to the Montecito Water District if the agency is a party to the contract, or to the Wage and Hour Division of the Department of Labor. If the Federal agency is not such a party to the contract, the contractor, subcontractor, or both, must, upon request, provide the full Social Security number and last known address, telephone number, and email address of each covered worker to the applicant, sponsor, owner, or other entity, as the case may be, that maintains such records, for transmission to the Montecito Water District, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

(4) ***Apprentices and equal employment opportunity*** —

(i) ***Apprentices***.

(A) ***Rate of pay.*** Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(B) ***Fringe benefits.*** Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(C) Apprenticeship ratio. The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph (a)(4)(i)(D) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph (a)(4)(i)(A) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(D) ***Reciprocity of ratios and wage rates.*** Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

(ii) ***Equal employment opportunity.*** The use of apprentices and journeyworkers under this part must be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

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

(6) ***Subcontracts.*** The contractor or subcontractor must insert in any subcontracts the clauses contained in paragraphs (a)(1) through (11) of this section, along with the applicable wage determination(s) and such other clauses or contract modifications as the Montecito Water District and/or U.S. Environmental Protection Agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate.

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

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

(9) ***Disputes concerning labor standards.*** Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(10) ***Certification of eligibility.***

(i) By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

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

(11) ***Anti-retaliation.*** It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

(i) Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

(ii) Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

(iii) Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or 29 CFR part 1 or 3; or

(iv) Informing any other person about their rights under the DBA, Related Acts, this part, or 29 CFR part 1 or 3.

(b) ***Contract Work Hours and Safety Standards Act (CWHSSA).*** The Agency Head must cause or require the contracting officer to insert the following clauses set forth in paragraphs (b)(1) through (5) of this section in full, or (for contracts covered by the Federal Acquisition Regulation) by reference, in any contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses must be inserted in addition to the clauses required by paragraph (a) of this section or 29 CFR 4.6. As used in this paragraph (b), the terms “laborers and mechanics” include watchpersons and guards.

(1) ***Overtime requirements.*** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she

is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) ***Violation; liability for unpaid wages; liquidated damages.*** In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of $32 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1).

(3) ***Withholding for unpaid wages and liquidated damages*** —

(i) ***Withholding process.*** The Montecito Water District may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this paragraph (b) on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

(ii) ***Priority to withheld funds.*** The Department has priority to funds withheld or to be withheld in accordance with paragraph (a)(2)(i) or (b)(3)(i) of this section, or both, over claims to those funds by:

(A) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(B) A contracting agency for its reprocurement costs;

(C) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(D) A contractor's assignee(s);

(E) A contractor's successor(s); or

(F) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901-3907.

(4) ***Subcontracts.*** The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs (b)(1) through (5) of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (5). In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

(5) ***Anti-retaliation.*** It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

(i) Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

(ii) Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

(iii) Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

(iv) Informing any other person about their rights under CWHSSA or this part.

(c) ***CWHSSA required records clause.*** In addition to the clauses contained in paragraph (b) of this section, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other laws referenced by § 5.1, the Agency Head must cause or require the contracting officer to insert a clause requiring that the contractor or subcontractor must maintain regular payrolls and other basic records during the course of the work and must preserve them for a period of 3 years after all the work on the prime contract is completed for all laborers and mechanics, including guards and watchpersons, working on the contract. Such records must contain the name; last known address, telephone number, and email address; and social security number of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid; daily and weekly number of hours actually worked; deductions made; and actual wages paid. Further, the Agency Head must cause or require the contracting officer to insert in any such contract a clause providing that the records to be maintained under this

paragraph must be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the Montecito Water District and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview workers during working hours on the job.

(d) ***Incorporation of contract clauses and wage determinations by reference.*** Although agencies are required to insert the contract clauses set forth in this section, along with appropriate wage determinations, in full into covered contracts, and contractors and subcontractors are required to insert them in any lower-tier subcontracts, the incorporation by reference of the required contract clauses and appropriate wage determinations will be given the same force and effect as if they were inserted in full text.

(e) ***Incorporation by operation of law.*** The contract clauses set forth in this section (or their equivalent under the Federal Acquisition Regulation), along with the correct wage determinations, will be considered to be a part of every prime contract required by the applicable statutes referenced by § 5.1 to include such clauses, and will be effective by operation of law, whether or not they are included or incorporated by reference into such contract, unless the Administrator grants a variance, tolerance, or exemption from the application of this paragraph. Where the clauses and applicable wage determinations are effective by operation of law under this paragraph, the prime contractor must be compensated for any resulting increase in wages in accordance with applicable law.

9. Water Quality Directive/Order Compliance

Contractor and Subcontractors will comply at all times with directives or orders issues pursuant to Division 7 – Water Quality of the California Water Code issued by any entity having jurisdiction over the Project and the Work performed thereunder.

10. Iron and Steel Requirements

All “iron and steel products” used in the Project were or will be produced in the United States. For purposes of this section, the term "iron and steel products" means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials. “Steel” means an alloy that includes at least 50 percent iron, between .02 and 2 percent carbon, and may include other elements.

11. Build America Buy America Requirements

(a)Funds received under this Agreement are subject to the Build America Buy America (BABA) requirements of Public Law 117-58 (the Infrastructure Investment and Jobs Act, also known as the Bipartisan Infrastructure Law (BIL), signed into law on November 15, 2021), which are in addition to “iron and steel products” requirements described above. Contractor must comply and require its Subcontractors to comply with all applicable

BABA requirements and reporting and must inform the State Water Board immediately of any information regarding a violation of the foregoing.

12. Clean Air Act and Clean Water Act Procurement Prohibitions

Contractor and Subcontractors will comply with all applicable standards, orders or requirements issued under Section 306 of the Clean Air Act and Section 508 of the Clean Water Act including: Executive Order 11738 Administration of the Clean Air Act and the Federal Water Pollution Control Act with Respect to Federal Contracts, Grants, or Loans; 42 USC § 7606; and 33 USC § 1368. Contractor and Subcontractors may not procure goods, services, or materials from suppliers excluded under the federal System for Award Management: sam.gov

13. Byrd Anti-Lobbying Certification

Contractor and Subcontractors certify that:

(a)No Federal appropriated funds have been paid or will be paid, by or on behalf of the Contractor and Subcontractors to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(b)If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the Contractor and Subcontractors shall complete and submit Standard form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(c)Contractor and Subcontractors shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

(d)This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. This certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

END OF SPECIAL ASADRA AND FEDERAL PROVISIONS AND SPECIFICATIONS

SECTION 01140
TEMPORARY ENVIRONMENTAL CONTROLS

PART 1: GENERAL

1.01 DESCRIPTION

A. Furnish all labor, materials, and equipment and perform all work required for the prevention of environmental pollution, biological impacts, and cultural impacts in conformance with applicable laws and regulations, during and as the result of construction under this Contract.

B. Environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which:

1. Adversely affect human health or welfare.

2. Unfavorably alter ecological balances of importance to human life.

3. Affect other species of importance to humankind.

4. Degrade the utility of the environment for aesthetic, cultural, and historical purposes.

C. Definitions of Pollutants:

1. Chemical Waste: Petroleum products, bituminous materials, salts, acids, alkalis, herbicides, pesticides, organic chemicals, and inorganic wastes.

2. Debris: Combustible and noncombustible waste, such as leaves, tree trimmings, ashes, and waste materials, resulting from construction or maintenance and repair work.

3. Sediment: Soil and other debris that has been eroded and transported by runoff water.

4. Solid Waste: Rubbish, debris, garbage, and other discarded solid materials resulting from industrial, commercial, and agricultural operations and from community activities.

5. Surface Discharge: Waters that are surface discharged may terminate in drainage ditches, storm sewers, creeks, and/or "waters of the United States" and would require a permit to discharge water from one or more regulatory authorities.

6. Rubbish: Combustible and noncombustible wastes such as paper, boxes, glass, metal, and lumber scrap.

7. Sanitary Wastes:

a. Sewage: Domestic sanitary sewage and human and animal waste.

b. Garbage: Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.

1.02 QUALITY CONTROL

A. Establish and maintain quality control for the environmental protection of all items set forth herein.

1.03 SUBMITTALS

A. Submit a Noise Control Plan.

B. Submit cutsheets or technical product literature for any products used for environmental, biological, or cultural protection and control.

1.04 PROTECTION OF ENVIRONMENTAL RESOURCES

A. Perform environmental pollution control and abatement in conformance with applicable local, state, and federal laws and regulations.

B. Protect environmental resources within the Work Area Limits during the entire period of the Contract. Confine activities to areas defined by the Contract Documents.

C. Protection of Land Resources: Prior to construction, identify all land resources to be preserved within the Work Area Limits. Do not remove, cut, deface, injure, or destroy land resources, including trees, shrubs, vines, grasses, topsoil, and land forms, without permission from the Owner. Do not fasten or attach ropes, cables, or guys to trees for anchorage unless specifically authorized, or where special emergency use is permitted.

1. Protect survey monuments and markers before construction operations begin.

2. If any irrigation is disrupted, provide irrigation of areas disrupted via temporary lines or other means. Return disrupted areas to similar conditions as prior to disruption. District to approve all plantings prior to work.

3. Handle and dispose of solid wastes in such a manner that will prevent contamination of the environment. Place solid wastes (excluding clearing debris) in containers that are emptied on a regular schedule. Transport all solid waste off the Site and dispose of waste in compliance with applicable requirements.

a. Maintain areas free of waste materials, debris, and rubbish. Maintain the Site in clean and orderly condition.

b. Remove debris and rubbish from the Site as necessary during the day and also at the end of every Working Day.

c. Broom and vacuum clean paved areas (both onsite and offsite as necessary) through the use of a motorized pickup sweeper at the end of every Working Day and as requested by the Owner and/or jurisdictional agency.

4. Store chemical waste away from the work areas in corrosion resistant containers and dispose of waste in accordance with Federal, State, and local regulations.

D. Protection of Air Resources: Perform construction activities to minimize pollution of air resources. Burning is not permitted on the Site. Activities, equipment, processes, and work shall be operated or performed in strict accordance with the requirements of the Santa Barbara County Air Pollution Control District (SBAPCD). In particular, the Contractor shall implement the following fugitive dust control measures during construction activities:

1. During construction, water trucks or sprinkler systems shall be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the Site and from exceeding SBCAPCD's limit of 20 percent opacity for greater than three minutes in any 30 minute period. At a minimum, this should include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency shall be required whenever the wind speed exceeds 15 miles per hour. Reclaimed water shall be used whenever practicable. However, reclaimed water shall not be used in or around crops for human consumption.

2. The amount of disturbed area shall be minimized.

3. On-site vehicle speeds shall be no greater than 15 miles per hour when traveling on unpaved surfaces.

4. A track-out prevention device shall be installed and operated where vehicles enter and exit unpaved roads onto paved streets. The track-out prevention device can include any device or combination of devices that are effective at preventing track out of dirt such as gravel pads, pipe-grid track-out control devices, rumble strips, or wheel washing systems.

5. If stockpiling of material is involved, soil stockpiled for more than one day shall be covered, kept moist, or treated with soil binders to prevent dust generation.

6. After clearing, grading, earth moving or excavation is completed, the disturbed area shall be treated by watering, or using roll-compaction, or revegetating, or by spreading soil binders until the area is paved or otherwise developed so that dust generation will not occur. All driveways and sidewalks to be paved/surfaced shall be completed as soon as practicable.

7. The Contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off-site. Their duties shall include holiday and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the SBCAPCD prior to grading/building permit issuance and/or map clearance.

8. The Contractor shall comply with SBCAPCD Rule 345: Control of Fugitive Dust from Construction and Demolition Activities, including all applicable standards and

measures therein.

E. Fueling/Maintenance: Fueling and maintenance operations shall be done in a manner that prevents spillage of fuel or dropping of petroleum products. If in the opinion of the Owner contaminated soil is present, they shall request that it be hauled off the Site and disposed of in accordance with applicable regulations.

F. Storage of Materials, Equipment, and Stockpiles: The Contractor shall store materials and equipment (when not in use) on impervious surfaces or plastic ground covers to prevent spills or leakage. Material storage and material/spoils from project activities shall be located and stored 100 feet from waterways. The Contractor shall maintain adequate spill prevention and response equipment on site and readily available to implement to minimize impacts to the aquatic and marine environments. The Contractor shall protect construction materials and spoils from stormwater runoff using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate.

G. Restoration of Damaged Property: If any direct or indirect damage is done to public or private property resulting from any act, omission, neglect, or misconduct, the Contractor shall restore the damaged property to a condition equal to that existing before the damage at no additional cost to the Owner. Repair, rebuild, or restore property as directed or make good such damage in an acceptable manner.

H. Final Clean up: On completion of the Work and after removal of all debris, rubbish, and temporary construction, Contractor shall leave the construction area in a clean condition satisfactory to the Owner. Inadequate final cleanup shall be grounds for the Owner to withhold funds.

1.05 NOISE AND VIBRATION CONTROL

A. Definitions:

1. Day Work: Construction activities performed between 7:00 a.m. and 4:30 p.m.

B. Noise Control (Day Work): The following noise control procedures shall be employed for work hours scheduled between 7 am to 10 pm:

1. Contractor shall submit a Noise Control Plan describing measures the Contractor will implement to limit noise levels during Day Work. The Noise Control Plan shall include product data for materials and/or equipment the Contractor proposes to use to limit noise levels, and shall include a drawing showing each applicable site and the proposed placement of all noise control measures. The Noise Control Plan shall include additional measures the Contractor will implement in the event that noise levels exceed the requirements herein.

2. Maximum Noise Levels: The Contractor shall maintain noise levels below 80 dBA L_{eq} averaged over 8 hours at the Site boundary.

3. Minimum Noise Abatement Requirements: The following noise abatement measures must be implemented by the Contractor. These noise abatement measures are minimum requirements meant to be improved or expanded upon as needed to comply with the noise level limit:

    a. Acoustical mufflers and engine shielding shall be utilized on all engines in regular use on the Site.

    b. Limit the number and duration of equipment idling.

    c. Maintain equipment such that parts and loads are secure against rattling and banging.

    d. The Contractor shall install temporary sound barriers/blankets along each project boundary line adjacent to the nearest single-family residences. The temporary barriers/blankets shall have a minimum sound transmission loss of 21 and noise reduction coefficient of 0.75. The temporary barriers/blankets shall be of sufficient height to extend from the top of the temporary construction fence and drape on the ground or be sealed at the ground. The temporary barriers/blankets shall have grommets along the top edge with exterior grade hooks, and loop fasteners along the vertical edges with overlapping seams, with a minimum overlap of 2 inches. Barriers shall work in conjunction with the safe operation of existing and temporary traffic controls. The Contractor's design and detailing of framework, supports, ties, attachment methods and other appurtenances required for the proper installation of any portable noise barriers, sound enclosures, soundwalls, and/or curtains that may be required. The Contractor's design and details shall be prepared and stamped by a Professional Engineer licensed in the State of California. The noise barrier shall be designed to withstand 80 mile-per-hour wind loads plus a 30% gust factor, unless indicated otherwise by the Contractor's engineer.

    e. All heavy-duty stationary construction equipment shall be placed so that emitted noise is directed away from the nearest residences and other noise-sensitive land uses (e.g., schools).

    f. The Contractor shall provide a sign at the yard entrance, or other conspicuous location, that includes a 24-hour telephone number for project information, and a procedure where a field engineer/construction manager will respond to and investigate noise complaints and take corrective action, if necessary, in a timely manner. The sign shall have a minimum dimension of 48 inches wide by 24 inches high. The sign shall be placed 5 feet above ground level.

    g. If a noise complaint(s) is registered, the Contractor shall be prepared to retain a District-approved Noise Consultant to conduct noise measurements at the use(s) that registered the complaint. The Contractor shall be prepared to undertake immediate corrective action identified by the District-approved noise consultant in the event that the noise level limits are exceeded.

    h. The Contractor may also use the following measures to reduce noise levels:

        i. Restricting the use of bells, whistles, alarms, and horns to safety

warning purposes only.

ii. Using noise-reducing enclosures around stationary noise-generating equipment (e.g., compressors and generators).

iii. Locating stationary noise-generating equipment as far from residences and other noise-sensitive receivers (e.g., schools), as feasible.

i. The Contractor shall supply/implement any additional measures/materials required to comply with the noise level limits.

1.06 PROTECTION OF BIOLOGICAL RESOURCES

A. Prior to initial ground-disturbing construction activities (e.g., vegetation clearing, grading, excavation, and other site preparation), a professional Qualified Biologist shall be retained by the District. The Contractor shall coordinate with the Qualified Biologist to implement the Worker Environmental Awareness Program for biological resources, as described in the Project CEQA Mitigation Monitoring and Reporting Program, included with these contract documents. Refer to Mitigation Measure BIO-1: Worker Environmental Awareness Program for additional requirements in Appendix E. The Contractor shall notify and coordinate with the Owner a minimum of 14 Calendar Days in advance of the start of any ground disturbance or excavation. No ground disturbance or excavation will be allowed prior to successful completion of the Worker Environmental Awareness Program. The Contractor shall have all workers that will be associated with ground-disturbing or excavation activities, including subcontractors, present at the Worker Environmental Awareness Program. Any worker not present at the Worker Environmental Awareness Program will not be allowed to perform ground-disturbing or excavation-related activities. Should the Contractor need to use additional worker(s), they shall be required to attend a Worker Environmental Awareness Program by the District's Biologist. The cost of any additional Worker Environmental Awareness Program sessions beyond the first preconstruction training shall be borne by the Contractor. The Contractor shall allow 2 hours for the Worker Environmental Awareness Program. The cost of any additional Worker Environmental Awareness Program sessions which may be required by the Contractor shall be $900 per session and be at the Contractor's expense.

B. Prior to mobilization, where the project work is adjacent to native habitat (i.e., environmentally sensitive habitat, riparian habitat, sensitive natural communities), the Contractor shall erect temporary construction fencing at the edge of the construction area to avoid impacts to the habitat throughout the duration of construction. If encroachment into sensitive natural communities cannot be avoided, the Contractor shall minimize areas of temporary disturbance within these habitats to the extent practicable. The Contractor shall limit staging and parking areas to sites which are unvegetated and/or previously disturbed areas comprising ruderal vegetation or non-native annual grasslands, ornamental landscaping, and paved/graded areas, to the extent practicable. If removal of sensitive vegetation is necessary during excavation and/or grading, the Contractor shall salvage and store the topsoil (top six inches) in temporary stockpiles and replace it in the same area following completion of excavation/grading activities. If removal of non-native invasive vegetation is necessary during excavation and/or grading,

the Contractor shall separate the plant material and topsoil and export them off-site to a landfill or similar disposal facility. The Contractor shall store temporary stockpiles with invasive species away from salvaged sensitive natural communities and separate from sensitive vegetation topsoil. If revegetation of the Site is necessary for soil stabilization and/or fugitive dust control, the revegetation plant palette used by the Contractor shall be free of invasive plants listed in the California Invasive Plant Council Inventory.

C. To avoid and/or minimize potential direct and indirect impacts to special status species and potentially jurisdictional waters and water quality outside of the project work area, the Contractor shall implement the following:

1. Prior to project mobilization, all limits of construction work adjacent to potentially jurisdictional waters shall be clearly delineated with orange construction fencing or similar highly visible material and maintained throughout the duration of construction.

2. Off-site tracking of loose construction and landscape materials shall be prevented by implementing street sweeping, vacuuming, and rumble plates, as appropriate.

3. Site washout areas shall be at least 100 feet from a storm drain, open ditch, or surface water and prevent runoff flows from such activities from entering receiving water bodies.

4. All vehicles and equipment shall be in good working condition and free of leaks. The Contractor shall prevent oil, petroleum products, or any other pollutants from contaminating the soil or entering a watercourse (dry or otherwise). When vehicles or equipment are stationary, mats or drip pans shall be placed below vehicles to contain fluid leaks.

5. Fugitive dust from ground disturbance activities shall be minimized using water trucks and covering of soil stockpiles.

6. A speed limit of 15 miles per hour for construction vehicles shall be implemented on unpaved non-public roads.

7. All food-related trash shall be disposed of in closed containers and removed from the Site each day during the construction period. Construction personnel shall not feed or otherwise attract wildlife to the construction area. At project completion, all project-generated debris, vehicles, building materials, and rubbish shall be removed from the Site.

8. Pets and firearms shall not be allowed on the Site during construction.

D. Work, including vegetation removal, ground disturbance, and construction and demolition, shall be initiated outside of the bird breeding season (January 1 to September 1), if practicable. If work must initiate during bird breeding season, the Contractor shall coordinate with the District-provided Biologist to implement the Pre-Construction Nesting Bird Surveys, Pre-Construction Presence/Absence Surveys for Special Status Wildlife Species, and Biological Construction Monitoring, as described for Mitigation Measures BIO-7, BIO-8, and BIO-9 in the Project CEQA Mitigation Monitoring and

Reporting Program, included as Appendix E to these contract documents. The Contractor shall provide a minimum of 14 Calendar Days of notice to the District prior to any instances of initial ground-disturbing activities (e.g., grading, excavation, and other site preparation) and vegetation removal to allow adequate time to schedule Biological Surveyors and a Biological Monitor. If the Contractor cancels work for which a Biological Monitor has been scheduled with less than 24 hours' notice, the monitor cancellation fee shall be $900 per event and shall be at the Contractor's expense.

E. If active bird nests are found during Pre-Construction Nesting Bird Surveys, the Contractor shall comply with the avoidance buffer(s) demarcated by the District-provided Biologist. The Contractor shall notify all construction personnel as to the existence of the buffer zone and instruct personnel to avoid entering the buffer zone during the nesting season. The Contractor shall not conduct any ground-disturbing activities inside this buffer until the District-provided Biologist has confirmed breeding/nesting is completed, and the young have fledged the nest. Encroachment into the buffer by the Contractor shall only be allowed at the discretion of the District-provided Biologist.

F. If non-listed special status wildlife species are found during the Pre-Construction Presence/Absence Surveys for Special Status Wildlife Species, the District-provided Biologist shall temporarily move any identified special status wildlife species outside of the construction area, and the Contractor shall place temporary barriers around the construction area, as practicable, to prevent ingress of the species. The Contractor shall not proceed with work until the District-provided Biologist determines the work area is free of special status wildlife species.

G. The Contractor shall avoid conducting construction activities between dusk and dawn adjacent to the unnamed drainages associated with the Park Lane site to avoid impacts to special status wildlife in and near these drainages. If construction must occur between dusk and dawn, the Contractor shall shield all lighting and direct it downward to minimize the potential for glare or spillover onto adjacent properties and to reduce impacts on local wildlife.

1.07 PROTECTION OF CULTURAL AND PALEONTOLOGICAL RESOURCES

A. Prior to initial ground-disturbing construction activities (e.g., vegetation clearing, grading, excavation, and other site preparation), a professional Qualified Archaeologist shall be retained by the District. The Contractor shall coordinate with the Qualified Archaeologist to implement the Cultural Resources Sensitivity Training, as described in the Project CEQA Mitigation Monitoring and Reporting Program, included with these contract documents. Refer to TCR-1: Cultural Resources Sensitivity Training for additional requirements in Appendix E. The Contractor shall notify and coordinate with the Owner a minimum of 14 Calendar Days in advance of the start of any ground disturbance or excavation. No ground disturbance or excavation will be allowed prior to successful completion of the Cultural Resources Sensitivity Training. The Contractor shall have all workers that will be associated with ground-disturbing or excavation activities, including subcontractors, present at the Cultural Resources Sensitivity Training. Any worker not present at the Cultural Resources Sensitivity Training will not be allowed to perform ground- disturbing or excavation-related activities. Should the

Contractor need to use additional worker(s), they shall be required to attend a Cultural Resources Sensitivity Training by the District's Archaeologist. The cost of any additional Cultural Resources Sensitivity Trainings beyond the first preconstruction training shall be borne by the Contractor. The Contractor shall allow 2 hours for the Cultural Resources Sensitivity Training. The cost of any additional Cultural Resources Sensitivity Training sessions which may be required by the Contractor shall be $900 per session and be at the Contractor's expense.

B. The Contractor shall coordinate with the District-provided Native American Monitor to implement the Native American Monitoring, as described for Mitigation Measure TCR-2 in the Project CEQA Mitigation Monitoring and Reporting Program, included as Appendix E to these contract documents. The Contractor shall provide a minimum of 7 Calendar Days of notice to the District prior to any instances of ground-disturbing activities up to five feet below ground surface to allow adequate time to schedule a Native American Monitor. If the Contractor cancels work for which a Native American Monitor has been scheduled with less than 24 hours' notice, the monitor cancellation fee shall be $800 per event and shall be at the Contractor's expense.

C. In the event that archaeological resources or fossils are exposed during project construction, all earth-disturbing work within 50 feet of the find shall be temporarily suspended until a Qualified Archaeologist or Paleontologist, provided by the District, has evaluated the nature and significance of the find. The Contractor shall notify the District immediately of any such find. The District will also consult with locally affiliated Tribes on the identification, treatment, and disposition of tribal cultural resources. Discoveries of archaeological resources or fossils may require further evaluation/treatment (e.g., testing, data recovery excavation, analysis), which will be conducted by the District's Qualified Archaeologist or Paleontologist.

D. In the event that human remains are discovered, no further disturbance shall occur until the County Coroner has made the necessary findings pursuant to Public Resources Code Section 5097.98 as directed by State Health and Safety Code Section 7050.5. Notify the Owner immediately upon discovery. The Native American Heritage Commission shall be notified within 24 hours by the Coroner if the remains are determined to be of Native American descent.

PART 2: PRODUCTS (NOT USED)

PART 3: EXECUTION (NOT USED)

END OF SECTION

SECTION 01270
BID ITEM DESCRIPTION, MEASUREMENT & PAYMENT

PART 1 : GENERAL

1.01 SUMMARY

A. This section provides a description for payment purposes of the various elements, components, actions, equipment and materials that are included with each bid item. Also included is a description of how measurement of a bid item will be performed, as necessary for payment purposes. Lump sum bid items will have no measurement description since the quantity is one.

B. The lump sum price includes full compensation for furnishing all labor, tools, materials, equipment and incidentals required to complete the Work in accordance with the Contract Documents. No other compensation will be allowed therefor.

C. Work for which no separate payment is provided will be considered a subsidiary obligation of the Contractor and the cost thereof shall be included in the applicable contract price for the item to which the work applies.

1.02 BID ITEM DESCRIPTIONS, MEASUREMENT AND PAYMENT

A. Mobilization and Demobilization (Bid Item No. 1).

Payment for mobilization/demobilization will be made at the lump sum price bid therefor in the schedule. The Contract lump sum price for mobilization/ demobilization shall include compensation to the limit allowed by the price bid for the movement of personnel, equipment, supplies and incidentals to and from the Site; for the establishment and removal of offices (if any) and temporary facilities and services at the Site; for the securement of permits required (if any) for the Work and occupancy rights to lands incidental to the Work; for payment of premiums for bonds and all insurance for the Work; for any necessary costs of acquisition of equipment, including purchase and mobilization/demobilization; and for any other work and operations which must be performed or costs that must be incurred incidental to the initiation of meaningful work at the Site, demobilization from the Site, and for which payment is not otherwise provided for under the Contract.

When other Contract items are adjusted, mobilization/demobilization costs will be deemed to have been recovered by the Contractor by the payments made for mobilization/demobilization and will be excluded from consideration in determining compensation therefor. Progress payments for mobilization/demobilization shall be subject to retainage as provided within these Specifications.

Progress payments for mobilization/demobilization will be made as follows:

1. For the first progress payment (after issuance of the Notice to Proceed), 40 percent of the amount bid for mobilization/demobilization will be allowed.

2. When 25 percent of the total original Contract Amount is earned from other schedule items, an additional 25 percent of the amount bid for mobilization/demobilization will be allowed.

3. When 50 percent of the total original Contract Amount is earned from other schedule items, an additional 20 percent of the amount bid for mobilization/demobilization will be allowed.

4. When 75 percent of the total original Contract Amount is earned from other schedule items, an additional 10 percent of the amount bid for mobilization/demobilization will be allowed.

5. When 90 percent of the total original Contract Amount is earned from other schedule items, the final 5 percent of the amount bid for mobilization/demobilization will be allowed.

B. Storm Water Pollution Prevention Plan (Bid Item No. 2).

Includes all items related to the development and approval of the Stormwater Pollution Prevention Plan, as well as the implementation of the measures identified to control storm water quality. Includes all BMPs, maintenance, and inspection required to comply with stormwater discharge requirements.

All work shall be complete and in accordance with the Contract Documents. Payment for bid item will be made at the lump sum price bid therefor in the Bid Schedule.

C. Cleaning and Disinfecting (Bid Item No. 3).

Includes all items related to cleaning and disinfecting the reservoir after the construction is completed. Includes rinsing, cleaning, disinfection, and testing, including potable water conveyance, and additional responsibilities for testing failures.

All work shall be complete and in accordance with the Contract Documents. Payment for bid item will be made at the lump sum price bid therefor in the Bid Schedule.

D. Demolition of Existing Roof, Column and Concrete Pedestal (Bid Item No. 4).

Includes all items related to the demolition, haul, and disposal of the existing reservoir's metal roofing panels, wood roof framing, steel columns, concrete pedestal, a portion of the floor slab adjacent to the wall, and exterior concrete channel, in accordance with the Contract Drawings.

All work shall be complete and in accordance with the Contract Documents. Payment for bid item will be made at the lump sum price bid therefor in the Bid Schedule.

E. Concrete Wall (Bid Item No. 5).

Includes all items related to the construction of the concrete wall as required and in accordance with the Contract Drawings and Specifications.

All work shall be complete and in accordance with the Contract Documents. Payment for bid item will be made at the lump sum price bid therefor in the Bid Schedule.

F. Concrete Wall Footing and Floor Slab(Bid Item No. 6).

Includes all items related to the construction of the concrete wall footing retrofit as required and in accordance with the Contract Drawings and Specifications.

All work shall be complete and in accordance with the Contract Documents. Payment for bid item will be made at the lump sum price bid therefor in the Bid Schedule.

G. Concrete Columns and Column Footings (Bid Item No. 7).

Includes all items related to the concrete columns and column footings as required and in accordance with the Contract Drawings and Specifications.

All work shall be complete and in accordance with the Contract Documents. Payment for bid item will be made at the lump sum price bid therefor in the Bid Schedule.

H. Concrete Roof Slab (Bid Item No. 8).

Includes all items related to the construction of the concrete roof slab as required and in accordance with the Contract Drawings and Specifications.

All work shall be complete and in accordance with the Contract Documents. Payment for bid item will be made at the lump sum price bid therefor in the Bid Schedule.

I. Hatches and Vents (Bid Item No. 9).

Furnish and install reservoir appurtenances including aluminum hatches, and aluminum roof vents as required and in accordance with the Contract Drawings and Specifications.

All work shall be complete and in accordance with the Contract Documents. Payment for bid item will be made at the lump sum price bid therefor in the Bid Schedule.

J. Ladders and Guardrails (Bid Item No. 10).

Furnish and install aluminum guardrails, interior stainless-steel ladders, and exterior steel ladder as required and in accordance with the Contract Drawings and Specifications.

All work shall be complete and in accordance with the Contract Documents. Payment for bid item will be made at the lump sum price bid therefor in the Bid Schedule.

K. Site Security Fencing and Gates (Bid Item No. 11).

Includes furnishing all materials, labor, tools, equipment, incidentals, and performing all work related to the new security measures, including the chain link fence and gate.

All work shall be complete and in accordance with the Contract Documents. Payment for bid item will be made at the lump sum price bid therefor in the Bid Schedule.

L. Piping, Site, and Drainage Modifications (Bid Item No. 12).

Drainage

Includes furnishing all materials, labor, tools, equipment, incidentals, and performing all work related to the drainage system, including the mud valve assembly with valve extension stem, CIPP lining of the existing drainage pipe and related items including excavation, filling, compaction, and forms.

All work shall be complete and in accordance with the Contract Documents. Payment for bid item will be made at the lump sum price bid therefor in the Bid Schedule.

Inlet and Outlet Piping System

Includes furnishing all materials, labor, tools, equipment, incidentals, and performing all work related to the Inlet and Outlet Piping System, including the check valve, HDPE and steel piping, concrete pipe supports, and connections to existing piping.

All work shall be complete and in accordance with the Contract Documents. Payment for bid item will be made at the lump sum price bid therefor in the Bid Schedule.

M. Concrete Swale (Bid Item No. 13).

Includes furnishing all materials, labor, tools, equipment, incidentals, and performing all work related to the 2’ wide concrete swale, including crushed aggregate base and ending sections of rip rap.

All work shall be complete and in accordance with the Contract Documents. Payment for bid item will be made at the lump sum price bid therefor in the Bid Schedule.

N. Crushed Aggregate Base Site Installation (Item No. 14).

Includes furnishing all materials, labor, tools, equipment, incidentals, and performing all work related to the installation of crushed aggregate base across the site area, including cutting existing and compacting existing grade.

All work shall be complete and in accordance with the Contract Documents. Payment for bid item will be made at the lump sum price bid therefor in the Bid Schedule.

O. GPR Floor Slab Scan (Bid Item No. 15).

Includes all labor, tools, equipment, incidentals, and performing all work related to the GPR Floor Slab Scan for void space underneath the existing floor slab and development of the report and heatmap showing the size and location of the void space.

All work shall be complete and in accordance with the Contract Documents. Payment for bid item will be made at the lump sum price bid therefor in the Bid Schedule.

P. Small Void Remediation (Bid Item No. 16).

Includes furnishing all materials, labor, tools, equipment, incidentals, and performing all work related to the remediation of small voids beneath the existing floor slab identified in the GPR floor slab scan remediated by polyurethane foam injection.

All work shall be complete and in accordance with the Contract Documents. Payment for the bid item will be made at the unit price bid in the Bid Schedule and the actual hours worked. Measurement shall start upon drilling/coring the concrete and conclude upon completion with the foam injection.

Contractor shall not perform this work until receiving approval from the District. If the actual quantity exceeds the number listed in the Bid Schedule, the contractor will be reimbursed based on the unit rate submitted in the bid. If no small void remediation is required, then no payment will be made against this bid item.

Q. Large Void Remediation (Bid Item No. 17).

Includes furnishing all materials, labor, tools, equipment, incidentals, and performing all work related to the remediation of small voids beneath the existing floor slab identified in the GPR floor slab scan remediated by removal of the existing slab, over excavation of 2-ft of soil and backfill with 2-sack slurry.

All work shall be complete and in accordance with the Contract Documents. Payment for bid item will be made at the unit price bid in the Bid Schedule and the actual hours of work performed. Measurement shall start upon initiation of the saw cut and conclude upon placement of the 2-sack slurry. No other payment shall be made for soil exports, equipment rental, cure time of the 2-sack slurry or any other incidentals related to this activity.

Contractor shall not perform this work until receiving approval from the District. If the actual quantity exceeds the number listed in the Bid Schedule, the contractor will be reimbursed based on the unit rate submitted in the bid. If no large void remediation is required, then no payment will be made against this bid item.

PART 2 : PRODUCTS

(Not Used)

PART 3 : EXECUTION

(Not Used)

END OF SECTION

SECTION 01300
SUBMITTALS

PART 1: GENERAL

1.01 DESCRIPTION

This section includes the requirements for submittals for shop drawings, materials certificates, testing, and record drawings.

1.02 LIST OF SUBMITTALS

The Contractor shall provide a list of all submittals required for the project along with a schedule of when these submittals are to be submitted. This list shall be provided prior to or with the first shop drawing submittals.

1.03 DOCUMENTATION OF EXISTING FACILITIES

A. Provide digital submissions of all photos and/or video.

B. Documentation shall clearly show the condition of existing facilities including existing cracks, settlement, paint blemishes, etc. as well as existing vegetation within 100' of the limits of construction and within the limits of construction.

C. Documentation shall be provided at least 48 hours prior to start of construction at the site.

D. In the event that the Contractor fails to document adequately, the Contractor shall repair any defect noted at the end of Construction at the Contractor's cost.

1.04 TRANSMITTAL

A transmittal or cover letter shall be provided. The transmittal or cover letter shall include a statement that the submittal items(s) are in complete compliance with the bid documents or it must include a statement that there are deviations. A list of those deviations shall be included.

1.05 POTHOLE DATA

A. Submit pothole data including description of found item, material, and survey data locating horizontal and vertical position.

B. Submit valves and manholes dipping data including description of item dipped and survey locating horizontal and vertical position.

1.06 SUBMITTALS

A. Submittals shall be approved prior to the Contractor or any of his subcontractors or suppliers performing related work. Any work completed without approved shop drawings is at the Contractor's sole risk and is subject to rejection and replacement at the District's discretion. The Contractor shall allow adequate time for approval including rejections and re-submittals.

B. Submittals shall be submitted electronically in PDF format. Contractor shall provide means to submit in acceptable manner to District or Engineer. Note that files may not be transmittable via email depending on receiver's security measures. If requested or as noted elsewhere, Contractor shall also provide one or more hard copies of some or all of the submittals, at no additional cost to the District.

C. The Engineer will return submittals to the Contractor within 21 calendar days after receipt of same.

D. The use of contract drawing reproductions for shop drawings is subject to rejection.

E. If the Contractor submits shop drawings of equipment by manufacturers other than those listed in the specifications, he shall provide the following information with the submittal:

1. The name and address of at least three companies or agencies that are currently using the equipment.

2. The name and telephone number of at least one person at each of the above companies or agencies whom the Engineer may contact.

3. A description of the equipment that was installed at the above locations. The description shall be in sufficient detail to allow the Engineer to compare it with the equipment that is proposed to be installed in this project.

F. Pipe shop drawings shall be submitted after the Contractor has potholed the project. Pipe shop drawings submitted prior to potholing are subject to rejection.

G. For equipment or materials requiring NSF approval, include a statement from the manufacturer that states that the component meets NSF 61 requirements.

H. Refer to individual specification sections for specific submittals to be made.

1.07 CERTIFICATES

Submit certificates as required in the individual specification sections.

1.08 TESTS

A. Submit testing procedures/plans with details in accordance with the respective specification section.

B. Submit test results as required in the individual specification sections.

1.09 SAMPLES

A. Samples specified in individual sections include, but are not necessarily limited to, Physical examples of the Work, such as sections of manufactured or fabricated work, small cuts or containers of materials, complete units of repetitively-used products, color/texture/pattern swatches and range sets, specimens for coordination of visual effect, graphic symbols and units of work to be used by the District for independent inspection and testing.

1.10 RECORD DRAWINGS

Except where otherwise provided, the Contractor shall maintain, on the jobsite, a set of full-size contract Plans. On these he shall mark all as-built conditions, locations, configurations, and other details which may vary from the details represented on the bid Plans.

A. Upon completion of work, the Contractor shall provide the District with one complete set of Record Drawings indicating all changes or modifications made during construction. The markings on the drawings shall be clear and legible.

B. The Final Retention Payment will not be made until the District receives the red-lined as-built drawings from the Contractor, in addition to the standard notice of completion procedure.

1.11 WARRANTIES

The Contractor shall provide the manufacturer's warranty for each piece of material and/or equipment that includes a warranty.

1.12 RESUBMITTALS

A. Resubmittals will be handled in the same manner as first submittal. On resubmittals, the Contractor shall direct specific attention, in writing, on the letter of transmittal and on resubmitted Shop Drawings by use of revision triangles or other similar methods, to revisions other than the corrections requested by the Engineer on previous submissions. Any such revisions that are not clearly identified within the submittal package shall be made at the risk of the Contractor. The Contractor shall make corrections to any work done because of this type of revision that is not in accordance with the Contract Documents as may be required by the District.

A. Resubmittals shall be complete in all respects. Each comment made by the Engineer shall be addressed and reflected either by a change in submittal documents or by explanation by the Contractor in the transmittal letter. The Contractor's failure to address all comments may result in the submittal being returned only partially reviewed. Such partial review shall be counted as a complete review for purposes of Paragraph 1.06.E of this Section.

B. Resubmittals shall not contain markings of the Engineer from previous submittals.

1.13 PROJECT SCHEDULES

A. Provide all project schedules in accordance with Section 01320.

B. Engineer's submittal review response for schedule submittal will be "Receipt Acknowledged - Filed for Record" including applicable comments.

1.14 MEASUREMENT AND PAYMENT

Full compensation for Submittals including furnishing all materials, labor, tools, equipment, and incidentals and performing all work described in this Section and as indicated on the Plans shall be included in the Contract price paid for related work and no additional compensation shall be allowed therefor.

PART 2: MATERIALS

(Not Used)

PART 3: EXECUTION

3.01 REVIEWS

A. It is the Contractor's responsibility to conform to the requirements of the contract documents. A review of a submittal does not relieve the Contractor of that responsibility.

B. Review of the submittals is intended only as a single, noncomprehensive step in project quality control.

C. Each submittal will be reviewed as a single package with one status that applies to the entire submittal. Submittal reviews will not be parsed to provide separate reviews for components of the submittal. The Contractor should break out critical items as separate submittals in order to facilitate a status that does not require re-submittal of the critical item.

END OF SECTION

SECTION 01310
PROJECT MEETINGS

PART 1: GENERAL

1.01 SUMMARY

A. Section includes: Requirements for conducting conferences and meetings for the purposes of addressing issues related to the Work, reviewing and coordinating progress of the Work and other matters of common interest, and includes the following:

1. Qualifications of Meeting Participants.
2. Preconstruction Conference.
3. Progress Meetings.
4. Pre-Installation Meetings.
5. Pre-Submittal and Submittal Review Meetings.
6. Pre-Shutdown Meetings.
7. Disinfection and Reservoir Start-up Meetings.
8. Post Construction Meeting.

B. The Engineer reserves the right to schedule additional meetings with project stakeholders at his sole discretion to facilitate the completion of the Work.

1.02 QUALIFICATIONS OF MEETING PARTICIPANTS

A. Representatives of entities participating in meetings shall be qualified and authorized to act on behalf of the entity each represents.

1.03 PRECONSTRUCTION CONFERENCE

A. Prior to the Notice to Proceed, including potholing, District's authorized representative will arrange preconstruction conference in a place convenient for most invitees.

B. Preconstruction Conference invitees: Contractor's project manager and superintendent, Construction Manager, District, Engineer, representatives of utilities, major subcontractors and others involved in performance of the Work, and others necessary to agenda.

C. Authorized District representative will preside at conference.

D. Purpose of conference: To establish working understanding between parties and to discuss Construction Schedule, shop drawing and other submittals, cost breakdown of major lump sum items, processing of submittals and applications for payment, and other subjects pertinent to execution of the Work.

E. Agenda will include:

1. Adequacy of distribution of Contract Documents.
2. Distribution and discussion of list of major subcontractors and suppliers.
3. Preliminary Schedule and critical construction sequencing.
4. Major equipment deliveries and priorities.
5. Project coordination.
6. Designation of responsible personnel.
7. Procedures and processing of:
    a. Field decisions.
    b. Proposal requests.
    c. Submittals.
    d. Change Orders.
    e. Request for Information/Interpretations.
    f. Applications for Payment.
    g. Record Documents.
8. Use of premises:
    a. Office, construction, and storage areas.
    b. District's requirements.
9. Construction facilities, controls, and construction aids.
10. Temporary utilities.
11. Safety and first aid procedures.
12. Security procedures.
13. Housekeeping procedures.

F. The Engineer will record minutes of meeting and distribute copies of minutes within 7 days of meeting to participants and interested parties.

1.04 PROGRESS MEETINGS

A. The Engineer will schedule and administer meetings throughout progress of the Work at maximum weekly intervals.

B. The Engineer will make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings.

C. Attendance required: The District, Engineer, Operator, Contractor, Contractor’s Project Manager, superintendent, quality control manager, project scheduler, major subcontractors, and suppliers as appropriate to agenda topics for each meeting.

D. Additional invitees: District utility companies when the Work affects their interests, and others necessary to agenda.

E. Agenda:
   1. Review minutes of previous meeting/minutes.
   2. Safety and security.
   3. Construction schedule summary.
   4. Review of look-ahead schedule.
   5. Review of off-site fabrication and delivery schedules.
   6. Review of submittals schedule and status of submittals.
   7. Request for information (RFIs) status.
   8. MOPs/shutdown coordination.
   9. Change orders and proposed change orders.
   10. Maintenance of quality standards (QA/QC).
   11. Field observations, problems, and conflicts.
   12. Commissioning and process start-up.
   13. General Items.
   14. Action items.
   15. Next meeting.

F. The Engineer will record minutes and distribute copies within 7 calendar days after meeting to participants, with copies to Contractor, District, and those affected by decisions made.

1.05 PRE-SUBMITTAL AND SUBMITTAL REVIEW MEETINGS

A. When required in individual specification sections or requested by the Engineer, convene pre-submittal and/or submittal review meetings.

B. Require attendance of parties directly affecting, or affected by, Work of specific section.

C. The Engineer will make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings

D. The Engineer will record minutes and distribute electronic copies within 7 calendar days after meeting to participants, with copies to Engineer, Contractor, District, and those affected by decisions made.

1.06 PRE-SHUTDOWN MEETINGS

A. All reservoir shutdowns require a pre-shutdown meeting at the Project site prior to commencing shutdown for tie-in or modification of specific plant systems.

B. Require attendance of parties directly affecting, or affected by shutdown, including Engineer, Contractor, Subcontractors, specific work crews, operations, and maintenance staff.

C. The Engineer will make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings.

D. Anticipated agenda:
   1. Review accepted shutdown procedures including conditions of shutdown, preparation, and installation procedures.
   2. Review timelines and sequences.
   3. Review responsibilities.
   4. Review dry run plan and schedule, as necessary.
   5. Review list of materials and equipment required for the work and availability on site.
   6. Review coordination with related work.

E. The Engineer will record minutes and distribute copies within 7 calendar days after meeting and prior to scheduled shutdown to participants, with copies to Engineer, District, and those affected by decisions made.

1.07 DISINFECTION AND RESERVOIR START-UP MEETINGS

A. Prior to disinfecting the tanks, reintroducing water, and placing the reservoirs in service, the District, Engineer of Record, and Contractor shall convene to discuss process and approach.

B. Require attendance of parties directly affecting, or affected by process start-up and testing, including Engineer, specific work crews, and District's operations and maintenance staff.

C. The Engineer will make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings.

D. Anticipated Agenda:
   1. Review accepted procedures including conditions of process start-up and testing, preparation, and installation procedures.
   2. Review timelines and sequences.
   3. Review responsibilities.
   4. Review dry run plan and schedule, as necessary.
   5. Review coordination with related work.

E. The Engineer will record minutes and distribute electronic copies within 5 calendar days after meeting and prior to scheduled process start-up to participants, with copies to Engineer, District, and those affected by decisions made.

1.08 POST-CONSTRUCTION MEETING

A. Meet with and inspect the Work 10 months after date of Substantial Completion with the District and Engineer.

B. The District will arrange meeting at least 7 days before meeting.

C. Meet in the District's office or other mutually agreed upon place.

D. Inspect the Work and draft list of items to be completed or corrected.

E. Review service and maintenance contracts and take appropriate corrective action when necessary.

F. Complete or correct defective work and extend correction period accordingly.

G. Require attendance of Contractor, Engineer, Project Manager, or Superintendent, appropriate manufacturers and installers of major units of constructions, and affected subcontractors.

PART 2: PRODUCTS

A. Not Used.

PART 3: EXECUTION

A. Not Used.

END OF SECTION

SECTION 01320

CONSTRUCTION PROGRESS SCHEDULES

PART 1: GENERAL

1.01 SUMMARY

A. Section includes: Preparation, submittal, and maintenance of computerized progress schedule and reports, contract time adjustments, and payment requests, including the following:

1. Preliminary Schedule.
2. Baseline Schedule.
3. Monthly Schedule Updates.
4. Weekly Summary Schedule.
5. Schedule of Submittals.
6. Manpower Schedule.
7. Equipment Schedule.
8. Commissioning and Process Start-Up Schedule.
9. As-Built Schedule.

B. Related sections:

1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
2. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.
3. The following Sections are related to the Work described in this Section. This list of Related Sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the Contractor to see that the completed Work complies accurately with the Contract Documents.
    a. Section 01270 – Bid Item Description, Measurement and Payment.

1.02 PURPOSE OF THE SCHEDULE

A. This Section specifies requirements and procedures for the Contractor to prepare construction schedules and schedule reports. The purpose of the schedules and reports shall be to:

1. Ensure adequate planning and timely execution of the work by the Contractor;
2. Establish a Baseline Construction Progress Schedule which subsequent monthly schedule updates will be compared against to determine overall progress and performance towards satisfactory completion of the Project.
3. Facilitate coordination and interfacing of the Contractor's work with others as needed;
4. Assist the Engineer in monitoring progress;

5. Evaluate proposed changes to the Contract and subsequent impacts to the construction schedule;
6. Effectively determine impacts of time extensions to overall Project completion.
7. The Critical Path Method (CPM) type construction schedule will be used to monitor work progress. The Contractor shall be responsible for providing all information concerning the sequencing, logic, and duration of all activities as well as providing the initial CPM logic network (in electronic and paper form) diagram and tabular report data.
8. The Contractor shall use Primavera P6 Professional and a hardware system commensurate with the size of the project. The system shall be capable of handling, processing, printing, and plotting all data required to satisfy the requirements of this Section. All electronic files submitted to the Engineer shall be compatible with Primavera P6 Professional, most current version.

1.03 SCHEDULING FORMAT AND SOFTWARE

A. Schedule format: Utilize CPM format.

B. Prepare computerized schedule utilizing Primavera P6 Professional, most current version.

1.04 PRECONSTRUCTION SCHEDULING MEETING

A. District and representatives will conduct Preconstruction Scheduling Meeting with Contractor's Project Manager a minimum of 7 calendar days before Notice to Proceed. This meeting is separate from the Preconstruction Conference Meeting and is intended to cover schedule issues exclusively.

B. At the meeting, review scheduling requirements. These include schedule preparation, reporting requirements, updates, revisions, and schedule delay analysis. The Contractor shall present its schedule methodology, draft work breakdown structure, planned sequence of operations, and proposed activity coding structure.

C. Coding structure:
1. Submit proposed coding structure, identifying the code fields and the associated code values it intends to use in the project schedule.
2. At a minimum, include code fields for Project Segment or Phase, Area of Work, Type of Work, Responsibility (e.g., District, Contractor, Subcontractor, etc.), and Bid Item.
3. Submittal/Procurement/Construction and Responsibility/Subcontractor. Refer to NETWORK DETAILS AND GRAPHICAL OUTPUT for listing of activity categories to be included in the schedule.

D. Work Breakdown Structure:
1. Submit proposed work breakdown structure (WBS).

E. Naming convention: Name schedule files with the year, month, and day of the data date, revision identifier, and a description of the schedule.
1. Example 1: 2014_07_30 rev 1 draft baseline schedule.xer.

2. Example 2: 2014_09_30 rev 2 sep final update.xer.

1.05 SCHEDULE PREPARATION

A. Preparation and submittal of Progress Schedule represents Contractor's intention to execute the Work within specified time and constraints. Failure to conform to requirement may result in termination for cause as specified in the General Provisions.

B. Contractor's bid covers all costs associated with the execution of the Work in accordance with the Progress Schedule.

C. During preparation of the preliminary Progress Schedule, Engineer will facilitate Contractor's efforts by being available to answer questions regarding sequencing issues, scheduling constraints, interface points, and dependency relationships.

D. Prepare schedule utilizing Precedence Diagramming Method (PDM).

E. Prepare schedule utilizing activity durations in terms of working days. Do not exceed 15 working day duration on activities except concrete curing, submittal review, and equipment fabrication and deliveries. Where duration of continuous work exceeds 15 working days, subdivide activities by location, stationing, or other sub-element of the Work. Coordinate holidays to be observed with the District and incorporate them into the schedule as non-working days.

F. Failure to include an activity required for execution of the Work does not excuse Contractor from completing the Work and portions thereof within specified times and at price specified in Contract. Contract requirements are not waived by failure of Contractor to include required schedule constraints, sequences, or milestones in schedule. Contract requirements are not waived by District's acceptance of the schedule. In event of conflict between accepted schedule and Contract requirements, terms of Contract govern at all times, unless requirements are waived in writing by the District.

G. Reference schedule to working days with beginning of Contract Time as Day "1".

H. Contractor's Bid covers all costs associated with the execution of the Work in accordance with the Baseline Schedule, including field and office overhead for the entire duration of the Contract Time, from the Notice to Proceed to the Contract Completion Date established in the Notice to Proceed, regardless of whether the Contractor's Baseline Schedule shows project completion or interim milestone completion earlier than the durations set forth in the Contract Documents. No compensation will be made for extended overhead for delays that do not extend the Work past the Contract Completion Date originally set forth in the Contract Documents.

I. Schedule logic: Assembled to show order in which Contractor proposes to carry out Work, indicate restrictions of access, availability of Work areas, and availability and use of manpower, materials, and equipment. Form basis for assembly of schedule logic on the following criteria:
   1. Which activities must be completed before subsequent activities can be started?
   2. Which activities can be performed concurrently?
   3. Which activities must be started immediately following completed activities?

4. What major facility, equipment, or manpower restrictions are required for sequencing these activities?

J. Interim milestone dates, operational constraints: In event there are interim milestone dates and/or operational constraints set forth in Contract, show them on schedule. Do not use Zero Total Float constraint or Mandatory Finish Date on such Contract requirements. The only allowable constraint for use in the construction schedule will be for contract milestone dates using a "Finish on or before" constraint, unless otherwise approved by the Engineer.

K. The District's Representative may require the Contractor, at any time during the Project, to develop a more detailed schedule/fragment than depicted in the Construction Progress Schedule to provide a clearer understanding of the effort needed to complete a specific area or task.

1.06 FLOAT OWNERSHIP AND EARLY COMPLETION

A. Contract float is for the mutual benefit of both District and Contractor and is an expiring resource available to and shared by both as needed to meet Contract milestones and the Contract completion date. Changes to the project that can be accomplished within this available period of float may be made by District without extending the Contract time, by utilizing float. Time extensions will not be granted nor delay damages owed until Work extends beyond currently accepted Contract completion date. Likewise, Contractor may utilize float to offset delays other than delays caused by District. Mutual use of float can continue until all available float shown by schedule has been utilized by either District or Contractor, or both. At that time, extensions of the Contract time will be granted by District for valid District-caused or third party-caused delays which affect the planned completion date and which have been properly documented and demonstrated by Contractor. Pursuant to the float sharing requirements of the Contract, use of float suppression techniques such as preferential sequencing, special lead/lag logic restraints, extended activity times, or imposed dates shall be cause for rejection of the Construction Progress Schedule and any revisions or updates. The use of float time shall be shared as directed by the Engineer.

B. Non-sequestering of float: Pursuant to float sharing requirements of Contract, schedule submittals can be rejected for, use of float suppression techniques such as preferential sequencing or logic, special lead or lag logic restraints, extended activity durations or imposed dates. Activity relationships based on resource limitations cannot be included in schedule submittals unless based on a resource-loaded and resource-leveled schedule.

C. District-initiated changes that extend or shorten the Contract Time shall be the sole basis to adjust the Contract completion date. Delays in the critical path not associated with proper requests for time extensions in accordance with the Contract shall be deemed to be the responsibility of the Contractor.

D. Any delays to the Contractor's early completion date shall be non-compensable and is considered Project Float which is not for the exclusive use of either the Contractor or the District.

1.07 NETWORK DETAILS AND GRAPHICAL OUTPUT

A. Produce a clear, legible, and accurate calendar based, time scaled, graphical network diagram. Group activities related to the same physical areas of the Work. Produce the network diagram based upon the early start of all activities.

B. Include for each activity, the description, activity number, estimated duration in working days, total float, and all activity relationship lines.

C. Illustrate order and interdependence of activities and sequence in which Work is planned to be accomplished. Incorporate the basic concept of the precedence diagram network method to show how the start of 1 activity is dependent upon the start or completion of preceding activities and its completion restricts the start of following activities.

D. Indicate the critical path for the project.

E. Delineate the specified contract duration and identify the planned completion of the Work as a milestone. Show the time period between the planned and Contract completion dates, if any, as an activity identified as project float unless a Change Order is issued to officially change the Contract completion date.

F. Identify system shutdown dates, system tie-in dates, specified interim completion or milestone dates, and contract completion date as milestones.

G. Include, in addition to construction activities:
   1. Submission dates and review periods for critical submittals and long-lead equipment. including:
      a. Disinfection and bacteriological testing plan.
      b. Approvals required by regulatory agencies or other third parties.

H. Produce network diagram on 22-inch by 34-inch sheets with grid coordinate system on the border of all sheets utilizing alpha and numeric designations.

I. Identify the execution of the following, at a minimum:
   1. Mobilization.
   2. All required submittals and submittal review times showing 21 calendar day duration for such activities and equal amount of time for re-submittal reviews.
   3. Equipment and materials procurement/fabrication/delivery and installation.
   4. Contractor-obtained permits.
   5. Identification of all subcontract work.
   6. All temporary utilities and construction.
   7. Excavation & Re-compaction.
   8. Underground utilities
   9. Foundations
   10. Shutdowns, diversions, and tie-ins to the existing facilities.
   11. Switch over between temporary and permanent facilities, equipment, piping, and electrical and instrumentation systems as may be required.

12. Backfill and compaction.
13. Grading, subbase, base, paving, and curb and gutters.
14. Fencing and landscaping.
15. Concrete, including installation of forms and reinforcement, placement of concrete, curing, stripping, finishing, and patching.
16. Tests for leakage of concrete structures intended to hold water.
17. Disinfection testing and returning the reservoirs to service.

1.08 SUBMITTAL OF SCHEDULES

A. Submit preliminary and baseline schedule.

B. Submit, on a monthly basis, updated schedules as specified.

C. Submit revised schedules and time impact analyses as specified.

D. Submit schedules in the media and number of copies as follows:
   1. CPM Schedule data electronic files in a native backed-up file (.XER).

1.09 PRELIMINARY SCHEDULE

A. Submit Preliminary Schedule at the Pre-Construction Meeting prior to issuance of the Notice to Proceed. Include a detailed plan of operations for first 60 calendar days of Work after receipt of Notice to Proceed. :
   1. Proposed procurement activities to be accomplished during the first 60 calendar days of the Contract.
      a. Procurement activities shall include mobilization, key shop drawing and sample submittals and the fabrication and delivery of key and long-lead procurement elements and indicate intended submittal, review and approval, and realistic dates for fabrication and delivery activities.
      b. Procurement activities shall later be incorporated into the Baseline Construction Schedule (discussed hereinafter) including all requested revisions.
   2. Proposed construction activities to be accomplished during the first 60 calendar days of the Contract.
      a. Construction activities shall later be incorporated into the Baseline Construction Schedule including all requested revisions.
   3. Summary activities which are necessary to properly indicate:
      a. The approach to scheduling the remaining Work areas or phases of the Work. The Work for each phase or area must be represented by at least one summary activity such that they cumulatively indicate the entire Construction Schedule

B. The Preliminary Schedule shall conform to the requirements outlined in this specification.

C. Meet with Engineer within 7 calendar days after receipt of Preliminary Schedule to review and make necessary adjustments. Submit revised Preliminary Schedule within 5 calendar days after meeting. The Engineer's Preliminary Schedule review comments shall be incorporated into the Baseline Construction Schedule.

1.10 BASELINE SCHEDULE

A. No more than 30 calendar days following the preconstruction conference, submit the Baseline Schedule for all Work of the project. Show sequence and interdependence of all activities required for complete performance of all Work, beginning with date of Notice to Proceed and concluding with date of final completion of Contract. The Baseline Schedule shall include a written narrative explaining the plan as set forth in the CPM logic network and schedule.

B. Acceptance of the Baseline Schedule by the District is a condition precedent to making payments as specified in Section 01270 after the first 60 calendar days after Notice to Proceed.

C. All activities in the Baseline Schedule and Schedule Updates shall use the physical percent complete type.

D. The Contractor shall collect data and information from subcontractors, suppliers, and equipment manufacturers for incorporation into the Baseline Schedule. The Baseline Schedule submittal shall include certification in the form of signatures from all subcontractors listed in the Bid, suppliers and equipment manufacturers validating data collected for schedule development and concurrence with Contractor's Baseline Schedule.

E. The Work activities comprising the Baseline Schedule shall be of sufficient detail to assure adequate planning and execution of the Work such that, in the judgment of the Engineer, it provides an appropriate basis for forecasting, monitoring, and evaluating the progress of the Work. Work activities shall conform to the following requirements:

1. Describe Work activities using consistent terminology such that the Work is readily identifiable for assessment of completion.
2. The construction time as determined by the schedule from early start to late finish for any subphase, phase, or the entire project shall not exceed the Contract times specified or shown in the Contract Documents. One day shall be the smallest time unit shown unless otherwise directed by the Engineer. The Contractor shall develop a project-specific calendar for the project so that the calendar does not affect the global Primavera calendar database.
3. Activities labeled "start," "continue," or "completion" will not be allowed. Logic relationships between activities shall be limited to finish to start type relationships. The use of durations between activities, or lags, shall not be permitted.

F. The Baseline Schedule shall contain the following standard milestones:

1. Notice to Proceed
2. Mobilization
3. Construction Start

4. Any specified Contract Milestones for each phase of work as identified in the Contract Documents
5. Substantial Completion
6. Final Completion

G. The Baseline Schedule shall begin with the date of issuance of the Notice to Proceed and shall not exceed the maximum number of days provided by the Contract. It shall include, but not be limited to, the following items:
1. Timing of the phased or total takeover by District.
2. Clearly identify all non-work days in the schedule, such as District holidays, craft holidays or other non-work periods. A project-specific calendar shall be prepared for the Baseline Schedule reflecting non-work days. Global calendars will not be accepted.
3. Specific information required by the Engineer.

H. The Baseline Construction Schedule shall demonstrate the final level of detail for each activity and shall contain the required relationships completely identified and the durations of each activity correctly depicted. The Baseline Construction Schedule shall be developed as follows:
1. The Baseline Construction Schedule shall contain no Contract changes or delays which may have been incurred during the interim schedule development period. These changes will be entered at the first update after the Baseline Construction Schedule has been accepted and a change to the Contract time or duration was made via an approved Change Order. Unexecuted change orders and corresponding time impacts shall not be incorporated into the Progress Schedule until a Change Order has been fully executed.
2. The Baseline Construction Schedule submitted for review and approval by the Engineer shall be un-statused and the data date shall be the Contract Notice to Proceed date. Reference schedule to working days with the Notice to Proceed date corresponding to Day "1."
3. The Baseline Construction Schedule shall clearly indicate the longest critical path of activities from Notice to Proceed to the Contract completion date.
4. The Contractor shall submit certification that the approved construction schedule has been reviewed and discussed with all subcontractors, suppliers and vendors as it relates to their work prior to commencement of their work.
5. Once the Baseline Construction Progress Schedule is accepted it becomes the schedule of record and the basis for future schedule updates.
6. After the acceptance of the Baseline Construction Progress Schedule, no changes shall be made therein without approval of the Engineer.

1.11 REVIEW AND ACCEPTANCE OF SCHEDULES

A. Engineer will review Baseline Schedule, Schedule Updates, Schedule Revisions, and Time Impact Analyses to ascertain compliance with specified project constraints, compliance with milestone dates, reasonableness of durations and sequence, accurate inter-relationships and completeness.

B. Engineer and District will issue written comments following completion of review of Baseline Schedule within 21 calendar days after receipt.

C. Written comments on review of Schedule Updates and Schedule Revisions and Time Impact Analyses will be returned to Contractor within 14 calendar days after receipt by Engineer.

D. Revise and resubmit schedule in accordance with Engineer's comments within 7 calendar days after receipt of such comments, or request joint meeting to resolve objections.

E. If Engineer requests a meeting the Contractor and all major subcontractors must participate in the meeting with Engineer.

F. Revise and resubmit schedule within 7 calendar days after meeting.

G. Use accepted schedule for planning, organizing, and directing the work and for reporting progress.

H. Engineer's submittal review response:
   1. When schedule reflects District's and Contractor's agreement of project approach and sequence, schedule will be accepted by District.
   2. Engineer's submittal review response for schedule submittal will be "Receipt Acknowledged - Filed for Record" including applicable comments.
   3. Acceptance of the schedules by the District is for general conformance with the Contract Documents and for District's planning information, and does not relieve the Contractor of sole responsibility for planning, coordinating, and executing the Work within the contract completion dates. Omissions and errors in the accepted schedules shall not excuse performance less than that required by the Contract Documents. Acceptance by the District in no way constitutes an evaluation or validation of the Contractor's plan, sequence or means, methods, and techniques of construction.

1.12 SCHEDULE UPDATES

A. Any update:
   1. Prepare update using most recent accepted version of schedule including:
      a. Actual start dates of activities that have been started.
      b. Actual finish dates of activities that have been completed.
      c. Percentage of completion of activities that have been started but not finished using physical percent complete. Duration percent complete and other scheduling methodologies that assume actual progress in accordance with planned progress shall not be accepted. Physical completion percentages shall be manually entered.
      d. Actual dates on which milestones were achieved.
      e. Update activities by inputting physical percent complete figures with actual dates.
      f. Use retained logic in preparing Schedule Updates.

g. When necessary, input remaining durations for activities whose finish dates cannot be calculated accurately with a percent complete figure only.

h. Revisions to the schedule may be included that have been previously approved as specified in this Section under Revisions to Schedule.

i. Original durations established in the accepted Baseline Schedule shall not be changed in Schedule Updates.

j. Default progress data provided from the scheduling system shall not be allowed. Actual start and finish dates shall not be automatically updated by default mechanisms that may be included in CPM scheduling software systems. Actual start and finish dates in the Construction Progress Schedule database shall match those dates provided from the Contractor Daily Reports. Failure of the Contractor to document the actual start and finish dates on the Contractor Daily Report for every in-progress or completed activity and to ensure that the data contained on the Contractor Daily Reports is the sole basis for schedule updating shall result in the disapproval of the Contractor's schedule and the inability of the Engineer to evaluate the Contractor's progress for payment purposes.

k. Activities that have reported progress without predecessor activities being completed, Finish Start Relationship (FS) (Out-of-Sequence Progress) will not be allowed except on a case-by-case basis with the approval from the Engineer. A written explanation of each activity shall be included in the narrative report that accompanies each Schedule Update. The Engineer may direct that changes in schedule logic be made to correct any or all out-of-sequence Work.

B. Monthly updates:

1. Once the Baseline Construction Schedule is accepted by the Engineer, the Contractor shall be responsible for preparing and submitting update information on logic, physical percent complete, actual start and finish dates, duration changes, and related reports, diagrams, and schedules based on the progress payment cycle.

2. Submit written narrative report in conjunction with each Schedule Update including descriptions of the following:

a. Current and anticipated delays.

1) Cause of the delay;

2) Corrective action and schedule adjustments to correct the delay;

3) Impact of the delay on other activities, milestones and completion dates.

b. Activities added to or deleted from the schedule are to adhere to cost and other resource loading requirements.

1) Identify added activities in manner distinctly different from original activity designations.

c. Changes in sequence, logic changes, relationship changes, or estimated duration of activities and the rationale associated with each change.

d. Pending issues and status of other items:

1) Permits;

2) Contract modifications;

3) Time extension requests;

4) Long-lead procurement items;

e. Assumptions made and activities affected by incorporating change order work into the schedule. Change order work shall not be incorporated into the schedule until a fully executed contract change order has been issued. Potential or proposed change orders shall not be incorporated into the schedule.

f. Other project or scheduling concerns such as procurement of long lead items.

1.13 REVISIONS TO SCHEDULE

A. Submit Revised Schedule within 5 calendar days:

1. When delay in completion of any activity or group of activities indicates an overrun of the Contract time or milestone dates by 15 working days or 5 percent of the remaining duration, whichever is less.
2. When delays in submittals, deliveries, or work stoppages are encountered making necessary the re-planning or rescheduling of activities.
3. When the schedule does not represent the actual progress of activities.
4. When any change to the sequence of activities, the completion date for major portions of the work, or when changes occur which affect the critical path.
5. When Contract modification necessitates schedule revision, submit schedule analysis of change order work with cost proposal.

B. Create a separate submittal for Schedule Revisions:

1. Comply with schedule updates as specified in this Section.
2. Do not submit with Schedule Updates.

C. Schedule Revisions will not be reflected in the schedule until after the revision is accepted by the District:

1. This includes Schedule Revisions submitted for the purpose of mitigating a Contractor-caused project delay (Recovery Schedule).

D. Schedule revisions shall include a detailed, written statement from the Contractor describing the Contractor's plan to recover the projected schedule delays.

E. Under no circumstances will the addition of equipment or construction forces, increasing the working hours or any other method, manner, or procedure to recover delays to the CPM Schedule be considered justification for contract modification or extra Work.

1.14 PAYMENT REQUESTS

A. Progress payments will not be made until monthly Progress Schedule Update is provided and physical completion percentages for each activity are approved by the Engineer.

1.15 WEEKLY SCHEDULE

A. Submit to Engineer, no later than 24 hours prior to the weekly progress meeting, a 4-Week Schedule showing the activities completed during the previous week and the

Contractor's schedule of activities for following 3 weeks. The Engineer may require further breakdown of certain activities in the look ahead schedules.

B. Use the logic and conform to the status of the current progress schedule when producing a Weekly Schedule in CPM schedule or a bar chart format. In the event that the Weekly Schedule no longer conforms to the current schedule, Contractor may be required to revise the schedule as specified in this Section.

C. The activity designations used in the Weekly Schedule must be consistent with those used in the Baseline Schedule and the monthly Schedule Updates. When activities used in the Baseline Schedule are further subdivided in the Weekly Schedule, specify Activity IDs for each activity that correspond to the Baseline Schedule activities.

D. Contractor and Engineer must agree on the format of the Weekly Schedule.

1.16 ADJUSTMENT OF CONTRACT TIME

A. Contract Time will be adjusted only for causes specified in Contract Documents.

1. Non-excusable delay: Non-excusable delays include actions or inactions of the Contractor, or events for which the Contractor has assumed contractual responsibility (including actions or inactions of subcontractors, suppliers, or material manufacturers at any tier) that would independently delay the completion of the Work beyond the current Contract completion date). No time extensions will be granted for non-excusable delays and liquidated damages may be assessed by the District.
2. Excusable delay: Events which are unforeseeable, outside the control of, and without the fault or negligence of either the District or the Contractor (or any party for whom either is responsible), which would independently delay the completion of the Work beyond the current Contract completion date. The Contractor is entitled to a time extension only. No other damages will be approved, including but not limited to extended overhead and home office overhead.
3. Compensable delay: Actions or inactions of the District, or events for which the District has assumed contractual responsibility, which would independently delay the completion of the Work beyond the current Contract completion date. The Contractor is entitled to a time extension and delay damages.
4. Concurrent delay: Concurrent delay is any combination of the above 3 types of delay occurring on the same calendar date.
    a. Exception to concurrent delay: Cases where the combination consists of 2 or more instances of the same type of delay occurring on the same calendar date. When one cause of delay is District-caused or caused by an event which is beyond the control and without the fault or negligence of either the District or the Contractor and the other Contractor-caused, the Contractor is entitled only to a time extension and no delay damages.

B. If the Contractor believes that the District has impacted its work, such that the project completion date will be delayed, the Contractor must submit proof demonstrating the delay to the critical path. This proof, in the form of a Time Impact Analysis, may entitle the Contractor to an adjustment of contract time.

C. The Time Impact Analysis:

1. Use the accepted schedule update that is current relative to the time frame of the delay event (change order, third party delay, or other District-caused delay) and update the schedule to the occurrence of the delay event if the delay event occurs after the data date of the accepted schedule update. Represent the delay event in the schedule by:
    a. Inserting new activities associated with the delay event into the schedule,
    b. Revising activity logic, or
    c. Revising activity durations.
2. Updates to the previously accepted schedule update used for preparation of the Time Impact Analysis are subject to the District's review and approval.
3. If the project schedule's critical path and completion date are impacted as a result of adding this delay event to the schedule, a time extension equal to the magnitude of the impact may be warranted.
4. The Time Impact Analysis submittal must include the following information:
    a. A fragment of the portion of the schedule affected by the delay event.
    b. A narrative explanation of the delay issue and how it impacted the schedule.
    c. A narrative explanation of each and every revision included in the fragment including, but not limited to, logic/relationship changes and duration changes.
    d. The native Primavera schedule file (.xer) used to perform the Time Impact Analysis.

D. When a delay to the project as a whole can be avoided by revising preferential sequencing or logic, and the Contractor chooses not to implement the revisions, the Contractor will be entitled to a time extension and no compensation for extended and/or home office overhead.

E. Indicate clearly that the Contractor has used, in full, all project float available for the work involved in the request, including any float that may exist between the Contractor's planned completion date and the Contract completion date. Utilize the latest version of the Schedule Update accepted at the time of the alleged delay, and all other relevant information, to determine the adjustment of the contract time.

F. Adjustment of the Contract Times will be granted only when the Contract Float has been fully utilized and only when the revised date of completion of the Work has been pushed beyond the contract completion date. Adjustment of the Contract Times will be made only for the number of days that the planned completion of the work has been extended.

G. Actual delays in activities which do not affect the critical path work or which do not move the Contractor's planned completion date beyond the Contract completion date will not be the basis for an adjustment to the contract time.

H. If completion of the project occurs within the specified contract time, the Contractor is not entitled to job-site or home office overhead beyond the Contractor's originally planned occupancy of the site.

I. Notify Engineer of a request for contract time adjustment. In cases where the Contractor does not submit a request for contract time adjustment for a specific change order, delay, or Contractor request within the period of time specified in the Contract Documents, then it is mutually agreed that the particular change order, delay, or Contractor request has no time impact on the Contract completion date and no time extension is required.

J. The Engineer will, within 30 calendar days after receipt of a contract time adjustment, request any supporting evidence, review the facts, and advise the Contractor in writing.

1. Include the new Progress Schedule data, if accepted by the District, in the next monthly Schedule Update.

1.17 FINAL SCHEDULE SUBMITTAL

A. The final Schedule Update becomes the As-Built Schedule.

1. The As-Built Schedule reflects the exact manner in which the project was constructed by reflecting actual start and completion dates for all activities accomplished on the project.
2. Contractor's Project Manager sign and certify the As-Built Schedule as being an accurate record of the way the project was actually constructed.

B. Retainage will not be released until final Schedule Update is provided.

PART 2: PRODUCTS (NOT USED)

PART 3: EXECUTION (NOT USED)

PART 4: ADDITIONAL REQUIREMENTS (NOT USED)

END OF SECTION

SECTION 01400
QUALITY AND EXPERIENCE REQUIREMENTS

PART 1: GENERAL

1.01 SCOPE OF WORK

A. General quality requirements for the concrete reservoir retrofits and experience requirements for the general contractor and subcontractors.

1.02 RELATED SECTIONS

Section 03052	Hot Weather Concreting
Section 03100	Concrete Formwork
Section 03251	Expansion and Construction Joints
Section 03200	Reinforcing Steel
Section 03300	Cast-in-Place Concrete

1.03 QUALITY REQUIREMENTS

A. Due to the nature of the project, it is the intent of these Specifications to obtain a first-class product with emphasis on overall safety, quality, durability, crack control, leak mitigation, strength, and quality control, both during and after the construction process. Of particular concern are the materials, processes, methods, and skills required to construct the concrete reservoir retrofits in accordance with the contract documents.

B. The quality of the ingredients in the concrete are critical, as are the placement, consolidation and curing of the concrete. The placement of the reinforcing steel, alignment and splicing of the waterstops are also critical.

1.04 EXPERIENCE REQUIREMENTS

A. Only general contractors experienced in the construction of publicly owned reinforced concrete structures for potable water, recycled water, wastewater facilities, or flood control structures are qualified to bid on and construct this project. The Contractor shall have successfully completed at least three (3) projects of similar size and complexity in the last twenty (20) years. All three of the completed projects must have been within the State of California.

B. A bid will be considered nonresponsive unless the Contractor's, submits the required project references and certifications to satisfy the experience requirements listed above.

END OF SECTION

SECTION 01500
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 : GENERAL

1.01 DESCRIPTION

A. This section describes the responsibilities for temporary utilities for construction, site/construction controls, and survey.

B. It shall be the Contractor's responsibility to provide plant and equipment adequate for the performance of the Work. All plant and equipment shall be kept in satisfactory operating condition, shall be capable of safely and efficiently performing the required work, and shall be subject to inspection and approval by the Owner at any time during the Contract. All work hereunder shall conform to the applicable requirements of Cal-OSHA Construction Safety Orders. The Contractor shall arrange with the appropriate utility agencies for temporary connections to the utilities. The Contractor is responsible for extending any utility services to the required point of use.

C. Type of Facilities: The types of temporary facilities required for general use at the Sites include, but are not limited to the following:

1. Electric power service
2. Water service
3. Sanitary facilities
4. Communication service
5. Ventilation
6. Fire protection
7. Barricades
8. Off-site storage and yard area

D. Scheduled Uses: The Contractor shall schedule the implementation and termination of service for each temporary utility or facility.

1.02 MEASUREMENT AND PAYMENT

Full compensation for Construction Facilities and Temporary Controls including furnishing all materials, labor, tools, equipment, and incidentals and performing all the work described in this Section and as indicated on the Plans and including all fees and charges shall be included as part of the Contract amount for related work and no additional compensation shall be allowed therefor. The field office shall be included in Mobilization and

Demobilization. The costs for all other items in this Section shall be paid for by the Contractor and shall be included in the appropriate bid item to which it is appurtenant.

1.03 **SUBMITTALS**

A. Submit Storm Water Pollution Prevention Plan.

B. Submit as required elsewhere in the specifications.

PART 2 : MATERIALS

2.01 **GENERAL**

A. The Contractor shall provide either new or used materials and equipment in substantially undamaged condition and without significant deterioration and recognized in the construction industry, by compliance with appropriate standards, as being suitable for intended use in each case.

PART 3 : EXECUTION

3.01 **GENERAL**

A. The Contractor shall maintain temporary services as installed for required period of use and shall relocate, modify, or extend as necessary during that period as required to accommodate the Work.

B. The Contractor shall be responsible for all costs of installation, maintenance, removal and usage of temporary facilities and any temporary utility required for the Work.

C. All temporary construction facilities and utility installations shall meet, at minimum, all applicable state, local and trade codes.

3.02 **CONSTRUCTION WATER**

A. The Contractor shall make his own arrangements for developing water sources and supply all labor and equipment to collect, load, transport, and apply water as necessary for compaction of materials, dust control, and other construction use.

B. The Contractor shall make his own arrangements for developing water sources and supply all labor and equipment to collect, load, transport, and apply water as necessary for hydro testing and disinfecting pipelines.

C. Water supply for initial filling and disinfecting of the tank will be provided by the District at no cost to the Contractor. The Contractor shall provide the conveyance system from the District's location for supply to the tank. The Contractor shall pay for the cost of subsequent filling and disinfection of the water if the tank must be discharged and refilled because of failure of any testing.

3.03 FACILITY DEWATERING

A. The Contractor shall drain the water from existing pipelines as required.

B. The District will draw down the tank(s) to as low a level as practical. The Contractor shall drain the remainder of the water. The Contractor shall also remove sediments and clean the tank.

C. The Contractor shall coordinate with the District and the District shall operate all District owned valves.

D. The Contractor shall be responsible for all activities associated with the dewatering except for the operation of District owned valves. Activities may include protection from erosion or damage, pumping, dechlorinating, traffic control, and reporting and complying with NPDES requirements.

3.04 CONSTRUCTION ELECTRICAL POWER

The Contractor shall provide for the purchase of power or provide portable power for the construction of the project. The Contractor shall provide for the extension of utility lines to the point of usage, as necessary.

3.05 FIELD FACILITIES

The Contractor shall provide a field office, chemical toilet and hand wash station.

3.06 TEMPORARY VENTILATION

A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity and to prevent accumulation of dust, fumes, vapors or gases.

3.07 TEMPORARY FIRE PROTECTION

A. Provide and maintain fire protection equipment, including extinguishers, hoses and other equipment as required for proper fire protection during the course of the Work and by law. The Contractor's fire protection program shall conform to the requirements of Article 36 of Cal-OSHA Construction Safety Orders.

3.08 BARRICADES

A. Provide temporary ladders, guards rails, and barricades as required and in accordance with applicable regulations, including California Code of Regulations, Title 8 and Cal/OSHA.

3.09 DUST CONTROL

Perform continuous dust control operations to prevent construction operations from producing dust in amounts harmful to persons or causing a nuisance to persons living nearby or occupying buildings in the vicinity of the work. Use water or dust preventative to control dust. Sweep and/or wash streets affected by the work.

3.10 ACCESS ROADS AND PARKING AREAS

The Contractor shall make arrangements for parking of employee vehicles.

3.11 STORAGE YARDS AND STAGING AREAS

The Contractor shall secure rights to use property for any areas required for storage and/or staging of materials, equipment, personnel, or for any other purposes if sufficient area is not available to the Contractor within the Contract limits of work or not otherwise identified on the Plans. Prior to entering/using such properties, the Contractor shall obtain written authorization from each property owner and shall provide the District with a copy of such authorization. In addition, before final acceptance of the project, the Contractor shall obtain a written statement of release from each property owner that granted use of property to the Contractor. The Contractor shall provide a copy of each release to the District. Failure of the Contractor to secure permissions to use properties shall not be reason to extend the number of Contract days for the project.

3.12 SITE SECURITY

A. The Contractor shall be responsible for site security during the duration of the project and shall implement any security measures deemed necessary to keep the site secure and safe. The Contractor may use existing permanent fencing to this end, such as the fencing at Park Lane reservoir, but shall also provide additional fencing, locks, gates, chain, etc. as needed. Necessary security measures shall be implemented prior to the Contractor receiving the first progress payment. The District shall maintain the direct ability to access the site at all times.

B. Alternately, the Contractor may construct permanent fencing for security if permanent fencing is noted on the Plans. However, the fencing must be completed prior to the Contractor receiving the first progress payment. The Contractor shall take the necessary precautions to protect the fence in place during construction. Progress payments for a permanent fence will not be made until the end of the project, after all repairs have been made to the fence to the satisfaction of the District.

3.13 VIBRATORY EQUIPMENT

The use of any such equipment which is capable of causing ground shaking shall not be permitted without prior written approval from the Engineer. If ground shaking vibratory equipment is requested and approved, the Contractor shall be responsible for making any repairs or replacements to facilities damaged due to nearby soils settling or other impacts of vibrating. This paragraph does not apply to vibration equipment used to consolidate concrete and vibratory equipment for consolidating concrete may be used.

3.14 TEMPORARY STORM WATER AND WIND CONTROL

A. The Contractor shall employ the necessary measures to control storm water and prevent damage to construction, to the site and to downstream properties from erosion and flooding caused or exacerbated by storm water runoff from the site.

B. The Contractor shall employ the necessary measures to control storm water quality.

C. The Contractor shall employ the necessary measures to control wind and the effects of wind and prevent damage to construction and to the site from wind related damage.

D. The above controls to protect the work shall apply to all work and is especially noted for any area that will be landscaped by the Contractor or by others. For these areas that will rely on mature landscaping for some protection, the protection shall remain in place after notice to proceed and during the warranty period. At the end of the warranty period the Contractor shall remove the temporary controls unless otherwise directed by the District. If the District directs the Contractor to leave the controls in place, the controls shall become the property of the District and the District will be responsible for them.

E. If the Contractor fails to take adequate controls to prevent water or wind damage, the Contractor shall make the necessary repairs at no additional cost to the District.

3.15 CONTROL OF LINE AND GRADE

A. All construction surveying shall be provided by the Contractor at his expense and in accordance with SSPWC Subsection 2-9.4 entitled “Line and Grade”. At all times during the survey, the surveyor shall be licensed in the State of California.

B. All pipes shall be laid to conform to the prescribed line and grade as shown on the plans except as such adjustments are ordered by the Engineer to maintain minimum cover requirements. Each pipe length shall be checked to ensure conformance to the grade line which the Contractor establishes from the grade stakes. The Contractor, at the Contractor’s expense, shall be responsible for monument preservation including corner ties, filings, and reconstruction.

3.16 OPERATIONS AND TERMINATIONS

A. Termination and Removal: All temporary construction facilities shall be promptly removed after they are no longer required. The Contractor shall complete and restore work that may have been delayed or affected by installation and use of temporary utilities, including repairs to construction and grades and restoration and cleaning of exposed surfaces.

END OF SECTION

SECTION 02050
REMOVAL OF EXISTING FACILITIES

PART 1: GENERAL

1.01 DESCRIPTION

This Section includes demolition, removal, recycling, replacement, and abandonment of existing pipelines and other facilities.

1.02 SUBMITTALS

A. Submit schedule of demolition. Include details about specific tasks that must be completed prior to demolition of specific facilities. If testing of a facility is required prior to demolition of another facility, include in the schedule. Identify demolition time constraints. Demolition schedule shall be a part of the Construction Schedule.

B. Provide tickets documenting proper disposal of contaminated materials.

C. Submit as required elsewhere in the specifications.

1.03 MEASUREMENT AND PAYMENT

Full compensation for Removal of Existing Facilities including furnishing all materials, labor, tools, equipment, incidentals, and disposal or delivery of removed items and performing all the work described in this Section and as indicated on the Plans shall be included in the Contract lump sum price paid for the work related and no additional compensation shall be allowed therefor.

PART 2: MATERIALS

(Not Used)

PART 3: EXECUTION

3.01 GENERAL

Perform removal, replacement, abandonment, and demolition work in accordance these specifications and as shown on the Plans. Prepare remaining surfaces to receive new scheduled and specified materials and finishes or to match materials and finishes of adjacent surfaces if none are specified or shown on the Plans.

Recycle all items that can practically be recycled in lieu of disposing in another manner.

3.02 **(NOT USED)**

3.03 **REMOVAL AND SALVAGING**

A. Remove piping and other facilities as shown on the Plans or specified herein. Facilities identified for removal shall become the property of the Contractor. As such, the Contractor assumes responsibility for all removal and disposal.

B. Materials and equipment salvaged from the project site are the property of the District. Salvaged material and equipment shall be delivered by the Contractor to a laydown area or areas within the project site as determined by the District. The Contractor shall take reasonable precautions to protect salvaged materials during the salvage and during storage.

C. Items identified for removal shall be removed in their entirety, including foundations and other appurtenant features unless otherwise noted.

D. Holes left from foundations, pipe removal or other features shall be filled with 90% compacted soil.

3.04 **REPLACEMENT**

Replace removed or abandoned piping with new piping in locations as shown on the Plans.

3.05 **ABANDON**

Abandon in place piping shown on the Plans to be abandoned. Abandoned pipe shall be cut and plugged at the ends with concrete or other approved method.

3.06 **DEMOLITION**

A. Existing structures, boxes, pipes, and other items are to be removed, altered, salvaged, and disposed of as specified herein or indicated on the Plans. Remove and dispose of all portions of these items which interfere with project construction. Protect existing facilities that do not directly interfere with project construction unless otherwise shown on the Plans to be abandoned, removed, or salvaged.

B. Facilities to be demolished shall be removed in their entirety and disposed of offsite including all belowground footings, foundations, and other associated appurtenances, as shown on the Plans or as specified herein. Backfill and compact all site areas disturbed by demolition work with earth backfill material in accordance with Section 02223 Trenching, Backfilling, and Compacting.

C. Items identified for removal shall be removed in their entirety, including foundations and other appurtenant features unless otherwise noted.

D. Holes left from foundations, pipe removal or other features shall be filled with 90% compacted soil.

E. Perform the work in a manner that will not damage parts of the structure not intended to be removed or to be salvaged for the District. If, in the opinion of the Engineer, the method of demolition used may endanger or damage parts of the structure or affect the satisfactory

operation of the facilities, promptly change the method when so notified by the Engineer. No blasting will be permitted.

F. All equipment, material, and piping, except as specified to be salvaged for the District, or removed by others, within the limits of the demolition, excavations, and backfills, will become the property of the Contractor and shall be removed from the project site.

G. Do not reuse material salvaged from demolition work on this project, except as specifically shown.

H. When removing portions of curb, gutter, or sidewalk, sawcut and remove the concrete at a control joint. This may require more removal than would otherwise be necessary.

3.07 DEWATERING

Refer to Section 01500 "Construction Facilities and Temporary Controls" for dewatering responsibilities.

3.08 HAZARDOUS MATERIALS

A. A.C. Pipe: Remove full lengths of ACP – no cutting is permitted. Pipe shall be removed using appropriate caution. Personnel shall wear appropriate personal protective equipment, and all laws and CalOSHA procedures for "Class I asbestos work" shall be followed. The pipe shall be disposed of at a site designated to handle such materials. The Contractor shall provide tickets documenting proper disposal of contaminated materials.

END OF SECTION

SECTION 02200
SITE PREPARATION

PART 1: GENERAL

1.01 DESCRIPTION

This section includes preparing the site surfaces to receive the Work.

1.02 DEFINITIONS

A. Interfering or Objectionable Material: Trash, rubbish, and junk; vegetation and other organic matter, whether alive, dead, or decaying; topsoil.

B. Clearing: Removal of interfering or objectionable material lying on or protruding above ground surface.

C. Grubbing: Removal of vegetation and other organic matter including stumps, buried logs, and roots greater than 2 inches caliper to a depth of 6 inches below existing ground.

D. Scalping: Removal of sod without removing more than upper 3 inches of topsoil.

E. Stripping: Removal of topsoil remaining after applicable scalping is completed.

F. Project Limits: Areas, as shown or specified, within which work is to be performed.

1.03 QUALITY ASSURANCE

Stake area limits for clearing, grubbing, and stripping prior to commencing work of clearing, grubbing, and stripping.

1.04 SCHEDULING AND SEQUENCING

Prepare site only after adequate erosion and sediment controls are in place. Limit areas exposed, or uncontrolled, to erosion during installation of temporary erosion and sediment controls.

1.05 MEAUREMENT AND PAYMENT

Full compensation for Site Preparation including furnishing all materials, labor, tools, equipment, and incidentals and performing all the work described in this Section and as indicated on the Plans shall be included in the bid item for the work related and no additional compensation shall be allowed therefor.

PART 2: PRODUCTS

(Not Used)

PART 3: EXECUTION

3.01 GENERAL

A. Conform to requirements of SSPWC Section 300-1.

B. Clear, grub, and strip areas as needed for waste disposal, borrow, or site improvements within limits shown, specified, or required.

C. Clear and trim as approved and provided below for construction laydown/access

3.02 CLEARING

A. Clear areas as required for earthwork and improvements. Additional areas may be cleared within specific approval as noted in the following requirements.

B. Prior to affecting any tree, the Contractor shall tag and identify the tree, verify the species, and identify the type and extent of the proposed work affecting the tree. The Contractor shall obtain approval from the District prior to performing any work affecting trees including removal, trimming canopy, and cutting roots.

C. Live Oaks shall be protected in place and left undisturbed.

D. Native species trees shall not be removed. These trees shall be kept healthy but maybe trimmed at the roots or canopy to the extent where their health is unaffected.

E. Trees other than Live Oak and Native species may be removed if requested and if the District provides prior approval.

3.03 GRUBBING

Grub areas as required

3.04 DISPOSAL

A. Clearing and Grubbing Debris:

1. Dispose of debris offsite.

2. Limit offsite disposal of clearing and grubbing debris to locations that are approved by federal, state, and local authorities, and that will not be visible from Project.

END OF SECTION

SECTION 02221
POTHOLES

PART 1: GENERAL

1.01 DESCRIPTION

This section includes potholing existing facilities.

1.02 SUBMITTALS

A. Submit pothole data prior to submitting any shop drawings that may be impacted by the pothole data. Submittal of items that may be impacted by the pothole data prior to pothole data submittal may be rejected.

1.03 MEASUREMENT AND PAYMENT

Full compensation for Potholes including furnishing all materials, labor, tools, equipment, and incidentals and performing all the work described in this Section and as indicated on the Plans shall be included in the Contract price paid for Potholes and no additional compensation shall be allowed therefor.

PART 2: MATERIALS

(Not Used)

PART 3: EXECUTION

3.01 ITEMS TO BE POTHOLED

The items to be potholed are indicated on the Plans.

3.02 TYPE OF POTHOLING

The Contractor may pothole with a backhoe or other excavating equipment or by use of a vacuum type of procedure.

3.03 POTHOLE REQUIREMENTS

A. The Contractor shall excavate and locate all connection locations identified on the Plans, including the inlet, outlet, and drain. The results of the potholes shall be documented including the type of facility, horizontal location, elevation, depth of cover, and type of material. The slope of the facility shall be obtained by completing a second pothole, at no additional cost to the District, when a pothole cannot be obtained in close proximity to the location of potential conflict with the proposed facility.

B. The Contractor shall dip all manholes and catch basins and locate the top of nut for all valves related to facilities that could affect proposed construction.

C. The potholes and dipping shall be completed and the data submitted prior to submittal and acceptance of the pipeline shop drawings and at least two weeks prior to pipeline construction.

3.04 PERMITS

The Contractor shall obtain and comply with the necessary permit(s) to allow potholing. This includes, if required, developing plans and providing necessary traffic control.

3.05 DIGALERT

The Contractor shall contact DIGALERT (811) prior to any excavation.

3.06 OTHER AGREEMENTS

The Contractor shall obtain all required agreements with owners that own utilities within 24" of the pothole in compliance with California law.

END OF SECTION

SECTION 02222
PROTECTING EXISTING FACILITIES

PART 1: GENERAL

1.01 DESCRIPTION

This section describes materials and procedures for protecting existing improvements.

1.02 REFERENCES

APWA Standard Plans for Public Works Construction No. 224 "Support for Conduits across Trenches", included in appendix.

1.03 SUBMITTALS

A. Submit drawings and calculations for support and protection at all pipeline crossings 18-inches and larger at least 30 days prior to excavation of crossing.

B. Submit documentation of existing facilities including a copy of all photos and/or video.

C. Submit as required elsewhere in the specifications.

1.04 MEASUREMENT AND PAYMENT

Full compensation for Protecting Existing Facilities including furnishing all materials, labor, tools, equipment, and incidentals and performing all work described in this Section and as indicated on the Plans, except for potholes, shall be included as part of the Contract price paid for related bid item(s) and no additional compensation shall be allowed therefor.

PART 2: MATERIALS

2.01 REPLACEMENT IN KIND

A. Except as indicated on the Plans or as specifically authorized by the Engineer, reconstruct utilities with new material of the same size, type, and original quality as that removed.

B. Damage to existing roads and adjacent properties shall be repaired to original condition or better or shall be reconstructed in-kind.

C. Replace portion of damaged street improvements, driveway, sidewalk, or pavement to the nearest construction joint unless otherwise noted.

PART 3: EXECUTION

3.01 GENERAL

A. The Contractor shall contact Underground Service Alert at least 48 hours prior to performing any excavation. In addition, contact any relevant agencies that don't participate in DigAlert (e.g. Caltrans).

B. Replace in kind improvements, such as pavement, curbs and gutters, ramps, barricades, traffic islands, signalization, fences, signs, mailboxes, etc., that are cut, removed, damaged, or otherwise disturbed by the construction.

C. Where utilities are parallel to or cross the pipeline trench but do not conflict with the permanent work to be constructed, follow the procedures given below and as indicated on the Plans. Notify the utility owner 48 hours in advance of the crossing construction and coordinate the construction schedule with the utility owner's requirements.

D. Perform potholes per Section 02221 "Potholes".

E. When protecting in place, the contractor shall take into account all loads, including surcharges and potential surcharges.

3.02 PROCEDURES

A. Protect in Place: Protect utilities in place, unless abandoned, and maintain the utility in service, unless otherwise specified on the Plans or in the Specifications. Protect all improvements in place, unless otherwise specified. Protect grading and plantings in place unless otherwise specified.

B. Remove, Store, and Re-Install: Fully disconnect existing material and equipment to be stored from electrical, water, or other service. Remove from the project site and store in accordance with manufacturer's recommendations and requirements. Make necessary provisions for safe storage of material and equipment. Keep materials and equipment stored in locations that will cause minimum inconvenience to other contractors, public travel, adjoining owners, and occupants. Location of the stored material and equipment shall be approved by the Owner prior to storing. At the conclusion of the project, fully re-install material and equipment such that all equipment functions as intended.

C. Cut and Plug Ends: Cut abandoned utility lines (conduits) and plug the ends with an 8-inch thick concrete plug. Concrete shall be a minimum Type "C". Dispose of the cut pipe as unsuitable material.

D. Contractor shall provide temporary support for all pipelines crossing the proposed trench. For all pipelines 18-inches in diameter or larger crossing over the proposed water main with less than 4 feet of clearance, the Contractor shall submit his proposed method of support for review by the District. All pipelines less than 18-inches in diameter and crossing over the proposed water main with less than 2 feet of clearance shall be protected by pouring 1-sack sand/cement slurry from the top of the water main to the bottom of the crossing pipeline. Facilities may be supported in accordance with APWA Std. Plan No. 224-3.

3.03 THRUST BLOCKS ON PRESSURE PIPELINES

The Contractor's attention is called to thrust blocks on pressure pipelines throughout the project whose thrust is in the direction of the trench excavation and, therefore, may be affected by the pipeline construction. Protect thrust blocks in place or shore to resist the thrust by a means acceptable to the District and the Engineer, and reconstruct. The contractor shall assume that thrust blocks exist on existing water lines, unless otherwise indicated. Thrust blocks may not be shown on the drawings for clarity.

3.04 ABANDONED UTILITIES

Remove and dispose of abandoned utilities within the trench excavation.

3.05 SERVICE LATERALS/CONNECTIONS

Service connections to the various utilities in the vicinity of the work are not necessarily shown on the Plans. Even if some laterals are shown on the Plans, the contractor should assume that there are other laterals not identified on the Plans. The Contractor shall make his own investigations, including exploratory excavations, to determine the locations and type of existing service laterals or appurtenances when their presence can be inferred from the presence of other visible facilities, such as buildings, meter boxes, and junction boxes, located on or adjacent to the site of the work. If the Contractor discovers utility facilities not identified in the Plans or in a position different from that shown in the Plans, he shall immediately notify in writing the Engineer and the owner of the utility. When it is necessary to remove, relocate, protect, or temporarily maintain a service connection, the cost of which is not required to be borne by the owner thereof, the Contractor shall bear all expenses incidental to the work on the utility or damage thereto. The work on the utility shall be done in a manner satisfactory to the owner thereof; it being understood that the owner of the utility has the option of doing such work with his own forces, or permitting the work to be done by the Contractor. No representations are made that the obligations to remove, relocate, protect, or temporarily maintain any utility and to pay the cost thereof is or is not required to be borne by the owner of such utility, and it shall be the responsibility of the Contractor to investigate to find out whether or not said cost is required to be borne by the owner of the utility. Should it be necessary to relocate or rebuild a house connection, the work shall conform to details provided by the respective owner.

3.06 SURVEY MONUMENTS

The Contractor shall comply with the law AB1414. The contractor shall tie-out survey monuments prior to disturbing. A new monument shall be constructed in conformance with applicable requirements. The tie-sheets and documentation for the new monument shall be filed with the appropriate Agency (typically the County). All costs associated with the filing shall be the responsibility of the Contractor. All work associated with the survey monuments shall be performed under the direction of a Licensed Land Surveyor.

END OF SECTION

SECTION 02223
TRENCHING, BACKFILLING, AND COMPACTING

PART 1: GENERAL

1.01 DESCRIPTION

This section includes materials, testing, and installation for trench excavation, backfilling, and compacting.

1.02 REFERENCES

ASTM D75	Standard Practice for Sampling Aggregates
ASTM D1556	Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D1557	Standard Test Methods for Laboratory Compaction Characteristics of soil Using Modified Effort
ASTM D2419	Standard Test Method for Sand Equivalent of Soils and Fine Aggregate
ASTM D2434	Standard Test Method for Permeability of Granular Soils (Constant Head)
ASTM D2922	Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D3017	Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
ASTM D4253	Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table
ASTM D4254	Standard Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density
ASTM G51	Standard Test Method for Measuring pH of Soil for Use in Corrosion Testing
Caltrans Test 417	Method of Testing Soils and Waters for Sulfate Content
Caltrans Test 422	Method of Testing Soils and Waters for Chloride Content
Caltrans Test 643	Method for Estimating the Service Life of Steel Culverts, Part 1 "Method of Field Resistivity Survey and Sampling for Laboratory Tests" and Part 4 "Laboratory Method of Determining Minimum Resistivity"

1.03 (NOT USED)

1.04 SUBMITTALS

A. Submit shoring plans signed by a registered structural or civil engineer, registered in the state of California for all trenches over 20 feet deep. For trenches 5 feet and deeper, shoring design must comply with Cal OSHA required methods.

B. Submit backfill and compaction procedures.

C. Submit material certifications for each material specified and used in this section.

D. Submit utility support plan for existing utilities 16-inch outside diameter and larger that are anticipated to cross the proposed pipe, any box structure crossing the proposed pipe, and any infrastructure which parallels or roughly parallels the proposed pipe and is anticipated to be within 3' clear from the edge of the proposed trench.

E. Submit data as required elsewhere in the specifications.

1.05 **DEFINITIONS**

A. Pavement Zone: The pavement zone includes the asphalt concrete and aggregate base pavement section placed over the trench backfill plus 12 inches on either side of the edge of trench.

B. Street Zone: The street zone is the top 12 inches of the trench immediately below the pavement zone in paved areas beneath paved portions of the right-of-way, curbs, gutters and sidewalks.

C. Trench Zone: The trench zone includes the portion of the trench from the top of the pipe zone to the bottom of the street zone in paved areas or to the existing surface in unpaved areas.

D. Pipe Zone: The pipe zone shall include the full width of trench from the bottom of the pipe or conduit to a horizontal level 6" above the top of the pipe, unless noted otherwise and as specified below. Where multiple pipes or conduits are placed in the same trench, the pipe zone shall extend from the bottom of the lowest pipe. This applies to the pipe, fittings, and appurtenances.

Thickness of Pipe:

Pipe Diameter	Zone above Top of Pipe
6 inches or smaller	6 inches
8 inches and larger	12 inches

E. Pipe Bedding Zone: The pipe bedding zone shall be defined as a layer of material immediately below the bottom of the pipe or conduit and extending over the full trench width on which the pipe is bedded. Thickness of pipe bedding zone shall be as follows unless otherwise shown in the Plans or otherwise described in the specifications for the particular type of pipe installed or otherwise required by permit. This applies to the pipe, fittings, and appurtenances.

Thickness of Pipe Bedding:

Pipe Diameter	Zone below Bottom of Pipe
6 inches or smaller	4 inches
8 inches and larger	6 inches
Any pipe located in rock material	9 inches

F. Rock Excavation: Rock excavation within a trench is defined as excavation in material that cannot, in the Engineer's opinion, be reasonably loosened or ripped with a hydraulic excavator with a net minimum flywheel rating of 300 horsepower fitted with a narrow bucket and teeth, such as a Caterpillar 345B L Series II UHD; and which must be systematically drilled and blasted or broken by a power-operated hammer, hydraulic rock breaker, expansive compounds, or other similar means prior to removal. Rock excavation outside a trench is defined as excavation in material that cannot, in the Engineer's opinion, be reasonably loosened or ripped with a track mounted tractor with a net minimum flywheel rating of 300 horsepower fitted with a single tooth ripper, such as a Caterpillar D8T; and which must be systematically drilled and blasted or broken by a power-operated hammer, hydraulic rock breaker, expansive compounds, or other similar means prior to removal. The term "rock excavation" does not necessarily correspond to "rock" as implied by names of geologic formations.

The Engineer shall make the determination as to whether material is classified as rock.

1.06 MEASUREMENT AND PAYMENT

Full compensation for Trenching, Backfilling, and Compacting including furnishing all materials, labor, tools, equipment, and incidentals and performing all work described in this Section and as indicated on the Plans shall be included as part of the Contract price paid for related work and no additional compensation shall be allowed therefor.

Costs for hauling and disposing of materials, soils testing and dewatering shall be included and no additional payments will be made for these items.

PART 2: MATERIALS

2.01 SAND CEMENT SLURRY

Unless otherwise required by permit or indicated on the Plans, sand cement slurry backfill shall consist of one sack (94 pounds) Type II Portland cement added per cubic yard of imported sand, except within 6 inches of a buried flexible pipe coupling, in which case use one-half sack. Sand shall be as described in Section 2.03 "Imported Sand".

2.02 NATIVE EARTH BACKFILL

Native earth backfill shall be native granular material free from roots, debris, and organic matter with less than 50% passing the No. 200 sieve and with no more than 60% gravel (i.e., not less than 40% passing the No. 4 sieve) and rock particles with a maximum dimension no greater than 6 inches.

2.03 IMPORTED SAND

Imported sand shall have the following gradation:

Sieve Size	Percent Passing By Weight
1/4 inch	100

No. 4	70 - 100
No. 16	35 - 75
No. 50	10 - 40
No. 200	0 - 10

Imported sand shall have a coefficient of permeability greater than 0.014 measured in accordance with ASTM D2434 or a minimum sand equivalent of 30 per ASTM D2419.

Minimum resistivity for "Imported Sand" backfill shall be 2,000 ohm-cm in accordance with Caltrans Test 643. Imported sand shall have a maximum chloride concentration of 200 mg/l in accordance with Caltrans Test 422 and maximum sulfate concentration of 500 mg/l in accordance with Caltrans Test 417.

2.04 CRUSHED ROCK

Crushed rock shall be the product of crushing rock or gravel. The portion of the material that is larger than will pass a 3/8 sieve shall contain at least 50 percent of particles having three or more fractured faces. Not over 5 percent shall be pieces that show no such faces. Of that portion which passes the 3/8 sieve, but is retained on the No. 4 sieve, not more than 10 percent shall be gravel particles.

Rock refill shall be 1" crushed rock.

Crushed rock shall meet the following gradations.

1-Inch Crushed Rock

Sieve Size	Percent Passing By Weight
1-1/2 inch	100
1 inch	90 - 100
3/4 inch	30 - 60
1/2 inch	0 - 20
No. 4	0 – 5

1/2-Inch Crushed Rock

Sieve Size	Percent Passing By Weight
1-1/2 inch	100
1 inch	100
3/4 inch	100
1/2 inch	90 – 100
3/8 inch	20 – 60
No. 4	0 – 15

2.05 **CONCRETE FOR PIPE ENCASEMENT AND THRUST BLOCKS**

Concrete for pipe encasement and thrust blocks shall be Class 520-C-2500 per Section 201-1.1.2 of the SSPWC, unless otherwise shown on the plans.

2.06 **WATER FOR COMPACTION**

Water used in compaction shall have a maximum chloride concentration of 500 mg/1 as measured by Caltrans Test 422, maximum sulfate concentration of 500 mg/l as measured by Caltrans Test 417, and shall have a pH of 7.0 to 9.0 as measured by ASTM G51. Water shall be free of organic materials injurious to the pipe coatings.

PART 3: EXECUTION

3.01 **COMPACTION REQUIREMENTS**

Compaction shall comply with the permit requirements from the appropriate agency, or as indicated on the Plans. If there is no appropriate permit with compaction requirements and if there is no indication on the Plans, compaction shall be 90% relative compaction for the pipe bedding zone, pipe zone, trench zone, and any refill. The street zone shall be compacted to 95% relative compaction (unless noted otherwise).

3.02 **MATERIAL REPLACEMENT**

Remove and replace any trenching and backfilling material which does not meet the specifications at the Contractor's expense.

3.03 **SHEETING, SHORING, AND BRACING OF TRENCHES**

Trenches shall have sheeting, shoring, and bracing conforming to CAL/OSHA requirements and the General Conditions. All shoring shall be removed after backfilling.

3.04 **(NOT USED)**

3.05 **TRENCH WIDTHS**

Minimum and maximum trench widths in the pipe zone shall be as shown on the Plans, or, if not shown on the Plans, as indicated on the standard drawings. If the minimum and maximum trench widths are not indicated elsewhere, they shall be as follows:

Nominal pipe Dia.	Min. distance from pipe wall to trench wall	Max. distance from pipe wall to trench wall
4"-12"	8"	12"
16"-24"	9"	14"
26"-48"	10"	18"

3.06 TRENCH EXCAVATION

A. Perform all excavating regardless of the type, nature, or condition of the material encountered to accomplish the construction. Do not operate excavation equipment within 5 feet of existing structures or newly completed construction. Excavate with hand tools in these areas.

B. Excavate the trench to the lines and grades required by the Plans with allowance for pipe thickness, sheeting and shoring if used, and for pipe base or special bedding. If the trench is excavated below the required grade, refill any part of the trench excavated below the grade at no additional cost to the District with imported sand. Place the refill material over the full width of trench in compacted layers not exceeding 6 inches deep to the established grade with allowance for the pipe base or special bedding.

C. Trench depth in rock shall be constructed by removing rock to a minimum depth of 9 inches below bottom of pipe and backfilling with rock refill material.

D. Excavate bell holes at each joint to permit proper assembly and inspection of the entire joint.

3.07 DEWATERING

A. Provide and maintain means and devices to remove and dispose of all water from any source entering the trench excavation during the time the trench is being prepared for the pipe laying, during the laying of the pipe, and until the backfill at the pipe zone has been completed. These provisions shall apply during day as well as night hours. Dispose of the water in a manner to prevent damage to adjacent property and in compliance with NPDES requirements. Do not drain trench water through the pipeline under construction. Do not allow groundwater to rise around the pipe until backfilling is completed.

B. The Contractor shall take all necessary precautions to prevent the pipe from floating due to water entering the trench from any source. The Contractor shall assume full responsibility for any damage due to floating and shall pay for and perform the work required to restore and replace the pipe to its specified condition and grade.

3.08 LOCATION OF EXCAVATED MATERIAL

During trench excavation, place the excavated material only within the working area and beyond a 1:1 plane drawn upward from the lower of the base of shoring or excavation. Do not obstruct any roadways or streets. Conform to federal, state, and local codes governing the safe loading of trenches with excavated material.

3.09 LENGTH OF OPEN TRENCH

Comply with permit requirements. If there are no permit requirements regarding the length of open trench, the Contractor shall limit the amount of open trench to the length of pipe which can be installed and backfilled to final grade. At no time should the length of open trench exceed 1,000 feet on the entire project. Steel plates located within the traveled way shall be limited to 100 feet at each location and can be used only with the prior approval of the District. Complete backfilling and trench repaving within 2 working days of pipe laying.

3.10 FOUNDATION STABILIZATION

A. After the required excavation has been completed, the District will inspect the exposed subgrade to determine the need for any additional excavation. It is the intent that additional excavation is conducted in all areas within the influence of the pipeline where unacceptable materials exist at the exposed subgrade. Overexcavation shall include the removal of all such unacceptable material that exists directly beneath the pipeline to a width 24 inches greater than the pipe outside diameter and to the depth required. Backfill the trench to subgrade of pipe base with rock refill material for foundation stabilization. Place the foundation stabilization material over the full width of the trench and compact in layers not exceeding 6 inches deep to the required grade.

B. Rock refill used by the Contractor for his convenience will not receive any additional payment.

3.11 CONCRETE FOR BELOW GROUND INSTALLATION

Contractor shall encase pipe with concrete to the line and dimensions indicated or place concrete between the undisturbed ground and the pipe or fittings to be restrained or supported. Quantity or bearing area of the concrete against the undisturbed ground shall be as shown on the Standard Drawings, Plans, or as directed by the District. Provide temporary support on the pipe, fittings, or valves until the concrete has obtained a 2-day cure. Place concrete such that the pipe joints, fittings, or valves are accessible for repairs. Vibrate the concrete during placement to eliminate honeycombing. Backfilling of the trench adjacent to the concrete will not be allowed until at least 3 days after placement or until the hydration process has produced a concrete that is hard enough to be self-supporting. Allow concrete to cure for at least 7 days prior to subjecting the concrete to pipeline pressure.

3.12 TRENCH BACKFILLING

A. Place the specified thickness of pipe bedding material over the full width of trench. Grade the top of the pipe bedding ahead of the pipe laying to provide firm, uniform support along the full length of pipe.

B. After pipe has been laid, place pipe zone material simultaneously on both sides of the pipe, keeping the level of backfill the same on each side. Carefully place the material around the pipe so that the pipe barrel is completely supported to 45 degrees each side of the pipe invert and so that no voids or uncompacted areas are left beneath the pipe. Use particular care in placing material on the underside of the pipe to prevent lateral movement during subsequent backfilling.

C. Compact material placed within 24 inches of the outer surface of the pipe by hand tamping only. Do not use any axle-driven or tractor-drawn compaction equipment until 3 feet of fill has been placed over the top of pipe.

D. Push the backfill material carefully onto the backfill previously placed in the pipe zone. Do not permit free fall of the material until at least 2 feet of cover is provided over the top of the pipe. Do not drop sharp, heavy pieces of material directly onto the pipe or the tamped material around the pipe.

E. Backfill of trench above the pipe zone shall not proceed until the required compaction in the pipe zone has been verified and accepted by the Engineer.

F. For pipelines sizes 6-inch through 42-inch the following materials may be used in each zone unless noted otherwise:

Zone	Allowable Material
Street	• Sand Cement Slurry • Imported Sand • Native Materials meeting the requirements of this Section.
Trench	• Sand Cement Slurry • Imported Sand • Native Earth Backfill meeting the requirements of this Section.
Pipe	• Sand Cement Slurry • Imported Sand
Pipe Bedding	• Imported Sand

G. All backfill within 24 inches of a valve or manway shall be imported sand.

3.13 BACKFILL COMPACTION

A. Compact backfill to the specified relative compaction. Compact by using mechanical compaction or hand tamping. Do not use high impact hammer-type equipment. Do not use plate compaction equipment on hydraulic excavators.

B. Compaction by jetting is generally not allowed for trench zone, but may be allowed for pipe and bedding zones in specific instances in areas approved by the District. Only imported sand materials backfilled in areas where foundation material is suitable will be allowed to be jetted.

When jetting has been explicitly allowed, jetted backfill material shall be placed and consolidated in layers not exceeding 4 feet in thickness. Vibrators shall be used to supplement the jetting operations. The water jets shall be at least 1-1/4-inches in diameter and of sufficient length to extend to the bottom of each layer. The Contractor shall operate the jets with a water pressure of at least 40 pounds per square inch and in such manner as to settle the backfill thoroughly. The backfill shall be satisfactorily settled throughout the length and depth of each layer before placement of the next layer. When jetting in pipe and bedding zones, care shall be taken not to float the pipe with excessive amounts of water.

On slopes too steep and trenches with inadequate drainage to consolidate backfill effectively, as determined by the District, the backfill shall be compacted by mechanical means.

C. Do not use any axle-driven or tractor-drawn compaction equipment within 5 feet of building walls, foundations, and other structures.

3.14 TESTING FOR COMPACTION

A. Tests specified below shall be performed by an engineer approved certified soil testing lab during the progress of the work to determine compliance with the compaction requirements specified herein, and the Contractor shall cooperate on the making of such tests by providing the labor and equipment necessary to obtain said tests at the required depth and allowing a reasonable time therefor.

Additional testing by the District may be performed for verification that contract requirements are being met and is not for Contractor's quality control. Contractor is responsible for adequacy of all backfill materials meeting contract requirements.

1. Determine the density of soil in place by the sand cone method, ASTM D1556 or by nuclear methods, ASTM D2922 and ASTM D3017.

2. Determine laboratory moisture- density relations of soils by ASTM D1557.

3. Determine the relative density of cohesionless soils by ASTM D4253 and ASTM D4254.

4. Sample backfill materials by ASTM D75.

B. The number of tests (depth and intervals) shall comply with the requirements of the pertinent permit. If there is no permit, or if the permit does not specify, the following shall be used.

1. For the pipe bedding zone, pipe zone, trench zone, and street zone, collectively 1 test for every 4’ or fraction thereof of depth for every 250 feet of trench length. Backfill depth is from the bottom of the trench to the bottom of the pavement zone.

2. For the pavement zone (aggregate base), 1 test for every 500 feet of trench length.

3. For jacking, receiving, and other pit type excavations, at least 1 test within the pipe bedding shall be taken. In addition, at least 1 test for every 5 vertical feet shall be taken.

C. "Relative compaction" is the ratio, expressed as a percentage of the in place dry density to the laboratory maximum dry density.

D. Any test falling below the specified relative compaction shall be deemed not to comply with the specifications. The area should be reworked and/or rerolled until all tests in the area meet the specified relative compaction.

E. Where compaction tests indicate a failure to meet the specified compaction, additional compaction tests shall be taken every 50 feet in each direction until the extent of the failing area is identified. Rework the entire area between locations that have passed the tests until the specified compaction has been achieved. The Contractor shall pay the actual cost of all soil retests.

F. The Contractor shall submit one or several procedures for the placement of backfill to achieve the required compaction. A test section shall be selected at the beginning of the project to experiment with proposed compaction procedures, using the equipment the Contractor plans to use on the project. Based on the results of the test section, one of the procedures may be used on the project. The procedures shall define maximum lift thickness and number of passes of the compaction equipment. Periodic monitoring.

3.15 DISPOSAL OF EXCESS MATERIAL

Excess site excavated or wasted material shall be disposed of offsite on a timely basis by the Contractor at his expense. No prearranged disposal site or related permits have been determined or secured by the District.

3.16 (NOT USED)

3.17 DIGALERT

The Contractor shall contact DIGALERT (811) prior to any excavation.

3.18 OTHER AGREEMENTS

The Contractor shall obtain all required agreements with owners of utilities within 24" of this work in compliance with California law.

END OF SECTION

SECTION 02520
CURED-IN-PLACE THERMOSETTING RESIN PIPE LINER

PART 1 : GENERAL

1.01 DESCRIPTION

This section includes the work necessary for the relining of potable water pipe for use of transporting potable water in the existing host water pipe.

1.02 REFERENCES

ASTM F1216	Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of Resin-Impregnated tube
ASTM 1743	Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of Cured-in-Place Thermosetting Resin Pipe
ASTM D790	Test Method for Flexural Properties of Un-reinforced Plastics and Electrical Insulating Materials
ASTM D5813	Cured-in Place Thermosetting Resin Sewer Pipe
ASTM F2019	Rehabilitation of Existing Pipelines and Conduits by pulled in place installation of glass reinforced plastic cured in place
ASTM D3681	Chemical resistance of Fiberglass Pipe in a Deflected Condition
ASTM D2990	Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics
AWWA C651	Disinfection of Potable Water Mains
ASTM D638	Standard Test Method for Tensile Properties of Plastics
SSPWC	"GreenBook" Standard Specifications for Public Works Construction, latest edition
NSF 61	Drinking Water System Components-Health Effects

1.03 SUBMITTALS

A. Calculations: Dimensions of the pressure lining shall be calculated and submitted to Engineer in accordance with ASTM F1216 Appendix X1.

B. Manufacturer Certification: A certification from the manufacturer on the composition of the liner materials, and that the liner meets the proposed application as appropriate. A copy of the NSF Certificate for NSF/61.

C. Cleaning Method: Contractor shall conduct pipe cleaning the water line, the method of installing the liner, and the quality control measure that will be taken to assure that the pipe meets these specifications and the intended purpose. Contractor shall submit post=cleaning video inspection prior to beginning work.

D. Work Plan: Contractor shall provide work plan description and schedule for liner insertion, resin saturation, resin curing and monitoring, pipe finishing, and restoration. Contractor

shall submit the insertion and heating schedule/plan at least 72 hours in advance of CIPP installation.

E. Curing Medium Discharge Plan: Plan compliant with state and local requirements. If a waste discharge permit is required to dispose of the curing medium the Contractor shall bear the full responsibility for applying and maintaining such a permit.

F. Installation and Setup Procedures: Installation and setup procedures for the CIPP liner including necessary equipment.

G. Comments: Provide manufacture-recommended construction details not shown on the plans.

H. MSDS and Safety Plan: Submit for information only.

I. Test Results: Test results of the installed CIPP liner consisting of the following: Lining thickness, flexural strength, flexural modulus, tensile strength (pulled in place liner only), tensile modulus (pulled in place liner only), chemical resistance.

1.04 MEASUREMENT AND PAYMENT

Full compensation for CIPP lining including furnishing all materials, labor, tools, equipment, and incidentals and performing all work described in this Section and as indicated on the Plans shall be included in the Contract price paid for Piping, Site, and Drainage Modifications and no additional compensation shall be allowed therefor.

PART 2 : MATERIALS

2.01 GENERAL

A. Materials shall comply with Safe Drinking Water Act and other federal or local requirements relevant to materials planned for use.

2.02 FLEXIBLE TUBE

a. The minimum length of the flexible tube shall have allowance for proper stretching or shrinkage due to pressure or expansion.

b. The flexible tube shall be one or more layers of needled felt or equivalent woven or non-woven material manufactured under quality-controlled conditions set by the manufacturer. The tube shall be constructed to withstand installation pressures, have sufficient strength to bridge missing pipe, and stretch to fit irregular pipe sections.

c. The wet-out tube shall have a relatively uniform thickness that when compressed at installation pressures will equal or exceed the calculated minimum design CIPP wall thickness.

d. The tube shall be manufactured to a size that when installed will tightly fit the internal circumference and length of the original pipe. Allowance should be made for circumferential stretching during installation.

e. The outside layer of the tube shall be coated with an impermeable, flexible membrane that will contain the resin and allow the resin impregnation (wet out) procedure to be monitored.

f. The tube shall contain no intermediate or encapsulated elastomeric layers. No material shall be included in the Tube that may cause delamination in the cured CIPP. No dry or unsaturated layers shall be evident.

g. The wall color of the interior pipe surface of CIPP after installation shall be a relatively light reflective color so that a clear detailed examination with closed circuit television inspection equipment may be made.

h. Seams in the tube shall be stronger than the non-seamed felt material.

i. The tube shall be marked for distance at regular intervals along its entire length, not to exceed 5 ft. Such markings shall include the manufacturer's name or identifying symbol. The tubes must be manufactured in the USA.

2.03 RESIN

The resin system shall be an epoxy resin compatible with a heat assisted cure, possibly in the presence of water and meeting NSF/ANSI Standard 61 – Drinking Water System Components. Supplier shall provide a certificate that the product meets the appropriate certification. The mix ratio of resin to hardener shall be as recommended by the manufacturer. The resin must have a delayed curing agent system that can remain in a refrigerated environment without curing for a minimum of 36 hours.

2.04 LINER REQUIREMENTS

Resin is mixed and dispensed within the closed felt/fiber tube while liner is under vacuum, inverted into the pipeline to be rehabilitated, and then cured by the presence of controlled steam or hot water for a minimum exposure as direct by the resin manufacturer. After the heat assisted curing process lined pipes shall be exposed to ambient temperature for 48 hours before restoring the pipe to water service. The resin/fiber matrix shall have the following minim structural properties as testing in the hoop orientation.

Proposed Design Table:

Flexural Radial Properties: (per ATSM D790)

	1-glass layer	2-glass layers
Modulus:	300,000 psi (2,070 MPa)	800,000 psi (5,500 MPa)
Strength:	12,000 psi (825 MPa)	20,000 psi (137 MPa)

Tensile Radial Property: (per ASTM D638)

Strength:	12,000 psi (82 MPa)	16,000 psi (110 MPa)

Note: One-layer fiberglass tubes can be used in 6”-10” diameter applications

Two-layer fiberglass tubes can be used in 8” diameter and greater’

2.05 **MANUFACTURES**

The CIPP liner and associated products shall be as manufactured by:

a. Sancon Technologies

b. Insituform Technologies Inc.

c. AFCO Technologies Inc.

d. Premier-Pipe

e. Or Approved Equal

PART 3 : EXECUTION

3.01 **INSTALLATION**

A. Material safety data sheets (MSDS) shall be available and maintained at the project site.

3.02 **PRE-INSTALLATION CLEANING AND INSPECTION**

A. The drain piping shall be cleaned. The Contractor is responsible for selecting the cleaning method.

B. Verify that the drain piping is clean and pipe conditions are as necessary for installation of the liner system.

C. A copy of the DVD shall be submitted to the Engineer for review and approval before liner installation begins.

D. If pipe rehabilitation does not commence within twenty four hours after cleaning, the pipeline must be re-cleaned. Re-cleaning will not be necessary if the Contractor installs and maintains an approved method to capture debris and prevent debris from entering the cleaned reach of pipe. The proposed debris collection method must be submitted to the Engineer for approval prior to cleaning pipelines. Should the debris collection method fail and allow debris to contaminate a cleaned pipeline, the Contractor must re-clean the pipeline at its sole expense.

3.03 **INSTALLATION PROCEDURES**

CIPP installation shall be in accordance with ASTM F1216, Section 7, or ASTM F1743, Section 6 with the following modifications:

A. Wet Out:

Thoroughly saturate flexible tube with resin prior to installation. Catalyst system or additives compatible with the resin and flexible tube shall be as approved by the Engineer. If the flexible tube is saturated with resin at another location it shall be transported, installed, and cured before expiration of the resin's shelf life or cure time. The resin-saturated tube shall be stored and transported under refrigerated, ultraviolet light-free conditions.

The quantity of resin used for tube impregnation shall be sufficient to fill the volume of air voids in the tube with additional allowances for polymerization shrinkage and the loss of resin through cracks and irregularities in the original pipe wall. A vacuum impregnation process shall be used. To insure thorough resin saturation throughout the length of the felt tube, the point of vacuum shall be no further than 25 feet from the point of initial resin introduction.

After vacuum in the tube is established, a vacuum point shall be no further than 75 feet from the leading edge of the resin. The leading edge of the resin slug shall be as near to perpendicular as possible. A roller system shall be used to uniformly distribute the resin throughout the tube. If the Installer uses an alternate method of resin impregnation, the method must produce the same results. Any alternate resin impregnation method must be proven.

Handle the resin impregnated flexible tube to retard or prevent resin setting until it is ready for insertion. No cuts, tears, or abrasions shall occur during handling. The Engineer may inspect the tube before it is placed into the host pipe. The Manufacturer shall have a representative on-site to observe and verify the proper installation of the CIPP liner.

B. Insertion:

Pulled-in-Place: Insert flexible tube through an existing manhole by means of procedure approved by the manufacturer per ASTM F 1743. A power winch should be utilized, and care should be exercised not to damage the tube as a result of pull-in friction.

Inverted: The addition of water, air, or steam pressure shall be adjusted to cause the CIPP tube to hold tightly against the host pipe per ASTM F 1216.

C. Curing:

After insertion is completed, apply a suitable heat source with a water recirculation or steam recirculation system capable of delivering heated curing agent uniformly throughout the section to achieve a consistent cure of the resin. Curing temperatures and durations shall be as recommended by the Manufacturer and approved by the Engineer.

The heat source shall be fitted with suitable monitors to gauge the temperature of incoming and outgoing water or steam supply.

Heating shall continue uninterrupted until the desired temperature is achieved. Temperatures at both ends shall be measured and recorded. The initials of the Engineer shall be obtained on curing logs. Initial cure may be considered completed when exposed portions of the flexible tube pipe take a hard set and temperatures are adequate, as recommended by the manufacturer.

A standby heat source shall be at the site, ready for service in case of a breakdown of the primary boiler.

Discharge of the curing agent shall be as previously stated in this Specification.

D. Cool Down: Cool the CIPP in accordance with the manufacturer's instructions and as approved by the Engineer. Do not release internal pressure in a way that can create a vacuum and damage the CIPP. The water in the CIPP shall be cooled to below 100°F before discharge.

E. Finished Pipe: The finished CIPP shall be continuous and free from visual defects such as foreign inclusions, dry spots, pinholes, delamination, and wrinkles. Lining defects shall be repaired as acceptable to the Engineer, at no additional cost to the Owner.

F. Contractor shall conduct field testing to confirm the lining thickness and other properties specified in this Specification.

3.04 VIDEO INSPECTION OF COMPLETED WORK

A. Pipe liner shall be inspected to document the condition of rehabilitated surfaces in accordance with Section 02150 — Cleaning and Television Inspection.

B. Submit to the Engineer a DVD showing the completed Work.

C. There shall be no extra resin and there shall be gap between the host pipe and CIPP liner.

3.05 TESTING AND FIELD INSPECTION

A. Chemical Resistance - The CIPP shall meet the chemical resistance requirements of ASTM F1216 Appendix X2. CIPP samples for testing shall be of tube and resin system similar to that proposed for actual construction. It is required that CIPP samples with and without plastic coating meet these chemical testing requirements.

B. Hydraulic Capacity - Overall, the hydraulic cross-section shall be maintained as large as possible. The CIPP shall have a minimum of the full flow capacity of the original pipe before rehabilitation. Calculated capacities may be derived using a commonly accepted roughness coefficient for the existing pipe material taking into consideration its age and condition.

C. CIPP Field Samples - The Contractor shall submit test results from field installations in the United States of the same resin system and tube materials as proposed for the actual installation. These test results must verify that the CIPP physical properties specified herein have been achieved in previous field applications. Samples for this project shall be prepared and physically tested in accordance with ASTM F1216 or ASTM F1743, Section 8. The flexural properties must meet or exceed the values listed in Table 1 of the applicable ASTM. In no case shall coupons be cut from the finished liner.

D. General Inspection - The liner will be inspected by the Engineer for proper resin saturation, cure and for air pockets, edge or seam defects, rips, tears, and punctures.

E. Wall Thickness Inspection - Wall thickness of samples shall be determined as described in paragraph 8.1.6 of ASTM F1743. The minimum wall thickness at any point shall not be less than 87.5% of the design thickness.

F. Visual Inspection - of the CIPP shall be in accordance with ASTM F1743, Section 8.6.

3.06 CORRECTIONS OF DEFECTIVE WORK

A. Correction of failed CIPP, or CIPP deemed defective from post-installation television inspection or test reports for structural values, thickness, etc., shall be repaired at no extra cost to the Owner. Major defects may require CIPP removal and replacement or relining. Minor defects may require cutting, grinding and/or resin-fill repairs of dry spots, lifts and/or delaminations as directed by the Engineer. The methods of repair, which may require field or workshop demonstration, shall be approved by the Engineer. Defects shall be removed, replaced, and retested, as directed by the Engineer.

B. Internal and external repairs may be made to the CIPP liner pipe in accordance with the manufacturer's recommendations and with the approval of the Engineer. Internal repairs may be made with approved fabric and epoxy or epoxy-vinyl-ester resins to restore strength and integrity. External repairs may be made by using standard plastic pipe repair techniques, including replacement of the damaged section using PVC pipe coupled to the CIPP liner, as approved by the Engineer.

3.07 CLEAN-UP

A. Upon acceptance of the installation work and testing, the Contractor shall restore the project area affected by the operations to a condition at least equal to that existing prior to the work.

3.08 WARRANTY

A. Upon During the 11th month after final acceptance the Contractor shall schedule a meeting and inspection of the work. The Contractor shall perform a video inspection in conformance with this Specification and with Specification Section 02150 - Cleaning and Video Inspection. Any defects found during the inspection shall be repaired and/or replaced at the Contractor's expense, in a manner approved by the Owner. The 11th month inspection does not relieve the Contractor of the warranty requirements specified in this Specification.

B. The Contractor and the manufacturer shall provide to District a certificate of warranty that states: "The complete pipeline rehabilitation was performed properly. We (the Contractor and Manufacturer) warrant all material and workmanship for a period of five (5) years starting from the day of final approval from District. The Contractor and the manufacturer shall provide field response to the District’s request regarding any defect in the pipeline rehabilitation. The Contractor shall repair, at its sole expense, any areas that fail to meet the requirements of the Contract Documents or are defective. All repair work shall receive a new certificate of warranty of five (5) years with the same terms and conditions."

END OF SECTION

SECTION 02830
CHAIN LINK FENCE AND GATES

PART 1 : GENERAL

1.01 DESCRIPTION

This section includes the work necessary for the chain link fence and gates complete.

1.02 REFERENCES

Standard Specifications for Public Works Construction

ASTM A121	Specification for Zinc-Coated (Galvanized) Steel Barbed Wire
ASTM A153	Specification for Zinc-Coating (Hot Dip) on Iron and Steel Hardware
ASTM A392	Specification for Zinc-Coated Steel Chain-Link Fence Fabric
ASTM A491	Specification for Aluminum-Coated Steel Chain-Link Fence Fabric
ASTM F567	Standard Practice for Installation of Chain-Link Fence
ASTM F1083	Specification for Pipe, Steel, Hot Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures

1.03 SUBMITTALS

A. Shop Drawings: Submit shop drawings and installation drawings prior to fabrication and delivery. These drawings shall provide detailed information and specifications for all materials, finishes, dimensions, and erection instructions.

1.04 MEASUREMENT AND PAYMENT

Full compensation for Chain Link Fence and Gates including furnishing all materials, labor, tools, equipment, and incidentals and performing all work described in this Section and as indicated on the Plans shall be included in the Contract price paid for Chain Link Fence and Gates and no additional compensation shall be allowed therefor.

PART 2 : MATERIALS

2.01 GENERAL

A. The work shall be performed in accordance with the Standard Specifications for Public Works Construction (Standard Specifications) and specification of Metallic-Coated Steel Chain Link Fence Fabric, published by Chain Link Fence Manufacturer's institute, Washington, DC 20036.

B. Materials shall be new and products of recognized, reputable manufacturers. Used, re-rolled, or re-galvanized materials are not acceptable.

C. Steel pipe shall conform to ASTM F1083, schedule 40.

D. All materials shall be hot-dip galvanized after fabrication. Posts and other appurtenances shall have a minimum zinc coating of 1.2 ounces per square foot of surface.

E. Aluminum-coated fabric and wire may be substituted for the galvanized fabric and wire. Aluminum coating shall be not less than 0.40 ounce per square foot, complying with ASTM A491, Class II.

2.02 FABRIC

Chain link fence fabric, woven of No. 9 gauge wire in 2 inch diamond-mesh pattern; mesh shall have a minimum 850 pounds breaking strength; selvages twisted and barbed, galvanized after weaving with 1.2 ounce zinc coating meeting the requirements of ASTM A392, Class 1.

2.03 TENSION WIRE

Tension wire shall be zinc or aluminum-coated coil spring steel wire not less than No. 7 gauge (0.177 inch in diameter). Provide tie clips of manufacturer's standard as approved for attaching the wire to the fabric, at intervals not exceeding 24 inches.

2.04 STRETCHER BARS

Stretcher bars shall be one-piece lengths equal to full height of fabric with a minimum cross-section of 3/16 inch by 3/4 inch or 3/8 inch diameter. Provide one stretcher bar for each gate and end post and two for each corner and full post.

2.05 STRETCHER BAR BANDS

Bar bands shall be heavy-pressed steel, spaced not over 15 inches on center to secure stretcher bars to tubular end, corner, pull, and gate posts.

2.06 FITTINGS

Malleable steel, cast iron, or pressed steel, galvanized to meet the requirements of ASTM A153. Fittings to include extension arms for shading fabric, stretcher bars and clamps, clips, tension rods, brace rods, hardware, fabric bands and fastenings, and all accessories.

2.07 LINE POSTS

Use galvanized H-columns, 2 inch by 2 1/4 inch, weight 4.1 pounds per linear foot; or 2.375 inch outside diameter, schedule 40 steel pipes, weight 3.65 pounds per linear foot; or C-section roll-formed from steel 1.875 inches by 1.625 inches.

2.08 END, CORNER, ANGLE, PULL AND GATE POSTS

For end, corner, angle, pull posts and gate posts for gates with 6 feet swing or less, use 2.875 inch outside diameter standard weight steel pipe, weight 5.79 pounds per linear foot. For gate posts with gates over 6 feet swing but less than 13 feet, use 4.00 outside diameter standard steel pipe,

weight 9.11 pounds per linear foot. For gate posts with gates over 13 feet swing but less than 18 feet, use 6.625 outside diameter standard steel pipe, weight 18.97 pounds per linear foot.

2.09 **POST TOPS**

Post tops shall be pressed steel or malleable iron, designed as a weather tight closure cap for tubular posts. Provide one cap for each post, unless equal protection is afforded by combination post top cap and barbed wire supporting arm where barbed wire is required. Where top rail is used, provide post caps with open hole tops to permit passage of top rail.

2.10 **GATES**

A. Gate frame shall be constructed of nominal 1.90-inch outside diameter pipe, weight 2.72 pounds per linear foot and shall be fabricated by welding. Each gate leaf shall be provided with at least one diagonal brace 1.66-inch outside diameter pipe, weight 2.27 pounds per linear foot. Frames shall be galvanized after fabrication.

B. Galvanized malleable iron fittings for hinges and latching the gate shall be provided. Fabric shall match the fabric used in the fence. Each pair of gates shall be provided with a heavy drop rod latch assembly with a locking device for a padlock.

2.11 **CHAIN AND LOCK**

Provide a chain and padlock to lock the gate. The chain shall be of sufficient length to allow some slack when locked. The lock shall be keyed to be compatible with the District's key.

2.12 **CONCRETE**

Class A or B Portland cement concrete 500-C-2500 with 5-inch maximum slump per SSPWC.

PART 3 : EXECUTION

3.01 **INSTALLATION**

A. Installation of fencing shall meet the requirements of ASTM F567.

B. Erect fencing in straight lines between angle points by skilled mechanics experienced in this type of construction. Erect in accordance with the manufacturer's recommendations as approved and with these Specifications. Line post holes shall be a minimum depth of 2.5 feet below finished grade. All other post holes shall be a minimum depth of 3 feet below finished grade. Holes for all posts shall be 12 inches in diameter unless otherwise indicated on the drawings. Space posts not more than 10 feet on centers and in true lines. Set posts plumb and to a depth of 3 inches from the bottom of the post hole. The top rail of the fence shall be at the top of the fabric. Fill remainder of hole with concrete to extend around the posts to a point 2 inches above finished grade. The top surface shall have a crown watershed finish. After concrete has set, install accessories. Fasten chain link fabric to end posts with stretcher bars and clamps and to line posts and top rail with wire or bands at approximately 14 inch centers and 24 inch centers, respectively. Install shading fabric on the brackets, tighten, and secure at each bracket. Brace gate posts diagonally to adjacent

line posts to ensure stability. Hang gates and adjust all hardware so that gates operate satisfactorily from open and closed position.

Install gates as follows:

1. The widths of any gates to be installed will be indicated on the plans.

2. A 3/8-inch adjustable tension rod shall be installed on all gates over 4 feet in width.

3. Chain link fence fabric shall be attached to the gate frame by the use of tension bars and tie wires as specified for fence construction, and suitable tension connectors spaced at approximately 16-inch intervals.

4. The swing gates shall be hung by at least 2 steel or malleable iron hinges, so designed as to securely clamp to the gate post and permit the gate to be swung back 180 degrees.

END OF SECTION

SECTION 03052
HOT WEATHER CONCRETING PROCEDURES

PART 1: GENERAL

1.01 SCOPE OF WORK

Hot weather is defined as any one of or combination of air temperature 80 degrees F or more, relative humidity 60% or less and/or wind velocity of 10 miles per hour or more. During hot weather, any or all of the methods specified herein for temperature control of concrete shall be used as required to maintain the concrete temperature below the limits specified.

1.02 RELATED SECTIONS

Section 03300	Cast-In-Place Concrete

1.03 REFERENCES

ACI 305R	Hot Weather Concreting

1.04 SHOP DRAWINGS

Not less than 30 days prior to expected placement of concrete under hot weather conditions, a complete procedure shall be submitted for review covering the aspects of protection of concrete and its ingredients from the detrimental effects of hot weather. Concrete placement during hot weather shall not commence prior to the return of the procedure marked "Reviewed".

1.05 PRODUCT DELIVERY, HANDLING AND STORAGE

A. Aggregate piles, cement bins and batch plant bins shall be shaded from the direct rays of the sun.

B. Aggregate piles shall be cooled by wetting and evaporation. Aggregate wetting shall be performed in such a manner that it will not cause wide variations in moisture content impairing slump uniformity.

PART 2: PRODUCTS

2.01 BATCHING AND MIXING

A. Concrete mix water shall be refrigerated, or ice shall be added to the mix up to 100 percent of the water requirement. Ice, when introduced into the mixer, shall be in such form that it will be completely melted and dispersed throughout the mix at the completion of the mixing time.

B. The mixing time shall be held to the minimum practicable consistent with producing concrete meeting the specified requirements.

PART 3: EXECUTION

3.01 CONCRETE HANDLING

During hot weather, give proper attention to ingredients, production methods, handling, placing, protection, and curing to prevent excessive concrete temperature or water evaporation in accordance with ACI 305R.

3.02 CONCRETE TEMPERATURE

The temperature of concrete at the time and location of placement shall not exceed 90 degrees F under any conditions. The allowable temperature of concrete when delivered to the site for placement shall be determined by use of Figure 2.1.5 of ACI 305 using the field conditions and a maximum evaporation rate of 0.15 pounds per square foot per hour.

3.03 DELIVERY

Concrete shall be placed in the Construction within 90 minutes after the completion of mixing.

3.04 PREPARATION FOR PLACING

Elevated forms and reinforcing steel for beams, slabs and similar members shall be cooled by fog spraying and evaporation immediately prior to placing concrete. Forms shall be free of standing water when concrete is placed herein.

3.05 PLACING

Concrete shall be placed in shallower layers than under normal weather conditions, if necessary, to assure coverage of the previous layer while it will respond readily to vibration.

3.06 FINISHING

Fog spray shall be used continuously during finishing operations to avoid excessive moisture loss in the freshly placed concrete that may result in the formation of surface plastic-shrinkage cracking. Fog spray shall also be used after finishing and before the specified curing is commenced to avoid surface plastic- shrinkage cracking.

3.07 PROTECTION AND CURING

A. Exposed surfaces and forms shall be kept covered and continuously moist. Once forms are loosened and during form removal, concrete surfaces shall be kept continuously wet by fog spraying or other approved means.

B. Exposed surfaces shall be either covered with 6-mil thick polyethylene sheeting or a curing compound as described in Section 03300. Keep surfaces continuously wet by fog spraying or other approved means.

C. There will be no additional reimbursement to the Contractor for costs incurred for placing concrete in hot weather.

END OF SECTION

SECTION 03100
CONCRETE FORMWORK

PART 1: GENERAL

1.01 SCOPE OF WORK

A. Formwork for cast-in-place concrete, with shoring, bracing, and anchorage

B. Openings for other work

C. Form accessories

D. Form stripping

1.02 RELATED SECTIONS

Section 03200	Reinforcing Steel
Section 03251	Expansion and Construction Joints
Section 03300	Cast-in-Place Concrete

1.03 REFERENCES

ACI 301	Structural Concrete for Buildings
ACI 318	Building Code Requirements for Reinforced Concrete
ACI 347	Guide to Formwork for Concrete
PS 1	Construction and Industrial Plywood

1.04 DESIGN REQUIREMENTS

A. The Contractor is solely responsible for design, engineering and construction of formwork, shoring and bracing to conform to design and code requirements; resultant concrete to conform to required shape, line and dimension.

B. Forming, shoring and bracing designs for footings, walls and roofs shall be provided by the Contractor to meet all requirements specified here-in.

C. Drawings and calculations shall be submitted verifying the selection of form ties, horizontal and vertical stiff-backs or braces for wall panels, forming and form openings, shoring of roof forms, or any other part of forming, shoring or bracing which may be considered critical by the Engineer.

D. A civil or structural engineer hired by the Contractor and registered in California must design all falsework and forming requirements for the walls and roof support systems. The drawings, with supporting calculations, must each be signed and sealed by the engineer. No work shall be started until the roof support and form design has been submitted to the District for records. The falsework design engineer must visit the site and approve the erection of all shoring prior to the placement of any concrete.

E. A civil or structural engineer hired by the Contractor and registered in California shall design the shoring, underpinning, bracing, etc. of the existing walls. The means and methods for the preservation of the existing walls and soil behind those walls is the sole responsibility of the Contractor.

F. The CONTRACTOR shall be solely responsible for the adequacy of all forming, shoring and bracing design.

G. Any formwork and falsework installed by Contractor shall be solely at Contractor's risk. The submittal of the design will not lessen or diminish the Contractor's liability.

1.05 SUBMITTAL FOR REVIEW

A. Product Data: Provide data on components to be used to demonstrate form materials and accessories meet these specifications. Submit product data for waterstops.

1.06 QUALITY ASSURANCE

A. Perform Work in accordance with ACI 347, 301, and 318.

B. Falsework shall be designed under the direct supervision of a licensed Structural or Civil Engineer experienced in the design of this work and licensed in California.

1.07 DELIVERY, STORAGE AND PROTECTION

A. Deliver void forms and installation instructions in manufacturer's packaging.

B. Store off ground in ventilated and protected manner to prevent deterioration from moisture.

PART 2: PRODUCTS

2.01 FORM MATERIALS

A. Form Materials: Contractor shall select form materials which will produce a smooth, even finish in all exposed surfaces.

B. Wall Form: The wall form design shall be such that wall sections can be poured full height without creating horizontal cold joints and without causing snapping of form ties which shall be of sufficient strength and number to prevent spreading of

the forms during the placement of concrete and which shall permit ready removal of the forms without spalling or damaging the concrete.

C. Column Form: The column form shall be a fabricated item designed for use as a column form. The pieces of the form, when secured together shall not allow mortar to leak from joints or the bottom of the form.

2.02 FORMWORK ACCESSORIES

A. Form Ties: Form ties which remain in the walls of water-retaining structures shall have waterstops and a breakback or cone one-inch minimum in depth.

Snap ties, if used, shall not be broken until the concrete has reached the design concrete strength. Snap ties, designed so that the ends must be broken off before the forms can be removed, shall not be used. The use of tie wires as form ties will not be permitted. Fully threaded stub bolts may be used in lieu of smooth ties with waterstops.

Taper ties with plastic or rubber plugs of an approved and proven design may also be used. The plugs must be driven into the hole with a steel rod, placed in a cylindrical recess made therefore in the plug. The taper ties shall be oriented such that when the tapered plugs are inserted, the pressure of the water will push the plug toward the taper. At no time shall plugs be driven on the flat area outside the cylindrical recess. A-58 SURE PLUG as manufactured by DAYTON SUPERIOR, Santa Fe Springs, CA (phone: (562) 522-3442) meet these specifications.

Ties shall positively secure the wall to the required dimension and hold the wall to that dimension prior to and during concrete placement.

B. Form Release Agent: Colorless mineral oil which will not stain concrete, or absorb moisture, or impair natural bonding. For steel forms, release agent shall prevent discoloration of the concrete due to rust.

C. Corners: Chamfer all corners of concrete unless specifically noted otherwise. Provide chamfer strip secured in forms as required.

D. Nails, Spikes, Lag Bolts, Through Bolts, Anchors: Sized as required, of sufficient strength and character to maintain formwork in place while placing concrete.

E. Waterstops: Shall conform to requirements in Section 03251, "Expansion and Construction Joints". The size and location of the waterstop shall be as shown on the Drawings.

F. Form Stiffeners: Horizontal walers shall consist of structural steel channels, angles or tubing of adequate size to retain the concrete without deflecting.

The walers shall be rolled or welded to the proper radii or offset brackets shall be used for shaping the wall to the dimensions shown on the Drawings and shall be used both for inside and outside wall forms in direct contact with the wall panels and at vertical spacing of no more than 96 inches on center where curved walls are required.

There shall be at least one waler within 24 inches of the top and bottom of the wall.

Vertical structural steel or wood members shall be used at a minimum horizontal spacing of 72 inches and shall have sufficient rigidity and strength to ensure the proper vertical alignments with the aid of braces under all predictable stress conditions.

In lieu of the above, a different system and spacing may be used if it is satisfactorily demonstrated to the ENGINEER that it will be equally effective.

G. Roof Form Supports: Forms and falsework supports for the roof shall be sufficiently rigid and strong enough to support the wet concrete, workers and equipment necessary for its placement without appreciable deflections. A minimum of 40 PSF for live-load shall be considered in the design.

Unless the deflection of roof-forms is limited to 1/300 of the column spacing length, an upward camber shall be provided.

The CONTRACTOR shall provide additional camber for beams and slabs to permit the concrete and reinforcing steel to act efficiently without development of deflection cracks.

PART 3: EXECUTION

3.01 EXAMINATION

A. Verify lines, elevation levels and centers before proceeding with formwork. Ensure that dimensions agree with drawings.

B. Clean surfaces of all forms to be in contact with concrete of all previous concrete or contaminants prior to erection.

3.02 EARTH FORM

A. Hand trim sides and bottom of earth forms. Remove loose soil prior to placing concrete. See typical details for additional requirements.

B. No forming stakes will be permitted in earth forms.

3.03 ERECTION - FORMWORK

A. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI 301.

B. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to overstressing by construction loads.

C. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. The arrangement of the formwork shall permit the removal of remaining principal shores.

D. Joints not shown on the Drawings or reviewed shop drawings shall not be permitted.

E. Obtain approval before framing openings in structural members, which are not indicated on Drawings.

F. Provide fillet and chamfer strips on external corners of beams, walls and slabs unless noted or shown otherwise.

G. Coordinate this section with other sections of work which require attachment of components to formwork.

H. If formwork is placed after reinforcement resulting in insufficient concrete cover over reinforcement, reinforcing shall be relocated to provide proper coverage.

I. Formwork shall be placed and secured to produce the concrete sections shown on the drawings.

J. Wall formwork shall be of sufficient strength and stiffness to permit the placement of the full wall height between vertical construction joints shown on the drawings without the need of additional horizontal construction joints.

3.04 WALL, WALL FOOTING, COLUMN AND COLUMN FOOTING FORMS

A. All vertical wall and column footing sides shall be formed by methods acceptable to the Engineer and to the correct elevations and location shown on the Plans.

B. Pouring of tank wall concrete may be done through pour openings on one of the wall sides, and may be pumped or poured from the top through the use of "elephant trunks" or tremies.

C. Under no circumstances shall forming be such that the drop of concrete in the forms will exceed 8 feet in any one place.

D. There shall be no blockouts or other types of wall-openings other than those shown on the Plans.

E. CONTRACTOR shall remove all wood splinters on concrete surfaces after stripping of wood forms.

F. Bulkheads to form vertical wall joints shall be strong enough to withstand concrete pressures during pouring and vibrating, and shall be properly placed between the forms and against the waterstop to avoid mortar seepage.

G. Holes shall be provided in the bulkheads to permit passage of horizontal mild steel reinforcing where required by the Plans.

H. Unless specifically called for on the Plans, no chamfer strips shall be placed in the corners of vertical construction joints of walls.

I. Every precaution shall be taken to ensure that all forms are in the proper alignment, plumb, placed to correct radius (where curved) and that all form supports are secure and tight.

J. Construction Tolerances:

1. The maximum permissible variation in tank radius, as measured from the center of the tank to the inside wall surface at the bottom, is plus or minus 3/8 of an inch.

2. The out-of-round tolerance is: 3/4" in 50', 3/8" in 10' and 3/16" in 24" from the true curvature specified at any point on the wall.

3. The maximum permissible variation in the vertical alignment, from the bottom to the top of the wall or columns, is plus or minus 3/8 of an inch.

4. The allowable tolerance in the average wall thickness for poured walls shall not vary more than 1/8 inch either way. All transitions from plus to minus shall be gradual, even and smooth, and without abrupt changes in the surfaces.

5. Adequate time and cooperation shall be provided to the Inspector to verify the compliance of these requirements prior to closing up the forms or pouring concrete.

M. The use of slip form construction for liquid-retaining walls will not be permitted on any part of the project.

3.05 ROOF FORMS

A. The finished form surface shall be smooth, true to elevation and alignment and all joints between boards, plywood sheets or form panels shall be mortar-tight, or be made mortar-tight by taping or other means as the situation calls for, before any concrete pour may be started.

B. Removal of the forms will be permitted only as specified in these Specifications or shown on the Plans.

As soon as the forms have been removed, the Engineer will carefully examine the top and bottom surface of the concrete for any defects in the concrete or irregularities in the surface which shall be repaired as required.

C. The Contractor shall provide either wedges under timber posts, screw jacks under shoring, or provide other means to adjust the forms and relieve the load.

D. Unless stated otherwise on the Plans, the permissible tolerance at any point for flat roof form-surfaces shall not exceed plus or minus 1/4 inch from the specified elevation or thickness. The finished roof surface shall be capable of completely draining. Contractor shall camber or provide necessary forming supports to prevent low spots and to ensure drainage. If low spots should occur, Contractor shall submit a corrective procedure to the Engineer for approval.

Any transition between high and low points shall be gradual, smooth and even, and shall be to the satisfaction of the Engineer.

3.06 APPLICATION – FORM RELEASE AGENT

A. Apply form release agent on formwork in accordance with manufacturer's recommendations.

B. Care shall be taken not to apply any form release agent to the reinforcing steel, anchoring devices or embedded items in the forms.

3.07 INSERTS, EMBEDDED PARTS AND OPENINGS

A. Provide formed openings where required for items to pass through concrete work.

B. Locate and secure in place items, which will be cast directly into concrete prior to the placing of the concrete.

C. Coordinate with work of other sections in forming and placing openings, slots, recesses, sleeves, bolts, anchors, other inserts and components of the Work.

D. Install accessories in accordance with manufacturer's instructions, straight level, and plumb. Ensure items are not disturbed during concrete placement.

E. Install waterstops in accordance with manufacturer's instructions. Secure edges of waterstop to ensure they will not be bent over during the placing of concrete.

F. Provide temporary ports or openings in formwork where required to facilitate cleaning, inspection, placing and consolidating concrete.

G. Close temporary openings with tight fitting panels, flush with inside face of forms, and neatly fitted so joints will not be apparent in exposed concrete surfaces.

3.08 FORM CLEANING

A. Clean forms as erection proceeds, to remove foreign matter within forms to provide a smooth even surface.

B. Clean formed cavities of debris prior to placing concrete.

C. Use compressed air to remove remaining foreign matter.

3.09 FORMWORK TOLERANCES

A. Construct formwork to maintain tolerances as stated in this section. If not noted provide as required by ACI 301.

B. Camber slabs and beams in accordance with ACI 301.

3.10 FIELD QUALITY CONTROL

A. Inspect erected formwork, shoring and bracing to ensure that work is in accordance with formwork design, and that supports, fastenings, wedges, ties, and items are secure and properly located.

B. Do not patch wood formwork except as allowed below, otherwise replace with new.

C. The contractor shall inspect all forms prior to each use for defects which may result in imperfections in the concrete surface. Forms which create defects in the surface of the concrete shall not be used. All form work is subject to inspection by the Engineer and shall be repaired or replaced as directed by the Engineer.

D. Wood forms may be used up to a maximum of 3 a reuses unless otherwise allowed by the Engineer. Wood forms shall be resurfaced or replaced at any time when the forms are deemed unacceptable by the Engineer.

3.11 FORM REMOVAL

A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads. The removal criteria given below, serve only as minimums. It is the sole responsibility of the CONTRACTOR to ensure the concrete has sufficient strength for forms to be removed.

B. Forms on sides of footings and encasements may be removed after 24 hours.

C. Wall forms shall not be removed until a minimum of 12 hours of accumulative time with ambient temperature over 50°F has passed since the concrete was placed and consolidated.

D. Structural slab forms and shoring shall not be removed for a minimum of 10 days and only when concrete test breaks indicate the concrete placed for the slab has reached a minimum of 85% of its required 28-day compressive strength. The Contractor may mold and cure additional concrete cylinders per Section 03300.3.07 to verify the 85% strength has been achieved.

E. Loosen forms carefully. Do not wedge pry bars, hammers or tools against finish concrete surfaces scheduled for exposure to view.

F. Store removed forms in manner that surfaces to be in concrete with fresh concrete will not be damaged. Discard damaged forms.

G. Contractor shall begin to apply curing compounds within one hour after stripping wall forms as outlined in Section 03300.03.08.

H. All formwork shall be removed before backfill is placed against the formed surface.

END OF SECTION

SECTION 03200
REINFORCING STEEL

PART 1: GENERAL

1.01 SCOPE OF WORK

Reinforcing steel bars, wire fabric and accessories for cast-in-place concrete.

1.02 RELATED SECTIONS

Section 03100	Concrete Formwork
Section 03200	Reinforcing Steel
Section 03300	Cast-in-Place Concrete

1.03 REFERENCES

ACI 301	Structural Concrete for Buildings
ACI 318	Building Code Requirements for Reinforced Concrete
ACI SP-66	American Concrete Institute - Detailing Manual
ASTM A185	Welded Steel Wire Fabric for Concrete Reinforcement
ASTM A615	Deformed and Plain Billet Steel Bars for Concrete Reinforcement
ASTM A706	Low-Alloy Steel Deformed Bars for Concrete Reinforcement
ASTM A775	Epoxy-Coated Reinforcing Steel Bars
AWS D1.4	Structural Welding Code for Reinforcing Steel
AWS D12.1	Welding Reinforcement Steel, Metal Inserts and Connections in Reinforced Concrete Construction
CRSI	Concrete Reinforcing Steel Institute - Manual of Practice

1.04 SUBMITTALS FOR REVIEW

A. Shop Drawings: Indicate bar sizes, spacings, locations and quantities of reinforcing steel bending and cutting schedules, supporting and spacing devices.

1.05 SUBMITTALS FOR INFORMATION

A. Submit certified copies of mill test report of reinforcement materials analysis demonstrating compliance with these specifications.

1.06 QUALITY ASSURANCE

Perform Work in accordance with CRSI Manual of Practice, ACI 301 and ACI 318.

PART 2: PRODUCTS

2.01 REINFORCEMENT

A. Reinforcing Steel: ASTM A615, 60 ksi yield grade.

B. Welded Reinforcing Steel: ASTM A706, 60 ksi yield grade, deformed billet steel box.

C. Epoxy Coated reinforcing shall be in conformance with ASTM A775.

2.02 **ACCESSORIES**

A. Tie Wire: Minimum 16 gage annealed type.

B. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during concrete placement conditions.

C. Mechanical Couplers: Mechanical couplers shall be provided where shown or may be used where approved by the ENGINEER. The couplers shall have the tensile capacity equal to a minimum of 125 percent of the reinforcement bars yield strength being spliced.

1. Where the type of coupler used is composed of more than one component, all components required for a complete splice shall be supplied. This shall apply to all mechanical splices, including those splices intended for future connections.

2. The reinforcement steel and coupler used shall be compatible for obtaining the required strength of the connection. Straight threaded type couplers shall require the use of the next larger size reinforcing bar or shall be used with reinforcing bars with specially forged ends which provide upset threads which do not decrease the basic cross section of the bar.

3. Couplers shall be **Lenton Form Saver as manufactured by Erico Products; Dowel Bar Splicer System as manufactured by Richmond Screw Anchor Company;** or equal.

2.03 **FABRICATION**

A. Fabricate concrete reinforcing in accordance with CRSI Manual of Practice and ACI 318.

B. Weld reinforcement in accordance with AWS D1.4.

C. Locate reinforcing splices not indicated on drawings, at point of minimum stress. Propose splice locations on reinforcement shop drawings.

D. Do not bend bars in the field, do not rebend bars. Do not bend bars that are partially embedded in concrete.

PART 3: EXECUTION

3.01 **PLACEMENT**

A. Place, support and secure reinforcement against displacement. Do not deviate from required position.

B. Do not displace or damage vapor barrier, where it occurs.

C. Accommodate placement of formed openings.

D. Maintain concrete cover around reinforcing as specified on the drawings.

E. Galvanized coated reinforcing bars shall be stored, transported, and placed in such a manner as to avoid damaging of the galvanized coating. In-place galvanized reinforcing bars shall be inspected for coating damage, and all coating damage due to fabrication or handling shall be repaired in accordance with ASTM A780 – "Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings" prior to placing concrete.

F. Do not use any kinked bars.

3.02 SPLICING

A. General:

1. Reinforcement bar splices shall only be used at locations shown. When it is necessary to splice reinforcement at points other than where shown, the character of the splice shall be as acceptable to the District and shall be specified on the submitted shop drawings.

2. Unless otherwise indicated, dowels shall match the size and spacing of the spliced bar.

B. Splices of Reinforcement:

1. The length of lap for reinforcement bars, unless otherwise shown shall be in accordance with ACI 318, Section 12.15.1 for a Class B splice.

2. Splices in column spiral reinforcement, when necessary, shall be made by welding or by a lap of 1-1/2 turns.

3.03 FIELD QUALITY CONTROL

A. Reinforcing shall be checked for proper alignment, spacing and configuration just prior to start of concrete placement or masonry grouting.

B. At the time of placing concrete or grouting, all reinforcement shall be free from loose mill scale, rust, grease, or other coating which might destroy or reduce its bond with concrete or grout.

C. All reinforcing chairs and bar supports shall be checked for proper positioning, just prior to start of concrete placement. All moved or tipped supports shall be properly reset.

END OF SECTION

SECTION 03251
EXPANSION AND CONSTRUCTION JOINTS

PART 1: GENERAL

1.01 SCOPE OF WORK

The Contractor shall furnish and install expansion and construction joints as shown and detailed, complete, such as waterstop, surface prep, bond breaker tape, primer, sealant, etc., in accordance with the requirements of the Contract Documents.

1.02 RELATED SECTIONS

Section 03200	Reinforcing Steel
Section 03300	Cast-in-Place Concrete

1.03 REFERENCES

ASTM C920	Specification for Elastomeric Joint Sealants
ASTM D412	Test Methods for Rubber Properties in Tension
ASTM D570	Test Method for Water Absorption of Plastics
ASTM D624	Test Method for Rubber Properties - Tear Resistance
ASTM D746	Test Method for Brittleness Temperature of Plastics and Elastomers by Impact
ASTM D747	Test Method for Apparent Bend Modulus of Plastics by Means of a Cantilever Beam
ASTM D792	Test Method of Specific Gravity and Density of Plastics by Displacement
ASTM D2240	Test Method of Rubber Property - Durometer Hardness
CRD-C-572	U.S. Army Corp. of Engineers Specifications for PVC Waterstop

1.04 SUBMITTALS

Furnish manufacturer's certification stating the material used in the proposed products meets all of the requirements specified here-in. The Engineer, at his option, may take samples of any materials and have them tested by an independent testing laboratory to verify their compliance with these Specifications. All such costs shall be borne by the District. If any materials should fail to meet these Specifications, all costs for further testing of the replacement material shall be borne by the Contractor.

1.05 OBSTRUCTIONS

The Contractor shall pay particular attention to removing all obstructions such as concrete, nails, etc., from joints when movements of floor, wall and roof sections can be expected under prestressing, temperature and other conditions.

PART 2: PRODUCTS

2.01 WATERSTOPS

A. Waterstops shall be of an approved type, supplied by an approved manufacturer and shall be plastic made of virgin polyvinylchloride compound, shall be ribbed, uniform in dimensions, dense, homogeneous, free from porosity, and as detailed on the Drawings.

B. No reclaimed PVC shall be used in the compound.

C. The finished waterstop material shall meet the requirements of CRD-C-572 and following minimum requirements:

1.	Tensile strength:	2,000 psi	(ASTM D-412)
2.	Ultimate elongation:	360%	(ASTM D-412)
3.	Shore hardness:	79 ± 3	(ASTM D-2240)
4.	Specific gravity:	1.4	(ASTM D-792)
5.	Stiffness in flexure:	700 psi	(ASTM D-747)
6.	Cold brittleness:	-35^{o} F	(ASTM D-746)
7.	Water absorption (48 hours):	0.320% max.	(ASTM D-570)
8.	Tear resistance:	225 lb./in.	(ASTM D-624)

D. GREENSTREAK, Inc., 3400 Tree Court Industrial Boulevard, St. Louis, MO 63122 (phone 800-325-9504) are two of several suppliers who can furnish waterstops meeting these requirements.

2.02 JOINT SEALERS

A. Joints, not requiring waterstops or when so indicated on the Drawings, shall be sealed with a joint sealer material of uniform, stiff consistency that does not contain solvents.

B. The joint sealer shall tenaciously adhere to primed concrete surfaces, shall remain permanently flexible, shall not contaminate potable water and be NSF approved.

C. The sealant material shall be of a type that will effectively and permanently seal joints subject to movements in concrete.

D. The joint sealer shall be an acceptable two-part, self-leveling (or gun grade), non-staining, polyurethane elastomeric sealant which cures at ambient temperature and conforming to ASTM C-920.

E. Product name and manufacturer:

1. SIKAFLEX/2C, Polyurethane Elastomeric Sealant, as manufactured by SIKA CHEMICAL CORP., Santa Fe Springs, CA (562-903-3648)

2. SELECT SEAL U-227 RESERVOIR GRADE, as manufactured by Select Products, Costa Mesa, CA (714-429-0808)

3. Approved equal

F. For sloping joints, vertical joints and overhead horizontal joints, only "non-sag" compounds shall be used; all such compounds shall conform to the requirements of ANSI/ASTM C 920 Class 12-1/2, or Federal Specification TT-S-0027 E(3), Type II.

G. For plane horizontal joints, the self-leveling compounds which meet the requirements of ANSI/ASTM C 920 Class 25, or Federal Specification TT-S-0027 E(3), Type I shall be used. For joints subject to either pedestrian or vehicular traffic, a compound providing non-tracking characteristics and having a Shore "A" hardness range of 25 to 35, shall be used.

H. Primer and bond breaker tape materials, if recommended by the sealant manufacturer, shall conform to the printed recommendations of the sealant manufacturer.

PART 3: EXECUTION

3.01 INSTALLATION OF WATERSTOPS

A. The waterstop shall be correctly positioned in the forms, centering the waterstop on the joint.

B. In cases where preformed expansion joint material is used in conjunction with the waterstop, allowance shall be made to provide equal waterstop concrete embedment on each side of joint.

C. Waterstop shall be held in place in the forms by use of a split form or other approved method that will positively hold the waterstop in the correct position and to the correct alignment.

D. Horizontal waterstops shall be bent up during placing of concrete until the concrete has been brought to the level of the waterstop; additional concrete shall then be placed over the waterstop, after which the concrete shall be thoroughly vibrated.

E. All horizontal and vertical waterstops, which are not accessible during pouring, shall be tied off in two directions every 12 inches in such a manner as to prevent the waterstop from being bent over during concrete placement or consolidation.

F. A hog-ring or nail may be driven through both ends of the waterstop to secure the waterstops to reinforcing steel or form-ties. The hog-rings and or nails shall be secured in a way to prevent them from coming loose or tearing through the waterstop.

G. All waterstops shall be properly spliced and joints shall be checked for strength and pinholes after splicing. Joints at corners and intersections of waterstops shall be shop fabricated (mitered and welded). Butt splices may be made in the field using personnel, equipment and methods approved by the waterstop manufacturer.

H. Splices shall be strong enough to develop a pulling force of 75 percent of the strength of the waterstop, and shall be watertight. Follow manufacturer's recommendations for splices.

I. The waterstops in the floor slab joints shall be connected to the vertical waterstop at the wall to wall-footing joint.

3.02 **JOINT SEALERS**

A. Joint sealed areas shall be sandblasted or roughened and blown clean of dust and sand with compressed air before the material may be applied.

B. Bond breaking tape shall be placed in the bottom of the sealant groove where shown on the Drawings.

C. Sides of the joints shall be primed (if required) with a primer compatible with the sealant and made by the same manufacturer. The sealant shall be applied in a continuous bead in accordance with the manufacturer's recommendations.

END OF SECTION

SECTION 03300
CAST-IN-PLACE CONCRETE

PART 1: GENERAL

1.01 SCOPE OF WORK

A. This section covers cast-in-place concrete including selective finishing and repair work for structures or retaining walls on the project.

B. The requirements specified herein are minimum requirements only and shall not be interpreted as all inclusive. It is the responsibility of the CONTRACTOR to employ the necessary practices based on the referenced ACI Standards to ensure the completion of quality concrete construction, of the strengths specified within the Construction Documents, and relatively free of cracks.

1.02 RELATED SECTIONS

Section 03052	Hot Weather Concreting
Section 03100	Concrete Formwork
Section 03200	Reinforcing Steel
Section 03251	Expansion and Construction Joints
Section 03740	Epoxy Adhesive Injection of Cracks in Concrete Members
Section 09900	Painting and Coating

1.03 REFERENCES

ASTM C31	Making and Curing Concrete Test Specimens in the Field
ASTM C33	Specification for Concrete Aggregate
ASTM C39	Compressive Strength of Cylindrical Concrete Specimens
ASTM C40	Organic Impurities in Sands for Concrete
ASTM C88	Soundness of Aggregates by use of Sodium Sulfate or Magnesium Sulfate
ASTM C94	Specifications for Ready-Mixed Concrete
ASTM C131	Resistance to Degradation of Small Size Course Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C136	Method for Sieve Analysis to Fine and Coarse Aggregate
ASTM C143	Test Method for Slump of Portland Cement Concrete
ASTM C150	Standard Specification for Portland Cement
ASTM C156	Test Method for Water Retention by Concrete Curing Materials
ASTM C173	Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method
ASTM C231	Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C233	Standard Method of Testing Air-Entraining Admixtures for Concrete
ASTM C260	Standard Specifications for Air-Entraining Admixtures for Concrete

ASTM C289	Standard Test Method for Potential Reactivity of Aggregates (Chemical Method)
ASTM C441	Standard Test Method for Effectiveness of Mineral Admixtures in Preventing Excessive Expansion of Concrete Due to the Alkali-Aggregate Reaction
ASTM C457	Microscopical Determination of Air-Void Content and Parameters of the Air-Void System in Hardened Concrete
ASTM C494	Standard Specifications for Chemical Admixtures for Concrete
ASTM C618	Standard Specifications for Coal Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete
ASTM C670	Preparing Precision Statements for Test Methods for Construction Materials.
ASTM C803	Penetration Resistance of Hardened Concrete
ASTM C1084	Portland Cement Content of Hardened Hydraulic-Cement Concrete
ACI 301	Structural Concrete for Buildings
ACI 211.1	Recommended Practice for Selecting Proportions for Normal and Heavyweight Concrete
ACI 304	Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
ACI 305R	Hot Weather Concreting
ACI 306R	Cold Weather Concreting
ACI 308	Standard Specifications for Curing Concrete

1.04 **SUBMITTALS FOR REVIEW**

A. The Shop Drawings shall show complete details and arrangement of reinforcing and embedded items.

B. Prepare mix design and prove with laboratory 7-day, 14-day and, 28-day compressive test, or submit test reports of 7-day, 14-day, and 28-day compressive tests of the mix where the same mix has been used on two previous structures. The materials used in any mix design submitted shall for review shall be from the same source as those that will be actually furnished for this project (i.e., cement manufacturer, aggregates, admixtures, etc.) Submit mix design and test reports in writing for review by the ENGINEER at least 15 days before placing of any concrete.

C. Provide certificate from supplier stating cement complies with ASTM C150 and these specifications.

D. Provide certificate that aggregates comply with ASTM C33. State weathering region limits of coarse aggregates: severe, moderate, or negligible. State basis of determining that potential reactivity is negligible.

E. For concrete admixtures provide manufacturer's certificate of compliance with these specifications.

F. Epoxy Bonding Compound: Provide manufacturer's specific instructions for use.

G. Non-shrink Grout: Provide manufacturer's certificate of compliance with these Specifications and specific instructions for use.

H. Concrete Shrinkage Test Results: Provide test results from a testing lab documenting the proposed concrete mix designs for water retaining structure are within the acceptable shrinkage limits stated in this section.

I. Fine and Coarse Aggregate Test Results: Provide results of required aggregate test stated in Section 2.03 of this specification.

J. NSF Certification: Provide certificate of approval from NSF International that concrete mixes meet ANSI/NSF 61 requirements for contact with drinking water. See subsection 1.05-C.7.

1.05 QUALITY ASSURANCE

A. Perform work in accordance with ACI 301.

B. Acquire cement and aggregate from same source for all work.

C. Concrete Mix Designs:

1. All concrete materials shall be proportioned so as to produce a workable mixture in which the water content will not exceed the maximum specified.

2. The exact proportions by weight of all materials entering into the concrete delivered to the jobsite shall conform to the approved mix design unless specifically so directed by the DISTRICT or Laboratory for improved specified strength or desired density, uniformity and workability.

3. The proportions of such mix design shall be based on a full cubic yard of hardened concrete.

4. The jobsite batch plant shall furnish delivery tickets, signed by a Certified Weighmaster, on which each shall state the weight of aggregates, sand, cement and water and the number of cubic yard of concrete furnished, which will be compared against the approved mix design.

5. There shall be no variation in the weights and proportions of materials from the approved mix design.

6. CONTRACTOR shall bear the costs of mix designs.

7. Concrete mixes used for reservoir construction require ANSI/NSF 61 certification. If the concrete mix is not NSF 61 Certified, all concrete mix ingredients including cement, admixtures and curing compounds except for aggregate shall be NSF 61 certified individually.

D. Concrete Shrinkage Testing:

1. Each mix design to be used in the construction of the tank shall be tested for concrete shrinkage in accordance with ASTM C157. The maximum rate of shrinkage shall be 0.042 at 28-day drying age. The test may be terminated after the 28-day drying age measurement. These tests shall be performed prior to the start of the concrete construction using the same material sources for materials as those to be used for construction.

2. The maximum concrete shrinkage for specimens cast in the field shall not exceed the trail batch maximum shrinkage by more than 25 percent.

3. If the required shrinkage limitation is not met during construction, the CONTRACTOR shall take any and all of the following actions, at no additional cost to and to the satisfaction of the DISTRICT, for securing the specified shrinkage requirements. These actions may include changing the source of aggregates, cement and/or admixtures; reducing water content; washing of aggregate to reduce the fines; increase the number of construction joints; modifying the curing requirements; complete removal of the non-conforming concrete; or other actions designed to minimize shrinkage or the effects of shrinkage.

E. Ready Mix Concrete:

1. Ready mixed concrete shall conform to the requirements of ACI 301 and ASTM C 94. In case of conflict, ACI 301 shall govern.

PART 2: PRODUCTS

2.01 CONCRETE COMPOSITION

Concrete shall be composed of Portland cement, fine aggregate, coarse aggregate, and water, so proportioned and mixed as to produce a plastic solution workable mixture in accordance with requirements of this section of the specifications, and suitable to the specific conditions of placement.

2.02 PORTLAND CEMENT

A. Portland cement shall be from an approved source and shall conform to the requirements of the current ASTM C-150, for Type II/V cement. Only one brand of cement from one manufacturing plant may be used.

B. Cement may be delivered in paper sacks or in bulk.

C. If cement is delivered in sacks, each sack shall contain not less than 94 pounds of cement, and if delivered in bulk, one barrel of cement shall be considered to weigh 376 pounds.

D. In order that the cement may not become unduly aged after delivery, the CONTRACTOR shall use cement that has been stored on the jobsite before using cement direct from freighting, hauling or transporting operations.

E. Storage bins for bulk cement shall be watertight and constructed so that there will be no dead storage.

F. If there is reason to believe that dead storage exists, the bins shall be emptied completely at least once every four months.

G. Cement bins at the batch plant, and cement storage silos shall be provided with effective dust collectors at the vents to prevent loss of cement.

H. The CONTRACTOR shall designate the source and quantity of cement required for his needs at least 30 days prior to its use, so that appropriate tests, inspection and certification can be made.

I. Certified mill certificates shall be furnished by the cement supplier with every shipment, giving proof that the above requirements have been met.

J. In addition, the DISTRICT may conduct, at its own expense, any tests it considers necessary, to insure that the cement provided meets the specified requirements.

K. Any cement not meeting the Specifications will be rejected.

L. The DISTRICT may direct the use of Portland cement of a type other than that above specified, in which case it will pay the additional cost, if any, for the cement required over the cost of that specified, or shall receive appropriate credit for any cement required of a lesser cost than specified.

2.03 FINE AND COARSE AGGREGATES

A. Fine aggregate shall be clean, natural sand consisting of hard, strong, durable and uncoated particles. It shall conform to the grading limits specified in ASTM C33.

B. Material removable by decantation from fine aggregate shall not exceed five percent (5%) by weight.

C. The moisture content of fine aggregate shall not exceed eight percent (8%) by weight at the time the aggregate is used for the concrete.

D. Fine aggregate shall be subjected to careful, thorough analysis to determine conformity with all requirements of these specifications.

E. Mortar specimens made with the fine aggregate shall have a compressive strength after seven (7) days of at least ninety percent (90%) of the strength of similar specimens made with Ottawa sand having a fineness modulus of 2.40.

F. Coarse aggregate shall be washed gravel or crushed stone consisting of hard, tough, durable particles free from adherent coating.

G. It shall contain no vegetable matter of soft, friable, thin, flat or elongated particles in quantities considered deleterious.

H. A thin, flat or elongated particle is defined as a particle having a maximum dimension in excess of five times its minimum dimension.

I. Aggregate that has disintegrated or weathered badly under exposure conditions similar to those that will be encountered in the work under consideration shall not be used.

J. When crushed stone is used, the crusher shall be equipped with a screening system that will entirely separate the dust from the stone and convey it to a separate bin.

K. The substances designated shall not be present in excess of the following amounts:

1.	Soft fragments:	5%
2.	Clay lumps:	1.4%
3.	Material removed by decantation:	1%

L. When the material removed by decantation consists essentially of crushed dirt, the maximum amount permitted may be raised to one and one-half percent (1/2%).

M. Coarse aggregate shall be subjected to a careful, thorough analysis to determine conformity with all requirements of these Specifications.

N. The maximum size aggregate shall be as required in this Section, the aggregate shall be uniformly well graded from coarse through fine.

O. Corrective measures to remedy deficiencies in aggregate grading may be used only with the written approval of the DISTRICT. Coarse aggregate grading shall conform to the requirements of ASTM C33 for the aggregate size number specified in this section.

P. The CONTRACTOR shall furnish satisfactory evidence to the DISTRICT that all aggregate used in the work meets the requirements specified herein. Tests shall be performed by a reputable independent testing laboratory and the cost of testing be borne by the CONTRACTOR.

Q. If the DISTRICT deems that testing of aggregate is necessary, samples may be selected from any of the aggregate delivered to the ready mix plant or jobsite and have them tested by a laboratory of the DISTRICT’s choice at their expense.

R. If in such tests the material fails to meet the specified requirements, the aggregate will be rejected and the expense of testing shall be borne by the CONTRACTOR.

S. If such tests show the aggregate to be satisfactory, the CONTRACTOR shall have no claim for costs due to delays caused by testing.

T. When tested in accordance with "Organic Impurities in Sands for Concrete" (ASTM C40), the fine aggregate shall provide a color in the supernatant liquid no darker than the reference standard color solution.

U. When tested in accordance with "Soundness of Aggregates by use of Sodium Sulfate or Magnesium Sulfate" (ASTM C88), the loss resulting after five cycles shall not exceed 10% for fine aggregate and 12% for coarse aggregate when using sodium sulfate.

V. When tested in accordance with "Resistance to Abrasion of Small Size Coarse Aggregate by use of the Los Angeles Machine" (ASTM C131), the coarse aggregate shall show a loss not exceeding 50% after 500 revolutions or 10% after 100 revolutions.

W. When tested in accordance with "Potential Reactivity of Aggregates (Chemical Method)" (ASTM C289), the aggregates should be represented by points lying to the left side of the solid line of Figure 2.

2.04 WATER

Water for mixing shall be clean, fresh and free from injurious amounts of oil, acid, chlorides, sulfates, alkali or organic matter. Water shall conform to ACI 301.

2.05 AIR-ENTRAINING AGENTS

A. Unless specifically required by the DISTRICT, the concrete may be air-entrained at the option of the CONTRACTOR, however, Class "A" concrete shall not be air-entrained.

B. Air-entraining agents shall conform to the requirements of ASTM C260 and C233.

C. The maximum total volumetric air content of the concrete before placement shall be as specified in subsection 2.10, as determined by ASTM C173 or ASTM C231.

D. Manufacturers and Product:

1. GRACE CONSTRUCTION PRODUCTS, Cambridge, MA (877) 423-6491; "DAREX AEA"

2. MASTER BUILDERS SOLUTION US LLC, Cleveland, OH (800) 628-9990, MasterAir Series

3. SIKA, Santa Fe Springs, CA (562) 903-3648; "AER".

2.06 WATER REDUCING ADMIXTURES

A. Water reducing additives, which do not affect the ultimate performance of any steel in any way, may be added to the concrete mix design. Water reducing additives shall conform to ASTM C494, Type A or D.

B. The use of water reducing additives shall not permit the cement content or the air-entrainment to be reduced below the minimum specified in subsection 2.10 below.

C. Superplasticizers, if allowed by the DISTRICT, shall conform to ASTM C494, Type F or G, batch plant added using second or third generation only.

2.07 ADMIXTURES

A. All admixtures used in any mix design shall be manufactured and supplied by the same admixture company to ensure compatibility and shall not contain calcium chloride or triethanolamine.

B. Flyash shall not be used in the concrete mix design.

C. When the air temperature during the pour exceeds 85°F, a concrete retarding admixture shall be added to all Class "A" concrete (as defined in subsection 2.08 below) used for wall construction.

1. Grace Construction Products, Cambridge, MA; “DARATARD-17”

2. Master Builders Solutions US LLC, Cleveland, OH; MasterPozzolith Series

3. To be considered as equal, any alternate product offered for consideration shall contain no calcium chloride, and shall be compatible with air-entrained cements and air-entraining admixtures conforming to the applicable ASTM, AASHO, ANSI and Federal specifications.

D. CONTRACTOR shall certify that admixtures do not contain calcium chlorides or other corrosive materials.

2.08 CONCRETE CLASSIFICATION

A. Unless indicated otherwise on the Drawings, concrete shall be of the following classes, each meeting the mix and compressive strength requirements as specified hereafter, and shall be used as follows:

1. **Class A:** Concrete reservoir walls, wall footing, floor slab, columns, roof slabs, drop panels, and concrete pipe supports.

2. **Class B:** Pipe blocks and appurtenances; other non-structural support structures and foundations.

3. **Class C:** Site work concrete for curbs, gutters, swale and flatwork.

B. At the CONTRACTOR's option, Class "A" concrete may be substituted for Class "B" and "C" concrete. Likewise, Class "B" concrete may be used in lieu of Class "C" concrete. If Class "A" concrete is substituted for Class "B" or "C" concrete, such concrete shall be air-entrained if the Class "B" or "C" concrete is required to be air-entrained.

2.09 MEASUREMENT AND SLUMP

A. All measurements of material for concrete shall be by weight. However, CONTRACTOR, at his own expense, may increase the cement content with a corresponding reduction in weight of aggregate and sand, if there is concern that the minimum strength requirements under these specifications cannot be met.

B. The amount of water to be used shall be the amount necessary to produce a plastic mixture of the specified slump, but shall not to exceed the water-cement ratio stated herein.

C. Measure slump prior to addition of water-reducing admixtures (if used) in accordance with ASTM C143. Slump shall be within the limits specified in subsection 2.10.

D. A tolerance of up to 1 inch above the indicated maximum slump is permitted for individual batches, but the average for all batches or the ten (10) most recent batches tested, whichever is fewer, does not exceed the stated limit. Concrete of lower than usual slump may be used provided it is properly placed and consolidated.

2.10 CONCRETE MIX PARAMETERS

A. Not withstanding what has been stated here-before, and unless shown otherwise on the Drawings, the concrete shall meet the following requirements:

		Class A	Class B	Class C
B.	Min. Compressive Strength	4,500 psi	3,000 psi	2,500 psi
C.	Max. Water/Cement Ratio (by weight)	0.40	0.45	0.50
D.	Slump (plus or minus 1-inch)	3	3.5	4
E.	Min. Cement Content (94 lb. sack of cement per cubic yard of solid concrete)	7.0 sacks	6.0 sacks	5.0 sacks
F.	Maximum Aggregate Size (Size Number 5, ASTM C33)	1 inch (5)	1 inch (5)	1 inch (5)
G.	Maximum Total Volumetric Air Content (plus or minus 1 percent)	0%	4%	4%

H. The cement content is required irrespective of resulting compressive strength.

I. No calcium chlorides are permitted in mix design.

2.11 WORKABILITY

A. Concrete shall be of such consistency and composition that it can be worked readily into the forms and around the reinforcement without excessive spading or permitting material to segregate or free water to collect on its surface.

B. If the concrete is not within the specified slump range, the proportions shall be adjusted to provide a plastic, cohesive mixture. All changes to the approved concrete mix designs shall be approved by the ENGINEER prior to use.

C. To avoid unnecessary changes in consistency, the aggregate shall be from a source with uniform quality, moisture content, and grading. Handle materials in such a manner that variations in moisture content will not interfere with production of concrete of the specified degree of uniformity and slump.

2.12 EPOXY ADHESIVE

A. A non-sag epoxy adhesive shall be applied over all dry-packed holes on the inside surface of walls and the repair honeycomb areas.

B. Manufacturer and Product:

1. SIKA Corporation, Lyndhurst, NJ, phone: (800) 933-7452, "Sikadur 32 Hi-Mod".

2. SELECT PRODUCTS CO., Costa Mesa, CA, phone: (714) 429-0808; "SELECT BOND GP-3000"

3. Approved equal materials may be used.

2.13 CURING COMPOUND

A. If wet curing process is not used on formed concrete surfaces, a curing compound shall be applied immediately after forms have been removed from the concrete surface. If the forms are kept on the concrete for a minimum of 7 days, a curing compound is not required.

B. Curing compounds will be accepted if it is a NSF 61 approved, water-base, non-yellowing, in conformance with ASTM C 309, Type 1, Class B. and shall be suitable for use in a potable water storage facility.

C. Regardless of the type of curing compound used, Contractor shall assume complete responsibility for its adequacy and shall remove the compound film from the concrete surface if not compatible with potable water and/or submerged conditions.

D. Manufacturer and Product:

1. Atlas Tech Products, 4640 Brinell Street, San Diego, California 92111. (858) 277-0585; "Atlas Quantum-Cure" Water-Base Curing Compound.

2. Approved equal

2.14 CONCRETE REPAIR MORTAR

A. Patch material shall be polymer-modified, cementitious, non-sag mortar with corrosion inhibitor properties.

B. Patch material shall meet the following requirements (@ 73 degrees F and 50 percent R.H.):

1.	Work Life:	30 minutes minimum
2.	Compressive Strength:	3,000 psi @ 7 days
3.	Bonding Strength (ASTM C 882):	2,200 psi @ 28 days
4.	Color:	Concrete Gray

C. The material shall be designed for vertical and overhead application. The patch material shall be capable of being applied in 2-inch thick applications on vertical surfaces.

D. The patch may be extended with clean sand in accordance with manufacturer's recommendations.

E. Manufacturer and Product:

1. STO Corp., phone (800) 221-2397 'CR 702'
2. Fosroc Inc., phone (800) 645-3954 'Renderoc HB2'
3. Sika Corporation, phone (562) 941-0231 'Sika Top 123 PLUS'
4. Approved equal

PART 3: EXECUTION

3.01 CONCRETE QUALITY

A. Concrete shall be composed of Portland cement, sand, coarse aggregate, water, air-entraining solution and admixtures as specified or approved by the ENGINEER. The required proportions shall be assembled, well mixed, transported, placed, consolidated, finished and cured as here-in-after specified. Concrete shall be uniformly dense and sound, free from faults, cracks, voids, honeycomb and other imperfections.

B. If not called for specifically and unless specified otherwise hereunder, concrete requirements shall follow ACI 301 where applicable.

3.02 SITE MIXED CONCRETE

A. Site mixed concrete may only be used for small quantities of Class "C" concrete where approved in writing by the ENGINEER and shall conform to ACI 304 as modified by these specifications.

B. Use a batch-type mixer capable of combining the aggregates, cement, and water within the specified time into a thoroughly mixed and uniform mass and discharging the mixture without segregation.

C. Use supporting equipment that can accurately proportion the cement, the coarse and fine aggregates, the admixtures, and the water which enters the mixing drum. Proportion the cement and aggregate by weight.

D. Discharge each entire batch before recharging. Do not allow volume of the mixed materials per batch to exceed the manufacturer's rated capacity of the mixer.

E. Mixing time shall be as follows:

1. For mixer of a capacity of 1 cubic yard or less, one and one-half minutes after batching is completed.

2. For mixers of capacities larger than 1 cubic yard, one and one-half minutes plus one-half minute for each additional 1/2 cubic yard capacity or fraction thereof in excess of 1 cubic yard.

3. The mixer shall revolve at a uniform rate as specified by the manufacturer for the mixing equipment.

3.03 READY-MIXED CONCRETE

A. Provide central-mixed concrete conforming to ASTM C94 as modified by these specifications.

B. Limit the haul time of central-mixed concrete so that the specified slump is attained without the addition of water onsite or during transit which exceeds mix design water-cement ratio specified here-in. In no event shall the time after water and cement are both added at the batch plant to the truck is empty exceed 90 minutes, unless specifically approved by the ENGINEER.

C. Use truck-transported, dry-batched concrete or mix on the jobsite when haul time is excessive. Do not retemper partially hardened concrete.

3.04 PLACEMENT OF CONCRETE

A. Placement shall conform to ACI 304 as modified by these specifications.

B. Notify the DISTRICT's Representative of readiness, not just intention, to place concrete in any portion of the work. This notification shall be such time in advance of the operation as the DISTRICT's Representative deems necessary to observe the preparations at the location of the proposed concrete placing and schedule the testing agency to be available to obtain the required concrete test specimens.

C. All forms, steel, anchors, ties, inserts, and other embedded items shall be in place before the CONTRACTOR's notification of readiness is given to the Engineer.

D. Schedule sufficient equipment for continuous concrete placing, program backup equipment, and the actions to be taken in case of an interruption in placing. Provide extra concrete vibrators. Test the concrete vibrators the day before placing concrete.

E. Concrete in walls shall not be placed in layers thicker than 24 inches (vertical dimension) at any one time except that the bottom layer shall be not thicker than 12 inches. Under no circumstances shall the drop of concrete in wall forms exceed 8 feet and when starting a wall placement, the free vertical drop shall not exceed 4 feet.

F. Concrete in circular spiral-tied columns shall be deposited in a way to limit the free vertical drop to 8 feet or less. All concrete shall be vibrated as required in this Section. The final quality of the poured concrete column shall be the responsibility of the CONTRACTOR. If the quality of the column is found to be unacceptable, the DISTRICT, at the CONTRACTOR's expense, may require the complete removal of the column and may require that an alternate placement method be used.

G. Each layer of concrete in walls and columns shall be vibrated thoroughly before the next layer may be placed. Vibrators shall be taken through the top layer down through the full thickness of the layer below to insure proper integration of the concrete from separate layers, to avoid the development of cold joints and voids between layers. In other words, each layer of concrete shall be vibrated at least twice.

H. If cold joints in walls and columns occur the wall or column shall be removed and replaced.

I. Horizontal waterstops in floor and roof slabs, if shown on the Drawings, shall be lifted up, and concrete placed under the waterstop, the waterstop shall then be laid down on that concrete, additional concrete shall be placed on top of that waterstop to the approximate finish level of the concrete, where upon the concrete shall be thoroughly vibrated in one continuous motion from one end of the waterstop to the other end without skipping any areas. Visual observations shall be performed by the CONTRACTOR to verify that voids under the waterstops do not exist.

J. Unspecified cold joints in floor, roof slabs, walls and in wall-footings shall not be permitted. Placed concrete shall be continuously covered with new concrete, and shall be thoroughly integrated through vibration, even if it means that horizontal passes of only 6 inches in width be made until additional concrete and equipment becomes available to permit wider passes in concrete placement. The presence of such a joint shall be cause for removal and replacement of the entire concrete pour, at no additional cost to the DISTRICT.

K. Vibrators shall be of the high-frequency internal type, and the number in use shall be ample to consolidate the incoming concrete properly within 15 minutes after it is deposited in the forms. In all cases, at least two vibrators shall be available at the site.

L. Vibrate concrete to eliminate rock pockets and voids, to consolidate each layer with that previously placed, to completely embed reinforcing bars and fixtures, and to bring just enough fine material to exposed surfaces to produce a smooth, dense, and even texture. Vibration shall be performed at each required pour window opening in the

reservoir wall form and elsewhere, where they occur. Use external vibrators for consolidating concrete when the concrete is otherwise inaccessible for adequate consolidating, provided the forms are constructed rigidly enough to resist displacement or damage from external vibration.

M. The following minimum equipment, which must be in excellent working condition, shall be available on the site for every concrete placement operation:

1.	Conveying:	1 pump and 1 crane
2.	Vibrating:	2 vibrators of 14,000 vibrations per minutes (minimum)
3.	Trowelling:	2 power operated trowelling machines (for floor and roof decks only)

The DISTRICT shall be the sole judge as to the acceptability of the equipment as to its condition and capacity. The CONTRACTOR shall assume complete responsibility for having adequate equipment.

N. Do not place concrete during rainstorms. Protect concrete placed immediately before rain to prevent rainwater from coming in contact with it. Keep sufficient protective covering on hand at all times for this purpose.

O. Concrete placed for encasements shall not be backfilled until the concrete has reached at least 50% of its specified 28-day compressive strength confirmed by concrete cylinder tests. The CONTRACTOR may mold and cure additional concrete cylinders per this Section to verify when the 50% strength has been achieved, prior to the required 7-day compression test. The CONTRACTOR shall keep the trench dewatered until that time. The CONTRACTOR may use Type III cement (High Early Strength) in lieu of Type II cement in the same batch quantities as specified, at no additional cost to the DISTRICT.

P. Concrete shall be placed and consolidated in all forms to produce a well-consolidated concrete with no voids or segregation.

Q. The temperature of concrete as delivered at the time and location of placement under the following combined ambient conditions, except concrete that will be deposited within wall or column forms, shall not exceed the following temperatures:

Relative humidity less than %	Ambient temperature greater than °F	Maximum concrete temperature °F
80	90	100
70	90	95
60	90	90
50	90	85
40	90	80
30	80	75
20	75	70

3.05 PUMPING CONCRETE

A. Determine pump size on rate of concrete placement, length of delivery pipe or hose, aggregate size, mix proportions, vertical lift, and slump of concrete.

B. Minimum inside diameter of pipe or hose shall be based on the maximum aggregate size as follows:

1. 1-inch maximum aggregate: 3 inches minimum I.D.

C. Do not use aluminum pipes for delivery of concrete to the forms.

D. Before pumping is started, prime the delivery pipe or hose by pumping mortar through the line using 5 gallons of mortar for each 50 feet of delivery line. Do not deposit mortar in forms.

E. Concrete for slump testing will be taken from the delivery end of the hose.

3.06 SURFACE FINISHES

A. Wood-Float Finish:

1. This requires an integral finish by wood-float after screeding, to compact the surface evenly.

2. Any excess surface water shall be removed before floating and no mortar shall be added for leveling surface.

B. Steel Trowel Finish:

1. Provide an integral finish obtained by trowelling with a steel trowel after the surface has been floated and allowed to dry until all watersheen on the surface has disappeared.

2. Final trowelling shall be done after the concrete has hardened sufficiently to prevent drawing moisture and fine materials to the surface and when the concrete is sufficiently hard that no mortar accumulates on the trowel while finishing surface.

3. Do not spread cement or mixture of cement and sand on surfaces to absorb excess water or to stiffen the concrete.

4. Trowelling shall produce a dense, smooth, impervious surface free from defects and blemishes.

5. All interior unformed exposed surfaces of the reservoir wall, wall footing, column footing and floor shall receive a smooth, even, level and hard (so called "burnt") steel trowel finish.

C. Formed Surfaces Finish:

1. After formwork is removed, surface fins and burrs shall be smoothed.

2. All formed surfaces shall be smooth, even and regular.

3. For honeycomb areas, see item H below of this section.

D. Joints Between Reservoir Elements:

1. The key in the surface between the reservoir floor and column footing shall be formed and the surface joint between the two elements shall be intentionally roughened after the initial set of concrete.

2. The key between the reservoir floor and the wall footing joint, shall be screeded with a steel brush in circumferential passes after the initial set of the concrete. The screeding shall not be done in a radial direction. Screeding shall be postponed until the laitance of the concrete can be fully removed. The floor surface below the wall footing along each side of the waterstop, for the width of the core wall above, shall receive a hard steel trowel finish as described in subsection 3.06B above. Heavy sandblasting may be done in lieu of the above and with the approval of the DISTRICT. Curing compounds, if used, that have been deposited in the keys, shall be removed by sandblasting prior to pouring the footing concrete, however the steel trowel area described above shall be protected.

E. Unformed Surfaces: Unformed surfaces which will not be exposed in the completed work shall be brought to required finished elevations and left true and regular.

F. Roof Slabs: All flat roof surfaces, unless shown otherwise on the Drawings, shall receive a steel trowel finish which is subsequently broomed with a steel or hard-bristled broom to leave a fine uniformly scratched concrete surface.

G. Screeds:

1. Sufficient screeds, unaffected by form deflections under concrete loads, shall be installed to insure an even concrete surface, true to grade and elevation, without unacceptable local depressions of any sort.

2. Screeds shall be set to the required levels and be approved by the DISTRICT before any concrete may be placed.

H. Form Tie Holes:

1. Tie holes shall be thoroughly cleaned and sandblasted or roughened. Holes shall be free of grease or other materials that will inhibit the bond of the epoxy adhesive to the concrete. After cleaning and roughening, vinyl plugs shall be installed in the middle third of the wall width. The tie holes shall be coated with a water insensitive epoxy adhesive, as specified here-in and properly filled by damp-packing with a mortar of damp-pack consistency by mixing one part of cement to one part of plaster sand. The amount of water to be added to the cement-sand mixture shall be such that the mortar can be properly compacted by driving it into the voids with a hammer. The outside portion of the tie hole shall be filled no sooner than 7 days after the inside has been filled.

2. Embeco or other additives shall not be used for damp-packing such cavities.

3. Interior surfaces of the damp-packed tie holes in the tank corewall shall be covered with an approved 10 mil. thick water insensitive non-sag epoxy coating, which shall conform to the requirements of this Section.

4. Finished surfaces shall be free from sand streaks or other voids.

I. Honeycombed Areas:

1. Defective surfaces, such as honeycomb, shall be cut out entirely until sound homogeneous concrete is met, even if it means going through the entire wall, floor or roof slab.

2. The exposed surface areas shall be coated with an approved epoxy bonding material, which shall be applied in accordance with the manufacturer's instructions, repair area with concrete repair mortar product. The repair material shall be applied following the recommendations of the manufacturer for the specific repair application.

3. The water content of the concrete repair mortar shall be as recommended by the manufacturer for the repair application.

4. Concrete repair mortar shall be tamped into place working from the edge of the repair area towards the center and finished to match the adjacent concrete surfaces.

5. The thickness of the lifts shall be limited to the manufacturer's recommendation to prevent sagging of the repair material.

6. The bond between a second lift of repair mortar shall be improved through the use of an approved epoxy bonding agent.

7. Surfaces which have been repaired shall be kept continuously damp during, and for a period of not less than seven days after completing the damp-pack operation, by the curing procedure described in Part 3.08 of this Section.

8. Under no circumstances shall the CONTRACTOR conceal the existence of a honeycombed area in the concrete in any way.

9. Neither Embeco nor calcium chloride shall be used for repairing honeycomb areas, nor shall they be mixed with the damp-packed materials.

J. Miscellaneous Surfaces: Miscellaneous surfaces that are not covered herein and not specifically designated on the Drawings shall be finished as directed by the DISTRICT. CONTRACTOR shall provide certification that any material placed on or in the walls shall be free of chlorides and other materials corrosive to prestressing steel.

K. Crack Repair: After concrete has cured, if any cracks larger than 0.02-inches have developed, they shall be repaired at no additional cost to the DISTRICT. The ENGINEER shall determine the repair method to be used and shall provide written direction to the CONTRACTOR regarding the repair method to be used at specific locations. Cracks shall be repaired per the requirements of Specification SECTION 03740 – Injection of Cracks in Concrete Members.

L. Finished Interior Concrete Surfaces: All vertical formed concrete surfaces shall be sacked. Vertical formed surfaces shall include, but are not limited to: walls, columns, footings, pipe supports and thrust restraints. All imperfections in any other interior surface of the tank, including those caused by air bubbles ("bug holes"), shall filled by sacking so that all resulting interior surfaces of the tank are smooth and free of imperfections. Surficial imperfections of all horizontal finished surfaces which include spalls greater than one-quarter inch (1/4") in any dimension shall be sacked.

3.07 CONCRETE TESTS

A. Compression test specimens and testing shall conform to ASTM C39.

B. Proportioning (or chemical analysis) tests shall conform to ASTM C-1084.

C. Frequency: At least one slump test and five test cylinders shall be taken, under the supervision of the DISTRICT, by an approved testing lab for every 100 cubic yards or fraction thereof of each class of concrete used at the jobsite each day. Each cylinder shall be coded to identify the date of delivery, the truck number, the location where the concrete has been used and the slump measured upon discharge. For each tank wall section, two sets of five cylinders shall be made, at the DISTRICT‘s option.

D. The specimens shall be standard test cylinders, six inches in diameter, twelve inches in length, and they shall be prepared in accordance with ASTM C31. Molds for the standard test cylinders shall be furnished at the expense of the DISTRICT.

E. Determine slump of the concrete following procedures from ASTM C 143 for each strength test sample and as required to establish the concrete slump is consistent.

F. Determine air content of the concrete using procedures from ASTM C173 or C231 for each strength test sample and as required to establish consistency.

G. Subject to the conditions outlined in this section, all costs for making and testing of concrete and materials, by an approved recognized reputable testing laboratory, will be borne by the DISTRICT.

H. The CONTRACTOR shall furnish any necessary labor to assist in obtaining and handling the test specimens. The testing of cylinders shall be performed by an approved testing laboratory that normally engages in the preparation of concrete mix designs and testing of concrete materials.

I. CONTRACTOR shall provide and maintain for the sole use of the DISTRICT’s testing agency adequate facilities for safe storage and proper curing of concrete test specimens on the project site, as required by ASTM C31.

J. One cylinder compression test shall be made of each group of test of cylinders after 7, 14 and 28 days, at the DISTRICT's option in accordance with ACI 318.

K. The evaluation of concrete compressive strength shall meet the following requirements. The average of any three consecutive compressive strength tests shall be equal to or greater than the specified 28-day strength. Not more than 10% of the tests shall be less than specified 28-day strength. No test shall be less than 85% of the specified 28-day strength.

L. If the 28-day compressive tests fail to meet the specified minimum compressive strength, the concrete will be assumed to be defective and one set of three cores from each area where the low strength concrete has been placed may be taken as selected by the ENGINEER and in accordance with ASTM C 42.

1. If the concrete in the structure will be dry under service conditions, cores shall be air dried (in temperature 60 to 80°F, relative humidity less than 60 percent) for 7 days before testing, and shall be tested dry. If the concrete in the structure will be more than superficially wet under service conditions, cores shall be immersed in water for at least 40 hours prior to testing and tested wet.

2. If the average compressive strength of the three concrete cores from the same location fails to equal 85% of the specified minimum compressive strength or if any single core is less than 75% of the minimum compressive strength, the concrete will be considered defective and shall be removed and replaced, all at no cost to the DISTRICT. Costs for coring, testing of the cores, and all required concrete repairs shall be paid by the CONTRACTOR.

M. If one cylinder in a 28-day test manifests evidence of improper sampling, molding, or testing, other than low strength, discard it and test one of the remaining cylinders for the recorded test result.

N. If requested by the DISTRICT, proportioning tests for each class of concrete delivered to the jobsite, shall be made from test cylinders designated by the DISTRICT.

O. In addition to the test cylinders referred to in this Section, an additional 3 test cylinders shall be made for each day's pour, or for every 4,000 square feet of wall and roof surface, whichever provides the largest number of cylinders.

They shall be cured in the same manner, and in the same location of the concrete area to be investigated. Before walls may be prestressed, or before roof-forms may be stripped, at least one cylinder, of each batch of 3 cylinders, must be tested to verify the in-place concrete strength meets the required compressive strength in order to proceed.

P. Proportioning tests may then be made, at the discretion of the DISTRICT, on those groups of cylinders that have shown low readings.

Q. Any concrete showing a cement content less than the ratio by weight established in the original mix design will be subjected to further testing of concrete cores taken from the concrete in question. Should these tests confirm that the specified requirements have not been met, the extra costs involved in such testing shall be borne by CONTRACTOR; and the concrete, at the DISTRICT's option, and at CONTRACTOR's sole expense, may be rejected and must then be removed from the site or may be strengthened with additional shotcrete or concrete as the situation warrants it. Should the core tests indicate that the strength requirements have been met or if the low strength concrete is deemed acceptable to the DISTRICT, the extra costs involved in such testing shall still be borne by the CONTRACTOR.

3.08 CURING

A. Curing Compound:

1. All formed concrete surfaces shall be sprayed with a concrete curing compound as specified in Section 03300.02.13 of these specifications at an application rate of 200 square feet per gallon, or as recommended by the product manufacturer, whichever provides the more dense application of the product. This requirement will be waived for formed surfaces if the forms have been left in place for at least 7 days after the concrete in the forms has been placed.

2. All concrete surfaces, exposed to drying winds and sunlight, shall be sprayed with a curing compound as specified in Section 03300.02.13 of these specifications at an application rate of 200 square feet per gallon, or as recommended by the product manufacturer, whichever provides the more dense application of the product.

3. Horizontal surfaces shall be cured by application of a curing compound, as described above AND by covering with 6 mil polyethylene sheets as soon as the surface of the concrete is dry to the touch. The polyethylene sheets shall be carefully taped and sealed to the concrete surface. The polyethylene sheets shall be kept on the surface of the concrete for as long as possible, but for at least seven (7) days, to minimize the loss of moisture trapped between the polyethylene sheets and the concrete. Water must be introduced between the polyethylene sheets and the concrete, after the concrete has set, whenever drops of moisture cannot be detected on the concrete side of the sheets.

4. Apply curing and sealing compound when surface water disappears and concrete surface will not be marred by walking workmen.

5. Apply curing and sealing compound in a uniform film. Avoid forming puddles of material in low areas.

6. Protect horizontal surfaces from foot traffic for a minimum of 12 hours after application of curing compound.

B. Wet Curing:

1. After the concrete surface is dry enough not to be marred, 6 mil. thick polyethylene sheets shall be carefully taped and sealed to all structural concrete slab surfaces and kept in place as long as possible, but for at least 7 days, to minimize the loss of moisture trapped between the polyethylene and the concrete. The polyethylene covering will not be required for new wall construction.

2. Water must be introduced between the polyethylene sheeting and the concrete (after the concrete has set) whenever moist drops cannot be detected on the concrete side of the sheeting. Water for curing shall be generally clean and free from any elements that might cause straining or discoloration of the concrete.

3.09 PROTECTION FROM ABRASION OR FIRE

A. Every reasonable precaution shall be taken to protect finished surfaces from abrasions or other damage.

B. Concrete surfaces or edges likely to be injured during the construction period shall be protected by leaving the forms in place or by erecting satisfactory covers.

C. No fire shall be permitted in direct contact with concrete at any time.

END OF SECTION

SECTION 03600
GROUT

PART 1: GENERAL

1.01 SCOPE OF WORK

This section specifies drypack grout, cement grout, non-shrink grout, epoxy grout, and uses.

1.02 RELATED SECTIONS

Section 03251	Expansion and Construction
Section 03300	Cast-In-Place Concrete
Section 05500	Miscellaneous Metalwork

1.03 REFERENCES

ASTM C33	Standard Specification for Concrete Aggregate
ASTM C40	Standard Test Method for Organic Impurities in Sand for Concrete
ASTM C88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C117	Standard Test Method for Materials Finer than No. 200 Sieve in Mineral Aggregates by Washing
ASTM C136	Standard Test Method for Sieve or Screen Analysis of Fine and Course Aggregates
ASTM C150	Standard Specification for Portland Cement
ASTM C494	Standard Specifications for Chemical Admixtures for Concrete
ASTM C1107	Specifications for Packaged Dry, Hydraulic-Cement Grout (Non-Shrink)
ASTM D695	Test Method for Compressive Properties of Rigid Plastics
ASTM E329	Standard Recommended Practice for Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction
Cal Test No. 217-I-1969	Method of Test for Sand Equivalent

1.04 SUBMITTAL FOR REVIEW

A. Product Data: Provide manufacturer's data for the following products demonstrating product is conformance with these specifications:

1. Bonding Compounds

2. Non-shrink Grout

3. Epoxy Grout

4. Water Reducing Retardant

B. Certificates of Compliance: Provide certificates of compliance with suppliers of the following materials indicating that the materials supplied conform to the requirements of these specifications.

1. Cement

2. Aggregates

PART 2: PRODUCTS

2.01 MATERIALS

A. Cement: Portland cement shall be ASTM C150 Type II/V, Low Alkali, containing less than 0.60 percent alkalies.

B. Aggregate:

1. General: Aggregate shall be non-reactive and shall be washed before use.

2. When sources of aggregate are changed, a new certification shall be provided for the new material prior to its use.

3. Fine Aggregate: Fine aggregate shall be hard, dense, durable particles of either sand or crushed stone regularly graded from coarse to fine and shall conform to ASTM C33 as modified herein. When tested in accordance with ASTM C136, gradation shall be such that 100 percent by weight will pass a standard No. 8 mesh sleeve and no less than 45 percent by weight will pass a standard No. 40 mesh sieve.

a. Variation from the specified gradations in individual tests will be acceptable if the average of three consecutive tests is within the specified limits and the variation is within the permissible variation listed below.

U.S. Standard Sieve Size	Permissible Variation in Individual Tests, Percent
30 or coarser	2
50 or finer	0.5

b. Other tests shall be in accordance with the following specifications:

Test	Test Method	Requirements
Organic Impurities	ASTM C40	
Amount of Material Passing No. 200 Sieve	ASTM C11	73% maximum by weight
Soundness	ASTM C88	10% maximum loss with sodium sulfate

Sand Equivalent	Cal Test 217	Minimum 80

C. Admixtures:

1. General: Admixtures shall be compatible with the grout. Calcium chloride or admixtures containing calcium chloride are not acceptable. Admixtures shall be used in accordance with the manufacturer's recommendations and shall be added separately to the grout mix.

2. Water Reducing Retarder: Water reducing retarder shall be ASTM C494 Type D and shall be Plastocrete 161MR; Sika Chemical Corp. Plastiment; or equal.

3. Lubricant for Cement Pressure Grouting: Lubricant additive for cement pressure grouting shall be Intrusion Prepakt Intrusion Aid, Sika Chemical Corporation Intraplast, or equal.

D. Water: Water for washing aggregate, for mixing and for curing shall be free from oil and deleterious amounts of acids, alkalies, and organic materials; shall not contain more than 1000 mg/1 of chlorides as CI, nor more than 1300 mg/1 of sulfates as SO_4; and shall not contain an amount of impurities that may cause a change of more than 25 percent in the setting time of the cement nor a reduction of more than 5 percent in the compressive strength of the grout at 14 days when compared with the result obtained with distilled water. Additionally, water used for curing shall not contain an amount of impurities sufficient to discolor the grout.

2.02 GROUT

A. Drypack Grout: Drypack grout shall be a mixture of approximately one part cement, 1-1/2 to 2 parts sand, water reducing retarder, and sufficient water to make a stiff workable mix.

B. Cement Grout: Cement grout shall be a mixture of one part cement, two parts sand, proportioned by volume, admixtures for pressure grouting, and sufficient water to form a workable mix.

C. Non-shrink Grout: Non-shrink grout shall be non-metallic, free-flowing, cement-based grout complying with ASTM C1107. The grout shall have a minimum compressive strength of 6,000 psi at 28 days, and shall be a Master Builders Masterflow 713; Sika Chemical Corp. Sikagrout 212; or approved equal.

D. Epoxy Grout: Epoxy grout shall be a solvent-free, high-strength, high-flow, 100% solids grout. The grout shall have a minimum compressive strength of 8,000 psi at 28 days.

2.03 BONDING COMPOUND

Bonding compound shall be an epoxy resin with anti-corrosion properties such as Sika Chemical Corp. Sika Armatec 110 or approved equivalent.

PART 3: EXECUTION

3.01 **GENERAL**

Holes required for grouting shall be blown clean. Horizontal holes for grouting shall be drilled at a slight downward angle to facilitate holding the grout until setting is complete. Bolts or reinforcing steel installed in horizontal grout holes shall be bent slightly accordingly.

3.02 **DRYPACK GROUT**

A. Drypack grout shall be used for built-up surfaces, setting miscellaneous metal items and minor repairs.

B. Surfaces required to be built up with drypack grout shall be roughened by brushing, cleaned, and coated with the bonding compound specified in this section before the application of the grout. The drypack grout shall be applied immediately following the application of the bonding compound in bands or strips to form a covering of the required thickness. The covering shall be smooth. Construction joints in the grout shall be sloped and shall be cleaned and wetted before application is resumed.

C. Drypack grout shall be cured in accordance with Section 03300, "Cast-in-Place Concrete".

D. Grout shall not be placed during freezing weather unless adequate protection is provided.

3.03 **CEMENT GROUT**

A. Cement grout shall be used for filling nonbearing portions of equipment pads and pressure grouting.

B. Except for the specialized equipment for pressure grouting, mixing and placing apparatus shall be similar to that normally used for cast-in-place concrete. Grout shall be mixed for a period of at least one minute. Diluted grout shall be agitated to keep ingredients mixed.

3.04 **NON-SHRINK GROUT**

A. Non-shrink grout shall be used for the bearing surfaces of machinery and equipment bases, column baseplates and bearing plates. It also shall be used for setting bolts and reinforcing steel in holes for grouting.

B. Grout shall be placed in accordance with manufacturer's instructions.

3.05 **EPOXY GROUT**

Epoxy grout shall be used for repairing cracks by pressure grouting, repairing structural concrete, and setting reinforcing dowels into holes for grouting. Concrete shall be primed in accordance with the grout manufacturer's instructions.

END OF SECTION

SECTION 03740
EPOXY ADHESIVE INJECTION OF CRACKS IN CONCRETE MEMBERS

PART 1: GENERAL

1.01 SCOPE OF WORK

This section covers the repair of cracks in concrete by the injection of an epoxy resin adhesive. The criteria to be used to determine if a crack is to be repaired by the method covered in this section shall be all cracks larger than 0.02 inches in width in a water containing structure. However, the use of epoxy versus polyurethane injection shall be at the discretion of the ENGINEER.

1.02 REFERENCES

ASTM D69 Test method for Compressive Properties of Rigid Plastics

1.03 QUALIFICATIONS

A. Epoxy injection shall be performed by a certified applicator.

B. CONTRACTOR's/SUBCONTRACTOR's operator engaged in the epoxy injection process shall have satisfactory operator experience in the methods of restoring concrete structures utilizing the specific epoxy injection process indicated. Operator's experience shall include previous repairs of cracked or damaged concrete structures, the technical knowledge of correct material selection and use, and the operation, maintenance and trouble shooting of equipment.

PART 2: MATERIALS AND EQUIPMENT

2.01 EPOXY RESIN ADHESIVE FOR INJECTION

A. Epoxy adhesive grout shall be a 100 percent solids 2-component, water insensitive, low-viscosity epoxy resin. Epoxy shall be suitable for grouting both dry and damp cracks. Epoxy shall develop a minimum tensile strength (ASTM D638) of 6,000 psi and a minimum compressive strength (ASTM D695) of 8,000 psi. The product shall meet the requirements of ASTM C 881, Type I-V.

B. Manufacturers and Products:

1. Select Products, SELECT BOND GP-4440, Costa Mesa, CA.

2. Sika, Sikadur 35, Hi-Mod LV, Santa Fe Springs, CA

3. Approved equal

2.02 **SURFACE SEAL**

A. The surface seal material is that material used to confine the injection adhesive in the fissure during injection and cure.

B. The surface seal material shall be a two-component, 100% solids, moisture-tolerant, high strength, rapid-curing, epoxy, smooth-paste adhesive to firmly hold injection fittings in place and to resist injection pressures adequately to prevent leakage during injection.

C. The material shall be from the same manufacturer of the epoxy resin adhesive and be of a compatible material and conform to ASTM C 881.

D. Manufacturers and Products:

1. Select Products, SELECT BOND GP-3000, Costa Mesa, CA.

2. Sika, Sikadur 33, Santa Fe Springs, CA

3. Approved equal

2.03 **EQUIPMENT FOR INJECTION**

A. The equipment used to meter and mix the two injection adhesive components and inject the mixed adhesive into the crack shall be portable, positive displacement type pumps with interlock to provide positive ratio control of exact proportions of the two components at the nozzle. The pumps shall be electric or air powered and shall provide in-line metering and mixing.

B. The injection equipment shall have automatic pressure control capable of discharging the mixed adhesive at any pre-set pressure up to 200 psi plus or minus 5 psi and shall be equipped with a manual pressure control override.

C. The injection equipment shall have the capability of maintaining the volume ratio for the injection adhesive prescribed by the manufacturer of the adhesive within a tolerance of plus or minus 5 percent by volume at any discharge pressure up to 200 psi.

PART 3: EXECUTION

3.01 **PREPARATION**

A. Surface adjacent to cracks or other areas of application shall be cleaned of dirt, dust, grease, oil, efflorescence or other foreign matter which may be detrimental to the integrity of the bond between the epoxy and the injection surface. Acids and corrosives shall not be permitted.

B. Entry ports shall be provided along the crack at intervals of not more than the thickness of the concrete at that location. Ports shall be compatible with pressure injection equipment.

C. Surface seal material shall be applied to the face of the crack between the entry ports. For through cracks, surface seal shall be applied to both faces.

D. Enough time for the surface seal material to gain adequate strength shall pass before proceeding with the injection.

3.02 EPOXY INJECTION

A. Injection of epoxy adhesive shall begin at lower entry port and continue until there is an appearance of epoxy adhesive at the next entry port adjacent to the entry port being pumped.

B. When epoxy adhesive travel is indicated by appearance at the next adjacent port, injection shall be discontinued on the entry port being pumped, and epoxy injection shall be transferred to the next adjacent port where epoxy adhesive has appeared.

C. Epoxy adhesive injection shall be performed continuously until cracks are completely filled.

D. If port to port travel of epoxy adhesive is not indicated, the work shall immediately be stopped and the DISTRICT notified.

3.03 FINISHING

A. When cracks are completely filled, epoxy adhesive shall be cured to sufficient time to allow removal of surface seal without any draining or runback of epoxy material from cracks.

B. Surface seal material and injection adhesive runs or spills shall be removed from concrete surfaces.

C. The face of the crack shall be finished flush to the adjacent concrete showing no indentations or protrusions caused by the placement of entry ports.

3.04 PRESSURE TEST

A. The mixing head of the injection equipment shall be connected and the equipment run until clear uniformly mixed material flows into the purge pail. The operator shall engage the equipment shut-off nozzle valve and subsequently bump the on-off switch while monitoring pressure on psi gauge until the pressure reaches 200 psi. Pressure gauge shall be monitored for one minute. If pressure is maintained between 190-200 psi, check valves shall be considered to be functioning properly and the injection may proceed. If pressure drops below 190 psi, CONTRACTOR shall be required to have new seals installed on the check valves and the equipment shall be subsequently retested.

B. The pressure test shall be run for each injection unit at the beginning and after meal break of every shift that the unit is used in the work of crack repair.

C. The adequacy and accuracy of the equipment shall be solely the responsibility of the CONTRACTOR.

3.05 **RATIO TEST**

A. The epoxy mixture ratio shall be monitored continuously while injecting by placing a strip of masking tape on the sides of the A and B reservoirs full height. After filling reservoirs, the A and B levels shall be marked and monitored while running injection machine into purge pail for a period of one minute.

B. The ratio test shall be run for each injection unit at the beginning and after mal break of every shift that the unit is used in the work of crack repair.

3.06 **PROOF OF RATIO AND PRESSURE TEST**

A. At all times during the course of the work the CONTRACTOR shall keep complete and accurate records of the pressure and ratio tests specified above available to the DISTRICT.

B. In addition, the DISTRICT at any time without prior notification of the CONTRACTOR, may request the CONTRACTOR to conduct the tests specified above in the presence of the DISTRICT.

END OF SECTION

SECTION 03760
POLYURETHANE INJECTION OF CRACKS IN CONCRETE MEMBERS

PART 1: GENERAL

1.01 SCOPE OF WORK

This section covers the repair of cracks in concrete by the injection of a polyurethane foam chemical grout. The criteria to be used to determine if a crack is to be repaired by the method covered in this section shall be all cracks 0.02 inches in width and larger in a water containment structure. However, the use of epoxy versus polyurethane injection shall be at the discretion of the Engineer.

1.02 REFERENCES

ASTM D3574	Test method for Flexible Cellular Materials – Slab, Bonded, and Molded Urethane Foams
ANSI/NSF 61	NSF International/American National Standards Institute (ANSI): Standard 61, Drinking Water System Components – Health Effects

1.03 QUALIFICATIONS

A. Polyurethane injection shall be performed by a certified applicator.

B. The Contractor's/Sub Contractor's operator engaged in the polyurethane injection process shall have a minimum of 5 years successful operator experience in the methods of restoring concrete structures utilizing the specific polyurethane injection process indicated. Operator's experience shall include previous repairs of cracked or damaged concrete structures, the technical knowledge of correct material selection and use, and the operation, maintenance and trouble shooting of equipment.

1.04 QUALITY ASSURANCE

A. Codes and Regulatory Agencies. Perform all work in compliance with all federal, state, and local codes and regulatory agencies.

B. Equipment. Submit records showing that Contractor has owned and operated the polyurethane grout injection equipment to be used to perform the work, or similar polyurethane injection equipment, for a minimum of 2 years.

C. Manufacturer's Representative. Product manufacturer's technical representative shall provide the Contractor such aid and instruction as is required to obtain proper application of the product. Contractor shall make all arrangements and pay all costs to have manufacturer's authorized representative on the job site at the beginning of all major phases of the work, including joint preparation and installation of polyurethane grout, to ensure proper procedures and quality control techniques are employed.

1.05 **SUBMITTALS**

A. Product Data. Submit manufacturer's technical data and installation instructions for each material, including manufacturer's trade name, all independent laboratory tests, performance data, method of application, storage requirements, safety data sheet, container sizes, and mixing instructions.

B. Operator experience. Provide a list of at least five projects that have been completed within the last 5 years utilizing the specific polyurethane injection process indicated. The list shall include project name and location; client's name, address and telephone number; name of project consultant.

PART 2: MATERIALS AND EQUIPMENT

2.01 **POLYURETHANE CHEMICAL GROUT**

A. The grouting material shall be a hydrophobic polyurethane liquid of the type that is applied in a crack or open joint by use of a packer or injection port. The grout shall be non-toxic after curing and NSF 61 approved. The polyurethane liquid shall react with water to foam and expand 11 to 15 times its original volume and cure to form a flexible, closed cell polyurethane foam. The reaction time shall be controllable with the addition of a catalyst/accelerator.

B. Product Properties of Uncured Polyurethane Chemical Grout

Property	Standard	Results
Solids Content	ASTM D 2369 B	100%
Viscosity	ASTM D 2196 A	600 cps +/-200
Density	ASTM D 1475	8.75-9.2 lbs/gal
Flash Point	ASTM D 93	> 200 degrees
Corrosiveness	Non-corrosive	
Toxicity	Non-toxic	

C. Product Properties of Cured Polyurethane Chemical Grout

Property	Standard	Results
Density	ASTM D 3574	8.75-9.2 lbs/gal
Tensile Strength	ASTM D 3574	> 75 psi
Elongation	ASTM D 3574	> 30%
Shrinkage	ASTM D 1042	< 5%
Toxicity	Non-toxic	

D. Manufacturers and Products:

1. Sika, SikaFix HH+, Santa Fe Springs, CA

2. Approved equal

2.02 **SURFACE SEAL**

A. The surface seal material is that material used to confine the polyurethane grout when the crack to be injected is wide.

B. The material shall be from the same manufacturer as the polyurethane grout and be of a compatible material.

C. Manufacturers and Products:

1. Sika, SikaSet Plug, Santa Fe Springs, CA

2. Approved equal

2.03 **EQUIPMENT FOR INJECTION**

A. Demonstrate equipment's ability to pump and dispense the chemical grout at sufficient pressures to fully seal all size joints and cracks. Use proper grouting equipment designed for the application of the specified materials.

B. Demonstrate that pumping equipment can maintain required pressure for 5 minutes with no leaks or drop in pressure.

PART 3: EXECUTION

3.01 **PREPARATION**

A. Surface adjacent to cracks or other areas of application shall be cleaned of laitance, dirt, dust, grease, oil, efflorescence or other foreign matter which may be detrimental to the integrity of the bond between the polyurethane grout and the injection surface. Acids and corrosives shall not be permitted.

B. Drill holes at an angle of approximately 45 degrees to the surface and on alternate sides of a crack, where possible, to intercept the crack at/near mid-thickness of the member being injected. Space holes as close as required. Maximum spacing is 12 inches (alternating sides).

C. Install injection ports into drilled holes. Ports shall be compatible with pressure injection equipment.

D. Surface seal material shall be applied to the face of the crack between the entry ports as required for wide cracks. For through cracks, surface seal shall be applied to both faces.

E. Enough time for the surface seal material to gain adequate strength shall pass before proceeding with the injection.

3.02 **CHEMICAL GROUT INJECTION**

A. Flush crack with clean water.

B. Inject chemical grout into cracks in accordance with manufacturer's written instructions.

C. Injection of chemical grout shall begin at lower injection port and continue until there is an appearance of pure uncontaminated chemical grout at the next injection port adjacent to the injection port being pumped.

D. When chemical grout travel is indicated by appearance at the next adjacent port, injection shall be discontinued on the injection port being pumped and the port shall be capped. Proceed to the next adjacent port where chemical grout has appeared.

E. Chemical grout injection shall be performed continuously until crack is completely filled.

F. If port to port travel of chemical grout is not indicated, the work shall immediately be stopped and the District notified.

3.03 **FINISHING**

A. When cracks are completely filled, chemical grout shall be cured sufficiently to allow removal of surface seal without any draining of repair material from cracks.

B. Remove surface seal material and injection ports. Thoroughly clean all concrete surfaces of excess grout material.

C. The face of the crack shall be finished flush to the adjacent concrete showing no indentations or protrusions caused by the placement of injection ports. Furnish surface to match surrounding concrete.

END OF SECTION

SECTION 05500
MISCELLANEOUS METALWORK

PART 1: GENERAL

1.01 SCOPE OF WORK

The Contractor shall furnish, fabricate, and install miscellaneous metalwork and appurtenances, complete, such as guard rails, ladders, grating, pipe supports, etc., in accordance with the requirements of the Contract Documents. The Contract Documents shall take precedence over these Specifications.

1.02 REFERENCES

AA-M32C22A41	Aluminum Association Publication
AASHTO	HS-20 Truck Loading
AISC	Specifications and Commentary
AISI	Design of Light Gauge, Cold-Formed Steel Structural Members
ANSI/AWS D1.1	Structural Welding Code – Steel
ANSI/AWS D1.2	Structural Welding Code – Aluminum
ANSI/AWS QC1	Specification for Qualification and Certification of Welding Inspectors
ASTM A 36	Specification for Structural Steel
ASTM A 48	Specification for Gray Iron Castings
ASTM A 53	Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
ASTM A 123	Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A 125	Specification for Steel Springs, Helical, Heat Treated
ASTM A 153	Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A 307	Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile
ASTM A 500	Specification for Cold-Formed Welded and Seamless Carbon Steel Tubing in Rounds and Shapes
ASTM A 563	Specification for Carbon and Alloy Steel Nuts
ASTM A 575	Specifications for Steel Bars, Carbon, Merchant Quality, M-Grades
ASTM A 786	Specification for Rolled Steel Floor Plates
ASTM B 98	Specification for Copper-Silicon Alloy Rod, Bar, and Shapes
ASTM B 438	Specification for Sintered Bronze Bearings (Oil-Impregnated)
ASTM F1554	Specification for Anchor Bolts, Steel, 36, 55 and 105-ksi Yield Strength
Cal OSHA	Occupational Safety and Health Administration
I.C.B.O.	Evaluation Reports:
1. ER-4627	Hilti Kwik-Bolt II Expansion Anchor
2. ER-5279	Simpson SET Adhesive Anchor Systems
NFPA 101	Life Safety Code
MIL-A-907E	Antiseize Thread Compound, High Temperature

1.03 **CONTRACTOR SUBMITTALS**

A. Shop Drawings: Shop drawings of all miscellaneous metalwork shall be submitted to the Engineer for review.

B. Layout drawings for grating shall be submitted showing the direction of span, type, material and depth of grating, size and shape of grating panels, seat angle details, and details of grating hold down fasteners. Load and deflection tables shall be submitted for each style and depth of grating used.

C. An ICC report listing the allowable load capacity in tension and shear for each size and type of concrete anchor used shall be submitted to the Engineer for review. Contractor shall submit manufacturer's recommended installation instructions and procedures for all adhesive anchors for Engineer's review. These instructions shall be strictly adhered to unless otherwise approved in writing.

D. No substitution for the indicated adhesive anchors will be considered unless accompanied with ICC report verifying strength and material equivalency, including temperature at which load capacity is reduced to 90 percent of that determined at 75 degrees F.

E. Calculations: Engineering calculations shall be submitted for review. Engineering calculations shall include (but not be limited to) ladders, guardrail posts, railings, brackets, support flanges, and fasteners or anchors.

1.04 **QUALITY ASSURANCE**

A. All weld procedures and welder qualification shall be available in the Contractor's field office for Engineer's review.

B. All welding shall be inspected by a Contractor-provided inspector qualified in accordance with AWS requirements and approved by the Engineer.

C. Inspection: All Work hereunder shall be subject to continuous inspection by a Special Inspector selected by the District and approved by the local Building Official having jurisdiction. Special Inspection shall be preformed in accordance with the current edition of the California Building Code. The Special Inspector shall work under the direct supervision of the District. All costs of such inspection shall be borne by the Contractor and shall be included in the price bid for completion of the Work.

The Special Inspector shall observe the following Work for conformance with the design drawings and specifications.

1. All field welding

2. Adhesive anchor installations

PART 2: PRODUCTS

2.01 **GENERAL REQUIREMENTS**

A. Steel:

1.	Shapes, Plates, Bars	ASTM A 36
2.	Pipe, Pipe Columns, Bollards	ASTM A 53, Type E or S, Grade B Standard weight unless noted otherwise
3.	Tubes	ASTM A 500 Grade B

B. Corrosion Protection: Unless otherwise indicated, miscellaneous metalwork of fabricated steel, which will be used in a corrosive environment and/or will be submerged in water/wastewater shall be 316L stainless steel or carbon steel coated in accordance with Section 09900 – Painting and Coating and shall not be galvanized prior to coating. All other miscellaneous steel metalwork shall be hot-dip galvanized after fabrication as specified herein.

C. Stainless Steel: Unless otherwise indicated, stainless steel metalwork and bolts shall be of Type 316L stainless steel and shall not be galvanized.

D. Aluminum: Unless otherwise indicated, aluminum metalwork shall be of Alloy 6061-T6. Aluminum in contact with concrete, porous materials, or dissimilar metals shall have contact surfaces coated in accordance with the Section 09900 – Painting and Coating.

E. Cast Iron: Unless otherwise indicated, iron castings shall conform to the requirements of ASTM A 48, Class 50B or better.

2.02 BOLTS AND ANCHORS

A. Standard Service Bolts (Not Buried or Submerged): Except where otherwise indicated, all bolts, anchor bolts, and nuts shall be steel, galvanized after fabrication as indicated herein. Threads on galvanized bolts and nuts shall be formed with suitable taps and dies such that they retain their normal clearance after hot-dip galvanizing. Except as otherwise indicated, steel for bolts, anchor bolts and cap screws shall be in accordance with the requirements of ASTM F1554, grade 36, or threaded parts of ASTM A 36.

B. Buried or Submerged Bolts: Unless other corrosion-resistant bolts are indicated, all bolts, anchor bolts, nuts, and washers which are buried, submerged, or below the top of the wall inside any hydraulic structure shall be Type 316 stainless steel conforming to ASTM A 193 for bolts and to ASTM A 194 for nuts. All threads on stainless steel bolts shall be protected with an antiseize lubricant suitable for submerged stainless steel bolts, to meet government specification MIL-A-907E.

1. Antiseize lubricant shall be classified as acceptable for potable water use by the NSF.

2. Antiseize lubricant shall be "PURE WHITE" by Anti-Seize Technology, Franklin Park, IL, 60131, “AS-470” by Dixon Ticonderoga Company, Lakehurst, NJ, 08733, or equal.

C. Bolt Requirements:

1. The bolt and nut material shall be free-cutting steel.

2. The nuts shall be capable of developing the full strength of the bolts. Threads shall be Coarse Thread Series conforming to the requirements of the American Standard for Screw Threads. All bolts and cap screws shall have hexagon heads and nuts shall be Heavy Hexagon Series.

3. The length of all bolts shall be such that after joints are made up, each bolt shall extend through the entire nut, but in no case more than 1/2-inch beyond the nut.

D. Adhesive Anchors: Unless otherwise indicated, all drilled, concrete or masonry anchors shall be adhesive anchors. No substitutions will be considered unless accompanied with ICC report verifying strength and material equivalency.

1. Epoxy adhesive anchors are required for drilled anchors where exposed to weather, in submerged, wet, splash, overhead, and corrosive conditions, and for anchoring handrails, pumps, mechanical equipment, and reinforcing bars. Epoxy anchor grout shall be as specified in this section. Threaded rod shall be ASTM A36 steel, unless noted otherwise, expect in submerged location where stainless steel threaded rod shall be used.

2. Unless otherwise indicated, adhesive anchors shall be Simpson SET-3G. Adhesive anchors manufactured by other manufacturer's may be used if approved by the Engineer. Such adhesive anchor shall be I.C.C. approved. The I.C.C. Evaluation Report for the proposed substitute anchors shall demonstrate that the anchors have at least an equivalent capacity as the specified anchors. Proposed substitute anchors shall meet all requirements of their I.C.C. Evaluation Report, including edge distance, anchor spacing, embedment, base material thickness.

E. Expansion Anchors: Material and Installation shall conform with ICC ER-4627. Expansion anchors shall be Simpson Strong Tie "Strong-Bolt 2" or ICC approved equal. Lead caulking anchors will not be permitted. Size shall be as indicated. Expansion type anchors shall be 304 or 316 stainless steel. Expansion anchors may only be used where specifically detailed. Expansion type anchors shall not be used unless approved by the Engineer.

2.03 LADDERS

A. Ladders: Ladders which may be partially or wholly submerged, which are located inside a hydraulic structure or where indicated, shall be of stainless steel construction. All other ladders shall be of aluminum or carbon steel, hot-dip galvanized after fabrication as indicated. Provide ladder and safety climb where noted on project drawings of material specified. The ladders shall meet the requirements of OSHA in Title 8, Division 1, Chapter 4, Subchapter 7, Group 1, Article 4, Section 3277.

B. Pop-Up Extensions: Ladders that do not have an exterior handhold shall be equipped with a pop-up extension. Pop-up extension device shall be manufactured of the same material and finish as the ladder with telescoping tubular section that locks automatically when fully extended. Upward and downward improvement shall be controlled by stainless steel spring

balancing mechanisms. Units shall be completely assembled with fasteners for securing to the ladder rungs in accordance with the manufacturer's instructions.

C. Fall Prevention Systems:

1. The fall prevention system shall be provided for ladders used to ascend heights exceeding 20 feet and where otherwise indicated on the Drawings.

2. All necessary components shall be provided, including 2 safety belts for each facility with a fall prevention installation to provide a complete and fully operational fall prevention system. A rail extension shall be provided for each installation.

PART 3: EXECUTION

3.01 FABRICATION AND INSTALLATION REQUIREMENTS

A. Fabrication and Erection: Except as otherwise indicated, the fabrication and erection of structural steel shall conform to the requirements of the American Institute of Steel Construction "Manual of Steel Construction."

B. Steel Railings: Field welding of steel pipe handrail joints will be permitted only if approved by the Engineer, and then only in accordance with its instructions.

C. Aluminum Railing: Unless otherwise specified or shown, all aluminum handrails and railings shall be component systems, installed complete and ready for use with all anchors, attachments, balusters, brackets, caps, fasteners, gates, posts, sleeves, trim, and all other related items required or necessary for the complete installation.

1. Extruded, case, molded, or bent work shall be straight and with true edges. Railings and handrails shall be provided with continuous top rails, without post projections or other obstructions.

2. Exterior railing systems shall provide for 1/4-inch expansion and contraction per 20 linear feet of railing. Interior railing systems shall provide for 1/8-inch expansion or contraction per 20 linear feet of railing.

3. Stainless steel fasteners shall be painted to match adjacent aluminum finishes.

4. Aluminum items in contact with concrete or steel or embedded in concrete shall be provided with a permanent electrolysis protective material. The protective material shall be applied to the aluminum surface that will be in contact with the dissimilar material.

3.02 WELDING

A. Method: All welding shall be by the metal-arc method or gas-shielded arc method as described in the American Welding Society's "Welding Handbook" as supplemented by other pertinent standards of the AWS. Qualification of welders shall be in accordance with the AWS Standards governing same.

B. Quality: In assembly and during welding, the component parts shall be adequately clamped, supported and restrained to minimize distortion and for control of dimensions. Weld reinforcement shall be as indicated by the AWS Code. Upon completion of welding, all weld splatter, flux, slag, and burrs left by attachments shall be removed. Welds shall be repaired to produce a workmanlike appearance, with uniform weld contours and dimensions. All sharp corners of material to be painted or coated shall be ground to a minimum of 1/32-inch on the flat.

C. Aluminum: All exposed welds shall be ground smooth and flush and shall be polished and anodized. Discoloration of exposed aluminum surfaces, whether or not due to welding, shall constitute a basis for rejection of the entire assembly.

3.03 GALVANIZING

All structural steel plates shapes, bars and fabricated assemblies required to be galvanized shall, after the steel has been thoroughly cleaned of rust and scale, be galvanized in accordance with the requirements of ASTM A 123. Any galvanized part that becomes warped during the galvanizing operation shall be straightened. Field repairs to galvanizing shall be made using "Galvinox," "Galvo-Weld," or equal.

3.04 CRAFTSMANSHIP

Personnel experienced in the fabrication of architectural metal work shall perform all work. Exposed surfaces shall be free from defects or other surface blemishes. All dimensions and conditions shall be verified in the field in advance. All joints, junctions, miters, and butting sections shall be precision-fitted, with no gaps occurring between sections, and all surfaces shall be flush and aligned.

3.05 DRILLED ANCHORS

Drilled post-installed anchors and reinforcing bars shall be installed in strict accordance with the applicable ICC Evaluation Report and manufacturer's instructions. Holes shall be roughened with a brush on a power drill, cleaned and dry. Drilled anchors shall not be installed until the concrete has reached the specified 28-day compressive strength. Adhesive anchors shall not be loaded until the adhesive has reached its indicated strength in accordance with the manufacturer's instructions.

END OF SECTION

SECTION 05521

ALUMINUM RAILINGS

PART 1: GENERAL

1.01 SCOPE OF WORK

A. The Contractor shall furnish and install all aluminum railing work complete, in accordance with the requirements of the Contract Documents.

B. All railings, guardrails, and handrails shall be aluminum railing systems unless otherwise specified or shown.

C. The aluminum railings shall be pipe railing system unless otherwise specified or shown.

1.02 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Government Standards: Cal OSHA California Occupational Safety and Health Administration

B. Trade Standards: Aluminum Association (AA) publications, as referenced herein.

C. Manufacturer's Standards: In addition to the standards listed above, all railings and their installation shall be in accordance with the manufacturer's published recommendations and specifications.

1.03 CONTRACTOR SUBMITTALS

A. General: Submittals shall be in accordance with Section 01300 - Submittals.

B. Shop Drawings: The Contractor shall submit the railing supplier's shop drawings on the railing systems.

C. Calculations: Engineering calculations shall be submitted for review. Engineering calculations shall include (but not be limited to) railings, handrail brackets, brackets, support flanges, and fasteners or anchors.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Delivery of Materials: Manufactured materials shall be delivered in original, unbroken packages, containers, or bundles bearing the label of the manufacturer.

B. Storage: All materials shall be carefully stored in a manner that will prevent damage and in an area that is protected from the elements.

PART 2: PRODUCTS

2.01 SYSTEM DESIGN AND STRUCTURAL PERFORMANCE OF RAILING COMPONENTS

A. Code Requirements: All railings, guardrails and handrails shall conform to the code requirements for industrial-commercial, non-public use and the State-approved OSHA. Railings, guardrails, and handrails, when part of a means of egress as defined by the

governing codes, shall conform to the requirements of the most stringent of the codes or reference standards. The whole project shall conform to the code and State-approved OSHA for industrial-commercial, non-public use unless otherwise specified or shown. Limited public use shall mean that the facility is not designed for general public use; however, occasionally the public is allowed controlled access when approved.

B. Loading Conditions: Railings and handrail brackets shall be capable of withstanding either of the following loading conditions without exceeding the allowable working stress of the material and without permanent deformation: (1) a 200-pound concentrated load applied to any point in any direction (2) a 50-pound per linear foot loading applied perpendicular to the top rail.

C. The allowable working stress shall be 60 percent of the material yield stress for materials that are more than 3 inches from a weld and 40 percent of the yield stress for all materials within 3 inches of any weld.

2.02 MATERIALS

A. Rail Section: Railings and handrails shall be round pipe design railing system unless otherwise specified or shown.

B. Rail Material: Aluminum shall be U.S. Alloy 6061 or 6063, T-5 or T-6. Aluminum pipe rail shall be not less than 1-1/2-inch diameter, Schedule 40 pipe.

C. Welding Rods: Aluminum welding rods shall be of type recommended by the aluminum manufacturer for anodized finished products.

D. Sleeves: Sleeves shall be formed with removable plastic inserts.

E. Fasteners: Fasteners, screws, and bolts shall be concealed and shall be of stainless steel or aluminum. Handrail bracket fasteners and fasteners over water basins shall be of stainless steel.

F. Brackets: Handrail brackets shall be aluminum with a finish that matches the handrail or railing of which they are a part.

G. Toeboards: Toeboards shall be extruded (match railing system) aluminum of not less than 4 inches in height. Toeboards for pipe railing shall be channel section for strength.

H. Socket Grout: Non-shrink grout for handrail post sockets shall consist of an inorganic, non-metallic, premixed grout with a minimum 28-day compressive strength of 4,000 psi. See Section 03600, “Grout”, for more information.

2.03 FINISHES

A. Pipe Railing System: Pipe railing system including handrails, railings, tube caps, and other miscellaneous parts of rails shall be provided with a 0.7-mil clear anodized finish, AA-M32.

2.04 MANUFACTURERS, OR EQUAL

A. Round Pipe Railings:
1. **"C-V Pipe Rail" by CraneVeyor Corp.**, South El Monte, California
2. **"Connectorail" by Julius Blum & Co.**
3. **“Speed-Rail” by Hollaender Manufacturing Co.**, Cincinnati, OH
4. Approved equal

PART 3: EXECUTION

3.01 COMPONENT SYSTEMS

A. Unless otherwise specified or shown, all aluminum handrails and railings shall be component systems, installed complete and ready for use with all anchors, attachments, balusters, brackets, caps, fasteners, gates, posts, sleeves, trim, and all other related items required or necessary for the complete installation.

3.02 CRAFTSMANSHIP

A. All work shall be performed by craftsmen experienced in the fabrication of architectural metal work. Exposed surfaces shall be free from defects or other surface blemishes. All dimensions and conditions shall be verified in the field in advance. All joints, junctions, miters, and butting sections shall be precision-fitted, with no gaps occurring between sections, and all surfaces shall be flush and aligned.

3.03 ALIGNMENT

A. Extruded, case, molded, or bent work shall be straight and with true edges. Railings and handrails shall be provided with continuous top rails, without post projections or other obstructions.

3.04 WELD FINISH

A. All exposed welds shall be ground smooth and flush and shall be polished and anodized. Discoloration of exposed aluminum surfaces, whether or not due to welding, shall constitute a basis for rejection of the entire assembly.

3.05 EXPANSION/CONTRACTION

A. Exterior railing systems shall provide for 1/4-inch expansion and contraction per 20 linear feet of railing. Interior railing systems shall provide for 1/8-inch expansion or contraction per 20 linear feet of railing.

3.06 FASTENER FINISH

A. Stainless steel fasteners shall be painted to match adjacent aluminum finishes.

3.07 RAILING CONTINUITY AND END TREATMENT

A. Railings shall be designed to form a continuous run system with elbow turns and bends that do not have interferences with hand movement. Newel posts and safety terminals may be used only when approved by the Engineer.

END OF SECTION

SECTION 08310
FLUSH-MOUNT ROOF HATCH

PART 1: GENERAL

1.01 SCOPE OF WORK

A. Work included: Furnishing and installing factory fabricated flush-mount access hatch doors and all work necessary to provide a complete installation meeting manufacturer's requirements.

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM)

1. ASTM A36: Standard Specification for Structural Steel

1.03 SUBMITTALS

A. Product Data: Provide manufacturer's product data for access hatch door assembly describing the required features.

B. Shop Drawings: Show profiles, accessories, location, dimensions and material of components.

C. Design Requirements: The product data submitted shall state the uniform distributed allowable load is greater or equal to the requirements of this section.

D. Contract Closeout: Access door manufacturer shall provide the manufacturer's Warranty prior to the contract closeout.

1.04 PRODUCT HANDLING

A. All materials shall be delivered in manufacturer's original packaging.

B. Store materials in a dry, protected, well-vented area. The contractor shall thoroughly inspect product upon receipt and report damaged material immediately to delivering carrier and note such damage on the carrier's freight bill of lading.

C. Remove protective wrapping immediately prior to installation.

1.05 SUBSTITUTIONS

A. Proposals for substitution products shall be accepted only from bidding contractors and not less than (10) working days before bid due date. Contractor guarantees that proposed substitution shall meet the performance and quality standards of this specification.

1.06 **JOB CONDITIONS**

A. Verify that other trades with related work are complete before installing access hatch(es).

B. Mounting surfaces shall be straight and secure; substrates shall be of proper width.

C. Refer to the construction documents, shop drawings, and manufacturer's installation instructions.

D. Observe all appropriate OSHA safety guidelines for this work.

1.07 **WARRANTY/GUARANTEE**

A. Manufacturer's standard warranty: Materials shall be free of defects in material and workmanship for a period of (25) twenty-five years from the date of purchase. Should a part fail to function in normal use within this period, manufacturer shall furnish a new part at no charge. Special finishes, and other special equipment (if applicable) shall be warranted separately by the manufacturers of those products.

PART 2: PRODUCTS

2.01 **ACCESS DOOR**

A. Furnish and install flush access door where indicated on plans, or. The vault access door shall be pre-assembled from the manufacturer.

B. Performance characteristics:

1. Cover: Shall be reinforced to support a minimum live load of 300 psf with a maximum deflection of 1/150th of the span.
2. Operation of the cover shall be smooth and easy with controlled operation throughout the entire arc of opening and closing.
3. Operation of the cover shall not be affected by temperature.
4. Entire door, including all hardware components, shall be highly corrosion resistant.

C. Cover: Shall be 1/4" aluminum diamond pattern.

D. Frame: Channel frame shall be 1/4" extruded aluminum with bend down anchor tabs around the perimeter. A continuous EPDM gasket shall be mechanically attached to the aluminum frame to create a barrier around the entire perimeter of the cover and significantly reduce the amount of dirt and debris that may enter the channel frame.

E. Hinges: Shall be specifically designed for horizontal installation and shall be through bolted to the cover with tamperproof Type 316 stainless steel lock bolts

and shall be through bolted to the frame with Type 316 stainless steel bolts and locknuts.

F. Drain Coupling: Provide a 1-1/2" (38mm) drain coupling location to drain frame to be approved by Engineer.

G. Lifting mechanisms: Manufacturer shall provide the required number and size of compression spring operators enclosed in telescopic tubes to provide, smooth, easy, and controlled cover operation throughout the entire arc of opening and to act as a check in retarding downward motion of the cover when closing. The upper tube shall be the outer tube to prevent accumulation of moisture, grit, and debris inside the lower tube assembly. The lower tube shall interlock with a flanged support shoe fastened to a formed 1/4" gusset support plate.

H. A removable exterior turn/lift handle with a spring-loaded ball detent shall be provided to open the cover and the latch release shall be protected by a flush, gasketed, removable screw plug.

I. Hardware:

1. Hinges: Heavy forged aluminum hinges, each having a minimum 1/4" diameter Type 316 stainless steel pin, shall be provided and shall pivot so the cover does not protrude into the channel frame.
2. Cover shall be equipped with a hold open arm which automatically locks the cover in the open position.
3. Cover shall be fitted with the required number and size of compression spring operators. Springs shall have an electrocoated acrylic finish. Spring tubes shall be constructed of a reinforced nylon 6/6 based engineered composite material.
4. A Type 316 stainless steel snap lock with fixed handle shall be mounted on the underside of the cover.
5. Hardware: Shall be Type 316 stainless steel throughout.

J. Finishes: Factory finish shall be mill finish aluminum with bituminous coating applied to the exterior of the frame which shall be in contact with concrete when installed.

K. Manufacturers:

1. The BILCO Company, New Haven, CT, (1-203-934-6363); Type JD-AL
2. Approved equal

PART 3: EXECUTION

3.01 INSPECTION

A. Verify that the flush access door installation will not disrupt other trades. Verify that the substrate is dry, clean, and free of foreign matter. Examine access door hatch unit(s) and report to manufacturer and have corrected any defects prior to any access door installations.

3.02 **INSTALLATION**

A. Submit product design drawings for review and approval to the Engineer prior to authorizing fabrication of access hatch(es).

B. The Contractor shall check installation conditions for access hatches and verify the manufacturer's flush access door details for accuracy to fit the specific application prior to fabrication. The Contractor shall comply with the access door manufacturer's installation instructions.

C. The Contractor shall furnish mechanical fasteners consistent with the vault access door manufacturer's instructions.

D. The access hatch shall be oriented as shown on the construction drawings or if not shown, to allow the hinges of the door to be opposite of the ladder at the hatch for a single leaf door. For a double leaf installation, the hinges shall be to each side of the ladder location.

END OF SECTION

SECTION 09900
PAINTING AND COATING

PART 1: GENERAL

1.01 DESCRIPTION

This section includes painting and coating systems.

1.02 REFERENCES

AWWA C210	Liquid-Epoxy Coating Systems for the Interior and Exterior of Steel Water Pipelines
AWWA C213	Fusion Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines
ANSI A159.1 SSPC	Steel Structures Painting Council, Surface Preparation Specifications
NSF/ANSI 61	Drinking Water System Components

1.03 SUBMITTALS

A. Submit manufacturer's data sheets showing the following information

1. Recommended surface preparation.

2. Minimum recommended dry film thicknesses per coat for prime, intermediate, and finish coats.

3. Percent solids by volume.

4. Recommended thinners.

5. Statement that the selected prime coat is recommended by the manufacturer for use with the selected intermediate and finish coats.

6. Application instructions including recommended application, equipment, humidity, and temperature limitations.

7. Manufacturer’s Safety Data Sheets.

B. Color Schedule. Provide list of colors for specific applications. Provide color sample chart. When requested, provide 8” square color swatch of top coat finish.

C. NSF Certificates. Provide NSF certificates for each final coating required to be NSF approved.

1.04 **SPECIFICATION APPLICABILITY**

This specification section applies to all surfaces noted herein except as otherwise indicated elsewhere.

1.05 **MEASUREMENT AND PAYMENT**

Full compensation for Painting and Coating including furnishing all materials, labor, tools, equipment, and incidentals and performing all work described in this Section and as indicated on the Plans shall be included in the Contract price paid for related work and no additional compensation shall be allowed therefor.

PART 2: MATERIALS

2.01 **COMPATIBILITY OF COATINGS**

Use products by the same manufacturer for prime coats, intermediate coats, and finish coats on the same surface, unless specified otherwise.

2.02 **COLORS**

Use colors as indicated elsewhere. If not indicated elsewhere, the Contractor shall request the color prior to obtaining the coating or having the coating work done.

2.03 **SUBMERGED METAL COATING SYSTEMS**

All coating systems submerged in potable water must be NSF 61 certified.

A. System No. 7—Submerged Metal

Type:	Epoxy
Service Conditions:	For use with structures, piping, or equipment immersed in water, and any metal within tank. May be used for field touch-up of fusion bonded epoxy coating.
Surface Preparation:	SSPC SP-10 or SSPC SP-11 for touch-up work if approved by the Engineer.
Coating Systems:	Three coats each 4 – 6 mils, to a total dry film thickness of 12-18 mils: Tnemec Series L140F, or approved equivalent. Color of topcoat: White. Coating system shall be NSF approved. Lining of pipe shall comply with AWWA C213.

B. System No. 8—Submerged Metal

Type:	Fusion Bonded Epoxy

Service Conditions: For use with structures, piping, or equipment immersed in water, and any metal within tank.

Surface Preparation: SSPC SP-10 or SSPC SP-11 for touch-up work if approved by the Engineer.

Coating Systems: Comply with the requirements in AWWA C213. Dry film thickness shall be 15–17 mils.
Coating system shall be NSF approved.

2.04 **EXPOSED METAL COATING SYSTEMS**

A. System No. 10 – Exposed Metal, Severely Corrosive Environment

Type: Epoxy

Service Conditions: Shall be used with metal structures or pipes located in vaults, manholes or structures subjected to water condensation.

Surface Preparation: SSPC SP-10 or SSPC SP-11 for touch-up work if approved by Engineer.

Coating System Two coats to a total dry film thickness of 8-12 mils:
Tnemec Series L69 Hi-Build Epoxoline II or approved equivalent.

B. System No. 15 - Exposed Metal, Atmospheric Weathering Environment

Type: Epoxy / Acrylic

Service Conditions: Shall be used on exterior steel and piping, fittings, and appurtenances subject to sunlight and weathering.

Surface Preparation: SSPC SP-6.

Prime Coat: Two coats to a dry film thickness of 6-10 mils:

Tnemec L69 Hi-Build Epoxoline II or approved equivalent

Finish Coat: One coat to a total dry film thickness of 2-3 mils:
Tnemec Series 1029 Enduratone or approved equivalent.

Total dry film thickness of system shall be 8 mils minimum.

2.05 BURIED METAL COATING SYSTEMS

A. System No. 20 - Buried Metal, Corrosive Groundwater Exposure

Type:	No-oxide grease
Service Conditions:	Shall be used to coat buried metal (flanges, bolts and nuts, fittings, flexible pipe couplings).
Surface Preparation:	SSPC SP-7 brush-off blast.
Coat:	One coat of grease such that all surfaces are well covered. Wrap in several layers of plastic wrap (egg saran wrap).

B. System No. 21 - Buried Metal, Corrosive Groundwater Exposure

Type:	Epoxy
Service Conditions:	Shall be used to coat buried metal (flanges, bolts and nuts, fittings, flexible pipe couplings, structural steel etc.) especially subject to corrosive groundwater (low pH, high sulfate and chloride concentrations.)
Surface Preparation:	SSPC SP-10 or SSPC SP-11 for touch-up work if approved by Engineer.
Prime Coat:	One coat to a dry film thickness of 3-5 mils: Tnemec Series L69 Hi-Build Epoxoline II or approved equivalent
Finish Coat:	One coat to a dry film thickness of 16-20 mils: Tnemec 22 Epoxoline or approved equivalent.
	Total dry film thickness shall be 19-25 mils.

2.06 COATING SYSTEM FOR NON- FERROUS METALS

A. System No. 52- Exposed Metal Galvanized & Non-Ferrous.

Type:	Epoxy / HDP Acrylic Polymer
Service Conditions:	Exposed Galvanized and Non-Ferrous Metal Surfaces
Surface Preparation:	SSPC SP-1, followed by an abrasive blast.
Prime Coat:	One coat to a dry film thickness of 2-3 mils: Tnemec Series L69 Hi-Build Epoxoline or approved equivalent.

Top Coat:	One coat to a dry film thickness of 2-3 mils: Tnemec Series 1029 Enduratone or approved equivalent. Total dry film thickness of system shall be 4-6 mils.

2.07 FIELD TOUCH UP AND REPAIRS

A. Organic Zinc Primer: Surfaces that are shop primed with inorganic zinc primers shall receive a field touchup of organic zinc primer to cover all scratches or abraded areas. Organic zinc coating system shall have a minimum solids volume of 54% and a minimum zinc content of 14 pounds per gallon. Coating shall be of the converted epoxy, epoxy phenolic, or urethane type and shall be Tnemec 90-97, 3 mils; International Zinc Lock Epoxy 308, 3 mils; or approved equivalent. Organic zinc primer shall be manufactured by the prime coat and finish coat manufacturer.

B. Fusion Bonded Epoxy: Field touch up and repairs of fusion bonded epoxy shall be made with an epoxy that is recommended by the manufacturer for touch-up on fusion bonded epoxy. Surface preparation shall also be per the manufacturer's recommendations.

C. Other Surfaces: Other surfaces that are shop primed shall receive a field touchup of the same primer used in the original prime coat.

D. The color of the field coating shall match the finished coating, unless otherwise agreed to.

2.08 AIR QUALITY REQUIREMENTS

Materials shall comply with South Coast Air Quality Management District's Rule 1107 for shop coating and Rule 1113 for field coating when applied within SCAQMD boundaries. When applied outside of California, all applicable local rules and requirements shall be complied with.

PART 3: EXECUTION

3.01 MANUFACTURER'S RECOMMENDATIONS

Follow the manufacturer's recommendations for all aspects of the coating work, unless more stringent requirements are included herein, in which case the more stringent requirements shall be followed.

3.02 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Remove unspecified and unapproved coatings from site immediately.

B. Deliver materials in their original unopened containers with labels identifying the manufacturer's name, brand name, product type, batch number, date of manufacturer, expiration date or shelf life, color, and mixing and reducing instructions.

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

D. Take precautions to prevent fire and spontaneous combustion.

3.03 ENVIRONMENTAL CONDITIONS

A. Do not apply coatings, under the following conditions unless otherwise recommended by the coating manufacturer:

1. Under dusty conditions, unless tenting, covers, or other such protection is provided for items being coated.

2. When light on surfaces measures less than 15 foot-candles

3. When ambient or surface temperature is less than 45 degrees Fahrenheit.

4. When relative humidity is higher than 85 percent.

5. When surface temperature is less than 5 degrees Fahrenheit above the dew point.

6. When the surface temperature exceeds the manufacturer's recommendation.

7. When ambient temperature exceeds 95 degrees Fahrenheit, unless manufacturer allows a higher temperature.

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

C. Provide adequate continuous ventilation and sufficient heating facilities to maintain minimum 45 degrees Fahrenheit for 24 hours before, during, and for 48 hours after application of topcoat.

3.04 PROTECTION

A. Protect adjacent surfaces from paint and damage. Furnish sufficient drop cloths, shields and protective equipment to prevent spray or droppings from fouling surfaces not being painted.

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

3.05 SURFACE PREPARATION

A. General: Sandblast or prepare only as much surface area as can be coated in one day. All sharp edges, burrs, and weld spatter shall be removed. Epoxy-coated pipe that has been factory coated shall not be sandblasted.

B. Manufacturer's Requirements: All surface preparation shall be per manufacturer's recommendation or as specified herein, whichever is more stringent.

C. SSPC Specifications: Wherever the words "solvent cleaning," "hand tool cleaning," "wire brushing," or "blast cleaning" or similar words are used in these specifications or in the paint manufacturer's specifications, they shall be understood to refer to the applicable SSPC specifications listed below:

SP-1	Solvent Cleaning
SP-2	Hand Tool Cleaning
SP-3	Power Tool Cleaning
SP-5	White Metal Blast Cleaning
SP-6	Commercial Blast Cleaning
SP-7	Brush-Off Blast Cleaning
SP-8	Pickling
SP-10	Near White Blast Cleaning
SP-11	Power Tool Cleaning to Bare Metal
SP-13	Surface Preparation of Concrete

D. Sandblasting: The Contractor shall provide suitable enclosure, exhaust system, and bag house for sandblasting operations to prevent violations of applicable air quality requirements.

E. Finish Coat Timing: Non-finish catalyzed coatings (including epoxies and urethanes) shall not be allowed to cure beyond the manufacturer's recommended time window prior to applying a topping coat. If it is allowed to cure beyond the manufacturer's recommended time window, the Contractor shall submit for approval a recommended remediation such as scarification to provide an adequate mechanical bond.

3.06 PAINTING SYSTEMS

All paints shall be delivered to the jobsite in the original, unopened containers. 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.

3.07 PAINT MIXING

Multiple-component coatings shall be prepared using all the contents of each component container as packaged by the paint manufacturer. Partial batches shall not be used. Multiple-component coatings that have been mixed beyond their pot life shall not be used. Small quantity kits for touch-up painting and for painting other small areas shall be provided. Only the components specified and furnished by the paint manufacturer shall be mixed. For reasons of color or otherwise, additional components shall not be intermixed, even within the same generic type of coating.

3.08 SURFACES NOT TO BE PAINTED

A. Unless noted otherwise, the following surfaces shall not be painted and shall be fully protected when adjacent areas are painted.

1. Mortar-coated pipe and fittings
2. Stainless Steel
3. Metal letters
4. Nameplates and grease fittings
5. Aluminum grating
6. Brass and copper tubing, submerged
7. Buried pipe, unless otherwise noted
8. Portions of mechanical or electrical equipment recommended by the manufacturer to not be painted

3.09 PROTECTION OF SURFACES NOT TO BE PAINTED

Hardware, lighting fixtures, switch plates, aluminum surfaces, machined surfaces, couplings, shafts, bearings, nameplates on machinery, and other surfaces not intended to be painted shall be removed, masked, or otherwise protected. Drop cloths shall be provided to prevent paint materials from falling on or marring adjacent surfaces. Working parts of mechanical and electrical equipment shall be protected from damage during surface preparation and painting process. Openings in motors shall be safely masked to prevent paint and other materials from entering the motors. All masking materials shall be completely removed and surfaces cleaned at completion of painting operations.

3.10 SURFACES TO BE COATED

A. Surfaces shall be coated as described below:

1. Buried Items: Buried flanges, nuts and bolts, valves, flexible pipe couplings, exposed rebar, and valve boxes shall be coated per System No. 21 unless otherwise specified in the particular specifications for these items or if items are called out to be stainless steel.
2. Above Ground Steel and Steel in Vaults: Above ground structural steel or steel shall be coated per System No.15. Steel located in vaults shall be coated per system No.10.
3. Pipe Supports: Pipe supports shall be coated the same as the adjacent piping.

4. Exposed Indoor Galvanized Electrical Conduit: Exposed indoor galvanized electrical conduit shall be coated per System No. 52. Color of finish coat shall be OSHA Safety Orange.

5. Mechanical Equipment: Mechanical equipment, such as pumps, shall be coated in accordance with System No. 52.

6. Concrete Surfaces: Concrete does not require coating unless indicated otherwise.

3.11 FIELD TOUCH UP AND REPAIR OF COATING

Surfaces that are shop primed shall receive a field touchup to cover all scratches or abraded areas.

3.12 DRY FILM THICKNESS TESTING

A. Coating Thickness Testing: Coating thickness specified for steel surfaces shall be measured with a magnetic-type dry film thickness gage. Dry film thickness gage shall be provided with calibration plates, such as an Elcometer 456 or equivalent. Each coat shall be checked for the correct dry film thickness. Measurement shall not be made until a minimum of eight hours after application of the coating. Non-magnetic surfaces shall be checked for coating thickness by micrometer measurement of cut and removed coupons. Contractor shall repair coating at all locations where coupons are removed.

B. Holiday Testing: The finish coat (except zinc primer and galvanizing) shall be tested for holidays and discontinuities with an electrical holiday detector of the low-voltage, wet-sponge type. Detector shall be provided as manufactured by Tinker and Rasor or K-D Bird Dog or approved equivalent.

C. Repair: If the item has an improper finish color, insufficient film thickness, or holidays, the surface shall be cleaned and top-coated with the specified paint material to obtain the specified color and coverage. Visible areas of chipped, peeled, or abraded paint shall be hand or power-sanded, feathering the edges. The areas shall then be primed and finish coated in accordance with the specifications. Work shall be free of runs, bridges, shiners, laps, or other imperfections.

END OF SECTION

SECTION 15000
GENERAL PIPING REQUIREMENTS

PART 1: GENERAL

1.01 DESCRIPTION

This section includes general requirements and connections to existing facilities for piping 4-inches in diameter and larger.

1.02 REFERENCES

CCR	California Code of Regulations, Title 22, Section 64572
DDW	California Environmental Protection Agency, State Water Resources Control Board, Division of Drinking Water

1.03 SUBMITTALS

A. Comprehensive plan for completing connection to existing system including valve(s) to be closed, party responsible for closing valve(s), schedule (including system shut-down time), disinfection methods, testing, etc.

B. Shop drawing for lubricants

1.04 MEASUREMENT AND PAYMENT

Full compensation for General Piping Requirements including furnishing all materials, labor, tools, equipment, and incidentals and performing all work described in this Section and as indicated on the Plans shall be included in the Contract price paid for related work and no additional compensation shall be allowed therefor.

PART 2: MATERIALS

2.01 (NOT USED)

2.02 POTABLE WATER SYSTEM REQUIREMENTS

A. All pipes, fittings, fixtures, solder, and flux for use in a potable water system shall be lead free in compliance with AB1953.

B. All potable water components shall comply with separation requirements per CCR Section 64572 as applicable.

C. All potable water components shall have NSF 61 approval per Section 64591 which generally requires that any component that comes into contact with potable water must be NSF 61 approved. Contractor shall provide only those materials that meet this requirement as applicable.

2.03 **LUBRICANTS**

Lubricant for pipe insertion for potable water applications shall have NSF 61 approval.

PART 3: EXECUTION

3.01 **POTHOLES**

Refer to Section 02221 “Potholes” for pothole requirements.

3.02 **EXISTING CONDITIONS**

Location, invert elevations, materials of construction, and dimensions of existing pipelines and concrete encasements shown on the Plans are approximate only.

3.03 **MATERIALS INSPECTION**

A. The Contractor shall inspect all pipe as it is delivered.

B. Any pipe that does not meet specifications or has been rejected shall be immediately removed from the jobsite and disposed of.

3.04 **DELIVERY AND TEMPORARY STORAGE AT SITE**

A. For cement shop lined pipe, keep plastic caps or plastic with steel straps placed over the ends of each pipe until immediately prior to installation. Add Water to interior of pipe if plastic cap is temporarily removed and replaced or repaired.

B. Transport pipe larger than 24-inches in diameter to the jobsite on padded, contoured bunks 10-inches wide contacting the pipe O.D. for at least 60 degrees at the quarter points with 4-inch wide nylon tie-down straps to protect the pipe.

C. Store pipe larger than 24-inches in diameter on 36-inch wide earth berms or timber cradles contacting the pipe O.D. for at least 60 degrees at the quarter points adjacent to the trench in the order of installation. Manufacturer installed or recommended stulls shall not be removed until after the pipe is installed and adequately supported.

D. Pipe 24-inches in diameter and smaller may be stored on wood skids at the quarter points or as recommended by the pipe supplier.

3.05 **SANITATION OF PIPE INTERIOR**

At all times when the work of installing pipe is not in progress, all openings into the pipe and the ends of the pipe in the trenches or structure shall be kept tightly closed to prevent the entrance of animals and foreign materials. The contractor shall maintain the inside of the pipe clean, sanitary, and free from foreign materials.

3.06 **PLACEMENT OF PIPE IN TRENCH**

A. Control water in trench per Section 02223 “Trenching, Backfilling, and Compacting”.

B. Lay pipes uphill if the grade exceeds 10% or otherwise hold in place by methods approved by the Engineer.

C. Excavate below the subgrade if shown on the Plans. If in rock, complete excavation to a uniform foundation free of protruding rocks. Complete stabilization of foundation if necessary, then place and compact material specified for the bedding per Section 02223 "Trenching, Backfilling, and Compacting" to bring the trench bottom to grade.

D. Place and compact the pipe base as specified in Section 02223 "Trenching, Backfilling, and Compacting".

E. Cut a depression to accommodate the pipe bell and spaces to permit removal of the pipe handling slings.

F. Lower the pipe onto the pipe base and install it to line and grade along its full length on firm bedding except at the bell and at the sling depressions.

G. All connecting parts of pipe, rings, couplings, and castings shall be cleaned before assembly. After bearing has been obtained, couplings shall be assembled in a proper manner (as determined by the Engineer). The use of excessive lubricant will not be permitted, and the assembly of the couplings and rings shall be in accordance with the manufacturer's recommendations. Lubricant and rubber rings shall be supplied by the pipe manufacturer. All fittings and valves shall have joints that match the type of adjoining pipe.

H. All fittings and valves shall be supported so that the pipe is not subjected to the weight of these appurtenances. The fittings shall be supported independently of the pipe.

I. Lift steel and concrete cylinder pipes with two 16-inch-wide belt slings and spreader bar or as recommended by the pipe manufacturer. Do not use cable slings. Avoid damage to coating. Proper care shall be used to prevent damage in handling, moving, and placing the pipe. Tools and equipment satisfactory to the Engineer shall be provided and used by the contractor.

J. In no case shall pipe be dropped or rolled into the trench.

3.07 ALIGNMENT AND COVER

A. Alignment Tolerances: Tolerances on grade are plus or minus ¼-inch. Tolerances on alignment are plus or minus 1-inch.

B. Cover: The pipe sections shall be laid in the trench to true alignment and grade in accordance with the Plans. Where the grade is not shown, pipe shall have a cover of 30 inches to subgrade in paved areas and 48 inches in unpaved areas. The pipe grade shall be approved by the Engineer.

3.08 FLANGED CONNECTIONS

A. Inspect gasket seating surfaces, gasket, and each stud or bolt, each nut, each washer, and the facing on which the nuts will rotate. Replace any damaged item. Be particularly diligent in replacing any galled, cracked or distorted items.

B. Verify that all stainless steel components are actually stainless steel by both visual and magnetic means.

C. Bolt holes of flanged valves shall straddle the horizontal and vertical centerlines of the pipe run to which the valves are attached.

D. Clean flanges by thoroughly wiping before installing. Attach gasket with adhesive as recommended by gasket manufacturer.

E. Clean flange bolts and nuts by wire brushing, lubricate threads with oil or graphite, and tighten nuts uniformly and progressively. Assemble all bolts in flange and then tighten bolts in the sequence and to the torque as recommended by the manufacturer. Retighten exposed bolts after 24 hours. Retighten bolts that will not be exposed after 24 hours prior to placing backfill (or other future obstruction). Do not reuse bolts or nuts.

F. If flanges leak under pressure testing, loosen or remove the nuts and bolts, reseat or replace the gasket, reinstall or retighten the bolts and nuts, and retest the joints. Joints shall be watertight.

G. Coat buried flanges with no-oxide grease and wrap in plastic.

3.09 RESTRAINED JOINTS

The Contractor shall pull tight all joints of restrained piping so that the pipe will not lengthen when loaded under testing pressure. For buried piping, the joints shall be pulled tight prior to backfilling. For above-ground, in-casing, in-bridges, etc., the joints shall be pulled tight prior to filling.

3.10 SEPARATION & JOINT LOCATION REQUIREMENTS

A. The Contractor shall comply with DDW requirements for separation of potable water, recycled water, and wastewater pipelines. The standards are contained in Section 64572, Title 22 of the California Code of Regulations.

B. The Contractor must obtain prior approval from the Engineer prior to revising alignment or grades in order to comply with the separation requirements.

3.11 NSF 61 APPROVAL REQUIREMENTS

The project shall meet the requirements of California Waterworks Standards (California Code of Regulations Title 22) including NSF approval per Section 64591 which generally requires that any component that comes into contact with potable water must be NSF 61 approved. Contractor shall provide only those material that meet this requirement as applicable.

3.12 CONNECTIONS OF DISSIMILAR METALS

All connections between dissimilar metal piping and fittings shall be made with dielectric couplings or flange insulation kits specially designed for this purpose and service, whether specifically identified on the plans or not unless otherwise noted.

3.13 CONNECTIONS TO EXISTING SYSTEM

A. Provide Connection Plan as identified in Submittals

B. The Contractor shall notify the Engineer and the District a minimum of 72 hours prior to a shutdown required to make a tie-in or prior to performing a hot-tap connection.

C. After hours work or weekend work shall be avoided when possible, unless otherwise noted. Any overtime costs incurred shall be paid by the Contractor.

D. During the work, the Contractor shall exercise all necessary precautions to prevent the entrance of trench water or other foreign material into the water main and shall conduct all operations in accordance with the most stringent sanitation practices. The interior of all appurtenances being installed shall be thoroughly disinfected by swabbing with a chlorine solution prior to installation.

E. The Contractor shall provide the existing water main coupon to the Engineer or District. In the case of a cut-in connection, the contractor shall make available a small sample of the removed water line in order for the District to be able to assess the condition.

F. Connections shall not be activated (i.e. allow an open connection to the water system) until a written confirmation of acceptable water quality testing and acceptable hydrostatic testing are obtained.

G. Drip tight shut-downs are not anticipated and the Contractor shall have available sump/trash pumps & other equipment necessary to remove water.

H. The Contractor shall drain the water from existing pipelines as required.

I. The Contractor shall be responsible for all activities associated with the dewatering except for the operation of District owned valves. Activities may include protection from erosion or damage, pumping, dechlorinating, traffic control, and reporting and complying with NPDES requirements.

3.14 EXISTING SYSTEM OPERATION

The Contractor shall not operate any valves owned by the District. For non-emergency operation of valves, the Contractor shall provide at least 24 hours notice for the District to operate valves. For emergencies, the Contractor shall immediately contact the District.

END OF SECTION

SECTION 15056
DUCTILE IRON PIPE AND FITTINGS

PART 1: GENERAL

1.01 DESCRIPTION

This section includes ductile-iron pipe and fittings for water service. The fittings may be used for PVC pipe as well as ductile iron pipe. Refer to Section 15000 "General Piping Requirements" for additional requirements.

1.02 REFERENCES

ASTM A193	Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High Temperature Service
ASTM A194	Standard Specification for Carbon and Alloy Steel Nuts for Bolts for High Pressure or High Temperature Service or Both
ASTM D1248	Standard Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable
AWWA C104	ANSI Standard for Cement Mortar Lining for Ductile-Iron Pipe and Fittings for Water
AWWA C105/A21.5	ANSI Standard for Polyethelene Encasement for Ductile-Iron Pipe Systems
AWWA C110/A21.10	ANSI Standard for Ductile-Iron and Gray-Iron Fittings for Water
AWWA C111/A21.11	ANSI Standard for Rubber Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
AWWA C115/A21.15	ANSI Standard for Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges
AWWA C116	ANSI Standard for Protective Fusion-Bonded Epoxy Coatings for the Interior and Exterior Surfaces of Ductile-Iron and Gray-Iron Fittings for Water Supply Service
AWWA C150/A21.50	ANSI Standard for Thickness Design of Ductile-Iron Pipe
AWWA C151/A21.51	ANSI Standard for Ductile-Iron Pipe, Centrifugally Cast, for Water or Other Liquids
AWWA C153/A21.53	ANSI Standard for Ductile-Iron Compact Fittings, 3 In. Through 64 In., for Water Service
AWWA C600	Installation of Ductile-Iron Water Mains and Their Appurtenances
CAC	California Administrative Code, Title 22, Section 64630
DDW	California Environmental Protection Agency, State Water Resources Control Board, Division of Drinking Water
NSF/ANSI 61	Drinking Water System Components

1.03 SUBMITTALS

A. Submit shop drawings that include details of pipe joints, manufacturing and design standards used, wall thickness, interior and exterior coatings, and pipe diameters.

1.04 **MEASUREMENT AND PAYMENT**

Full compensation for Ductile Iron Pipe and Fittings including furnishing all materials, labor, tools, equipment, and incidentals and performing all work described in this Section and as indicated on the Plans shall be included in the Contract price paid for Pipeline work. All labor, materials, tools, and equipment for pipeline related costs including pipe, fittings, appurtenances, saw cutting, pavement removal and excavation, disposal, backfill, compaction, pavement replacement, striping, in-kind replacements, disinfection, and testing shall be included and no additional compensation shall be allowed therefor.

PART 2: MATERIALS

2.01 **DUCTILE-IRON PIPE**

A. Ductile-iron pipe shall be manufactured in accordance with AWWA C151.

B. All ductile-iron pipe shall be the pressure class shown on the Plans for bell and spigot pipe, pressure class 350 for plain end pipe and thickness Class 53 for flanged spools, unless indicated otherwise. If the pressure class of bell and spigot pipe is not indicated on the Plans, pressure class or thickness class of DIP shall be determined by the design method detailed in AWWA C150 the “Thickness Design Method”.

C. Unless otherwise called out on the plans, a "push-on" type joint shall be used. The joint dimensions and gasket shall be as specified in AWWA C111.

D. Flanges for ductile-iron pipe shall be the "screwed-on" type in accordance with AWWA C115.

E. Each pipe shall be marked with the class or nominal thickness, net weight without lining, and casting period. Also, the manufacturer’s mark, country where cast, year produced, and the letters “DI” or “Ductile” shall be cast or stamped on the pipe.

F. Outlets for DIP shall be as follows:

2” or smaller:	bronze service saddle
2-1/2”:	tapped tee or service saddle
4” and larger:	D.I. tee fitting

2.02 **LINING AND COATING**

A. All buried or concrete encased ductile-iron pipe shall have a factory applied bituminous coating not less than 1 mil thick.

B. Ductile-iron piping that is exposed shall be factory primed with epoxy. Finish coats shall be applied in the field after installation. Coatings shall be per Section 09900

"Painting and Coating" System No. 10 epoxy or System No. 15 epoxy/acrylic as applicable.

2.03 DUCTILE-IRON FITTINGS

A. Ductile-iron fittings shall be manufactured in accordance with AWWA C110 or AWWA C153, but gray-iron fittings may not be used in lieu of ductile-iron.

B. Non-restrained fittings shall be made with "push-on" joints designed for use with the type of pipe to be joined in accordance with AWWA C111 unless noted otherwise. Restrained fittings may be "push-on" or "mechanical" for ductile iron fitting to ductile iron pipe. Restrained fittings must be "mechanical" for ductile iron fitting to PVC and HDPE pipe.

C. All domestic and recycled water fittings shall be cement-mortar lined in accordance with AWWA C104.

D. All buried or concrete encased ductile-iron fittings shall have a factory applied bituminous coating not less than 1 mil thick.

E. Ductile-iron fittings that are exposed shall be factory primed with epoxy. Finish coats shall be applied in the field after installation. Coatings shall be per Section 09900 "Painting and Coating" System No. 10 epoxy or System No. 15 epoxy/polyurethane as applicable and per AWWA C116.

F. Unless otherwise indicated on the drawings, all fittings with flanged ends shall be ductile iron compatible with class 125 flanges and flat faced in accordance with AWWA C153.

2.04 POLYETHYLENE ENCASEMENT

All pipe and fittings shall be installed with an 8-mil polyethylene encasement per AWWA C105.

2.05 RESTRAINED JOINTS

Where restrained joints are called for on 8-inches in diameter and smaller pipe, push-on joints shall be restrained with locking gasket rated for 250 psi operating pressure. Joint restraint shall be push-on joint with "Field-Lok" gaskets or "TR-Flex" joint restraints as manufactured by U.S. Pipe, Perma-Lock Joint as manufactured by Pacific States Cast Iron Pipe Company, or approved equivalent.

Where restrained joints are called for on 10-inches in diameter and larger pipe, use a "TR-Flex" restrained joint pipe or field lock gasket as manufactured by U.S. Pipe or approved equivalent. The restrained joint shall be a boltless restrained push-on joint design and shall contain a positive axial locking restrained system and be capable of deflection after assembly. Restraint of field cut pipe by using U.S. Pipe's "TR Flex Gripper Ring" or Approved Equivalent. Restraint of field cut pipe shall be kept to a minimum.

Where restrained joints at fittings are called for, mechanical joints with Ebaa Iron "megalugs" or Romac Industries, Inc. Romagrip may be used, or approved equivalent.

2.06 GASKETS

A. Gaskets for flanged joints shall be 1/8-inch thick, cloth-inserted rubber. Full face type gaskets with pre-punched holes shall be used where both flanges are flat faced and pipe size is 12-inches or less. Ring gaskets extending to the inner edge of the bolts shall be used where a raised face flange is present and for all pipe 14-inches and larger.

B. Rubber gaskets for push-on joints shall be synthetic or natural rubber manufactured in accordance with AWWA C111.

2.07 BOLTS, NUTS, AND WASHERS

A. Bolts, nuts and washers for buried, submerged, or vault applications shall be Type 316 stainless steel conforming to ASTM A193, Grade B8 for bolts, and ASTM A194, Grade 8 for nuts. Bolts, nuts and washers for above ground applications shall be 316 stainless steel. Fit shall be Classes 2A and 2B per ANSI B1.1 when connecting to valves with body bolt holes.

B. Bolts for flange insulation kits shall conform to ASTM A193, Grade B7. Nuts shall conform to ASTM A194, Grade 2H.

C. Provide one (1) washer for each nut. Washer shall be of the same material as the nuts.

D. The length of each bolt or stud shall be such that between ¼-inch and 3/8-inch will project through the nut when drawn tight.

PART 3: EXECUTION

3.01 GENERAL

A. Ductile-iron pipe and ductile iron fittings shall be installed in accordance with the applicable portions of AWWA C600, unless otherwise noted, Section 15000 "General Piping Requirements", and as specified herein.

B. Where closure sections are required by the contractor's installation operations, the sections shall be installed in accordance with the applicable sections of these specifications, at no additional cost to the District.

3.02 SEPARATION REQUIREMENTS

The Contractor shall comply with DDW requirements for separation of pipelines. Refer to Section 15000 "General Piping Requirements".

3.03 PLACEMENT OF PIPE IN TRENCH

A. Refer to Section 15000 "General Piping Requirements".

B. The radius of curvature of the trench shall determine the maximum length of pipe section that can be used without exceeding the allowable deflection at a joint. Combined deflections at rubber gasket, restrained joint, deflection coupling or flexible coupling joints shall not exceed 5 degrees for 12-inch in diameter and smaller pipes and shall not exceed 3 degrees for larger pipes but in no case shall the deflection exceed that recommended by the manufacturer.

The manufacturer's printed installation guide outlining the radius of curvature that can be negotiated with pipe sections of various length and the deflection couplings shall be followed if applicable.

C. Pipe shall be cut by a method recommended in the pipe manufacturer's installation guide, as approved by the Engineer. When pipe is cut and is to be joined to a cast-iron fitting or another piece of pipe the end shall be beveled in the field or place of manufacture to create a beveled end equal in quality to the machined ends of the pipe as furnished by the manufacturer. Such machining shall not result in undercutting the wall thickness and must be approved by the Engineer before installation.

D. All damaged coatings shall be coated after assembly with mastic, Minnesota Mining and Manufacturing EC 244, Koppers Bitumastic (Super-Tank) 505, or an Approved Equivalent. Stainless steel bolts shall not be coated.

3.04 ALIGNMENT AND COVER

Refer to Section 15000 “General Piping Requirements”.

3.05 OPERATIONS INCIDENTAL TO JOINT COMPLETION

The Contractor shall plan joint completion to accommodate temporary test bulkheads for hydrostatic testing per Section 15990 “Pressure Testing of Piping”.

3.06 THRUST RESTRAINT

Refer to Section 15000 “General Piping Requirements”.

3.07 POLYETHYLENE ENCASEMENT

Polyethylene encasement shall be a loose 8-mil-thick polyethylene tube. All joints between plastic tubes shall be wrapped with 2-inch-wide polyethylene adhesive tape, Polyken 900, Scotch wrap 50, or Approved Equivalent.

3.10 JOINT BONDING

Bonding of joints is not required.

3.11 TESTING

A. Hydrostatic Testing: All pipelines shall pass a hydrostatic pressure test in accordance with Section 15990 “Pressure Testing of Piping”.

B. Disinfection: All water pipelines shall be disinfected and tested in accordance with Section 15992 "Disinfection of Piping" prior to connection to the existing distribution system.

END OF SECTION

SECTION 15062
HIGH DENSITY POLYETHYLENE (HDPE) PRESSURE PIPE AND FITTINGS

PART 1: GENERAL

1.01 DESCRIPTION

This section describes the general requirements for HDPE pressure pipe and fittings for potable water applications including materials, installation, and testing. The section is also intended for HDPE pipe used for slip lining.

1.02 REFERENCES

The following is a list of standards that may be referenced in this Section:

ANSI B16.1	Cast Iron Pipe Flanges and Flanged Flings.
ANSI B18.2.2	Square and Hex Nuts (Inch Series).
	ASTM A193 Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service.
ASTM A194	Standard Specification for Carbon and Alloy Steel Nuts for Bolts for High-Pressure and High-Temperature Service.
ASTM A240	Standard Specification for Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels.
ASTM A307	Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength.
ASTM A536	Standard Specification for Ductile Iron Castings.
ASTM A563	Standard Specification for Carbon and Alloy Steel Nuts.
ASTM D638	Standard Test Method for Tensile Properties of Plastics.
ASTM D2657	Standard Practice for Heat Fusion Joining of Polyolefin Pipe and Fittings.
ASTM D2774	Standard Practice for Underground Installation of Thermoplastic Pressure Piping.
ASTM D3350	Standard Specification for Polyethylene Plastics Pipe and Fittings Materials.
ASTM F714	Standard Specification for Polyethylene (PE) Plastic Pipe (SDK-PK) Based on Outside Diameter.
AWWA C906	Polyethylene (PE) Pressure Piping and Fittings, 4-In. through 63-In., for Water Distribution and Transmission.
NSF/ANSI 61	Drinking Water System Components
PPI	Plastic Pipe Institute

1.03 SUBMITTALS

A. Shop Drawings:

1. Catalog information confirming pipe, fittings, UV tape, and other materials conform to requirements of this Section.

2. Drawings of specific connection details and fabricated specials such as tees, reducers, outlets and bends.

3. Specifications of fusing machine and fusing procedures and restrictions.

4. Fusing machine data logger with temperature, date and pressure recording elements.

B. Quality Control Submittals:

1. Certification from Plastic Pipe Institute that pipe manufacturer meets recipe and mixing requirements of resin manufacturer for resin used to manufacture pipe for this project.

2. Certification from pipe manufacturer that Contractor is qualified to join, lay, and handle pipe. Contractor experience installing HDPE.

3. Personnel experience installing HDPE.

4. Testing Plan per Sections 15990 “Pressure Testing of Piping” and 15992 “Disinfection of Piping”.

1.04 QUALIFICATIONS

A. Contractor shall have a minimum of 3 years of experience installing HDPE pipe. Contractor shall provide experience including a description of the HDPE installation (diameter, length, general conditions) and the date of installation.

B. Contractor shall have personnel working on this project with a minimum of 3 years of experience installing HDPE pipe. The Contractor shall provide a list of personnel with HDPE installation experience that will be working on this project, their responsibility for this project, and a summary of their experience including a description of the HDPE installation (diameter, length, general conditions), date of installation, and identification of responsibilities.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Delivery, storage, and handling of pipe shall be per references or as defined herein.

B. Damaged pipe is defined as pipe with any kinks or with gouges exceeding 10 percent of pipe wall thickness.

C. Shipping: Do not cut, kink, or otherwise damage pipe during transportation.

D. Storage:

1. Onsite Storage Limitation: Onsite pipe storage shall be limited to a maximum of one week, unless an exception is approved by District.

2. Limit stacking of pipe to a height that will not cause excessive deformation of bottom layers of pipes under anticipated temperature conditions. Note, summer temperatures may reach over 100 degrees F.

3. Where necessary due to ground conditions, store pipe on wooden dunnage, spaced suitably and of such widths as not to allow deformation of pipe at point of contact with dunnage or between supports.

PART 2: PRODUCTS

2.01 MANUFACTURERS

A. Pipe and fittings specified in this Section shall be products of:

1. CP Chem Performance Pipe; DriscoPlex, Series 4000 and Series 4100

2. J-M Manufacturing

3. Rinker Materials; Polypipe

4. ISCO Industries

5. Maskell Pipe

2.02 MATERIALS

A. For storm drain HDPE refer to “Storm Drain System” specification 02620.

B. For Pipe and Fittings:

1. Conform to requirements of AWWA C906.

2. Polyethylene resin shall meet or exceed requirements of ASTM D3350 for PE 4710 material with cell classification of 335464C, or better.

3. Maximum Allowable Hoop Stress: 800 psi at 73.4 degrees F.

4. Pipe sizes shall conform to ASTM F714.

5. Pipe shall have a DR as shown on the plans.

6. Fitting shall be pressure rated to the rating of the pipe or higher.

7. Pipe O.D. sizes shall be ductile iron pipe sizes (DIPS).

8. The pipe shall contain no recycled compounds except that generated in the manufacturer's own plant from resin of the same specification form the same raw material.

9. All pipes shall be suitable for use as pressure conduits, listed as NSF 61, and per AWWA C906.

C. Pipe lengths, fittings and flanged connections to be joined by thermal butt-fusion shall be of same type, grade, and class of polyethylene compound and supplied from same raw material supplier.

D. Fittings shall be fabricated from polyethylene pipe by means of thermal butt-fusion . Ends of fabricated fittings shall not be trimmed to match pipe section to which they are going to be joined. Polyethylene fittings shall have thicker walls as required to obtain same or higher pressure rating as straight pipe when installed.

E. Flanges: ASTM A240, Type 316 stainless steel, backing rings with 125 pound, ANSI B16.1 Standard drilling. Flanges shall be complete with one-piece, molded polyethylene stub ends. Flanged connections shall have same or greater pressure rating as pipe.

F. Gaskets: Gasket material, size, and thickness shall be as recommended by pipe or flange manufacturer.

G. Joints: Thermal butt-fusion by thermal welding machine only, except where connecting to unions, valves, and equipment with threaded connections that may require future disassembly. Fusion type couplings shall not be allowed to make-up the butt-fusion joint.

H. Bolts, Nuts, Washers: Type 316 stainless steel, ASTM A193, Grade BSM, Class 2, hex head bolts; and ASTM A194, Grade 8 hex head nuts. Bolts shall be fabricated in accordance with ANSI B18.2.2 and provided with washers of same material as bolts.

I. Restrained Pipe Coupling:

1. Provide restrained couplings as shown on the Drawings, quantity as shown on the Drawings.

2. EBAA Series 3800 Restrained Coupling or Approved Equal

PART 3: EXECUTION

3.01 INSTALLATION

A. General:

1. Fabricate and install polyethylene pipe in strict conformance with ASTM D2774, and pipe manufacturer's printed recommendations.

2. Joining: Butt-fuse pipes and fittings as outlined in ASTM D2657 and in strict accordance with pipe manufacturer's recommendations. Sections shall be joined into continuous lengths on the jobsite above ground.

3. Mechanical Connections: Connect HDPE pipe to auxiliary equipment such as valves or other appurtenances shown on plans with flanged connections as follows:

   a. Polyethylene "stub end", thermally butt-fused to ends of pipe.

   b. Backing ring, as specified.

   c. Bolts, Nuts, Washers: Type 316 stainless steel, ASTM A193, Grade BSM, Class 2, hex head bolts; and ASTM A194, Grade 8 hex head nuts. Bolts shall be fabricated in accordance with ANSI B 18.2.2 and provided with washers of same material as bolts.

   d. Gaskets as specified.

   e. Mechanical connections are not allowed in pipeline joints not connecting to appurtenances per Section 16640, Cathodic Protection and Joint Bonding.

4. Special Precautions at Flanges: Support polyethylene pipe connected to heavy fittings, maintenance holes, and rigid structures in such a manner that no subsequent relative movement between polyethylene pipe at flanged joint and rigid structures is possible.

5. Buried flanges shall be coated per Section 09900, Painting and Coating System No. D-1.

6. HDPE pipe shall not be joined to existing pipe or adjacent segments until a minimum of 12 hours has elapsed to allow for temperature equalization and stress relief. HDPE pipe stretched beyond its elastic limit or damaged in any way shall be rejected.

B. Placement in Trench:

1. Handle joined pipeline in such a manner that pipe is not damaged by dragging it over sharp and cutting objects.

2. Any damage to the pipe shall be repaired as directed by the Engineer at no additional cost to the District.

3. Position slings for handling pipeline away from butt-fused joints.

4. Remove sections of damaged pipe and replace it with undamaged pipe.

5. Damaged pipe shall be painted “DO NOT USE", and be removed from jobsite within 48 hours.

6. Exercise care when lowering pipe into trench to prevent damage or twisting of

pipe.

7. Place pipe from one side of trench to other (like a snake) to allow for thermal and settling movements.

8. At flanges, valves, and connections, excavate trench bottom out sufficiently to ensure clearance between undisturbed trench bottom and flange, valve, or connection.

9. Connection to unrestrained piping shall be made only when surface temperature of HDPE pipe is within the temperature range as recommended by the manufacturer, and not to exceed 85 degrees F.

C. UV Exposed HDPE:

1. Where pipe is exposed to UV light, provide wrap with a general purpose, corrosion-resistant tape with UV resistance per the manufacturer's recommendations.

D. Post-Installation: Remove and replace any damaged pipe and fittings discovered after installation with a new pipe at no additional cost to the District.

END OF SECTION

SECTION 15100
GATE VALVES

PART 1: GENERAL

1.01 DESCRIPTION

This section includes material, testing, and installation of 4-inch through 16-inch gate valves.

1.02 REFERENCES

ANSI B16.1	Cast Iron Pipe Flanges and Flanged Fittings Class 25, 125, 250, and 800
ASTM A126	Standard Specification for Gray Iron Castings for Valves, Flanges and Pipe Fittings
ASTM A193	Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High Temperature Service
ASTM A194	Standard Specification for Carbon and Alloy Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both
ASTM A276	Standard Specification for Stainless Steel Bars and Shapes
ASTM A307	Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
ASTM A536	Standard Specification for Ductile Iron Castings
ASTM B16	Standard Specification for Free-Cutting Brass Rod, Bar and Shapes for Use in Screw Machines
ASTM B62	Standard Specification for Composition Bronze or Ounce Metal Castings
ASTM D429	Standard Test Methods for Rubber Property-Adhesion to Rigid Substrates
ASTM D2000	Standard Classification System for Rubber Products in Automotive Applications
AWWA C509	Resilient Seated Gate Valves for Water Supply Service
AWWA C550	Protective Interior Coatings for Valves and Hydrants
NSF/ANSI 61	Drinking Water System Components

1.03 SUBMITTALS

A. Product data sheets

B. Product catalogue cut sheets indicating selected size, application, and materials of construction.

C. NSF Certification

D. Operations & Maintenance information

1.04 MEASUREMENT AND PAYMENT

Full compensation for Gate Valves including furnishing all materials, labor, tools, equipment, and incidentals and performing all work described in this Section and as indicated on the Plans shall be included as part of the Contract amount for Gate Valves and no additional compensation shall be allowed therefor.

PART 2: MATERIALS

2.01 GENERAL

A. Unless noted otherwise, valves shall be in conformance with AWWA C509.

B. Valves are identified on the Plans by size and type.

C. Valves shall be NSF approved.

D. Valves shall be complete with operating handwheels, levers, chainwheels, pipe stands, extension stems, gear actuators, operating nuts, chains, wrenches, and valve boxes required for operation.

E. 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.

F. Contractor shall coordinate the drilling pattern between flanges.

2.02 VALVE OPERATORS

A. For buried or submerged valves, provide 2-inch AWWA operating nuts.

B. For above ground valves, provide open stem and yoke operator with handwheel. Minimum handwheel diameter shall be 12 inches.

C. Operators on buried valves shall produce the required torque on the operating nut with a maximum input of 150 foot-pounds.

D. Valve operators shall open by turning counterclockwise.

2.03 GATE VALVE CONSTRUCTION

A. Pressure Rating: Gate valves shall be resilient-seated gate valves with a minimum rated working pressure of 200 psi. Valve shall be bubble tight at the rated working pressure.

B. General: Valve shall have a smooth unobstructed waterway free from any pockets that would allow sediments to gather.

C. Valve Bodies, Operating Nuts, Bonnet, Seal: Cast iron ASTM A126 class B or ductile iron ASTM A536, grade 65-45-12.

D. Valve Ends: Furnish valve with the type of ends as shown on the Plans. Flanged ends shall be class 125, ANSI B16.1.

E. Valve Wedge: Cast iron ASTM A126, class B or Ductile iron ASTM A536, Grade 65-45-12 with Buna N rubber encapsulation, ASTM D2000.

F. Valve Stems: Brass ASTM B16 or Bronze ASTM B62. Stem guide shall be made of materials that will not bind with the stem.

G. Stem Seals: Synthetic rubber ASTM D2000, O-ring seal type with three rings located in stem.

H. Bonnet and Seal Nuts and Bolts:

Above ground installations – cadmium plated carbon steel ASTM A307, Grade B cadmium plated or stainless steel A193 and A194, Type 316 Grade B8 or Grade 8.

Below ground and vault installations - stainless steel A193 and A194, Type 316 Grade B8 or Grade 8.

I. Bronze Parts: All internal working parts (unless otherwise noted above) shall be all bronze containing not more than 2 percent aluminum or more than 5 percent zinc.

2.04 LINING AND COATING

A. All internal and external ferrous surfaces of the valve body and bonnet shall have a fusion bonded epoxy coating, a minimum of 8 mils Dry Film Thickness, in compliance with AWWA C550, applied electrostatically by the manufacturer prior to assembly.

B. Finish coat valves located above ground or in vaults and structures in the field in accordance with Section 09900 “Painting and Coating”, system number 10 or 15 as applicable. Finish coat shall match the color of the adjacent piping. Coat handwheels the same as the valves. A finish coat (beyond the fusion bonded epoxy coating) is not required for buried valves.

C. Recycled water valves shall have purple coating.

2.05 GASKETS, BOLTS, NUTS, AND WASHERS FOR FLANGED VALVES

Gaskets, bolts, nuts, and washers for flanged valves shall be in accordance with the requirements for the adjacent pipe.

2.06 VALVE BOXES FOR BURIED VALVES

A. Buried valves shall have valve boxes.

B. Unless otherwise indicated, valve box pipe material shall be 8-inch schedule 40 PVC pipe and shall be of a design such that traffic loads are not transmitted to the valve.

C. Unless otherwise indicated, design cast-iron cap to rest within a frame; size the tapered skirt of the cap for a close fit inside the upper sleeve portion of the valve box.

2.07 **EXTENSION STEMS FOR BURIED VALVE OPERATORS**

A. Where the depth of the valve is such that its centerline is more than 4 feet below grade, provide operating extension stems to bring the operating nut to a point 24 to 36 inches below the surface of the ground and/or box cover.

B. Extension stems shall be steel and shall be complete with 2-inch-square operating nut and centering rings.

C. Valve stem extensions shall be of a solid design (no pinned couplings permitted) with guides.

2.08 **ACCEPTABLE MANUFACTURERS AND MODELS**

The following valves may require certain options and/or revisions from the standard model in order to meet the requirements of these specifications.

A. Class 150 Gate Valves

American Flow Control, Series 500 Resilient Wedge Valve

Mueller Company, 2360 Series Resilient Wedge Gate Valve

Approved Equivalent

PART 3: EXECUTION

3.01 **GENERAL**

A. Install in accordance with applicable AWWA standards.

B. Install in accordance with the applicable portions of Section 15000 “General Piping Requirements”.

C. Buried valves shall be installed plumb so that the operating nut is vertical. If the Plans do not detail a required change in slope of the pipe for plumb valve installation, the Contractor shall make the necessary minor adjustments to do so, after approval from the Engineer.

3.02 **EXTERIOR PROTECTION**

All exposed flanges and other metal surfaces and all damaged coatings shall be coated after assembly per Section 09900 “Painting and Coating”.

3.03 **VALVE BOXES**

A. Valves boxes shall be firmly supported and shall be kept centered and plumb over the operating nut of the valve.

B. Beveled sections of pipe will not be allowed at the top of the valve extension pipe. The top cut shall be square and machine made.

C. The box cover shall be flush with the surface of the finished pavement or at any other level designated by the Engineer.

D. In unpaved areas a Class B concrete collar, per Section 03010 "General Concrete Construction" shall be poured around each valve box a minimum of 9-inches beyond the valve box and 6-inches deep.

E. Paint valve box covers per Section 09900 "Painting and Coating".

3.04 MARKERS

In unpaved areas a blue "carsonite" marker shall be installed adjacent to the valve can. The marker shall extend 3' above ground and 5" below ground anchored in the concrete collar.

3.05 BACKFILL

A. All backfill within 24 inches of a valve shall be clean, washed imported sand as defined in Section 02223 "Trenching, Backfilling, and Compacting".

B. Backfill is to be placed and compacted in accordance with Section 02223 "Trenching, Backfilling, and Compacting".

3.06 VALVE TESTING AND DISINFECTION

A. Test and disinfect valves at the same time that the connecting pipelines are tested. See Section 15990 "Pressure Testing of Pipe" and Section 15992 "Disinfection of Piping" for pressure testing and disinfection requirements.

B. Protect or isolate any valve with a pressure rating less than the test pressure.

END OF SECTION

SECTION 15112
CHECK VALVES

PART 1: GENERAL

1.01 DESCRIPTION

This section includes materials, testing, and installation of duckbill check valves and rubber flapper swing check valves, 4-inches in diameter and larger.

1.02 REFERENCES

ANSI B16.1	Cast Iron Pipe Flanges and Flanged Fittings Class 25, 125, 250, and 800
ASTM A126	Standard Specification for Gray Iron Castings for Valves, Flanges and Pipe Fittings
ASTM A240	Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
ASTM A276	Standard Specification for Stainless Steel Bars and Shapes
ASTM A536	Standard Specification for Ductile Iron Castings
ASTM B62	Standard Specification for Composition Bronze or Ounce Metal Castings
AWWA C508	Swing Check Valves for Waterworks Service, 2-inch through 24-Inch NPS
AWWA C511	Reduced-Pressure Principle Backflow Prevention Assembly
NSF/ANSI 61	Drinking Water System Components

1.03 SUBMITTALS

A. Product data sheets

B. Product catalogue cut sheets indicating selected valve, size, application, and materials of construction.

C. Installation instructions

D. NSF Certification

1.04 MEASUREMENT AND PAYMENT

Full compensation for Check Valves including furnishing all materials, labor, tools, equipment, and incidentals and performing all work described in this Section and as indicated on the Plans shall be included in the Contract price paid for Check Valves and no additional compensation shall be allowed therefor.

PART 2: MATERIALS

2.01 GENERAL

A. The Contractor shall furnish and install all check valves of the types and sizes shown and specified, complete and operable, including lining, appurtenances, and accessories, in accordance with the requirements of the Plans and specifications.

B. Provide check valves designed for a water working pressure of not less than 150 psi.

C. Provide valves designed to permit flow in one direction, when the inlet pressure is greater than the discharge pressure, and to close tightly to prevent return flow when discharge pressure exceeds inlet pressure.

D. Provide valves which have distinctly cast on the body of each valve:

1. Manufacturer's name, initials, or trademark by which the manufacturer can be identified readily.

2. Valve size.

3. Working pressure.

4. Direction of flow.

E. Valves for potable water service shall comply with NSF 61.

F. Contractor shall coordinate the drilling pattern between flanges.

2.02 RUBBER FLAPPER SWING CHECK VALVES

A. Rubber flapper swing valves shall be of the size shown on the plans and shall be in accordance with AWWA C508.

B. Valve Bodies and Covers: Cast iron ASTM A126, Grade B or ductile iron ASTM A536.

C. Valve Ends: Flanged, Class 125, per ANSI B16.1.

D. Flapper: NBR having an O-ring seating edge and internally reinforced with steel.

E. Valve shall be designed for 175 psi differential pressure for water and shall be suitable for submerged service.

A. Acceptable Manufacturers:

APCO CRF100
Approved equivalent

2.03 **DUCK BILL CHECK VALVES**

A. Body: Valve shall be made from EPDM rubber. Back-up rings shall be type 316 stainless steel.

B. End: Duck bill check valves shall be flanged unless noted otherwise.

C. Bolts: Bolts shall include a washer on the rubber flange and a locking type of nut.

D. Acceptable Manufacturers:

Onyx Valve Company
Tideflex
Approved equivalent

2.04 **LINING AND COATING**

A. All internal and external ferrous surfaces of the valve body and cover shall have a fusion bonded epoxy coating, a minimum of 8 mils Dry Film Thickness, applied by the manufacturer prior to assembly. The fusion bonded epoxy coating shall be applied in compliance with the coating manufacturer's recommendations.

B. Finish coat valves located above ground or in vaults and structures in the field in accordance with Section 09900 "Painting and Coating", system number 10 or 15 as applicable. Finish coat shall match the color of the adjacent piping. A finish coat (beyond the fusion bonded epoxy coating) is not required for buried valves.

2.05 **GASKETS, BOLTS, NUTS, AND WASHERS FOR FLANGED CHECK VALVES**

Gaskets, bolts, nuts and washers for flanged check valves shall be in accordance with the requirements for the adjacent pipe.

PART 3: EXECUTION

3.01 **GENERAL**

A. Install in accordance with AWWA Standards and the manufacturer's printed instructions.

3.02 **EXTERIOR PROTECTION**

All exposed flanges and other metal surfaces and all damaged coatings shall be coated after assembly per Section 09900 “Painting and Coating”.

3.03 **VALVE TESTING AND DISINFECTION**

B. Test and disinfect valves at the same time that the connecting pipelines are tested. See Section 15990 “Pressure Testing of Pipe” and Section 15992 “Disinfection of Piping” for pressure testing and disinfection requirements.

C. Protect or isolate any valve with a pressure rating less than the test pressure.

END OF SECTION

SECTION 15113
MUD VALVE

PART 1: GENERAL

1.01 DESCRIPTION

This section includes material, testing, and installation of the reservoir's mud valve and operator.

1.02 REFERENCES

ASTM A276	Standard Specification for Stainless Steel Bars and Shapes
ASTM A307	Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
ASME B36.19M	Stainless Steel Pipe
NSF/ANSI 61	Drinking Water System Components

1.03 SUBMITTALS

A. Product data sheets.

B. Product catalogue cut sheets indicating selected size, application, and materials of construction.

C. Submit pothole information of existing drain.

D. Submit steel spool that will connect the mud valve to the 90-degree bend.

E. Show dimensions & orientation of valve actuators as installed on the valve. Include method for connecting operator to the valve nut. Specify bolt material and size, hole size, etc.

F. Operations & Maintenance information in accordance with Section 01730 "Operating and Maintenance Manual."

G. Submit in accordance with Section 01300 "Submittals."

1.04 MEASUREMENT AND PAYMENT

Full compensation for Mud Valve including furnishing all materials, labor, tools, equipment, and incidentals and performing all the work described in this Section and as indicated on the Plans shall be included as part of the Contract amount for Mud Valve and no additional compensation shall be allowed therefor.

PART 2: MATERIALS

2.01 GENERAL

A. Valve shall be complete with extension stem required for operation.

B. Valve shall be mounted flush with the adjacent floor areas.

C. Contractor shall coordinate the drilling pattern between flanges.

2.02 VALVE OPERATOR

A. Provide 2-inch AWWA operating nut.

B. Operator on valve shall produce the required torque on the operating nut with a maximum input of 150 foot-pounds.

C. Valve operator shall open by turning counterclockwise.

2.03 MUD VALVE CONSTRUCTION

The Mud Valve shall be of the heavy-duty flanged type designed to provide a positive seal. The valve shall be non-rising stem style as detailed on the Plans. The frame, plug, operating stem, and yoke shall be 316 stainless steel. The plug seat shall be Buna-N rubber for a positive seal. Plug stem shall have hydraulic relief slots to prevent sediment from building up in the plug stem area. Valve shall be a Troy MVXN or approved equivalent.

2.04 GASKETS, BOLTS, NUTS AND WASHERS FOR MUD VALVE

Gaskets shall be in accordance with the requirements for the adjacent pipe. Bolts, nuts, and washers shall be 316 stainless steel.

2.05 SPOOL

A. Spool shall be schedule 40 steel pipe, with 150 lb. flanges.

B. Spool shall be epoxy coated as follows:

Surface Preparation:	SSPC SP-10 or SSPC SP-11 for touch-up work if approved by Engineer.
Prime Coat:	One coat to a dry film thickness of 3-5 mils: Tnemec Series L69 Hi-Build Epoxoline II or approved equivalent
Finish Coat:	One coat to a dry film thickness of 16-20 mils: Tnemec 22 Epoxoline or approved equivalent.
	Total dry film thickness shall be 19-25 mils.

2.06 **EXTENSION STEM FOR SUBMERGED VALVE OPERATOR**

A. Provide operating extension stem to bring the operating nut to mud valve operator access hatch as detailed in Plans. Extension stem shall be 3" diameter schedule 40 316 stainless steel pipe and shall be complete with 2-inch-square operating nut.

B. Extension stem shall be secured onto the mud valve operating nut via a stainless steel bolt/nut through a drilled hole in the valve extension and the operating nut, or other approved method.

PART 3: EXECUTION

3.01 **VALVES**

A. Pothole existing drain in accordance with Section 02221 "Potholes." Contractor shall determine necessary spool length to achieve flush mounting.

B. Install in accordance with applicable AWWA standards.

C. Install in accordance with the applicable portions of Section 15000 "General Piping Requirements."

D. Valve shall be installed plumb so that the operating nut is vertical.

3.02 **VALVE TESTING AND DISINFECTION**

A. Disinfect valve exterior during tank disinfection. Interior of valve and piping do not require disinfection. Valve shall undergo hydrostatic testing by filling the tank and examining the drain for any leakage. Drain pipe shall exhibit no visible signs of leakage. See Section 15994 "Disinfection and Testing of Tanks."

END OF SECTION

SECTION 15122
MISCELLANEOUS PIPE APPURTENANCES

PART 1: GENERAL

1.01 DESCRIPTION

This section includes mud valves, flexible gasketed sleeve-type compression pipe couplings, expansion joints, adaptors, and transition couplings for steel, ductile-iron, and PVC pipes. Not all couplings identified in this section are necessarily required.

1.02 REFERENCES

ANSI B16.5	Pipe Flanges and Flanged Fittings
ASTM A36	Standard Specification for Carbon Structural Steel
ASTM A47	Standard Specification for Ferritic Malleable Iron Castings
ASTM A53	Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
ASTM A108	Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished
ASTM A193	Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service
ASTM A194	Standard Specification for Carbon and Alloy Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both
ASTM A283	Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
ASTM A285	Standard Specification for Pressure Vessel Plates, Carbon Steel, Low- and Intermediate-Tensile Strength
ASTM A510	Standard Specification for General Requirements for Wire Rods and Course Round Wire, Carbon Steel
ASTM A512	Standard Specification for Cold-Drawn Buttweld Carbon Steel Mechanical Tubing
ASTM A536	Standard Specification for Ductile Iron Castings
AWWA C105	American National Standard for Polyethylene encasement for Ductile-Iron Pipe Systems
AWWA C110	American National Standard for Ductile-Iron and Gray-Iron Fittings for Water
AWWA C153	Ductile-Iron Pipe and Fittings
AWWA C210	Liquid-Epoxy Coating Systems for the Interior and Exterior of Steel Water Pipelines
AWWA C213	Fusion Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines
AWWA C219	Bolted, Sleeve-Type Couplings for Plain-End Pipe
AWWA C606	Grooved and Shouldered Joints
AWWA M11	Steel Water Pipe: A Guide for Design and Installation
NSF/ANSI 61	Drinking Water System Components

1.03 SUBMITTALS

A. Submit manufacturer's catalog data for each coupling, adaptor, or other appurtenance. Include manufacturer's model or figure number for each type of coupling or joint for each type of pipe material for which couplings are used.

B. Show materials of construction by ASTM reference and grade. Show coatings and provide dimensions. For thrust harness, include number, size, and material of tie rods and lugs.

C. Submit NSF Certifications

D. Submit installation instructions including manufacturer's recommended torques to which the coupling bolts shall be tightened.

1.04 MEASUREMENT AND PAYMENT

Full compensation for Miscellaneous Pipe Appurtenances including furnishing all materials, labor, tools, equipment, and incidentals and performing all work described in this Section and as indicated on the Plans shall be included in the Contract price paid for related piping work and no additional compensation shall be allowed therefor.

PART 2: MATERIALS

2.01 FLEXIBLE PIPE COUPLINGS FOR PLAIN END DUCTILE-IRON PIPE AND HDPE PIPE

A. Flexible pipe couplings for pipe 12 inches and smaller shall be ductile iron, EBAA Mega-Coupling Series 3800 or approved equivalent.

B. Provide internal pipe wall stiffener where restrained of HDPE is required.

C. Couplings shall include joint restraints.

2.02 FLANGED COUPLING ADAPTERS FOR CAST - AND DUCTILE-IRON PIPE AND PVC PIPE

A. Flanged coupling adapters for cast iron, ductile iron, and PVC pipe shall be in compliance with AWWA C219.

B. Flanged coupling adapters for pipe 12 inches and smaller shall be cast iron: Dresser Style 127, Smith-Blair Series 912, Romac FCA501, or approved equivalent.

C. Flanged coupling adapters for pipe larger than 12 inches shall be steel; Dresser Style 128, Smith-Blair Type 913, Romac FC400, or approved equivalent.

D. Flange ends shall match the flange of the connecting pipe.

2.03 BOLTS, NUTS AND WASHERS

Unless otherwise noted, bolts, nuts and washers for submerged applications, buried applications and applications in vaults shall be Type 316 stainless steel conforming to ASTM A193, grade B8 for bolts, and ASTM A194, grade 8 for nuts. Bolts and nuts for above ground applications shall be Type 316 stainless steel. Fit shall be classes 2A and 2B per ANSI B1.1 when connecting to valves with body bolt holes.

2.04 MODULAR WALL SEALS

A. Seal between pipe and pipe sleeve shall be a modular, multi-link, mechanical type which expands upon tightening to hold the pipe in place and provide a water tight seal.

B. The seal element shall be EPDM with composite pressure plates and 316 stainless steel bolts and nuts.

2.05 FLEXIBLE EXPANSION JOINT

A. Flexible expansion joints shall be force balanced

B. Unless otherwise noted on the plans, flexible expansion joints shall consist of two ball and socket joints with integral expansion joint and provide for simultaneous deflection and axial movement.

C. Construct unit from ASTM 65-45-12 Ductile Iron conforming to the requirements of ASTM A536 and AWWA C153. Retaining or locking rings shall be Type 400 Stainless Steel.

D. Provide flanged connections meeting requirements of AWWA C110 (class 150).

E. Line all internal surfaces (wetted parts) with a minimum of 10 mils of fusion bonded epoxy conforming to the applicable requirements of AWWA C213 and holiday test with a 1500 volt spark test. Conform to requirements of NSF-61.

F. Sealing gaskets and covers shall be constructed of EPDM conforming to NSF-61.

G. Coat external surfaces with a catalyzed coal tar epoxy conforming to the material requirements of AWWA C210 or with fusion bonded epoxy conforming to AWWA C213.

H. For buried applications, install in polyethylene sleeves conforming to AWWA C105.

I. Provide stainless steel nuts and bolts per paragraph 2.05 of this section.

J. Joint shall provide a minimum offset of 6-inches and a minimum expansion of 9-inches.

K. Pressure test each flexible expansion joint at the factory prior to shipment. Pressure test to 350 psi against its own restraint per AWWA C600 or ASTM D2774. A minimum 2:1 safety factor, determined from the published pressure rating, shall apply. Factory Mutual Approval is required for 12-inch and smaller sizes.

L. Joint shall be equipped with restraining tie rods to maintain position and alignment during shipment and installation.

2.06 **MUD VALVES**

A. The Mud Valve shall be of the heavy-duty flanged type designed to provide a positive seal. The valves shall be (non-rising, rising) stem style.

B. The frame, plug, operating stem, and yoke shall be stainless steel. The plug seat shall be Buna-N or Viton rubber for a positive seal.

C. Stems shall not be coated.

D. Plug stem shall have hydraulic relief slots to prevent sediment from building up in the plug stem area.

E.

F. Plug base shall have no thru holes as to prevent any possible leak path.

G. The manufacturer shall show proof of ISO 9001 certification.

H. Where required, the manufacturer shall provide valve operating stems, floor stands, and stem guides as specified in the valve schedule or plans.

I. Valve and accessories shall be manufactured by Troy Valve Model MVXN (non-rising) or MVXR (rising) or approved equal.

PART 3: EXECUTION

3.01 **INSTALLATION OF COUPLINGS, ADAPTORS, AND EXPANSION JOINTS**

A. Install in accordance with the applicable portions of Section 15000 “General Piping Requirements”.

B. Provide temporary restraint for pressure test.

C. Clean oil, scale, rust, and dirt from pipe ends. Clean gaskets in flexible pipe couplings before installing.

D. For buried applications, install in polyethylene sleeves conforming to AWWA C105. All backfill within 12-inches of joint shall be imported sand with a sand equivalent of at least 30.

E. Install expansion joints per manufacturer's recommendations. Install expansion joints so that 50% of total travel is available for expansion and 50% is available for contraction.

F. Lubricate bolt threads with graphite and oil prior to installation.

G. Remove temporary tie restraining rods after pressure test has been accepted, but prior to covering with polyethylene sleeve and backfilling for buried applications.

3.02 PAINTING AND COATING

A. Line and coat buried flexible pipe couplings (including joint harness assemblies), transition couplings, and flanged coupling adapters with 12-mils of fusion bonded epoxy.

B. Coat flexible pipe couplings (including joint harness assemblies), transition couplings, and flanged coupling adapters located indoors, in vaults and structures, and above ground with the same coating system as specified for the adjacent pipe. Prime coat shall be applied at the factory. Color shall match the color of the connecting pipe.

C. Line flexible pipe couplings with 12-mils fusion bonded epoxy.

3.03 TESTING

A. Test appurtenances in place with the pipe being tested. Test in accordance with Section 15990 “Pressure Testing of Piping” and Section 15992 “Disinfection of Piping”. Temporarily restrain expansion joints and other appurtenances as necessary for the hydrostatic test.

B. Protect any appurtenance with a pressure rating less than the test pressure.

END OF SECTION

SECTION 15140
PIPING SUPPORTS

PART 1: GENERAL

1.01 SCOPE

This section includes the requirements for furnishing and installation of all piping supports required for the project as specified herein, whether or not shown on the plans.

1.02 REFERENCES

California Building Code Section 1632

1.03 SUBMITTALS

A. Detailed design in compliance with the CBC (including seismic loading). Design shall account for pressure loads, vertical loads, and horizontal loads. Detailed design includes support spacing, connections to the pipe support foundation, and connections to the pipe as well as the support itself.

B. Calculations supporting detailed design.

C. Detail drawings indicating types of supports, location, and connection to wall, floor, or ceiling.

D. Catalog cuts of proposed products with materials of construction, load ratings, and installation requirements.

E. Legend including Drawing number, services, pipe weight (in service), support type, support material or finish, distance to floor, support spacing and maximum vertical load.

1.04 MEASUREMENT AND PAYMENT

Full compensation for Piping Supports including furnishing all materials, labor, tools, equipment, and incidentals and performing all work described in this Section and as indicated on the Plans shall be included in the Contract price paid for pipe supports and no additional compensation shall be allowed, therefore.

PART 2: PRODUCTS

2.01 GENERAL

A. All piping shall be supported against sag, lateral and vertical movement in a manner which will prevent undue strain on any valve, fitting, pipe or piece of equipment. A

pipe stand or hanger could provide support. This applies to pressure and non-pressure piping but does not include conduit for wiring.

B. Unless otherwise indicated on the Plans, exposed piping shall be supported at the base of all risers, at intervals not to exceed 5 feet on all horizontal runs of pipe 2-inches and smaller, at intervals not to exceed 8 feet on all horizontal runs of pipe 2 1/2-inches through 4-inches, and at intervals not to exceed 12 feet on all horizontal runs of pipe larger than 4-inches.

C. In addition, pipe supports or hangars shall be provided at changes in direction or elevation, adjacent to flexible couplings, at pipe connections to equipment, and where otherwise shown. Pipe supports and hangers shall not be installed in equipment access areas.

2.02 DESIGN

A. Provide detailed piping support design for all piping, whether or not supports are shown on the plans.

B. Pipe support system components shall be designed to withstand the dead loads imposed by the weight of pipes filled with water and shall have a minimum factor of safety of 5.

C. If pipe supports are shown on plans, comply with the plan details, unless otherwise approved. Manufacturer's catalog figure numbers are typical of the types and quality of standard pipe supports and hangers to be employed. Special support and hanger details are shown to cover typical locations where standard catalog supports are not applicable.

D. No use shall be made of wire, straps, chains, or such for supporting piping. Expansion shields may only be used for anchoring support brackets to existing walls. No pipe shall be supported from the pipe below it or hung from the pipe above it unless approved in writing by the Engineer.

2.03 HANGERS AND SUPPORTS

A. No attempt has been made to show all required pipe supports in all locations, either on the Plans or in the details. The absence of pipe supports and details on any drawings shall not relieve the Contractor of the responsibility of providing a satisfactory piping support system in conformance with the functional and specific support spacing requirements of these specifications. Where a specific type of support or anchorage is shown in the Plans, then only that type shall be used there.

B. In general, all piping in galleries, along walls and ceilings, buildings and structures, and other exposed areas shall be supported by a steel metal frame support system, Unistrut, Elcen, or Engineer approved equivalent. All brackets, clamps, hangers, fittings, accessories, nuts, bolts, and anchor bolts utilized with the channels shall be as recommended by the manufacturer. Materials shall be galvanized steel unless shown otherwise on the Plans.

C. Where a metal frame pipe support system is not used, horizontal piping shall be supported by Fee and Mason 100 Series; Anvil, Figure 260 or 590; or Engineer approved equivalent; clevis hangers with threaded rods sized according to the Plans and with concrete inserts, Fee and Mason; Anvil Figure 28; or Engineer approved equivalent. Where it is not possible to cast inserts in the concrete, use may be made of clevis plates, Anvil, Figure 49; Fee and Mason; or Engineer approved equivalent, with stainless steel concrete anchors. Vertical riser clamps shall be Bergen Paterson Inc. Part No. 126; Anvil Figure 261; or Engineer approved equivalent. All supports shall be hot dip galvanized, unless specified otherwise on the Plans.

D. Pedestal pipe supports shall be adjustable, with stanchion, saddle, and anchoring flange as shown, Anvil; Fee, and Mason; or Engineer approved equivalent. Provide neoprene waffle isolation pad under anchoring flanges, adjacent to equipment or where otherwise required to provide vibration isolation. Pads shall be Mason Industries Inc. Type W; Fabreeka Products Company; or Engineer approved equivalent.

PART 3: EXECUTION

3.01 PAINTING

In general, supports shall be field primed and painted as specified in Section 09900, "Painting and Coating". Colors shall match pipe service color, wall or ceiling color or as directed by the Engineer.

3.02 INSTALLATION

Nonshrink grout shall be used under the floor flanges to give level bearing, and floor flanges shall be bolted to the floor with four stainless steel bolts cast in the concrete, if possible, or using stainless steel concrete anchors.

END OF SECTION

SECTION 15400
SMALL DIAMETER PIPING REQUIREMENTS, PIPING, AND VALVES

PART 1: GENERAL

1.01 DESCRIPTION

This section describes the requirements for piping, valves, and fittings that are less than 4-inches in diameter. Not all items identified in this section are necessarily required.

1.02 REFERENCES

ANSI B16.22	ANSI/ASME B16.22 Wrought Copper and Copper Alloy Solder Joint Pressure Fittings
ANSI B16.24	Bronze Pipe Flanges and Flanged Fittings
ANSI B16.26	Cast Copper Alloy Fittings for Flared Copper Tubes
ASTM A193	Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature
ASTM A194	Standard Specification for Carbon and Alloy Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both
ASTM B32	Standard Specification for Solder Material
ASTM B88	Standard Specification for Seamless Copper Water Tube
ASTM B193	Standard Test Method for Resistivity of Electrical Conductor Materials
ASTM D1784	Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
ASTM D1785	Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120
ASTM D2464	Standard Specification for Threaded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
ASTM D2564	Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems
ASTM D3895	Standard Test Method for Oxidative-Induction Time of Polyolefins by Differential Scanning Calorimetry
ASTM F467	Standard Specification for Nonferrous Nuts for General Use
ASTM F468	Standard Specification for Nonferrous Bolts, Hex Cap Screws, and Studs for General Use
AWWA C200	Steel Water Pipe-6 In. and Larger
AWWA C303	Concrete Pressure Pipe, Bar-Wrapped, Steel-Cylinder Type
AWWA C900	Polyvinyl Chloride (PVC) Pressure Pipe, and Fabricated Fittings, 4 In. Through 12 In., for Water Distribution
AWWA C905	Polyvinyl Chloride (PVC) Pressure Pipe, and Fabricated Fittings, 14 In. Through 48 In., for Water Transmission and Distribution
CCR	California Code of Regulations, Title 22, Section 64572
DDW	California Environmental Protection Agency, State Water Resources Control Board, Division of Drinking Water
NSF/ANSI 61	Water System Components

1.03 **SUBMITTALS**

A. Submit manufacturer catalogue cuts indicating materials, coatings, and material standards for all piping, gaskets, valves, and appurtenances.

B. Submit NSF Certifications

1.04 **DEFINITIONS OF BURIED AND EXPOSED PIPING**

A. Buried piping is piping buried in the soil, or encased in concrete, commencing at the inside face of the wall or top of the slab of a structure. Where a coating is specified, provide the coating up to the inside of the structure.

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.

1.05 **MEASUREMENT AND PAYMENT**

Full compensation for Small Diameter Piping Requirements, Piping, and Valves including furnishing all materials, labor, tools, equipment, and incidentals and performing all work described in this Section and as indicated on the Plans shall be included in the Contract price paid for related work and no additional compensation shall be allowed therefor.

PART 2: MATERIALS

2.01 **GENERAL**

The small diameter piping shown on the plans is schematic in nature and does not necessarily show all required components. Adaptors, reducers, couplings, dielectric fittings, bushings, and all other appurtenances shall be included as required.

2.02 **POTABLE WATER SYSTEM REQUIREMENTS**

A. All pipes, fittings, fixtures, solder, and flux for use in a potable water system shall be lead free in compliance with AB1953.

B. All potable water components shall comply with DDW separation requirements per CCR Section 64572 as applicable.

C. All potable water components shall have NSF approval per Section 64591 which generally requires that any component that comes into contact with potable water must be NSF 61 approved. Contractor shall provide only those materials that meet this requirement as applicable.

2.03 DEFAULT PIPING MATERIALS

If no material is shown in the Plans and not called out otherwise in this Section, use the following piping materials:

Service	Size Range (inches)	Material
Buried	3 and smaller	Copper
Exposed	3 and smaller	Copper

2.04 ALTERNATIVE MATERIALS

The schedule above may show alternative piping materials for certain services. In such cases, the same pipe material shall be used for all pipe sizes in all locations for the given piping service. Do not intermix piping materials.

2.05 COPPER PIPE AND FITTINGS

A. Exposed Service: Seamless copper tubing conforming to ASTM B88, Type L, hard drawn.

B. Buried Service: Seamless copper tubing conforming to ASTM B88, Type K, annealed or drawn.

C. Couplings and Fittings for Copper Tubing: Unless otherwise specified, couplings and fittings for copper tubing ½-inch and smaller nominal diameter shall be compression type, brass or bronze, capable of holding the full bursting strength of the tubing; shall meet the requirements of ANSI B16.26; and shall be Swageloc, Gyrolok, or approved equivalent. Couplings and fittings for copper tubing larger than ½-inch nominal diameter shall be wrought copper or bronze, solder joint pressure fittings and shall conform to ANSI B16.22. Provide threaded nipples when connecting to pumps and valves.

D. Solder: Construct soldered joints using ASTM B32, Alloy Grade 50B solder approved by NSF.

E. Dielectric Protection: Prevent copper tubing or fittings from contacting ferrous metals using appropriate insulation.

2.06 PVC PLASTIC PIPE AND FITTINGS

A. Polyvinyl chloride pipe shall conform to ASTM Standard D1785 and shall be Type I, Grade 1 materials.

B. All PVC pipe shall be Schedule 80, unless otherwise shown or indicated.

1. Pipe and fittings shall be extruded from Type I, Grade 1, Class 12454-B material in accordance with ASTM D1784.

2. Unless otherwise indicated on the drawings, all connections shall be slip type. Slip connections shall be made by solvent welding with a solvent material recommended by the pipe manufacturer.

3. Solvent for joining PVC pipe shall conform to the requirements of ASTM D2564 and to the requirements of the pipe manufacturer.

4. Threaded fittings shall be schedule 80 and shall conform to ASTM D2464 and shall be made from Type I, Grade 1 materials.

2.07 **(NOT USED)**

2.08 **SOLENOID VALVES**

A. Solenoid valves shall be of the size, type, and class shown on the plans and in any case shall be designed for not less than 150 psi water working pressure. Valves for water, air, or gas service shall have brass or bronze body with screwed ends, stainless steel trim and spring, Teflon or other resilient seals with material best suited for the temperature and fluid handled. Solenoid valves in vaults shall have stainless steel bodies. For explosion proof, corrosion, special purposes, or outdoor locations NEMA Types 4, 7, 8, 9, 9E, or 9G enclosures shall be used as applicable. Vaults shall be considered a corrosive environment.

B. Approved Manufacturers:

1. Automatic Switch Company (ASCO), Model "RED HAT"

2. Magnatrol Valve Corporation

3. Skinner Valve Division of Honeywell, Model "LANCER"

2.09 **BALL VALVES (2-INCHES AND SMALLER)**

A. Stainless Steel Ball Valves

1. Unless specifically indicated on the plans, all ball valves 2-inches in diameter and smaller shall have stainless steel bodies with PFTE seats and seals with stainless steel ball. Valves shall have a minimum working pressure rating of 1500 psi at 150ºF. All valves shall have integral lock-out devices incorporated in the design.

2. Approved Manufacturers

a. Parker Model XVP502SS – 1/4" – ½" size.

b. Parker Model VP500SS – ¾" – 2" size.

c. Approved equivalent.

B. Bronze Ball Valves

1. Where specifically called for on the plans, provide bronze ball valves. Bronze ball valves, 2-inches and smaller shall be brass bodied with PFTE seats and seals with stainless steel ball. Valves shall be rated for 150 psi WWP minimum. All valves shall have integral lock-out devices incorporated into the design.

2. Approved Manufacturers

   a. Parker Model XVP500P

   b. Approved equivalent.

2.10 CHECK VALVES 2-INCHES AND SMALLER

A. Unless specifically indicated on the plans, all check valves, 2-inches and smaller shall be stainless steel swing check valves with PTFE gasket and stainless steel trim. Small swing check valves shall be rated for 150 psi working water pressure minimum.

B. Acceptable Manufacturers

1. Crane Model 370

2. Approved equivalent.

2.11 NEEDLE VALVES

A. Needle valves shall be stainless steel bodied with stainless steel trim.

B. Acceptable Manufacturers

1. Hoke Series 2200

2. Approved equivalent.

2.12 PRESSURE RELIEF VALVES

A. Pressure relief valves shall be stainless steel bodied, stainless steel fitted with Teflon seals.

B. Acceptable Manufacturers

1. Circle Seal Series 5100

2. Approved equivalent.

2.13 Y-TYPE STRAINERS

Y-Type strainers shall be stainless steel bodied with Type 304 stainless steel strainer. Strainer shall have 1/32-inch diameter perforations. Y-Type strainers shall be Yarway, Bailey, or approved equivalent.

2.14 GASKETS FOR BELL AND SPIGOT JOINTS

A. The rubber gaskets used to seal pipe joints shall be made of nitrile rubber (Buna-N) of such size and cross section as to fill completely the recess provided for it. The gasket shall have smooth surfaces and shall be extruded or molded to the required diameters within a tolerance of ±1/64 inch. The rubber compound shall contain not less than 50% by volume of nitrile rubber (Buna-N). The remainder of the compound shall consist of pulverized fillers free from rubber substitutes, reclaimed rubber, and deleterious substances. The compound shall meet the following physical requirements when tested in accordance with appropriate sections of "Method of Physical Tests and Chemical Analyses for Rubber Goods" (Federal Specification ZZ-R-601a):

Tensile strength, psi, min.	15,000
Elongation at rupture, percentage min.	350
Shore durometer, Type A	50 to 65
Compression set, percentage of original deflection, max.	20
Method B (constant deflection; 22 hours at 158ºF) ASTM D 3895 – Lock joint only	20
Accelerated aging in air (70 hours at 212ºF):	
Tensile strength, percentage of original strength, min.	85
Hardness change, percentage, max.	+15
Water absorption, percent volume change, max.	10
Ozone 2 ppm to 6 ppm, 25% elongation, 2 hours at 100ºF max.	No cracking
Specific gravity	1.35 to 1.45

B. The gaskets shall be the product of a manufacturer having a successful experience record in the manufacture of rubber gaskets for pipe joints.

C. Store the rubber at 70ºF or less. Do not expose to the direct rays of the sun. Store the gaskets in such a way to permit free circulation of air around the rubber.

D. Contractor may also supply rubber gaskets in accordance with AWWA C900, C905, C303 and C200.

2.15 BOLTS, NUTS, AND WASHERS FOR FLANGES FOR STEEL PIPE

A. Bolts, nuts and washers for submerged applications, buried applications and applications in vaults shall be Type 316 stainless steel conforming to ASTM A193, grade B8, for bolts, and ASTM A194, Grade 8, for nuts. Bolts, nuts and washers for above ground applications shall be Type 316 stainless steel or cadmium plated. Fit shall be classes 2A and 2B per ANSI B1.1 when connecting to cast-iron valves having body bolt holes.

B. Bolts used in flange insulation kits shall conform to ASTM A193 grade B7. Nuts shall conform to ASTM A194 grade 2H.

C. Provide washers for each nut.

2.16 BOLTS, NUTS AND WASHERS FOR FLANGES FOR COPPER TUBING

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

B. When both above ground 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 B8 for bolts and ASTM A194 grade 8 for nuts.

D. Connect to buried ferrous flanges with flange insulation kits. Bolts used in flange insulation kits shall conform to ASTM B193, 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.

2.17 LUBRICANT FOR STAINLESS-STEEL BOLTS AND NUTS

Lubricant shall be TRX-synlub by Ramco, Anti-Seize by Ramco, Husk-It Husky Lube O'Seal, or approved equivalent.

2.18 GASKETS FOR FLANGES FOR COPPER TUBING AND PIPING

A. Gaskets shall be full face, 1/8-inch thick, and shall be one of the following non-asbestos materials:

1. Cloth-inserted rubber. Products: John Crane Co. Style 777 or equal. Gaskets shall be suitable for a pressure of 200 psi at a temperature of 180ºF.

2. Acrylic or aramid fiber bound with nitrile. Products: Garlock "Bluegard", "Klinger", "Klingersil C4400", or equal. Gaskets shall be suitable for a water pressure of 500 psi at a temperature of 400ºF.

PART 3: EXECUTION

3.01 GENERAL

All equipment supplied under this section shall be installed in accordance with the Supplier's printed instructions.

3.02 INSTALLATION OF STAINLESS-STEEL BOLTS AND NUTS

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

3.03 THREADED CONNECTIONS

Clean threads by wire brush or swab. Apply Teflon joint compound or tape to pipe threads before installing threaded fittings. Joints shall be water tight.

3.04 CONNECTIONS OF DISSIMILAR METALS

All connections between dissimilar metal piping, tubing, or fittings shall be made with dielectric couplings especially designed for this purpose and service.

3.05 LEAKAGE TESTING

A. Test devices for leakage at the same time that the connecting pipelines are tested. See Section 15990 "Pressure Testing of Piping" for pressure testing requirements.

B. Protect or isolate any devices whose pressure rating is less than the test pressure.

3.06 DISINFECTION

Disinfect piping and appurtenances at the same time that the connecting pipelines are disinfected. See Section 15992 "Disinfection of Piping" for disinfection requirements.

END OF SECTION

SECTION 15990
PRESSURE TESTING OF PIPING

PART 1: GENERAL

1.01 DESCRIPTION

This section specifies the cleaning and leakage testing for water pressure piping.

1.02 REFERENCES

ASME	Boiler and Pressure Vessel Code
NPDES	National Pollutant Discharge Elimination System

1.03 SUBMITTALS

A. Submit Pressure Testing Plan which shall include limits of testing, test bulkhead locations and design calculations, methods and locations to release air, methods and locations to fill and drain pipe, cleaning method details, location of pressure gauges, location and method to make up water, method to meter make up water, and sequence of testing for multiple pipe tests. Identify any in-kind replacements for temporary facilities.

B. Submit flow meter and pressure gage calibration certifications.

C. Submit three copies of the test records to the Engineer upon completion of the testing.

1.04 MEASUREMENT AND PAYMENT

Full compensation for Pressure Testing of Piping including furnishing all materials, labor, tools, equipment, and incidentals and performing all the work described in this Section and as indicated on the Plans shall be included as part of the Contract price paid for related work. Work in this section includes all work necessary unless otherwise noted to pressure test water mains including, but not limited to, temporary items, permanent items, testing water, water disposal, and all associated work such as excavation, backfill, replacements in-kind, and traffic control.

PART 2: MATERIALS

2.01 VENTS AND DRAINS FOR ABOVEGROUND PIPING

Install vents on the high points of above ground piping whether or not shown on the Plans. Install drains on low points of above ground piping, whether or not shown on the Plans. Provide a valve at each vent or drain point. Valves shall be at least ¾-inch for piping 3 inches and larger and at least ½-inch for piping smaller than 3 inches.

2.02 TEMPORARY VENTS AND DRAINS FOR BURIED PIPING

Provide temporary manual air-release valves at all local high points where a permanent air-release valve is not required. 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 equal to the adjacent pipe. Provide a drain, whether shown on the Plans or not, as necessary, to fill and drain the pipeline for testing.

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 TEMPORARY TESTING RESTRAINTS

Provide temporary restraints for any appurtenance that requires restraint for testing pressure but does not require permanent restraint per the design.

2.05 TESTING FLUID

A. Testing fluid shall be potable water.

B. Submit request for use of water from water lines of District 48 hours in advance.

C. The Contractor shall make his own arrangements for developing water sources and supply all labor and equipment to collect, load, transport, and apply water as necessary for hydro testing and disinfecting pipelines.

2.06 TESTING EQUIPMENT

Provide all required testing equipment including, but not limited to, calibrated 4-inch-diameter minimum face pressure gauges, pipes, bulkheads, pumps, calibrated meters and chart recorder to perform the hydrostatic testing. Provide calibration certification for meter and pressure gauges. Temporary equipment shall remain the Contractor's property.

PART 3: EXECUTION

3.01 PERMITTING

Obtain and comply with all permits required for testing including but not limited to an NPDES permit.

3.02 TESTING PREPARATION

A. Provide traffic control as necessary.

B. Isolate pipe to be tested with an “air gap” type of separation between the pipeline to be tested and the distribution system, unless otherwise noted. Water supply from a potable source must have adequate protection from backflow. Testing against valves that are connected to the distribution system will not be permitted.

C. Contractor shall provide all items, work, and equipment required to test & sample the pipeline whether or not those items are specifically identified and including temporary and permanent items.

D. Pipes and appurtenances shall be in place and anchored before commencing pressure testing.

E. 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.

F. Conduct pressure tests on buried piping after the trench has been completely backfilled and thrust blocks and concrete encasements have reached at least 75% of its ultimate design strength. Pressure tests shall not be conducted until concrete has cured a minimum of 48 hours. Contractor may, if field conditions permit and as approved by Engineer or District's Representative, partially backfill trench and leave joints open for inspection and conduct hydrostatic test. Partially backfill trench shall be backfilled with a minimum of 2-1/2 feet of material, or center loaded to hold the pipe in place while testing. Final field hydrostatic test shall not, however, be conducted until backfilling has been completed as specified above.

G. Provide all temporary piping and equipment required to perform the testing. This includes, but is not limited to, test bulkheads, piping needed to carry the test fluid to the piping that is to be tested, air release assemblies, drains, as well as all of the work associated with these temporary items, including but not limited to, excavation, backfill, replacements in-kind, and traffic control.

H. 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.

I. Notify District in writing not less than 5 working days in advance of testing.

3.03 CLEANING

Before conducting hydrostatic tests, flush pipes with water to remove dirt and debris. Maintain a flushing velocity of at least 2.5 fps for the minimum time period as given by the formula below and as required to thoroughly clear the pipeline of dirt and debris.

$$T = \frac{2L}{3}$$

in which:

T = flushing time (seconds)
L = pipe length (feet)

Alternatively, mains may be cleaned by swabbing or jetting. In mains 24-inches or larger in diameter, additional alternatives include sweeping, scrubbing, or equally effective means.

All water, sediment, dirt, and foreign material accumulated during the cleaning operation shall be discharged, vacuumed, or otherwise removed from the pipe.

3.04 LENGTH OF TEST SECTION FOR BURIED PIPING

The maximum length of test section for buried pipe is 5,000 feet.

3.05 INITIAL PIPELINE FILLING FOR HYDROSTATIC TESTING

A. Maximum rate of filling shall not cause water velocity in pipeline to exceed 1 fps.

B. When testing CML pipe, fill the pipe to be tested with water and allow the pipe to soak for a minimum of 24 hours to allow the cement to absorb water prior to performing the pressure test.

3.06 TESTING NEW PIPE WHICH CONNECTS TO EXISTING PIPE

Test new pipelines which are to be connected to existing pipelines by isolating the new line from the existing line by means of pipe caps, spectacle flanges, or blind flanges. After the new line has been successfully tested, remove caps or flanges and connect to the existing piping.

3.07 TESTING AIR RELEASE AND AIR/VACUUM VALVES

When test pressure is above 200 psi or when the test pressure is 150 psi to 200 psi and the duration is longer than 4 hours, install temporary ball valves to bleed air and perform the pipe pressure test. After the pipe has passed the pressure test, install ARV's and retest at the specified pressure. Perform a visual leak inspection and release the pressure as soon as practical. If there is any visible leakage, repair and retest.

3.08 TEST PRESSURES

A. For all piping subjected to tank HGL and therefore low pressures, test at 75 psi.

B. For all other piping (i.e. not subjected directly to tank HGL), test at 200 psi. Pressure measurements shall be taken at, or adjusted to, the lowest point in the portion of the line being tested.

C. Under no circumstances shall the total test procedure exceed eight hours at 1.5 times the pressure class of pipe.

3.09 HYDROSTATIC TESTING OF ABOVEGROUND OR EXPOSED PIPING

Open vents at high points of the piping system to purge air while the pipe is being filled with water. Subject the piping system to the test pressure specified herein. Maintain the test pressure for a minimum of 24 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.

3.10 HYDROSTATIC TESTING OF BURIED PIPING

A. Apply and maintain the test pressure by means of a hydraulic force pump.

B. 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

C. 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 the apparent leakage in the piping system. The allowable loss rate is defined by the formula:

$$L = \frac{HND(P)^{\frac{1}{2}}}{C}$$

in which:

H = specified test period (hours)
L = allowable loss (gallons)
N = number of rubber-gasketed joints in the pipe test
D = diameter of the pipe (inches)
P = specified test pressure (psig)
C = 7,400

D. The allowable leakage loss for welded or flanged steel pipe shall be zero.

E. The allowable leakage loss for buried piping having threaded, brazed, or welded (including solvent welded) joints shall be zero.

F. Repair and retest any pipes showing leakage rates or losses greater than that allowed in the above criteria.

3.11 REPETITION OF TEST

If the actual leakage or loss 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.

3.12 BULKHEAD AND TEST FACILITY REMOVAL

After all pressure and disinfection tests have been satisfactorily completed and the pipeline is ready to be placed into service, remove test bulkheads and other temporary test facilities, restore the pipe coatings, and fill the pipeline section tested with water and maintain it full until disinfection of pipeline at the completion of the contract. The Contractor shall assume all responsibility for any damage to the pipeline as a result of pressure imposed during

operations of filling the pipeline with water and conducting the tests. Backfill, compact and replace in-kind any improvements.

3.13 TESTING RECORDS

Provide records of each piping segment during the testing. These records shall include:

A. Date of test.

B. Location of test.

C. Identification of pipeline material.

D. Identification of pipe specification.

E. Test fluid.

F. Test pressure.

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.

I. Test duration.

J. Allowable losses.

K. Actual losses.

END OF SECTION

SECTION 15992
DISINFECTION OF PIPING

PART 1: GENERAL

1.01 DESCRIPTION

This section includes materials and procedures for disinfection of potable water piping by the continuous feed method, by the swabbing method, and by the slug method. The tablet method to disinfect pipelines will not be allowed. All potable lines shall be disinfected.

1.02 REFERENCES

AWWA C651	Disinfecting Water Mains
AWWA C655	Field Dechlorination
CCR 22-16	California Code of Regulations Title 22 Chapter 16 "California Waterworks Standards"
NPDES	National Pollutant Discharge Elimination System

1.03 SUBMITTALS

A. Disinfection plan: Prior to starting any disinfection work, submit to the engineer a detailed disinfection plan covering: the method and procedure proposed; coordination, drawings or sketches indicating the specific pipelines to be disinfected; sequence of operations; equipment and materials used; the manner of filling and flushing of lines; and the method for neutralization and disposal of chlorinated discharge.

1.04 MEASUREMENT AND PAYMENT

Full compensation for Disinfection of Piping including furnishing all materials, labor, tools, equipment, and incidentals and performing all work described in this Section and as indicated on the Plans shall be included as part of the Contract price paid for related work. Work in this section includes all work necessary to disinfect water mains including temporary bulkheads, temporary blow-offs, temporary air relief valves, testing water, permits, disinfectant neutralization, water disposal, sampling, laboratory tests, pavement removal, excavation, backfill, compaction, pavement replacement, and replacements in-kind.

PART 2: MATERIALS

2.01 LIQUID CHLORINE

Inject with a solution feed chlorinator and a water booster pump. Use an experienced operator and 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, chlorine residual testing kit or testing device capable of measuring free chlorine. Range 0.0 to 20.0 mg/l. Maintain kits in good working order and available for immediate test of residuals at point of sampling.

2.05 **DECHLORINATION**

Provide an appropriate reducing agent to neutralize chlorinated water without production of byproducts which could adversely affect the receiving waters and which meets the requirements of state and local regulatory agencies, AWWA C651 Appendix C, and AWWA C655.

2.06 **APPURTENANCES FOR TESTING**

A. Maintain appurtenances as indicated in Section 15990 “Pressure Testing of Piping” as necessary.

B. Install temporary sampling facilities or provide adequate sampling locations from acceptable appurtenances.

2.07 **POTABLE WATER FOR DISINFECTION**

A. The Contractor shall use potable water for the disinfection effort.

PART 3: EXECUTION

3.01 **PERMITS**

Discharge of water into watercourses or surface waters is regulated by the California Regional Water Quality Control Board, under National Pollutant Discharge Elimination System (NPDES). Obtain and comply with an NPDES permit.

3.02 PRE-FLUSHING AND TESTING

Prior to disinfection, the line shall be cleaned or pre-flushed to remove debris and pressure tested in accordance with Section 15990 “Pressure Testing of Piping.

3.03 DISINFECTION

Disinfect piping in accordance with CCR 22-16 and AWWA C651 as modified below in these specifications. Disinfect the new pipeline coincident with refilling by either the continuous feed method or the slug method. Disinfect the connections to the existing facilities by the swabbing method prior to refilling the pipeline. The contractor shall make sure that all air pockets have been eliminated during the filling process and that all parts of the pipe are exposed to the chlorinated water.

3.04 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 resulting chlorine concentration is 25 mg/l minimum. Check the concentration at points downstream during the filling to ascertain that sufficient chlorine is being added.

3.05 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 a minimum of 100 mg/l. Feed the chlorine for a sufficient period to develop a solid column of “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.

3.06 DISINFECTION OF VALVES AND APPURTENANCES

During the period that the chlorine solution or slug is in the section of pipeline, open and close all valves to obtain a chlorine residual at valves and other pipeline appurtenances. Testing against valves connected to the water system is not allowed.

3.07 CONFIRMATION OF RESIDUAL

A. After the chlorine solution applied by the continuous feed method has been retained in the pipeline for 24 hours, confirm that a free chlorine residual of 10 mg/l minimum exists at all points 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. If slug residual drops below 50 mg/l at any sampling point, stop flow and move chlorination equipment forward to the sampling point and rebuild the slug concentration to above 100 mg/l before continuing flow.

3.08 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 0.1 mg/l of the replacement water. The Contractor shall be responsible for all costs to dechlorinate the water before it enters any storm drain, watercourse or approved point of discharge.

3.09 LABORATORY TESTS

A. Bacteriological Tests: Two samples, one 24 hours after the first, shall be collected from each separate section of the pipeline after chlorination, flushing and refilling. Samples shall be collected by a certified laboratory no sooner than 24 hours after the completion of the flushing process and shall be tested within six hours of obtaining the samples for bacteriologic quality of the water. For lines longer than 2,000 feet, conduct one additional set of tests for each 1,200 feet plus one set for the end and one for each branch in accordance with AWWA C651. Sampling shall be conducted in accordance with AWWA C651. Both samples must indicate the absence of coliform bacteria before the pipeline can be placed into service.

B. Heterotrophic Plate Count Tests: If the heterotrophic plate count is greater than 500 per ml, additional flushing and retesting shall be performed until the plate count is less than 500 per ml.

3.10 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 at no additional cost to the District.

3.11 TEMPORARY FACILITY REMOVAL

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

END OF SECTION

SECTION 15994
DISINFECTION AND TESTING OF TANKS

PART 1: GENERAL

1.01 DESCRIPTION

This section includes materials and procedures for cleaning, filling, testing and disinfecting of potable water storage tanks.

1.02 REFERENCES

AWWA C651	Disinfecting Water Mains
AWWA C652	Disinfection of Water-Storage Facilities
AWWA C655	Field Dechlorination
ACI 350	Code Requirements for Environmental Engineering Concrete Structures and Commentary
CCR 22-16	California Code of Regulations Title 22 Chapter 16 "California Waterworks Standards"

1.03 SUBMITTALS

A. Disinfection / Testing Plan: Prior to filling the water storage tank, submit to the Engineer for approval, a detailed plan and schedule for filling, testing and disinfecting the tank including:

1. Method and procedure
2. Schedule of filling and tests
3. Sequence of Operation
4. Materials to be used
5. Safety procedures to be followed

1.04 MEASUREMENT AND PAYMENT

Full compensation for Disinfection and Testing of Tanks including furnishing all materials, labor, tools, equipment, and incidentals and performing all work described in this Section and as indicated on the Plans shall be included in the Contract amount for the work related and no additional compensation shall be allowed therefor.

PART 2: MATERIALS

2.01 LIQUID CHLORINE

Prepare chlorine solution by injecting liquid chlorine into water using a solution feed chlorinator and a water booster pump. Use an experienced operator and 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 reservoir at a metered rate.

2.03 SODIUM HYPOCHLORITE (SOLUTION)

Further dilute in water to desired concentration and discharge into the reservoir at a metered rate.

2.04 CHLORINE RESIDUAL TEST KIT

For measuring chlorine concentration, supply and use a medium range, drop count, titration kit. Range 0.00 to 20 mg/L. Maintain kits in good working order and available for immediate test of residuals at point of sampling.

2.05 DECHLORINATION

If it becomes necessary to discharge chlorinated waters, provide an appropriate reducing agent to neutralize the chlorinated water without production of byproducts which will adversely affect the receiving waters and which meets the requirements of state and local regulatory agencies, AWWA C652 Appendix C, and AWWA C655.

2.06 POTABLE WATER FOR DISINFECTION

Water supply for initial filling and disinfecting of the tank will be provided by the District at no cost to the Contractor. The Contractor shall provide the conveyance system from the District's location for supply to the tank. The Contractor shall pay for the cost of subsequent filling and disinfection of the water if the tank must be discharged and refilled because of failure of any testing.

PART 3: EXECUTION

3.01 PERMITS

Discharge of water into watercourses or surface waters is regulated by the California Regional Water Quality Control board, under National Pollutant Discharge Elimination System (NPDES). Contractor shall obtain and comply with this permit including schedule and coordinate rates of flow and locations of discharge, provide notice for discharges, and de-chlorination of water.

3.02 CLEANING

A. Prior to both testing and disinfecting, the reservoir shall be cleaned by thoroughly hosing down all surfaces with a 400 psi minimum-pressure hose and nozzle of sufficient size to deliver a minimum flow of 50 gpm. All water, dirt, and foreign material accumulated in this cleaning operation shall be collected and removed from the reservoir.

B. Exterior waterproofing, if required, shall be completed and cured prior to filling.

3.03 DISINFECTING, FILLING, AND TESTING WATER QUALITY

A. Piping between isolation valves and tank shall be filled with a solution containing 10 mg/L of free chlorine residual before starting to disinfect the tank.

B. The reservoir shall be disinfected by chlorination. Chlorination shall be performed in strict accordance with the requirements of CCR 22-16 and AWWA C652, Method 2 using 200 mg/l chlorine solution. Rinsing is required after 30 minutes and before 2 hours for any particular area. Contractor shall ensure that chlorine is rinsed adequately per these specifications especially in areas where there is concrete sealant. Contractor shall be responsible to not damage sealant.

Alternatively, disinfection may be performed in accordance with CCR 22-16 and AWWA C652, Method 3 using 50 mg/l chlorine solution as modified as follows:

1. After the tank is cleaned and prior to water proofing (if required), water containing 50 mg/l of chlorine shall be sprayed on all wall, column and underside of roof areas and all interior surfaces washed down with the chlorine solution.

2. Water containing 50 mg/l of free chlorine residual shall be brought to such a depth that when the tank is filled the resulting free chlorine residual is from 1.5 to 2.0 mg/L.

3. The 50 mg/L chlorine solution shall be allowed to stand for 6 hours prior to beginning to fill the tank to the first 8 feet.

C. After holding the chlorinated water for 24 hours, fill the tank in increments of eight-foot depths with 8 normal working hours between each increment for observation of possible leaks through the subdrains, the reservoir wall, or the wall-footing joint. The filling of the reservoir shall be coordinated with the District.

D. If only damp spots and small puddles of water are noted, the 8-foot incremental filling can continue. If major leaks are noted, they should be thoroughly investigated prior to continuing to fill the tank. All leaks shall be repaired to the satisfaction of the District at no additional cost to the District.

E. The tank should only be filled during normal working hours. At the end of each day the reservoir and perimeter drain should be checked for evidence of any kind of leakage.

F. The free chlorine residual concentrations shall be monitored and adjusted while filling, so that when the reservoir is full the resulting free chlorine residual is between 1.5 to 2.0 mg/L.

G. After filling to the overflow level, the reservoir shall soak for 24 hours.

H. The Contractor shall observe the water surface and overflow the tank if necessary to purge of any floating contaminants. Overflow water shall be dechlorinated in compliance with NPDES permit.

I. After the 24-hour soak period, water samples shall be taken for bacteriological & heliotropic plate count testing. After another 24 hour period, a second set of water samples shall be taken and tested.

J. Bactee Testing: The disinfection shall be accepted if samples taken for the final bacteriological test conform to AWWA Standard C652 and are found to be free of bacteriological contamination; in addition, heterotrophic plate counts shall be less than 500 per liter. The Contractor shall continue to disinfect the reservoir until satisfactory bacteriological and heliotropic test results are obtained, at no additional cost to the District.

K. Odor Testing: The water in the full reservoir shall also be tested for odor resulting from a reaction with the chlorine or excessive chlorine. If the result of the odor testing is 3.0 Threshold Odor Numbers or less, the results will be considered satisfactory. If the results are above 3.0 Threshold Odor Numbers, the Contractor shall perform measures to reduce the odor. The Contractor shall be responsible for all costs associated with the measures to reduce the odor and for retesting.

L. If any test is positive, the Contractor shall correct the cause of the positive test, shall rechlorinate (if necessary) and retest until two consecutive satisfactory bacteriological tests are obtained and it passes the other tests, at no additional cost to the District. If testing results continue to be positive, the Contractor shall drain the reservoir, re-disinfect, fill, and retest the reservoir water all at no additional cost to the District.

M. If the reservoir fails any of the testing and water must be discharged.

3.04 LEAK TESTING

A. After filling and disinfecting, but before waterproofing and backfilling the tank (if required), the water level shall be held at the overflow for a period of 24 hours.

B. The tank and the drain lines shall then be examined for evidence of leaks after 24 hours.

C. The leakage rate of the completed tank shall not exceed 0.05% of the tank capacity in any 24 hour period when tested in accordance with ACI 350. If, at the end of 5 days the average daily leakage does not exceed the maximum allowable, the test shall be considered satisfactory.

END OF SECTION

APPENDIX A

FORMS

DAILY WORK REPORT
FOR EXTRA OR DISPUTED WORK

Project Name & No.:		Report No:
Prime Contractor:	Subcontractors:	Date Work Performed:
Description of Work:		WCD No. (if applicable):

EQUIPMENT (furnish invoices for rentals)

Description	Hours	Hrly Rate	Total Prime	Total Sub
Subtotal				
15% Markup				
Total				

LABOR

Name	Classification	Hours	Hrly Rate	Total Prime	Total Sub
Subtotal					
20% Markup					
Total					

MATERIAL (furnish invoices)

Description	Qty	Unit Price	Total Prime	Total Sub
Subtotal				
15% Markup				
Total				

TOTAL	Prime	Sub
Total Equipment, Material & Labor		
Prime markup on Sub (10% first $5,000 - see contract for applicability)		
Prime markup on Sub (5% over first $5,000 - see contract for applicability)		
Subtotal		
Total (Prime + Sub)		
TOTAL THIS REPORT		

I certify that the charges are accurately reported for the work indicated.

_____ Contractor's Representative Date

_____ District Representative* Date

Notes:

* If the District and the Contractor are unable to reach agreement on disputed work, the District may direct the Contractor to proceed with the work. In this case, the District's signature shall not be construed as an acknowledgment of extra work, but shall merely acknowledge receipt of the Contractor's potential claim.

CONTRACTOR'S CERTIFICATE OF COMPLETION

TO: _____(Montecito Water District Project Manager)
Montecito Water District
583 San Ysidro Road
Santa Barbara, CA 93108

PROJECT _____

PROJECT NO. _____

OWNER Montecito Water District

FROM: _____
(Firm or Corporation)

This is to certify that I, _____, am an authorized Official of

_____ (firm)

working in the capacity of _____ (title)
and have been properly authorized by said firm or corporation to sign the following statements pertaining to the subject contract.

I know of my own personal knowledge, and do hereby certify, that the Work of the subject Contract has been performed, and materials used and installed in every particular, in accordance with, and conformity to, the Contract Documents, including the Drawings and Specifications.

The Contract Work is now complete in all parts and requirements, and ready for your final inspection.

I understand that neither the determination by the Engineer that the work is complete, nor the acceptance thereof by the Owner, shall operate as a bar to claim against the Contractor under the terms of the warranty provisions of the Contract Documents.

By _____ Date _____
(Name)

Title _____

For _____
(Name of firm or corporation)

ESCROW AGREEMENT FOR
SECURITY DEPOSITS IN LIEU OF RETENTION

This Escrow Agreement is entered into and made effective as of the latest date of the signatures on this Agreement by and between Montecito Water District ("District") whose address is 583 San Ysidro Road, Santa Barbara, California, 93108 and
_____ ("Contractor") whose address is
_____
_____ and
_____ ("Escrow Agent") whose address is
_____
_____.

For consideration hereinafter set forth, District, 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 District pursuant to the Construction Contract entered into between District and Contractor for the work described as _____
_____ in the amount of _____ dated _____ (hereinafter referred to as the "Contract"), which Contract is identified by Project No. _____. Alternatively, on written request of Contractor, District shall make payments of the retention earnings directly to the Escrow Agent. When Contractor deposits the securities as a substitute for Contract earnings, the Escrow Agent shall notify District within ten 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 District and Contractor. Securities shall be held in the name of _____, and shall designate Contractor as the beneficial owner.

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

(3) When District makes payments of retentions earned directly to Escrow Agent, the Escrow Agent shall hold them for the benefit of Contractor until such time as 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 District pays the Escrow Agent directly.

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

(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 District to the Escrow Agent that District consents to the withdrawal of the amount sought to be withdrawn by Contractor.

(7) District shall have a right to draw upon the securities in the event of default by Contractor. Upon seven days' written notice to the Escrow Agent from District of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by District.

(8) Upon receipt of written notification from District certifying that the Contract is final and complete, and that Contractor has complied with all requirements and procedures applicable to the Contract, the 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 payments of fees and charges.

(9) Escrow Agent shall rely on the written notifications from District and Contractor pursuant to Sections (5) to (8), inclusive, of this Agreement and District and Contractor shall hold Escrow Agent harmless from Escrow Agent's release 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 District and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

On behalf of District:

General Manager
Title

Nicholas Turner
Name

_____
Signature

Montecito Water District
583 San Ysidro Road
Santa Barbara, CA 93108

On behalf of Contractor:

_____
Title

_____
Name

_____
Signature

_____
Street Address

_____
City & State Zip Code

On behalf of Escrow Agent:

_____
Title

_____
Name

_____
Signature

_____
Street Address

_____
City & State Zip Code

At the time the Escrow Account is opened, District 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 latest date set forth below.

MONTECITO WATER DISTRICT

By_____ Date _____
Nicholas Turner
Its: General Manager

CONTRACTOR:

By_____ Date_____
_____
Its_____
(If Contractor is a corporation, the Escrow Agreement shall be signed above by one of the following: Chairman of the Board, President or any Vice President)

By_____ Date_____
_____
Its_____
(If Contractor is a corporation, the Escrow Agreement shall be signed above by one of the following: Secretary, any Assistant Secretary, Chief Financial Officer or any Assistant Treasurer)

ESCROW AGENT:

By_____ Date_____
_____
Its_____

Bank Charter: State ___

Federal ___

RELEASE ON CONTRACT

Conditional Waiver and Release upon Final Payment [Escrow Funds]

[California Civil Code § 8136]

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S/CONTRACTOR'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE UPON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT/CONTRACTOR HAS RECEIVED PAYMENT

Identifying Information

Name of Claimant/Contractor: _____

Name of Customer/Owner: _____

Project Location/Description: _____

Project No.: _____

Conditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant/contractor has for labor and service provided, and equipment and material delivered, to the customer/owner on this project. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant/contractor, are **waived and released** by this document, unless listed as an Exception below. This document is effective only on the claimant's/contractor's receipt of payment from the financial institution on which the following check is drawn and/or by which an electronic disbursement is made:

Maker of Check/Bank Name: _____

Amount of Check/Amount disbursed: _____ (Plus accumulated interest)

Check/Disbursement Payable to: _____

Escrow Account Number: _____

Exceptions

This document does not affect any of the following:

(Describe disputed claims and provide amount)

_____ $_____

_____ $_____

(Attach additional pages if necessary)

Signature

Claimant’s/Contractor’s Name: _____

Claimant’s/Contractor’s Signature: _____

Claimant’s/Contractor’s Title: _____

Company Name: _____

Date of Signature: _____

RELEASE ON CONTRACT

Conditional Waiver and Release upon Final Payment

[California Civil Code § 8136]

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S/CONTRACTOR'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE UPON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT/CONTRACTOR HAS RECEIVED PAYMENT

Identifying Information

Name of Claimant/Contractor _____

Name of Customer/Owner: _____

Project Location/Description: _____

Project No.: _____

Conditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant/contractor has for labor and service provided, and equipment and material delivered, to the customer/owner on this project. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant/contractor, are **waived and released** by this document, unless listed as an Exception below. This document is effective only on the claimant's/contractor's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: _____

Amount of Check: _____

Check Payable to: _____

Exceptions

This document does not affect any of the following:

(Describe disputed claims and provide amount)

_____ $_____

_____ $_____

(Attach additional pages if necessary)

Signature

Claimant's/Contractor's Name: _____

Claimant's/Contractor's Signature: _____

Claimant's/Contractor's Title: _____

Company Name: _____

Date of Signature: _____

Pre-Bid Request Form for Information or Clarification (RFI/RFC Form)

Owner: Montecito Water District

Project Name: _____ Proj. No: _____

Engineer: _____ Fax No.:_____
(for Engineer name and contact information, see *Notice Inviting Bids)*

Bidder's Name: _____ Date: _____

Submitted by: _____ _____
(Print Name) (Signature)

Fax No.: _____ Telephone No.: _____

Number of Pages Including this Sheet: _____

Specification Section No.: _____ Specifications Page No.: _____

Drawing/Sheet No.: _____ Detail: _____

Description: (describe in detail the requested information and/or clarification)

_____

_____

_____

_____

_____

_____

_____

_____

_____

Notes:

1. All fields must be filled in.
2. Submit this form by the date and time set forth in the Notice Inviting Bids.
3. If a response is made which modifies the Contract Documents, it will be made in writing for the benefit of all prospective bidders and without identification as to the source of inquiry.
4. Responses to matters not affecting the Contract Documents may be provided by phone.
5. Use a separate form for each item. Attach additional pages as necessary for each item.

CONTRACT CLARIFICATION/INTERPRETATION REQUEST (RFI)

Project: _____ Request No. _____

Contractor: _____ Date: ___/___/____

Project No. _____

Clarification/Interpretation requested by: _____

Regarding: Plan Sheet ____ of ____ Specifications Section: _____

Description:

Prepared by: _____

Date: ___/___/___

Response by: _____

Response:

Signed: _____

Date: ___/___/___

583 San Ysidro Road
Santa Barbara, CA 93108
(805) 969-2271 ph

HYDRANT METER USE REQUEST

NAME/COMPANY _____ **PH/CELL**_____

MAILING ADDRESS _____

PRIMARY POINT OF CONTACT _____**FIRE HYDRANT #** _____

NATURE OF REQUEST _____

PROPERTY LOCATION OF WATER USE (APN) _____

PROPERTY OWNER _____

FEES

Deposit:	**$837**
Installation/Removal Charge:	**$133**
Monthly Rental Fee (billed monthly only):	**$35**
Water Unit Rate ($/HCF):	**$11.76**

THE FOLLOWING RULES MUST BE OBSERVED WHEN USING THE FIRE HYDRANT:

1. Hydrants must be opened and closed slowly with an approved fire hydrant wrench, according to fire department instructions.
2. Hydrant must be shut down when not in use.
3. Montecito Water District ("MWD") will require a deposit for water use, and for any meter installed on the hydrant. MWD must be notified when applicant is finished with the hydrant.
4. This permit MUST be kept on the job site at ALL times and MUST be shown, upon demand to any fire or water district personnel.
5. Hydrant use is subject to all MWD Ordinances and Resolutions, including but not limited to any action by the Board of Directors modifying the fees and charges set forth herein.

I hereby agree to the above conditions and will be responsible for water used through the fire hydrant and for any waste or property damage caused by use of said hydrant.

_____ _____
Owner Signature Date

_____
Print Name

APPENDIX B

CONSTRUCTION INSTALLMENT SALE AGREEMENT

October 14, 2024

Montecito Water District
Attn: Nick Turner, General Manager
583 San Ysidro Road
Santa Barbara, CA 93108

Agreement Number: D2402005
Project Number: 4210007-001C
Please review, and if appropriate, electronically sign the signature page of the Agreement via Adobe Sign no later than thirty (30) calendar days from the date of this letter. Once electronically signed, the Agreement will be routed automatically to the next signer. You will automatically receive a copy of the fully executed Agreement via Adobe Sign once the final signer has signed. This Agreement cannot be considered binding by either party until executed by the State Water Resources Control Board (State Water Board).

For the Funding Agreement to be executed by the State Water Board, the following items **must also be returned electronically with the signed signature pages**: The Opinion will need to be dated and signed on or after the date the agreement is signed. Counsel can file and attach the letters and submit them back to Adobe.

1. Opinion of General Counsel.

Please note that all projects receiving funding must comply with all applicable implementing guidelines and regulations adopted by the California Department of Industrial Relations (DIR), regarding state prevailing wage requirements. You must contact DIR for guidance on how to comply. Information can be found at: http://www.dir.ca.gov/lcp.asp.

Davis Bacon Compliance:
https://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/davisbacon.shtml

Disadvantaged Business Enterprise (DBE)
https://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/docs/policy0513/dbe_compliance_guidelines_instructions.pdf

We strive to provide superior service to our recipients and would appreciate your feedback on the application process. Please assist us in completing a 5-minute Customer Satisfaction Survey at https://www.surveymonkey.com/s/DWSRFSatisfaction so we can continue to improve on our service and process. Your comments are valuable to the success of the DWSRF Program. Thank you for your time and we look forward to continuing to work with you.

Your Agreement may be funded with Federal Capitalization Grants DW Catalog of Federal Domestic Assistance No. 66.468. If your financing agreement is funded with a Federal Capitalization Grant, you must comply with the rules and regulations in Subpart F of Title 2 U.S. Code of Federal Regulations (CFR) Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*. These requirements include the submission of a single or program audit if you expend $750,000 or more of Federal funds during your fiscal year. The receipt of Federal funds may be directly from the Federal government or via a pass-through entity such as the State Water Resources Control Board. In addition to other reporting requirements, ***your Single Audit Report must be submitted to the State Controller's Office and to the State Water Resources Control Board, Division of Financial Assistance within nine months after the end of your fiscal year.***

Ms. Shawnna Bell may be contacted at (916) 449-5636 or shawnna.bell@waterboards.ca.gov.

Enclosures

Adobe Acrobat Sign Transaction Number: CBJCHBCAABAAGJWzVhc8AmtqA1m_w7-nh5Z2j5lvIk4g

Documents Transmitted back to Adobe by the Recipient:

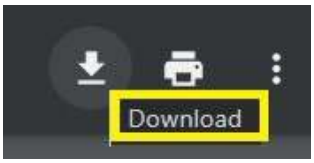
Steps:

1. Once the Adobe notification has been received, the Recipient will open Adobe. The Recipient must checkmark the box to agree to the Consumer Disclosure. Click on [**Accept**]

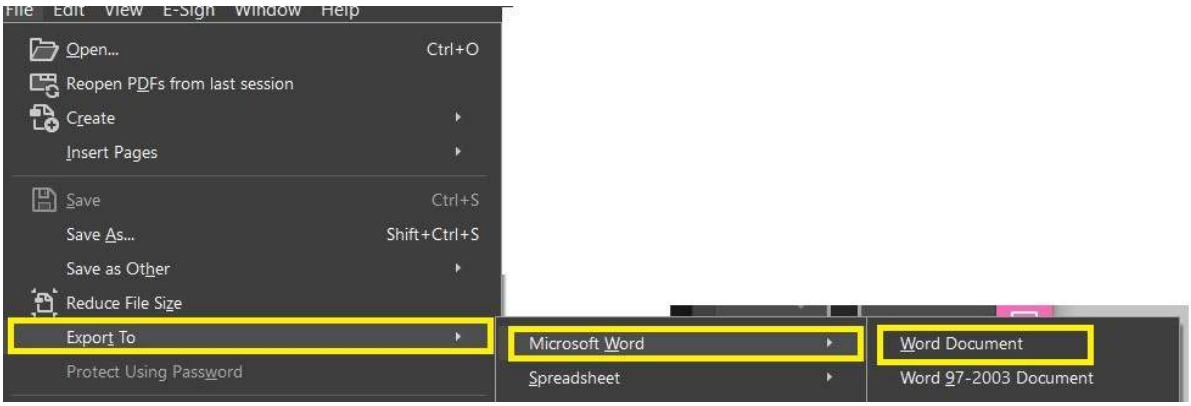


2. The Recipient will need to download the (PDF) documents by selecting the corresponding radio button. Ensure to save the documents to the desired location.





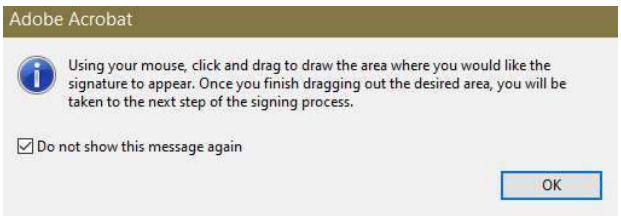
3. Once you have saved the documents to the desired location, the Recipient will proceed with generating the required closing documents. For the documents to be edited, you must save your file in Word format. Click on [**File-Export To-Microsoft Word – Word Document**]



4. Once the Recipient has completed the closing documents, the file must be saved as “Adobe PDF” for their respective digital signatures to be entered.

5. The Recipient will select [**Certificates**] from the tools field and using your mouse, click and drag to draw the area where you would like the signature to appear. A dialogue message box will display your Digital ID press [**Continue**] and click on [**Sign**]. [**Save**]





6. The Recipient will attach the signed documents to Adobe by clicking the [**Click to Attachment**] and downloading the signed document(s).



7. Once the closing document(s) have been attached, the Recipient will click on the [**Click to Sign**] button.



DRINKING WATER
ADDITIONAL SUPPLEMENTAL APPROPRIATIONS FOR DISASTER RELIEF (ASADRA)

MONTECITO WATER DISTRICT

AND

CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

CONSTRUCTION
INSTALLMENT SALE AGREEMENT

PROJECT NO. 4210007-001C

MONTECITO WATER RESILIENCE PROJECT

AGREEMENT NO. D2402005

PROJECT FUNDING AMOUNT: $34,895,970.00
PRINCIPAL FORGIVENESS COMPONENT: $10,468,791.00
ESTIMATED REASONABLE PROJECT COST: $34,895,970.00

ELIGIBLE WORK START DATE: JANUARY 1, 2021
ELIGIBLE CONSTRUCTION START DATE: JULY 1, 2024
COMPLETION OF CONSTRUCTION DATE: SEPTEMBER 30, 2027
FINAL REIMBURSEMENT REQUEST DATE: MARCH 30, 2027
FINAL PAYMENT DATE: SEPTEMBER 30, 2057
RECORDS RETENTION END DATE: SEPTEMBER 30, 2063

Adobe Acrobat Sign Transaction Number: CBJCHBCAABAAGJWzVhc8AmtqA1m_w7-nh5Z2j5lvIk4g

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AGREEMENT

1. AUTHORITY.

(a) The State Water Resources Control Board (State Water Board) is authorized, and implements its authority, to provide financial assistance under this Agreement pursuant to Section 116760 et seq. of the Health and Safety Code, and Resolution Nos. 2019-0065 and 2022-0041.

(b) The Recipient is authorized to enter into this Installment Sale Agreement (Agreement) pursuant to Resolution No. 2249.

2. INTENTION.

(a) The Recipient desires to receive financial assistance for and undertake work required for the drinking water construction Project according to the terms and conditions set forth in this Agreement.

(b) The State Water Board proposes to assist in providing financial assistance for eligible costs of the Project in the amount set forth in Exhibit B, according to the terms and conditions set forth in this Agreement, with the expectation that the Recipient shall repay a portion of the financial assistance to the State Water Board.

(c) The Recipient intends to evidence its obligation to submit Payments to the State Water Board and secure its obligation with Net Revenues of its water enterprise, as set forth in Exhibit B, according to the terms and conditions set forth in this Agreement.

(d) The Deputy Director has consented to prepayment of this loan, as set forth in Section B.2.8 of this Agreement.

3. AGREEMENT, TERM, DOCUMENTS INCORPORATED BY REFERENCE.

In consideration of the mutual representations, covenants and agreements herein set forth, the State Water Board and the Recipient, each binding itself, its successors and assigns, do mutually promise, covenant, and agree to the terms, provisions, and conditions of this Agreement.

(a) The Recipient hereby sells to the State Water Board and the State Water Board hereby purchases from the Recipient the Project. Simultaneously therewith, the Recipient hereby purchases from the State Water Board, and the State Water Board hereby sells to the Recipient, the Project in accordance with the provisions of this Agreement. All right, title, and interest in the Project shall immediately vest in the Recipient on the date of execution and delivery of this Agreement by both parties without further action on the part of the Recipient or the State Water Board.

(b) Subject to the satisfaction of any condition precedent to this Agreement, this Agreement shall become effective upon the signature of both the Recipient and the State Water Board. Conditions precedent are not limited to the following:

i. The Recipient must deliver to the Division a resolution authorizing this Agreement.
ii. The Recipient must deliver an opinion of bond counsel and general counsel satisfactory to the State Water Board's counsel dated on or after the date that the Recipient signs this Agreement.

(c) Upon execution, the term of the Agreement shall begin on the Eligible Work Start Date and extend through the Final Payment Date.

(d) This Agreement includes the following exhibits and attachments thereto:

i. EXHIBIT A – SCOPE OF WORK
ii. EXHIBIT B – FUNDING TERMS
iii. EXHIBIT C – GENERAL & PROGRAMMATIC TERMS & CONDITIONS
iv. EXHIBIT D – SPECIAL CONDITIONS
v. EXHIBIT E – PAYMENT SCHEDULE

(e) This Agreement includes the following documents incorporated by reference, as well as any documents incorporated by reference in Exhibit D:

i. the Final Plans & Specifications, dated _____, which are the basis for the construction contract to be awarded by the Recipient;
ii. construction contract to be awarded by the Recipient;
iii. the Drinking Water System Permit No. 4210007, and any amendments thereto; the Davis-Bacon requirements found at: https://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/docs/2022/2022-dwsrf-governmental-entities-public.pdf

(f) This Agreement, and any amendments hereto, may be executed and delivered in any number of counterparts, each of which when delivered shall be deemed to be an original, but such counterparts shall together constitute one document. The parties may sign this Agreement, and any amendments hereto, either by an electronic signature using a method approved by the State Water Board or by a physical, handwritten signature. The parties mutually agree that an electronic signature using a method approved by the State Water Board is the same as a physical, handwritten signature for the purposes of validity, enforceability, and admissibility.

4. PARTY CONTACTS

State Water Board		Montecito Water District	
Section:	Division of Financial Assistance		
Name:	Maria Pang, Project Manager	Name:	Nick Turner, General Manager
Address:	1001 I Street, 16th Floor	Address:	583 San Ysidro Road
City, State, Zip:	Sacramento, CA 95814	City, State, Zip:	Santa Barbara, CA 93108
Phone:	(916) 319-8256	Phone:	(805) 969-2271
Email:	Maria.pang@waterboards.ca.gov	Email:	nturner@montecitowater.com

The Recipient may change its contact upon written notice to the Division, which notice shall be accompanied by authorization from the Recipient's Authorized Representative. The State Water Board will notify the Recipient of any changes to its contact.

While the foregoing are contacts for day-to-day communications regarding Project work, the Recipient shall provide official communications and events of Notice as set forth in Exhibit C to the Division's Deputy Director.

5. DEFINITIONS.

Unless otherwise specified, each capitalized term used in this Agreement has the following meaning:

"Additional Payments" means the reasonable extraordinary fees and expenses of the State Water Board, and of any assignee of the State Water Board's right, title, and interest in and to this Agreement, in connection with this Agreement, including all expenses and fees of accountants, trustees, staff,

contractors, consultants, costs, insurance premiums and all other extraordinary costs reasonably incurred by the State Water Board or assignee of the State Water Board.

“Allowance" means an amount based on a percentage of the accepted bid for an eligible project to help defray the planning, design, and construction engineering and administration costs of the Project.

“Agreement” means this agreement, including all exhibits and attachments hereto.

"Authorized Representative" means the duly appointed representative of the Recipient as set forth in the certified original of the Recipient’s authorizing resolution that designates the authorized representative by title.

“Cachuma Water Supply Agreement” means the Contract for the Furnishing of Water to Montecito County Water District, dated September 12, 1949, by and between the Santa Barbara County Water Agency and the District, as originally executed and as renewed and amended by the Renewal Master Contract on March 12, 1996, and as both may from time to time be amended or supplemented in accordance therewith.

“Charge In Lieu of Interest” means any fee or charge in lieu of some or all of, but not to exceed, the interest that would otherwise be owed under this Agreement, as set forth in Exhibit E.

"Completion of Construction" means the date, as determined by the Division after consultation with the Recipient, that the work of building and erection of the Project is substantially complete, and is identified in Exhibit A of this Agreement.

“Cover Page” means the front page of this Agreement.

“Days” means calendar days unless otherwise expressly indicated.

“Debt Service” means, as of any date, with respect to outstanding System Obligations and, in the case of the additional debt tests in Exhibit B of this Agreement, any System Obligations that are proposed to be outstanding, the aggregate amount of principal and interest scheduled to become due (either at maturity or by mandatory redemption), together with any Charge In Lieu of Interest on this Obligation or other System Obligations to the State Water Board, calculated with the following assumptions:

a. Principal payments (unless a different subdivision of this definition applies for purposes of determining principal maturities or amortization) are made in accordance with any amortization schedule published for such principal, including any minimum sinking fund payments;

b. Interest on a variable rate System Obligation that is not subject to a swap agreement and that is issued or will be issued as a tax-exempt obligation under federal law, is the average of the SIFMA Municipal Swap Index, or its successor index, during the 24 months preceding the date of such calculation;

c. Interest on a variable rate System Obligation that is not subject to a swap agreement and that is issued or will be issued as a taxable obligation under federal law, is the average of SOFR, or its successor index, during the 24 months preceding the date of such calculation;

d. Interest on a variable rate System Obligation that is subject to a swap agreement is the fixed swap rate or cap strike rate, as appropriate, if the variable rate has been swapped to a fixed rate or capped pursuant to an interest rate cap agreement or similar agreement;

e. Interest on a fixed rate System Obligation that is subject to a swap agreement such that all or a portion of the interest has been swapped to a variable rate shall be treated as variable rate debt under subdivisions (b) or (c) of this definition of Debt Service;

f. Payments of principal and interest on a System Obligation are excluded from the calculation of Debt Service to the extent such payments are to be paid from amounts then currently on deposit with a trustee or other fiduciary and restricted for the defeasance of such System Obligations;

g. If 25% or more of the principal of a System Obligation is not due until its final stated maturity, then principal and interest on that System Obligation may be projected to amortize over the lesser of 30 years or the Useful Life of the financed asset, and interest may be calculated according to subdivisions (b)-(e) of this definition of Debt Service, as appropriate.

“Deputy Director” means the Deputy Director of the Division.

“District Office” means District Office of the Division of Drinking Water of the State Water Board.

"Division" means the Division of Financial Assistance of the State Water Board or any other segment of the State Water Board authorized to administer this Agreement.

“Division of Drinking Water” means the Division of Drinking Water of the State Water Board.

“Eligible Construction Start Date” means the date set forth on the Cover Page of this Agreement, establishing the date on or after which construction costs may be incurred and eligible for reimbursement hereunder.

“Eligible Work Start Date” means the date set forth on the Cover Page of this Agreement, establishing the date on or after which any non-construction costs may be incurred and eligible for reimbursement hereunder.

“Enterprise Fund” means the enterprise fund of the Recipient in which Revenues are deposited.

“Event of Default” means the occurrence of any of the following events:

a) Failure by the Recipient to make any payment required to be paid pursuant to this Agreement, including Payments;
b) A representation or warranty made by or on behalf of the Recipient in this Agreement or in any document furnished by or on behalf of the Recipient to the State Water Board pursuant to this Agreement shall prove to have been inaccurate, misleading or incomplete in any material respect;
c) A material adverse change in the condition of the Recipient, the Revenues, or the System, which the Division reasonably determines would materially impair the Recipient’s ability to satisfy its obligations under this Agreement.
d) Failure by the Recipient to comply with the additional debt test or reserve fund requirement, if any, in Exhibit B or Exhibit D of this Agreement;
e) Failure to operate the System or the Project without the Division’s approval;
f) Failure by the Recipient to observe and perform any covenant, condition, or provision in this Agreement, which failure shall continue for a period of time, to be determined by the Division;
g) The occurrence of a material breach or event of default under any System Obligation or Material Obligation that results in the acceleration of principal or interest or otherwise requires immediate prepayment, repurchase or redemption;
h) Initiation of proceedings seeking arrangement, reorganization, or any other relief under any applicable bankruptcy, insolvency, or other similar law; the appointment of or taking possession of the

Recipient's property by a receiver, liquidator, assignee, trustee, custodian, conservator, or similar official; the Recipient's entering into a general assignment for the benefit of creditors; the initiation of resolutions or proceedings to terminate the Recipient's existence, or any action in furtherance of any of the foregoing;
i) A determination pursuant to Gov. Code section 11137 that the Recipient has violated any provision in Article 9.5 of Chapter 1 of Part 1 of Division 3 of Title 2 of the Government Code; or
j) Loss of the Recipient's rights, licenses, permits, or privileges necessary for the operation of the System or the Project, or the occurrence of any material restraint on the Recipient's enterprise by a government agency or court order.
k) The occurrence of a material breach or event of default under any Material Obligation.

"Final Payment Date" is the date by which all principal and accrued interest due under this Agreement is to be paid in full to the State Water Board and is specified on the Cover Page of this Agreement.

"Final Reimbursement Request Date" means the date set forth as such on the Cover Page of this Agreement, after which date, no further Project Funds disbursements may be requested.

"Fiscal Year" means the period of twelve (12) months terminating on June 30 of any year, or any other annual period selected and designated by the Recipient as its Fiscal Year in accordance with applicable law.

"Force Account" means the use of the Recipient's own employees, equipment, or resources for the Project.

"GAAP" means generally accepted accounting principles, the uniform accounting and reporting procedures set forth in publications of the American Institute of Certified Public Accountants or its successor, or by any other generally accepted authority on such procedures, and includes, as applicable, the standards set forth by the Governmental Accounting Standards Board or its successor, or the Uniform System of Accounts, as adopted by the California Public Utilities Commission for water utilities.

"Indirect Costs" means those costs that are incurred for a common or joint purpose benefiting more than one cost objective and are not readily assignable to the Project (i.e., costs that are not directly related to the Project). Examples of Indirect Costs include, but are not limited to: central service costs; general administration of the Recipient; non-project-specific accounting and personnel services performed within the Recipient organization; depreciation or use allowances on buildings and equipment; the costs of operating and maintaining non-project-specific facilities; tuition and conference fees; generic overhead or markup; and taxes.

"Initiation of Construction" means the date that notice to proceed with work is issued for the Project, or, if notice to proceed is not required, the date of commencement of building and erection of the Project.

"Listed Event" means, so long as the Recipient has outstanding any System Obligation subject to Rule 15c2-12, any of the events required to be reported with respect to such System Obligation pursuant to Rule 15c2-12(b)(5).

"Material Obligation" means an obligation of the Recipient that is material to this transaction, including System Obligations.

"Maximum Annual Debt Service" means the maximum amount of Debt Service due on System Obligations in a Fiscal Year during the period commencing with the Fiscal Year for which such calculation is made and within the next five years in which Debt Service for any System Obligations will become due.

"Net Revenues" means, for any Fiscal Year, all Revenues received by the Recipient less the Operations and Maintenance Costs for such Fiscal Year.

"Obligation" means the obligation of the Recipient to make Payments (including Additional Payments) as provided herein, as evidenced by the execution of this Agreement, proceeds of such obligations being used to fund the Project as specified in the Project Description in Exhibit A and Exhibit B and in the documents thereby incorporated by reference.

“Operations and Maintenance Costs” means the (1) reasonable and necessary costs spent or incurred for maintenance and operation of the System, calculated in accordance with GAAP, including (among other things) the expenses of management and repair and other expenses necessary to maintain and preserve the System in good repair and working order, and including administrative costs of the Recipient that are charged directly or apportioned to the operation of the System, such as salaries and wages of employees, payments to the Public Employees Retirement System, overhead, insurance, taxes (if any), fees of auditors accountants, attorneys or engineers and insurance premiums; (2) all other reasonable and necessary costs of the Recipient or charges (other than Debt Service) required to be paid by it to comply with the terms of any System Obligation; (3) all costs (other than Debt Service) paid by the Recipient under the Water Supply Agreement with the Central Coast Water Authority; (4) all costs (other than Debt Service) paid by the Recipient under the Cachuma Water Supply Agreement; (5) all costs (other than Debt Service) paid by the Recipient under the Water Supply Agreement with the City of Santa Barbara; and (6) all costs (other than Debt Service payable under an agreement for the purchase or acquisition of water (i) where the water supply partner may construct certain capital facilities or infrastructure specified in such agreement and (ii) under which the Recipient is obligated to pay debt service on debt incurred by the water supply partner relating to such capital facilities or infrastructure of the water supply partner) of water purchased or otherwise acquired by the System, but excluding in all cases: (a) depreciation, replacement and obsolescence charges or reserves therefor; (b) amortization of intangibles or other bookkeeping entries of a similar nature; (c) costs of capital additions, replacements, betterments, extensions or improvements to the System which under GAAP are chargeable to a capital account or to a reserve for depreciation; and (d) charges for the payment of System Obligations. For the avoidance of doubt, any payment stemming from an obligation of the Recipient to pay principal and interest or equivalent for the capital costs of a water supply partner in connection with the purchase or other acquisition of water pursuant to an agreement with such water supply partner (i) where the water supply partner may construct certain capital facilities or infrastructure specified in such agreement and (ii) under which the Recipient is obligated to pay debt service on debt incurred by the water supply partner relating to such capital facilities or infrastructure of the water supply partner is excluded from this definition and shall be treated as Debt Service, and any such obligation to make such payments shall be considered a System Obligation.

“Parity Obligation” means a debt obligation of the Recipient on parity with this Obligation. The Recipient’s Parity Obligations are these:

- The Indenture of Trust, dated as of August 1, 2020, by and between the Montecito Water District and The Bank of New York Mellon Trust Company, N.A., as trustee.
- The Cater Water Filtration Plant Improvements Financing Agreement, dated March 18, 2002, between the Recipient and the City of Santa Barbara.
- The Cater Water Filtration Plant Improvements Contribution Agreement, dated June 28, 2011, between the Recipient and the City of Santa Barbara.

“Payment” means any payment due to the State Water Board from the Recipient pursuant to this Agreement.

"Policy" means the State Water Board's “Policy for Implementing the Drinking Water State Revolving Fund,” as amended from time to time, including the Intended Use Plan in effect as of the execution date of this Agreement.

“Project” means the Project financed by this Agreement as described in Exhibits A and B and in the documents incorporated by reference herein.

"Project Completion" means the date, as determined by the Division after consultation with the Recipient, that operation of the Project is initiated or is capable of being initiated, whichever comes first.

"Project Costs" means the incurred costs of the Recipient which are eligible for financial assistance under this Agreement, which are allowable costs as defined under the Policy, and which are reasonable, necessary and allocable by the Recipient to the Project under GAAP, and may include capitalized interest.

“Project Funds” means all moneys disbursed to the Recipient by the State Water Board for eligible Project Costs pursuant to this Agreement.

“Recipient” means the Montecito Water District.

“Records Retention End Date” means the last date that the Recipient is obligated to maintain records and is set forth on the Cover Page of this Agreement.

“Regional Water Quality Control Board” or “Regional Water Board” means the appropriate Regional Water Quality Control Board.

“Reserve Fund” means the reserve fund required pursuant to Exhibit B of this Agreement.

"Revenues" means, for each Fiscal Year, all income, rents, rates, fees, charges and other moneys derived from the ownership or operation of the System, calculated in accordance with GAAP, including, without limiting the generality of the foregoing:

(1) All income, rents, rates, fees, charges or other moneys derived from the sale, furnishing and supplying of the water or other services, facilities, and commodities sold, furnished or supplied through the facilities of the System including standby and availability charges and development fees allocable to the System; plus

(2) except as set forth in (z) below, taxes or assessments, if any, the imposition of which is permitted by law; plus

(3) the earnings on and income derived from the investment of the amounts described in clauses (1) and (2) above and the general unrestricted funds of the Recipient; plus

(4) deposits to the Enterprise Fund from amounts on deposit in the Rate Stabilization Fund; but less

(5) any Revenues transferred from the Enterprise Fund to the Rate Stabilization Fund ;

but excluding in all cases:

(y) customers’ deposits or any other deposits subject to refund, until such deposits have become the property of the Recipient; and

(z) reserves, taxes or assessments specifically pledged to the payment of debt service with respect to notes, bonds or other obligations of the Recipient and which reserves, taxes or assessments are not available for any other purpose of the Recipient.

“Rule 15c2-12(b)(5)” means Rule 15c2-12(b)(5) promulgated by the Securities and Exchange Commission pursuant to the Securities Exchange Act of 1934, as amended.

“Senior Obligation” means a debt obligation of the Recipient that is senior to this Obligation. There are no Senior Obligations.

“SRF” means the Drinking Water State Revolving Fund.

“State” means State of California.

“State Water Board” means the State Water Resources Control Board.

“Subordinate Obligation” means a debt obligation of the Recipient that is subordinate to this Obligation. There are no Subordinate Obligations.

“System” means all properties and assets, real and personal, tangible and intangible, of the Recipient now or hereafter existing, used or pertaining to the acquisition, treatment, reclamation, transmission, distribution and sale of water, including all additions, extensions, expansions, improvements and betterments thereto.

“System Obligation” means any obligation of the Recipient payable from the Revenues, including but not limited to this Obligation, any Parity Obligation, any Subordinate Obligation, and such additional obligations as may hereafter be issued in accordance with the provisions of such obligations and this Agreement.

“Useful Life” means the economically useful life of the Project beginning at Completion of Construction and is set forth in Exhibit A.

“Year” means calendar year unless otherwise expressly indicated.

IN WITNESS WHEREOF, this Agreement has been executed by the parties hereto.

MONTECITO WATER DISTRICT:

By:_____
Name: Nick Turner
Title: General Manager

Date:_____

STATE WATER RESOURCES CONTROL BOARD:

By:_____
Name: Joe Karkoski
Title: Deputy Director
Division of Financial Assistance

Date:_____

Adobe Acrobat Sign Transaction Number: CBJCHBCAABAAGJWzVhc8AmtqA1m_w7-nh5Z2j5lvIk4g

EXHIBIT A – SCOPE OF WORK

A.1. PROJECT DESCRIPTION, USEFUL LIFE, AND SCOPE OF WORK.

(a) The Project is the project set forth on the Cover Page of this Agreement.

(b) The Useful Life of this Project is at least 30 years.

(c) Scope of Work.

The recipient will retrofit or replace eight (8) existing treated water storage reservoirs (Doulton, Romero, Terminal, Bella Vista, Park Lane, Cold Spring, Hot Springs, and Buena Vista) in multiple phases. Construction will include structural, electrical, piping, and site improvements.

A.2. STANDARD PROJECT REQUIREMENTS.

A.2.1 Acknowledgements.

The Recipient shall include the following acknowledgement in any document, written report, or brochure prepared in whole or in part pursuant to this Agreement:

"Funding for this project has been provided in full or in part through an agreement with the State Water Resources Control Board.

California's Drinking Water State Revolving Fund is capitalized through a variety of funding sources, including grants from the United States Environmental Protection Agency and state bond proceeds.

The contents of this document do not necessarily reflect the views and policies of the foregoing, nor does mention of trade names or commercial products constitute endorsement or recommendation for use."

A.2.2 Reports

A.2.2.1 Progress Reports.

(a) The Recipient must provide a progress report to the Division each quarter, beginning no later than 90 days after execution of this Agreement.

(b) The Recipient must provide a progress report with each reimbursement request. Failure to provide a complete and accurate progress report may result in the withholding of Project Funds, as set forth in Exhibit B.

(c) A progress report must contain the following information:

i. A summary of progress to date including a description of progress since the last report, percent construction complete, percent contractor invoiced, and percent schedule elapsed;

ii. A description of compliance with environmental requirements;

iii. A listing of change orders including amount, description of work, and change in contract amount and schedule; and

iv. Any problems encountered, proposed resolution, schedule for resolution, and status of previous problem resolutions.

A.2.2.2 Project Completion Report.

(a) The Recipient must submit a Project Completion Report to the Division with a copy to the appropriate District Office on or before the due date established by the Division and the Recipient at the time of final project inspection. The Project Completion Report must include the following:

i. Description of the Project,

ii. Description of the water quality problem the Project sought to address,

iii. Discussion of the Project's likelihood of successfully addressing that water quality problem in the future, and

iv. Summary of compliance with applicable environmental conditions.

(b) If the Recipient fails to submit a timely Project Completion Report, the State Water Board may stop processing pending or future applications for new financial assistance, withhold disbursements under this Agreement or other agreements, and begin administrative proceedings.

A.2.2.3 As Needed Reports.

The Recipient must provide expeditiously, during the term of this Agreement, any reports, data, and information reasonably required by the Division, including but not limited to material necessary or appropriate for evaluation of the funding program or to fulfill any reporting requirements of the state or federal government.

A.2.2.4 DBE Reports for SRF Projects.

The Recipient must report Disadvantaged Business Enterprise (DBE) utilization to the Division on the DBE Utilization Report, State Water Board Form DBE UR334. The Recipient must submit such reports to the Division annually within ten (10) calendar days following October 1 until such time as the "Notice of Completion" is issued. The Recipient must comply with 40 CFR § 33.301 and require its contractors and subcontractors on the Project to comply.

A.2.3 Signage.

The Recipient shall place a sign at least four feet tall by eight feet wide made of ¾ inch thick exterior grade plywood or other approved material in a prominent location on the Project site and shall maintain the sign in good condition for the duration of the construction period. The sign must include the following disclosure statement and color logos (available from the Division):

a. The sign shall include the following logos:







b. The sign shall include the following statement:

"Funding for this $34,895,970.00 Montecito Water Resilience Project (ASADRA) project has been provided in full or in part by the Drinking Water State Revolving Fund through an agreement with the State Water Resources Control Board. California's Drinking Water State Revolving Fund is capitalized through a variety of funding sources, including grants from the United States Environmental Protection Agency and state bond proceeds."

c. The Project sign may include another agency's required promotional information so long as the above requirements are satisfied. The sign shall be prepared in a professional manner.

A.2.4 Commencement of Operations.

Upon Completion of Construction of the Project, the Recipient must expeditiously initiate Project operations.

A.3 DATES & DELIVERABLES.

(a) Time is of the essence.

(b) The Recipient must expeditiously proceed with and complete construction of the Project.

(c) The following dates are established as on the Cover Page of this Agreement:

i. Eligible Work Start Date
ii. Eligible Construction Start Date
iii. Completion of Construction Date
iv. Final Reimbursement Request Date
v. Records Retention End Date
vi. Final Payment Date

(d) The Recipient must award the prime construction contract timely.

(e) The Recipient agrees to start construction no later than [DFA will insert date that is within 6 months after execution of this Agreement].

(f) The Recipient must deliver any request for extension of the Completion of Construction date no less than 90 days prior to the Completion of Construction date.

(g) The undisbursed balance of this Agreement will be deobligated if the Recipient does not provide its final reimbursement request to the Division on or before the Final Reimbursement Request Date.

(h) Upon request by the Division, the Recipient shall submit verifiable data to support deliverables specified in the Scope of Work. The Recipient's failure to comply with this requirement may be construed as a material breach of this Agreement.

A.4 SCHEDULE.

Failure to provide items by the due dates indicated in the table below may constitute a material violation of this Agreement. The Project Manager may adjust the dates in the "Estimated Due Date" column of this table, but Critical Due Date adjustments will require an amendment to this Agreement. The Recipient must complete and submit all work in time to be approved by the Division prior to Project Completion. As applicable for specific submittals, the Recipient must plan adequate time to solicit, receive, and address

comments prior to submitting the final submittal. The Recipient must submit the final reimbursement request prior to the Final Reimbursement Request Date set forth on the Cover Page.

ITEM	DESCRIPTION OF SUBMITTAL	CRITICAL DUE DATE	ESTIMATED DUE DATE
SCOPE OF WORK			
1	Completion of Construction	September 30, 2027	N/A
REPORTING			
1	Progress Reports	N/A	Quarterly
2	Final Project Inspeetion and Certificartion	N/A	Upon completion of the Project
3	Project Completion Report	N/A	January 30, 2027
4	As Needed Information and Reports	N/A	As Requested by Division
BUDGET COSTS AND REIMBURSEMENT			
	First Reimbursement Request	No later than 90 days from Agreement Execution Date	N/A
2	Final Budget Approval Package	N/A	February 14, 2025
3	Reimbursement Requests	N/A	Quarterly
4	Final Reimbursement Request	March 30, 2027	N/A

EXHIBIT B – FUNDING TERMS

B.1. FUNDING AMOUNTS AND REIMBURSEMENTS

B.1.1 Funding Contingency and Other Sources.

(a) If this Agreement's funding for any fiscal year expires due to reversion or is reduced, substantially delayed, or deleted by the Budget Act, by Executive Order, or by order or action of the Department of Finance, the State Water Board has the option to either cancel this Agreement with no liability accruing to the State Water Board, or offer an amendment to the Recipient to reflect the reduced amount.

(b) If funding for Project Costs is made available to the Recipient from sources other than this Agreement, the Recipient must notify the Division. The Recipient may retain such funding up to an amount which equals the Recipient's share of Project Costs. To the extent allowed by requirements of other funding sources, excess funding must be remitted to the State Water Board to be applied to Payments due hereunder, if any.

B.1.2 Estimated Reasonable Cost.

The estimated reasonable cost of the total Project, including associated planning and design costs is thirty-four million eight hundred ninety-five thousand nine hundred seventy dollars and no cents ($34,895,970.00).

B.1.3 Project Funding Amount.

Subject to the terms of this Agreement, the State Water Board agrees to provide Project Funds not to exceed the amount of the Project Funding Amount set forth on the Cover Page of this Agreement.

B.1.4 Principal Forgiveness Component.

(a) Contingent on the Recipient's performance of its obligations under this Agreement, the State Water Board will forgive principal of not to exceed the amount of the Principal Forgiveness Component set forth on the Cover Page of this Agreement.

(b) Upon Completion of Construction, the State Water Board will prepare an alternate payment schedule reflecting this forgiveness.

B. 1.5 Budget Costs.

(a) Estimated budget costs are contained in the Summary Project Cost Table below:

LINE ITEM	TOTAL ESTIMATED COST	PROJECT FUNDING AMOUNT
Construction	$26,920,141	$26,920,141
Pre-Purchased Material/Equipment	$0	$0
Real Property or Easement Acquisition	$0	$0
Change Order Contingency	$4,750,613	$4,750,613
Force Account	$0	$0
Allowances (Soft Costs)	$3,225,216	$3,225,216
TOTAL	$34,895,970	$34,895,970

The Division's Final Budget Approval and related Form 259 and Form 260 will document a more detailed budget of eligible Project Costs and Project funding amounts. Construction of the Project may be completed in phases with written approval of the Division. If construction proceeds under separate phases, the Recipient must submit a Final Budget Approval package and receive Final Budget Approval from the Division for each phase.

Upon written request by the Recipient, the Division may adjust the line items of the Summary Project Cost Table at the time of Division's Final Budget Approval. Upon written request by the Recipient, the Division may also adjust the line items of the Summary Project Cost Table as well as the detailed budget at the time of Recipient's submittal of its final claim. Any line item adjustments to the Summary Project Cost Table that are due to a change in scope of work will require an Agreement amendment. The sum of adjusted line items in both the Summary Project Cost Table and the detailed budget must not exceed the Project Funding Amount. The Division may also propose budget adjustments.

(b) Under no circumstances may the sum of line items in the budget approved through the Final Budget Approval process exceed the Project Funding Amount. Any increase in the Project Funding Amount will require an Agreement amendment.

B.1.6 Contingent Disbursement.

(a) The State Water Board's disbursement of funds hereunder is contingent on the Recipient's compliance with the terms and conditions of this Agreement.

(b) The State Water Board's obligation to disburse Project Funds is contingent upon the availability of sufficient funds to permit the disbursements provided for herein. If sufficient funds are not available for any reason, including but not limited to failure of the federal or State government to appropriate funds necessary for disbursement of Project Funds, the State Water Board shall not be obligated to make any disbursements to the Recipient under this Agreement. This provision shall be construed as a condition precedent to the obligation of the State Water Board to make any disbursements under this Agreement. Nothing in this Agreement shall be construed to provide the Recipient with a right of priority for disbursement over any other entity. If any disbursements due the Recipient under this Agreement are deferred because sufficient funds are unavailable, it is the intention of the State Water Board that such disbursement will be made to the Recipient when sufficient funds do become available, but this intention is not binding.

(c) Construction costs and disbursements are not available until after the Division has approved the final budget form submitted by the Recipient.

(d) No costs incurred prior to the Eligible Work Start Date are eligible for reimbursement.

(e) Construction costs incurred prior to the Eligible Construction Start Date are not eligible for reimbursement.

(f) Failure to proceed according to the timelines set forth in this Agreement may require the Recipient to repay to the State Water Board all disbursed Project Funds.

(g) The Recipient agrees to ensure that its final reimbursement request is received by the Division no later than the Final Reimbursement Request Date. If the final reimbursement request is not received timely, the undisbursed balance of this Agreement will be deobligated.

(h) The Recipient is not entitled to interest earned on undisbursed funds.

B.1.7 Reimbursement Procedure.

Except as may be otherwise provided in this Agreement, disbursement of Project Funds will be made as follows:

(a) Upon execution and delivery of this Agreement by both parties, the Recipient may request immediate reimbursement of any eligible incurred planning and design allowance costs through submission to the State Water Board of the Reimbursement Request Form 260 and Form 261, or any amendment thereto, duly completed and executed. To be eligible for reimbursement, Project Costs, including any planning and design allowance costs, must have been incurred in compliance with all applicable requirements, including the state and federal cross-cutting requirements listed in Exhibit C.

(b) The Recipient must submit a reimbursement request for costs incurred prior to the date this Agreement is executed by the State Water Board no later than ninety (90) days after this Agreement is executed by the State Water Board. Late reimbursement requests may not be honored.

(c) The Recipient may request reimbursement of eligible construction and equipment costs consistent with budget amounts approved by the Division in the Final Budget Approval.

(d) Additional Project Funds will be promptly disbursed to the Recipient upon receipt of reimbursement request Form 260 and Form 261, or any amendment thereto, duly completed and executed by the Recipient for incurred costs consistent with this Agreement, along with receipt of progress reports due under Exhibit A.

(e) The Recipient must not request reimbursement for any Project Cost until such cost has been incurred and is currently due and payable by the Recipient, although the actual payment of such cost by the Recipient is not required as a condition of reimbursement request. Supporting documentation (e.g., receipts) must be submitted with each reimbursement request. The amount requested for administration costs must include a calculation formula (i.e., hours or days worked times the hourly or daily rate = total amount claimed). Disbursement of Project Funds will be made only after receipt of a complete, adequately supported, properly documented, and accurately addressed reimbursement request. Reimbursement requests submitted without supporting documents may be wholly or partially withheld at the discretion of the Division.

(f) The Recipient must spend Project Funds within 30 days of receipt. If the Recipient earns interest earned on Project Funds, it must report that interest immediately to the State Water Board. The State Water Board may deduct earned interest from future disbursements.

(g) The Recipient shall not request a reimbursement unless that Project Cost is allowable, reasonable, and allocable.

(h) Notwithstanding any other provision of this Agreement, no disbursement shall be required at any time or in any manner which is in violation of or in conflict with federal or state laws, policies, or regulations.

(i) No work or travel outside the State of California is permitted under this Agreement unless the Division provides prior written authorization. Failure to comply with this restriction may result in termination this Agreement, pursuant to Exhibit C. Any reimbursement for necessary travel and per diem shall be at rates not to exceed those set by the California Department of Human Resources at http://www.calhr.ca.gov/employees/Pages/travel-reimbursements.aspx. as of the date costs are incurred by the Recipient.

B.1.8 Withholding of Disbursements.

Notwithstanding any other provision of this Agreement, the State Water Board may withhold all or any portion of the Project Funds upon the occurrence of any of the following events:

(a) The Recipient's failure to maintain reasonable progress on the Project as determined by the Division;
(b) Placement on the ballot or passage of an initiative or referendum to repeal or reduce the Recipient's taxes, assessments, fees, or charges levied for operation of the System or payment of debt service on System Obligations;
(c) Commencement of litigation or a judicial or administrative proceeding related to the Project, System, or Revenues that the State Water Board determines may impair the timely satisfaction of Recipient's obligations under this Agreement;
(d) Any investigation by the State Water Board, District Attorney, California State Auditor, Bureau of State Audits, the United States Environmental Protection Agency's (USEPA) Office of Inspector General, the Internal Revenue Service, Securities and Exchange Commission, a grand jury, or any other state or federal agency, relating to the Recipient's financial management, accounting procedures, or internal fiscal controls;
(e) A material adverse change in the condition of the Recipient, the Revenues, or the System, that the Division reasonably determines would materially impair the Recipient's ability to satisfy its obligations under this Agreement, or any other event that the Division reasonably determines would materially impair the Recipient's ability to satisfy its obligations under this Agreement;
(f) The Recipient's material violation of, or threat to materially violate, any term of this Agreement;
(g) Suspicion of fraud, forgery, embezzlement, theft, or any other misuse of public funds by the Recipient or its employees, or by its contractors or agents regarding the Project or the System;
(h) An event requiring Notice as set forth in Exhibit C;
(i) An Event of Default or an event that the Division determines may become an Event of Default.

B.1.9 Fraud and Misuse of Public Funds; Enforcement.

All requests for reimbursement submitted must be accurate and signed by the Recipient's Authorized Representative under penalty of perjury. All costs submitted pursuant to this Agreement must only be for the work or tasks set forth in this Agreement. The Recipient must not submit any invoice containing costs that are ineligible or have been reimbursed from other funding sources unless required and specifically noted as such (i.e., match costs). Any eligible costs for which the Recipient is seeking reimbursement shall not be reimbursed from any other source. Double or multiple billing for time, services, or any other eligible cost is improper and will not be compensated. Any suspected occurrences of fraud, forgery, embezzlement, theft, or any other misuse of public funds may result in suspension of disbursements and, notwithstanding any other section in this Agreement, the termination of this Agreement requiring the repayment of all Project Funds disbursed hereunder. Additionally, the Deputy Director of the Division may request an audit; refer the matter for appropriate administrative action, including but not limited to the recovery of financial assistance provided and the imposition of civil penalties; and/or refer the matter to the Attorney General's Office or the appropriate district attorney's office for criminal prosecution or the imposition of civil liability. A person who knowingly makes or causes to be made any false statement, material misrepresentation, or false certification in any submittal may be subject to a civil penalty, criminal fine, or imprisonment. (Wat. Code, § 13490 et seq.)

B.2 RECIPIENT'S PAYMENT OBLIGATION, PLEDGE, AND RESERVE

B.2.1 Project Costs.

The Recipient must pay any and all costs connected with the Project including, without limitation, any and all Project Costs and Additional Payments. If the Project Funds are not sufficient to pay the Project Costs in full, the Recipient must nonetheless complete the Project and pay that portion of the Project Costs in excess of available Project Funds, and shall not be entitled to any reimbursement therefor from the State Water Board.

B.2.2 Estimated Principal Payment Due.

The estimated amount of principal that will be due to the State Water Board from the Recipient under this Agreement is twenty-four million four hundred twenty-seven thousand one hundred seventy-nine dollars and no cents ($24,427,179.00).

B.2.3 Interest Rate and In-Lieu of Interest Charges.

(a) The Recipient agrees to make all Payments according to the schedule in Exhibit E, and as otherwise set forth herein, at an interest rate of Zero percent (0.00%) per annum.

(b) Interest will accrue beginning with each disbursement.

(c) In lieu of, and not to exceed, interest otherwise due under this Agreement, the Recipient agrees to pay the following charge(s), as further set forth in Exhibit E:

- an Administrative Service Charge
- a Drinking Water Small Community Emergency Grant Fund Charge

B.2.4 Reserved.

B.2.5 Obligation Absolute.

The obligation of the Recipient to make the Payments and other payments required to be made by it under this Agreement, from the Net Revenues and/or other amounts legally available to the Recipient therefor, is absolute and unconditional, and until such time as the Payments and Additional Payments have been paid in full, the Recipient must not discontinue or suspend any Payments or other payments required to be made by it hereunder when due, whether or not the Project, or any related part thereof is operating or operable or has been completed, or its use is suspended, interfered with, reduced or curtailed or terminated in whole or in part, and such Payments and other payments shall not be subject to reduction whether by offset or otherwise and shall not be conditional upon the performance or nonperformance by any party of any agreement for any cause whatsoever.

B.2.6 Payment Timing.

(a) The Recipient must pay interest annually, by September 30th of each year, until one year after Completion of Construction. Beginning no later than one year after Completion of Construction, the Recipient must make annual Payment of the principal of the Project Funds, together with all interest accruing thereon by September 30th . The Recipient must make Payments fully amortizing the total principal of the Project by the Final Payment Date. Payments are based on a standard fully amortized assistance amount with equal annual payments.

(b) The remaining balance is the previous balance, plus the disbursements, plus the accrued interest on both, plus any Charge In Lieu of Interest, less the Payment. Payment calculations will be made beginning one (1) year after Completion of Construction. Exhibit E is a payment schedule based on the provisions of this Exhibit and an estimated disbursement schedule. Actual payments will be based on actual disbursements.

(c) Upon Completion of Construction and submission of necessary reports by the Recipient, the Division will prepare an appropriate payment schedule and supply the same to the Recipient. The Division may amend this schedule as necessary to accurately reflect amounts due under this Agreement. The Division will prepare any necessary amendments to the payment schedule and send them to the Recipient. The Recipient must make each Payment on or before the due date therefor. A ten (10) day grace period will be allowed, after which time a penalty in the amount of costs incurred by the State Water Board will be assessed for late payment. These costs may include, but are not limited to, lost interest earnings, staff time, bond debt service default penalties, if any, and other related costs. For purposes of penalty assessment, payment will be deemed to have been made if payment is deposited in the U.S. Mail within the grace period with postage prepaid and properly addressed. Any penalties assessed will not be added to the assistance amount balance, but will be treated as a separate account and obligation of the Recipient. The interest penalty will be assessed from the payment due date.

(d) The Recipient is obligated to make all payments required by this Agreement to the State Water Board, notwithstanding any individual default by its constituents or others in the payment to the Recipient of fees, charges, taxes, assessments, tolls or other charges ("Charges") levied or imposed by the Recipient. The Recipient must provide for the punctual payment to the State Water Board of all amounts which become due under this Agreement and which are received from constituents or others in the payment to the Recipient. In the event of failure, neglect or refusal of any officer of the Recipient to levy or cause to be levied any Charge to provide payment by the Recipient under this Agreement, to enforce or to collect such Charge, or to pay over to the State Water Board any money collected on account of such Charge necessary to satisfy any amount due under this Agreement, the State Water Board may take such action in a court of competent jurisdiction as it deems necessary to compel the performance of all duties relating to the imposition or levying and collection of any of such Charges and the payment of the money collected therefrom to the State Water Board. Action taken pursuant hereto shall not deprive the State Water Board of, or limit the application of, any other remedy provided by law or by this Agreement.

(e) Each Payment must be paid in lawful money of the United States of America by check or other acceptable form of payment set forth at www.waterboards.ca.gov/make_a_payment.
The Recipient must pay Payments and Additional Payments from Net Revenues and/or other amounts legally available to the Recipient therefor.

B.2.7 Pledged Revenues.

B.2.7.1 Establishment of Enterprise Fund and Reserve Fund.

In order to carry out its System Obligations, the Recipient covenants that it shall establish and maintain or shall have established and maintained the Enterprise Fund. All Revenues received shall be deposited when and as received in trust in the Enterprise Fund. As required in this Exhibit, the Recipient must establish and maintain a Reserve Fund.

B.2.7.2 Pledge of Net Revenues, Enterprise Fund, and Reserve Fund.

The Obligation hereunder shall be secured by a lien on and pledge of the Enterprise Fund, Net Revenues, and any Reserve Fund on parity with the Parity Obligations. The Recipient hereby pledges and grants such lien on and pledge of the Enterprise Fund, Net Revenues, and any Reserve Fund to secure the Obligation, including payment of Payments and Additional Payments hereunder. The Enterprise Fund, Net Revenues in the Enterprise Fund, and any Reserve Fund shall be subject to the lien

of such pledge without any physical delivery thereof or further act, and the lien of such pledge shall be valid and binding as against all parties having claims of any kind in tort, contract, or otherwise against the Recipient.

B.2.7.3 Application and Purpose of the Enterprise Fund.

Subject to the provisions of any outstanding System Obligation, money on deposit in the Enterprise Fund shall be applied and used first, to pay Operations and Maintenance Costs, and thereafter, all amounts due and payable with respect to the System Obligations in order of priority. After making all payments hereinabove required to be made in each Fiscal Year, the Recipient may expend in such Fiscal Year any remaining money in the Enterprise Fund for any lawful purpose of the Recipient.

B.2.8 Prepayment (ASADRA).

As set forth in Section 2 of this Agreement, and consistent with the State Water Board's Debt Management Policy, adopted on October 3, 2017 and with the Additional Supplemental Appropriations for Disaster Relief, 2019 (ASADRA) Revised Supplemental Intended Use Plan in effect as of the execution date of this Agreement, the Recipient may prepay any portion of the principal and interest due under this Agreement, at any time.

B.2.9 Reserve Fund.

Prior to Completion of Construction, the Recipient must establish a restricted Reserve Fund, held in its Enterprise Fund, equal to one year's Debt Service on this Obligation. The Recipient must maintain the Reserve Fund throughout the term of this Agreement. The Reserve Fund is subject to lien and pledged as security for this Obligation, and its use is restricted to payment of this Obligation during the term of this Agreement.

B.3 RATES, FEES AND CHARGES.

(a) The Recipient must, to the extent permitted by law, fix, prescribe and collect rates, fees and charges for the System during each Fiscal Year which are reasonable, fair, and nondiscriminatory and which will be sufficient to generate Revenues in the amounts necessary to cover Operations and Maintenance Costs, and must ensure that Net Revenues are equal to the sum of (i) at least 125% of the Maximum Annual Debt Service with respect to all outstanding System Obligations senior to and on parity with the Obligation and (ii) at least 100% of the Maximum Annual Debt Service with respect to all outstanding System Obligations subordinate to the Obligation, so long as System Obligations other than this Obligation are outstanding. Upon defeasance of all System Obligations other than this Obligation, this ratio must be at least 125%, except where System Obligations are defeased pursuant to refunding obligations.

(b) The Recipient may make adjustments from time to time in such fees and charges and may make such classification thereof as it deems necessary, but shall not reduce the rates, fees and charges then in effect unless the Net Revenues from such reduced rates, fees, and charges will at all times be sufficient to meet the requirements of this section.

(c) Upon consideration of a voter initiative to reduce Revenues, the Recipient must make a finding regarding the effect of such a reduction on the Recipient's ability to satisfy the rate covenant set forth in this Section. The Recipient must make its findings available to the public. The Recipient's Authorized Representative must request, if necessary, the authorization of the Recipient's decision-maker or decision-making body to file litigation to challenge any such initiative that it finds will render it unable to satisfy the rate covenant set forth in this Agreement and its obligation to operate and maintain the Project for its Useful Life. The Recipient must diligently pursue and bear any and all costs related to such

challenge. The Recipient must notify and regularly update the State Water Board regarding the status of any such challenge.

B.4 ADDITIONAL DEBT.

(a) The Recipient's future debt that is secured by Revenues pledged herein may not be senior to this Obligation.

(b) The Recipient may issue additional parity or subordinate debt only if all of the following conditions are met:

i. No Event of Default (or no event with respect to which notice has been given and which, once all notice of grace periods have passed, would constitute an Event of Default) has occurred and is continuing;
ii. Net Revenues in the most recent Fiscal Year, excluding transfers from a rate stabilization fund, if any, meet the ratio for rate covenants set forth in this Exhibit with respect to any outstanding and proposed additional obligations;
iii. The Recipient is in compliance with any reserve fund requirement of this Obligation.

B.5 NO LIENS.

The Recipient must not make any pledge of or place any lien on the Project, System, or Revenues except as otherwise provided or permitted by this Agreement.

EXHIBIT C – GENERAL & PROGRAMMATIC TERMS & CONDITIONS

C.1 REPRESENTATIONS & WARRANTIES.

The Recipient represents, warrants, and commits to the following as of the Eligible Work Start Date and continuing thereafter for the term of this Agreement.

C.1.1 Application and General Recipient Commitments.

The Recipient has not made any untrue statement of a material fact in its application for this financial assistance, or omitted to state in its application a material fact that makes the statements in its application not misleading.

The Recipient agrees to comply with all terms, provisions, conditions, and commitments of this Agreement, including all incorporated documents.

The Recipient agrees to fulfill all assurances, declarations, representations, and commitments in its application, accompanying documents, and communications filed in support of its request for funding under this Agreement.

C.1.2 Authorization and Validity.

The execution and delivery of this Agreement, including all incorporated documents, has been duly authorized by the Recipient. Upon execution by both parties, this Agreement constitutes a valid and binding obligation of the Recipient, enforceable in accordance with its terms, except as such enforcement may be limited by law.

C.1.3 No Violations.

The execution, delivery, and performance by Recipient of this Agreement, including all incorporated documents, do not violate any provision of any law or regulation in effect as of the date of execution of this Agreement by the Recipient, or result in any breach or default under any contract, obligation, indenture, or other instrument to which Recipient is a party or by which Recipient is bound as of the date of execution of this Agreement by the Recipient.

C.1.4 No Litigation.

There are, as of the date of execution of this Agreement by the Recipient, no pending or, to Recipient's knowledge, threatened actions, claims, investigations, suits, or proceedings before any governmental authority, court, or administrative agency which materially affect, or if resolved unfavorably to the Recipient, would materially affect, the financial condition or operations of the Recipient, the System, the Revenues, and/or the Project.

There are no proceedings, actions, or offers by a public entity to acquire by purchase or the power of eminent domain the System or any of the real or personal property related to or necessary for the Project.

C.1.5 Property Rights and Water Rights.

The Recipient owns or has sufficient property rights in the Project property for the longer of the Useful Life or the term of this Agreement, either in fee simple or for a term of years that is not subject to third-party revocation during the Useful Life of the Project.

The Recipient possesses all water rights necessary for this Project.

C.1.6 Solvency and Insurance.

None of the transactions contemplated by this Agreement will be or have been made with an actual intent to hinder, delay, or defraud any present or future creditors of Recipient. The Recipient is solvent and will not be rendered insolvent by the transactions contemplated by this Agreement. The Recipient is able to pay its debts as they become due. The Recipient maintains sufficient insurance coverage considering the scope of this Agreement, including, for example but not necessarily limited to, general liability, automobile liability, workers compensation and employer liability, professional liability.

C.1.7 Legal Status and Eligibility.

The Recipient is duly organized and existing and in good standing under the laws of the State of California. Recipient must at all times maintain its current legal existence and preserve and keep in full force and effect its legal rights and authority. The Recipient acknowledges that changes to its legal or financial status may affect its eligibility for funding under this Agreement and commits to maintaining its eligibility. Within the preceding ten years, the Recipient has not failed to demonstrate compliance with state or federal audit disallowances.

C.1.8 Financial Statements and Continuing Disclosure.

The financial statements of Recipient previously delivered to the State Water Board as of the date(s) set forth in such financial statements: (a) are materially complete and correct; (b) present fairly the financial condition of the Recipient; and (c) have been prepared in accordance with GAAP. Since the date(s) of such financial statements, there has been no material adverse change in the financial condition of the Recipient, nor have any assets or properties reflected on such financial statements been sold, transferred, assigned, mortgaged, pledged or encumbered, except as previously disclosed in writing by Recipient and approved in writing by the State Water Board.

The Recipient is current in its continuing disclosure obligations associated with its material debt, if any.

C.1.9 System Obligations

The Recipient has no System Obligations other than those defined in this Agreement.

C.1.10 No Other Material Debt.

The Recipient has no Material Obligations other than System Obligations except as set forth in this paragraph:

- The Water Supply Agreement, dated September 2, 2020, between the Recipient and the City of Santa Barbara, as may be amended from time to time.

C.1.11 Compliance with State Water Board Funding Agreements.

The Recipient represents that it is in compliance with all State Water Board funding agreements to which it is a party.

C.2 DEFAULTS AND REMEDIES

In addition to any other remedy set forth in this Agreement, the following remedies are available under this Agreement.

C.2.1 Return of Funds; Acceleration; and Additional Payments.

Notwithstanding any other provision of this Agreement, if the Division determines that an Event of Default has occurred, the Recipient may be required, upon demand, immediately to do each of the following:

i. return to the State Water Board any grant or principal forgiveness amounts received pursuant to this Agreement;
ii. accelerate the payment of any principal owed under this Agreement, all of which shall be immediately due and payable;
iii. pay interest at the highest legal rate on all of the foregoing; and
iv. pay any Additional Payments.

C.2.2 Reserved.

C.2.3 Administrative remedies.

Whenever the State Water Board determines that the Recipient, the Recipient's contractor, consultant, employee, agent, assignee, or grantee has violated any requirement or term of the Agreement, the State Water Board may impose civil penalties in accordance with Water Code, section 13497. The State Water Board may impose civil liability administratively against the Recipient or the Recipient's consultant or contractor or other agent furnishing any information related to funds disbursed or costs claimed for reimbursement if the Recipient or the Recipient's consultant or contractor or other agent fails to personally attest that the information is true, accurate, and complete the best of one's knowledge. (Wat. Code, § 13498.) The State Water Board may impose civil liability administratively against any person who makes a misrepresentation in any submittal to the State Water Board, including, but not limited to, an application, report, certification, record, invoice, form, or other document that is submitted to the State Water Board relating to a financial assistance agreement. (Wat. Code, § 13499.)

C.2.4 Judicial remedies.

Whenever the State Water Board determines that an Event of Default shall have occurred, the State Water Board may enforce its rights under this Agreement by any judicial proceeding, whether at law or in equity. Without limiting the generality of the foregoing, the State Water Board may:

i. by suit in equity, require the Recipient to account for amounts relating to this Agreement as if the Recipient were the trustee of an express trust;
ii. by mandamus or other proceeding, compel the performance by the Recipient and any of its officers, agents, and employees of any duty under the law or of any obligation or covenant under this Agreement, including but not limited to the imposition and collection of rates for the services of the System sufficient to meet all requirements of this Agreement; and
iii. take whatever action at law or in equity as may appear necessary or desirable to the State Water Board to collect the Payments then due or thereafter to become due, or to enforce performance of any obligation or covenant of the Recipient under this Agreement.

Upon the filing of a suit or other commencement of judicial proceedings to enforce the rights of the State Water Board under this Agreement, the State Water Board may make application for the appointment of a receiver or custodian of the Revenues, pending such proceeding, with such power as the court making such appointment may confer.

C.2.5 Termination.

Upon an Event of Default, the State Water Board may terminate this Agreement. Interest shall accrue on all amounts due at the highest legal rate of interest from the date that the State Water Board delivers notice of termination to the Recipient.

C.2.6 Damages for Breach of Tax-Exempt Status.

In the event that any breach of any of the provisions of this Agreement by the Recipient results in the loss of tax-exempt status for any bonds of the State or any subdivision or agency thereof, or if such breach results in an obligation on the part of the State or any subdivision or agency thereof to reimburse the federal government by reason of any arbitrage profits, the Recipient must immediately reimburse the State or any subdivision or agency thereof in an amount equal to any damages paid by or loss incurred by the State or any subdivision or agency thereof due to such breach.

C.2.7 Damages for Breach of Federal Conditions.

In the event that any breach of any of the provisions of this Agreement by the Recipient results in the failure of Project Funds to be used pursuant to the provisions of this Agreement, or if such breach results in an obligation on the part of the State or any subdivision or agency thereof to reimburse the federal government, the Recipient must immediately reimburse the State or any subdivision or agency thereof in an amount equal to any damages paid by or loss incurred by the State or any subdivision or agency thereof due to such breach.

C.2.8 Remedies and Limitations.

None of the remedies available to the State Water Board shall be exclusive of any other remedy, and each such remedy shall be cumulative and in addition to every other remedy given hereunder or now or hereafter existing at law or in equity. The State Water Board may exercise any remedy, now or hereafter existing, without exhausting and without regard to any other remedy.

Any claim of the Recipient is limited to the rights and remedies provided to the Recipient under this Agreement and is subject to the claims procedures provided to the Recipient under this Agreement.

C.2.9 Non-Waiver.

Nothing in this Agreement shall affect or impair the Recipient's Obligation to pay Payments as provided herein or shall affect or impair the right of the State Water Board to bring suit to enforce such payment. No delay or omission of the State Water Board in the exercise of any right arising upon an Event of Default shall impair any such right or be construed to be a waiver of any such Event of Default. The State Water Board may exercise from time to time and as often as shall be deemed expedient by the State Water Board, any remedy or right provided by law or pursuant to this Agreement.

C.2.10 Status Quo.

If any action to enforce any right or exercise any remedy shall be brought and either discontinued or determined adversely to the State Water Board, then the State Water Board shall be restored to its former position, rights and remedies as if no such action had been brought.

C.3 STANDARD CONDITIONS

C.3.1 Access, Inspection, and Public Records.

The Recipient must ensure that the State Water Board, the Governor of the State, the USEPA, the USEPA's Office of Inspector General, any member of Congress, or any authorized representative of the foregoing, will have safe and suitable access to the Project site at all reasonable times during Project construction and thereafter for the term of the Agreement. The Recipient acknowledges that, except for a subset of information regarding archaeological records, the Project records and locations are public records, including but not limited to all of the submissions accompanying the application, all of the documents incorporated into this Agreement by reference, and all reports, reimbursement requests, and supporting documentation submitted hereunder.

C.3.2 Accounting and Auditing Standards; Financial Management Systems; Records Retention.

(a) The Recipient must maintain project accounts according to GAAP as issued by the Governmental Accounting Standards Board (GASB) or its successor. The Recipient must maintain GAAP-compliant project accounts, including GAAP requirements relating to the reporting of infrastructure assets.

(b) The Recipient must comply with federal standards for financial management systems. The Recipient agrees that, at a minimum, its fiscal control and accounting procedures will be sufficient to permit preparation of reports required by the federal government and tracking of Project funds to a level of expenditure adequate to establish that such funds have not been used in violation of federal or state law or the terms of this Agreement. To the extent applicable, the Recipient is bound by, and must comply with, the provisions and requirements of the federal Single Audit Act of 1984 and 2 CFR Part 200, subpart F, and updates or revisions, thereto.

(c) Without limitation of the requirement to maintain Project accounts in accordance with GAAP, the Recipient must:

i. Establish an official file for the Project which adequately documents all significant actions relative to the Project;
ii. Establish separate accounts which will adequately and accurately depict all amounts received and expended on the Project, including all assistance funds received under this Agreement;
iii. Establish separate accounts which will adequately depict all income received which is attributable to the Project, specifically including any income attributable to assistance funds disbursed under this Agreement;
iv. Establish an accounting system which will accurately depict final total costs of the Project, including both direct and Indirect Costs;
v. Establish such accounts and maintain such records as may be necessary for the State to fulfill federal reporting requirements, including any and all reporting requirements under federal tax statutes or regulations; and
vi. If Force Account is used by the Recipient for any phase of the Project, other than for planning, design, and construction engineering and administration provided for by allowance, accounts will be established which reasonably document all employee hours charged to the Project and the associated tasks performed by each employee.

(d) The Recipient must maintain separate books, records and other material relative to the Project. The Recipient must also retain such books, records, and other material for itself and for each contractor or subcontractor who performed or performs work on this project for a minimum of thirty-six (36) years after Completion of Construction. The Recipient must require that such books, records, and other material are subject at all reasonable times (at a minimum during normal business hours) to inspection, copying,

and audit by the State Water Board, the California State Auditor, the Bureau of State Audits, the USEPA, the USEPA's Office of Inspector General, the Internal Revenue Service, the Governor, or any authorized representatives of the aforementioned. The Recipient must allow and must require its contractors to allow interviews during normal business hours of any employees who might reasonably have information related to such records. The Recipient agrees to include a similar duty regarding audit, interviews, and records retention in any contract or subcontract related to the performance of this Agreement. The provisions of this section survive the term of this Agreement.

C.3.3 Amendment.
No amendment or variation of the terms of this Agreement shall be valid unless made in writing and signed by both the Recipient and the Deputy Director or designee.

Requests for amendments must be in writing and directed to the contact listed in Section 4 and to the Division's Chief of Loans and Grants Administration Section.

C.3.4 Assignability.

This Agreement is not assignable by the Recipient, either in whole or in part, without the consent of the State Water Board in the form of a formal written amendment to this Agreement.

C.3.5 Audit.

(a) The Division may call for an audit of financial information relative to the Project if the Division determines that an audit is desirable to assure program integrity or if an audit becomes necessary because of state or federal requirements. If an audit is called for, the audit must be performed by a certified public accountant independent of the Recipient and at the cost of the Recipient. The audit must be in the form required by the Division.

(b) Audit disallowances must be returned to the State Water Board.

C.3.6 Bonding.

Where contractors are used, the Recipient must not authorize construction to begin until each contractor has furnished a performance bond in favor of the Recipient in the following amounts: faithful performance (100%) of contract value; labor and materials (100%) of contract value. This requirement shall not apply to any contract for less than $25,000.00.

C.3.7 Competitive Bidding

Recipient must adhere to any applicable state law or local ordinance for competitive bidding and applicable labor laws.

C.3.8 Compliance with Applicable Laws, Rules, and Requirements.

The Recipient must, at all times, comply with and require its contractors and subcontractors to comply with all applicable federal and state laws, rules, guidelines, regulations, and requirements. Without limitation of the foregoing, to the extent applicable, the Recipient must:

(a) Comply with the provisions of the adopted environmental mitigation plan, if any, for the term of this Agreement;

(b) Comply with the Policy; and

(c) Comply with and require compliance with the state and federal requirements set forth elsewhere in this Agreement.

C.3.9 Computer Software.

The Recipient certifies that it has appropriate systems and controls in place to ensure that state funds will not be used in the performance of this Agreement for the acquisition, operation or maintenance of computer software in violation of copyright laws.

C.3.10 Conflict of Interest.

The Recipient certifies that its owners, officers, directors, agents, representatives, and employees are in compliance with applicable state and federal conflict of interest laws.

C.3.11 Continuous Use of Project; No Lease, Sale, Transfer of Ownership, or Disposal of Project.

The Recipient agrees that, except as provided in this Agreement, it will not abandon, substantially discontinue use of, lease, sell, transfer ownership of, or dispose of all or a significant part or portion of the Project during the Useful Life of the Project without prior written approval of the Division. Such approval may be conditioned as determined to be appropriate by the Division, including a condition requiring repayment of all disbursed Project Funds or all or any portion of all remaining funds covered by this Agreement together with accrued interest and any penalty assessments that may be due.

C.3.12 Data Management.

The Recipient will undertake appropriate data management activities so that Project data can be incorporated into statewide data systems.

C.3.13 Disputes.

(a) The Recipient may appeal a staff decision within 30 days to the Deputy Director of the Division or designee, for a final Division decision. The Recipient may appeal a final Division decision to the State Water Board within 30 days. The Office of the Chief Counsel of the State Water Board will prepare a summary of the dispute and make recommendations relative to its final resolution, which will be provided to the State Water Board's Executive Director and each State Water Board Member. Upon the motion of any State Water Board Member, the State Water Board will review and resolve the dispute in the manner determined by the State Water Board. Should the State Water Board determine not to review the final Division decision, this decision will represent a final agency action on the dispute.

(b) This clause does not preclude consideration of legal questions, provided that nothing herein shall be construed to make final the decision of the State Water Board, or any official or representative thereof, on any question of law.

(c) Recipient must continue with the responsibilities under this Agreement during any dispute.

(d) This section relating to disputes does not establish an exclusive procedure for resolving claims within the meaning of Government Code sections 930 and 930.4.

C.3.14 Reserved.

C.3.15 Environmental Clearance.

(a) No work that is subject to CEQA or NEPA may proceed under this Agreement unless the State Water Board has provided environmental clearance. The State Water Board may require changes in the scope

of work or additional mitigation as a condition to providing construction or implementation funding under this Agreement. Recipient shall not perform any work subject to CEQA and/or NEPA before the State Water Board completes its environmental review and specifies any changes in scope or additional mitigation that may be required. Proceeding with work subject to CEQA and/or NEPA without approval by the State Water Board shall constitute a breach of a material provision of this Agreement.

(b) If this Project includes modification of a river or stream channel, the Recipient must fully mitigate environmental impacts resulting from the modification. The Recipient must provide documentation that the environmental impacts resulting from such modification will be fully mitigated considering all of the impacts of the modification and any mitigation, environmental enhancement, and environmental benefit resulting from the Project, and whether, on balance, any environmental enhancement or benefit equals or exceeds any negative environmental impacts of the Project.

C.3.16 Governing Law.

This Agreement is governed by and shall be interpreted in accordance with the laws of the State of California.

C.3.17 Income Restrictions.

The Recipient agrees that any refunds, rebates, credits, or other amounts (including any interest thereon) accruing to or received by the Recipient under this Agreement must be paid by the Recipient to the State Water Board, to the extent that they are properly allocable to costs for which the Recipient has been reimbursed by the State Water Board under this Agreement.

C.3.18 Indemnification and State Reviews.

The parties agree that review or approval of Project plans and specifications by the State Water Board is for administrative purposes only, including conformity with application and eligibility criteria, and expressly not for the purposes of design defect review or construction feasibility, and does not relieve the Recipient of its responsibility to properly plan, design, construct, operate, and maintain the Project. To the extent permitted by law, the Recipient agrees to indemnify, defend, and hold harmless the State Water Board, the Bank, and any trustee, and their officers, employees, and agents for the Bonds, if any (collectively, "Indemnified Persons"), against any loss or liability arising out of any claim or action brought against any Indemnified Persons from and against any and all losses, claims, damages, liabilities, or expenses, of every conceivable kind, character, and nature whatsoever arising out of, resulting from, or in any way connected with (1) the System or the Project or the conditions, occupancy, use, possession, conduct, or management of, work done in or about, or the planning, design, acquisition, installation, or construction, of the System or the Project or any part thereof; (2) the carrying out of any of the transactions contemplated by this Agreement or any related document; (3) any violation of any applicable law, rule or regulation, any environmental law (including, without limitation, the Federal Comprehensive Environmental Response, Compensation and Liability Act, the Resource Conservation and Recovery Act, the California Hazardous Substance Account Act, the Federal Water Pollution Control Act, the Clean Air Act, the Toxic Substances Control Act, the Occupational Safety and Health Act, the Safe Drinking Water Act, the California Hazardous Waste Control Law, and California Water Code Section 13304, and any successors to said laws), rule or regulation or the release of any toxic substance on or near the System or the Project; or (4) any untrue statement or alleged untrue statement of any material fact or omission or alleged omission to state a material fact necessary to make the statements required to be stated therein, in light of the circumstances under which they were made, not misleading with respect to any information provided by the Recipient for use in any disclosure document utilized in connection with any of the transactions contemplated by this Agreement, except those arising from the gross negligence or willful misconduct of the Indemnified Persons. The Recipient must also provide for the defense and indemnification of the Indemnified Persons in any contractual provision extending indemnity to the Recipient in any contract let for the performance of any work under this Agreement, and must cause the

Indemnified Persons to be included within the scope of any provision for the indemnification and defense of the Recipient in any contract or subcontract. To the fullest extent permitted by law, the Recipient agrees to pay and discharge any judgment or award entered or made against Indemnified Persons with respect to any such claim or action, and any settlement, compromise or other voluntary resolution. The provisions of this section survive the term of this Agreement.

C.3.19 Independent Actor.

The Recipient, and its agents and employees, if any, in the performance of this Agreement, shall act in an independent capacity and not as officers, employees, or agents of the State Water Board.

C.3.20 Integration.

This Agreement constitutes the complete and final agreement between the parties. No oral or written understanding or agreement not incorporated in this Agreement shall be binding on either party.

C.3.21 Leveraging Covenants.

(a) The Recipient covenants to furnish such financial, operating and other data pertaining to the Recipient as may be requested by the State Water Board to: (i) enable the State Water Board to cause the issuance of Bonds and provide for security therefor; or (ii) enable any underwriter of Bonds issued for the benefit of the State Water Board to comply with Rule 15c2-12(b)(5).

(b) The Recipient further covenants to provide the State Water Board with copies of all continuing disclosure documents or reports that are disclosed pursuant to (i) the Recipient's continuing disclosure undertaking or undertakings made in connection with any outstanding System Obligation, (ii) the terms of any outstanding System Obligation, or (iii) a voluntary disclosure of information related to an outstanding System Obligation. The Recipient must disclose such documents or reports to the State Water Board at the same time such documents or reports are submitted to any dissemination agent, trustee, nationally recognized municipal securities information repository, the Municipal Securities Rulemaking Board's Electronic Municipal Market Access (EMMA) website or other person or entity.

C.3.22 No Discrimination.

(a) The Recipient must comply with Government Code section 11135 and the implementing regulations (Cal. Code Regs, tit. 2, § 11140 et seq.), including, but not limited to, ensuring that no person is unlawfully denied full and equal access to the benefits of, or unlawfully subjected to discrimination in the operation of, the Project or System on the basis of sex, race, color, religion, ancestry, national origin, ethnic group identification, age, mental disability, physical disability, medical condition, genetic information, marital status, or sexual orientation as such terms are defined under California law, for as long as the Recipient retains ownership or possession of the Project.

(b) If Project Funds are used to acquire or improve real property, the Recipient must include a covenant of nondiscrimination running with the land in the instrument effecting or recording the transfer of such real property.

(c) The Recipient must comply with the federal American with Disabilities Act of 1990 and implementing regulations as required by Government Code section 11135(b).

(d) The Recipient's obligations under this section shall survive the term of this Agreement.

(e) During the performance of this Agreement, Recipient and its contractors and subcontractors must not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment

because of sex, race, color, ancestry, religious creed, national origin, sexual orientation, physical disability (including HIV and AIDS), mental disability, medical condition (cancer), age (over 40), marital status, denial of family care leave, or genetic information, gender, gender identity, gender expression, or military and veteran status.

(f) The Recipient, its contractors, and subcontractors must ensure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment.

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

(h) The Recipient, its contractors, and subcontractors must comply with all applicable federal civil rights regulations, including statutory and national policy requirements. (2 CFR § 200.300). This includes, to the greatest extent practicable and to the extent permitted by law, the requirement to respect and protect the freedom of persons and organizations to engage in political and religious speech. (Executive Order 13798).

(i) The Recipient, its contractors, and subcontractors must give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.

(j) The Recipient must include the nondiscrimination and compliance provisions of this clause in all subcontracts to perform work under this Agreement.

C.3.23 No Third Party Rights.

The parties to this Agreement do not create rights in, or grant remedies to, any third party as a beneficiary of this Agreement, or of any duty, covenant, obligation, or undertaking established herein.

C.3.24 No Obligation of the State.

Any obligation of the State Water Board herein contained shall not be an obligation, debt, or liability of the State and any such obligation shall be payable solely out of the moneys encumbered pursuant to this Agreement.

C.3.25 Notice.

Upon the occurrence of any of the following events, the Recipient must provide notice as set forth below.

(a) Within 24 hours of the following, the Recipient must notify the Division by phone at (916) 327-9978 and by email to Maria.Pang@waterboards.ca.gov and Uyen.Trinh-Le@waterboards.ca.gov and DrinkingWaterSRF@waterboards.ca.gov:
    i. The seizure of, or levy on, any Revenues securing this Agreement;
    ii. Any discovery of any potential tribal cultural resource and/or archaeological or historical resource (also notify the Division's Senior Cultural Resources Officer, Lisa.Machado@waterboards.ca.gov or (916) 323-0626). Should a potential tribal cultural resource and/or archaeological or historical resource be discovered during construction or Project implementation, the Recipient must ensure that all work in the area of the find will cease until a qualified archaeologist has evaluated the situation and made recommendations regarding preservation of the resource, and the Division has determined what actions should be taken to protect and preserve the resource. The Recipient must implement appropriate actions as directed by the Division.

(b) Within five (5) business days, the Recipient must notify the Division by phone at (916) 327-9978; by email to Lance.Reese@waterboards.ca.gov Maria.Pang@waterboards.ca.gov and Uyen.Trinh-Le@waterboards.ca.gov and DrinkingWaterSRF@waterboards.ca.gov; and by mail to the contact address set forth in Section 4 of this Agreement of the occurrence of any of the following events:

i. Bankruptcy, insolvency, receivership or similar event of the Recipient, or actions taken in anticipation of any of the foregoing;
ii. Change of ownership of the Project or the System or change of management or service contracts, if any, for operation of the System;
iii. Loss, theft, damage, or impairment to Project, the Revenues or the System;
iv. Failure to meet any debt service coverage test in Exhibit B of this Agreement;
v. Draws on the Reserve Fund;
vi. Listed Events and Events of Default, except as otherwise set forth in this section;
vii. Failure to observe or perform any covenant or comply with any condition in this Agreement;
viii. An offer from a public entity to purchase the Project or the System or any portion thereof, or any of the real or personal property related to or necessary for the Project;
ix. A proceeding or action by a public entity to acquire the Project or the System by power of eminent domain;
x. Incurrence of a System Obligation or other Material Obligation by the Recipient; or
xi. A default, event of acceleration, termination event, modification of terms, or other similar event under the terms of a System Obligation or other Material Obligation of the Recipient, any of which reflect financial difficulties.

(c) Within ten (10) business days, the Recipient must notify the Division by phone at (916) 327-9978, by email to Maria.Pang@waterboards.ca.gov and Uyen.Trinh-Le@waterboards.ca.gov and DrinkingWaterSRF@waterboards.ca.gov, and by mail to the contact address set forth in Section 4 of this Agreement of the following events:

i. Material defaults on Material Obligations, other than this Obligation;
ii. Unscheduled draws on material debt service reserves or credit enhancements, reflecting financial difficulties;
iii. Substitution of credit or liquidity providers, if any or their failure to perform;
iv. Any litigation pending or threatened with respect to the Project or the Recipient's technical, managerial or financial capacity to operate the System or the Recipient's continued existence, or any judgment or court order relating to such litigation that has a significant effect on the Project or the System;
v. Circulation of a petition to repeal, reduce, or otherwise challenge the Recipient's rates for services of the System;
vi. Consideration of dissolution, or disincorporation, or any other event that could materially impair the Revenues;
vii. Rating changes on outstanding System Obligations, if any;
viii. Enforcement actions by or brought on behalf of the State Water Board or Regional Water Board; or
ix. Any investigation by the District Attorney, California State Auditor, Bureau of State Audits, USEPA's Office of Inspector General, the Internal Revenue Service, Securities and Exchange Commission, a grand jury, or any other state or federal agency, relating to the Recipient's financial management, accounting procedures, or internal fiscal controls;

(d) The Recipient must notify the Division promptly by phone at (916) 327-9978, by email to Maria.Pang@waterboards.ca.gov and Uyen.Trinh-Le@waterboards.ca.gov and DrinkingWaterSRF@waterboards.ca.gov, and by mail to the contact address set forth in Section 4 of this Agreement of any of the following events:

i. The discovery of a false statement of fact or representation made in this Agreement or in the application to the Division for this financial assistance, or in any certification, report, or request for reimbursement made pursuant to this Agreement, by the Recipient, its employees, agents, or contractors;
ii. Any substantial change in scope of the Project. The Recipient must undertake no substantial change in the scope of the Project until prompt written notice of the proposed change has been provided to the Division and the Division has given written approval for the change;
iii. Cessation of all major construction work on the Project where such cessation of work is expected to or does extend for a period of thirty (30) days or more;
iv. Any circumstance, combination of circumstances, or condition, which is expected to or does delay Completion of Construction for a period of ninety (90) days or more;
v. Discovery of any unexpected endangered or threatened species, as defined in the federal Endangered Species Act. Should a federally protected species be unexpectedly encountered during construction of the Project, the Recipient agrees to promptly notify the Division. This notification is in addition to the Recipient's obligations under the federal Endangered Species Act;
vi. Any Project monitoring, demonstration, or other implementation activities required in Exhibit A or Exhibit D of this Agreement, if any;
vii. Any public or media event publicizing the accomplishments and/or results of this Agreement and provide the opportunity for attendance and participation by state representatives with at least ten (10) working days' notice to the Division. The Recipient is encouraged to notify the EPA project officer ;
viii. Any allegation of research misconduct involving research activities that are supported in whole or in part with EPA funds under this Project, as required by Exhibit C.4.3(xxvii);
ix. Any events requiring notice to the Division pursuant to the provisions of this Agreement;
x. Completion of Construction of the Project, and actual Project Completion;
xi. The award of the prime construction contract for the Project;
xii. Initiation of construction of the Project.

C.3.26 Operation and Maintenance; Insurance.

The Recipient agrees to sufficiently and properly staff, operate and maintain all portions of the System during the Useful Life of the Project in accordance with all applicable state and federal laws, rules, and regulations.

The Recipient will procure and maintain or cause to be maintained insurance on the System with responsible insurers, or as part of a reasonable system of self-insurance, in such amounts and against such risks (including damage to or destruction of the System) as are usually covered in connection with systems similar to the System. Such insurance may be maintained by a self-insurance plan so long as such plan provides for (i) the establishment by the Recipient of a separate segregated self-insurance fund in an amount determined (initially and on at least an annual basis) by an independent insurance consultant experienced in the field of risk management employing accepted actuarial techniques and (ii) the establishment and maintenance of a claims processing and risk management program.

In the event of any damage to or destruction of the System caused by the perils covered by such insurance, the net proceeds thereof shall be applied to the reconstruction, repair or replacement of the damaged or destroyed portion of the System. The Recipient must begin such reconstruction, repair or replacement as expeditiously as possible, and must pay out of such net proceeds all costs and expenses in connection with such reconstruction, repair or replacement so that the same must be completed and the System must be free and clear of all claims and liens. If such net proceeds are insufficient to reconstruct, repair, or restore the System to the extent necessary to enable the Recipient to pay all remaining unpaid principal portions of the Payments, if any, in accordance with the terms of this Agreement, the Recipient must provide additional funds to restore or replace the damaged portions of the System.

Recipient agrees that for any policy of insurance concerning or covering the construction of the Project, it will cause, and will require its contractors and subcontractors to cause, a certificate of insurance to be issued showing the State Water Board, its officers, agents, employees, and servants as additional insured; and must provide the Division with a copy of all such certificates prior to the commencement of construction of the Project.

C.3.27 Permits, Subcontracting, and Remedies.

Recipient must procure all permits, licenses and other authorizations necessary to accomplish the work contemplated in this Agreement, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work. Signed copies of any such permits or licenses must be submitted to the Division before any construction begins.

The Recipient must not contract or allow subcontracting with excluded parties. The Recipient must not contract with any party who is debarred or suspended or otherwise excluded from or ineligible for participation in any work overseen, directed, funded, or administered by the State Water Board program for which this funding is authorized. For any work related to this Agreement, the Recipient must not contract with any individual or organization on the State Water Board's List of Disqualified Businesses and Persons that is identified as debarred or suspended or otherwise excluded from or ineligible for participation in any work overseen, directed, funded, or administered by the State Water Board program for which funding under this Agreement is authorized. The State Water Board's List of Disqualified Businesses and Persons is located at
http://www.waterboards.ca.gov/water_issues/programs/enforcement/fwa/dbp.shtml

C.3.28 Professionals.

The Recipient agrees that only licensed professionals will be used to perform services under this Agreement where such services are called for. All technical reports required pursuant to this Agreement that involve planning, investigation, evaluation, design, or other work requiring interpretation and proper application of engineering, architectural, or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to Business and Professions Code, sections 5536.1, 6735, 7835, and 7835.1. To demonstrate compliance with California Code of Regulations, title 16, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

C.3.29 Prevailing Wages.

The Recipient agrees to be bound by all applicable provisions of State Labor Code regarding prevailing wages. The Recipient must monitor all agreements subject to reimbursement from this Agreement to ensure that the prevailing wage provisions of the State Labor Code are being met.

In addition, the Recipient agrees to comply with the Davis-Bacon provisions incorporated by reference in Section 3 of this Agreement.

C.3.30 Public Funding.

This Project is publicly funded. Any service provider or contractor with which the Recipient contracts must not have any role or relationship with the Recipient, that, in effect, substantially limits the Recipient's ability to exercise its rights, including cancellation rights, under the contract, based on all the facts and circumstances.

C.3.31 Recipient's Responsibility for Work.

The Recipient shall be responsible for all work and for persons or entities engaged in work performed pursuant to this Agreement, including, but not limited to, contractors, subcontractors, suppliers, and providers of services. The Recipient shall be responsible for responding to any and all disputes arising out of its contracts for work on the Project. The State Water Board will not mediate disputes between the Recipient and any other entity concerning responsibility for performance of work.

C.3.32 Related Litigation.

Under no circumstances may the Recipient use funds from any reimbursement under this Agreement to pay costs associated with any litigation the Recipient pursues against the State Water Board or any Regional Water Quality Control Board. Regardless of the outcome of any such litigation, and notwithstanding any conflicting language in this Agreement, the Recipient agrees to repay all of the disbursed funds plus interest in the event that Recipient does not complete the project.

C.3.33 Rights in Data.

The Recipient agrees that all data, plans, drawings, specifications, reports, computer programs, operating manuals, notes, and other written or graphic work produced in the performance of this Agreement are subject to the rights of the State as set forth in this section. The State shall have the right to reproduce, publish, and use all such work, or any part thereof, in any manner and for any purposes whatsoever and to authorize others to do so. If any such work is copyrightable, the Recipient may copyright the same, except that, as to any work which is copyrighted by the Recipient, the State reserves a royalty-free, nonexclusive, and irrevocable license to reproduce, publish, and use such work, or any part thereof, and to authorize others to do so, and to receive electronic copies from the Recipient upon request.

C.3.34 State Water Board Action; Costs and Attorney Fees.

Any remedy provided in this Agreement is in addition to and not in derogation of any other legal or equitable remedy available to the State Water Board as a result of breach of this Agreement by the Recipient, whether such breach occurs before or after completion of the Project, and exercise of any remedy provided by this Agreement by the State Water Board shall not preclude the State Water Board from pursuing any legal remedy or right which would otherwise be available. In the event of litigation between the parties hereto arising from this Agreement, it is agreed that each party shall bear its own costs and attorney fees.

C.3.35 Timeliness.

Time is of the essence in this Agreement.

C.3.36 Unenforceable Provision.

In the event that any provision of this Agreement is unenforceable or held to be unenforceable, then the parties agree that all other provisions of this Agreement have force and effect and shall not be affected thereby.

C.3.37 Venue.

Any action arising out of this Agreement shall be filed and maintained in the Superior Court in and for the County of Sacramento, California.

C.3.38 Waiver and Rights of the State Water Board.

Any waiver of rights by the State Water Board with respect to a default or other matter arising under this Agreement at any time shall not be considered a waiver of rights with respect to any other default or matter. Any rights and remedies of the State Water Board provided for in this Agreement are in addition to any other rights and remedies provided by law.

C.4 MISCELLANEOUS STATE AND FEDERAL REQUIREMENTS

C.4.1 Reserved.

C.4.2 State Cross-Cutters.

Recipient represents that, as applicable, it complies and covenants to maintain compliance with the following with respect to all Project Costs for the term of this Agreement:

i. The California Environmental Quality Act (CEQA), as set forth in Public Resources Code 21000 et seq. and in the CEQA Guidelines at Title 14, Division 6, Chapter 3, Section 15000 et seq.

ii. Water Conservation requirements, including regulations in Division 3 of Title 23 of the California Code of Regulations.

iii. Monthly Water Diversion Reporting requirements, including requirements set forth in Water Code section 5103.

iv. Public Works Contractor Registration with Department of Industrial Relations requirements, including requirements set forth in Sections 1725.5 and 1771.1 of the Labor Code.

v. Volumetric Pricing & Water Meters requirements, including the requirements of Water Code sections 526 and 527.

vi. Urban Water Management Plan requirements, including the Urban Water Management Planning Act (Water Code, § 10610 et seq.).

vii. Urban Water Demand Management requirements, including the requirements of Section 10608.56 of the Water Code.

viii. Delta Plan Consistency Findings requirements, including the requirements of Water Code section 85225 and California Code of Regulations, title 23, section 5002.

ix. Agricultural Water Management Plan Consistency requirements, including the requirements of Water Code section 10852.

x. Charter City Project Labor Requirements, including the requirements of Labor Code section 1782 and Public Contract Code section 2503.

xi. The Recipient agrees that it will, at all times, comply with and require its contractors and subcontractors to comply with directives or orders issued pursuant to Division 7 of the Water Code.

xii. Regulations in Division 4 of Title 22 of the California Code of Regulations, including but not limited to California Waterworks Standards in Chapter 16, and Lead and Copper regulations in Chapter 17.5.

C.4.3 Federal Requirements and Cross-Cutters for SRF Funding.

The Recipient acknowledges, warrants compliance with, and covenants to continuing compliance with the following federal terms and conditions with Respect to all Project Costs for the term of this Agreement and for the Useful Life of the Project:

i. Unless the Recipient has obtained a waiver from USEPA on file with the State Water Board or unless this Project is not a project for the construction, alteration, maintenance or repair of a public water system or treatment work, the Recipient shall not purchase “iron and steel products” produced outside of the United States on this Project. Unless the Recipient has obtained a waiver from USEPA on file with the State Water Board or unless this Project is not a project for the construction, alteration, maintenance or repair of a public water system or treatment work, the Recipient hereby certifies that all “iron and steel products” used in the Project were or will be produced in the United States. For purposes of this section, the term "iron and steel products" means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials. “Steel” means an alloy that includes at least 50 percent iron, between .02 and 2 percent carbon, and may include other elements.

ii. The Recipient acknowledges that funds received under this Agreement are subject to the Build America Buy America (BABA) requirements of Public Law 117-58 (the Infrastructure Investment and Jobs Act, also known as the Bipartisan Infrastructure Law (BIL), signed into law on November 15, 2021), which are in addition to “iron and steel products” requirements described in section C.4.3 (i) above. Specifically, unless (1) the Recipient has requested and obtained a waiver from USEPA on file with the State Water Board pertaining to the Project or the Project is otherwise covered by a general applicability waiver, as confirmed in writing by the State Water Board; or (2) the State Water Board and, to the extent the Project is co-funded by any other agency using federal funds subject to BABA requirements, each such agency, has advised the Recipient in writing that the BABA requirements are not applicable to the Project, the Recipient shall ensure and certifies that, as these terms are defined within and made applicable by Public Law 117-58:

(a) all iron and steel used in the Project are produced in the United States;
(b) the manufactured products used in the Project are produced in the United States; and
(c) the construction materials used in the Project are produced in the United States.

The Recipient must comply and require its contractors and subcontractors to comply with all applicable BABA requirements and reporting and must inform the State Water Board immediately of any information regarding a violation of the foregoing.

Based on representations made by the Recipient and corresponding evidence on file with the State Water Board, the Project qualifies for the “Adjustment Period Waiver of Section 70914(a) of

P.L. 117-58, Build America, Buy America Act, 2021 for SRF Projects that have Initiated Design Planning", found at EPA - SRF - Final Waiver - Adjustment Period September 2022 - Signed.pdf. This waiver applies to projects that have initiated project design planning prior to May 14, 2022, the statutory effective date of the BABA requirements, and permits the use of non-domestic manufactured products and construction materials that would otherwise be prohibited under the BABA requirements. This program waiver does not waive the iron and steel requirements under BABA. Sections 70917(a) and (b) of BIL provide a savings provision for existing statutory requirements that meet or exceed BABA requirements, such as the "iron and steel products" requirements applicable to SRF funded projects referenced in section C.4.3 (i) above, which will continue to apply as part of BABA requirements.

iii. The Recipient must include in full the Wage Rate Requirements (Davis-Bacon) language incorporated by reference in Section 3 of this Agreement in all construction contracts and subcontracts.

iv. The Recipient must comply with the signage requirements set forth in Exhibit A.

v. The Recipient shall notify the State Water Board and the USEPA contact of public or media events publicizing the accomplishment of significant events related to this Project and provide the opportunity for attendance and participation by federal representatives with at least ten (10) working days' notice.

vi. The Recipient shall comply with applicable USEPA general terms and conditions found at https://www.epa.gov/grants/epa-general-terms-and-conditions-effective-october-1-2022-or-later.

vii. No Recipient may receive funding under this Agreement unless it has provided its Unique Entity Identifier, assigned by the System for Award management, to the State Water Board.

viii. The Recipient represents and warrants that it and its principals are not excluded or disqualified from participating in this transaction as such terms are defined in Parts 180 and 1532 of Title 2 of the Code of Federal Regulations (2 CFR). If the Recipient is excluded after execution of this Agreement, the Recipient shall notify the Division within ten (10) days and shall inform the Division of the Recipient's exclusion in any request for amendment of this Agreement. The Recipient shall comply with Subpart C of Part 180 of 2 CFR, as supplemented by Subpart C of Part 1532 of 2 CFR. Such compliance is a condition precedent to the State Water Board's performance of its obligations under this Agreement. When entering into a covered transaction as defined in Parts 180 and 1532 of 2 CFR, the Recipient shall require the other party to the covered transaction to comply with Subpart C of Part 180 of 2 CFR, as supplemented by Subpart C of Part 1532 of 2 CFR.

ix. To the extent applicable, the Recipient shall disclose to the State Water Board any potential conflict of interest consistent with USEPA's Final Financial Assistance Conflict of Interest Policy at https://www.epa.gov/grants/epas-final-financial-assistance-conflict-interest-policy. A conflict of interest may result in disallowance of costs.

x. USEPA and the State Water Board have the right to reproduce, publish, use and authorize others to reproduce, publish and use copyrighted works or other data developed under this assistance agreement.

xi. Where an invention is made with Project Funds, USEPA and the State Water Board retain the right to a worldwide, nonexclusive, nontransferable, irrevocable, paid-up license to practice the invention owned by the Recipient. The Recipient must utilize the Interagency Edison extramural invention reporting system at http://iEdison.gov and shall notify the Division when an invention report, patent report, or utilization report is filed.

xii. The Recipient agrees that any reports, documents, publications or other materials developed for public distribution supported by this Agreement shall contain the Disclosure statement set forth in Exhibit A.

xiii. The Recipient acknowledges that it is encouraged to follow guidelines established under Section 508 of the Rehabilitation Act, codified at 36 CFR Part 1194, with respect to enabling individuals with disabilities to participate in its programs supported by this Project.

xiv. The Recipient, its employees, contractors and subcontractors and their employees warrants that it will not engage in severe forms of trafficking in persons, procure a commercial sex act during the term of this Agreement, or use forced labor in the performance of this Agreement. The Recipient must include this provision in its contracts and subcontracts under this Agreement. The Recipient must inform the State Water Board immediately of any information regarding a violation of the foregoing. The Recipient understands that failure to comply with this provision may subject the State Water Board to loss of federal funds. The Recipient agrees to compensate the State Water Board for any such funds lost due to its failure to comply with this condition, or the failure of its contractors or subcontractors to comply with this condition. The State Water Board may unilaterally terminate this Agreement if the Recipient that is a private entity is determined to have violated the foregoing.

xv. The Recipient certifies to the best of its knowledge and belief that:

a. No federal appropriated funds have been paid or will be paid, by or on behalf of the Recipient, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.
b. If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with this Agreement, the Recipient shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions, and notify the State Water Board.

The Recipient shall require this certification from all parties to any contract or agreement that the Recipient enters into and under which the Recipient incurs costs for which it seeks reimbursements under this Agreement.

xvi. The Recipient must comply with the following federal non-discrimination requirements:

a. Title VI of the Civil Rights Act of 1964, which prohibits discrimination based on race, color, and national origin, including limited English proficiency (LEP).
b. Section 504 of the Rehabilitation Act of 1973, which prohibits discrimination against persons with disabilities.
c. The Age Discrimination Act of 1975, which prohibits age discrimination.
d. Section 13 of the Federal Water Pollution Control Act Amendments of 1972, which prohibits discrimination on the basis of sex.
e. 40 CFR Part 7, as it relates to the foregoing.

xvii. Executive Order No. 11246. The Recipient shall include in its contracts and subcontracts related to the Project the following provisions:

"During the performance of this contract, the contractor agrees as follows:"(a) The contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

"(b) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.

"(c) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

"(d) The contractor will comply with all provisions of Executive Order No. 11246 of Sept. 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

"(e) The contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

"(f) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of Sept 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

"(g) The contractor will include the provisions of Paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of Sept. 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, That in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States."

xviii. The Recipient agrees to comply with the requirements of USEPA's Program for Utilization of Small, Minority and Women's Business Enterprises.

xix. Procurement Prohibitions under Section 306 of the Clean Air Act and Section 508 of the Clean Water Act, including Executive Order 11738, Administration of the Clean Air Act and the Federal Water Pollution Control Act with Respect to Federal Contracts, Grants, or Loans; 42 USC § 7606; 33 USC § 1368. Except where the purpose of this Agreement is to remedy the cause of the violation, the Recipient may not procure goods, services, or materials from suppliers excluded under the federal System for Award Management: sam.gov

xx. Uniform Relocation and Real Property Acquisition Policies Act, Pub. L. 91-646, as amended; 42 USC §§4601-4655. The Recipient must comply with the Act's implementing regulations at 49 CFR 24.101 through 24.105.

xxi. The Recipient agrees that if its network or information system is connected to USEPA networks to transfer data using systems other than the Environmental Information Exchange Network or USEPA's Central Data Exchange, it will ensure that any connections are secure.

xxii. All geospatial data created pursuant to this Agreement that is submitted to the State Water Board for use by USEPA or that is submitted directly to USEPA must be consistent with Federal Geographic Data Committee endorsed standards. Information on these standards may be found at www.fgdc.gov.

xxiii. If the Recipient is a water system that serves 500 or fewer persons, the Recipient represents that it has considered publicly-owned wells as an alternative drinking water supply.

xxiv. The Recipient represents that it is not a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability; and it is not a corporation that was convicted of a felony criminal violation under a Federal law within the preceding 24 months.

xxv. The Recipient agrees to immediately notify the Project Manager in writing about any allegation of research misconduct involving research activities that are supported in whole or in part with EPA funds under this Project, including fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results, or ordering, advising, or suggesting that subordinates engage in research misconduct.

xxvi. The Recipient agrees to comply with, and require all contractors and subcontractors to comply with, EPA's Scientific Integrity Policy, available at https://www.epa.gov/osa/policy-epa-scientific-integrity, when conducting, supervising, and communicating science and when using or applying the results of science. For purposes of this condition scientific activities include, but are not limited to, computer modelling, economic analysis, field sampling, laboratory experimentation, demonstrating new technology, statistical analysis, and writing a review article on a scientific issue.

The Recipient shall not suppress, alter, or otherwise impede the timely release of scientific findings or conclusions; intimidate or coerce scientists to alter scientific data, findings, or professional opinions or exert non-scientific influence on scientific advisory boards; knowingly misrepresent, exaggerate, or downplay areas of scientific uncertainty; or otherwise violate the EPA's Scientific Integrity Policy. The Recipient must refrain from acts of research misconduct, including publication or reporting, as described in EPA's Policy and Procedures for Addressing Research Misconduct, Section 9.C, and must ensure scientific findings are generated and disseminated in a timely and transparent manner, including scientific research performed by contractors and subcontractors.

xxvii. The Recipient agrees to comply with the Animal Welfare Act of 1966 (7 USC 2131-2156). Recipient also agrees to abide by the "U.S. Government Principles for the Utilization and Care of Vertebrate Animals used in Testing, Research, and Training," available at http://grants.nih.gov/grants/olaw/references/phspol.htm#USGovPrinciples.

xxviii. The Recipient certifies that no Project Funds will be used on:

a. Video surveillance or telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities), telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities);
b. Telecommunications or video surveillance services produced by such entities;
c. Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country; or
d. Other telecommunications or video surveillance services or equipment in violation of 2 CFR 200.216.

xxxiii. The Recipient agrees to ensure that if the Project includes lead service line replacement, each lead service line replaced using Project Funds must be replaced in its entirety, unless the remaining portion of that service line has already been replaced or is being replaced with another funding source. For the purposes of this paragraph, a "lead service line" refers to a service line made of lead, which connects the water main to the building inlet. "Lead service line" also refers to lead goosenecks, pigtails, and connectors. A galvanized service line is considered a lead service line if it ever was or is currently downstream of any lead service line or service line of unknown material. A lead service line may be owned by the water system, owned by the property owner, or both.

EXHIBIT D – SPECIAL CONDITIONS

D.1. Covenant Against Water Supply Agreement Debt

So long as this Agreement is in effect, the Recipient agrees that the Recipient will not: (1) elect to participate in a debt financing through the Central Coast Water Authority that would result in all or a portion of the debt service on such debt being payable by the Recipient under the Water Supply Agreement with the Central Coast Water Authority and such debt service being treated as an Operation and Maintenance Cost under this Agreement, (2) elect to participate in a debt financing through the Cachuma Operation and Maintenance Board that would result in all or a portion of the debt service on such debt being payable by the Recipient under the Recipient's agreement with Cachuma Operation and Maintenance Board and such debt service being treated as an Operation and Maintenance Cost under this Agreement, (3) elect to participate in a debt financing through the City of Santa Barbara that would result in all or a portion of the debt service on such debt being payable by the Recipient under the Water Supply Agreement with the City of Santa Barbara and such debt service being treated as an Operation and Maintenance Cost under this Agreement, or (4) enter into any future agreement for the purchase or acquisition of water (i) where the water supply partner may construct certain capital facilities or infrastructure specified in such agreement and (ii) under which the Recipient is obligated to pay debt service on debt incurred by the water supply partner relating to such capital facilities or infrastructure of the water supply partner and such debt service payments are treated as an Operation and Maintenance Cost under this Agreement; provided that the Recipient will be permitted to enter into an agreement of the type described in (4) if (a) such agreement provides the Recipient with the option to not participate in the debt financing of the water supply partner and the Recipient does not participate in the debt financing, or (b) the Recipient's obligation to pay debt service payments under such agreement is on parity with the Parity or Subordinate Obligations and is not treated as an Operation and Maintenance Cost under this Agreement.

Notwithstanding the foregoing paragraph, the Recipient shall be permitted to participate in a debt financing through the Central Coast Water Authority, the Cachuma Operation and Maintenance Board, the City of Santa Barbara, or a future water supply partner, including debt financings that would be paid through the respective water supply agreements, so long as the Recipient's obligation to pay from Net Revenues the portion of such debt service allocated to the Recipient is on a parity with the Parity or Subordinate Obligations and the payment of the portion of debt service allocated to the Recipient is not treated as an Operation and Maintenance Cost under this Agreement.

D.2. Funds Related to Contamination

(a) As a condition precedent to this Agreement and prior to any disbursement, the Recipient shall (i) notify the Division of any demands made by the Recipient against third parties for monetary damages, reimbursement of costs, or other relief, including litigation, related to drinking water contamination, including contamination by 1,2,3-trichloropropane (1,2,3-TCP), perfluoroalkyl and polyfluoroalkyl substances (PFAS), or other substances; and (ii) unless waived by the Division, notify and provide to the Division copies of any agreements with third parties (e.g., settlement agreements or consent agreements) or court or administrative orders arising out of litigation or disputes related to contamination of the drinking water associated with the Project.

(b) After execution of this Agreement, the Recipient shall notify the Division promptly of the new occurrence of any matters requiring notice under paragraph (a), above. Upon request, the Recipient shall promptly provide information and copies of documents as requested by the Division.
(c) Unless the Division provides approval to exclude certain funds, the Recipient shall place all funds received as a result of litigation, settlements, or orders based on contamination in the Recipient's drinking water system into a restricted reserve account, to be used for either Operation and Maintenance costs related to addressing such contamination, or a capital improvement project, other than the Project, that

addresses such contamination. Alternatively, upon consent of the Division, the funds may be used as match funding for the Project or held in a restricted reserve account to support the financial capacity of the System. The Recipient shall provide documentation satisfactory to the Division showing the total amount of such funds deposited into a restricted reserve account prior to the start of construction, and provide additional documentation thereafter of any additional funds that Recipient receives. If the Recipient has previously spent such funds for costs that are eligible for reimbursement under this Agreement, the Recipient may seek reimbursement of those costs under this Agreement, but upon receiving reimbursement for those costs, shall place the funds into a restricted reserve account in accordance with the requirements stated above.

(d) The amount of this Agreement may be reduced, and/or disbursements withheld, to offset amounts received under any contamination-related order or agreement described in paragraphs (a)(ii) or (b), above, to avoid double recovery. The Recipient shall ensure that no duplicative reimbursements of the same costs occur under both this Agreement and any past or future judgment, settlement, or order. Noncompliance with these paragraphs (a), (b), (c), or (d) shall be an Event of Default.

D.3. Executive Order N-6-22 — Russian Sanctions.

On March 4, 2022, Governor Gavin Newsom issued Executive Order N-6-22 (the EO) regarding Economic Sanctions against Russia and Russian entities and individuals. "Economic Sanctions" refers to sanctions imposed by the U.S. government in response to Russia's actions in Ukraine, as well as any sanctions imposed under state law. The EO directs state agencies to terminate contracts with, and to refrain from entering any new contracts with, individuals or entities that are determined to be a target of Economic Sanctions. Accordingly, should the State Water Board determine Recipient is a target of Economic Sanctions or is conducting prohibited transactions with sanctioned individuals or entities, that shall be grounds for termination of this Agreement. The State Water Board shall provide Recipient advance written notice of such termination, allowing Recipient at least 30 calendar days to provide a written response. Termination shall be at the sole discretion of the State Water Board.

The Recipient represents that the Recipient is not a target of economic sanctions imposed in response to Russia's actions in Ukraine imposed by the United States government or the State of California. The Recipient is required to comply with the economic sanctions imposed in response to Russia's actions in Ukraine, including with respect to, but not limited to, the federal executive orders identified in California Executive Order N-6-22, located at https://www.gov.ca.gov/wp-content/uploads/2022/03/3.4.22-Russia-Ukraine-Executive-Order.pdf and the sanctions identified on the United States Department of the Treasury website (https://home.treasury.gov/policy-issues/financial-sanctions/sanctions-programs-and-country-information/ukraine-russia-related-sanctions). The Recipient is required to comply with all applicable reporting requirements regarding compliance with the economic sanctions, including, but not limited to, those reporting requirements set forth in California Executive Order N-6-22 for all Recipients with one or more agreements with the State of California with an aggregated value of Five Million Dollars ($5,000,000) or more. Notwithstanding any other provision in this Agreement, failure to comply with the economic sanctions and all applicable reporting requirements may result in termination of this Agreement.

> For Recipients with an aggregated agreement value of Five Million Dollars ($5,000,000) or more with the State of California, reporting requirements include, but are not limited to, information related to steps taken in response to Russia's actions in Ukraine, including but not limited to:
>
> 1. Desisting from making any new investments or engaging in financial transactions with Russian institutions or companies that are headquartered or have their principal place of business in Russia;
> 2. Not transferring technology to Russia or companies that are headquartered or have their principal place of business in Russia; and
> 3. Direct support to the government and people of Ukraine.

Environmental Special Conditions:

1. The documents identified below are incorporated by reference and the Recipient shall comply with the conditions and recommendations therein:

   a. The Mitigation Monitoring and Reporting Program adopted by the Montecito Water District on July 27, 2021 for the Project. The Recipient shall implement all mitigation measures therein.

2. The Recipient shall make no changes in the Project, construction area, or special conditions, without obtaining the appropriate and necessary prior approval from the State Water Board.

REPORTING TO THE STATE WATER BOARD

1. In the Recipient's Progress Reports and the Project Completion Report, submitted pursuant to this Agreement, the Recipient shall include a discussion of the status of its compliance with all environmental measures identified in this Exhibit D, with separate sections clearly labeled with section titles, discussing the status of Recipient's compliance with:

   a. Mitigation Monitoring and Reporting Program measures adopted for the Project.

EXHIBIT E – PAYMENT SCHEDULE

See the attached preliminary Payment Schedule. The final Payment Schedule will be forwarded to the Recipient after all disbursements have been paid and construction of the Project has been completed.

California DWSRF Payment Schedule

Principal is paid over: **30 Years**

Interest rate: **0.00000%**

Project No. 4210007-001C - Montecito Water District
Agreement: D2402005 - based on Actual + Projected Disbursements

Montecito Water Resilience Project (ASADRA)

Ref Num	Due Date	Date Received	Principal Payment	Interest Rate%	Interest Payment	Total P and I Payment	Total Payment	Ending Balance	CPI Interest
1	9/30/2028		814,239.30	0.000	0.00	814,239.30	814,239.30	23,612,939.70	0.00
2	9/30/2029		814,239.30	0.000	0.00	814,239.30	814,239.30	22,798,700.40	0.00
3	9/30/2030		814,239.30	0.000	0.00	814,239.30	814,239.30	21,984,461.10	0.00
4	9/30/2031		814,239.30	0.000	0.00	814,239.30	814,239.30	21,170,221.80	0.00
5	9/30/2032		814,239.30	0.000	0.00	814,239.30	814,239.30	20,355,982.50	0.00
6	9/30/2033		814,239.30	0.000	0.00	814,239.30	814,239.30	19,541,743.20	0.00
7	9/30/2034		814,239.30	0.000	0.00	814,239.30	814,239.30	18,727,503.90	0.00
8	9/30/2035		814,239.30	0.000	0.00	814,239.30	814,239.30	17,913,264.60	0.00
9	9/30/2036		814,239.30	0.000	0.00	814,239.30	814,239.30	17,099,025.30	0.00
10	9/30/2037		814,239.30	0.000	0.00	814,239.30	814,239.30	16,284,786.00	0.00
11	9/30/2038		814,239.30	0.000	0.00	814,239.30	814,239.30	15,470,546.70	0.00
12	9/30/2039		814,239.30	0.000	0.00	814,239.30	814,239.30	14,656,307.40	0.00
13	9/30/2040		814,239.30	0.000	0.00	814,239.30	814,239.30	13,842,068.10	0.00
14	9/30/2041		814,239.30	0.000	0.00	814,239.30	814,239.30	13,027,828.80	0.00
15	9/30/2042		814,239.30	0.000	0.00	814,239.30	814,239.30	12,213,589.50	0.00
16	9/30/2043		814,239.30	0.000	0.00	814,239.30	814,239.30	11,399,350.20	0.00
17	9/30/2044		814,239.30	0.000	0.00	814,239.30	814,239.30	10,585,110.90	0.00
18	9/30/2045		814,239.30	0.000	0.00	814,239.30	814,239.30	9,770,871.60	0.00
19	9/30/2046		814,239.30	0.000	0.00	814,239.30	814,239.30	8,956,632.30	0.00
20	9/30/2047		814,239.30	0.000	0.00	814,239.30	814,239.30	8,142,393.00	0.00
21	9/30/2048		814,239.30	0.000	0.00	814,239.30	814,239.30	7,328,153.70	0.00
22	9/30/2049		814,239.30	0.000	0.00	814,239.30	814,239.30	6,513,914.40	0.00
23	9/30/2050		814,239.30	0.000	0.00	814,239.30	814,239.30	5,699,675.10	0.00
24	9/30/2051		814,239.30	0.000	0.00	814,239.30	814,239.30	4,885,435.80	0.00
25	9/30/2052		814,239.30	0.000	0.00	814,239.30	814,239.30	4,071,196.50	0.00
26	9/30/2053		814,239.30	0.000	0.00	814,239.30	814,239.30	3,256,957.20	0.00
27	9/30/2054		814,239.30	0.000	0.00	814,239.30	814,239.30	2,442,717.90	0.00
28	9/30/2055		814,239.30	0.000	0.00	814,239.30	814,239.30	1,628,478.60	0.00
29	9/30/2056		814,239.30	0.000	0.00	814,239.30	814,239.30	814,239.30	0.00
30	9/30/2057		814,239.30	0.000	0.00	814,239.30	814,239.30	0.00	0.00
			24,427,179.00		**0.00**	**24,427,179.00**	**24,427,179.00**		**0.00**

[DATE]

[FORM OF OPINION OF GENERAL COUNSEL – insert your letterhead]

State Water Resources Control Board
Division of Financial Assistance
Attn:
1001 I Street
Sacramento, CA 95814

Re: Recipient Entity ("Recipient") – Name of Project –Project No. [xxxxxxxxxx] ("Project") – Agreement No. [xxxxxxxxxxxxxxxx] ("Agreement")

Ladies and Gentlemen:

I am/This firm acts as General Counsel to the Recipient in connection with the Project. This opinion is delivered to the State Water Resources Control Board ("State Water Board") at the request of the Recipient. In connection therewith, I have examined the laws pertaining to the Recipient, originals of the Agreement between the Recipient and the State Water Board, the Recipient's authorized representative resolution [number] adopted on [DATE], the Recipient's rate-setting resolution [number] adopted on [DATE], (collectively, "the Resolutions"), and such other documents, legal opinions, instruments and records, and have made such investigation of law, as I have considered necessary or appropriate for the purpose of this opinion.

Based on the foregoing, it is my opinion that:

a. The Recipient, a general law city/charter city/county/special district of the State of California duly organized, validly existing under the laws of the State of California pursuant to [INSERT SPECIFIC CODE SECTIONS], has the requisite legal right, power, and authority to execute and deliver the Agreement and carry out and consummate all transactions contemplated therein.

b. The Resolutions have been duly adopted at meetings of the Recipient which were called and held pursuant to law with all public notice required by law and at which a quorum was present and acting when the Resolutions were adopted. The Resolutions are in full force and effect and have not been amended, modified, supplemented, or rescinded, nor has the rate-setting resolution been challenged or the rates become subject of a referendum or initiative or other similar process.

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c. To the best of my knowledge and based upon a reasonable investigation, all proceedings required by law or under the ordinances or bylaws of the Recipient to be taken by the Recipient in connection with the authorization of the Agreement and the transactions contemplated by and related thereto, and all such approvals, authorizations, consents or other orders of or filings or registrations with such public boards or bodies, if any, as may be legally required to be obtained by the Recipient prior to the date hereof with respect to all or any of such matters have been taken or obtained and are in full force and effect, except that no opinion is expressed as to any approvals, obligations or proceedings which may be required under any federal securities laws or state blue sky or securities laws.

d. To the best of my knowledge and based upon a reasonable investigation, the execution and delivery of the Agreement and the consummation of the transactions therein will not conflict with or constitute a breach of or default (with due notice or the passage of time or both) under (i) the statutes creating the Recipient or any amendments thereto, (ii) the ordinances or by laws of the Recipient, (iii) any bond, debenture, note or other evidence of indebtedness, or any material contract, agreement or lease to which the Recipient is a party or by which it or its properties are otherwise subject or bound or (iv) any applicable law or administrative regulation or any applicable court or administrative decree or order. All material contracts, agreements, or leases are listed in Exhibit D of the Agreement.

e. [paragraph required for construction projects; delete if solely planning and no access to property will occur during planning]: To the best of my knowledge and based upon a reasonable investigation, the Recipient has sufficient property rights in the Project property for the purposes contemplated in the Agreement and has complied with the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 U.S.C. 4601 et seq.) with respect to any property acquired for the purposes of the Project. These property rights extend for at least 50 years from today's date, as follows: [in perpetuity][date certain].

f. To the best of my knowledge and based upon a reasonable investigation, there is no action, suit, proceeding, inquiry or investigation before any court, or by any federal, state, municipal or other governmental authority pending or threatened against or affecting the Project or the system of which the Project is a part (the System), or the assets, properties, or operations of the Recipient relating to the Project or System, which, if determined adversely to the Recipient or its interests would result in any material change in the assets or financial condition of the Recipient, the Project, or the

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System; and the Recipient is not in default with respect to any order or decree of any court or any order, regulation, or demand of any federal, state, municipal, or other governmental agency which default might have consequences that would materially and adversely affect the financial condition of the Recipient, the Project, or the System.

g. No facts have come to my attention which lead me to believe that the Recipient's authorized representative has made any untrue statement of a material fact or omitted or omits to state a material fact or has made misleading statements in the Agreement.

h. The Agreement has been duly authorized, executed, and delivered, and assuming due authorization, execution and delivery of the Agreement by the State Water Board, constitutes legal, valid, and binding obligation of the Recipient enforceable against the Recipient in accordance with its terms, subject to the laws relating to bankruptcy, insolvency, reorganization, or creditors' rights generally and to the application of equitable principles, if equitable remedies are sought.

Sincerely,

General Counsel
[Recipient Name]

DRAFT

Adobe Acrobat Sign Transaction Number: CBJCHBCAABAAGJWzVhc8AmtqA1m_w7-nh5Z2j5lvIk4g

California Environmental Quality Act (CEQA) Determination

Montecito Water District (Applicant)
Montecito Water Resilience Project (ASADRA) (Project)
Project Number: 4210007-001C

As the Deputy Director for the State Water Resources Control Board (State Water Board), Division of Financial Assistance, I have been delegated the authority to approve and execute financing agreements for projects that are routine and non-controversial.

The Applicant has requested authorization from the State Water Board to begin construction of the Project in advance of receiving an executed financing agreement. According to the Drinking Water State Revolving Fund regulations at 40 Code of Federal Regulations (C.F.R.) section 35.3525(a)(2)(i), a state may include eligible project reimbursement costs within loans if a system "received approval, authorization to proceed, or any similar action" by the state prior to initiation of project construction and the construction costs were incurred after such state action.

Although the State Water Board has not approved financing for this Project, the State Water Board has completed its review of the CEQA documents for this Project and has determined to provide approval for the Applicant to begin construction of the Project as provided in 40 C.F.R. section 35.3525(a)(2)(i).

1. The Applicant is the CEQA Lead Agency and has prepared an Initial Study/Mitigated Negative Declaration (MND) titled Reservoir Retrofit and Replacement Project, for the Project which was circulated through the Governor's Office of Planning and Research (OPR), State Clearinghouse (No. 2021060200) for review and comments. The Applicant adopted the MND and a Mitigation Monitoring and Reporting Program (MMRP) and approved the Project on July 27, 2021. The Applicant filed a Notice of Determination (NOD) with the Santa Barbara County Clerk on December 16, 2021 and the OPR on December 17, 2021.

   The Applicant prepared an Addendum to the MND (Addendum) for the Project which was posted at the OPR on December 17, 2021. The Applicant adopted the Addendum and filed an NOD with the Santa Barbara County Clerk on December 16, 2021 and the OPR on December 17, 2021.

2. The State Water Board is a Responsible Agency under CEQA. A Responsible Agency complies with CEQA by considering the MND, Addendum and MMRP prepared by the Lead Agency and by reaching its own conclusions on whether and how to approve the Project involved. The State Water Board has independently considered the MND, Addendum and MMRP, and pursuant to my delegated authority, I make the following determinations regarding the Project:

Adobe Acrobat Sign Transaction Number: CBJCHBCAABAAGJWzVhc8AmtqA1m_w7-nh5Z2j5lvIk4g

- The MND and MMRP include mitigation measures BIO-4 and BIO-5 to reduce the potential water quality impacts of the Project to less than significant levels as described in the final MND and MMRP. Because of the mitigation measure(s) identified herein and in the MND and MMRP, the Project will not result in any significant adverse water quality impacts.

- The MND and MMRP also include mitigation measure(s) for air quality, biological resources, cultural resources, geology and soils, noise, and tribal cultural resources that mitigate potential environmental impacts to less than significant levels for these impact categories. Changes or alterations to the Project based on these mitigation measure(s) are within the responsibility and jurisdiction of other public agencies and are not within the jurisdiction of the State Water Board. Such changes either have been adopted by other relevant agencies or can and should be adopted by such other agencies.

This action to approve the start of construction of the Project does not constitute an approval of financial assistance/financing for the Project.

A final copy of the MND, Addendum, MMRP, comments and responses, and records of the approval for the Project are available to the general public at the State Water Board, Division of Financial Assistance at 1001 I Street, 16th Floor, Sacramento, CA 95814.

Joe Karkoski Digitally signed by Joe Karkoski
Date: 2024.06.17 12:13:22 -07'00'
Water Boards

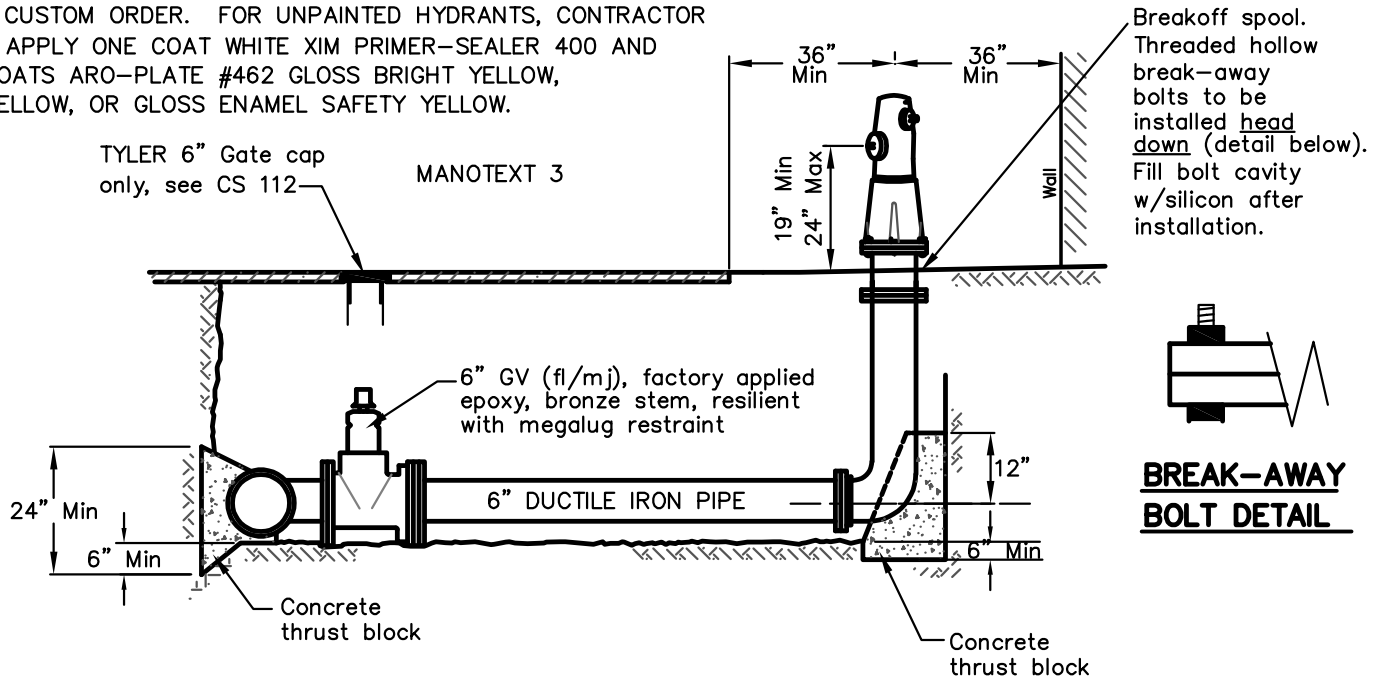
Joe Karkoski, Deputy Director
Division of Financial Assistance

Adobe Acrobat Sign Transaction Number: CBJCHBCAABAAGJWzVhc8AmtqA1m_w7-nh5Z2j5lvIk4g

APPENDIX C

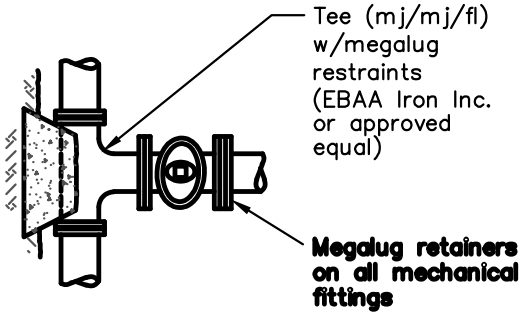
MONTECITO WATER DISTRICT STANDARD DRAWINGS

NOTE: PRE-PAINTED JONES HYDRANTS SHALL BE PAINT CODE "Z-2" CUSTOM ORDER. FOR UNPAINTED HYDRANTS, CONTRACTOR SHALL APPLY ONE COAT WHITE XIM PRIMER-SEALER 400 AND TWO COATS ARO-PLATE #462 GLOSS BRIGHT YELLOW, Z-2 YELLOW, OR GLOSS ENAMEL SAFETY YELLOW.

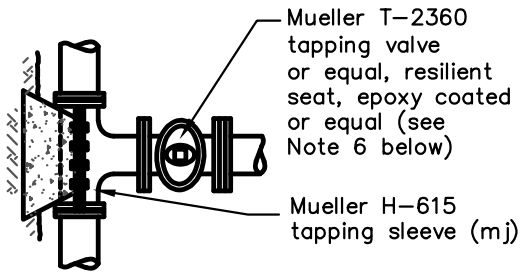


MANO

BREAK-AWAY BOLT DETAIL



NEW MAIN/CUT-IN



Note: Hot tap by KOPPL PIPELINE SERVICES INC or contractor approved by MWD

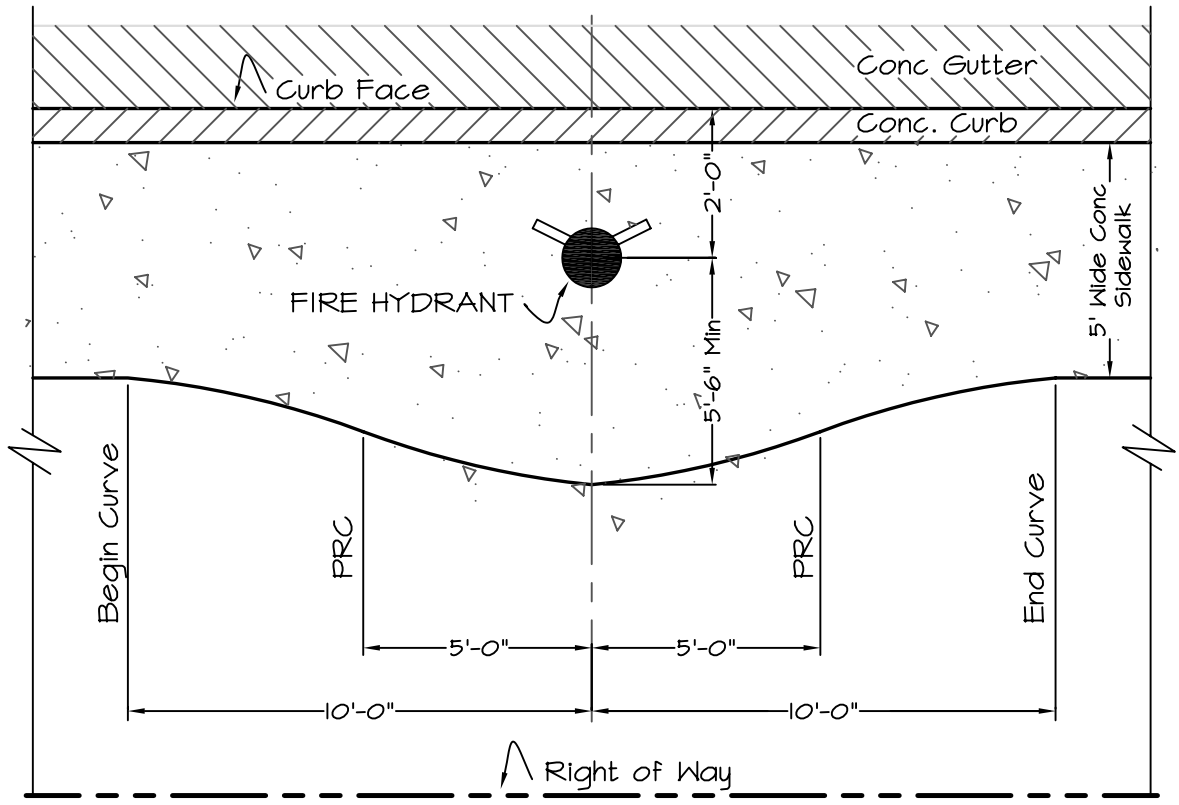
EX MAIN/HOT TAP

General Notes:

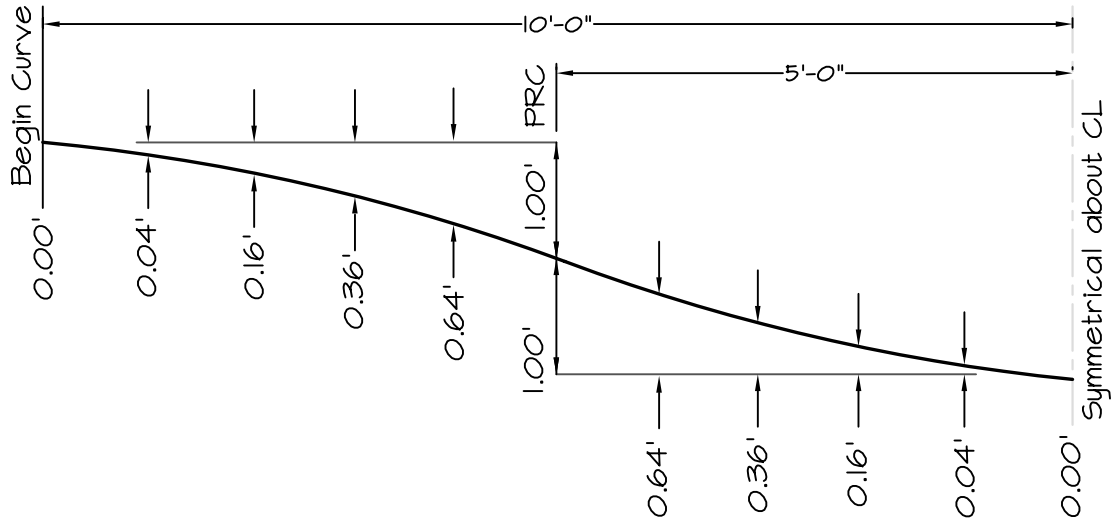
1. Fire hydrant shall be J. Jones All Bronze No. 3700R (6-hole drillings) with 2-1/2 inch and 4 inch National Standard Thread Outlets. All caps shall be brass. All Penta 6010 Nuts shall be 1-1/2 inch.
2. Machine scored cast iron breakoff spool shall be installed.
3. Fire hydrant bury, adapter, tee and breakoff spool shall be factory cement-lined. Bronze fire hydrant bodies shall not be cement-lined.
4. Outlets shall be positioned 45° to curb or roadway. Hose caps shall be bronze.
5. All buried bolts shall be coated and wrapped per MWD Standard Specifications.
6. Tapping sleeve shall be heavy duty cast-iron type, Mueller H-615 mechanical joint or approved equal.
7. Concrete thrust block shall be in accordance with MWD CS 113.
8. Fire hydrant installation in a sidewalk shall be per MWD CS 103.
9. All mechanical joint fittings shall have megalug retaining glands.

FIRE HYDRANT INSTALLATION

JULY 2022	MWD CONSTRUCTION STANDARD DRAWING	CS 102



PLAN VIEW



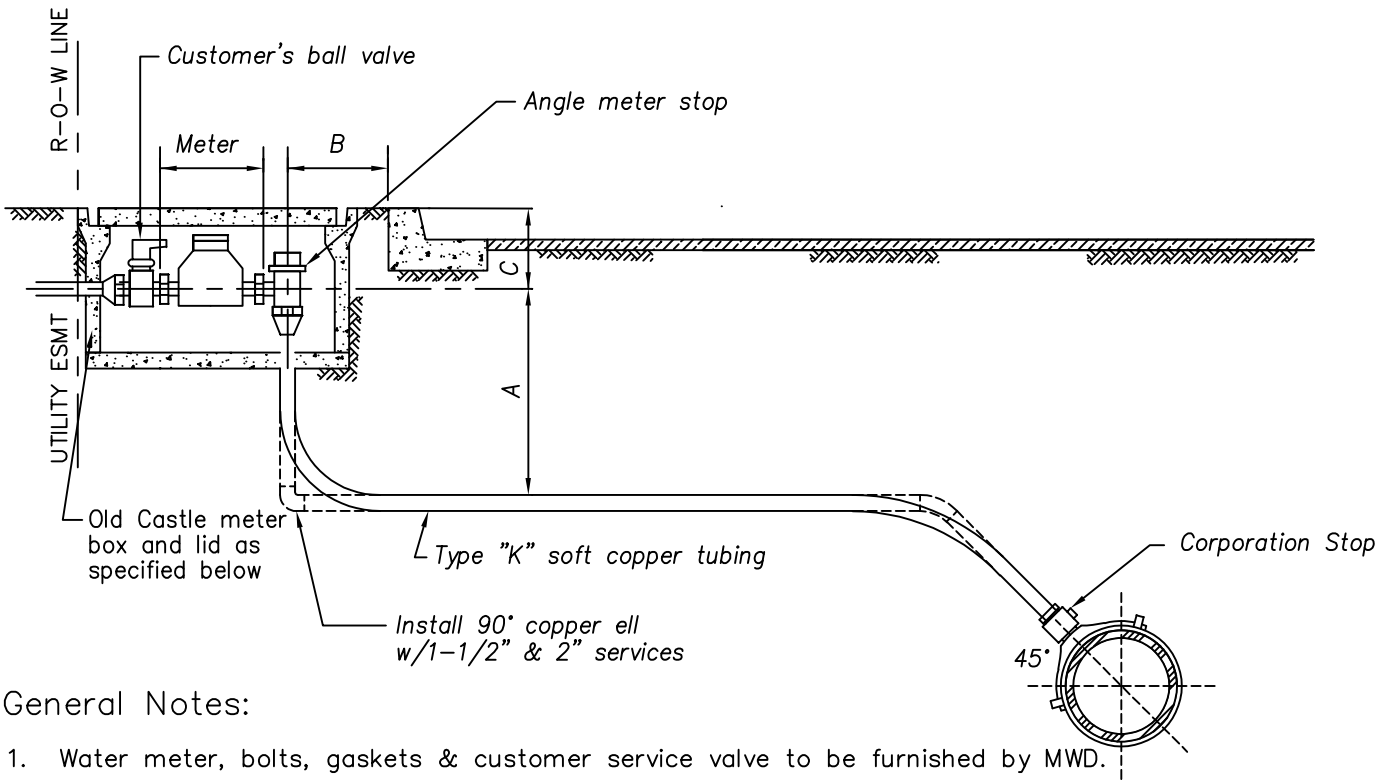
BACK OF SIDEWALK

General Notes:

1. Fire hydrant installation shall be in accordance with MWD CS 102.
2. Concrete sidewalk construction shall conform to specifications of entity having jurisdiction.
3. Any variance to the sidewalk modification to conform to conditions other than shown must be approved by the entity having jurisdiction.

SIDEWALK MODIFICATION AROUND FIRE HYDRANT

OCT 2006	MWD CONSTRUCTION STANDARD DRAWING	CS 103



General Notes:

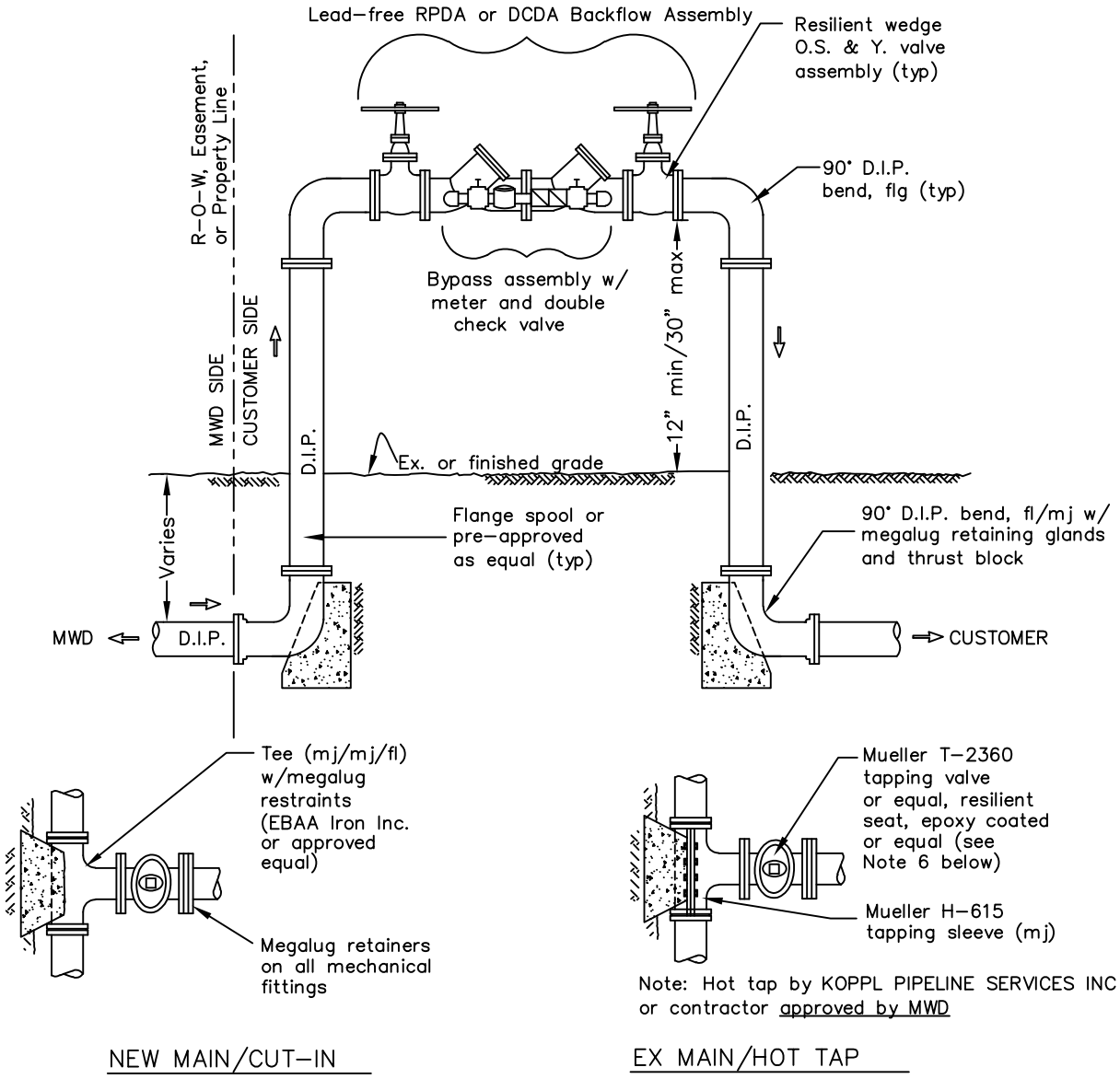
1. Water meter, bolts, gaskets & customer service valve to be furnished by MWD.
2. James Jones Co. designations are used to identify fittings. Similar fittings from other manufacturers may be approved.
3. Install J-979 saddle with neoprene ring gaskets & CS thread when connecting all service taps.
4. Tap all steel pipe through saddle, welded coupling, or approved equal.
5. Minimum separation between service taps shall be two 2 feet.
6. Services shall be installed at right angles to the line of the main.
7. Backfill per MWD Standard Specifications for the installation of water mains.
8. If main being tapped is encased in polyethylene sheath, service line shall be wrapped tightly for a distance of 3 feet from the main with 8 mil polyethylene.
9. 3/4" services shall have a 1" tap, 1" service line (copper type "k" soft) & will bush down at the meter with a J-128-H bushing.
10. For 1-1/2" & 2" services longer than 20' use copper slip coupling (soldered).
11. Note: 1-1/2" & 2" copper pipe type "K" soft for underground use.
    1-1/2" & 2" copper pipe type "K" hard for above ground use only.
12. Steel traffic lids to be installed when meter box is subject to heavy vehicle traffic or parking. Steel lids to be BROOKS or EISEL hinged, diamond plate and conform wth series numbers listed below.

MATERIALS & DIMENSIONS

Meter Size	Angle Meter Stop	Corp Stop	Ball Valve	Meter Space	A	B	C	Meter Box Model #	Lid Model #
3/4"	E-1963WSG	E-1937SG	E-1908W	9-3/8"	18"	8"	8"	1324-12	FL30
1"	E-1963WSG	E-1937SG	E-1908W	11-1/8"	18"	8"	8"	1324-12	FL30
1-1/2"	E-1975WSG	E-1937SG	E-1913W	13-1/4"	18"	12"	8"	1527-12	FL1527
2"	E-1975WSG	E-1937SG	E-1913W	16-3/4"	18"	12"	8"	1730-12	FL36

3/4" TO 2" SERVICE CONNECTION

AUG 2021	MWD CONSTRUCTION STANDARD DRAWING	CS 104



NEW MAIN/CUT–IN

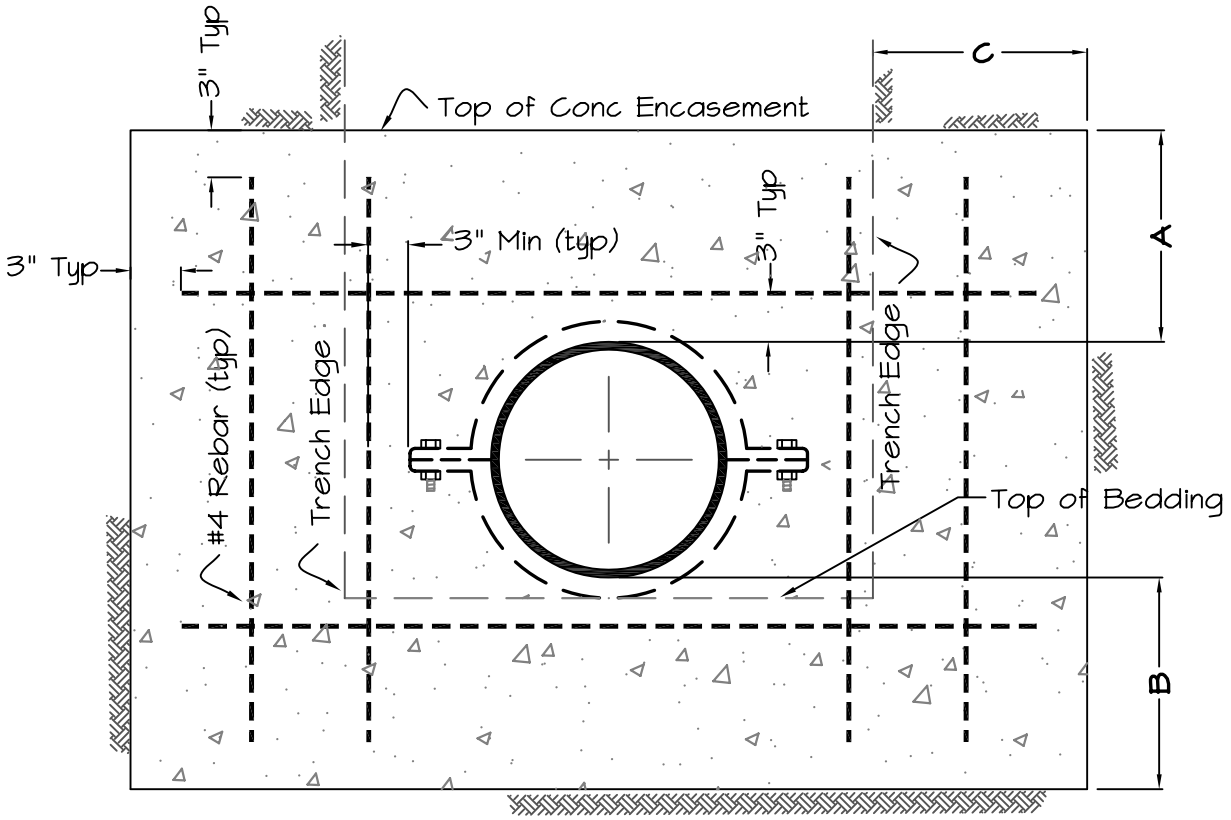
EX MAIN/HOT TAP

General Notes:

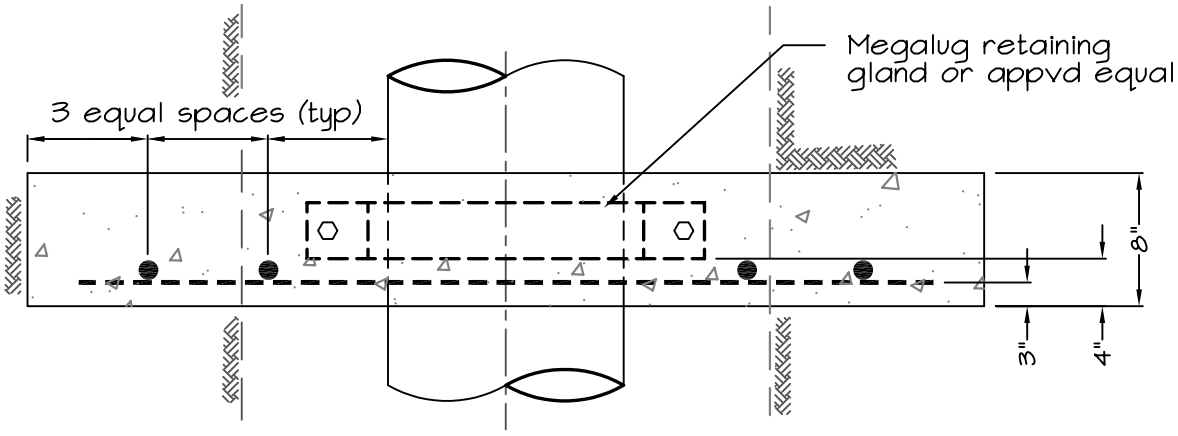
1. The backflow assembly shall be in accordance with the University of Southern California Foundation for Cross–Connection Control's most current List of Approved Backflow Assemblies , AWWA C510–97, and approved by MWD prior to installation.
2. All new & replacement assemblies on potable water service lines shall be lead–free in accordance with California Health & Safety Code 116875.
3. Location of assembly to be approved by MWD prior to installation.
4. There shall be no water service connections between the District water main & the backflow assembly.
5. Assembly shall be horizontal and level unless approved for other orientations and approved by MWD prior to installation.
6. Thrust blocks to be per MWD CS 113.
7. Backflow assembly to be tested and approved by a certified tester. No water shall be supplied to the fireline, except for backflow testing purposes, until a satisfactorily completed backflow test report is received at the Montecito Water District office (583 San Ysidro Road, Montecito).
8. Maintain minimum 12–inch horizontal and vertical clearance from any obstructions.
9. Pipe supports with concrete footings (not shown) required as needed.

BACKFLOW ASSEMBLY FOR LARGE FIRELINE

FEB 2024	MWD CONSTRUCTION STANDARD DRAWING	CS 105



CROSS-SECTION



PLAN VIEW

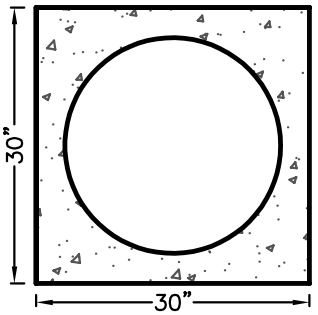
General Notes:

1. Thrust collar to be poured against firm undisturbed native soil.
2. Concrete mix to be 5 sack slurry.

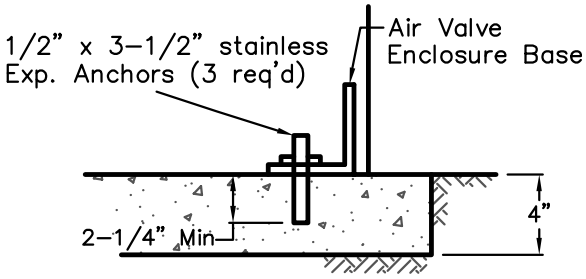
Main Size (in)	Pressure (psi)	A	B	C
8" or less	0-300	6"	6"	12"
10"	0-150	6"	6"	12"
10"	150-300	6"	8"	15"
12"	0-150	6"	6"	12"
12" or greater	150-300	6"	10"	18"

CONCRETE THRUST COLLAR

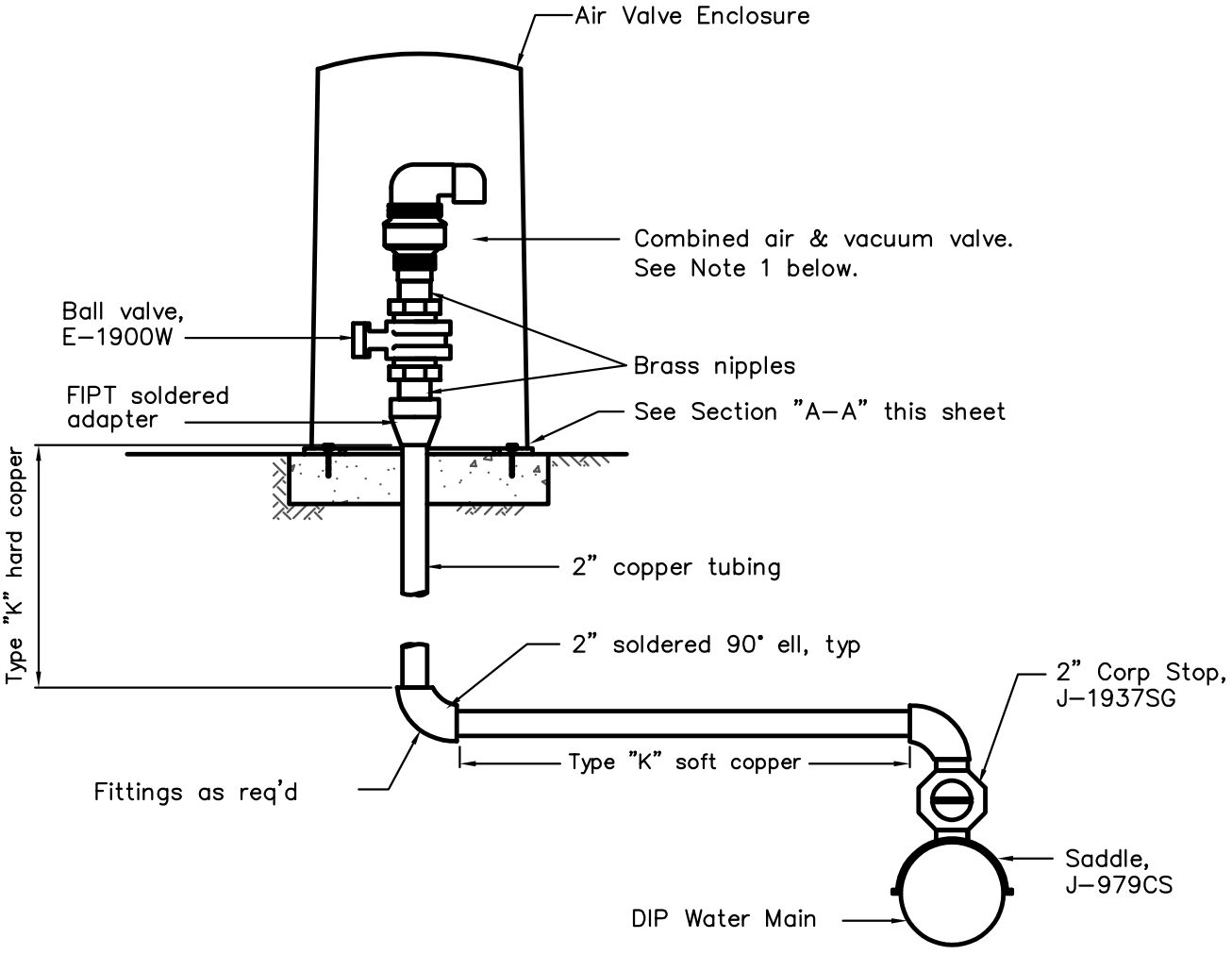
OCT 2006	MWD CONSTRUCTION STANDARD DRAWING	CS 106



CONCRETE PAD



SECTION "A-A"

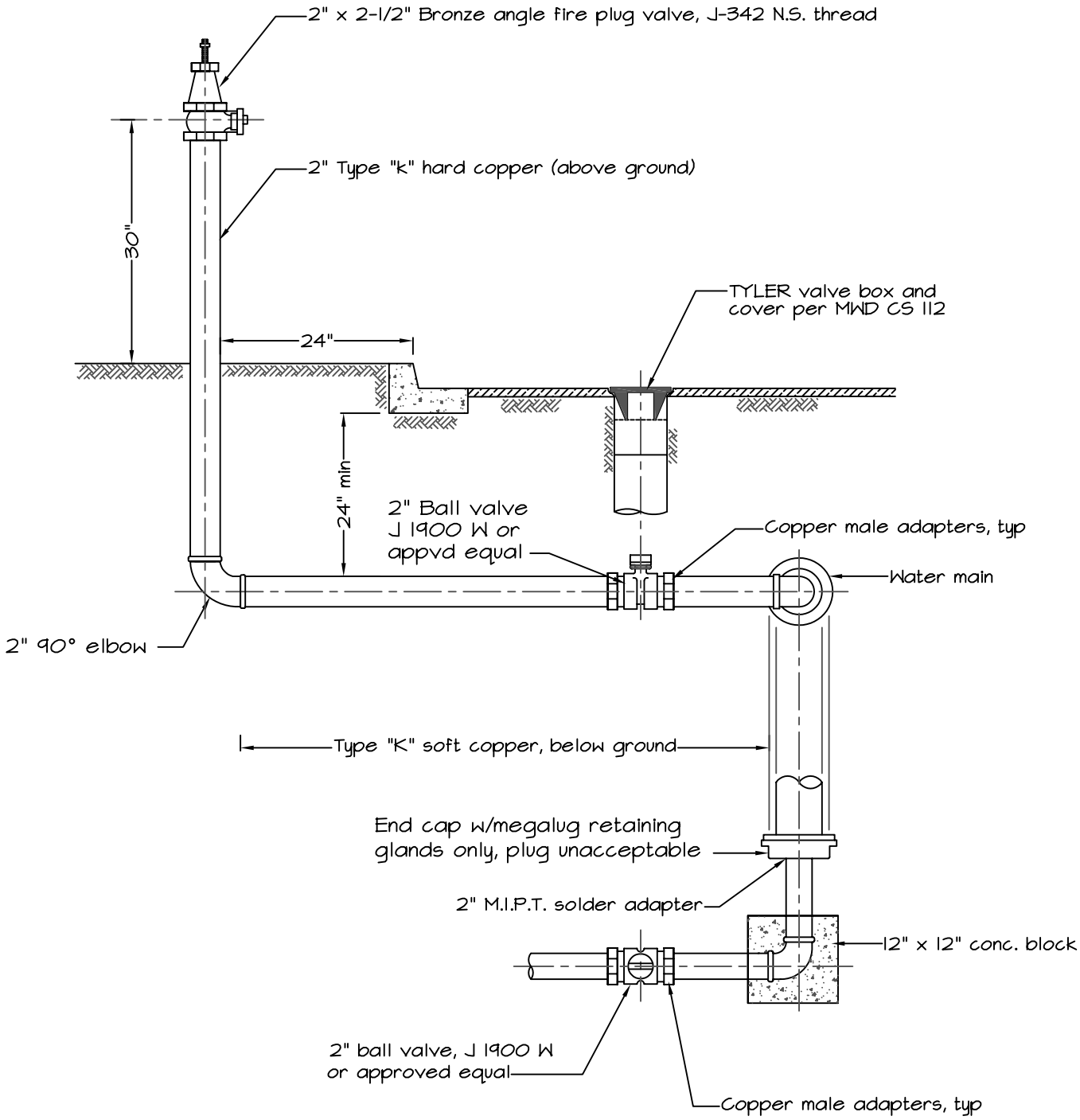


General Notes:

1. Combined air & vacuum valve shall be 2" A.R.I. Model D-040 only.
2. Air Valve Enclosure shall be Pipeline Products Part # VCAS-1424 Sandstone colored.

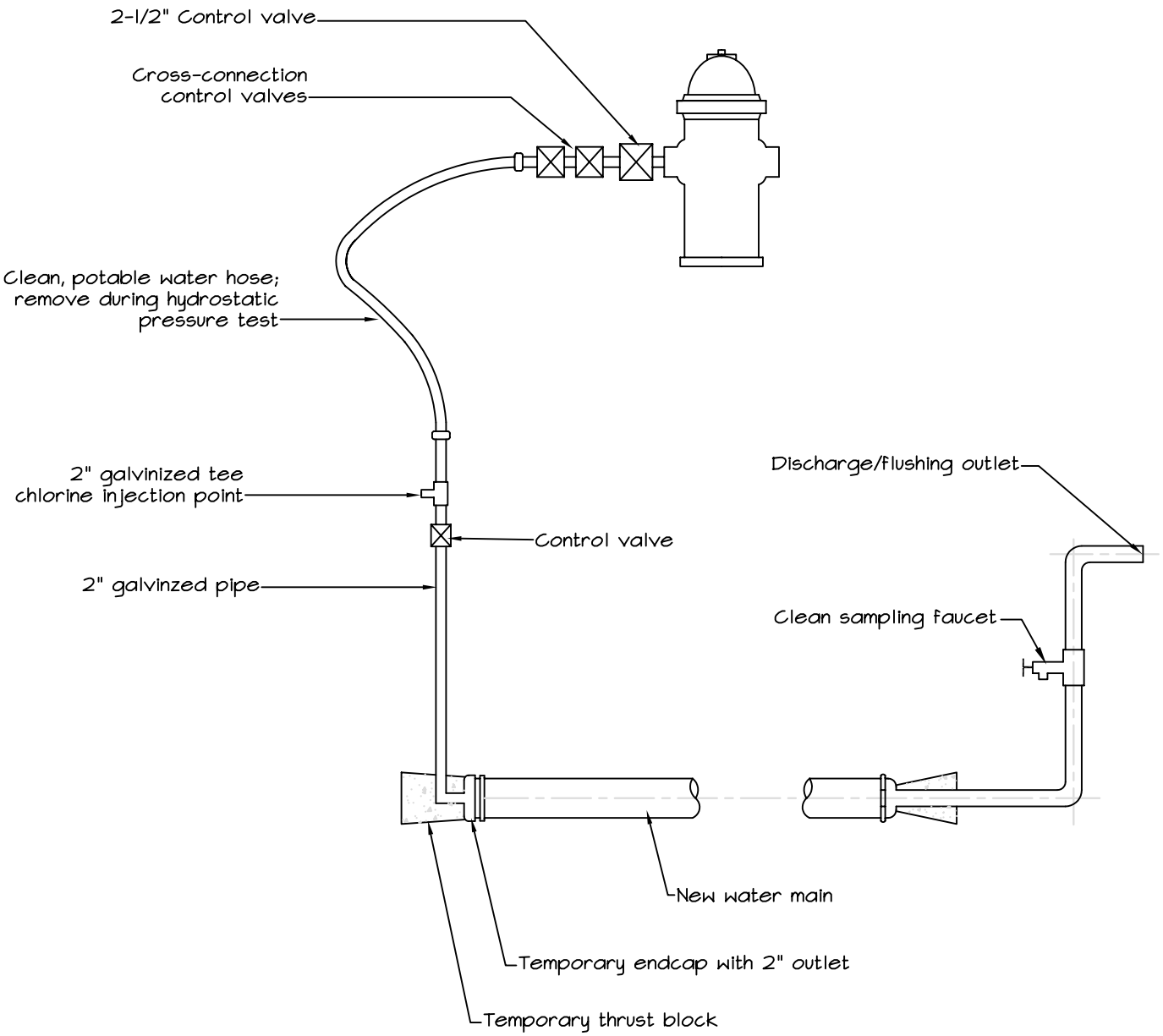
AIR AND VACUUM RELEASE VALVE (2")

FEB 2020	MWD CONSTRUCTION STANDARD DRAWING	CS 107



FLUSH LINE

OCT 2006	MWD CONSTRUCTION STANDARD DRAWING	CS 108

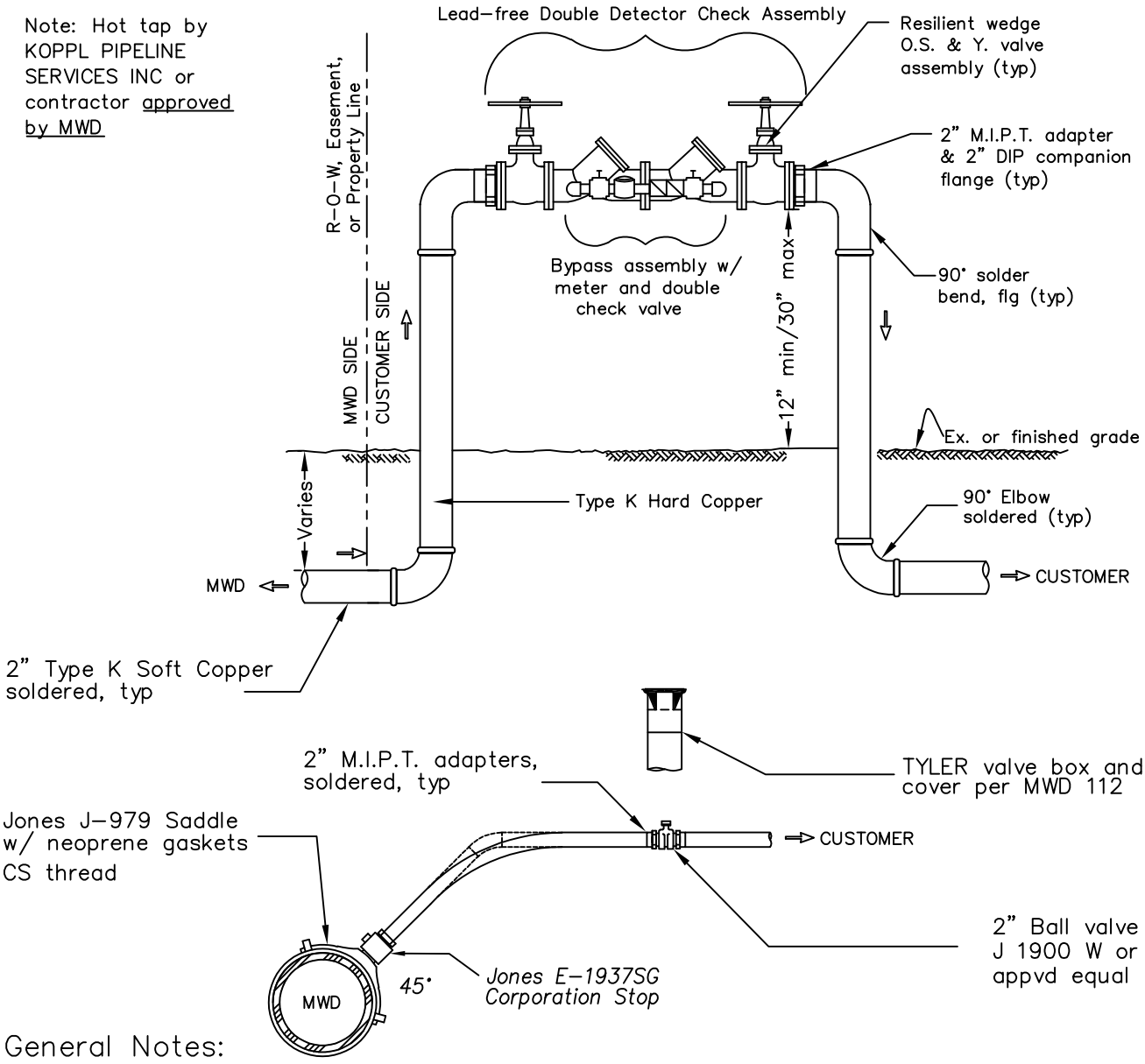


General Notes:

1. Alternate layouts require approval by MWD.

DISINFECTION LAYOUT FOR NEW WATER MAINS

OCT 2006	MWD CONSTRUCTION STANDARD DRAWING	CS 109

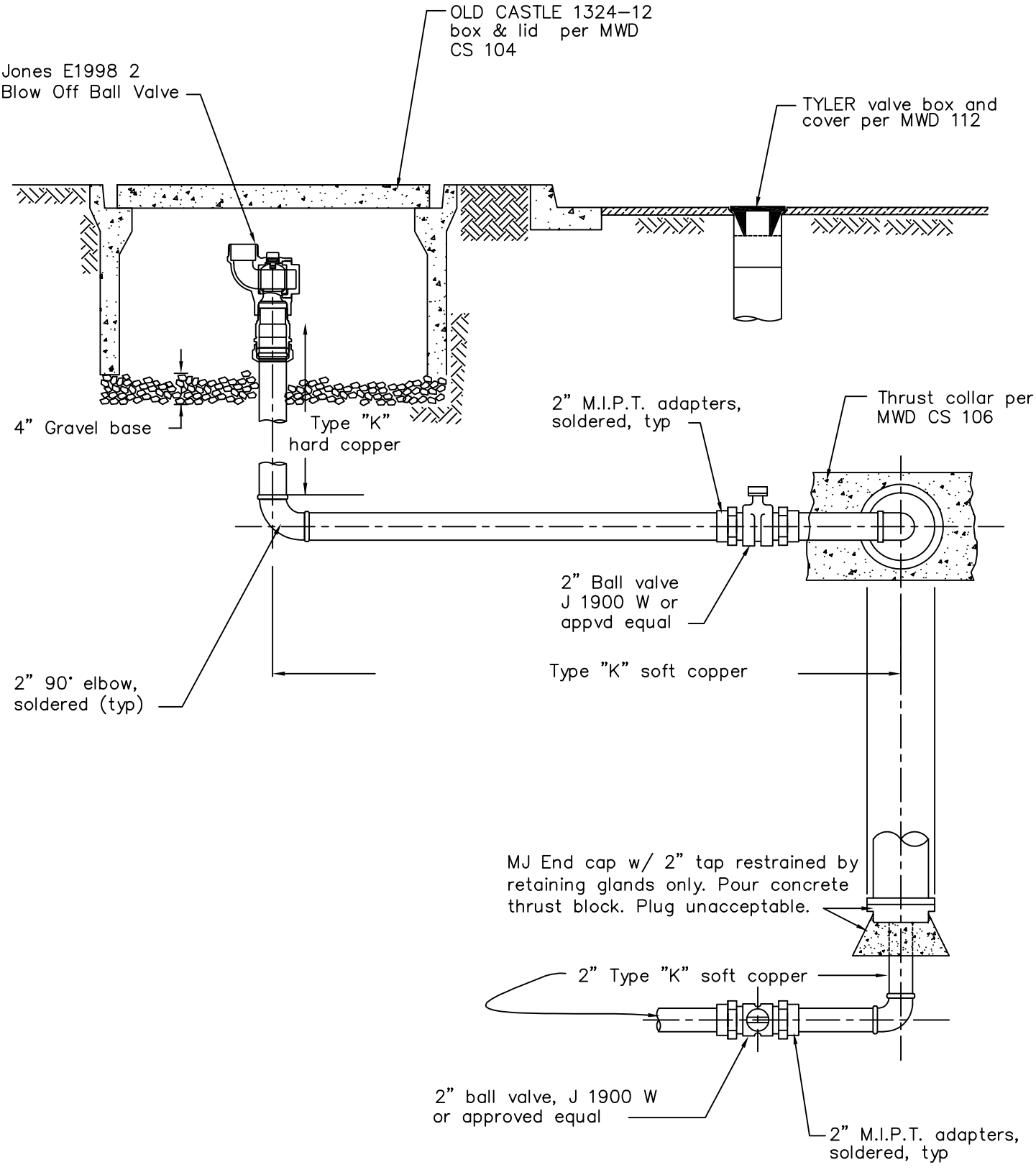


General Notes:

1. The double detector check assembly shall be in accordance with the University of Southern California Foundation for Cross–Connection Control's most current List of Approved Backflow Assemblies , AWWA C510–97, and approved by MWD prior to installation.
2. All new & replacement assemblies on potable water service lines shall be lead–free in accordance with California Health & Safety Code 116875.
3. Location of assembly to be approved by MWD prior to installation.
4. There shall be no connections between the District water main & the backflow assembly.
5. Assembly shall be horizontal and level unless approved for other orientations and approved by MWD prior to installation.
6. Backflow assembly to be tested and approved by a certified tester. No water shall be supplied to the fireline, except for backflow testing purposes, until a satisfactorily completed backflow test report is received at the Montecito Water District office (583 San Ysidro Road, Montecito).
7. Maintain minimum 12–inch horizontal and vertical clearance from any obstructions.
8. James Jones Co. designations are used to identify fittings. Similar fittings from other manufacturers may be approved.

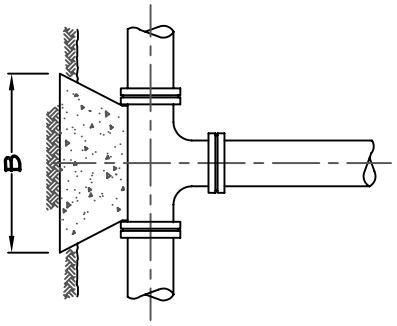
DOUBLE DETECTOR CHECK BACKFLOW ASSEMBLY FOR 2" FIRELINE

OCT 2024	MWD CONSTRUCTION STANDARD DRAWING	CS 110

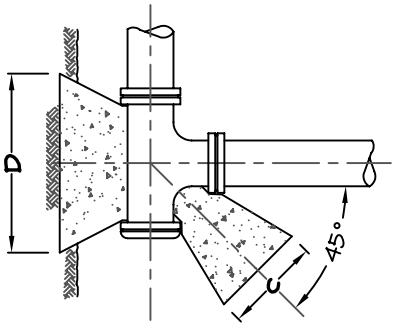


END DRAIN

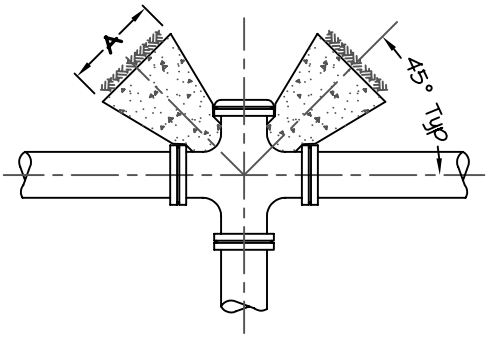
SEP 2021	MWD CONSTRUCTION STANDARD DRAWING	CS 111



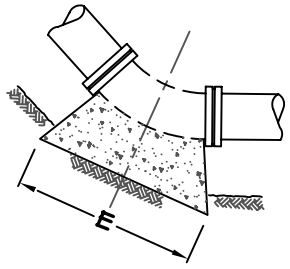
TEE



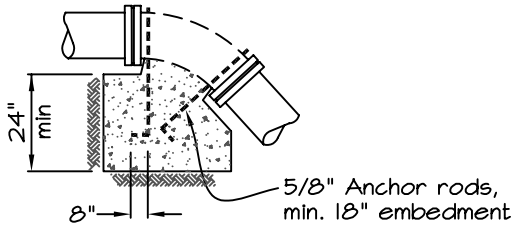
TEE (One End Plugged)



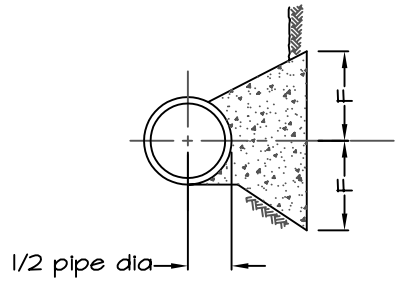
CROSS (One End Plugged)



BEND



VERTICAL BEND



THRUST BLOCK
TYPICAL SECTION

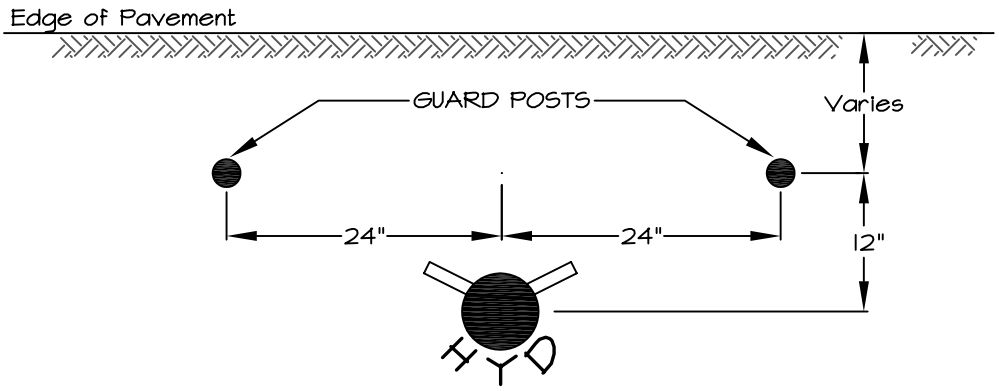
General Notes:

1. Thrust blocks to be poured against firm undisturbed native soil.
2. Concrete mix to be 5 sack.
3. Concrete poured against the pipe fitting must not extend beyond the joints.
4. Dimensions shown below are given in inches except as notes.

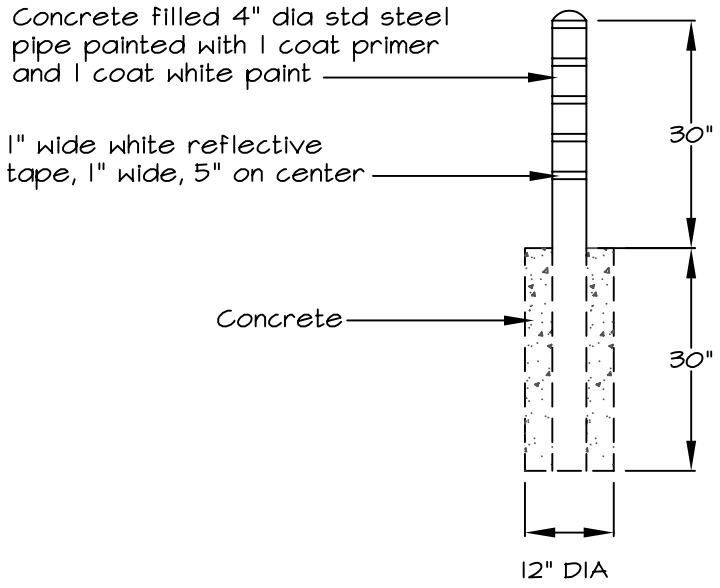
Main Size (In)	Main Pressure (psi)	Crosses & Tees					Horizontal Bends								Required Cubic Yards		
							90°		45°		22-1/2°		11-1/4°				
		F	A	B	C	D	F	E	F	E	F	E	F	E	45°	22-1/2°	11-1/4°
4	0-150	5	12	12	12	18	5	12	5	12	5	12	5	12	0.4	0.2	0.2
4	150-300	6	12	12	18	24	6	18	5	12	5	12	5	12	0.8	0.4	0.2
6	0-150	6	18	18	18	30	6	18	6	12	6	12	6	12	0.9	0.5	0.3
6	150-300	9	12	18	24	36	9	24	9	18	6	12	6	12	1.8	1.0	0.5
8	0-150	9	12	18	24	36	9	24	6	18	6	12	6	12	1.5	0.8	0.4
8	150-300	12	18	24	36	48	12	36	9	24	9	18	6	12	3.0	1.6	0.8
10	0-150	12	18	18	30	36	12	30	9	24	6	18	6	12	2.3	1.2	0.6
10	150-300	15	24	30	42	60	15	42	12	30	9	24	6	18	4.6	2.4	1.2
12	0-150	12	18	30	36	54	12	36	12	24	9	18	6	12	3.3	1.7	0.8
12	150-300	18	24	36	48	72	18	48	15	36	12	24	9	18	6.6	3.4	1.7

CONCRETE THRUST BLOCK

OCT 2006	MWD CONSTRUCTION STANDARD DRAWING	CS 113



PLAN VIEW



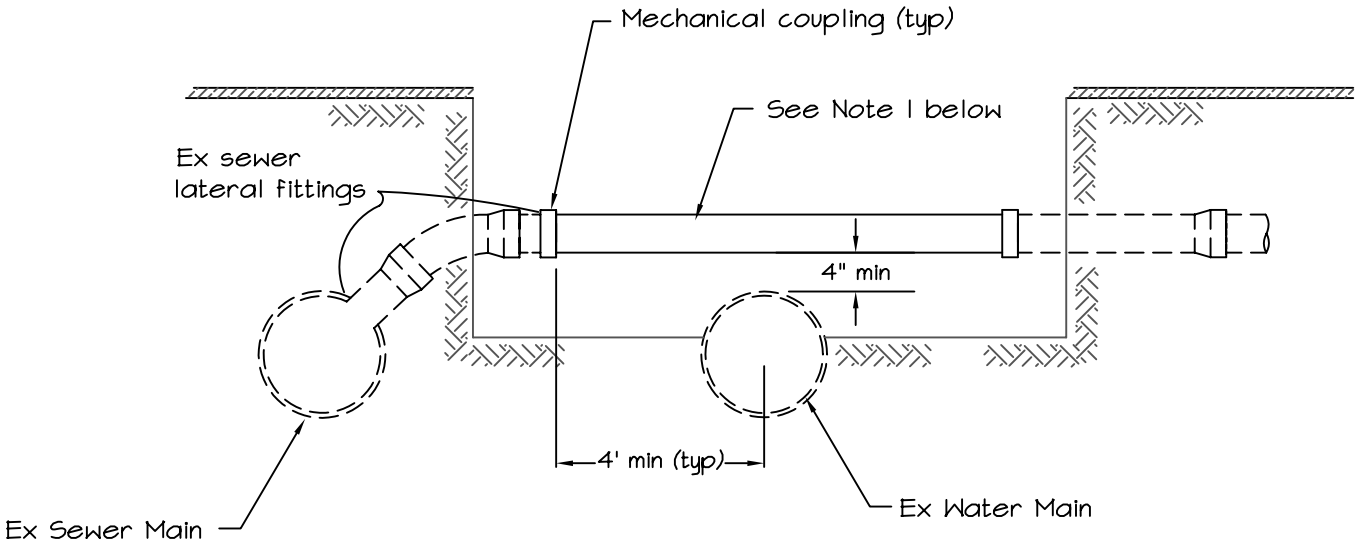
SECTION VIEW

General Notes:

1. Guard posts shall be installed plumb.
2. Concrete shall be placed against firm undisturbed native soil and be thoroughly consolidated.
3. Any variance to the guard post layout to conform to conditions other than shown must be approved by MWD prior to installation.

FIRE HYDRANT GUARD POST

OCT 2006	MWD CONSTRUCTION STANDARD DRAWING	CS 114

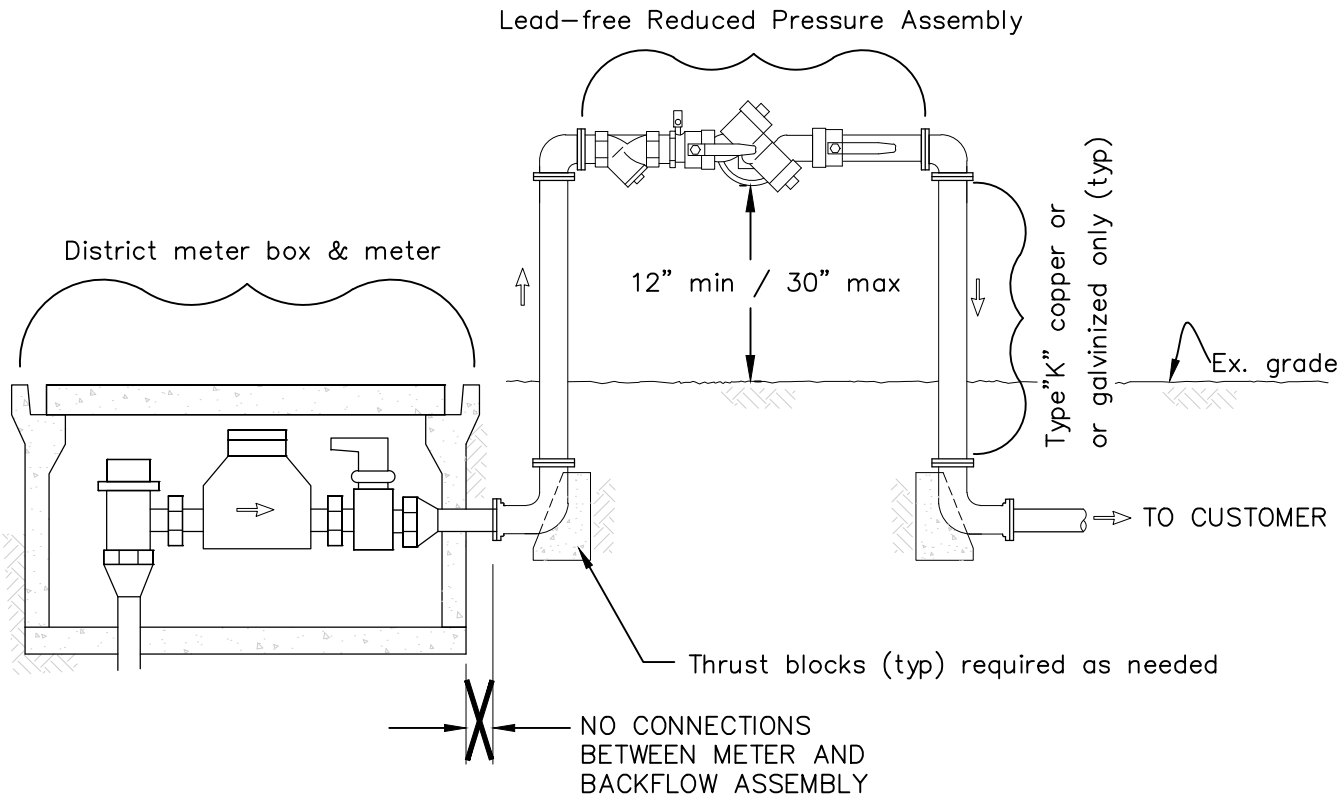


General Notes:

1. In accordance with the California State Department of Health Services Criteria for the Separation of Mains and Sanitary Sewers, sanitary house laterals that cross above a pressure water main shall be constructed of a continuous section of DIP, Class 200 plastic, reinforced concrete pressure pipe or any sewer pipe within a continuous sleeve. The continuous section shall be a mininum of 4' from each edge of the existing water main.
2. This standard is the minimum requirement and no lesser variance will be approved by MWD.
3. Sewer laterals shall maintain 2% minimum slope.
4. Backfill and replace pavement per MWD standard specifications for the installation of water mains and shall conform to specifications of other entities having jurisdiction.
5. Mechanical compression coupling shall be Caulder Coupling or approved equal.

NEW OR REPAIR OF SEWER LATERAL OVER WATER MAIN

OCT 2006	MWD CONSTRUCTION STANDARD DRAWING	CS 116

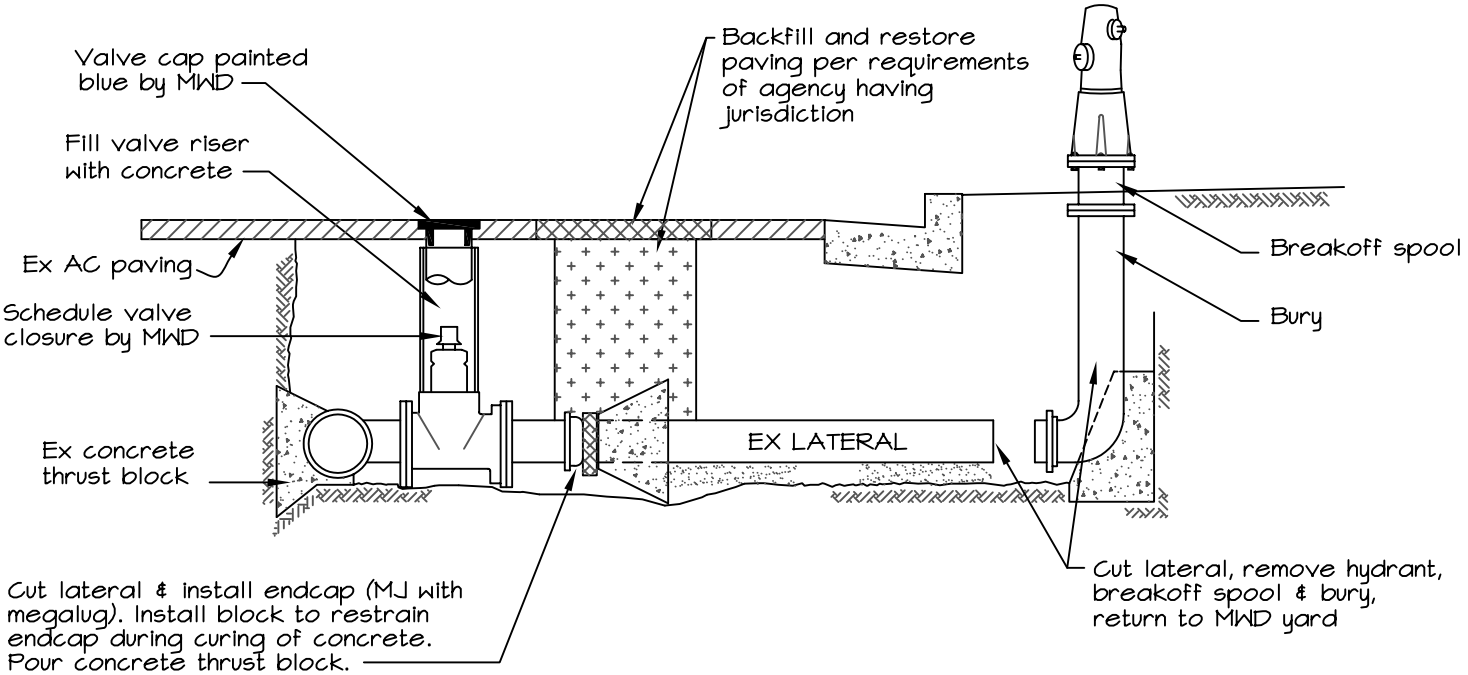


General Notes:

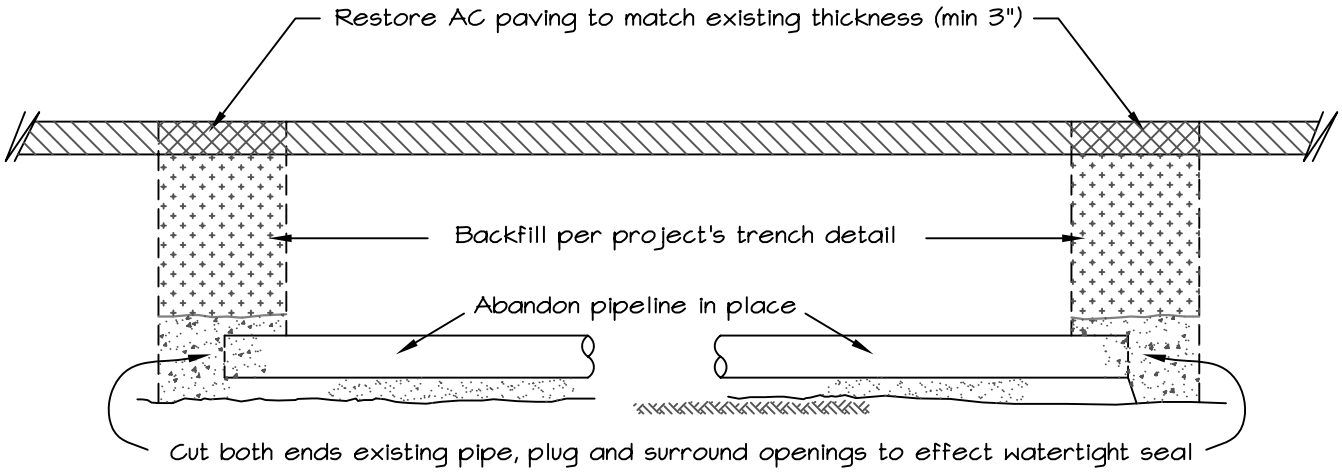
1. The reduced pressure assembly shall be in accordance with the University of Southern California Foundation for Cross–Connection Control's most current "List of Approved Backflow Assemblies", AWWA C511–17, and pre–approved by MWD prior to installation.
2. All new & replacement assemblies on potable water service lines shall be lead–free in accordance with California Health & Safety Code 116875.
3. Location of assembly to be at District meter. Exceptions to be approved by MWD prior to installation.
4. There shall be no connections between the District meter and the backflow assembly.
5. Assembly shall be horizontal and level unless approved for other orientations and pre–approved by MWD prior to installation.
6. Thrust blocks to be per MWD CS 113.
7. Backflow assembly to be tested and approved by a certified tester. MWD meter shall remain locked, except for backflow testing purposes, until a satisfactorily completed backflow test report is received at the Montecito Water District office (583 San Ysidro Road, Montecito).
8. Maintain minimum 12–inch clearance from any structure.
9. Pipe supports with concrete footings (not shown) required as needed.

REDUCED PRESSURE BACKFLOW ASSEMBLY FOR METER PROTECTION

JUNE 2019	MWD CONSTRUCTION STANDARD DRAWING	CS 117



VALVE & FIRE HYDRANT

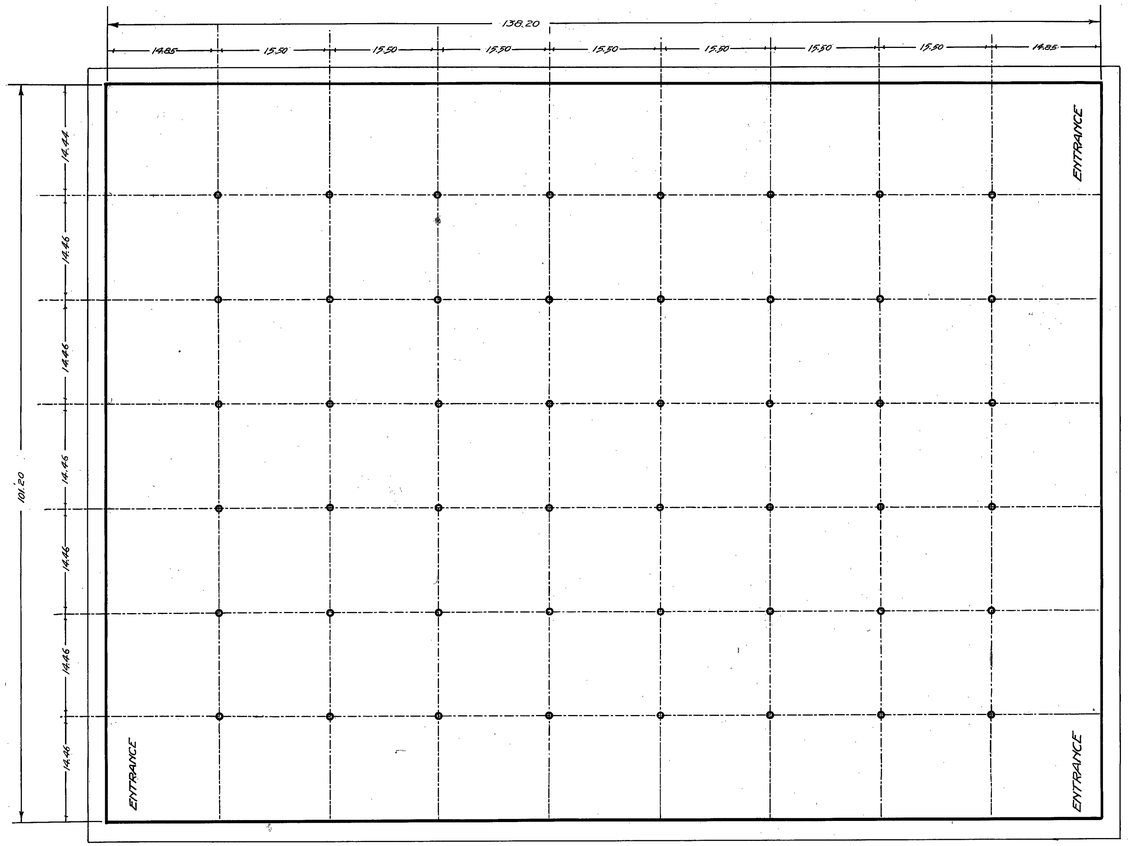


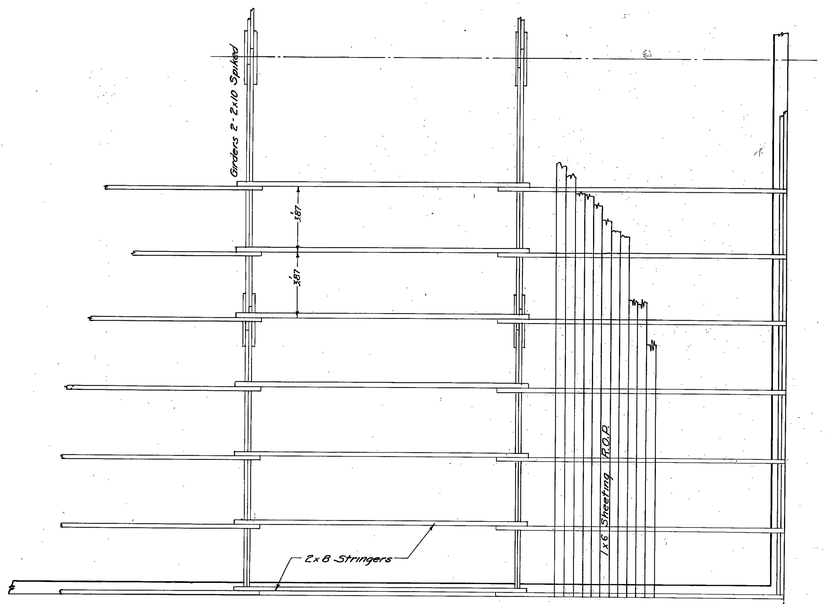
WATER MAIN

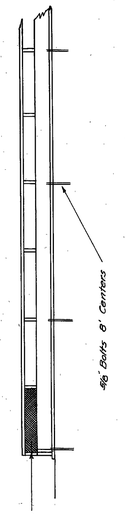
ABANDONMENT OF FACILITIES

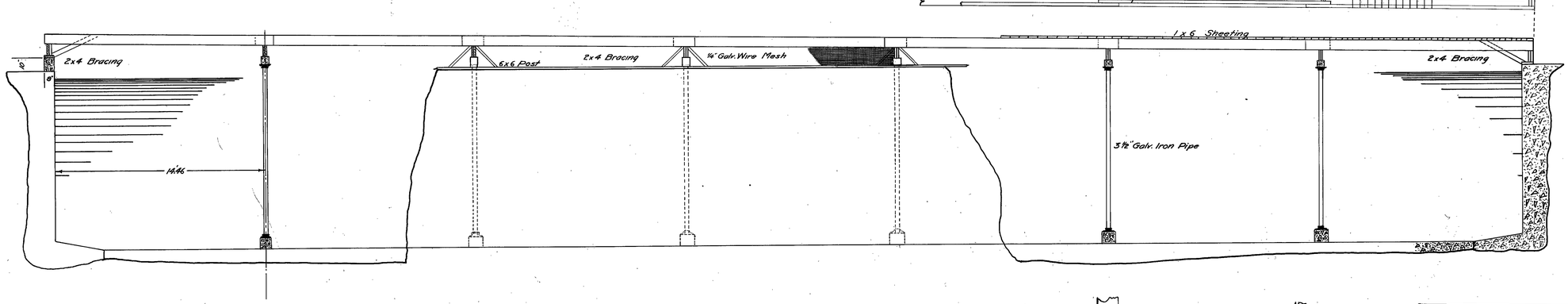
OCT 2006	MWD CONSTRUCTION STANDARD DRAWING	CS 120

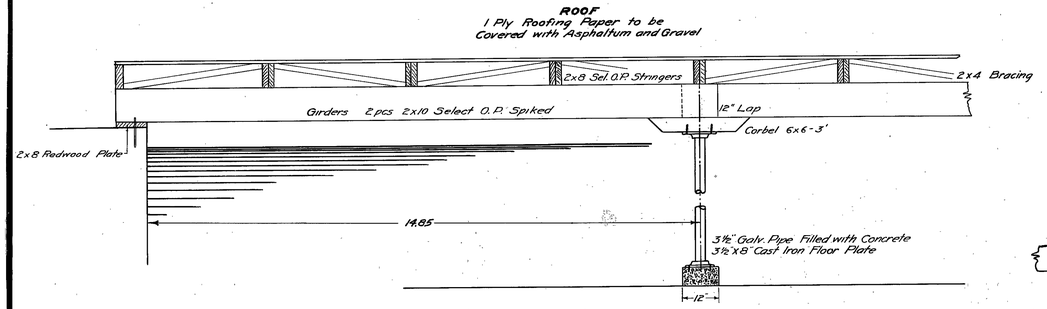
APPENDIX D
RECORD DRAWINGS

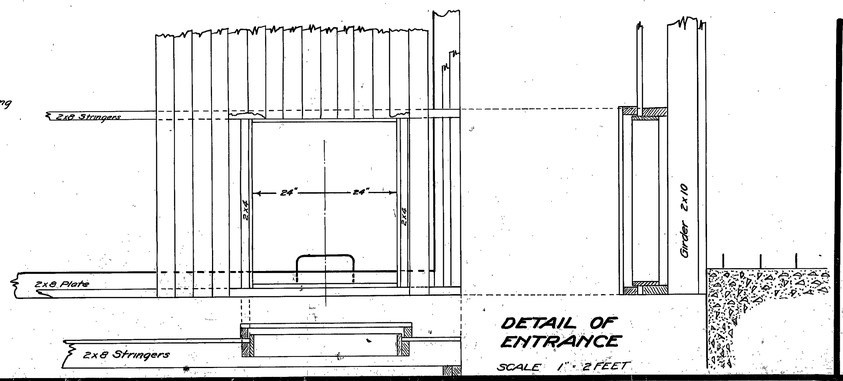












DETAIL OF ENTRANCE
SCALE 1" = 2 FEET

PARK LANE RESERVOIR

CARPENTER RESERVOIR

MONTECITO COUNTY WATER DISTRICT

LEEDS & BARNARD, CONSULTING ENGINEERS — CARL WYANT, RESIDENT ENGINEER

DRAWN BY D.Smith

APPROVED Nov 30th 1924

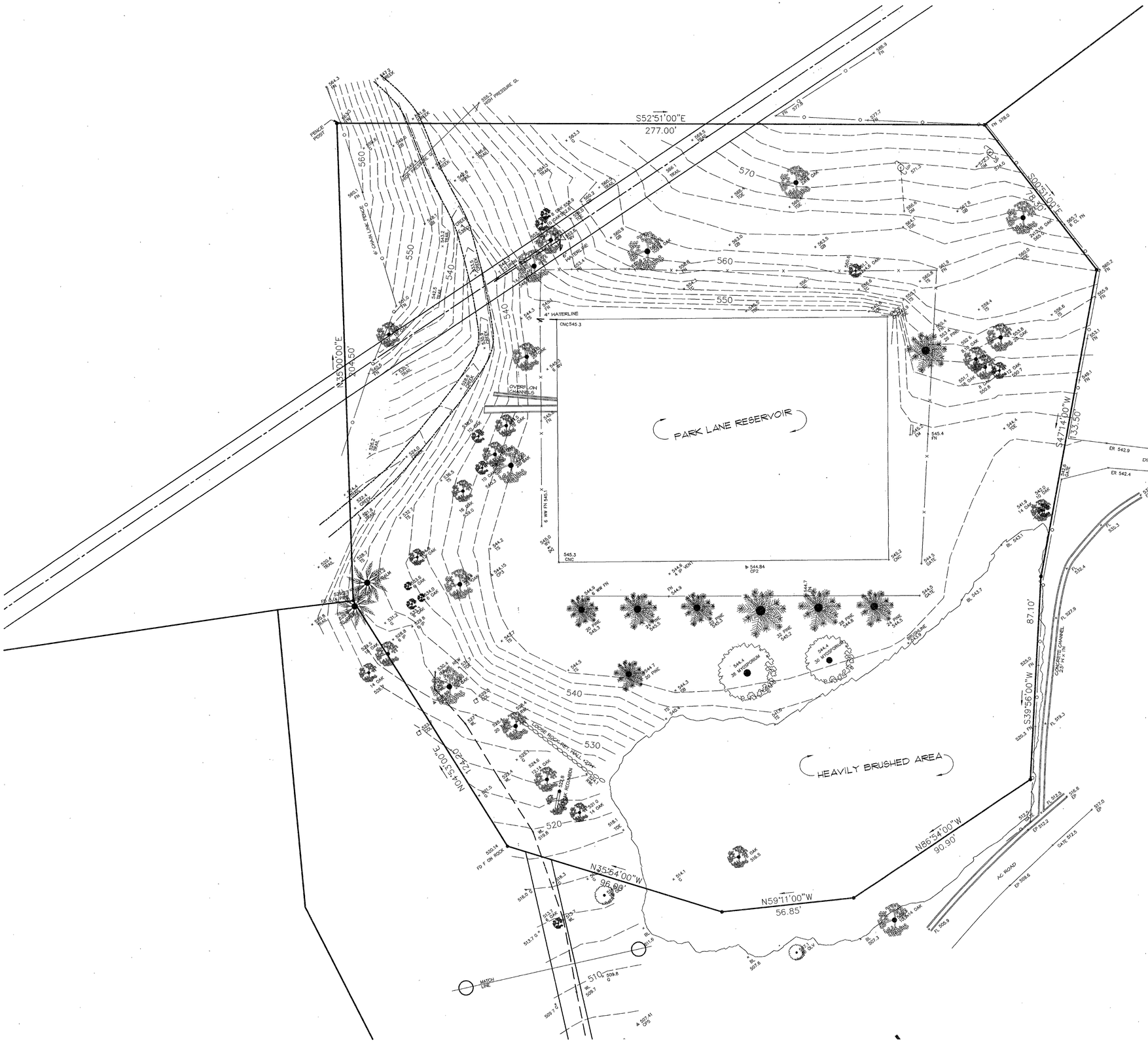
Carl Wyant
RESIDENT ENGINEER

APPROVED Dec. 4 1924

LEEDS & BARNARD
CONSULTING ENGINEERS

BY Chas. T. Leeds

B26



SURVEY NOTES

AC	ASPHALT CONCRETE
ACA	ACACIA TREE
AVO	AVOCADO
BL	BRUSH LINE
CNC	CONCRETE
CP	CONTROL POINT
CRB	CURB
DI	DROP INLET
DM	DEADMAN
DW	DRIVEWAY
EP	EDGE OF PAVEMENT
ER	EDGE OF ROAD
EVLT	ELECTRIC VAULT
FD	FOUND
FG	FINISH GRADE
FL	FLOW LINE
FN	FENCE
G	GRADE
GB	GRADE BREAK
GM	GAS METER
IP	IRON PIPE
IVLT	IRRIGATION VAULT
OLV	OLIVE TREE
RWL	RETAINING WALL
TC	TOP OF CUT
TR	TREE
TS	TOP OF SLOPE
TOE	TOE OF SLOPE
TS	TOP OF SLOPE
SMH	SEWER MANHOLE
UP	UTILITY POLE
WL	WATER LINE
WM	WATER METER
WV	WATER VALVE

NOTE: DRIPLINES ARE NOT PLOTTED

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DAVIS LAND SURVEYING
comprehensive land surveying and topographic consulting
44 HELENA AVENUE
SANTA BARBARA, CALIFORNIA 93101
L.S.5742 (805)564-8756

PARK LANE RESERVOIR

PARTIAL TOPOGRAPHIC SURVEY

SURVEY NOTES

1. BOUNDARY DATA & EASEMENTS PER O.R. BK.5, PG.137 & RS. BK.31, PG.27
2. BENCHMARK ELEVATION OF 412.1' DERIVED AT SEWER MANHOLE LOCATED AT PARK LN. & MOUNTAIN DR. PER COUNTY FLOOD CONTROL AERIAL (NSVD 29)

Drawn By	JKP
Field Work Preformed	3-1-00
Date Drawn	3-7-00
Scale	1" = 20'
Print Date	
Drawing Name	MWD20.dwg
Index No.	3-1-00

MWD20a.dwg 12/12/01 10:10:40 AM AM PST

C18

APPENDIX E

MITIGATION MONITORING AND REPORTING PROGRAM



Reservoir Retrofit and Replacement Project

Mitigation Monitoring and Reporting Program

prepared by

Montecito Water District
583 San Ysidro Road
Santa Barbara, California 93108
Contact: Adam Kanold, Assistant General Manager/Engineering Manager

prepared with the assistance of

Rincon Consultants, Inc.
209 East Victoria Street
Santa Barbara, California 93101

July 2021

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
rinconconsultants.com

Mitigation Monitoring and Reporting Program

CEQA requires that a reporting or monitoring program be adopted for the conditions of project approval that are necessary to mitigate or avoid significant effects on the environment (Public Resources Code 21081.6). This mitigation monitoring and reporting program is intended to track and ensure compliance with adopted mitigation measures during the project implementation phase. For each mitigation measure recommended in the Final Initial Study-Mitigated Negative Declaration for the Montecito Water District (District) Reservoir Retrofit and Replacement Project, specifications are made herein that identify the action required, the monitoring that must occur, and the agency or department responsible for oversight.

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification Initial	Compliance Verification Date	Compliance Verification Comments
Air Quality							
AQ-1: Fugitive Dust Control Measures							
The following standard SBCAPCD fugitive dust control measures shall be implemented during project construction activities: ▪ During construction, water trucks or sprinkler systems shall be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the site and from exceeding SBCAPCD's limit of 20 percent opacity for greater than three minutes in any 30 minute period. At a minimum, this should include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency shall be required whenever the wind speed exceeds 15 miles per hour (mph). Reclaimed water shall be used whenever practicable. However, reclaimed water shall not be used in or around crops for human consumption. ▪ The amount of disturbed area shall be minimized. ▪ On-site vehicle speeds shall be no greater than 15 mph when traveling on unpaved surfaces. ▪ A track-out prevention device shall be installed and operated where vehicles enter and exit unpaved roads onto paved streets. The track-out prevention device can include any device or combination of devices that are effective at preventing track out of dirt such as gravel pads, pipe-grid track-out control devices, rumble strips, or wheel washing systems.	Include fugitive dust control measures in construction contractor specifications, as applicable	Prior to the issuance of construction bid documents	Once	Montecito Water District			
	Field verify compliance with fugitive dust control measures	During construction	Periodically				

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Com-pliance Verifi-cation Initial	Com-pliance Verifi-cation Date	Com-pliance Verifi-cation Comments
▪ If stockpiling of material is involved, soil stockpiled for more than one day shall be covered, kept moist, or treated with soil binders to prevent dust generation. ▪ After clearing, grading, earth moving or excavation is completed, the disturbed area shall be treated by watering, or using roll-compaction, or revegetating, or by spreading soil binders until the area is paved or otherwise developed so that dust generation will not occur. All driveways and sidewalks to be paved/surfaced shall be completed as soon as practicable. ▪ The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off-site. Their duties shall include holiday and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the SBCAPCD prior to grading/building permit issuance and/or map clearance. ▪ The project contractor(s) shall comply with SBCAPCD Rule 345: Control of Fugitive Dust from Construction and Demolition Activities, including all applicable standards and measures therein.							

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification Initial	Compliance Verification Date	Compliance Verification Comments
Biological Resources							
BIO-1: Worker Environmental Awareness Program							
Prior to initiation of all construction activities (including staging and mobilization), all personnel associated with project construction shall attend a Worker Environmental Awareness Program (WEAP) training, conducted by a qualified biologist, to assist workers in recognizing special status biological resources which may occur in the study area. This training will include information about nesting birds and the special status species potentially occurring in the study area. The specifics of this program shall include identification of special status species and habitats, a description of the regulatory status and general ecological characteristics of special status resources, and review of the limits of construction and measures required to avoid and minimize impacts to biological resources within the work area. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employees, and other personnel involved with construction of the project. All employees shall sign a form provided by the trainer documenting they have attended the WEAP and understand the information presented to them. The crew foreman shall be responsible for ensuring crew members adhere to the guidelines and restrictions designed to avoid impacts to special status species. If new construction personnel are added to the project, the crew foreman shall confirm the new personnel receive the WEAP training before starting work. The subsequent	Retain a qualified biologist to conduct a Worker Environmental Awareness Program training and review documentation of training	Prior to initiation of all construction activities (including staging and mobilization)	Once	Montecito Water District			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification Initial	Compliance Verification Date	Compliance Verification Comments
training of personnel can include a video recording of the initial training and/or the use of written materials rather than in-person training by a biologist.							
BIO-2: Sensitive Habitat Fencing							
Prior to project mobilization, where the project is adjacent to native habitat (i.e., environmentally sensitive habitat [ESH], riparian habitat, sensitive natural communities); temporary construction fencing shall be erected by the contractor at the edge of the temporary construction area to avoid impacts to the habitat throughout the duration of construction. If complete avoidance is not feasible, impacts shall be minimized as described in Mitigation Measure BIO-3.	Field verify erection of temporary construction fencing around ESH	Prior to project mobilization and during construction	Periodically	Montecito Water District			
BIO-3: Minimization of Sensitive Habitat Impacts							
If encroachment into sensitive natural communities cannot be avoided, areas of temporary disturbance within these habitats shall be minimized to the extent practicable. Staging and parking areas shall be limited to sites which are unvegetated and/or previously disturbed areas comprising ruderal vegetation or non-native annual grasslands, ornamental landscaping, and paved/graded areas, to the extent practicable. If removal of sensitive vegetation is necessary during excavation and/or grading, the topsoil (top six inches) shall be salvaged and stored in temporary stockpiles and replaced in the same area following completion of excavation/grading activities. If removal of non-native invasive vegetation is necessary during excavation and/or grading, the	Include minimization measures in construction contractor specifications, as applicable	Prior to the issuance of construction bid documents	Once	Montecito Water District			
	Field verify compliance with minimization measures	During construction, if temporary disturbance of sensitive natural communities cannot be avoided	As needed				
	Field verify compliance with topsoil salvage, storage, and replacement requirements	During construction, if removal of sensitive vegetation is necessary	As needed				

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification Initial	Compliance Verification Date	Compliance Verification Comments
plant material and topsoil shall be separated and exported off-site to a landfill or similar disposal facility. Temporary stockpiles with invasive species shall be stored away from salvaged sensitive natural communities and separate from sensitive vegetation topsoil. If revegetation of the site is necessary for soil stabilization and/or fugitive dust control, the revegetation plant palette shall be free of invasive plants listed in the California Invasive Plant Council Inventory.							
BIO-4: Construction Material Storage to Prevent Leaks and Spills							
Materials and equipment (when not in use) shall be stored on impervious surfaces or plastic ground covers to prevent spills or leakage. Material storage and material/spoils from project activities shall be located and stored 100 feet from waterways. Adequate spill prevention and response equipment shall be maintained on site and readily available to implement to minimize impacts to the aquatic and marine environments. Construction materials and spoils shall be protected from stormwater runoff using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate.	Include construction material storage measures in construction contractor specifications, as applicable	Prior to the issuance of construction bid documents	Once	Montecito Water District			
	Field verify compliance with construction material storage measures	During construction	Periodically				

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification Initial	Compliance Verification Date	Compliance Verification Comments
BIO-5: Construction Best Management Practices							
To avoid and/or minimize potential direct and indirect impacts to special status species and potentially jurisdictional waters and water quality outside of the project area, the following Best Management Practices (BMPs) shall be implemented: a. Prior to project mobilization, all limits of construction work adjacent to potentially jurisdictional waters shall be clearly delineated with orange construction fencing or similar highly visible material and maintained throughout the duration of construction. b. Off-site tracking of loose construction and landscape materials shall be prevented by implementing street sweeping, vacuuming, and rumble plates, as appropriate. c. Site washout areas shall be at least 100 feet from a storm drain, open ditch, or surface water and prevent runoff flows from such activities from entering receiving water bodies. d. All vehicles and equipment shall be in good working condition and free of leaks. The contractor shall prevent oil, petroleum products, or any other pollutants from contaminating the soil or entering a watercourse (dry or otherwise). When vehicles or equipment are stationary, mats or drip pans shall be placed below vehicles to contain fluid leaks.	Include BMPs in construction contractor specifications, as applicable	Prior to the issuance of construction bid documents	Once	Montecito Water District			
	Field verify compliance with BMPs	During construction	Periodically				

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification Initial	Compliance Verification Date	Compliance Verification Comments
e. Fugitive dust from ground disturbance activities shall be minimized using water trucks and covering of soil stockpiles. f. A speed limit of 15 mph for construction vehicles shall be implemented on unpaved non-public roads. g. All food related trash shall be disposed of in closed containers and removed from the project site each day during the construction period. Construction personnel shall not feed or otherwise attract wildlife to the construction area. At project completion, all project-generated debris, vehicles, building materials, and rubbish shall be removed from the project site. h. Pets and firearms shall not be allowed on the project sites during construction.							
BIO-6: Arborist Study							
Prior to the start of construction, an Arborist Study should be conducted for protected trees with any portion of their dripline within the project area and a 20-foot buffer. Protected trees shall be defined as native trees that are six inches or greater in diameter, as is standard in the county.[1] The study should plot the location of protected trees and identify the species. The Arborist Report shall be prepared by a Certified Arborist and include, at minimum, the following: ▪ An inventory of all trees containing a canopy drip line within 20 feet of the project area, as feasible without trespassing on private lands. Inventory data shall record, at minimum: diameter at breast height (DBH), height, canopy spread, and overall health rating	Retain a Certified Arborist to complete an Arborist Study	Prior to the start of construction	Once	Montecito Water District			
	Review and approve Arborist Study	Prior to the start of tree-disturbing construction activities	Once				

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification Initial	Compliance Verification Date	Compliance Verification Comments
▪ Description of proposed site development activities including, but not limited to, excavation and grading, any tree trimming for access, and staging/parking. ▪ Tree protection recommendations which would at a minimum include a site plan depicting the project area, the tree protection zone (TPZ; six feet from the dripline, as is typical in the county[1]), and project encroachment boundaries; tree protection fencing, activities prohibited/permitted within the tree protective zone, and standard measures for protecting trees during construction. The Arborist Report shall be submitted to the District for approval prior to the start of any tree-disturbing construction activities.							
BIO-7: Pre-Construction Nesting Bird Surveys							
To avoid disturbance of nesting and special status birds, including raptor species, protected by the MBTA and CFGC 3503, activities related to the project including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season for migratory birds (January 1 through September 1), if practicable. If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than seven days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the project footprint, including a 100-foot buffer (300 feet for raptors), and in inaccessible areas (e.g., private lands) from afar	Retain a qualified biologist to conduct a pre-construction nesting bird survey and review survey results	Within seven days prior to initiation of ground disturbance and vegetation removal activities	Once per reservoir site	Montecito Water District			
	Field verify compliance with any avoidance requirements, as needed	During initial ground disturbance and vegetation removal activities, as needed, until nests are inactive	Once per reservoir site				

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification Initial	Compliance Verification Date	Compliance Verification Comments
using binoculars to the extent practicable. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California coastal communities. If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground-disturbing activities shall occur inside this buffer until the avian biologist has confirmed breeding/nesting is completed, and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.							
BIO-8: Pre-Construction Presence/Absence Survey for Special Status Wildlife Species							
Within seven days prior to the commencement of ground disturbing activities, a qualified biologist shall be retained to perform a survey for coast range newt, coast patch-nosed snake, and northern California legless lizard in natural habitat areas within the project footprint and a 50-foot buffer to determine the presence/absence of these species. The pre-construction survey shall be conducted on foot within the project footprint and 50-foot buffer. Raking shall be conducted in areas of sandy, loose, and moist soils under sparse	Retain a qualified biologist to perform a pre-construction special status species survey	Within seven days prior to the commencement of ground-disturbing activities	Once per reservoir site as needed	Montecito Water District			
	Field verify implementation of avoidance measures	During construction	As needed, if special status species are identified				
	Review pre-construction survey technical memorandum	Prior to project completion	Once				

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification Initial	Compliance Verification Date	Compliance Verification Comments
vegetation/leaf litter to determine the presence/absence of northern California legless lizard. The qualified biologist shall temporarily move any identified special status wildlife species outside of the construction area, and temporary barriers shall be placed around the construction area, as practicable, to prevent ingress. Construction shall not proceed until the work area is determined to be free of special status wildlife species. The results of these surveys shall be documented in a technical memorandum.							
BIO-9: Biological Construction Monitoring							
A qualified biological monitor shall be present during initial ground-disturbing activities and vegetation removal to confirm impacts to special status wildlife species are avoided. The monitor shall have the authority to halt construction activities to avoid potential impacts to special status species. The results of biological monitoring shall be documented in daily logs and a technical memorandum at project completion.	Retain qualified biological monitor to monitor for special status species during initial ground-disturbing activities and vegetation removal	Prior to start of initial ground-disturbing activities and vegetation removal	Daily for initial ground-disturbing and vegetation removal activities	Montecito Water District			
	Review biological monitoring technical memorandum	After project completion	Once				
BIO-10: Night Construction and Night Lighting							
Night-time construction should be avoided adjacent to Hot Springs Creek and the four unnamed drainages associated with the Terminal, Hot Springs, Park Lane, Buena Vista, and Bella Vista sites to avoid impacts to special status wildlife in and near these drainages. If construction must occur at night (between dusk and dawn), all lighting will be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties and to reduce impacts on local wildlife.	Avoid night-time construction adjacent to Hot Springs Creek and the four unnamed drainages associated with the Terminal, Hot Springs, Park Lane, Buena Vista, and Bella Vista sites	During construction	As needed	Montecito Water District			
	If night-time construction must occur, field verify that lighting is shielded and directed downward	During construction	Periodically, as needed				

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification Initial	Compliance Verification Date	Compliance Verification Comments
Cultural Resources							
CUL-1: Unanticipated Discovery of Archaeological Resources							
In the event cultural resources are unexpectedly encountered during ground-disturbing activities, work in the immediate area must halt and an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology[2] shall be contacted immediately to evaluate the find. If the discovery proves to be NRHP eligible, additional work such as data recovery excavation and Native American consultation may be warranted to mitigate any adverse effects.	Retain an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology[2]	During ground-disturbing activities, if cultural resource is identified	As needed	Montecito Water District			
	Field verify required evaluation of the identified resource	During ground-disturbing activities, if cultural resource is identified	As needed				
	If discovery is NRHP eligible, complete additional work to mitigate adverse effects, if needed	During ground-disturbing activities, if cultural resource is identified	As needed				
Geology and Soils							
GEO-1: Unanticipated Discovery of Paleontological Resources							
In the event an unanticipated fossil discovery is made during the course of project development, construction activity should be halted in the immediate vicinity of the fossil, and a qualified professional paleontologist should be notified and retained to evaluate the discovery, determine its significance, and determine if additional mitigation or treatment is warranted. Work in the area of the discovery will resume once the find is properly documented and authorization is given to resume construction work. Any significant paleontological resources found during construction monitoring will be prepared, identified, analyzed, and permanently curated in an approved regional museum	Notify and retain a qualified paleontologist	During construction, if paleontological resource is identified	As needed	Montecito Water District			
	Field verify required evaluation of the identified resource	During construction, if paleontological resource is identified	As needed				
	If additional mitigation or treatment is warranted, implement additional measures	During construction, if paleontological resource is identified	As needed				
	Prepare, identify, analyze, and permanently curate significant paleontological resources	During construction, if significant paleontological resource is identified	As needed				

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification Initial	Compliance Verification Date	Compliance Verification Comments
repository under the oversight of the qualified paleontologist.							
Noise							
N-1: Construction Noise Reduction Measures							
The following construction noise reduction measures shall be implemented during project construction activities: ▪ Installation of temporary sound barriers/blankets along each project boundary line adjacent to the nearest single-family receivers, respectively. The temporary barriers/blankets shall have a minimum sound transmission loss of 21 and noise reduction coefficient of 0.75. The temporary barriers/blankets will be of sufficient height to extend from the top of the temporary construction fence and drape on the ground or be sealed at the ground. The temporary barriers/blankets will have grommets along the top edge with exterior grade hooks, and loop fasteners along the vertical edges with overlapping seams, with a minimum overlap of 2 inches ▪ All heavy-duty stationary construction equipment shall be placed so that emitted noise is directed away from the nearest sensitive receivers. ▪ A sign shall be provided at the yard entrance, or other conspicuous location, that includes a 24-hour telephone number for project information, and a procedure where a field engineer/construction manager will respond to and investigate noise complaints and take corrective action, if necessary, in a timely manner. The sign	Include construction noise measures in construction contractor specifications, as applicable	Prior to the issuance of construction bid documents	Once	Montecito Water District			
	Field verify compliance with construction noise reduction measures	During construction	Periodically				
	Retain a noise consultant to conduct noise measurements at the use that registers a complaint	During construction, if noise complaint is registered, in a timely manner	As needed				
	Review letter report of noise monitoring and implement additional feasible construction noise reduction measures	During construction, if noise complaint is registered	As needed				

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification Initial	Compliance Verification Date	Compliance Verification Comments
will have a minimum dimension of 48 inches wide by 24 inches high. The sign will be placed 5 feet above ground level. ▪ If a noise complaint(s) is registered, the contractor will retain a District-approved noise consultant to conduct noise measurements at the use(s) that registered the complaint. The noise measurements will be conducted for a minimum of 1 hour and will include 1-minute intervals. The consultant will prepare a letter report for code enforcement summarizing the measurements, calculation data used in determining impacts, and potential measures to reduce noise levels to the maximum extent feasible. The following measures may also be used to reduce noise levels: ▪ The use of bells, whistles, alarms, and horns shall be restricted to safety warning purposes only. ▪ Noise-reducing enclosures shall be used around stationary noise-generating equipment (e.g., compressors and generators). ▪ Stationary noise-generating equipment shall be located as far from sensitive receivers, as feasible.							

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification Initial	Compliance Verification Date	Compliance Verification Comments
Tribal Cultural Resources							
TCR-1: Cultural Resources Sensitivity Training							
Prior to the start of ground-disturbing activities, an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology[2] shall conduct cultural and tribal cultural resources sensitivity training for all construction workers involved in ground-disturbing activities. A local Native American representative shall participate in the sensitivity training and have the opportunity to distribute information regarding cultural resources and/or protection of cultural resources.	Retain an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology[2] to conduct a Worker's Environmental Awareness Program training, coordinate for a local Native American representative to participate in the training, and review documentation of training	Prior to the start of ground-disturbing activities	Once	Montecito Water District			
TCR-2: Native American Monitoring							
The District shall retain a local Native American representative to observe ground-disturbing activities up to five feet below the ground surface. Ground-disturbing activities include, but are not limited to, clearing/grubbing, excavation, grading, and trenching. If cultural resources are encountered, the local Native American representative shall have the authority to request ground-disturbing activities cease within 50 feet of the discovery. An archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology[2] shall be contacted immediately to document and evaluate the find. Impacts to the find shall be avoided to the extent feasible; methods of avoidance may include, but shall not be limited to, capping or fencing, or project redesign. If necessary, the archaeologist may be required to prepare a treatment plan for archaeological testing in consultation with the local Native American representative. If the	Retain a local native American representative to observe ground-disturbing activities up to five feet below the ground surface	Prior to the start of ground-disturbing activities	Daily for ground-disturbing activities up to five feet below the ground surface	Montecito Water District			
	If needed, field verify required evaluation of the identified resource	During ground-disturbing activities, if cultural resource is identified	As needed				
	If avoidance is infeasible, prepare plan to reduce impacts to less than significant and conduct required consultation, if needed	During ground-disturbing activities, if cultural resource is identified	As needed				

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Com-pliance Verifi-cation Initial	Com-pliance Verifi-cation Date	Com-pliance Verifi-cation Comments
discovery proves to be eligible for the CRHR and cannot be avoided by the project, additional work, such as data recovery excavation, may be warranted to mitigate any significant impacts to historical resources.							

SBCAPCD = Santa Barbara County Air Pollution Control District, mph = miles per hour; WEAP = Worker Environmental Awareness Program; ESH = environmentally sensitive habitat; BMP = Best Management Practice; DBH = diameter at breast height; TPZ = tree protection zone; MBTA = Migratory Bird Treaty Act; CFGC = California Fish and Game Code; NRHP = National Register of Historic Places

[1] Santa Barbara, County of. 2021. Environmental Thresholds and Guidelines Manual. January 2021. Available at: https://www.countyofsb.org/plndev/permitting/environmentalreview.sbc.

[2] National Park Service. 1983. Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines. Available at: http://www.nps.gov/history/local-law-Arch_Standards.htm.