

INVITATION FOR BID

Notice to Prospective Bidders

June 3, 2026

You are invited to review and respond to this Invitation for Bid (IFB) number 10219595 for Cured-In-Place Pipe (CIPP) lining services. The anticipated term of this agreement is four (4) years. In submitting your bid, you must comply with these instructions.

Note that all agreements entered into with the Department of Water Resources, hereinafter referred to as the "State", incorporates, by reference, the State's General Terms and Conditions (GTC) and Contractor Certification Clauses (CCC) that may be viewed and downloaded at the Department of General Services (DGS) website:

<https://www.dgs.ca.gov/OLS/Resources/Page-Content/Office-of-Legal-Services-Resources-List-Folder/Standard-Contract-Language>

If you do not have Internet access, a hard copy can be provided by contacting the person listed below. The CCC package contains clauses and conditions that may apply to your Agreement and to anyone doing business with the State. The Certification will be kept on file in a central location. Inquiries regarding the processing of this bid should be referred to Wesley McCandless via phone (916) 902-7850 or email wesley.mccandless@water.ca.gov. Please note that no verbal information given will be binding upon the State unless such information is issued in writing as an official addendum to this solicitation.

Sincerely,

Wesley McCandless, Contract Specialist

Attachment(s)

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A. Purpose and Description of Services

Contractor will supply material, equipment, and labor to install full segment (access point to access point) Cured-In-Place Pipe (CIPP) linings to rehabilitate culvert pipes and full depth rehabilitation of gate riser manholes, and appurtenances. Culvert pipes and gate riser manholes to be rehabilitated penetrate through the State Plan of Flood Control (SPFC) levees located in the Sacramento River and the San Joaquin River Basins in the Central Valley, California.

B. Bidder Minimum Qualifications

1. Contractor must possess a General Contractor license with the State of California.
2. The Contractor will have a minimum of three (3) years of continuous experience installing CIPP in pipes of a similar size and length as contained in this contract.
3. For the Contractor to be considered qualified, a minimum linear footage of the exact liner proposed must have been successfully installed previously by the Contractor as described below:
 - a. The Contractor will have installed a minimum of 50,000 linear feet of the CIPP liner system proposed for use for pipes less than or equal to 36 inches in diameter.
 - b. The Contractor will have installed a minimum of 10,000 linear feet of the CIPP liner system proposed for use for pipes greater than 36 inches in diameter.
 - c. The Contractor will have installed a minimum of 500 vertical feet of the Riser liner system proposed.
4. Documentation showing the Contractor's experience will be submitted with their bid proposal and include a description of the work performed, the time period of performance, and will include the name, address, and telephone number of the owner, agency, or municipality.
5. The Contractor must be able to design the CIPP liners according to the included specifications in the Scope of Work and in accordance with Appendix X1 of the latest edition of the ASTM F-1216. All calculations will include data that conforms to the requirements of these specifications. The responsibility of the design correctness lies entirely on the Contractor regardless of DWR's review of the design submittals.
6. The Department has determined that Bidders responding to this solicitation must comply with Disabled Veteran Business Enterprise (DVBE) Program participation requirements, which is a minimum of three percent (3.0%) commitment. Bidders must complete and submit the following forms: Attachment VI, Bidder Certification of DVBE Participation (DWR 9526), Attachment VII, DVBE Declaration (DGS PD 843); Attachment VIII, Bidder Declaration (DGS PD 05-105) and DVBE bidder's and/or subcontractor(s)' Department of General Services Office of Small Business and Disabled Veteran Business Enterprise Services (DGS/OSDS) certification(s). ***Failure to fulfill the DVBE requirement will render your bid non-responsive and shall be cause for bid rejection.***

C. Bid Requirements and Information

1. BID KEY ACTION DATES

All bidders must adhere to the following time schedule.

IFB available to prospective bidders on	June 3, 2026
Technical questions must be submitted by	June 17, 2026 at 12:30pm
Answers to technical questions will be disseminated by	June 22, 2026 at 4:30pm
Bids must be received by	July 7, 2026 at 9:00am
Bid opening to be held on	July 7, 2026 at 9:30am
Anticipated start date of agreement is	August 2026

Bid Openings: Sealed bids will be publicly opened and read via a TEAMS link. You may participate using the link provided below.

Topic: Public Bid Opening IFB # 10219595 for cured-in-place pipe (CIPP) services
Time: July 7, 2026 at 9:30am

Join TEAMS Meeting

<https://teams.microsoft.com/meet/255344375053807?p=rA8RvnorsvoXouMwws>

Or by Telephone (audio only):

Dial: +1 916-573-2034,,519934198#

Phone Conference ID: 519 934 198#

*Please note that the bid opening via TEAMS will be visual only with no opportunity for questions and answers.

2. LOCATION WHERE WORK WILL BE PERFORMED:

The Contractor will provide rehabilitation services on approximately 300 culverts and 50 gate riser manholes. The services will be performed in SPFC levees in areas maintained by the Local Maintaining Agencies (LMA) throughout the Central Valley. See Exhibit A, Attachment 2 for maps showing the general locations of the SPFC levees (Project Levees). The pipes will be located within 25 miles of each other for each work order, measured along the levee roads or local roads, whichever is shorter.

3. QUESTIONS AND ANSWERS

Technical questions must be submitted in writing to wesley.mccandless@water.ca.gov and received by the State on or before June 17, 2026 at 12:30pm. The State's representatives will provide answers in writing to all potential bidders by June 22, 2026 at 4:30pm .

4. SUBMISSION OF BID

- a. Bids must be submitted by United States Postal Service (USPS) mail, hand delivery, United Parcel Service (UPS), express mail, or Federal Express.
- i. Bids submitted by USPS must be addressed to:

Department of Water Resources
Contract Services
Attn: Wesley McCandless
P.O. Box 942836
715 P Street
Sacramento, CA 94236-0001

ii. Bids submitted by hand delivery, must be given to Contract Specialist Wesley McCandless on or before July 7, 2026 at 9:00am. Please coordinate a day and time via phone (916) 902-7850 or email wesley.mccandless@water.ca.gov.

iii. Bids submitted by UPS, express mail, or Federal Express must be addressed to:

Department of Water Resources
Contract Services
Attn: Wesley McCandless
715 P Street
Sacramento, CA 95814

- b. All bids must include original signatures on the following documents: Bid/Bidder Certification Sheet and any other documents specified in the Bid Checklist.
- c. Bids not including the documents identified in the Bid Checklist shall be deemed non-responsive and will be rejected.
- d. All bids are to be sent to DWR within the time frame indicated in the Time Schedule. Bids received after the due date and time will be returned unopened to the prospective bidder.
- e. All bids must be submitted under sealed cover. The sealed cover must be plainly marked with the IFB title and number, must show your firm's name and address, and must be marked with "DO NOT OPEN."
- f. Bids not submitted under sealed cover will be rejected. A minimum of two signed bids must be submitted. One bid must be submitted in hardcopy. One bid must be submitted in an electronic format (Word and/or PDF File) on a USB Drive. Both bids must be signed and submitted in the same envelope. USB Drives can be returned at the request of the bidder once the solicitation is concluded.
- g. Bids must be submitted for the entire service described within the Scope of Work. Deviations from the specifications will not be considered and will be cause for rejection of the bid.
- h. The State does not accept alternate language from a bidder. A bid with such language will be considered a counter proposal and will be rejected. The State's General Terms and Conditions (GTC) are not negotiable.
- i. A bid may be rejected if conditional or incomplete, or if it contains any alterations of form or other irregularities of any kind. The State may waive any immaterial deviation in a bid. The State's waiver of immaterial defect shall in no way modify the IFB document or excuse the bidder from full compliance with the objectives if awarded the Agreement. The State may reject all bids if deemed necessary.
- j. Costs for developing bids and preparation of award of the Agreement are entirely the responsibility of the bidder and shall not be chargeable to the State.
- k. This IFB must be signed by an individual who is authorized to bind the bidding firm contractually. The signature must indicate the title or position that the individual holds in the firm. An unsigned bid will be rejected.

- l. A bidder may modify a bid after its submission by withdrawal and resubmission before the bid due date. Modification of a bid offered in any other manner, oral or written, will not be considered.
- m. A bidder may withdraw their bid by submitting a written request to the State for its withdrawal, signed by the bidder or an agent authorized in accordance with Paragraph l above. A bidder may thereafter submit a new bid before the bid submission deadline. Bids may not be withdrawn after the bid due date. Bids received after the due date and time will be returned unopened to the prospective bidder.
- n. DWR may modify the IFB prior to the date fixed for submission of bids by the issuance of an Addendum to all parties who received a bid package.
- o. If all bids are too high, DWR is not required to award an Agreement.
- p. Bids are public upon bid opening.
- q. Bidders are cautioned not to rely on the State during the evaluation to discover and report all defects and errors in the bid documents. Bidders should carefully proof read documents for errors and adherence to the IFB requirements prior to bid submittal.
- r. Where applicable, the bidder should carefully examine the worksite and specifications. Bidder shall investigate the conditions, character, quality of surface, subsurface materials, or obstacles to be encountered. No additions to the Agreement amount will be made because of failure to thoroughly examine the worksite and specifications.
- s. Public Bid Openings may be conducted in person or online. Bid openings conducted online will be done virtually using TEAMS. You may participate using the link provided in the solicitation under Section C Paragraph 1 above.

5. EVALUATION AND SELECTION PROCESS

- a. The State will put each bid through a process of evaluation to determine the responsiveness of bidders to the State's needs. The final selection will be made on the basis of the lowest responsible bid meeting the specifications.
- b. Bids containing false or misleading statements or providing references that do not support an attribute or condition claimed by the bidder may be rejected. If, in the opinion of the State, information was intended to mislead the State in its evaluation of the bid, and the attribute, condition, or capability is a requirement of this IFB, it will be the basis for rejection of the bid.
- c. At the time of bid opening, each bid will be checked for the presence or absence of required information in conformance with the submission requirements of this IFB.
- d. Bids submitted that include option years will be evaluated based on the total bid amount for all years provided for the overall bid ranking. However, the total bid amount, for determining the contract amount will not include the option years.

- e. The contract will be awarded to the lowest responsible bidder after consideration of any applicable preferences. If there are tied bids, representatives of the State will draw straws to pick the winning bidder. The drawing will be witnessed and documented by two or more State employees.

6. TAX DELINQUENT STATUS VERIFICATION

- a. Effective July 1, 2012 [Public Contract Code 10295.4](#), requires state agencies to verify the tax delinquent status of bidders responding to state solicitations.
- b. At the time of bid evaluation, prior to contract award and execution, the State will verify all proposing firms and identified subcontractors as not listed as tax delinquent by the Franchise Tax Board and the California Department of Tax and Fee Administration. Any proposing firms or subcontractor listed as tax delinquent shall result in a proposal rejection and will not be considered for contract award. Proposing firms wanting further clarification can refer to the statute above or to the web sites listed below for additional information.

California Department of Tax and Fee Administration – Top 500 Sales Tax and Use Delinquencies in California

<https://www.cdtfa.ca.gov/taxes-and-fees/top500.htm>

Franchise Tax Board – Top 500 Delinquent Tax Payers

<https://www.ftb.ca.gov/about-ftb/newsroom/top-500-past-due-balances/index.html>

7. GENERATIVE ARTIFICIAL INTELLIGENCE (GEN AI) DISCLOSURE

- a. The State of California seeks to realize the potential benefits of GenAI, through the development and deployment of GenAI tools, while balancing the risks of these new technologies.
- b. Bidder / Offeror must notify the State in writing if it: (1) intends to provide GenAI as a deliverable to the State; or (2), intends to utilize GenAI, including GenAI from third parties, to complete all or a portion of any deliverable that materially impacts: (i) functionality of a State system, (ii) risk to the State, or (iii) Contract performance. For avoidance of doubt, the term “materially impacts” shall have the meaning set forth in State Administrative Manual (SAM) § 4986.2 Definitions for GenAI.
- c. Failure to report GenAI to the State may result in disqualification. The State reserves the right to seek any and all relief to which it may be entitled to as a result of such non-disclosure.
- d. Upon notification by a Bidder / Offeror of GenAI as required, the State reserves the right to incorporate GenAI Special Provisions into the final contract or reject bids/offers that present an unacceptable level of risk to the State.
- e. Government Code 11549.64 defines “Generative Artificial Intelligence (GenAI)” as an artificial intelligence system that can generate derived synthetic content, including text, images, video, and audio that emulates the structure and characteristics of the system’s training data.

8. DEPARTMENT OF INDUSTRIAL RELATIONS REGISTRATION OF CONTRACTORS AND PREVAILING WAGE MONITORING AND ENFORCEMENT

- a. In addition to complying with other applicable laws, effective for all bids on public works received on or after March 1, 2015, each bidder submitting a bid for such contract work must

be a Department of Industrial Relations Registered Contractor pursuant to Labor Code § 1725.5 ("DIR Registered Contractor"). A Bidder who is not a DIR Registered Contractor when submitting a bid for the contract work is deemed "not qualified." Pursuant to Labor Code § 1725.5, all subcontractors identified in a Bidder's Subcontractor' List shall also be DIR Registered Contractors.

- b. Effective for contracts for public works awarded on or after April 1, 2015, all awarded Prime Contractors, and all subcontractors of any tier, at all times during the performance of the work, shall be DIR Registered Contractors. Also, all such contractors and subcontractors must furnish electronic certified payroll records directly to the Labor Commissioner (of the Division of Labor Standards Enforcement). The contracts are subject to compliance monitoring and enforcement by the Department of Industrial Relations.
- c. Effective January 1, 2016, all public works projects whether new or ongoing are subject to the requirement to furnish electronic certified payroll records directly to the Labor Commissioner.
- d. All contractors who are awarded a contract shall also post any required notice adopted by DIR regarding prevailing wage monitoring and enforcement program.

9. AWARD AND PROTEST

A bidder may protest the award of a contract on the grounds that it (the bidder) is the lowest responsible bidder meeting the specifications and should therefore be awarded the contract.

A protestant must be able to prove that the awarding agency has committed a material error in the conduct of the bid award process.

Public inspection of all bids will be allowed after the bid opening.

Protests must be received in a timely manner pursuant to Public Contract Code Section 10345, as applicable. In order to be considered timely, a protest must be filed with the State Agency conducting the solicitation and DGS before the contract award is made.

Please note that if the award will be made to other than the low bidder, any protests must be filed within five business days of notice to the low bidder that the contract was awarded to another bidder. If a written request was submitted by a bidder to the State agency requesting that a notice of intent to award be posted, the protest must be filed during the five business days the notice is posted.

Within five business days of filing the protest, the protestant must submit a detailed written statement of protest if the original protest did not contain the complete grounds for the protest.

Both the original protest and/or the detailed statement of protest, if any, must include the IFB number, the name of the State Agency conducting the solicitation, State agency contact person, and protestant's fax number, if any.

The protest documents may be sent by regular mail, email, courier, or personal delivery to:

Department of General Services
Office of Legal Services
Attention: Bid Protest Coordinator
707 Third Street, 7th Floor, Suite 7-330
West Sacramento, CA 95605
Bid Protest Coordinator Email address: OLSProtests@dgs.ca.gov

AND

Department of Water Resources
Contract Specialist Email Address: wesley.mccandless@water.ca.gov

Upon receipt of the protest, DGS shall send the protestant an acknowledgement letter and thereafter communicate with the parties regarding further disposition of the protest.

10. DISPOSITION OF BIDS

Upon bid opening, all documents submitted in response to this IFB will become the property of the State and will be regarded as public records under the California Public Records Act (Government Code Section 7920 et seq.) and are subject to review by the public. Bids may be returned at the request and expense of the bidder.

D. Standard Conditions of Service

1. Service(s) shall not commence until the Agreement is fully executed and all approvals have been obtained.
2. All performance under the Agreement shall be completed on or before the termination date of the Agreement unless this Agreement is amended to extend the term.
3. No oral understanding or agreement shall be binding on either party.

E. Payee Data Record

1. The Contractor awarded this Agreement must have completed and submitted form STD 204, Payee Data Record, to determine if the Contractor is subject to a seven percent State Income Tax withholding pursuant to California Revenue and Taxation Code Sections 18662, 18805, and 26131.
2. No payment shall be made unless the Payee Data Record form has been completed and returned to the State.

F. Key Employee Policies and Guidelines Notice Acknowledgment (Consultants and Contractors)

1. The selected contractor awarded this Agreement must complete and submit the form DWR 9524a, Key Employee Policies and Guidelines Notice Acknowledgment. These policies and guidelines communicate expectations for contractors. Every contractor or subcontractors employee is expected to read and understand the material contained within. Primary contractor/subcontractors are responsible to ensure that their employees are aware of and adhere to the policies and guidelines.

G. Economic Incentive Programs

Bidders may be eligible for additional preferences when their place of business is located within certain economic regions and when they hire persons living and working within those economic regions. Please access the following links to read information about these economic incentive programs.

TACPA CONTRACT PREFERENCE

This solicitation contains Target Area Contract Preference Act (TACPA) preference request forms. Please carefully review the forms and requirements. Bidders are not required to apply for these preferences. Denial of the TACPA preference request is not a basis for rejection of the bid.

The State as part of its evaluation process reserves the right to verify, validate, and clarify all information contained in the bid. This may include, but is not limited to, information from bidders, manufacturers, subcontractors and any other sources available at the time of the bid evaluation. Bidder refusal to agree to and/or comply with these terms, or failure to provide additional supporting information at the State's request may result in denial of preference requested.

Contracts awarded with applied preferences will be monitored throughout the life of the contract for compliance with statutory, regulatory, and contractual requirements. The State will take appropriate corrective action and apply sanctions as necessary to enforce preference programs. Links to forms and contact information are below.

- [TACPA Preference Request \(STD 830\)](#)
- [Manufacturer's Summary of Contract Activities and Labor Hours \(DGS PD 525\)](#)
- [Bidder's Summary of Contract Activities and Labor \(DGS PD 526\)](#)

Any questions regarding the TACPA preference should be directed to DGS-PD Support Services Unit at (916) 375-4609 or TACPA@dgs.ca.gov.

H. Small Business Preference Program

1. The Small Business Procurement and Contract Act [Government Code \(GC\) Section 14838 et. seq.](#) requires that a fair share of the State's purchases and contracts for goods, information technology services and construction be placed with a certified Small Business (SB) or Micro-Business (MB). The Act mandates that state agencies:
 - a. Establish participation goals,
 - b. Provide a five percent (5.0%) SB calculation preference, and
 - c. Provide the opportunity for bidders to receive a five percent (5.0%) non-small business (NSB) calculation preference when achieving twenty-five percent (25.0%) SB participation through subcontracted efforts.

Bidder which is awarded the contract is committed to paying the stated percentage of the total contract amount (including contract amendments) to the SB subcontractor(s) as declared on the DGS PD 05-105 form. SB bidders and subcontractors must be certified by DGS/OSDS to participate in SB Preference program.

2. SMALL BUSINESS PREFERENCE

The SB Preference offers certified SB's and MB's a calculation preference in the amount of five percent (5%) of the lowest responsible bid submitted by a bidder who is not a certified SB. The SB Preference is used as a calculation for determining the lowest bidder and does not affect the actual price bid. Responding bidders must:

- a. Includes in its bid a notification to the awarding department that it is an SB or that it has submitted to The Department of General Services, Office of Small Business & Disabled Veteran Business Enterprise Services (DGS/OSDS) a complete

- application no later than 5:00 p.m. on the bid due date, and is subsequently certified by DGS/OSDS as an SB; and
- b. Include copy of firm's DGS/OSDS SB certification
- c. Submits a timely, responsive bid; and
- d. Be determined to be a responsible bidder.

3. NON-SMALL BUSINESS PREFERENCE

Non-small business (NSB) bidders will be granted a five percent (5.0%) NSB preference on a bid evaluation when a responsible NSB has agreed to subcontract at least twenty-five percent (25.0%) of their bid price with a California certified SB and if the NSB bidder's bid is not the low price bid, or when a proposal has been not been ranked as the highest scored bid pursuant to the evaluation of the solicitation. Responding bidders must:

- a. Include information on required form DGS PD 05-105, Attachment VIII, of the DGS/OSDS certified SB subcontractor(s) with which it commits to subcontract a total of at least twenty-five percent (25%) of its net bid price (refer to page two of form for detailed instructions);
- b. Include copy of the DGS/OSDS certification for each identified SB;
- c. Submits a timely, responsive bid; and
- d. Be determined to be a responsible bidder.

4. NON-SMALL BUSINESS PREFERENCE CALCULATION

The NSB calculation preference five percent (5.0%) is used for bid evaluation purposes only. Awards made as a result of the NSB preferences shall be awarded at the bidder's original bid price. The preference shall be computed as follows:

Bidder A, (Low Bid), non-small business:	\$125,000
Bidder B, non-small business (subcontracting 25% to a certified small business)	\$131,000
Calculation Preference:	$\$125,000 \times .05 = \$6,250$
Bidder B	\$131,000
Subtract calculated preference	<u>- \$6,250</u>
Adjusted Bid for Bidder B	\$124,750

Award is made to Bidder B as the low bidder at the bid price of \$131,000.

5. TIES BETWEEN CERTIFIED SMALL BUSINESSES AND DVBE BUSINESSES

In the event of a precise tie between the bid of an SB and the bid of a Disabled Veteran Business Enterprise (DVBE) that is also an SB, the award shall go to the DVBE that is also an SB.

6. MAXIMUM ALLOWABLE PREFERENCES

In no event shall the amount of the SB or NSB subcontractor preferences awarded on a single bid exceed \$50,000, and in no event shall the combined cost of the SB or NSB subcontractor preference and preferences awarded pursuant to any other provision of law exceed \$100,000. The five percent (5%) calculation preference is used for computation purposes only and does not alter or affect the actual bid price or the amount of the executed contract. When a certified SB is the lowest responsive, responsible bidder, then there is no need to compute the SB preference as the SB is the low bidder.

7. COMMERCIALLY USEFUL FUNCTION (SBs) ([Government Code \(GC\) section 14837\(d\) \(4\)](#))

A certified SB, micro-business (MB) contractor, subcontractor or supplier, must meet commercially useful function (CUF) requirements under [Government Code \(GC\) section 14837\(d\) \(4\)](#). Selected firms must perform a CUF relevant to this contract.

The term “small business contractor, subcontractor or supplier” means any person or entity that satisfies the ownership (or management) and control requirements in accordance with [GC section 14837\(d\) \(4\)](#) and provides services or goods that contribute to the fulfillment of the contract requirements by performing a CUF. A person or an entity is deemed to perform a CUF if that person or entity does **all** of the following:

1. Is responsible for the execution of a distinct element of the work of the contract.
2. Carries out contractual obligations by actually performing, managing, or supervising the work involved.
3. Performs work that is normal for its business services and functions.
4. Is not further subcontracting a portion of the work that is greater than that expected to be subcontracted by normal industry practices.
5. Is responsible, with respect to products, inventories, materials, and supplies required for the contract, for negotiating price, determining quality and quantity, ordering, installing, and, if applicable, making payment
6. Its role is not an extra participant in the transaction, contract or project through which funds are passed in order to obtain the appearance of DVBE participation.

8. BIDDER CUF REQUIREMENTS

The Department will determine, to the best of its ability, that your firm meets the criteria above for CUF. In responding to this solicitation, you are confirming that, under [GC 14837 \(d\) \(4\)](#) above, your business provides goods and/or services meet the definition of CUF. All bidders are required to provide CUF documentation using the State's Bidder Declaration form DGS PD 05-105, Attachment VIII, included in the solicitation document. When completing the DGS PD 05-105, bidders must identify all subcontractors proposed for participation in the contract. Any bidder awarded a contract is contractually obligated to use the subcontractor for the corresponding work defined unless the State agrees to a substitution.

I. Disabled Veteran Business Enterprise Program

DVBE Program Participation is Required for Solicitation

This solicitation includes DVBE Program participation requirements, which is a minimum of three percent (3.0%) commitment. Complete and provide the following forms for DVBE Program participation compliance:

1. DWR 9526, Attachment VI (Bidder Certification of DVBE Participation)
2. DGS PD 843 Attachment VII (DVBE Declarations)
3. DGS PD 05-105, Attachment VIII (Bidder Declaration) - refer to page two of form for detailed instructions
4. DGS/OSDS Certification(s) for bidder and/or subcontractor(s). Bidder and/or subcontractors must be certified by DGS/OSDS in order to take part in DVBE Participation Program.

DVBE Incentive is as follows:

DVBE Required Participation	Incentive Percentage (%)
5.0% or over	5.0%
4.0% to 4.99%	4.0%
3.0% to 3.99%	3.0%

If you need assistance with finding a certified DVBE subcontractor, you can contact California Department of Veterans Affairs (CalVet) DVBE Program

- <https://www.calvet.ca.gov/contact>
 - o Phone Number: 800-952-5626
 - o Email: DVBE@calvet.ca.gov

You can also do a certified vendor search on Cal eProcure:

<https://caleprocure.ca.gov/pages/PublicSearch/supplier-search.aspx?psNewWin=true>

1. DWR SB/DVBE PROGRAM MANAGER PRE-REVIEW OF DVBE DOCUMENTATION

The Department's SB/DVBE Program Manager offers a pre-review of a bidder's DVBE documentation prior to proposal submission. Since non-compliance with the DVBE program is immediate cause for rejection, the State strongly recommends firms interested in bidding take advantage of this opportunity to ensure they are fully compliant with DVBE Program participation requirements.

Bidders should allow at least five (5) working days for pre-review of their DVBE documentation and submit them to the following:

SB/DVBE Program Manager
Email: SB.DVBE@water.ca.gov

Upon satisfactory review of the bidder's DVBE documentation, the DWR SB/DVBE Program Manager issues a Notification of Compliance which the bidder will submit with their bid submittal.

2. DVBE INCENTIVE PROGRAM

Under [CCR 1896.99.100](#), the California DVBE Incentive provides responsive and responsible bidders the opportunity to receive additional incentive calculations. The incentive is applied at the time of solicitation evaluation when a proposing firm identifies and commits to using a California-certified DVBE subcontractor to provide services or commodities in support of the overall contract. Application of the DVBE Incentive may place the bidder in line for contract award.

The following are key elements of the DVBE Incentive Program:

- a. The DVBE Incentive is applied during the evaluation process and is only applied to responsive bids from responsible bidders proposing the percentage(s) of DVBE participation for the incentive(s) specified in the solicitation.
- b. DVBE Incentive participation is at the discretion of the bidder and is *optional* when overall DVBE Program requirements are exempt by the State for that solicitation.

- c. When requesting the DVBE Incentive Application, a bidder must complete and return the DVBE Incentive Application Request included within this solicitation with their proposal at time of submission.
- d. DVBE certified firm (bidder and/or subcontractor(s)) must be certified by DGS/OSDS.
- e. Services or commodities provided by the DVBE firm MUST meet the definition of CUF as defined under Government Codes: [14837](#) and [14842.5](#); [Military and Veterans Code 999 \(B\) \(i\) \(ii\)](#); and [California Code of Regulations 1896.71](#). A DVBE firm determined as not meeting CUF regulations will render the responding firm ineligible for the DVBE Incentive Application.
- f. Bidder which is awarded this contract, is committed to paying the stated percentage (on each form DWR 9526) of the total contract amount (including contract amendments) to the DVBE subcontractor declared on this form.

3. COMMERCIALLY USEFUL FUNCTION - DVBEs ([MVC 999\(B\)](#))

Firms selected must perform a “*commercially useful function*” relevant to this contract. The term “DVBE contractor, subcontractor or supplier” means any person or entity that satisfies the ownership (or management) and control requirements of [CCR 1896.61\(f\)](#); is certified in accordance with [CCR 1896.70](#) and provides services or goods that contribute to the fulfillment of the contract requirements by performing a commercially useful function. As defined in [MVC 999\(B\)](#), a person or an entity is deemed to perform a “commercially useful function” if a person or entity does *all* of the following:

- a. Is responsible for the execution of a distinct element of the work of the contract;
- b. Carries out the obligation by actually performing, managing, or supervising the work involved;
- c. Performs work that is normal for its business services and functions
- d. Is not further subcontracting a portion of the work that is greater than that expected to be subcontracted by normal industry practices
- e. Is responsible, with respect to products, inventories, materials, and supplies required for the contract, for negotiating price, determining quality and quantity, ordering, installing, if applicable, and making payment; and
- f. Its role is not an extra participant in the transaction, contract or project through which funds are passed in order to obtain the appearance of DVBE participation.

4. ORDER OF EVALUATION

For purposes of evaluation, first SB Preference will be applied, followed by the DVBE Incentive calculation.

J. Pending Small Business or Disabled Veteran Business Enterprise Certification Applications

Bidders wishing to apply for the SB Preference, NSB Preference or DVBE Incentive related to this solicitation and have pending SB or DVBE certification(s) applications under review by DGS/OSDS, you must have:

1. notified DGS/OSDS that you are responding to a solicitation and are seeking an expedite review of your SB or DVBE certification application in relation to the solicitation;
2. provided DGS/OSDS with the Bid Key Action Dates page from the solicitation itself; and
3. must have submitted a complete application with all required forms and documentation to DGS/OSDS for review and approval by close of business of the Bid Submittal due date.

Bidders must notify the State in writing at the time of bid submission that they have an application for SB or DVBE certification under review at the DGS/OSDS, and that they wish to be considered for the SB Preference, NSB Preference or DVBE Incentive.

Contact DGS/OSDS at (916) 375-4940 to obtain information about the application expedite process. Website: <https://www.dgs.ca.gov/PD/About/Page-Content/PD-Branch-Intro-Accordion-List/OSDS/OSDS>

BID CHECKLIST

Please review the following checklist for a list of documents that must be returned with your bid package. Please read the State of California's General Terms and Conditions (GTC) before signing and submitting your bid package. The State does not accept alternate language from a bidder. A bid with such language will be considered a counter proposal and will be rejected. The GTC's are *not* negotiable. Unless otherwise noted, failure to include the required documents will be cause for bid rejection.

DOCUMENTS REQUIRED WITH SUBMISSION OF BID

- ☐ Attachment I – Bid Sheet (must be signed and include all pages)
- ☐ Attachment II – Bid/Bidder Certification Sheet
- ☐ Attachment III – Bidder References
- ☐ Attachment IV – Darfur Contracting Act Certification
- ☐ Attachment V – GenAI Disclosure (DWR 9834)
- ☐ Attachment VIII, Bidder Declaration (DGS PD 05-105) – include all subcontracting information for entire bid on this one form also indicate if you are not subcontracting services.
- ☐ Attachment IX – California Civil Rights Laws Attachment
- ☐ Attachment X – Iran Contracting Act
- ☐ Bidder's Bond (DWR 4021)
 - Bidder's Bond must be equal to 10% of the bid amount; and
 - Surety must be registered with the CA Department of Insurance
- ☐ Copy of General Contractor license with the State of California
- ☐ Current valid copy of the DIR Registration
- ☐ Non-Collusion Declaration (DWR 4206)

SMALL BUSINESS PREFERENCE PROGRAM

- ☐ If you are a prime firm which is SB-certified and/or subcontracting to an SB, you must complete and return the following forms
 - List all subcontracting information on Attachment VIII, Bidder Declaration (DGS PD 05-105) mentioned above; and
 - Copy of current DGS/OSDS DVBE certification(s) for prime and/or subcontractor(s)

DVBE PARTICIPATION AND INCENTIVE PROGRAMS

- ☐ If you are a prime firm which is DVBE-certified and/or subcontracting to a DVBE, you must complete and return the following forms:
 - Attachment VI, Bidder Certification of DVBE Participation (DWR 9526);
 - Attachment VII, DVBE Declaration (DGS PD 843);
 - List all subcontracting information on Attachment VIII, Bidder Declaration (DGS PD 05-105) mentioned above; and
 - Copy of current DGS/OSDS DVBE certification(s) for prime and/or subcontractor(s)
- ☐ SB/DVBE Program Manager's Notification of Compliance (*if obtained in advance from the SB/DVBE Program Manager*)

ADDITIONAL STATE MANDATED PREFERENCE PROGRAMS

Required only when the bidding firm claims following:

- ☐ Target Area Contract Preference Act (TACPA) (Std. 830)

DOCUMENTS REQUIRED UPON CONTRACTOR SELECTION/BID AWARD

These documents are not required at the time of bid submittal; however these documents will be required of the awarded firm upon contractor selection/bid award.

- ☐ Contractor Certification Clauses (CCC) (CCC must be signed once a contractor has been selected)
- ☐ Payee Data Record (Std. 204)
- ☐ Payment Bond (DWR 3373)
 - *Payment Bond must be equal to 100% of the contract amount; and*
 - *Surety must be registered with the CA Department of Insurance*
- ☐ Performance Bond (DWR 156)
 - *Performance Bond must be equal to 100% of the contract amount; and*
 - *Surety must be registered with the CA Department of Insurance*
- ☐ Certificate(s) of Insurance
- ☐ Key Employee Policies and Guidelines Notice Acknowledgment (Consultants and Contractors) (DWR 9524a)

ATTACHMENT I BID SHEET

The rates and estimated quantities indicated below will be used solely for computing the cost as a fair and equitable formula to determine the low bidder and is not binding on the contracting agency. However, the actual costs quoted below by the bidder shall be binding for the term of the Agreement. The estimated quantities are provided for bid evaluation only. The actual number of pipes, or other appurtenant structures, to be rehabilitated using the Cured-in-Place Pipe (CIPP) or other methods may vary from the bid sheets shown below. Contract award will be based on lowest total amount of Bid Sheet 1 that includes the total bid amounts from Bid Sheets 2 through 3.

The bidder hereby agrees to provide all labor, materials, licenses, and permits necessary to perform all services required for the foregoing titled work in accordance with the Scope of Work. The rates listed on this Bid Sheet shall include every item of expense, direct and indirect, including travel expenses, and taxes incidental to the specified rates.

The bidder is required to bid each item. Failure to indicate a dollar amount in any item will be grounds to reject the entire bid. A zero-dollar (\$0.00) amount listed for any and all items will be interpreted and understood by the State to mean that the bidder indicating a zero-dollar amount shall perform any such services, up to and including the quantity indicated, at no cost to the State.

The Contractor will provide designs for culvert relining for various pipe diameters as shown in Bid Sheet 2. The Contractor for bidding purposes will provide a per foot cost for different pipe diameters and design considerations as well as cost for incremental increase in lining thickness for each pipe diameter. For bid evaluation, the average price per foot for each pipe diameter will be used to evaluate the bids. The average will be based on the bids provided for estimated depths and ovalities. In the example provided below, the Contractors bid items for 12-inch pipes for the 5% and 10% ovalities at depths from 10 feet to 25 feet will be averaged. The average price/foot of \$47.50 would be used to evaluate the bid in this example as shown in the formula below:

$$\text{Average Price/Foot} = (40+41+42+44+50+52+55+56)/8=47.50$$

Culvert NPS (inches)	Estimated Depth (feet)	Unit Price/foot		Average Price/ foot
		At Ovality of		
	Ovality	5%	10%	
12	10	\$ 40.00	\$ 50.00	\$ 47.50
	15	\$ 41.00	\$ 52.00	
	20	\$ 42.00	\$ 55.00	
	25	\$ 44.00	\$ 56.00	

The special design in Bid Sheet 2 includes increasing the liner thickness by 1.5 mm. The Contractor will provide an incremental cost/foot to increase the liner thickness by 1.5 mm for each pipe size. This special design may be used when conditions occur in the field which requires a modified design. Estimated quantities for special design are provided for bid evaluation.

The same bidding and evaluation process described above will be followed for lining of gate riser manholes using Bid Sheet 3. The Contractor will provide the thicknesses in the sheets using the rating curves included within Exhibit A, Attachment 5. The Contractor may elect to install a larger thickness, but the thickness bid will not be less than the thickness calculated by the rating curves. The special design includes increasing the liner thickness by 0.5 mm.

The Contractor will be allowed to use their own cost sheet for invoicing after the contract has been awarded with approval from the DWR Contract Manager. The pipe identification numbers provided by DWR for each work order will be included in the invoice.

The service contract will be a four (4) year duration.

Mobilization unit price for each work order outlined in BID SHEET 1 includes travel time and travel expenses for the mobilization, demobilization, and performing the entire work listed in the work order.

BID SHEET 1 – UNIT PRICES

The Contractor shall fill in unit prices for each Item

ITEM	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Perform initial site visit and provide submittals	300	Per each site		
2	<i>Mobilization</i>				
2a	Mobilization: 1 to 5 pipes	2	Per work order		
2b	Mobilization: 6 to 10 pipes	5	Per work order		
2c	Mobilization: 11 to 20 pipes	5	Per work order		
2d	Mobilization: More than 21 pipes	3	Per work order		
2e	Mobilization: 1 to 5 risers	3	Per work order		
2f	Mobilization: 6 to 10 risers	2	Per work order		
2g	Mobilization: 11 to 20 risers	2	Per work order		
2h	Mobilization: More than 21 risers	1	Per work order		
3	<i>Pipe preparation</i>				
3a	<=24 inches	203	Per pipe		
3b	>24 to 36 inches	75	Per pipe		
3c	>36 inches	22	Per pipe		
4	<i>CCTV inspections</i>				
4a	<=24 inches	203	Per pipe		
4b	>24 to 36 inches	75	Per pipe		
4c	>36 inches	22	Per pipe		
5	Gate Riser Manhole Inspections	50	Per riser		
6	Pipe end repair	40	Each		
7	Temporary cofferdam	45	Each		
7a	Additional height of temporary cofferdam	15	Vertical Foot		
7b	Additional length of temporary cofferdam	20	Horizontal Foot		
8	Procurement of gate at manufacturer's cost	1	Allowance	\$ 1,500,000.00	\$ 1,500,000.00
9	<i>Storage and delivery of new gate</i>				
9a	<=24 inches	50	Each		
9b	>24 to 36 inches	25	Each		
9c	>36 inches	10	Each		
10	<i>Remove and dispose of existing gate</i>				
10a	<=24 inches	50	Each		
10b	>24 to 36 inches	25	Each		
10c	>36 inches	10	Each		
11	<i>Install new gate - labor and equipment only</i>				
11a	<=24 inches	50	Each		
11b	>24 to 36 inches	25	Each		
11c	>36 inches	10	Each		
12	Remove existing ladder	50	Each		
13	Reinstall existing ladder	20	Each		
14	Install new ladder	50	Each		
15	Repair of existing gates and headwalls - labor only	100	Hourly		
16	Concrete repair - material and equipment only	50	Cubic Foot		
17	Epoxy coating of gate bolts - material and equipment only	5	Gallon		
18	Miscellaneous metal - material and equipment only	100	Pound		
19	CIPP rehabilitation with gate riser manhole	75	Each		

BID SHEET 1 – UNIT PRICES (Continued)

The Contractor shall fill in unit prices for each Item

ITEM	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL
20	Total CIPP culvert relining		BID SHEET 2		
21	Total incremental CIPP for special designs		BID SHEET 2		
22	Total gate riser manhole relining		BID SHEET 3		
23	Total incremental gate riser manhole relining for special designs		BID SHEET 3		
24	Structural Concrete	40	CY		
25	Bar Reinforcing Steel	1000	LB		
26	Traffic control crew: 3 man crew, 2 vehicles, and traffic control equipment	160	Hourly		
27	Traffic control crew: 3 man crew, 2 vehicles, and traffic control equipment-Overtime	40	Hourly		
28	Laborer with truck and equipment	160	Hourly		
29	Laborer with truck and equipment-Overtime	40	Hourly		
30	CCTV warranty inspections				
30a	<=24 inches	20	Per pipe		
30b	>24 to 36 inches	8	Per pipe		
30c	>36 inches	3	Per pipe		
31	Gate Riser Manhole warranty inspections	10	Per riser		
32	Infrared spectrum test	5	Each		
33	Miscellaneous repair of CIPP installed by others - labor and equipment only	1	Hourly		
34	Miscellaneous repair of CIPP installed by others - material only	1	Allowance	\$ 50,000.00	\$ 50,000.00
35	Miscellaneous Heavy Cleaning	100	Hourly		
36	Infiltration Grouting	10	Gallon		
37	<i>Unforeseen Labor, Equipment, and Material Items</i>				
37a	Unforeseen Labor and Equipment	100	Hourly	\$ 200.00	\$ 20,000.00
37b	Unforeseen Material Items	100	Hourly	\$ 200.00	\$ 20,000.00
38	Unforeseen Fees	100	Hourly	\$ 200.00	\$ 20,000.00
				TOTAL BID:	

BID SHEET 2 – STANDARD LINER DESIGNS AND LINING UNIT PRICES

Culvert NPS (inches)	Estimated Quantity of Culverts for CIPP Rehabilitation	Average Length (feet)	Estimated Total Length (feet)	Estimated Depth (feet)					Unit Price/foot		Average Price/ foot	Total Cost= Average Price/foot x Estimated Total Length	Special Design			TOTAL COST PER PIPE DIAMETER	Lining System or Systems proposed for Use	
						Nominal Size		Nominal Size					Incremental Cost \$/foot/1.5 mm thickness increase	Estimated Length of Special design (feet)	Total Cost for Special Design			
					Min req'd		Min req'd		At Ovality of									
				Ovality	5%		10%		5%	10%								
12	4	51	204	10										51				
				15														
				20														
				25														
16	2	185	370	10										185				
				15														
				20														
				25														
18	4	103	412	10										103				
				15														
				20														
				25														
24	193	60	11580	10										1200				
				15														
				20														
				25														
30	30	70	2100	10										210				
				15														
				20														
				25														
36	45	65	2925	10										325				
				15														
				20														
				25														
42	10	85	850	10										85				
				15														
				20														
				25														
48	8	105	840	10										105				
				15														
				20														
				25														
60	4	75	300	10										75				
				15														
				20														
				25														
							Bid Item 20: Total CIPP Culvert Relining									Bid Item 21: Total Incremental CIPP for Special Designs		

BID SHEET 3 – STANDARD LINER DESIGNS AND LINING UNIT PRICES FOR GATE RISER MANHOLES

Gate Riser Manhole Diameter (inches)	Estimated Quantity of Gate Riser Manholes for Rehabilitation	Average Length (feet)	Estimated Total Length (feet)	Estimated Depth (feet)							Average Price/ foot	Total Cost= Average Price/foot x Estimated Total Length	Special Design			TOTAL COST PER GATE RISER MANHOLE DIAMETER	Lining System or Systems proposed for Use
													Incremental Cost \$/foot/0.5 mm thickness increase	Estimated Length of Special design (feet)	Total Cost for Special Design		
					Min req'd	Nominal Size	Min req'd	Nominal Size									
36	15	13	195	15										26			
				20													
				25													
42	4	12	48	15										12			
				20													
				25													
48	19	14	266	15										28			
				20													
				25													
60	11	17	187	15										34			
				20													
				25													
72	1	12	12	15										12			
				20													
				25													
							Bid Item 22: Total Gate Riser Manhole Lining								Bid Item 23: Total Incremental Gate Riser Manhole Lining for Special Designs		

NO GUARANTEE OF WORK UNDER THIS CONTRACT.

In the event of computational error, unit prices will prevail over extended totals. The State will check bid calculations and recalculate bid totals.

The Contractor's signature, in ink, affixed hereon and dated will constitute a certification under the penalty of perjury under the laws of the State of California that the Contractor's license number and expiration date are true and correct.

Company Name

Contractor's
License
Number

Contractor's License Expiration
Date

Printed Name and Title of Bidder

Signature of Bidder

Date

I certify under penalty of perjury under the laws of the State of California, the foregoing is true and correct.

**ATTACHMENT II
BID/BIDDER CERTIFICATION SHEET**

This Bid/Bidder Certification Sheet must be signed and returned along with all the required attachments as an entire package in duplicate with **original signatures**. The bid must be transmitted in a sealed envelope in accordance with IFB instructions.

Do not return Bid Requirements and Information or the Sample Agreement.

- A. Our all-inclusive bid is submitted as detailed in Attachment I, Bid Sheet.
- B. All required attachments are included with this certification sheet.
- C. The signature affixed hereon and dated certifies compliance with all the requirements of this bid document. The signature below authorizes the verification of this certification. **An unsigned Bid/Bidder Certification Sheet may be cause for rejection.**

1. Company Name	2. Telephone Number ()	2a. Email
3. Address		
Indicate your organization type: 4. ☐ Sole Proprietorship 5. ☐ Partnership 6. ☐ Corporation		
Indicate the applicable employee and/or corporation number: 7. Federal Employee ID No. (FEIN) 8. California Corporation No.		
9. Indicate applicable license and/or certification information:		
10. Bidder's Name (Print)	11. Title	
12. Signature	13. Date	
14. Are you certified with the Department of General Services, Office of Small Business Certification and Resources (OSDS) as: a. California Small Business Yes ☐ No ☐ If yes, enter certification number: _____ b. Disabled Veteran Business Enterprise Yes ☐ No ☐ If yes, enter your service code below: _____ NOTE: A copy of your Certification is required to be included if either of the above items is checked "Yes". Date application was submitted to OSDS, if an application is pending:		

Completion Instructions for Bid/Bidder Certification Sheet

Complete the numbered items on the Bid/Bidder Certification Sheet by following the instructions below.

Item Numbers	Instructions
1, 2, 2a, 3	Must be completed. These items are self-explanatory.
4	Check if your firm is a sole proprietorship. A sole proprietorship is a form of business in which one person owns all the assets of the business in contrast to a partnership and corporation. The sole proprietor is solely liable for all the debts of the business.
5	Check if your firm is a partnership. A partnership is a voluntary agreement between two or more competent persons to place their money, effects, labor, and skill, or some or all of them in lawful commerce or business, with the understanding that there shall be a proportional sharing of the profits and losses between them. An association of two or more persons to carry on, as co-owners, a business for profit.
6	Check if your firm is a corporation. A corporation is an artificial person or legal entity created by or under the authority of the laws of a state or nation, composed, in some rare instances, of a single person and his successors, being the incumbents of a particular office, but ordinarily consisting of an association of numerous individuals.
7	Enter your federal employee tax identification number.
8	Enter your corporation number assigned by the California Secretary of State's Office. This information is used for checking if a corporation is in good standing and qualified to conduct business in California.
9	Complete, if applicable, by indicating the type of license and/or certification that your firm possesses and that is required for the type of services being procured.
10, 11, 12, 13	Must be completed. These items are self-explanatory.
14	If certified as a California Small Business, place a check in the "Yes" box, and enter your certification number on the line. If certified as a Disabled Veterans Business Enterprise, place a check in the "Yes" box and enter your service code on the line. If you are not certified to one or both, place a check in the "No" box. If your certification is pending, enter the date your application was submitted to OSDS.

**ATTACHMENT III
BIDDER REFERENCES**

List below three references for services performed within the last five years, which are similar to the scope of work to be performed under this contract.

REFERENCE 1

Name of Firm

Street Address

City

State

Zip Code

Contact Person

Telephone Number ()

Dates of Service

Brief Description of Service Provided:

REFERENCE 2

Name of Firm

Street Address

City

State

Zip Code

Contact Person

Telephone Number ()

Dates of Service

Brief Description of Service Provided:

REFERENCE 3

Name of Firm

Street Address

City

State

Zip Code

Contact Person

Telephone Number ()

Dates of Service

Brief Description of Service Provided:

Please provide a statement of explanation if no references are available:

**ATTACHMENT IV
DARFUR CONTRACTING ACT CERTIFICATION**

Pursuant to Public Contract Code section 10478, if a bidder or proposer currently or within the previous three years has had business activities or other operations outside of the United States, it must certify that it is not a "scrutinized" company as defined in Public Contract Code section 10476.

Therefore, to be eligible to submit a bid or proposal, please initial one of the following three paragraphs and complete the certification below:

1. _____
 Initials We do not currently have, or we have not had within the previous three years, business activities or other operations outside of the United States.

OR

2. _____
 Initials We are a scrutinized company as defined in Public Contract Code section 10476, but we have received written permission from the Department of General Services (DGS) to submit a bid or proposal pursuant to Public Contract Code section 10477(b). A copy of the written permission from DGS is included with our bid or proposal.

OR

3. _____
 Initials We currently have, or we have had within the previous three years, business activities or other operations outside of the United States, but we certify below that we are not a scrutinized company as defined in Public Contract Code section 10476.

CERTIFICATION

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

<i>Proposer/Bidder Firm Name (Printed)</i>		<i>Federal ID Number</i>
<i>By (Authorized Signature)</i>		
<i>Printed Name and Title of Person Signing</i>		
<i>Date Executed</i>	<i>Executed in the County and State of</i>	

YOUR BID OR PROPOSAL WILL BE DISQUALIFIED UNLESS YOUR BID OR PROPOSAL INCLUDES THIS FORM WITH EITHER PARAGRAPH # 1. # 2. or # 3 INITIALED AND THE CERTIFICATION SIGNED.

ATTACHMENT V

State of California

DEPARTMENT OF WATER RESOURCES

California Natural Resources Agency

Generative Artificial Intelligence (GenAI) Disclosure

Bidder/Offeree Information		
Solicitation/Contract number		Bidder ID/Vendor ID (optional)
Business Name		Business Telephone Number
Address		City/State/Zip
Description of purchase or service		
Does the purchase or service include GenAI? ☐ Yes ☐ No (If no, skip to the signature section of the form.)		
GenAI Description		
1. What is the application and/or product name?		
2. What is the model and version of the product?		
3. What is the license tier of the GenAI product, if applicable (free, enterprise, platinum, etc.)?		
4. How is the GenAI solution delivered: IaaS, PaaS, SaaS, or will it be deployed on-premises?		
Approval		
By signing this document, I have identified and reported any GenAI use in the performance of this contract.		
Name	Signature	Date

ATTACHMENT VI

State of California

DEPARTMENT OF WATER RESOURCES

California Natural Resources Agency

BIDDER CERTIFICATION OF DVBE PARTICIPATION

DWR is firmly committed to meeting or exceeding the State's minimum annual DVBE participation goal of three percent (3.0%) of total reportable procurements (Public Contract Code (PCC) Section 10115, Military and Veterans Code (MVC) 999 and California Code of Regulations (CCR) Title 2, Section 1896.7).

The Bidder Certification of DVBE Participation form (DWR 9526) must be signed by representatives of the Bidder's firm and of the DVBE Subcontractor's firm, who have legal authority to execute binding agreements.

A copy of the current and valid certification from the Department of General Services, Office of Small Business and Disabled Veteran Business Enterprise, must be included for each DVBE firm, from the Cal eProcure website below:

<https://caleprocure.ca.gov/pages/PublicSearch/supplier-search.aspx?psNewWin=true>

SECTION 1 - DVBE PARTICIPATION PROGRAM (Check mark one box)			
☐ DVBE Program participation <u>is required</u> in solicitation.		☐ DVBE Program participation <u>is not required</u> in solicitation.	
SECTION 2 - BIDDER'S INFORMATION			
FIRM NAME			
FIRM CONTACT NAME			
STREET ADDRESS			
CITY	STATE	ZIP CODE	
TELEPHONE	EMAIL		
CERTIFICATION TYPE(S)	Check <u>all</u> that apply: ☐ SB ☐ MB ☐ SB-PW ☐ DVBE ☐ OSDS #		
SECTION 3 - DESCRIBE THE SERVICES OR COMMODITIES TO BE PROVIDED BY THE DVBE BIDDER, OR THE DVBE SUBCONTRACTOR WHO IS IDENTIFIED IN SECTION 5.			
SECTION 4 - IDENTIFY BIDDER'S DVBE PARTICIPATION COMMITMENT (Check mark one box)			
☐ OPTION A: COMMITTED a minimum of 100.0% - Bidder is a CA-certified DVBE firm and <u>is not</u> subcontracting to a CA-certified DVBE firm.			
☐ OPTION B: COMMITTED a minimum of 100.0% - Bidder is a CA-certified DVBE firm and <u>is</u> subcontracting to a CA-certified DVBE firm.			
☐ OPTION C: COMMITTED a minimum of 3.0% to one DVBE subcontractor listed in Section 5, _____ % (fill in amount).			
☐ OPTION D: COMMITTED a combined total of _____ % (fill in amount) to multiple DVBE subcontractors which includes The percentage to the DVBE subcontractor listed in Section, _____ % (fill in amount). A separate DWR 9526 is required for each CA-certified DVBE subcontractor to which Bidder is making a commitment.			
(*) Bidder, if awarded the contract, is committed to paying the above stated percentage of the total contract amount (including contract amendments) to the DVBE subcontractor declared on this form.			
Printed Name of Bidder's Authorized Representative		Signature of Bidder's Authorized Representative	Date
SECTION 5 - DVBE SUBCONTRACTOR'S INFORMATION (Complete this section if you selected Options C or D above.)			
FIRM NAME			
FIRM CONTACT NAME			
STREET ADDRESS			
CITY	STATE	ZIP CODE	
TELEPHONE	EMAIL		
CERTIFICATION TYPE(S)	Check <u>all</u> that apply: ☐ SB ☐ MB ☐ SB-PW ☐ DVBE ☐ OSDS #		
Printed Name of DVBE's Authorized Representative		Signature of DVBE's Authorized Representative	Date

ATTACHMENT VII

[Link to form DGS PD 843](#)

- Select and use for titled "Disabled Veterans Business Enterprise Declarations" – 1 page

STATE OF CALIFORNIA – DEPARTMENT OF GENERAL SERVICES PROCUREMENT DIVISION DISABLED VETERAN BUSINESS ENTERPRISE DECLARATIONS DGS PD 843 (Rev. 9/2019) Formerly STD. 843		
Instructions: The disabled veteran (DV) owner(s) and DV manager(s) of the Disabled Veteran Business Enterprise (DVBE) must complete this declaration when a DVBE contractor or subcontractor will provide materials, supplies, services or equipment [Military and Veterans Code Section 999.2]. Violations are misdemeanors and punishable by imprisonment or fine and violators are liable for civil penalties. All signatures are made under penalty of perjury.		
SECTION 1		
Name of certified DVBE: _____		DVBE Ref. Number: _____
Description (materials/supplies/services/equipment proposed): _____		
Solicitation/Contract Number: _____		SCPRS Ref. Number: _____
(FOR STATE USE ONLY)		
SECTION 2		
APPLIES TO ALL DVBEs. Check only <u>one</u> box in Section 2 and provide original signatures.		
☐ I (we) declare that the <u>DVBE is not a broker or agent</u> , as defined in Military and Veterans Code Section 999.2 (b), of materials, supplies, services or equipment listed above. Also, complete Section 3 below if renting equipment.		
☐ Pursuant to Military and Veterans Code Section 999.2 (f), I (we) declare that the <u>DVBE is a broker or agent for the principal(s) listed below or on an attached sheet(s)</u> . (Pursuant to Military and Veterans Code 999.2 (e), State funds expended for equipment rented from equipment brokers pursuant to contracts awarded under this section shall <u>not</u> be credited toward the 3-percent DVBE participation goal.)		
All DV owners and managers of the DVBE (attach additional pages with sufficient signature blocks for each person to sign):		
_____ (Printed Name of DV Owner/Manager)	_____ (Signature of DV Owner/ Manager)	_____ (Date Signed)
_____ (Printed Name of DV Owner/Manager)	_____ (Signature of DV Owner/Manager)	_____ (Date Signed)
Firm/Principal for whom the DVBE is acting as a broker or agent: _____ (If more than one firm, list on extra sheets.) (Print or Type Name)		
Firm/Principal Phone: _____ Address: _____		
SECTION 3		
APPLIES TO ALL DVBEs THAT RENT EQUIPMENT <u>AND</u> DECLARE THE DVBE IS NOT A BROKER.		
☐ Pursuant to Military and Veterans Code Section 999.2 (c), (d) and (g), I am (we are) the DV(s) with at least 51% ownership of the DVBE, or a DV manager(s) of the DVBE. The DVBE maintains certification requirements in accordance with Military and Veterans Code Section 999 et. seq.		
☐ The undersigned owner(s) <u>own(s) at least 51% of the quantity and value of each piece of equipment</u> that will be rented for use in the contract identified above. I (we), the DV owners of the equipment, have submitted to the administering agency my (our) personal federal tax return(s) at time of certification and annually thereafter as defined in <i>Military and Veterans Code 999.2, subsections (c) and (g)</i> . <i>Failure by the disabled veteran equipment owner(s) to submit their personal federal tax return(s) to the administering agency as defined in Military and Veterans Code 999.2, subsections (c) and (g), will result in the DVBE being deemed an equipment broker.</i>		
Disabled Veteran Owner(s) of the DVBE (attach additional pages with signature blocks for each person to sign):		
_____ (Printed Name)	_____ (Signature)	_____ (Date Signed)
_____ (Address of Owner)	_____ (Telephone)	_____ (Tax Identification Number of Owner)
Disabled Veteran Manager(s) of the DVBE (attach additional pages with sufficient signature blocks for each person to sign):		
_____ (Printed Name of DV Manager)	_____ (Signature of DV Manager)	_____ (Date Signed)
Page ____ of ____		

ATTACHMENT VIII

[Link to form DGS PD 05-105](#)

- Select and use form titled "Bidder Declaration (Written)" – 2 pages

State of California—Department of General Services, Procurement Division GSPD-05-105 (REV 08/09)				Solicitation Number _____																														
BIDDER DECLARATION																																		
1. Prime bidder information (Review attached Bidder Declaration Instructions prior to completion of this form): a. Identify current California certification(s) (MB, SB, NVSA, DVBE): _____ or None ☐ b. Will subcontractors be used for this contract? Yes ☐ No ☐ (If yes, indicate the distinct element of work your firm will perform in this contract e.g., list the proposed products produced by your firm, state if your firm owns the transportation vehicles that will deliver the products to the State, identify which solicited services your firm will perform, etc.). Use additional sheets, as necessary. c. If you are a California certified DVBE: (1) Are you a broker or agent? Yes ☐ No ☐ (2) If the contract includes equipment rental, does your company own at least 51% of the equipment provided in this contract (quantity and value)? Yes ☐ No ☐ N/A ☐																																		
2. If no subcontractors will be used, skip to certification below. Otherwise, list all subcontractors for this contract. (Attach additional pages if necessary): <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="font-size: x-small;">Subcontractor Name, Contact Person, Phone Number & Fax Number</th> <th style="font-size: x-small;">Subcontractor Address & Email Address</th> <th style="font-size: x-small;">CA Certification (MB, SB, NVSA, DVBE or None)</th> <th style="font-size: x-small;">Work performed or goods provided for this contract</th> <th style="font-size: x-small;">Corresponding % of bid price</th> <th style="font-size: x-small;">Good Standing?</th> <th style="font-size: x-small;">51% Rental?</th> </tr> </thead> <tbody> <tr> <td style="height: 40px;"></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> <tr> <td style="height: 40px;"></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> <tr> <td style="height: 40px;"></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> </tbody> </table>							Subcontractor Name, Contact Person, Phone Number & Fax Number	Subcontractor Address & Email Address	CA Certification (MB, SB, NVSA, DVBE or None)	Work performed or goods provided for this contract	Corresponding % of bid price	Good Standing?	51% Rental?						☐	☐						☐	☐						☐	☐
Subcontractor Name, Contact Person, Phone Number & Fax Number	Subcontractor Address & Email Address	CA Certification (MB, SB, NVSA, DVBE or None)	Work performed or goods provided for this contract	Corresponding % of bid price	Good Standing?	51% Rental?																												
					☐	☐																												
					☐	☐																												
					☐	☐																												
CERTIFICATION: By signing the bid response, I certify under penalty of perjury that the information provided is true and correct. Page _____ of _____																																		
State of California—Department of General Services, Procurement Division GSPD-05-105 (REV 08/09) Instructions																																		
BIDDER DECLARATION Instructions																																		
All prime bidders (the firm submitting the bid) must complete the Bidder Declaration. 1.a. Identify all current certifications issued by the State of California. If the prime bidder has no California certification(s), check the line labeled "None" and proceed to item #2. If the prime bidder possesses one or more of the following certifications, enter the applicable certification(s) on the line: • Microbusiness (MB) • Small Business (SB) • Nonprofit Veteran Service Agency (NVSA) • Disabled Veteran Business Enterprise (DVBE) 1.b. Mark either "Yes" or "No" to identify whether subcontractors will be used for the contract. If the response is "No," proceed to item #1.c. If "Yes," enter on the line the distinct element of work contained in the contract to be performed or the goods to be provided by the prime bidder. Do not include goods or services to be provided by subcontractors. Bidders certified as MB, SB, NVSA, and/or DVBE must provide a commercially useful function as defined in Military and Veterans Code Section 999 for DVBEs and Government Code Section 14837(d)(4)(A) for small/microbusinesses. Bids must propose that certified bidders provide a commercially useful function for the resulting contract or the bid will be deemed non-responsive and rejected by the State. For questions regarding the solicitation, contact the procurement official identified in the solicitation. Note: A subcontractor is any person, firm, corporation, or organization contracting to perform part of the prime's contract. 1.c. This item is only to be completed by businesses certified by California as a DVBE. (1) Declare whether the prime bidder is a broker or agent by marking either "Yes" or "No." The Military and Veterans Code Section 999.2 (b) defines "broker" or "agent" as a certified DVBE contractor or subcontractor that does not have title, possession, control, and risk of loss of materials, supplies, services, or equipment provided to an awarding department, unless one or more of the disabled veteran owners has at least 51-percent ownership of the quantity and value of the materials, supplies, services, and of each piece of equipment provided under the contract. (2) If bidding rental equipment, mark either "Yes" or "No" to identify if the prime bidder owns at least 51% of the equipment provided (quantity and value). If not bidding rental equipment, mark "N/A" for "not applicable." 2. If no subcontractors are proposed, do not complete the table. Read the certification at the bottom of the form and complete "Page ____ of ____" on the form. If subcontractors will be used, complete the table listing all subcontractors. If necessary, attach additional pages and complete the "Page ____ of ____" accordingly.																																		
2. (continued) Column Labels Subcontractor Name, Contact Person, Phone Number & Fax Number—List each element for all subcontractors. Subcontractor Address & Email Address—Enter the address and if available, an Email address. CA Certification (MB, SB, NVSA, DVBE or None)—If the subcontractor possesses a current State of California certification(s), verify on this website (www.eprsource.pd.dgs.ca.gov). Work performed or goods provided for this contract—Identify the distinct element of work contained in the contract to be performed or the goods to be provided by each subcontractor. Certified subcontractors must provide a commercially useful function for the contract. (See paragraph 1.b above for code citations regarding the definition of commercially useful function.) If a certified subcontractor is further subcontracting a greater portion of the work or goods provided for the resulting contract than would be expected by normal industry practices, attach a separate sheet of paper explaining the situation. Corresponding % of bid price—Enter the corresponding percentage of the total bid price for the goods and/or services to be provided by each subcontractor. Do not enter a dollar amount. Good Standing?—Provide a response for each subcontractor listed. Enter either "Yes" or "No" to indicate that the prime bidder has verified that the subcontractor(s) is in good standing for all of the following: • Possesses valid license(s) for any license(s) or permits required by the solicitation or by law • If a corporation, the company is qualified to do business in California and designated by the State of California Secretary of State to be in good standing • Possesses valid State of California certification(s) if claiming MB, SB, NVSA, and/or DVBE status 51% Rental?—This pertains to the applicability of rental equipment. Based on the following parameters, enter either "N/A" (not applicable), "Yes" or "No" for each subcontractor listed. Enter "N/A" if the: • Subcontractor is NOT a DVBE (regardless of whether or not rental equipment is provided by the subcontractor) or • Subcontractor is NOT providing rental equipment (regardless of whether or not subcontractor is a DVBE) Enter "Yes" if the subcontractor is a California certified DVBE providing rental equipment and the subcontractor owns at least 51% of the rental equipment (quantity and value) it will be providing for the contract. Enter "No" if the subcontractor is a California certified DVBE providing rental equipment but the subcontractor does NOT own at least 51% of the rental equipment (quantity and value) it will be providing. Read the certification at the bottom of the page and complete the "Page ____ of ____" accordingly.																																		

ATTACHMENT IX

STATE OF CALIFORNIA
CALIFORNIA CIVIL RIGHTS LAWS ATTACHMENT
DGS OLS 04 (Rev. 01/17)

DEPARTMENT OF GENERAL SERVICES
OFFICE OF LEGAL SERVICES

Pursuant to Public Contract Code section 2010, a person that submits a bid or proposal to, or otherwise proposes to enter into or renew a contract with, a state agency with respect to any contract in the amount of \$100,000 or above shall certify, under penalty of perjury, at the time of the bid or proposal is submitted or the contract is renewed, all of the following:

1. **CALIFORNIA CIVIL RIGHTS LAWS**: For contracts executed or renewed after January 1, 2017, the contractor certifies compliance with the Unruh Civil Rights Act (Section 51 of the Civil Code) and the Fair Employment and Housing Act (Section 12960 of the Government Code); and
2. **EMPLOYER DISCRIMINATORY POLICIES**: For contracts executed or renewed after January 1, 2017, if a Contractor has an internal policy against a sovereign nation or peoples recognized by the United States government, the Contractor certifies that such policies are not used in violation of the Unruh Civil Rights Act (Section 51 of the Civil Code) or the Fair Employment and Housing Act (Section 12960 of the Government Code).

CERTIFICATION

I, the official named below, certify under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Proposer/Bidder Firm Name (Printed)	Federal ID Number
-------------------------------------	-------------------

By (Authorized Signature)

Printed Name and Title of Person Signing

Executed in the County of	Executed in the State of
---------------------------	--------------------------

Date Executed

**ATTACHMENT X
IRAN CONTRACTING ACT
(Public Contract Code sections 2202-2208)**

Prior to bidding on, submitting a proposal or executing a contract or renewal for a State of California contract for goods or services of \$1,000,000 or more, a vendor must either: a) certify it is **not** on the current list of persons engaged in investment activities in Iran created by the California Department of General Services ("DGS") pursuant to Public Contract Code section 2203(b) and is not a financial institution extending twenty million dollars (\$20,000,000) or more in credit to another person, for 45 days or more, if that other person will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS; or b) demonstrate it has been exempted from the certification requirement for that solicitation or contract pursuant to Public Contract Code section 2203(c) or (d).

To comply with this requirement, please insert your vendor or financial institution name and Federal ID Number (if available) and complete **one** of the options below. Please note: California law establishes penalties for providing false certifications, including civil penalties equal to the greater of \$250,000 or twice the amount of the contract for which the false certification was made; contract termination; and three-year ineligibility to bid on contracts. (Public Contract Code section 2205.)

OPTION #1 - CERTIFICATION

I, the official named below, certify I am duly authorized to execute this certification on behalf of the vendor/financial institution identified below, and the vendor/financial institution identified below is **not** on the current list of persons engaged in investment activities in Iran created by DGS and is not a financial institution extending twenty million dollars (\$20,000,000) or more in credit to another person/vendor, for 45 days or more, if that other person/vendor will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS.

<i>Vendor Name/Financial Institution (Printed)</i>		<i>Federal ID Number (or n/a)</i>
<i>By (Authorized Signature)</i>		
<i>Printed Name and Title of Person Signing</i>		
<i>Date Executed</i>	<i>Executed in</i>	

OPTION #2 – EXEMPTION

Pursuant to Public Contract Code sections 2203(c) and (d), a public entity may permit a vendor/financial institution engaged in investment activities in Iran, on a case-by-case basis, to be eligible for, or to bid on, submit a proposal for, or enters into or renews, a contract for goods and services.

If you have obtained an exemption from the certification requirement under the Iran Contracting Act, please fill out the information below, and attach documentation demonstrating the exemption approval.

<i>Vendor Name/Financial Institution (Printed)</i>		<i>Federal ID Number (or n/a)</i>
<i>By (Authorized Signature)</i>		
<i>Printed Name and Title of Person Signing</i>		<i>Date Executed</i>

SAMPLE CONTRACT

STATE OF CALIFORNIA - DEPARTMENT OF GENERAL SERVICES

STANDARD AGREEMENT

STD 213 (Rev. 03/2019)

AGREEMENT NUMBER

PURCHASING AUTHORITY NUMBER (If Applicable)

1. This Agreement is entered into between the Contracting Agency and the Contractor named below:

CONTRACTING AGENCY NAME

CONTRACTOR NAME

2. The term of this Agreement is:

START DATE

THROUGH END DATE

3. The maximum amount of this Agreement is:

4. The parties agree to comply with the terms and conditions of the following exhibits, which are by this reference made a part of the Agreement.

EXHIBITS	TITLE	PAGES
Exhibit A	Scope of Work	
Exhibit B	Budget Detail and Payment Provisions	
Exhibit C*	General Terms and Conditions	
* *		

Items shown with an asterisk (*), are hereby incorporated by reference and made part of this agreement as if attached hereto. These documents can be viewed at <https://www.dgs.ca.gov/OLS/Resources>

IN WITNESS WHERE OF THIS AGREEMENT HAS BEEN EXECUTED BY THE PARTIES HERETO.

CONTRACTOR

CONTRACTOR NAME (if other than an individual, state whether a corporation, partnership, etc.)

CONTRACTOR BUSINESS ADDRESS

CITY

STATE

ZIP

PRINTED NAME OF PERSON SIGNING

TITLE

CONTRACTOR AUTHORIZED SIGNATURE

DATE SIGNED

STATE OF CALIFORNIA

CONTRACTING AGENCY NAME

CONTRACTING AGENCY ADDRESS

CITY

STATE

ZIP

PRINTED NAME OF PERSON SIGNING

TITLE

CONTRACTING AGENCY AUTHORIZED SIGNATURE

DATE SIGNED

CALIFORNIA DEPARTMENT OF GENERAL SERVICES APPROVAL

EXEMPTION (If Applicable)

EXHIBIT A SCOPE OF WORK

- A. Contractor agrees to provide services to the Department of Water Resources (DWR), Flood Maintenance and Operations Branch (FMO), as described herein. Contractor will supply material, equipment, and labor to install full segment (access point to access point) Cured-In-Place Pipe (CIPP) to rehabilitate culvert pipes and full depth rehabilitation of gate riser manholes within the State Plan of Flood Control (SPFC) levees in the Sacramento River and the San Joaquin River Basins, California.
- B. The rehabilitation work request is issued by DWR via work orders. See Exhibit A, Attachment 1. DWR will provide a list of pipes to the Contractor with completed National Association of Sewer Service Companies (NASSCO) Pipeline Assessment Certification Program (PACP) inspection reports for each pipe in the work order. The Contractor will perform a pipe evaluation which consists of a site visit and providing all CIPP rehabilitation submittals as described herein for each pipe.
- C. The Contractor will provide rehabilitation services on approximately 300 culverts and 50 gate riser manholes. The services will be performed in SPFC levees in areas maintained by the Local Maintaining Agencies (LMA) throughout the Central Valley. DWR and the LMAs are routinely performing NASSCO PACP inspections on the culvert inventory located in the SPFC leveed areas mentioned above. See Exhibit A, Attachment 2 for maps showing the general locations of the SPFC levees (Project Levees). The pipes will be located within 25 miles of each other for each work order, measured along the levee roads or local roads, whichever is shorter.
- D. The average length estimated for the pipes requiring CIPP rehabilitation is 60 feet but can range from 25 to 230 feet. The majority of rehabilitation will be in pipes measuring 24 inches in diameter but can range from 12 inches to 60 inches. Host pipe material will typically consist of Corrugated Metal Pipe (CMP) but may also consist of steel or concrete.
- E. The average depth estimated for gate riser manholes requiring rehabilitation is 15 feet but can range from 10 to 25 feet. The majority of rehabilitation will be in gate riser manholes measuring 48 inches in diameter but can range from 36 to 72 inches. The host gate riser manhole material is CMP. Typical cross section showing the lining extents is within Exhibit A, Attachment 6.
- F. Typical cross sections showing the pipe through the levee are shown in Exhibit A, Attachment 3. The majority of pipes are continuous from the landside to waterside as shown on the sheet titled, "CIPP REPAIR." Some of the pipes have an intersecting gate riser manhole which is accessed near the top of the levee waterside slope as shown in the sheet titled, "CIPP REPAIR – WITH GATE RISER MANHOLE." However, pipes with a gate riser manhole are still considered one (1) pipe unit as measured on Exhibit B, Attachment 1.
- G. For the pipes that have a gate riser manhole, CIPP rehabilitation will involve lining through the riser and gate opening. After the CIPP is set, the Contractor will cut out excess CIPP so the structure will properly function and seal the ends at the riser location. Sealant for gate or riser openings will be polyurethane-based non-sag elastomeric sealant Sikaflex-1A, or equivalent. Alternatively, a temporary spool piece can be inserted to assist with lining through a riser and then restore pipe with end sealing as noted herein to ensure proper function of the drainage pipe system assembly post-lining.
- H. Gate riser manholes to be rehabilitated may also include installation of a concrete encasement for a new canal gate to be installed via wall mount to the encasement. This work is shown in Exhibit A, Attachment 6.

- I. Traffic control for most pipe locations will not be needed. If required, the Contractor will need to provide a traffic control crew consisting of a minimum of 3 people, 2 vehicles, and appropriate equipment. The Contractor will be responsible for securing any encroachment permits or necessary permissions for traffic control.
- J. On-site disposal locations will generally be provided for each work area. Travel from the pipe location to the disposal site will typically be less than a 20-minute drive along levee roads in each direction. If required, and disposal is not permitted on site, the Contractor will dispose of the material at a location determined by the Contractor.
- K. Clearing of vegetation and minor debris removal may be necessary to gain access to the entrance of pipes and or manholes. DWR may request a laborer to provide vegetation and/or minor debris removal or other miscellaneous work. At the request of DWR, the Contractor will provide a laborer and truck with hand tools including shovels, shears, picks, etc.
- L. Removing screw gates, slide gates, and/or flap gates will typically be necessary for rehabilitation. The Contractor will provide labor and equipment necessary for removal and reinstallation of gates. Depending on the existing condition of the headwall and gate and at the direction of DWR, repairs will be made which may include installing a new gate to the gate manufacturer's and DWR's specifications per Section R – Construction Method.
- M. New gate procurement, storage, and delivery to the site, as a whole or partially, may be done by the LMA or by the Contractor when directed by DWR. An allowance is included in the bid for procurement and storage and delivery of gates by the Contractor when directed by DWR.
- N. DWR and LMAs will typically provide access to either the waterside or landside of the pipe. Access will mainly be a dirt road located parallel to the levee and perpendicular to the culvert. CIPP rehabilitation will be done in both the upstream and downstream direction, depending on the best access location. In some situations, the work may have to be performed from the levee road located at the top of the levee. DWR will coordinate with the Contractor on the feasibility of CIPP rehabilitation at these locations.
- O. There may be instances where there is a hole in the existing pipe near a gate interfering with the integrity of the CIPP end seal. For such instances the Contractor may be instructed to trim the pipe end to facilitate CIPP lining. Such work will not be measured for separate payment and will be included in the various bid items. If the pipe end needs to be replaced or extended with new pipe, DWR will provide such services.
- P. Presented below is a summary table of the estimated quantity of work described:

Area	CIPP Rehabilitation	Average Length of Pipe
Sacramento River System - Local Maintaining Agencies	110	68 Ft
San Joaquin River System - Local Maintaining Agencies	190	55 Ft

- Q. DWR will coordinate with the LMA on existing levee maintenance operations (e.g. mowing, clearing, and burning) and advise the Contractor of operations affecting their work.

R. Contract Managers during the term of this agreement will be:

Department of Water Resources

Name:
Office Phone:
Cell Phone:
Email:

[Insert Contractor name]

Name:
Office Phone:
Cell Phone:
Email:

Contract Managers may be changed upon written notice to the other party.

S. QUALIFICATIONS

1. Contractor must possess a General Contractor license with the State of California.
2. The Contractor will have a minimum of three (3) years of continuous experience installing CIPP in pipes of a similar size and length as contained in this contract.
3. For the Contractor to be considered qualified, a minimum linear footage of the exact liner proposed must have been successfully installed previously by the Contractor as described below:
 - i. The Contractor will have installed a minimum of 50,000 linear feet of the CIPP liner system proposed for use for pipes less than or equal to 36 inches in diameter.
 - ii. The Contractor will have installed a minimum of 10,000 linear feet of the CIPP liner system proposed for use for pipes greater than 36 inches in diameter.
 - iii. The Contractor will have installed a minimum of 500 vertical feet of the gate riser manhole liner system proposed.
4. Documentation showing the Contractor's experience will be submitted with their bid proposal and include a description of the work performed, the time period of performance, and will include the name, address, and telephone number of the owner, agency, or municipality.
5. The Contractor must be able to design the CIPP liners according to the included specifications in the Scope of Work and in accordance with Appendix X1 of the latest edition of the ASTM F-1216. All calculations will include data that conforms to the requirements of these specifications. The responsibility of the design correctness lies entirely on the Contractor regardless of DWR's review of the design submittals.

T. Description of Services

1. This specification covers the supply and installation of full segment CIPP to rehabilitate culvert pipes and their appurtenant structures within the SPFC levees in the Sacramento River and the San Joaquin River Basins, California.
2. CIPP means trenchless culvert rehabilitation by installing a resin-felt composite structure which when cured will form a continuous-close fit liner within an existing culvert, with structural strength to support the anticipated loading throughout a 50-year design life. The felt may be impregnated with reinforcing glass or a resin reinforcing composite may be used where UV curing methods are utilized.
3. Full segment CIPP means CIPP extending from access point to access point for a full culvert length spanning a levee.

4. Minimum material requirements for CIPP will conform to the latest edition of the ASTM D5813 "Standard Specification for Cured-In-Place Thermosetting Resin Culvert Pipe" and the supplemental requirements noted herein.
5. Appurtenant Structure rehabilitation may include work on pipe risers or manholes, inlet/outlet structures, gates and headwalls.

T. Materials

1. CIPP Materials Requirements

- i. Approved Liner Systems include the following:
 1. Insituform
 - a. Non-reinforced tube – hot water and steam curing methods.
 - b. Reinforced tube – hot water, steam, and UV curing systems.
 2. Michels Corporation
 - a. Non-reinforced tube – hot water and steam curing methods.
 - b. Reinforced tube – hot water, steam, and UV curing systems.
 3. SAK
 - a. Non-reinforced tube – hot water and steam curing methods.
 - b. Reinforced tube – hot water, steam, and UV curing systems.
 4. Inliner USA
 - a. Non-reinforced tube – hot water and steam curing methods
 - b. Reinforced tube – hot water, steam, and UV curing systems.
 5. Reline America
 - a. Reinforced tube with UV curing system.
- ii. The materials of the Liner System, Tube and Resin, will comply with the requirements of the latest edition of the ASTM D5813 Sections 5, 6, 7, and 8, unless noted otherwise.
- iii. The Tube will consist of one or more layers of fabric that are compatible with the resin used and are capable of supporting and carrying resin. The Tube will be capable of withstanding installation procedures and curing temperatures.
- iv. The resin will be a thermosetting polyester or vinyl ester.
- v. If a calibration hose is used for inflation of the Liner System, it will comply with the requirements of the latest edition of the ASTM F1743 or ASTM F2019.
- vi. Prior to construction, the resin manufacturer will be required to submit a resin sample for infrared analysis. The infrared spectrum generated from this sample may be compared to the spectrum obtained from samples of the actual resin used to wet-out the liner at DWR's discretion.
- vii. The minimum structural properties of the Liner System will satisfy the requirements of Table 1 as per the latest edition of the ASTM F1216, or

Table 2 as per the latest edition of the ASTM F2019.

Table 1: Minimum Properties as per ASTM F1216

Component	Structural Property	Minimum Value (MPa)	Minimum Value (PSI)
Tube	Tensile Strength	5	725
Liner System	Flexural Strength	31	4,500
Liner System	Flexural Modulus	1724	250,000

Table 2: Minimum Properties as per ASTM F2019

Component	Structural Property	Minimum Value (MPa)	Minimum Value (PSI)
Tube	Tensile Strength	Declared value	Declared value
Liner System	Flexural Strength	103	15,000
Liner System	Flexural Modulus	5000	725,000

2. Gate Riser Manhole Liner System Material Requirements

i. Polyurethane Liner Systems:

1. Approved Liner Systems include the following:
 - a. Spraywall by Sprayroq
 - b. Sancon 100 by Sancon Technologies
 - i. Or approved equal
2. Minimum requirements:
 - a. The lining will be high build, corrosion and abrasion resistant, 100% polyurethane coating. The lining system will employ a 100% solids epoxy primer capable of bonding to damp concrete.

ii. Cured-in-Place Manhole (CIPM) Liner Systems:

1. Approved Liner Systems include the following:
 - a. CIPM Liner System by Alternative Liner Technologies
 - b. Triplex Liner System by McNeil Technologies.
 - i. Or approved equal
3. Verification of structural properties to be used in design will be made by attaching relevant third-party test results. Reports verifying structural properties will conform to the requirements of Table 3. Flexural strength, tensile strength, and flexural modulus values will be based on field test results attained by the Contractor with the specific liner system, tube, and resin proposed for use on this project.
4. Type testing by the manufacturer of the resin system will not be used to support design values for short term strength and stiffness. Test results from resin field sampling on previous representative projects may be used to support design values for short term strength and stiffness. Design values will not exceed the manufacturer's theoretical value, when using field sampling test results.

Table 3: Reference Standard for Structural Property Verification

Structural Property	Applicable Standard	Report Requirements
Tensile Strength (Tube)	ASTM D5035	Section 13 of ASTM D5035
Flexural Strength and Flexural Modulus (Liner System)	ASTM D790	Section 13 of ASTM D790 (as modified in Appendix X2 of ASTM F2019 for UV)
Long Term Flexural Creep Modulus (Liner System)	ASTM D2990	Section 13 of ASTM D2990 (as modified in Appendix X3 of ASTM F2019 for UV)

5. Submit chemical resistance results for each proposed Liner System.
6. If the third-party test results do not implicitly indicate the resin and tube name on the actual laboratory report, the third party will provide such information.
7. For each liner system proposed, Contractor must fill out the table in Exhibit A, Attachment 4, and submit with Bid Proposal. Sample table shown below.

Table 4: Liner System Name and Design Details

Materials:			
Liner System Name			
Resin: Name, Type, Manufacturer			
Tube: Name, Type, Manufacturer			
Tube Tensile Strength to ASTM D5035 (PSI)			
Design:			
Liner System Name			
Flexural Strength to ASTM D790 (PSI)			
Flexural Modulus to ASTM D790 (PSI)			
Compressive Strength to ASTM D695 (PSI)			
Tensile Strength to ASTM D638 (PSI)			
Flexural Creep Modulus projected to 50 Years to ASTM D2990 (PSI)			

U. Liner Design

1. CIPP Design Objectives for Culvert Rehabilitation, include:
 - a. Meeting design structural strength for the culvert by installing a close-fit CIPP for anticipated loading.

- b. Rehabilitate culvert to meet or exceed existing hydraulic capacity.
- c. Reducing infiltration and exfiltration that may compromise long term structural stability of the pipe.
- d. Preventing root intrusion.
- e. Providing a liner installation that is compatible with the host pipe in instances where the host pipe may be lined with bituminous mixtures.
- f. Minimizing the time required to complete the culvert rehabilitation.
- g. Minimizing disturbance to pavements, roads, and private property.
- h. Minimizing disruption to vehicular and pedestrian traffic.
- i. Select CIPP system and plan approach to rehabilitation toward maximizing the achievement of these design objectives.

2. CIPP Design - General

- a. Design full segment CIPP in accordance with the most current version of Appendix X1 of ASTM F1216 and these specifications as a gravity pipe in a fully deteriorated pipe condition in accordance with design conditions noted in the Drawings and Specifications.
- b. Size CIPP in accordance with the design objectives to provide a close-fit to the host pipe with no annulus except for the maximum allowable diametric shrinkage due to curing permitted in ASTM D5813 and the natural annulus afforded by the corrugations in the host pipe.
- c. Perform a design check to confirm the full flow hydraulic capacity of the CIPP will be equal to or greater than the existing culvert. Use "Manning's" formula with assumed 'n' value of 0.015 for the CIPP in corrugated pipe and an "n" value for the existing CMP of 0.025. For smooth wall host pipes, assume a "Manning's" "n" value of 0.011 for the CIPP and an estimated "Manning's" "n" based on the observed condition of the pipeline from the PACP Inspections.

3. CIPP Design – Full Deteriorated Condition

- a. Provide Standard Designs for all sizes of culvert, all heights of cover, and all host pipe ovality conditions noted in the Table in Bid Sheet 2. Utilize the following design criteria:
 - 1. Design CIPP for fully deteriorated pipe condition for long term sustained loads in accordance with Appendix X1 of ASTM F1216 and the following minimum design assumptions and included the supplementary design checks for Flood Conditions noted below.
 - a. Include an allowance for an AASHTO HS20 concentrated live load in the total external pressure on the pipe.
 - b. For liners listed with 10 feet of depth carry out design checks at 10 feet depth and for 5 feet of cover and carry greater thickness.
 - 2. Calculate dead load based on soil density of 120 lb/ft³ (1920 kg/m³).

3. Assume groundwater level for long term sustained load at 3 feet above pipe (using a 50-year value for flexural modulus and flexural strength as noted below). This is the sustained long-term loading check.
4. Carry out a short-term loading check for flood conditions. Groundwater level at top of levee (e.g., to full cover depth in Table in the Exhibit B, Attachment 1). Use a 1000-hour flexural modulus and flexural strength (flood condition loading check) and assume partially deteriorated design conditions (i.e., Check only Equations X1.1 and X1.2 of ASTM F1216 Appendix X1).
5. Use ovalities in the Table shown in Bid Sheet 2 or based on observation of the maintenance inspection and site-specific Work Orders involving Special Designs.
6. De-rated values for long term sustained loads will be the projected value at 50 years of a continuous application of the design load based on the specific resin and felt composite as established by ASTM D2990 based on testing at 25% of flexural yield strength. Flood condition checks as noted above will use the projected 1000-hour value from the same ASTM D2990 test results.
7. Long term values for flexural strength will match long term flexural modulus reductions unless the manufacturer can demonstrate otherwise with appropriate long-term testing data (i.e., ASTM D2990 or equal).
8. Modulus of soil reaction ($E's$) will be assumed to be 1000 psi (6984 kPa) for depth of cover checks greater than or equal to 10 feet (3 m) and 700 psi (4825 kPa) for depth of cover checks less than 10 feet (3 m).
9. Minimum factor of safety (N) of 2.
10. Design Values used for flexural modulus and flexural strength:
 - a. Use design values (i.e., prior to de-rating for creep) for flexural modulus and flexural strength that are equal to or greater than the minimum values stipulated in Table 1 of ASTM F1216.
 - b. Use only design values (i.e., prior to de-rating for creep) that the Contractor can demonstrate that they consistently achieve in actual field installations based on independent third-party testing by a recognized laboratory with adequate experience in carrying out ASTM D790 testing on CIPP samples.

4. Gate Riser Manhole Liner Design:

- a. Using reviewed and accepted long term flexural strength and modulus the Contractor will determine the required liner wall thickness using the following procedure:
 - i. Select the long-term (50-year) compressive and tensile strength for the lining product proposed for use.
 - ii. Using the long-term compressive and tensile strength to determine the minimum liner thickness from the respective design equation using applicable design conditions.

- iii. The minimum required liner thickness will be the greater of the thicknesses determined from the design equations within Exhibit A Attachment 5 for compressive and tensile strength.
 - iv. The Contactor may supplement the design equations with Finite Element Analysis or other methods for calculating the required liner thickness, but the liner thickness will not be less than that calculated using the design equations within Exhibit A Attachment 5.
 - v. Increase the selected thickness to allow for processing and to ensure the installed liner meets all the requirements specified within this contract.
- b. Minimum material properties:
- i. Material properties will conform to the material requirements specified herein and fall within the range of material properties noted in Exhibit A Attachment 5.

5. Fiber-optic cable sensing system:

- a. Zia Systems or approved equal.

6. Camera Inspection Equipment:

- a. The inspections will be performed using a color pan and tilt camera or a side wall scanning (panoramic) camera specifically designed and constructed for storm drainage or storm drain pipeline inspection.
- b. Lighting for the pan and tilt camera or side wall scanning camera will provide a clear picture of the entire periphery of the existing culvert. The camera will include a remote adjustable optical focus and automatic light compensation iris with remote override, camera controller with remote focus, iris and auto centering control and camera lighting system. Illumination sensitivity will be 3 lux or less. During inspection, lighting intensity will be adjusted to minimize glare. Lighting and picture quality will be adjusted to provide a clear, in-focus picture of the entire periphery of the pipe for all conditions encountered. Lighting will be adjusted according to the size of the pipe.
- c. The pan and tilt camera will pause, pan, and visually inspect all connections, pipe ends, and maintenance or structural defects.
- d. If utilizing a camera with side wall scanning capabilities, pausing, and panning of each connection is not necessary during the inspection if the image clearly depicts the inside of the connection for post processing.
- e. Side wall scanning inspection systems are imaging cameras that are capable of a continuous 360-degree image capture of the wall of the pipeline being inspected. These systems may have one or multiple cameras to capture the complete interior view of the pipeline. Due to the high resolution of the image quality, the inspections may be conducted at a higher Speed than color pan and tilt closed-circuit television (CCTV) method. Once the pipeline inspections are completed, the captured images can be linked with a companion software package that allows for identifying and coding defects and features in the pipeline. Typically, these systems provide a fold flat view and a perspective view (typical of CCTV) of the pipeline.
- f. The camera will move through the pipe in a downstream direction whenever possible at a maximum uniform rate of 25 feet per minute (fpm). Maximum allowable error for all the footage counters will not exceed 0.5%.

- g. There will be no geometrical distortion of the image. The camera and monitor will be able to produce a minimum of 460 lines of horizontal resolution and 400 lines of vertical resolution. Focal distance will be adjustable from a range of 1 inch to infinity. **The camera will be mounted on skids or a tractor suitably sized for each pipe diameter to be inspected to center the camera vertically and horizontally in the pipe.** In pipe shapes that are other than round, the approximate center of the pipe will be determined by measuring the inside of the pipe at its greatest width (span) and at its greatest height (rise) and placing the camera at $\frac{1}{2}$ the height in the pipe and $\frac{1}{2}$ the width. Inspections not meeting these requirements will be rejected and will be re-inspected at no additional cost to the DWR.

7. Existing Culvert Design Conditions and engagement Protocol

- a. DWR is currently performing NASSCO PACP inspections on the Culvert inventory including cleaning. Site specific Work Orders will be generated by DWR for each site including:
 - 1. The specific grouping of culverts to be rehabilitated for the mobilization.
 - 2. Copies of the CCTV inspection.
 - 3. Direction on which Standard Design is deemed to govern at each site or a request for a Special Design.
 - 4. General description of site access development and flow control to be provided or direction for the Contractor to provide same at the specified hourly rates.
- b. The Contractor will visit each site and review all design recommendations and provide DWR the following:
 - 1. Confirmation of whether additional cleaning is required beyond the minimum level of cleanings stipulated in the Construction Methods, Section 3, Culvert Cleaning (p.50).
 - 2. Concurrence with the Standard Designs noted or recommendations on altered Design Conditions.
 - 3. Special Design as requested.
 - 4. Concurrence with DWR's site access for CIPP work and/or provision of site development requirements.

8. Submittals Before Starting Work

- a. Submit the CIPP design Shop Drawings sealed and signed by a Professional Engineer licensed to practice in the State of California. Include the following information:
 - 1. CIPP thickness computations including all specified design checks for all Standard Designs in Bid Submission.
 - 2. Calculations showing the hydraulic capacity of the CIPP culvert will be equal to or greater than the existing culvert.

3. Name and manufacturer of the resin and tube proposed for each CIPP Lining System that Standard designs are based on.
 4. Sufficient results of testing from an independent third-party laboratory from previous field installations (minimum of the three previous projects) to substantiate the validity of design values used for short term flexural modulus and flexural strength.
 5. Adequate support documentation from an Independent Testing Lab to substantiate creep and strength reductions for each CIPP lining system based on ASTM D2990 testing carried out at representative stress levels for the proposed installation (representative will be deemed to be testing carried out at 25% of the flexural yield strength).
 6. Other information that may be required by DWR to confirm the CIPP Standard designs conform to the specified requirements and design intent.
- b. Submit Gate Riser Manhole liner system shop drawings including the following information:
1. Thickness computations including all specified design checks for all Standard Designs in Bid Submission.
 2. Sufficient results of testing from an independent third-party laboratory from previous field installations (minimum of the three previous projects) to substantiate the validity of design values used for short term flexural modulus and flexural strength.
 3. Adequate support documentation from an Independent Testing Lab to substantiate creep and strength reductions for each CIPP lining system based on ASTM D2990 testing carried out at representative stress levels for the proposed installation (representative will be deemed to be testing carried out at 25% of the flexural yield strength).
 4. Other information that may reasonably be required by DWR to confirm the Gate Riser Manhole Standard designs conform to the specified requirements and design intent.
- c. Provide resin samples as follows:
1. Arrange for the manufacturer of the resin to forward a reference sample of each type of resin proposed for use on the works to a test laboratory approved by DWR to be used as a comparative reference sample for infrared spectrum testing.
 2. Deliver a representative sample from each resin batch to be used on the project before adding the catalyst from the wet-out facility to a test laboratory approved by DWR.
 3. The Contractor will arrange and pay for an infrared analysis of the samples when requested by DWR.

- d. Standard methods to be employed for styrene management.
 - 1. All sites interface with surficial drainage courses that should be assumed to be an active fish habitat. Therefore, styrene discharge to the environment in measurable levels will not be permitted.
 - 2. Styrene management plans can include one of the following alternatives methods of control:
 - a. Use of styrene free resins.
 - b. Use of on-site treatment systems where hot water curing methods are used.
 - c. 100% condensate capture and off-site disposal at a legal discharge facility where steam curing methods are utilized.
 - d. On-site monitoring to verify no residual styrene is discharged to the environment where UV curing methods are used.
- e. Styrene management plans will include sufficient details on:
 - 1. Required limits to be regulatory compliant for discharge based on the Contractor's proposed resin selection, curing method, and discharge location for steam condensate or cure water, storm water, etc.
 - 2. The means, methods, and techniques employed to mitigate styrene levels to within acceptable limits for discharge to the environment, including:
 - a. Resin selection to eliminate or mitigate styrene levels.
 - b. Cure considerations to mitigate excessive styrene volatilization.
 - c. Handling considerations, post cure to mitigate levels discharged to aquatic or other environments that may be deleteriously impacted by excessive styrene levels.
 - d. Monitoring to be employed to confirm discharge levels are consistent with the styrene management plans stated discharge limit objectives.

9. Submittals Before Starting On-Site Work

- a. Provide the following submittals to DWR a minimum of 10 days before starting lining in each set of Mobilizations.
 - 1. CIPP design Shop Drawings sealed and signed by a Professional Engineer licensed to practice in the State of California for any Special Designs requested by DWR.
 - 2. Submit an operations protocol for the CIPP tube impregnation process that provides information on the following:
 - a. Resin impregnation method.

- b. Designated location of the wet-out facility.
 - c. Documentation the resin to be used has not exceeded its shelf life as recommended by the manufacturer of the resin.
 - d. Volume and weight of resin to be impregnated into each liner and repair section including the proposed excess allowance for polymerization and migration (typically 7%) into cracks and joints of the host pipe.
 - e. Roller gap setting required to provide the final installed CIPP thickness based on the proposed volume of resin.
 - f. Details of the wet-out procedure for internal point repair CIPP.
3. Submit a construction protocol that provides information on the following:
- a. Details of planned scope of work for any extra work:
 - i. Site access.
 - ii. Flow control measures, if required.
 - b. Site specific liner requirements, including:
 - i. Details of pre-liner installation, if utilized.
 - ii. Liner installation specifics as per Clause 7.4 of ASTM F1216 for inversions, Clause 6.4 of ASTM F1743 for pull-in installations, and/or Clause 6.2 of ASTM F2019 for air inversion methods with reinforced tubes.
 - iii. Estimated length of time required to reinstate the culvert.
 - iv. Method of styrene management to be employed.
 - c. Required curing heads and times as per Clause 7.6.3 of ASTM F1216 for inversions of non-reinforced tubes, Clause 6.6.3 of ASTM F1743 for pull-in installations, and/or Clause 6.6.3 or 6.7.3 of ASTM F2019 for steam and UV curing methods, respectively. Curing protocols will provide specific direction on:
 - i. Recognized temperature for exothermic reaction
 - ii. Curing times or in the case of UV light cures, rate of travel of the ultraviolet light train assembly, pressures, temperature of the liner, and the amount and power of the lamps in operation
 - iii. Length of time to full cure after exotherm has occurred and recommended adjustments to curing time for complex heat sink or temperature variations that may occur during the curing period.
 - iv. Cool down rates for hot water and steam cure methods.

V. CONSTRUCTION METHOD

1. Verification of Existing Culvert and Gate Riser Manhole Dimensions.

- a. Verify dimensional requirements of each culvert and gate riser manhole to be rehabilitated prior to manufacturing of the CIPP or CIPM tube as follows:
 - i. Length of culvert for full segment CIPP.
 - ii. Depth of riser for full depth gate riser manhole relining
 - iii. Diameter and cross-section of the culvert and gate riser manhole including any deviations from within the section to be relined.
- b. Use calibrated calipers or other suitable measuring device capable of measuring accurately to ± 1 mm to confirm cross section geometry at clock positions of:
 - i. 12:00 to 6:00
 - ii. 2:00 to 8:00,
 - iii. 3:00 to 9:00 and
 - iv. 4:00 to 10:00.
- c. Estimate the remainder of the culvert and gate riser manhole dimensional requirements based on dimensional checks and the PACP Inspections.
- d. Obtain additional measurements for large diameter (larger than 24 inches) culverts sufficient to define the cross section to meet the design objectives for the rehabilitation system being utilized, including but not limited to:
 - i. The length of the inside perimeter (circumference) of the pipe culvert at the upstream and downstream ends.
- e. Submit host pipe lengths, depths, and dimensions to DWR in conjunction with the design submission and pre-design inspection where required.

2. Cleaning

- a. Remove loose and solid debris and root masses in accordance with Clause 7.12 of ASTM F1216. Site specific cleaning will include all debris removal that can readily be removed with high velocity cleaning equipment that is capable of producing a flow rate of 1 gallon per second at 2,000 psi (13,800 kPa) of pressure.
- b. Any debris vacuumed will be disposed by the Contractor in accordance with local regulations.

3. Inspection of Headwall and Gate Installation

- a. Inspect the existing headwall and gate to document condition of the concrete and if the existing gate is in a true vertical and horizontal alignment, operating correctly and in suitable condition to provide a tight seal upon completion of the CIPP work.
- b. Inform DWR if the headwall or gate is found to not be functioning as designed.

4. Culvert Inspections

- a. Flow control will be utilized to minimize water from entering the line during the inspection. In the case of bellies in the line, the pipe will be cleared of any standing water to provide continuous visibility during the inspection.
- b. Perform the following culvert inspections in accordance with NASSCO Standard Specifications for Inspection Method and documentation:
 1. V1 = Initial CCTV Inspection to confirm pipe preparation requirements. No coding required.
 2. V2 = Pre-Lining Inspection after culvert cleaning and preparation. No coding of the submission will be required.
 3. V3 = Post-Lining Inspection subsequent to installing the CIPP and culvert service reinstatement. Full coding required. Perform post-lining inspection immediately after culvert connection reinstatement while flow control measures are in place.
 4. Warranty Inspection before expiration of the warranty period and acceptance. Full coding required. Perform only at sites selected by DWR. Refer to Section R. 23. for further information regarding the number of pipes to be warranty inspected and timing to complete the inspections.
- c. Perform the following gate riser manhole inspections in accordance with NASSCO Standard Specifications for Manhole Condition Certification Program:
 - i. V1 = Initial Inspection to confirm gate riser manhole preparation requirements. No coding required.
 - ii. V2 = Pre-Lining Inspection after gate riser manhole cleaning and preparation. No coding of the submission will be required.
 - iii. V3 = Post-Lining Inspection subsequent to installing the liner and gate riser manhole reinstatement. Full coding required. Perform post-lining inspection immediately after riser connection reinstatement while flow control measures are in place.
 - iv. Warranty Inspection before expiration of the warranty period and acceptance. Full coding required. Perform only at sites selected by DWR. Refer to Section R. 25. for further information regarding the number of pipes to be warranty inspected and timing to complete the inspections.
- d. Provide a copy of each video, PACP inspection, and Microsoft Access inspection database to DWR.
- e. Advise DWR of any condition that is contrary to the design conditions or assumptions made that may affect either long- or short-term performance of the CIPP prior to liner design.
- f. Review the V1: Initial CCTV Inspection with DWR to obtain concurrence on the nature and amount of preparation work to be undertaken.
- g. Review the V2: Pre-Lining Inspection video with DWR at least 24 hours before installing the CIPP and obtain approval to install the CIPP. The Pre-Lining Inspection will confirm:

1. Necessary cleaning and pipe preparation work have been satisfactorily completed.
 2. Condition of the culvert pipe is consistent with the design conditions and the Specifications. Advise DWR of any condition that is contrary to the design conditions or assumptions made that may affect either long- or short-term performance of the CIPP prior to commencing lining.
 3. Location, condition, and operational status of all culvert services.
- h. V3: Post-Lining Inspection is to confirm the adequacy of culvert terminations and the fit and finish of the liner. The liners will have no infiltration, will uniformly cover specified surfaces and be free of defects that could reduce its intended performance.
 - i. Perform V3: Post-Lining Inspection within 24 hours of completing liner installation and prior to removing flow control, where applicable.
 - j. Warranty Inspection to confirm the fit and finish of the liner, need for any remedial work and acceptance of any repair work performed during the warranty period. Provide adequate culvert cleaning in accordance with Section 2.
 - k. The Contractor will perform all work in accordance with the latest OSHA confined space entry regulations

5. Flow Control

- a. Provide flow control, as required, around the section in which work is to be performed. Flow dams, flumes, and bypass pumping will be the full responsibility of the Contractor. The flow control system will be sufficient to handle expected flow conditions and will be capable of releasing flow in a controlled manner if an unexpected storm event occurs. If damage occurs to the host pipe or liner from the means and methods of flow control, the Contractor will repair such damage at no additional cost to the Owner. All repairs will be done to the satisfaction of DWR.
- b. Notify DWR of any drainage issues at the time of inspection. Such issues will be coordinated with DWR to be addressed prior to CIPP liner installation.
- c. If necessary, Contractor will provide labor, equipment, and material to create earth cofferdams, or other means of creating a temporary dam, and dewatering to facilitate CIPP lining of water impacted pipes. Contractor's dewatering proposal for water impacted pipes will be reviewed on a case-by-case basis and require DWR approval. Contractor will work with DWR environmental team to secure proper clearances, if necessary.
- d. Sandbag wall with visqueen and plywood is an example of acceptable options to dewater the culvert pipes with associated pumping of ponded water. Excavation or soil placement using heavy equipment is allowed for setting up such temporary water diversions only with prior approval granted by the Department of Water Resources (DWR) environmental and/or the local agency authority.

6. Preparation and Repairs prior to Lining

- a. Perform preparation and repairs as indicated in Site Specific Work Order instructions.

- b. Depending on the pipe condition near the gates, the pipe may require patching of holes or cut back to ensure adequate room to form the CIPP end seal.
- c. Clean interior surfaces of gate riser manholes of debris, dirt, oil, grease, remains of old coating materials, and any other extraneous materials as required by the lining system manufacturer.
- d. Pressure wash gate riser manhole walls to remove loose mortar, concrete and debris.
- e. Pressure washing levels, used for cleaning, will be as recommended by the manufacturer.
- f. Repair irregularities in gate riser manhole using materials, compatible with proposed resurfacing material, as recommended by the manufacturer.
- g. Repair leakage in manhole using materials, compatible with proposed resurfacing material.

7. Set-up and Gate Modifications to Facilitate Liner Installation

- a. Clear all vegetation. Minor debris removal may also be necessary to gain access to the entrance of pipes and/or manholes.
- b. If needed, remove screw gates, slide gates, and/or flap gates as necessary for CIPP rehabilitation. Remove damaged, misaligned or otherwise unacceptable anchors. Remove anchors by coring or drilling out the anchors. Thoroughly clean and roughen resulting holes. Reinstall existing or new gate as directed by DWR. All new anchors, bolts or other fastening devices must be of stainless-steel composition.
- c. Gate riser manholes:
 - i. Remove entirety of the existing gate and ladder in the gate riser manhole prior to rehabilitation.
 - ii. After the gate riser manhole has been lined full depth, install the pipe penetration's concrete encasement in accordance with the drawing and specifications included within Exhibit A, Attachment 6.
 - iii. After the concrete encasement has cured, mount new wall mounted canal gate and install new ladder in accordance with these contract documents.

8. Weather

- a. Review the weather forecast with DWR before starting CIPP lining installation.
- b. Delay liner installation when the anticipated weather conditions are such that anticipated culvert flow will exceed the limit of the available flow control measures or if the required extended curing times as identified in the styrene management plan may not be achieved.

9. Installation of CIPP

- a. To monitor the temperature of the CIPP wall during the curing process, temperature monitors will be placed between the host pipe and the CIPP throughout its entire length (continuous). The sensor will be active to monitor the temperature on the outside of the

CIPP during the entire curing process (i.e. initial heating stages to exotherm, curing time after exotherm, and cool down) through a fiber-optic cable sensing system. The installation of the system will be per the manufacturer's recommendations.

- b. In addition to the fiber-optic cable sensing system, separate temperature sensors (thermistors) will be placed between the host pipe and the CIPP in the bottom of the host pipe (invert) at each access point.
- c. For all inversion installations, a pre-liner will be installed. The pre-liner tube will be a plastic tube to fit the existing pipeline and will be continuous from manhole (access) to manhole (access). Pre-liners are not required when using pulled-in tubes with exterior coatings or in the case of UV or LED wet-out tubes that contain an inner and outer foil material.
- d. If required by the construction protocol, provide supplementary means of axial restraint to preclude excessive axial shrinkage.
- e. Prior to CIPP installation, a hydrophilic grouting material will be installed in accordance with manufacturer's recommendations for the full circumference of the pipe at both ends to seal the ends of the CIPP. The seal will be installed within the last 12-inches of the ultimate termination face of the CIPP liner and in an uninterrupted band (minimum 3/8" bead), gunned in the middle of corrugation crevice for corrugated metal pipes.
 - i. The grout for the CIPP end seals will be Leakmaster LV-Z as manufactured by Hydrotite for Sika or approved equal.
- f. Install liners by inversion methods in accordance with ASTM F1216 or by pull-in methods in accordance with ASTM F1743 and/or by the methods stipulated in ASTM F2019.
- g. For inversion installations for culverts that have been documented to have drainage issues, the rate of liner installation will be controlled with a holdback rope to assist with pushing out any residual water from the bottom of the host pipe. Every attempt will be made to remove all debris and water prior to installation.
- h. Full segment CIPP will be cured by hot water, steam, or UV light in accordance with the recommended cure/cool down times, minimum and maximum pressures, and temperatures provided by the manufacturer.
- i. Provide workmanship in accordance with ASTM D5813 and supplemental requirements noted in ASTM F1216, ASTM F1743, or ASTM F2019 dependent on CIPP system.
- j. Trim ends of CIPP neatly to fit flush with the host pipe, to seal the liner and to make watertight, and to facilitate proper gate operation. Where localized defects are noted, repair the liner with an approved full circumference CIPP internal point repair. Review method of defect resolution for concurrence with DWR.
- k. Fill annular spaces where the CIPP does not make an adequate seal with the host pipe at manholes, termination points and/or culvert penetrations due to broken or misaligned pipe. Use a polymeric resin mixture compatible with the CIPP.
- l. Extend limits for any internal point repairs a minimum of 12" (300 mm) in each direction beyond the limits of any defects to be repaired by CIPP point repairs.

- m. Ensure termination points of internal point repairs provide a smooth and uniform flow transition to the host pipe for the full circumference of the repair.
- n. Follow the protocol for styrene mitigation and monitoring as stipulated in the approved site-specific Styrene Management Plan.
- o. New gate installation and/or existing gate replacement or repair must be completed before CIPP lining placement.

10. Installation of Gate riser manhole Lining System:

- a. All lining systems will be installed in accordance with the manufacturer's recommendations including application temperature limitations.
- b. Polyurethane:
 - i. The work consists of troweling, spray applying and/or spincasting polymeric materials to the inside of the existing manhole.
 - 1. Contractors qualified in accordance with these specifications will perform the application or installation of the polymeric SYSTEMS.
 - ii. Flow will be controlled or removed from application surfaces until the polymeric material is applied and cured in accordance with the requirements of the material manufacturer.
 - 1. Surfaces will be cleaned and prepared as required by the polymeric material manufacturer and defined in SSPC SP-13/NACE No. 6 to acceptable moisture levels within the substrate and with a uniform, sound clean neutralized surface having sufficient profile to promote a mechanical bond with the polymeric coating. Oils, grease, incompatible existing coatings, waxes, form release, curing compounds, efflorescence, sealers, salts, or other contaminants which may affect the performance and adhesion of the coating to the substrate will be removed.
 - 2. Concrete and/or mortar damaged by corrosion, chemical attack or other means of degradation will be removed so that only sound substrate remains.
 - 3. Polyurethane, and hybrid polymeric systems will be applied only when manhole surfaces are in an oven-dry or air-dry state, with the surface feeling dry to the touch, or as required by the systems manufacturer. The prepared surface profile will be to ICRI 310.2R CSP 3-5, or as required by the systems manufacturer.
 - iii. Active infiltration will be stopped prior to application of polymeric systems.
 - iv. Repair materials compatible with the polymeric SYSTEMS will be used to fill voids, bugholes, and other surface defects which may affect the performance or adhesion of the polymeric SYSTEMS and to repair, smooth or rebuild surfaces providing a concrete or masonry substrate suitable for application of the polymeric SYSTEMS.
 - v. Areas where corroded rebar is observed will be cleaned and prepared in accordance with ICRI 310.1R and coated with the specified or approved polymeric material as recommended by the polymeric SYSTEMS manufacturer.

1. Repaired or resurfaced surfaces will be inspected for cleanliness and suitability prior to application of the polymeric SYSTEMS. Additional surface preparation may be required prior to application.
- vi. Specified surfaces will be shielded to avoid exposure to direct sunlight or other intense heat source throughout the application process. Where varying surface temperatures exist, coating application will be scheduled when the temperature is falling and not rising as recommended by the polymeric material manufacturer.
- vii. The polymeric systems will be terminated at the top of the gate riser manhole
- viii. Spray Application
 1. Spray or spincast application methods will be executed in accordance with the requirements of the systems manufacturer.
 2. The spincast device used for application is raised and lowered at a controlled retrieval speed conducive to centrifugally casting the polymeric material to produce a uniform application to the interior surfaces of the manhole.
 3. Polymeric material will be applied to the uniform minimum thickness as approved in the design submitted in accordance with the contract documents.
 4. Subsequent top coating or additional coats of a polymeric material will occur within the material's recoat time. Additional surface preparation procedures will be required if this recoat time is exceeded. Requirements from the polymeric systems manufacturer for the specific application, in consideration of temperature and project conditions, will be followed by the Contractor.
 5. Measure the installed thickness of the system to confirm it meets the minimum value required in these specifications. Wet film thickness will be measured in accordance with ASTM D4414.
- ix. Install new canal gate to the new concrete encasement after the concrete is fully cured in accordance with manufacturer's recommendations. Install ladder as directed by DWR.

c. Cured-in-Place Manhole (CIPM) Systems:

- i. The work consists of installation of a reinforced fabric tube saturated with a polymer resin into a manhole that is expanded to conform to the existing manhole using air pressure and cured in place using controlled steam. Installation will be performed in accordance with the requirements of the system manufacturer or ASTM F3033.
- ii. The Contractor will furnish materials, equipment, tools, and labor as required for the rehabilitation of the manholes specified, including the installation of the Premade-Liner.
- iii. Saturate the Premade-Liner with resin. Insert it into the manhole, pressurize using air and cure with steam or hot air, or pressurize using water and cure with hot water following the requirements of the CIPM systems manufacturer.
- iv. The Contractor will measure the gate riser manhole depth and cut the Tube from a bulk roll to match the depth of the gate riser manhole.

- v. Using a controlled vacuum impregnation process, the resin is manually measured and mixed and introduced into the Tube following the requirements of the CIPM systems manufacturer.
- vi. The resin impregnated Tube is inverted through the center of the retaining ring until the liner is fully turned inside out and positioned within the manhole.
- vii. An inflation bladder inserted within the Tube is pressurized to expand the Tube against the interior surfaces of the manhole and maintained until cured.
- viii. After cure is complete, the inflation bladder is removed and the CIPM Tube is trimmed at the top of the gate riser manhole flush with the manhole cover/top.
- ix. Install new canal gate to new concrete encasement after concrete is fully cured in accordance with manufacturer's recommendations. Install ladder as directed by DWR.

11. Emission Stacks from Steam Cure Operations

- a. A perimeter of 15 feet will be clearly delineated around exhaust MH's and emission stacks during curing. This perimeter could be entered by workers for short amounts of time not exceeding 5 minutes. If this area must be entered for longer than 5 minutes, PPE will be used.
- b. Emissions stacks will be a minimum of 6 feet in height to enhance the dispersion of emissions and lessen the likelihood of workers entering the perimeter from having to cross into the plume even when wearing PPE.
- c. Job site air monitoring will be conducted and documented to confirm that proper dissipation is occurring within the designated venting area.

12. Liner Tube Transport/Storage Trucks:

- a. For those entering the liner transport truck or storage unit, active air monitoring will be utilized at the initial opening of the truck or storage unit door to ensure a safe work environment. At the initial opening of the liner transport truck or storage unit door, suitable PPE will be worn by those immediately entering the truck or storage unit.
- b. Job site air monitoring will be conducted and documented for the refrigerator storage unit as referenced in the 2020 Report on CIPP Emissions Phase 2: Evaluation of Air Emissions from Polyester Resin CIPP with Steam Cure studies from Louisiana Tech's Trenchless Technology Center.

13. Procuring, Delivering, and Storing Gates

- a. The Contractor, when directed by DWR, will procure, store, and deliver gates to the jobsite for installation. Gates will be procured based on the appropriate parameters/dimensions of the pipe and the existing gate mounting location available fit clearance limitations to accommodate the new gate size. All dimensions to be verified by the Contractor in the field prior to procurement. All gates will be handled and stored in accordance with the manufacturer's recommendations.
- b. Refer to "15. Installation of Gates" for gates specifications and installation instructions.

14. Removal of Gates

- a. If directed by DWR, the Contractor will remove and properly dispose of the existing gate. Inspect existing headwall concrete surface, patch if required as described in Section 16.

15. Installation of Gates

- a. Flap gates will be F-25 medium duty flap gates manufactured by Waterman USA, or equivalent.
 - i. Flap gates will be epoxy coated and installed with 316 stainless steel assembly hardware. Flap gate seals will be neoprene.
 - ii. All flap gates will be able to withstand a seated design head of 25 feet and operating head of 20 feet.
 - iii. Duty rating and design head capacity of gates to be procured is subject to fitment at the existing site. Where fitment is an issue the contractor shall propose an alternate gate, that fit the existing site, for DWR approval prior to ordering the gate.
- b. Canal gates (screwgates) will be C-20 cast iron canal gates manufactured by Waterman USA, or equivalent.
 - i. Canal gate rails, frame, and all hardware will be 316 stainless steel. The gate will be epoxy coated and seals will be neoprene.
 - ii. All canal gates will be able to withstand a seating head of 20 feet and an unseating head of 10 feet.
 - iii. Duty rating and design head capacity of gates to be procured is subject to fitment at the existing site. Where fitment is an issue the contractor shall propose an alternate gate, that fit the existing site, for DWR approval prior to ordering the gate.
- c. Combination canal gates will be FC-10 cast iron gates manufactured by Waterman USA, or equivalent.
 - i. Combination canal gate rails, frame, and all hardware will be 316 stainless steel. The gate will be epoxy coated and seals will be neoprene.
 - ii. All combination gates will be able to withstand a seating head of 20 feet and an unseating head of 10 feet.
 - iii. Duty rating and design head capacity of gates to be procured is subject to fitment at the existing site. Where fitment is an issue the contractor shall propose an alternate gate, that fit the existing site, for DWR approval prior to ordering the gate.
- d. Slide gates will be heavy-duty cast iron slide (sluice) gates compliant with AWWA C560 as manufactured by Waterman USA, or equivalent.
 - i. Slide gate rails, frame, and all hardware will be 316 stainless steel. The gate will be epoxy coated.
 - ii. All slide gates will be able to withstand a seating head of 20 feet and an unseating head of 10 feet.

- iii. Duty rating and design head capacity of gates to be procured is subject to fitment at the existing site. Where fitment is an issue the contractor shall propose an alternate gate, that fit the existing site, for DWR approval prior to ordering the gate.
- e. Install the gate type, size, mounting option, and hoist agreed upon with DWR and in conformance with manufacturer's recommended installation procedures. Other gate types and material may be considered to accommodate special cases. Gate installation should be completed before CIPP liner installation.
- f. Gates will be installed in true horizontal and vertical alignment.
- g. Making a cardboard or plywood template of the gate bolt pattern is recommended to reduce handling and potential for gate damage during installation. If the gate is used as a template, proper care in handling is required to prevent mis-alignment, warping or distortion.
- h. Install stainless steel threaded rods using the template to accurately drill bolt holes in existing concrete headwall to minimum 4-inch depth for less than 5/8-inch diameter bolts and minimum 7-inch depth for 5/8-inch and greater diameter bolts. Check existing wall thickness and provide a minimum 2-inch concrete cover to rear of headwall. If wall thickness doesn't accommodate minimum embedment length specified and 2-inches of concrete cover notify DWR for instructions.
- i. Set stainless steel threaded rods with epoxy (Sika AnchorFix 3001, Hilti HIT-RE 500 or equal) in accordance with epoxy manufacturer recommendations for horizontal anchor installations. Use template to confirm correct threaded rod locations.
- j. After epoxy has set, per the recommended timing by the manufacturer, measure headwall surface for horizontal and vertical plumb with carpenter's level. If out of true alignment by 0.01-inch, install solid stainless-steel shims so gate will be in true alignment.
- k. Check for maximum seat clearance between gate seating surfaces of 0.004-inch per manufacturer recommendations. If clearance exceeds maximum clearance, remove stainless steel anchor nuts, and adjust shims to provide required clearance. Fill space between gate and concrete with elastomeric joint sealant (or non-shrink, non-metallic grout if space is $\frac{3}{4}$ -inch or more) and tighten the anchor nuts per the gate manufacturer's instructions and/or industry standards.
- l. Adjust side wedges (or pivot lugs). Recheck to confirm seat clearance between gate seating surfaces remains less than 0.004-inch. Seal between gate and CIPP lining using polyurethane-based non-sag elastomeric sealant Sikaflex-1A.
- m. Lubricate surfaces per manufacturers recommendations.

16. Repairs of Existing Gates and Concrete

- a. Bolts need to be replaced due to damage or improper seating of the gate.
 - i. Cut bolts and remove gate from wall.
 - ii. Expansion bolt will need to be extracted, possibly by drilling out.
 - iii. Complete Section 15 steps f through k.

- iv. Additional steps are required if the gate is removed from the frame to mount the gate assembly.
 - 1. Store gate components on an even, clean dry surface and fully support to prevent distortion or warping.
 - 2. Mount the frame to full horizontal and vertical alignment by adjusting shims and anchor nuts.
 - 3. Reinstall the cover, guide rails and wedges on the frame and adjust to manufacturer's recommended clearances. Check full circumference for maximum clearance between seating surfaces of 0.004-inch.
 - 4. Fully open and close gate through two cycles and recheck to confirm seat clearance between gate seating surfaces remains less than 0.004-inch.
 - 5. Complete installation per general procedure.
- b. Existing gate is not in horizontal and/or vertical alignment, or not sealed to the headwall.
 - i. Cut bolts and remove gate from wall.
 - ii. Reinstall as described in Section 15.
- c. Bolts are showing rust and gate does not leak.
 - i. Clean the rust off of the bolts with rust remover and wire brush.
 - ii. Clean with solvent and dry.
 - iii. Apply epoxy coating such as Sikagard-62 or equivalent to the nut and bolt.
- d. Bolts that are not stainless steel or galvanized and need protection from rusting.
 - i. Clean with solvent and dry.
 - ii. Apply epoxy coating such as Sikagard-62 or equivalent to the nut and bolt.
- e. Missing bolts on spigot mounted gates.
 - i. Inspect gate for proper alignment and clearance. If improperly installed or leaking, remove and reinstall gate on spigot per manufacturer's recommended installation manual procedures.
 - ii. If installation is proper and gate is not leaking, replace missing bolts with new stainless-steel bolt(s) tightened per the gate manufacturer's instruction and/or industry standard.
- f. Missing bolts on flatback gates.
 - i. Inspect gate for proper alignment and clearance. If improperly installed or leaking, remove, clean and repair concrete surfaces, and reinstall the gate on the headwall per the gate's manufacturer's installation procedure.

- ii. If installation is proper and gate is not leaking, replace missing bolts with stainless steel bolt(s), as outlined under Section 15, steps e. through j.
- g. Damaged, deteriorated, and spalled areas of the concrete that require repair to obtain level surfaces for mounting of gates.
 - i. All deteriorated or damaged concrete will be removed from the repair area to provide sound concrete for bonding of the repair material. Resulting areas to be repaired must be clean of any contamination and have square edges around the perimeter that are at least 1/8-inch in depth. Apply a polymer modified prepackaged mortar, SikaTop 123 Plus or equal, in maximum 1 ½-inch lifts. Additional thickness requires scoring the material after ½ hour to apply additional 1 ½-inch lift. This mortar may also be used to fill holes where anchors are removed but will not be replaced. Cure the repairs per the manufacturer's requirements.
- h. Defective gates.
 - i. The contractor shall notify DWR if any existing gate encountered is believed to be defective with an explanation of the nature of the defect and wait for DWR instructions before performing any other work on that gate. DWR on a case-by-case basis may approve procurement of a new replacement gate or explore repairing the gate, if feasible.

17. Ladder and Anchorage

- a. Provide fixed ladders as shown on drawings that adhere to all requirements provided in EM 385-1-1 and OSHA specifications. The ladder will be of steel construction, be hot dipped galvanized, and rungs of ladder must be anti-slip. Submit ladder and anchorage design for DWR review and approval.
- b. Fabricated from 1-1/2-inch IPS steel pipe side rails and 1-inch solid round steel rod rungs. Secure uprights by anchoring to wall with bent plates. Weld plates to uprights and bolt to wall. Ground smooth all welds. Provide ladder with mill finish.
 - i. Provide rung knurled or dimpled to minimize slipping.
- c. Fabricate rungs from 1-inch diameter steel rod and shaped to meet the requirements of OSHA 1910.27, Fig. D-1. Provide a clear width of 16 inches, drop front design approximately 3 inches deep and turned upward at least 2 inches at the embedded ends, and embed to a depth of 6 inches into the wall. Space rungs a maximum 12 inches apart vertically and projecting 7 inches from face of wall to centerline of rungs.

18. Culvert Inspection Report

- a. Provide DWR with the following culvert inspection reports prepared in accordance with NASSCO PACP or as specified in the Culvert Inspections.
 - i. V1: Pre culvert rehab inspection before undertaking any rehab work.
 - ii. V2/V3: Pre and post culvert lining inspections and reports.

- iii. Warranty inspection reports a minimum of 30 days before expiration of the Warranty period.

19. Quality Control Records

- a. Maintain the following Quality Control records of the work and provide to DWR after completion of the work.
 - 1. Summary of the resin impregnation process including:
 - a. Volume of resin supplied.
 - b. Excess quantity of resin added during the wet out to account for polymerization and migration into the host pipe.
 - c. Roller gap setting.
 - d. Resin catalyst(s) used.
 - e. Time and location of the wet out.
 - f. Means taken to store and transport the resin impregnated CIPP from the wet-out facility to the job site.
 - g. Means of curing liners.
 - 2. Continuous log of the of pressure maintained in the liner during the curing period.
 - 3. Pulling force used to pull or winch CIPP into place in the host culvert and measured liner elongation.
 - 4. Continuous log of temperature at boiler in and out and at all thermistors placed between the host pipe and the liner at all access points during the initial cure, cure, and cool down periods for all thermal curing methods and as per Clause 6.7.3 of ASTM F2019 for UV cures.
 - 5. Fiber-optic cable sensing system output report that specifically identifies stations along the length of pipe, indicates the maximum temperature achieved and the sustained temperature time at the stations. At each station along the length of the pipe, the computer will record both the maximum temperature and the minimum cool down temperature and comply with the manufacturer's recommendations.
 - 6. Monitoring and activities carried out in support of site-specific Styrene Management Plans.
 - 7. A record of chain of custody for CIPP samples. The record will include the sample number, date and time sample was received at lab, carrier tracking number, date sample was prepared, prepared by (initials), and date tested.
 - 8. A record of daily safety meeting with all site participants acknowledgements. The record will include the scope of the day's work, applicable safety topics for the tasks covered in the workday, Muster points and location of safety

equipment, and signatures from site workers acknowledging safe work procedures.

9. For CIPM systems, the Contractor will provide an onsite wetout log that includes nominal liner thickness, resin quantity, liner size, and time of resin saturation and all sampling documentation.

10. For Polyurethane systems, the Contractor will provide all sampling documentation.

20. Sampling for Liner Acceptance

- a. For each and every CIPP liner installation, obtain confined or plate samples as noted herein.
- b. For CIPM systems:
 - i. For each install, obtain and test plate samples in accordance with ASTM F2019 as noted herein.
- c. For Polyurethane systems:
 - i. Obtain samples as recommended by the manufacturer and test for compressive and tensile strength in accordance with ASTM D695 and ASTM D638, respectively.

21. Confined Test Samples

- a. Where possible use confined test sample methods to assess site-specific compliance requirements. Confined test sampling will be carried out, where possible, in accordance with Clause 8.1.1 of ASTM F1216 and as follows:
 1. Provide necessary forms of the same diameter as the host pipe and secure a minimum 8" (200 mm) long full diameter confined test sample from each CIPP.
 2. Locate the test sample from in an intermediate manhole or at a termination point and invert through the form.
 3. Cut the CIPP sample to coincide with multi-piece form if used for CIPP larger than 18 inches (450 mm) in diameter to facilitate removal from the manhole.
- b. In larger culvert sizes where it is not possible to provide a full diameter confined test sample and with DWR's approval, provide a minimum 8-inch x 8-inch (200 mm x 200 mm) sample cut from inside the host pipe. Cut the test sample from a location where no defects were noted in Table 1 of the Schedule of Specific Design Conditions and site-specific Repairs of this document, and at the 10:00 o'clock or 2:00 o'clock position. Grout area where test sample was taken with a polymeric grout compatible with the liner system to form a smooth watertight patch flush with liner.
 1. Identify the culvert where the liner sample is from on the form or sample itself if no form and provide to DWR intact in the form.

- c. The Contractor will coordinate and pay for CIPP sample testing to confirm the CIPP flexural strength, flexural modulus, and thickness in accordance with the requirements of ASTM D5813, D790, and ASTM D3567.
- d. If it can be demonstrated that it is impractical to obtain confined test samples or other installed test samples due to CIPP size and site-specific conditions, then results from test plate samples will be used to confirm flexural strength and flexural modulus.

22. Test Plate Samples

- a. Prepare test plate samples for each and every CIPP installation.
- b. Prepare test plate samples in accordance with Clause 8.1.2 of ASTM F1216 and as follows from the actual CIPP and cure in the following manner:
 - 1. In a clamped mold placed in the downtube or manhole for water-cured liners.
 - 2. In a clamped mold placed in a container filled with uniformly distributed steam from the installation manhole for steam-cured liners.
 - 3. As per ASTM F2019 for UV cured liners.
- c. The Contractor will coordinate and pay for test plate sample testing to confirm the flexural strength, flexural modulus, and thickness in accordance with the requirements of ASTM D5813, D790, and D3567 in all instances where confined or other sampling techniques cannot be utilized. In instances where confined or other sampling techniques are not conclusive, test plate samples may be utilized to reconcile designs at the Contractor's expense.

23. Infrared Spectroscopy

- a. If directed by DWR, DWR will arrange and the Contractor will pay for testing to compare the infrared spectrum of the resin field samples supplied from the wet-out to the reference spectrum generated from the resin sample provided by the resin manufacturer to verify installed material acceptability.

24. Post Construction Design Review for Design Reconciliation

- a. If all installed liner properties are in excess of design values, the installations will not require a Design Reconciliation.
- b. In instances where any installed properties are less than the design values based on acceptance testing, a Design Reconciliation will be carried out by the Engineer responsible for Standard and Special Designs as follows:
 - 1. Perform a post-construction design review to ensure that the completed liner meets all design checks required as per liner Design, Sections or any additional conditions stipulated in Special Designs. The design review will utilize the measured values for flexural strength, flexural modulus, and liner thickness from the confined pipe sample testing or from the test plate testing in circumstances where confined pipe samples are not able to be secured.
 - 2. Liner strength values will be further reduced to account for creep based on the creep reduction values recommended in the approved Shop Drawing submissions and the stipulated design checks for sustained and Flood Event

loading. The use of full enhancement factors in this analysis will be limited to liners that are confirmed by visual classification to be close-fit liners based on the post-lining culvert inspection.

3. Advise DWR of any discrepancies between the constructed CIPP and the design requirements.
- c. Perform necessary remedial measures to confirm that a liner deemed as structurally deficient will comply with all stipulated design life requirements such as confirmation of actual ovality, determination of a more representative groundwater elevation locally through monitoring, more precise information on height of cover and/or supplemental strength testing and thickness measurements at the Contractor's expense.
- d. Repair sections of CIPP removed for supplemental testing by placing a full circumference internal point repair of the same thickness as the full segment liner over and extending 12" (300 millimeters) beyond each side of the cut section.
- e. Install a supplemental liner of the required thickness to structurally enhance the installed liner if supplemental testing fails to confirm the CIPP will meet the 50-year design life requirement.
- f. Review remedial action with DWR prior to implementation.
- g. Perform all further testing, monitoring and calculations and install structural enhancements at own cost.

25. Warranty Inspections

- a. A Warranty period of liner work will be 1 year from the date of installation but no earlier than the completion date of satisfactory warranty CCTV inspections and/or walk-through inspections and resolution of issues discovered during the warranty CCTV and/or the walk-through inspections. Certification of acceptance of the Work will not, however, relieve the Contractor from his or her responsibilities for any breach of the Contract including, but not limited to, defective or deficient Work appearing after the date of such certification.
- b. The Contractor will participate in a walk-through inspection for all sites not inspected in Warranty CCTV inspections at no cost to DWR. The Contractor will provide suitable lighting for a visual inspection of these installations from each access side. The walk-through inspections will be complete, and all data provided to DWR one month prior to the warranty period expiration. Walk-through inspections will not begin earlier than within three (3) months of the warranty period expiration.
- c. Warranty inspections will be carried out at locations designated by DWR for up to 10% of the sites per work order rounded up to the next one's decimal place. The Contractor will complete the warranty inspections and provide the inspection data to DWR within 30 days of notification. These inspections will require full PACP coding.
- d. Should the sampling of Warranty Inspections show systemic defects or defective installations for more than 1:10 Warranty inspections, DWR reserves the right to increase the sampling size to another 5% of the inventory at the Contractor's expense. The sampling will continue to be increased until no additional defects are found.
- e. All defects found by Warranty Inspection will be rectified at the Contractor's expense within 90 days of discovery. A repair proposal with adequate supporting documents showing that

the repair will fully reinstate the structural integrity of the CIPP lining will be submitted by the Contractor to DWR for review and approval prior to starting the repair of any found defects.

- f. Once the repair has been installed by the Contractor, the culvert will have its warranty period extended one year from the date the repair was accepted by DWR. The Contractor will re-inspect the pipe after one flood season to ensure the repair withstood the impact of flood water running through it at no additional cost to DWR.
- g. DWR reserves the right to perform warranty inspections of pipes relined as a part of this Contract by a third party. Any defects found through such inspections will be repaired or replaced by the Contractor at no additional cost to DWR.
- h. DWR may direct the Contractor to perform warranty inspections on pipes lined under a separate contract.

W. MEASUREMENT AND PAYMENT

Presented below are the major items associated with the CIPP rehabilitation work. Additional supporting work and bid items are described in Exhibit B Attachment 1, Bid Sheets. All payments will be made in accordance with Exhibit B, Attachment 1, Bid Sheets.

1. Perform Initial Site Visit and Provide Submittals

- a. This bid item includes the cost for performing the initial site visit and providing all submittals as indicated in these specifications including verification of existing culvert and gate riser manhole dimensions.
- b. This bid item will be measured for payment on a per site basis.

2. Mobilization

- a. Mobilization and demobilization will be measured on a unit basis and paid for at the Contract Unit Price for "Mobilization". Number of units to be paid for will be the total number of work orders for each number of pipe classifications, accepted and measured by DWR. DWR will only pay for one mobilization per work order. Mobilization will only be paid if rehabilitation is performed.

3. Pipe Preparation

- a. This bid item will include all costs associated with cleaning and preparing the pipe before CCTV inspection and CIPP rehabilitation in accordance with these specifications and include up to 4 passes of cleaning equipment.
- b. All costs associated with properly disposing of vacuumed debris will not be paid separately and be considered incidental.
- c. Pipe preparation prior to lining will be measured on a per pipe (culvert) basis for each diameter classification noted in Bid Sheet 1.

4. CCTV Inspections

- a. This bid item will include all costs associated with performing complete CCTV inspection in accordance with these specifications. This bid item apply to V1, V2, and V3 CCTV inspections of the pipes receiving CIPP rehab, and in rare occasions to other pipes that are not being rehabilitated when requested by DWR.
- b. Culvert CCTV inspections will be measured on a per pipe (culvert) basis for each diameter classification noted in the Bid Sheet 1.

5. Gate Riser Manhole Inspections

- a. This bid item will include all costs associated with performing complete CCTV inspection in accordance with these specifications. This bid item apply to V1, V2, and V3 CCTV inspections of gate riser manhole being rehabilitated and in rare occasions to other gate riser manhole that are not being rehabilitated when requested by DWR.
- b. Gate riser manhole inspections will be measured on a per gate riser manhole basis.

6. Pipe End Repair

- a. This bid item will include all costs associated with repair pipe ends as required before CIPP rehabilitation in accordance with these specifications. This includes instances where the pipe end may have a hole or other defect that interferes with the CIPP end seal requiring either cutting the pipe and/or patching the defect.
- b. Pipe End Repair prior to lining will be measured on a per pipe end (each) basis.

7. Temporary Cofferdam and dewatering

- a. This bid item will include all costs associated with installing and removing a temporary flow dam, regardless of type, measuring a minimum of two (2) feet and a maximum of four (4) feet in height with an approximate length of twenty (20) feet around the pipe inlet/outlet in accordance with these specifications. Refer to Section 7.d. for temporary dam cases that exceed these limits. This bid item will include all costs of restoring the site to its original pre-construction condition. This bid item will also include all costs associated with dewatering the pipe including trash pumps or submersible pumps of up to 300 GPM discharge capacity, up to 100 feet of hose length, and all other items required to successfully dewater the pipe. Refer to Section 7.e. for dewatering cases that require equipment that exceed the limits indicated in this section.
- b. Temporary cofferdam will be measured on a per temporary cofferdam (each) basis.
- c. For instances where only dewatering pumps and/or a temporary flow dam less than 2 feet in height is adequate to dewater the pipe to facilitate the work, no payment will be made for this item of work. Such instances will be considered incidental and included in the cost for total CIPP culvert relining.
- d. For instances where temporary cofferdams larger than 4 feet in height or 20 feet in length are required, the Contractor will be paid per additional vertical foot and/or additional horizontal foot of cofferdam installed beyond the 4 feet in height and/or 20 feet in length under the "Additional height of temporary cofferdam" and the "Additional length of temporary cofferdam" bid items.

- e. For special dewatering cases where the required pump size exceeds the size indicated in section 7.a. above, and/or where other special equipment is needed, the contractor shall submit a dewatering plan proposal including a list of required special equipment, and its associated cost, for DWR approval. The special equipment cost is considered a pass-through cost and shall be paid for under the “Unforeseen Labor and Equipment” bid item. The invoice submittal must include proof of the additional special equipment cost incurred.

8. Procurement of Gates at Manufacturer’s Cost

- a. An allowance is included in the bid for procurement of gates by the Contractor with prior approval by DWR. Procurement of gates will be paid for at the invoiced manufacturer unit price for each gate procured, including shipping costs. All necessary hardware needed to install the gates such as bolts/threaded rods, etc. will be invoiced per Item 19: Miscellaneous Metal – Material and Equipment Only.

9. Storage and Delivery of New Gate

- a. This bid item will include all costs associated with storing and delivering new gates to the job site in accordance with these specifications and as directed by DWR.
- b. Storage and delivery of new gates will be measured on a per gate (each) basis for each size classification noted in the Bid Sheet 1.

10. Remove and Dispose of Existing Gate

- a. This bid item will include all costs associated with removing and properly disposing of existing gates in accordance with these specifications and as directed by DWR.
- b. Removal and disposal of existing gates will be measured on a per gate (each) basis for each size classification noted in the Bid Sheet 1.

11. Install New Gate

- a. This bid item will include all labor and equipment costs associated with installing new gates in accordance with these specifications and as directed by DWR.
- b. Installing new gates will be measured on a per gate (each) basis for each size classification noted in the Bid Sheet 1.

12. Remove Existing Ladder

- a. This bid item will include all costs associated with removing existing ladders in accordance with these specifications and as directed by DWR.
- b. Removal of ladders will be measured on a per ladder basis (each).

13. Reinstall Existing Ladder

- a. This bid item will include all costs associated with reinstalling existing ladders in accordance with these specifications and as directed by DWR.

- b. Reinstallation of existing ladders will be measured on a per ladder basis (each).

14. Install New Ladder

- a. This bid item will include all material, labor and equipment costs associated with installing new ladders in accordance with these specifications and as directed by DWR.
- b. Installing new ladders will be measured on a per ladder (each) basis.

15. Repair of Existing Gates and Headwalls – Labor Only

- a. This bid item will include all labor costs associated with repairing existing gates and headwalls in accordance with these specifications and as directed by DWR. This bid item includes labor to repair damaged headwalls and preparing rusted existing bolts for epoxy coating. Material costs for solvent used for cleaning will not be measured for separate payment and will be incidental to the various bid items. Costs for material and equipment will be paid for under such designated bid items.
- b. Payment for this line item will be measured on an hourly basis.

16. Concrete Repair – Material and Equipment Only

- a. This bid item will include all material and equipment costs associated with performing concrete repairs on existing headwalls in accordance with these specifications and as directed by DWR.
- b. Payment for concrete material will be measured on a per cubic foot basis.

17. Epoxy Coating of Gate Bolts – Material and Equipment Only

- a. This bid item will include all material and equipment costs associated with epoxy coating bolts on existing headwalls in accordance with these specifications and as directed by DWR.
- b. Payment for epoxy material will be measured on a per gallon basis.

18. Miscellaneous Metal – Material and Equipment Only

- a. This bid item will include all material and equipment costs associated with installing new bolts/threaded rods or other metal hardware necessary to repair existing gates in accordance with these specifications and as directed by DWR.
- b. Miscellaneous metal will be measured on a per pound basis.

19. CIPP Rehabilitation of Culvert with Gate Riser Manhole

- a. This bid item will include all additional labor, material, and equipment necessary to provide CIPP rehabilitation for pipes containing a gate riser manhole as specified in Section F – also refer to Section G. If the gate within the gate riser manhole requires to

be removed, reinstalled, or replaced, such work would be paid for under the bid items 8, 9, 10, and/or 11.

- b. CIPP rehabilitation of culverts with gate riser manhole will be measured on a per gate riser manhole (Each) basis.

20. Total CIPP Culvert Relining

- a. This bid item will include all costs associated with relining culverts with CIPP in accordance with these specifications including all work not specifically identified as separate bid items such as, but not limited to, installation of fiber optic system and sealing CIPP ends. Quality control records and CIPP tests samples will not be measured for separate payments and will be included with payment for total CIPP Culvert Relining.
- b. Total CIPP culvert relining will be measured on a length basis for each culvert size and paid for at the Contract Unit Price for "Full Segment CIPP". Length to be paid for will be the total length of CIPP supplied and installed in accordance with this specification.
- c. Full segment CIPP measurement will be made horizontally at grade, above the centerline of the pipe from the commencement to the end of the CIPP liner.
- d. DWR reserves the right to enforce the following:
 - i. Eighty (80) percent of the payment will be made upon satisfactory completion of the CIPP installation work. The remaining twenty (20) percent of the payment will be made upon confirmation of the CIPP strength and delivery and acceptance of all required submissions, shop drawings, and reports.

21. Total Incremental CIPP for Special Designs

- a. This bid item will include the additional labor, material, and equipment necessary to increase the liner thickness as indicated in Exhibit B, Attachment 1, Bid Sheets. All special designs will be reviewed and approved by DWR before implementation.
- b. Total incremental CIPP for Special Designs will be measured and paid for following Exhibit B, Attachment 1, Bid Sheets.

22. Total gate riser manhole relining

- a. This bid item will include all costs associated with relining gate riser manholes in accordance with these specifications including all work not specifically identified as separate bid items. Quality control records, testing, and tests samples will not be measured for separate payment and will be included with payment for total Gate Riser Manhole Relining.
- b. Total Gate Riser Manhole Relining will be measured on a length basis for each gate riser manhole size and paid for at the Contract Unit Price for "Full Depth Lining". Length to be paid for will be the total length of liner supplied and installed in accordance with this specification.
- c. Full depth lining measurement will be made at top of gate riser manhole, to the bottom (sump) of the gate riser manhole.

- d. This bid item will include all costs for preparation of the gate riser manhole for lining and flow control/dewatering as required by the Contract Documents.
- e. DWR reserves the right to enforce the following:
 - i. Eighty (80) percent of the payment will be made upon satisfactory completion of the liner installation work. The remaining twenty (20) percent of the payment will be made upon confirmation of the liner strength and delivery and acceptance of all required submissions, shop drawings, and reports.

23. Total incremental gate riser manhole relining for Special Designs

- a. This bid item will include the additional labor, material, and equipment necessary to increase the liner thickness for gate riser manhole lining as indicated in Exhibit B, Attachment 1, Bid Sheets. All special designs for gate riser manholes will be performed and stamped by a third-party engineer Contracted by DWR before implementation.
- b. Total incremental gate riser manhole relining for Special Designs will be measured and paid following total Exhibit B, Attachment 1, Bid Sheets.

24. Structural Concrete

- a. This bid item will include all labor, material, and equipment costs associated with placing structural concrete for mounting gates (e.g. concrete encasement inside gate riser manholes) in accordance with these specifications and as directed by DWR.
- b. Structural concrete will be measured on a per cubic yard basis.

25. Bar Reinforcing Steel

- a. This bid item will include all labor, material, and equipment costs associated with placing bar reinforcing steel for structural concrete in accordance with these specifications and as directed by DWR.
- b. Bar reinforcing steel will be measured on a per pound basis.

26. Traffic Control Crew: 3 Man Crew, 2 Vehicles, and Traffic Control Equipment

- a. This bid item will include all costs associated with providing a traffic control crew consisting of a minimum of 3 people, 2 vehicles, and appropriate equipment at a regular time rate.
- b. Payment for this bid item will be measured on an hourly basis.

27. Traffic Control Crew: 3 Man Crew, 2 Vehicles, and Traffic Control Equipment - Overtime

- a. This bid item will include all costs associated with providing a traffic control crew consisting of a minimum of 3 people, 2 vehicles, and appropriate equipment at an overtime rate.
- b. Payment for this bid item will be measured on an hourly basis.

28. Laborer with Truck and Equipment

- a. This bid item will include all costs associated with providing a work crew consisting of a minimum of one person and truck with hand tools including shovels, shears, picks, etc. at a regular time rate.
- b. Payment for this bid item will be measured on an hourly basis.

29. Laborer with Truck and Equipment - Overtime

- a. This bid item will include all costs associated with providing a work crew consisting of a minimum of one person and truck with hand tools including shovels, shears, picks, etc. at an overtime rate.
- b. Payment for this bid item will be measured on an hourly basis.

30. CCTV Warranty Inspections

- a. This bid item will include all costs associated with providing complete warranty CCTV inspection of relined culverts and will include an allowance for cleaning to facilitate reasonable visuals on the installed liner in accordance with these specifications and as directed by DWR.
- b. Warranty CCTV inspections will be measured on a per pipe (culvert) basis for each diameter classification noted in Bid Sheet 1.

31. Gate Riser Manhole Warranty Inspections

- a. This bid item will include all costs associated with providing complete warranty CCTV inspection of relined gate riser manholes and will include an allowance for cleaning to facilitate reasonable visuals on the installed liner in accordance with these specifications and as directed by DWR.
- b. Gate riser manhole warranty inspections will be measured on a per gate riser manhole basis.

32. Infrared Spectrum Test

- a. This bid item will include all labor, material, and equipment necessary for the Contractor to perform infrared spectrum testing of resin field samples in accordance with these specifications and as directed by DWR.
- b. Number of units to be paid for will be total number of samples tested.

33. Miscellaneous Repair of CIPP Installed by Others – Labor and Equipment Only

- a. This bid item will include all costs associated with providing a five (5) person minimum crew with all equipment necessary for repairing defects of pipes relined by others with prior approval by DWR and in accordance with these specifications. "Others" is defined as a separate Contractor other than the one performing the work under this contract. All costs associated with visiting the repair site and preparing all submittals as indicated in

these specifications including verification of the repair dimensions will be paid for under the "Perform Initial Site Visit and Provide Submittals" item.

- b. Payment for this bid item will be measured on an hourly basis.

34. Miscellaneous Repair of CIPP Installed by Others – Material Only

- a. This bid item is for material used in repairing defects of pipes relined by others with prior approval by DWR and in accordance with these specifications. Materials will be paid for at the invoiced manufacturer unit price including shipping costs. "Others" is defined as a separate Contractor other than the one performing the work under this contract.

35. Miscellaneous Heavy Cleaning

- a. This bid item will include all labor, material, and equipment costs associated with extra work involved in heavy cleaning of culverts. This item shall only be used if 4 passes does not successfully clean the culvert and requires prior approval by DWR.
- b. Payment for this bid item will be measured on an hourly basis.
- c. All costs associated with properly disposing of vacuumed debris will not be paid separately and be considered incidental.

36. Infiltration Grouting

- a. This bid item will include all labor, material, and equipment costs associated with grouting infiltration for lining culverts and gate riser manholes.
- b. Infiltration grouting will be measured on a per gallon basis.

37. Unforeseen Labor, Equipment, and Material Items

- a. Labor and Equipment Items: This bid item will include labor and equipment for the Contractor to complete unforeseen tasks not outlined in this contract but required to complete work approved by DWR.
- b. Material Items: This bid item will include material costs for the Contractor to complete unforeseen tasks not outlined in this contract but required to complete work approved by DWR.
- c. The Contractor must have all labor, equipment, and material, costs negotiated upon and approved by the DWR Contract Manager prior to the start of unforeseen work. The agreed upon cost of labor, equipment, or material must be invoiced per the fixed hourly rate indicated in Bid Sheet 1, at the completion of each unforeseen task.

38. Unforeseen Fees

- a. This bid item will include any unforeseen fees associated with the completion of work within this contract. This may be related to fees for extra liability insurance, permits, or other fees required to complete work approved by DWR.

- b. The Contractor must have all fee costs negotiated upon and approved by the DWR Contract Manager prior to disbursements of unforeseen fees. The agreed upon cost of fees must be invoiced per the fixed hourly rate indicated in Bid Sheet 1.

X. SCHEDULE, WORKING HOURS, AND SPECIAL PROVISIONS

1. Schedule of Work

- a. Contractor will begin work within 30 days once the Work Order is received from DWR.
- b. Contractor will provide and adhere to a reasonable schedule, considering access issues and the weather forecast, for completing the assigned tasks in the work order within two weeks of the issuance of the work order. The initial schedule and schedule change proposals due to unforeseen events, such as unanticipated weather changes or access issues, will be submitted to DWR for approval.
- c. Contractor will coordinate work schedule with DWR authorized representative.
- d. The Contractor will be given full and adequate access to the work location(s) during regular business hours, 6:00 a.m. – 5:00 p.m., Monday through Friday, except for State-observed holidays.
- e. Contractor may be accompanied by a DWR representative during all work.
- f. All required deliverables will be delivered in a timely manner, not to exceed 30 days, or within a mutually agreed upon timeframe.

2. Work Hours

- a. It is intended that the Contractor work 8 hours per day for 5 days per week, Monday through Friday, excluding State holidays. Normal working hours will begin no earlier than 6:00 a.m. and end no later than 5 p.m. Working irregular hours, more than 8 hours per day, more than 40 hours per week, holidays, and/or weekends may be required to complete the work; working irregular hours must be coordinated and approved in advance by DWR. Contractor will comply with the rates set by the Department of Industrial Relations and they can be found at www.dir.ca.gov.

3. Special Provisions

- a. In the event the Contractor is unable to perform the commissioned services because of problems relating to quality, quantity, scheduling or for any other reason the Contractor will immediately notify DWR authorized representative. Specific instructions will then be issued to the Contractor.
- b. Violations of the Scope of Work as described above, will constitute cause to cancel this contract.
- c. Contractor will be responsible for making repairs and adjustments necessary to keep the equipment in good and safe working order. The State will have the right to stop work and/or cease payment should Contractor fail to service and maintain the equipment properly to deliver quality work and stay in compliance with all safety regulations and practices.

- d. Contractor will have the proper permits/licenses/certificates to perform all work associated with this contract. Contractor will maintain required permits/licenses/certificates during the term of this contract.
- e. Contractor will not be entitled to any compensation for work done before notice to proceed is issued.
- f. The State will not be responsible for loss or damage to the equipment used to perform this work.
- g. In the event any State-owned equipment or property is damaged through the fault of the Contractor or its agents, the Contractor will replace or repair the equipment or property to the State's satisfaction.
- h. Prior to the commencement of daily activities, a tailgate meeting will be conducted to review the specific requirements of the planned work. Attendance at the daily tailgate meeting is mandatory for all employees and Contractors at the site. A preoperational health and safety briefing and acknowledgement will be documented on the attendance form by all site attendants. per Section R. 17(8).

EXHIBIT A, ATTACHMENT I

SAMPLE WORK ORDER

Contract# - REHABILITATION WORK ORDER #

Department of Water Resources
Cured-In Place Pipe (CIPP) Work Order #

DWR Contact: _____ Contractor: _____
Phone: _____ Phone: _____

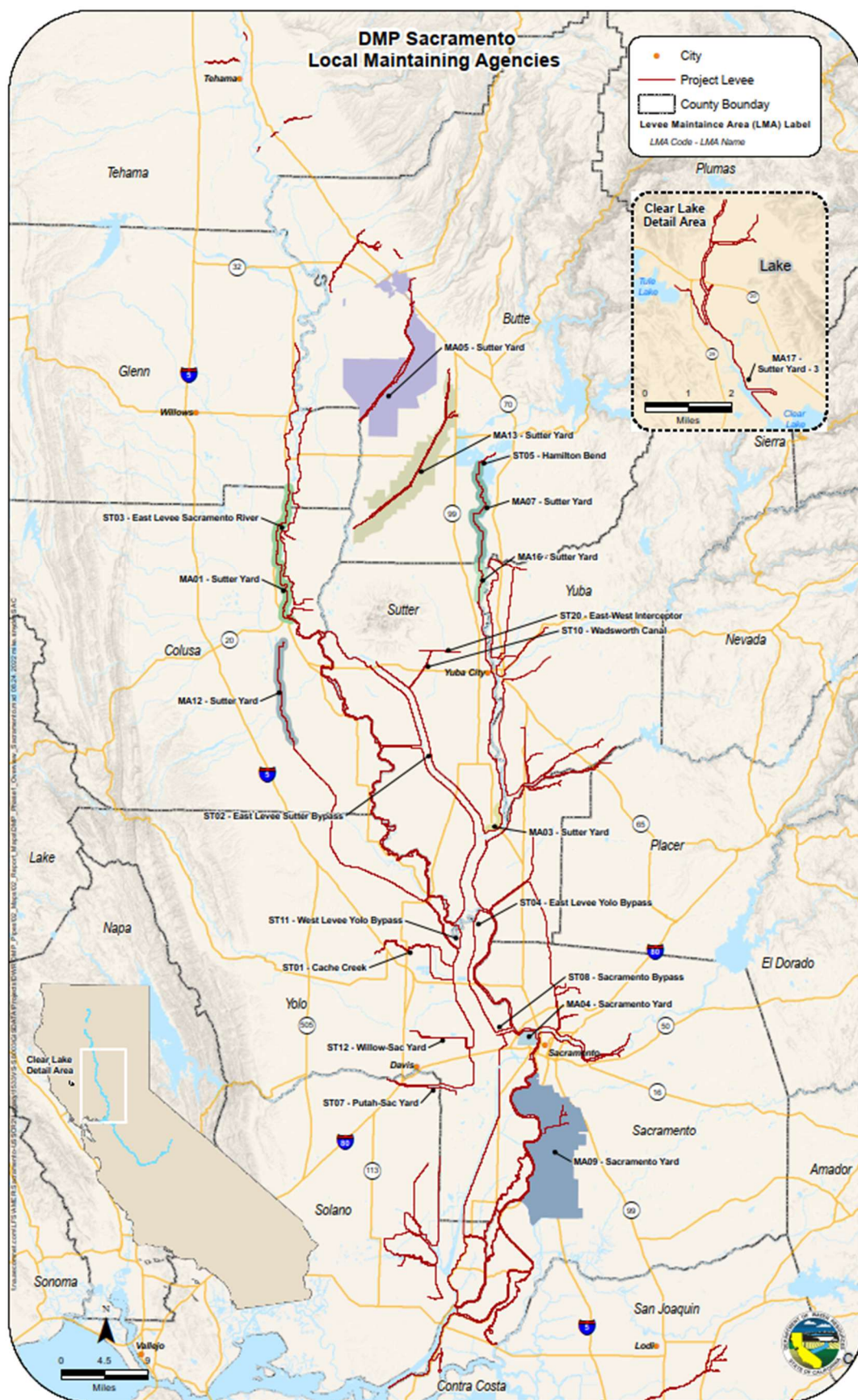
Job Summary Table

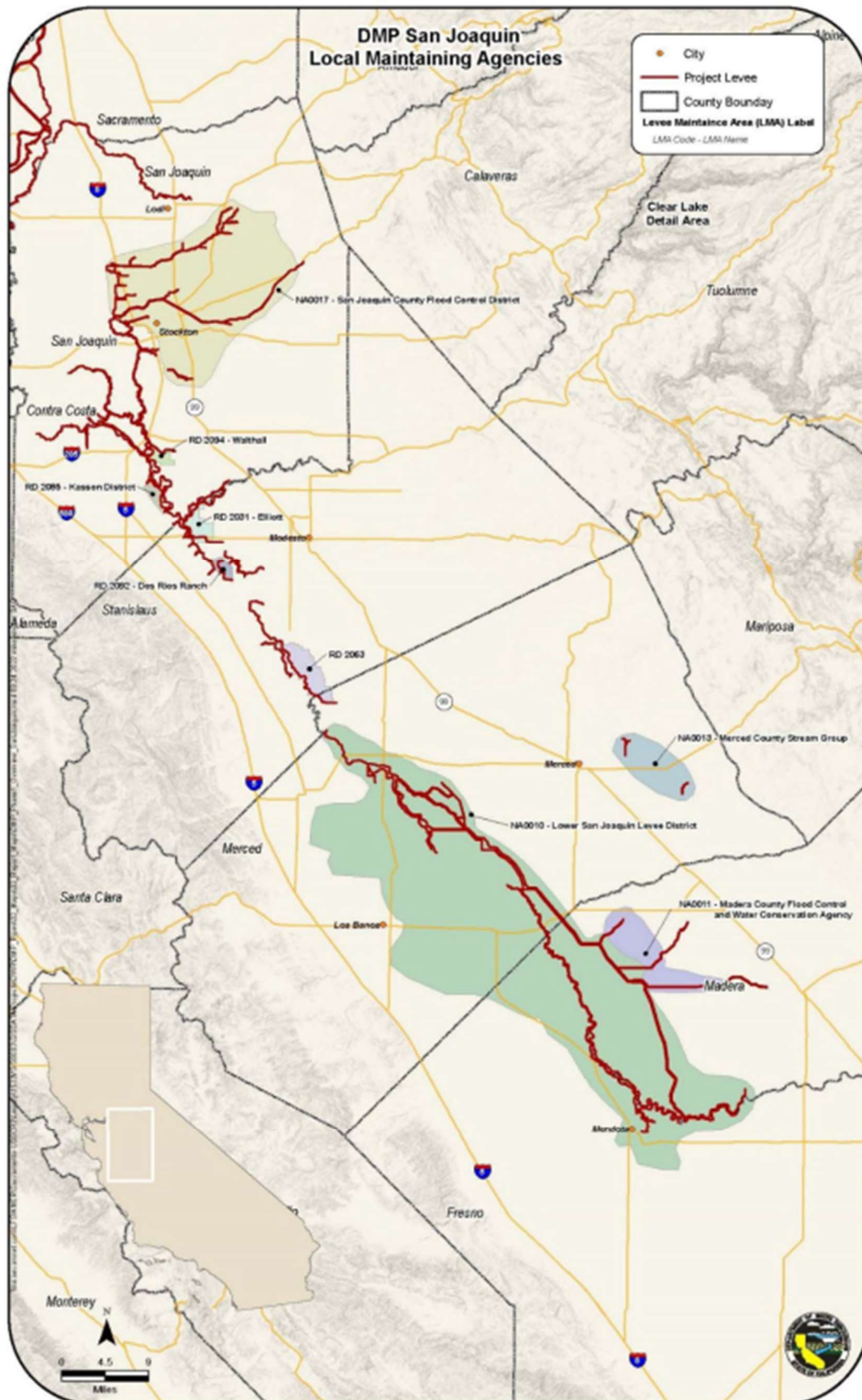
Job Number		City	
Date		County	
LMA(s)		Waterways	
LMA Contact		Total No. of Pipes	
LMA Phone		Pending Gates	

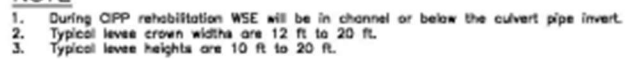
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Contractor shall verify all culvert dimensions before liner procurement

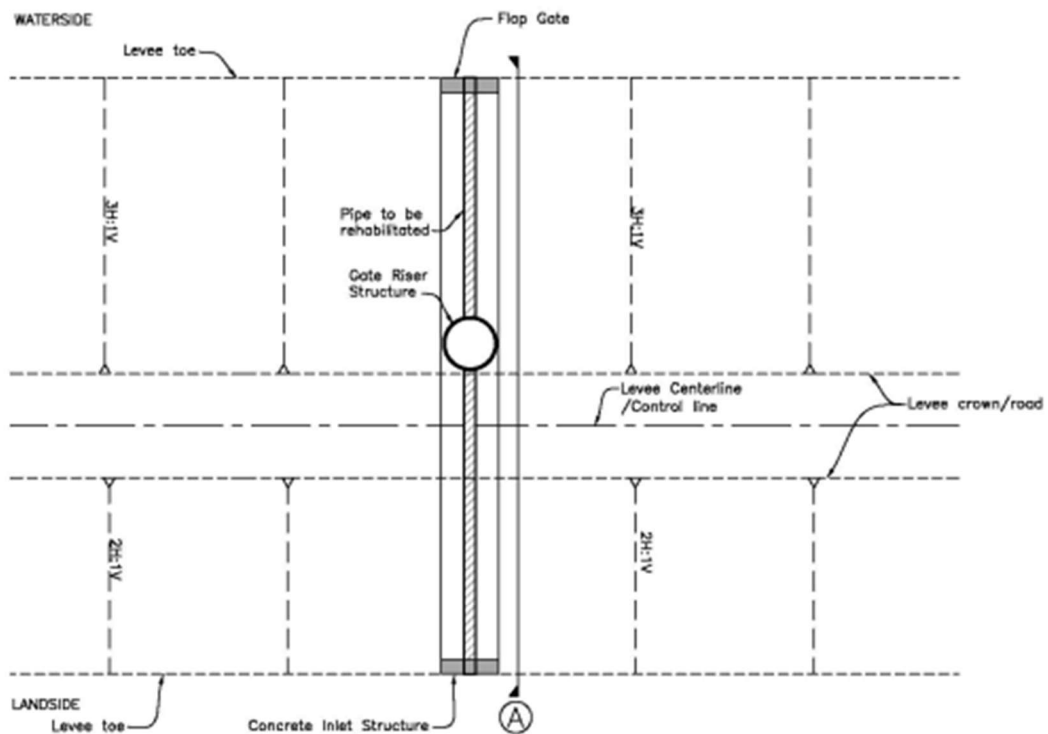
2. Access considerations based on input from local district and inspectors. Pipe verification field visit and scheduling of work shall be coordinated in a 3 week look ahead timeframe.





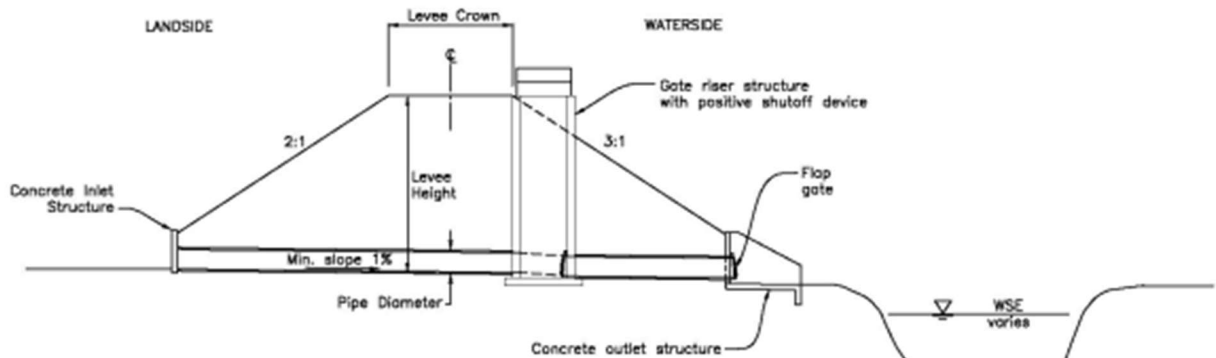


Deferred Maintenance Program (DMP)				DMP REPAIR ALTERNATIVE CIPP REPAIR		DRAWING NO. SHEET NO. 1 OF 1



PLAN VIEW CIPP REPAIR

SCALE: NONE



**CIPP WITH GATE RISER MANHOLE
SECTION A - A**

SCALE: NONE

NOTE

1. During CIPP rehabilitation WSE will be in channel or below the culvert pipe invert.
2. Typical levee crown widths are 12 ft to 20 ft.
3. Typical levee heights are 10 ft to 20 ft.

Deferred Maintenance Program (DMP)

DMP REPAIR ALTERNATIVE
CIPP REPAIR - WITH GATE RISER MANHOLE

DRAWING NO.

SHEET NO.
1 OF 1

**EXHIBIT A, ATTACHMENT 4
LINER SYSTEM NAME AND DESIGN DETAILS**

Materials:			
Liner System Name			
Resin: Name, Type, Manufacturer			
Tube: Name, Type, Manufacturer			
Tube Tensile Strength to ASTM D5035 (PSI)			
Design:			
Liner System Name			
Flexural Strength to ASTM D790 (PSI)			
Flexural Modulus to ASTM D790 (PSI)			
Compressive Strength to ASTM D695 (PSI)			
Tensile Strength to ASTM D638 (PSI)			
Flexural Creep Modulus projected to 50 Years to ASTM D2990 (PSI)			

Materials:			
Liner System Name			
Resin: Name, Type, Manufacturer			
Tube: Name, Type, Manufacturer			
Tube Tensile Strength to ASTM D5035 (PSI)			
Design:			
Liner System Name			
Flexural Strength to ASTM D790 (PSI)			
Flexural Modulus to ASTM D790 (PSI)			
Compressive Strength to ASTM D695 (PSI)			
Tensile Strength to ASTM D638 (PSI)			
Flexural Creep Modulus projected to 50 Years to ASTM D2990 (PSI)			

EXHIBIT A, ATTACHMENT 5 DESIGN REQUIREMENTS FOR GATE RISER MANHOLE LINERS

Gate Riser Manhole Liner Design Requirements

Liner Product Requirements

The liner product for the gate riser manholes will be an unbonded designed full depth liner (Figure 10) that is designed structurally to resist all current and anticipated loading.

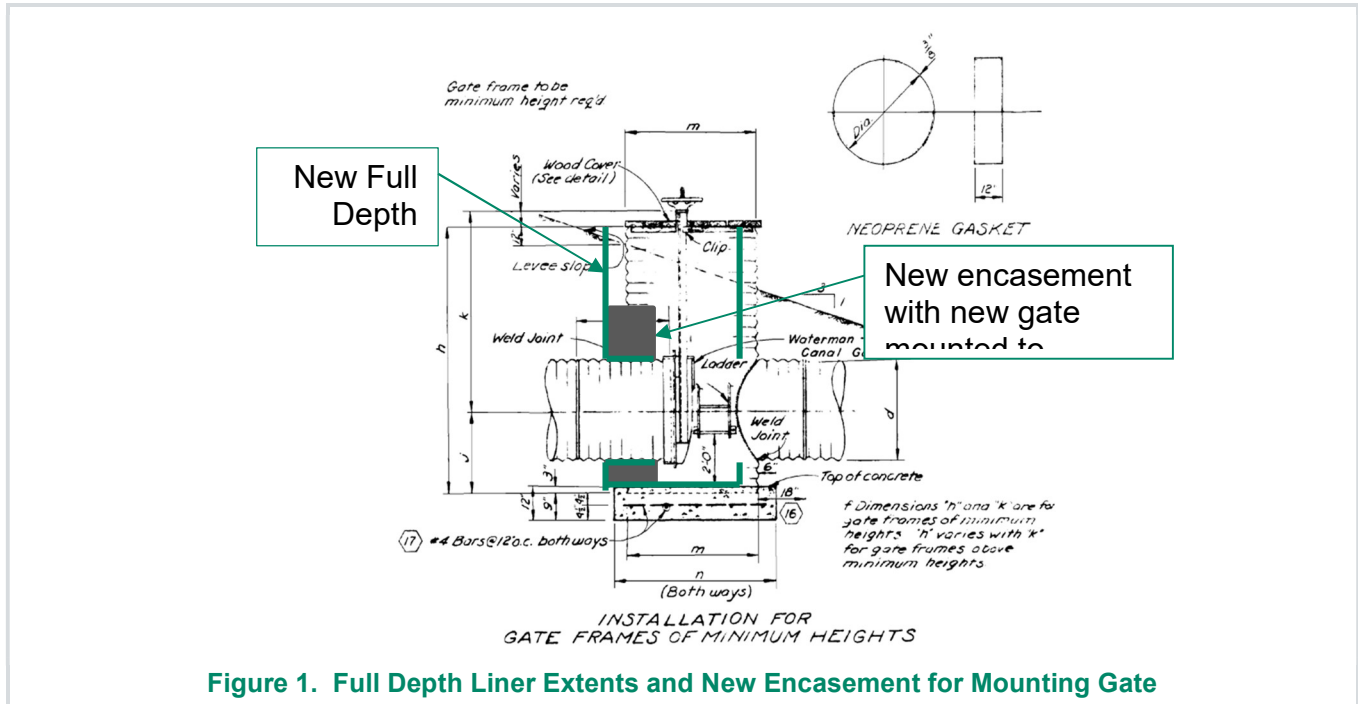


Figure 1. Full Depth Liner Extends and New Encasement for Mounting Gate

Load Case Considerations and Design Approach

The structural designs for a unbonded (close-fit) liner that are detailed herein are based on the ASCE Manual of Practice 92 – Manhole Inspection and Rehabilitation (2022) and the assumptions and investigations carried out in support of Preliminary and Detailed Design for the project. In addition to conventional hydrostatic loads due to groundwater and the potential for earth and live loading, the liner design must also consider extreme hydrostatic loads from flood events due to the function of the levee the culverts convey flow through.

The guidance in ASCE MOP 92 suggests that the most likely load to come onto the liner after its installation is only external hydrostatic pressure. This is based on research to date, which concluded that a cylindrically shaped manhole structure can lose almost all the lateral earth pressure that was acting on it at the time of installation due to consolidation (Carroll, 2023). Consideration of lateral earth pressure in liner design would only occur if a significant movement of the manhole wall would occur after installation of the liner. From field observations there was no deformation or indication of poor soil quality surrounding the gate riser manholes to warrant consideration of lateral earth pressure in design. The other load that could be present on the liner is live loading from traffic or construction equipment. Since the host pipe is flexible in nature, any liner installed will also see the live load. It is difficult to quantify the amount to be taken by the host structure versus the liner and as such full live load transferred to the liner was assumed.

The analysis of load cases included three specific Load Cases for each Section:

- Load Case 1 – Long-term (50 year) groundwater elevations at 3 feet above soffit of pipe
- Load Case 2 – Long-term (50 year) AASHTO HS-20 live load at surface of pipe
- Load Case 3 – Short-term (10,000 hour) hydrostatic loads due flood event at levee crown

Governing Load Conditions and Evaluation of Unbonded Lining Technologies

Spray applied polyurethane and cured-in-place manhole liners were reviewed due to their ability to handle the anticipated loading and applicability for an unbonded “fully deteriorated” design. The load cases were checked using a circular section throughout as the liner is specified to be installed before the encasement (see Figure 1). The circular section was checked for hoop stress, fully constrained buckling, and axial compression. It was found that the governing load case was Load Case 3 up to 15 feet bury depth and then Load Case 1 at 15 feet and below.

Minimum thickness calculations were performed for a maximum gate riser manhole diameter of 72-inches. Similar to the box culvert liner designs, rating curves were developed to specify the minimum thickness to allow flexibility in product declared mechanical properties.

Table 1. Governing Equations for Minimum Liner Thickness for Gate Riser Manholes

Section	Depth from top of Gate Riser Manhole to Invert (ft) ¹	Long-Term ² Limiting Compressive/Tensile Strength
≤72" Diameter	<15	$y=17386x^{-0.981}$
	20	$y=14227x^{-0.981}$
	25	$y=10735x^{-0.977}$

¹For gate riser manholes that are between design depths, round up to the next design depth (e.g. for 17 ft use 20 ft not 15 ft equation)

²Long-Term mechanical properties will be values at 10,000 hour sustained load for depths greater than 15 feet and 50-year sustained load for depths 15 feet or less.

x = Long-Term compressive or tensile strength in psi, the less of values should be used

y =minimum thickness in millimeters (mm)

As per the specifications, thicknesses for Bidding purposes can be determined by:

- Inputting the Bidder's declared properties for the limited Long-Term (LT) compressive and LT tensile strength into the above formulae for each section (*Note the creep retention values must be substantiated by valid ASTM D2990 or equal testing for flexural modulus creep testing or creep rupture testing for long term flexural strength.*)
- Selecting the larger of those two thicknesses
- Increase the selected thickness to allow for processing, installation loading (e.g. jacking, grouting), and to deliver a liner that meets the design intent of the install.

For example, if the Bidder's declared values for limiting LT compressive and LT tensile strength were 4,000 psi, the minimum required thickness would be calculated as 4.16 mm for a gate riser manhole with a depth range of 15 to 20 feet.

Lastly Figure 2 depict the fitted curves versus the actual data to aid in carrying out a visual check on calculated thicknesses.

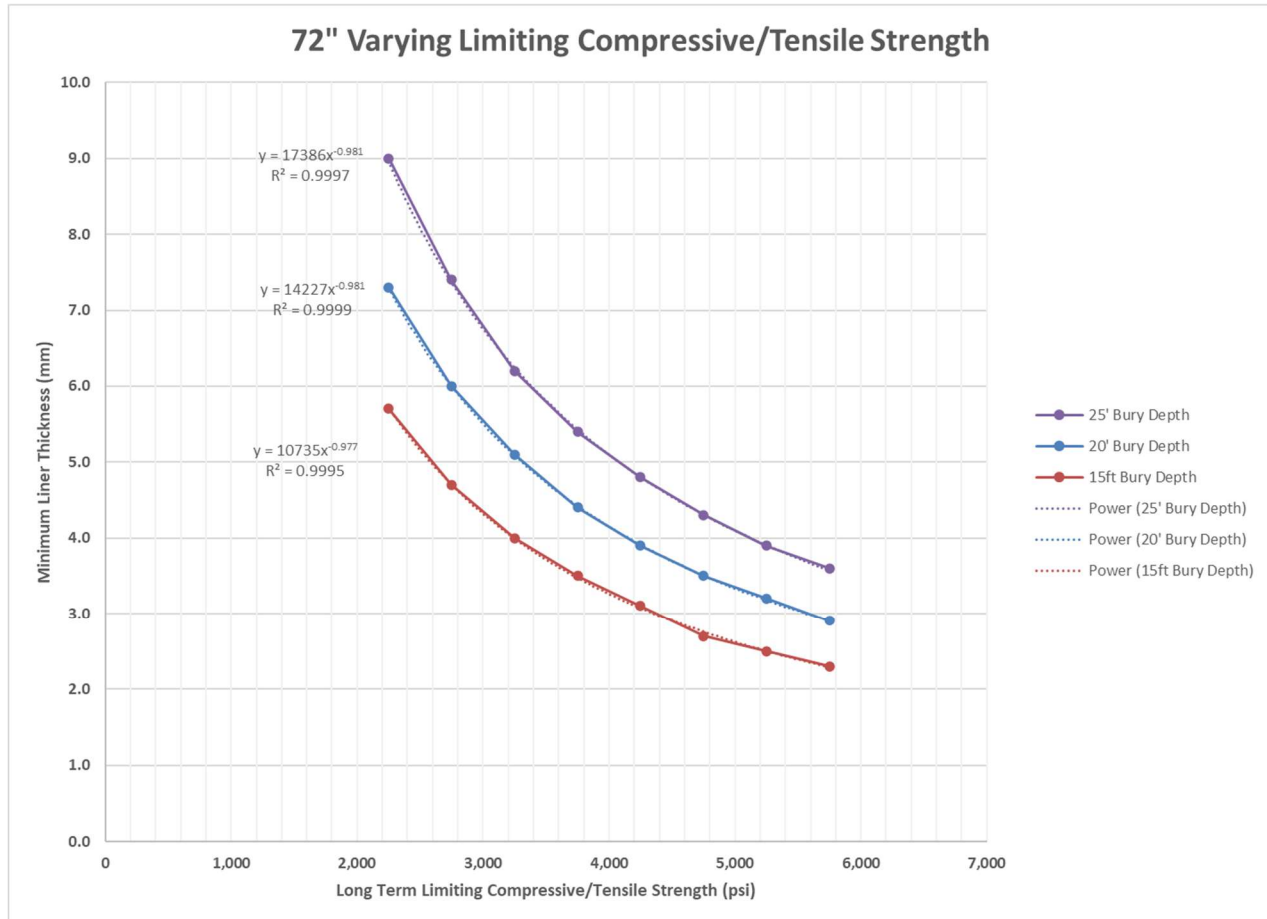


Figure 2. Thickness versus Limiting Compressive/Tensile Strength for 72" Maximum Diameter Gate Riser Manhole at Varying Depths

EXHIBIT A, ATTACHMENT 6 GATE RISER MANHOLE RELINING

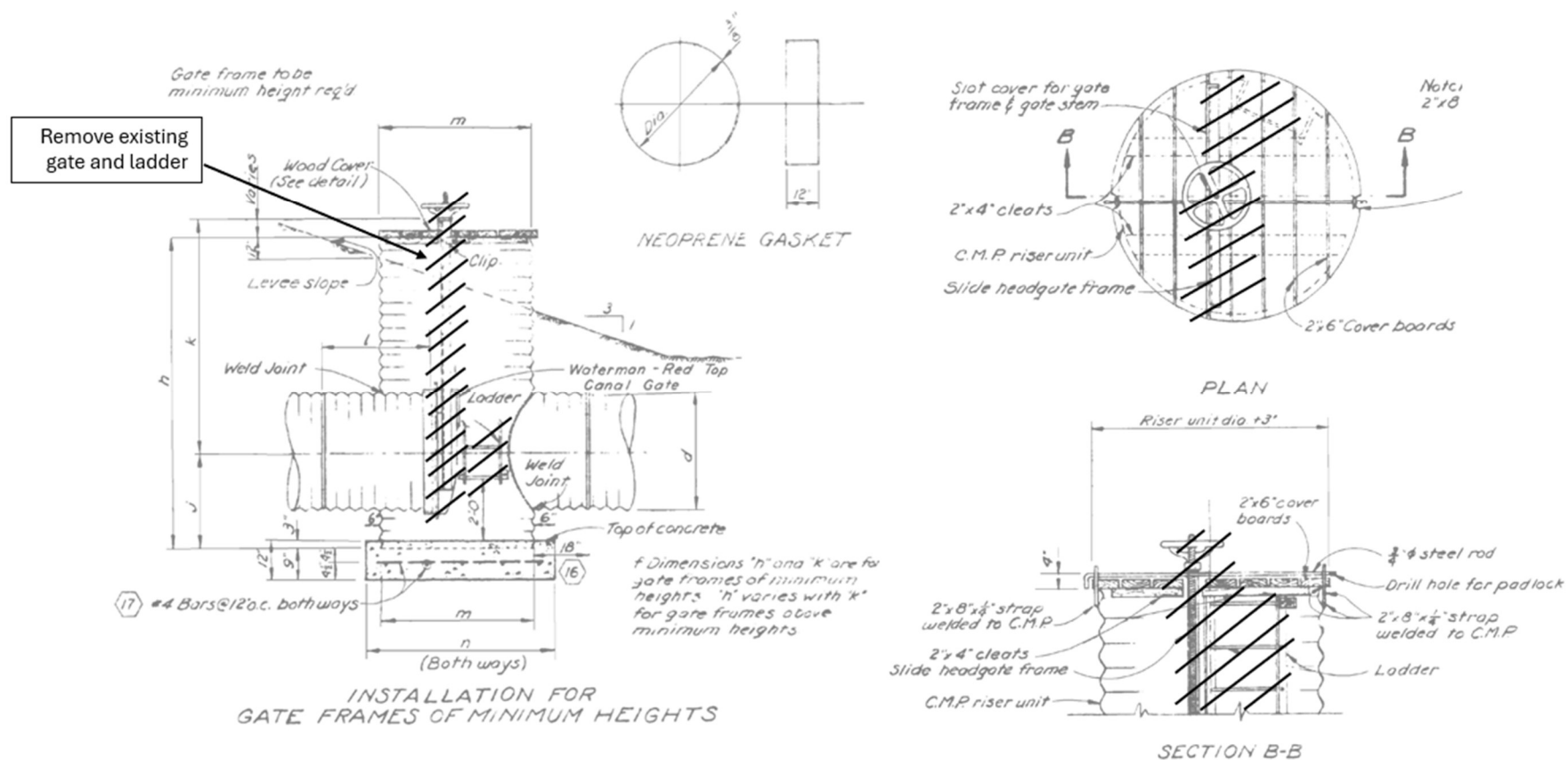


Figure 1 – Gate Riser Manhole Relining – Existing Conditions and Demolition

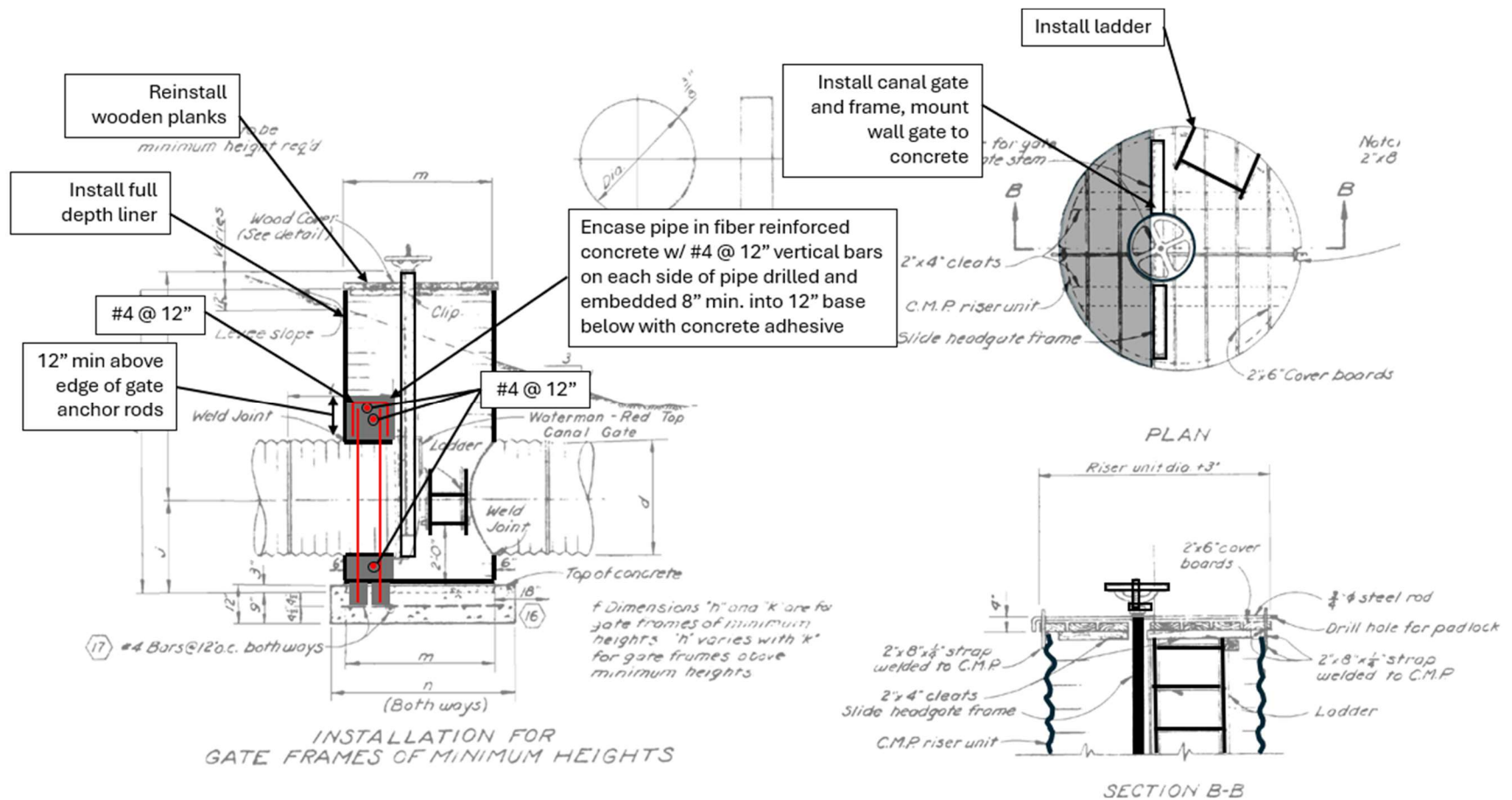


Figure – 2 Gate Riser Manhole Relining – Plan and Section

SECTION 03 10 00
CONCRETE FORMWORK

PART 1- GENERAL

1.01 DESCRIPTION:

- A. Provide design and furnish materials for fabricating, erecting and removing formwork, false work and shoring for cast-in-place concrete as shown within the contract documents and specified herein for a complete installation. The use of stay-in-place forms is expressly prohibited.
- B. Use formwork to cast all cast-in-place concrete structures.

1.02 REFERENCES:

- A. American Concrete Institute (ACI):
 - 1. [117](#)/117R: Standard Tolerances for Concrete Construction and Materials.
 - 2. [309.2R](#): Identification and Control of Visible Effects of Consolidation on Formed Concrete Surfaces.
 - 3. [318](#)/318R: Building Code Requirements for Structural Concrete and Commentary.
 - 4. [347](#): Guide to Formwork for Concrete.
 - 5. [350](#)/350R: Code Requirements for Environmental Concrete Structures and Commentary.
- B. The Engineered Wood Association (APA)
- C. National Institute of Product Standards and Technology
 - 1. Voluntary Product Standard PS 1 Structural Plywood

1.03 DESIGN REQUIREMENTS:

- A. Design formwork in conformance with methodology of ACI 347R for anticipated loads, lateral pressures, depth of concrete placement and rate of concrete placement. Design will consider any special requirements due to the use of self consolidating, plasticized and/or retarded set concrete. All forms and shoring will be designed at the contractor's expense.

1.04 QUALIFICATIONS:

- A. Formwork Designer: Formwork, false work, and shoring design will be by an Engineer licensed in the state where the Project is located.

1.05 SUBMITTALS:

- A. Submit product data for form ties, spreaders, chamfer strips, rustication strips, form liners, form coatings, and bond breakers.
- B. Submit following shop drawings in accordance with 01 33 00.
 - 1. Layout of panel joints and tie hole pattern for architectural formwork.
 - 2. Form Ties: Submit data sheets for form ties proposed for use.
 - 3. Form Ties-Tapered Through-Bolts: Proposed method of sealing and patching form tie holes.

1.06 QUALITY ASSURANCE:

- A. Design of Formwork:
 - 1. The Contractor will assume responsibility for the design, Engineering and construction of formwork. Forms will be designed to produce concrete members identical in shape, lines and dimensions to members shown on the Contract Documents.
 - 2. When high range water reducer (superplasticizer) is used in concrete mix or when self consolidated concrete is specified, forms will be designed for full hydrostatic pressure per ACI 347.
 - 3. The formwork will be designed for the loads and lateral pressures in accordance with ACI 347 and wind loads as specified by the local building code.
 - 4. Construction, openings, offsets, keyways, recesses, moldings, chamfers, blocking, screeds, bulkheads, waterstops, anchorages, inserts, and other features will be provided.
 - 5. Formwork will be designed to be readily removable without impact, shock, or damage to 'green' concrete surfaces and adjacent materials.
 - 6. The maximum panel deflection will be $L/360$ of the span between structural members.
- B. Unless otherwise specified herein, formwork will be constructed so that the concrete surfaces will conform to the tolerance limits as given in ACI 117.
- C. Materials, fabrications and workmanship found defective will be promptly removed and replaced and new acceptable work will be provided in accordance with Contract requirements at no additional cost to the owner.

1.07 DELIVERY, STORAGE AND HANDLING:

- A. Materials will be delivered to the site in an undamaged condition and at such intervals as will avoid delay in the work.

- B. Material will be stored and protected in a clean, properly drained location. Material will be kept off the ground under a weather-tight covering permitting good air circulation. Formwork materials will be stored on dry wood sleepers, pallets, platforms or other appropriate supports which have slope for positive drainage. Materials will be protected from distortion, excessive stresses, corrosion and other damage. Materials will not be stored on the structure in a manner that might cause distortion or damage to the supporting structure.

PART 2- PRODUCTS

2.01 LUMBER:

- A. Lumber used in form construction will be Douglas fir, No. 2 grade, S4S, Standard Grading and Dressing Rules No. 16, West Coast Lumber Inspection Bureau; or Southern Yellow Pine, No. 2, S4S, Standard Grade Rules Southern Pine Inspection Bureau. Boards will be 6 inches or more in width.

2.02 PLYWOOD:

- A. Only grade-marked plywood conforming to APA will be provided.
- B. Plywood used in form construction will be Grade B-B, Class 1 plyform, mill-oiled, and sanded on both sides in conformance with U.S. Product Standard PS 1 Structural Plywood.
- C. Thickness will be sized to maintain alignment and surface smoothness, but not less than 5/8-inch thick.

2.03 STEEL FORMS:

- A. Commercial grade sheets not less than 16 gage will be provided.
- B. Stock material that is free from warps, bends, kinks, cracks, and rust or other matter that could stain the concrete will be provided.

2.04 FORM MATERIAL LOCATIONS:

- A. Wall Forms:
 - 1. Materials: Plywood, hard plastic finished plywood or steel in new and undamaged condition, of sufficient strength and surface smoothness to produce specified finish.
- B. All Other Forms: Materials as specified for wall forms.

2.05 FORM TIES:

- A. Locate form ties on exposed surfaces in a uniform pattern. Place form ties so they remain embedded in the concrete except for a removable portion at each end. Form ties will have conical or spherical type inserts with a maximum diameter of 1 inch. Construct form ties so that no metal is within 1-1/2 inch of the concrete surface when the forms, inserts, and

tie ends are removed. Do not use wire ties. Ties will withstand all pressures and maintain forms within acceptable deflection limits.

- B. Flat bar ties for panel forms will have plastic or rubber inserts having a minimum depth of 1-1/2 inch and sufficient dimensions to permit patching of the tie hole.
- C. Tapered form ties will be tapered through-bolts or through-bolts that utilize a removable tapered sleeve.
- D. Water Stop Ties: For water-holding structures, basements, pipe galleries, and accessible spaces below finish grade, furnish one of the following:
 - 1. Integral steel water stop 0.103 inch thick and 0.625 inch in diameter tightly and continuously welded to tie.
 - 2. Neoprene water stop 3/16-inch thick and 15/16 inch diameter whose center hole is one-half diameter of tie, or molded plastic water stop of comparable size.
- E. Elastic Vinyl Plug:
 - 1. Design and size of plug will allow insertion with tool to enable plug to elongate and return to original length and diameter upon removal forming watertight seal.
 - 2. Manufacturer:
 - a. Dayton Superior; A58 Sure Plug.
 - c. Or acceptable equivalent product.
- F. Mechanical EPDM Rubber Plug:
 - 1. Mechanical plug for taper tie
 - 2. Manufacturers:
 - a. Sika Greenstreak, St. Louis, MO; X-Plug
 - b. Or acceptable equivalent product.
 - 3. Friction fit plugs will not be allowed.

2.06 BOND BREAKER:

- A. Bond breaker will be a V.O.C.-compliant nonstaining type that will provide positive bond prevention.
- B. Manufacturers:
 - 1. Edoco Burke; Clean Lift 90 W.B..
 - 2. Nox-Crete, Inc.; Silcoseal 97EC.
 - 3. Or acceptable equivalent product.

2.07 FORM CAULKING:

- A. Form caulking will be a one-component, gun-grade silicone sealant that is capable of producing flush, watertight and non-absorbent surfaces and joints. Sealant will be compatible with the type of forming material and concrete ingredients used.
- B. Products:
 - 1. Series 1200 Construction Caulking; GE Silicones.
 - 2. Dow Corning 999-A; Dow Corning Co..
 - 3. Sikasil WS-295; Sika Corporation.
 - 4. Or acceptable equivalent product.

2.08 CHAMFER STRIPS:

- A. Provide 3/4 inch by 3/4-inch chamfer strips milled from clear, straight-grain pine, surfaced each side or extruded vinyl type with or without nailing flange unless otherwise shown on the Contract Documents.

2.09 INSERTS:

- A. Provide galvanized cast steel or galvanized welded steel inserts, complete with anchors to concrete and fittings such as bolts, wedges and straps.

2.10 DOVETAIL ANCHOR SLOTS:

- A. Provide dovetail anchor slots manufactured from 22 gage, galvanized steel with removable felt or polyurethane.

2.11 FORM RELEASE AGENT:

- A. Form release agent will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces. Form release agent will be a ready-to-use water-based material formulated to reduce or eliminate surface imperfections and containing no mineral oil or organic solvents.
- B. Manufacturers and Products:
 - 1. BASF; MBT, Rheofinish 211.
 - 2. Cresset Chemical Company; Crete-Lease 20-VOC.
 - 3. Unitex Chemicals; Farm Fresh.
 - 4. Symons Corporation: Magic Kote
 - 5. Or acceptable equivalent product.

PART 3- EXECUTION

3.01 FORM TOLERANCES:

- A. Comply with the requirements of ACI 117 for tolerances for formed surfaces except as specified in Table 03 10 00-1.

Table 03 10 00-1	
Vertical alignment (plumbness)	1/4-inch in any 10 feet and 1-inch maximum for entire length
Variation from the level or from the grades indicated on the drawings	1/4-inch in any 10 feet
Variation of distance between walls	1/4-inch in any 10 feet and 1-inch maximum for entire length and height
Variation in the sizes and locations of sleeves, floor openings and wall openings	Minus 1/4-inch. Plus 1/2-inch.
Variation in thickness of walls	Minus 1/4-inch. Plus 1/2-inch.

- B. Tolerances are not cumulative
- C. Where equipment is to be installed, comply with manufacturer's tolerances if more restrictive than above.
- D. Failure of the forms to produce the specified concrete surface and surface tolerance will be grounds for rejection of the concrete work. Rejected work will be repaired or replaced at no additional cost to the Owner.

3.02 PREPARATION:

- A. Clean form surfaces to be in contact with concrete of foreign material prior to installation. Tape, gasket, plug, and/or caulk joints, gaps, and apertures in forms so that the joint will remain watertight and withstand placing pressures without bulging outward or creating surface irregularities.
- B. Coat form surfaces in contact with concrete with a form release agent prior to form installation.
- C. Keep form coatings off steel reinforcement, items to be embedded, and previously placed concrete.
- D. Steel Forms: Apply form release agent to steel forms as soon as they are cleaned to prevent discoloration of concrete from rust.

3.03 ERECTION AND INSTALLATION:

- A. Forms will be constructed in accordance with ACI 347 to required dimensions, plumb, straight and mortar tight. Forms will be substantial, properly braced, and tied together to maintain position and shape and to resist all pressures to which they may be subject.

Unless otherwise indicated on the Contract Documents, formwork will be constructed so that the concrete surfaces will conform to the tolerance limits in ACI 117 and herein specified.

- B. Provide means for holding adjacent edges and ends of form panels tight and in accurate alignment to prevent the formation of ridges, fins, offsets, or similar surface defects in the finished concrete.
- C. Provide one cleanout and inspection opening 12 inches wide by 18 inches high every 7 feet at the bottom of each lift of forms.
- D. Provide exterior corners of concrete members with chamfers as specified.
- E. Provide means for removing forms without injury to the surface of finished concrete.
- F. Do not embed any form-tying device or part thereof other than metal in the concrete.
- G. Locate large end of taper tie on the "wet" side of the wall.
- H. Use only form or form-tying methods that do not cause spalling of the concrete upon form stripping or tie removal.
- I. Form surfaces of concrete members except where placement of the concrete against the ground is shown in the drawings or as indicated below. The dimensions of concrete members shown in the drawings apply to formed surfaces, except where otherwise indicated. Add 2 inches of concrete where concrete is placed against trimmed undisturbed ground in lieu of forms. Placement of concrete against the ground will be limited to footings and other nonexposed concrete and only where the character of the ground is such that it can be trimmed to the required lines and will stand securely without caving or sloughing.
- J. Provide openings with continuous keyways and water stops. Provide a slight flare to facilitate grouting and the escape of entrained air during grouting. Provide formed openings with additional reinforcement as shown in the typical structural details. Reinforcing will be at least 2 inches clear from the opening surfaces and encased items.
- K. Set anchor bolts and other embedded items accurately before placing concrete and hold securely in position until the concrete is placed and set. Check special castings, channels, or other metal parts that are to be embedded in the concrete prior to and again after placing concrete. Check nailing blocks, plugs, and strips necessary for the attachment of trim, finish, and similar work prior to placing concrete.

3.04 PROTECTION:

- A. During installation, the forms will not be used as a storage platform nor as a working platform until the forms have been permanently fastened in position.

3.05 PIPES AND WALL CASTINGS CAST IN CONCRETE:

- A. Install wall castings, wall flanges, and wall anchors before placing concrete. Do not weld, tie, or otherwise connect the wall castings or anchors to the reinforcing steel.

- B. Pipes or wall castings located below operating water level will have water stop ring collars and will be cast in place. Do not block out such piping and grout after the concrete section is cast unless permitted, authorized or directed by DWR. Pipes fitted with thrust rings will be cast in place.

3.06 REMOVAL OF FORMS:

- A. Forms will be removed in accordance with ACI 347 recommendations without damage to concrete and in a manner to ensure complete safety to the structure. Forms, form ties and bracing will not be removed without specific permission of the Contractor's Registered Professional DWR.
- B. The following table indicates the minimum allowable time after the last cast concrete is placed before forms, shoring, or wall bracing may be removed; during which the air surrounding the concrete is above 50 degrees F.

Table 03 10 00-2	
Walls; Similar members not supporting loads.	24 hours

- C. Removal times will be increased if the concrete temperature following placement is permitted to drop below 50 degrees F.

3.07 PATCHING OF TAPERED TIE HOLES:

- A. Clear tie hole of all loose debris with a taper tie void brush and flush debris from tie hole with air or water.
- B. Install plug from larger tie hole end in accordance with manufacturer's instructions using an insertion tool as recommended by the manufacturer.
- C. Fill each side of hole with mortar. Apply mortar to the "wet" side of the wall first. Consolidate mortar solidly into the hole.

END OF SECTION

SECTION 03 21 00
CONCRETE REINFORCEMENT

PART 1- GENERAL

1.08 DESCRIPTION:

- A. Provide concrete reinforcement as indicated and specified within the Contract Documents:

1. Section Includes:
 - a. Reinforcement bars.
 - b. Reinforcement accessories.

1.09 REFERENCES:

- A. ASTM International (ASTM):

1. [A184](#): Standard Specification for Fabricated Deformed Steel Bar Mats for Concrete Reinforcement.
2. [A615](#): Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
3. [A616](#): Standard Specification for Rail-Steel Deformed and Plain Bars for Concrete Reinforcement.
4. [A617](#): Standard Specification for Axle-Steel Deformed and Plain Bars for Concrete Reinforcement.
5. [A706](#): Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement.
6. ASTM A1064/A1064M - Standard Specification for Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete

- B. American Concrete Institute (ACI):

1. [301](#): Standard Specification for Structural Concrete.
2. [315](#): Details and Detailing of Concrete Reinforcement.
3. [318](#): Building Code Requirements for Structural Concrete.
4. [350](#): Building Code Requirements for Environmental Engineering Concrete Structures

- C. Concrete Reinforcing Steel Institute (CRSI):

1. Manual of Standard Practice.
 2. Placing Reinforcing Bars.
 - D. American Welding Society (AWS):
 1. [D1.4](#): Structural Welding Code, Reinforcement Steel.
 - E. Where reference is made to one of the above standards, the version in effect at the time of bid opening will apply.
- 1.10 SUBMITTALS:
- A. Unless otherwise acceptable to DWR, each submittal will include reinforcement only for a single structure or part thereof. Shop drawings depicting multiple structures on the same sheet are not acceptable.
 - B. Shop Drawings:
 1. Submit bar lists and placing drawings for all reinforced concrete structures.
 2. Detail reinforcement in conformance with ACI 315.
 3. Clearly indicate bar sizes, spacing, locations, quantities and total weight of reinforcement steel.
 4. Clearly show marking for each reinforcement item.
 - C. Submit Certificates: Submit AWS qualification certificates for welders employed on the Work for the appropriate electrode and class of material. Testing will be conducted and witnessed by an independent testing laboratory prior to welding reinforcement in work. Maintain qualification and certification records at the job site, readily available for examination of test results.
 - D. Submit certified copies of mill test reports of reinforcement analysis dated within the last three months for each shipment of reinforcement with specific lots in shipments identified.
 - E. Chemical composition of reinforcement steel: Ladle analysis indicating percentage of carbon, phosphorous, manganese and sulfur present in steel.
 - F. Where mechanical couplers are required or permitted to be used to splice reinforcement steel, submit Manufacturer's literature that contains instructions and recommendations for installation for each type of coupler used; certified test reports that verify the load capacity of each type and size of coupler used; and Shop Drawings that show the location of each coupler with details of how they are to be installed in the formwork.
- 1.11 QUALITY ASSURANCE:
- A. Do not fabricate reinforcement until shop and placement drawings have been reviewed and accepted by DWR.
 - B. Perform concrete reinforcement work in accordance with CRSI Manual of Practice and ACI 315.

1.12 INSPECTION AND TESTING:

- A. In no case will any reinforcement steel be covered with concrete until the installation of the reinforcement has been observed by DWR and DWR's authorization to proceed with the concreting has been obtained. DWR will be given a minimum of 48 hours prior notice of the readiness of placed reinforcement for observation. The forms will be kept open until DWR has finished observations of the reinforcement steel.
- B. Provide DWR with access to fabrication plant to facilitate inspection of reinforcement. Notify DWR of commencement and duration of shop fabrication, in sufficient time to allow for proper inspection.

1.13 DELIVERY STORAGE AND HANDLING:

- A. Keep reinforcement steel free from mill scale, rust, dirt, grease or other foreign matter.
- B. Ship and store reinforcement steel with bars of the same size and shape fastened in bundles with durable tags, marked in a legible manner with waterproof markings showing the same "mark" designations as those shown on the submitted placing drawings.
- C. Store reinforcement steel off the ground, protected from moisture and kept free from dirt, oil or other injurious contaminants.

PART 2- PRODUCTS

2.12 REINFORCEMENT STEEL:

- B. Reinforcement Steel: ASTM A615, 60 ksi yield grade; deformed billet steel bars.
- C. Reinforcement will be clean and free from loose mill scale, dirt, grease, oil, form release agent, dried concrete or any material reducing bond with concrete.

2.13 ACCESSORY MATERIALS:

- A. Tie Wire: Minimum 16 gage annealed type.
- B. Chairs, Bolsters, Bar Supports, and Spacers: sized and shaped for strength and support of reinforcement during concrete placement including load bearing pad on bottom of base slabs and slabs on grade to prevent puncturing the vapor retarder.
- C. Provide epoxy for grouting reinforcement bars specifically formulated for such application for the moisture condition, application temperature, and orientation of the hole to be filled.

2.14 FABRICATION:

- A. Fabricate concrete reinforcement in accordance with CRSI Manual of Standard Practice, ACI 315 and ASTM A184.
- B. Cold bend bars. Do not straighten or rebend bars.
- C. Do not heat reinforcement steel to bend or straighten.

- D. Bend bars around a revolving collar having a diameter of not less than that recommended by ACI 318.
- E. Cut bar ends that are to be butt spliced, or threaded by saw cutting. Terminate such ends in flat surfaces within 1-1/2 degrees of a right angle to the axis of the bar.

PART 3- EXECUTION

3.08 INSTALLATION:

- A. Place, support and secure reinforcement against displacement. Do not deviate from required position. Place reinforcement a minimum of 2 inches clear of any metal pipe or fittings.
- B. Position dowels accurately. Rigidly support, align and securely tie dowels normal to the concrete surface before concrete placement. Setting dowels into wet concrete is prohibited.
- C. Position wall dowels projecting from base slabs on grade with templates or guides held in place above the concrete placement line. Position the templates to obtain the required clearance between the dowels and the face of the walls.
- D. Bars additional to those indicated that may be found necessary or desirable by the Contractor for the purpose of securing reinforcement in position will be provided by the Contractor at no additional cost to the Owner.
- E. Tie reinforcement steel at intersections in accordance with CRSI "Placing Reinforcement Bars":
- F. Locate reinforcement to avoid interference with items drilled in later, such as concrete anchors.
- G. Securely support and tie reinforcement steel to prevent movement during concrete placement.
- H. Unless otherwise shown on the Drawings or permitted by DWR, do not bend reinforcement bars that project from in-place concrete.
- I. Do not weld reinforcement steel bars (including tack welded) either during fabrication or erection unless specifically shown on the Drawings or specified herein, or unless prior written permission has been obtained from DWR. Immediately remove bars that have been welded, including tack welds, without such permission from the work. Comply with AWS D1.4 when welding of reinforcement is or called for.
- J. Setting bars and welded wire reinforcement on layers of fresh concrete as the work progresses or adjusting reinforcement during the placement of concrete is prohibited.
- K. Provide and place safety caps on all exposed ends of vertical reinforcement that pose a danger to injury or life safety.

3.09 FIELD QUALITY CONTROL:

- A. Remove reinforcement with kinks or bends not shown on shop or placement drawings. Remove such reinforcement from job site and replace with new fabricated steel. Do not field bend of reinforcement unless reinforcement is indicated or specified to be field bent.
- B. Protect reinforcement from rusting, deforming, bending, kinking and other injury. Clean in-place reinforcement that has rusted, or been splattered with concrete using sand or water blasting prior to incorporation into the Work.

END OF SECTION

SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART 1- GENERAL

1.14 DESCRIPTION:

- A. Provide all labor, materials, equipment and incidentals necessary to furnish and install cast-in-place concrete as specified and as shown within the Contract Documents.

1.15 REFERENCES:

A. American Concrete Institute (ACI):

1. [ACI 211.1](#): Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete
2. [ACI 301](#): Specifications for Structural Concrete
3. [ACI 304R](#): Guide for Measuring, Mixing, Transporting and Placing Concrete
4. ACI 304.2R: Placing Concrete by Pumping Methods
5. [ACI 305.1](#): Specification for Hot Weather Concreting
6. [ACI 306.1](#): Standard Specification for Cold Weather Concreting
7. [ACI 308.1](#): Specification for Curing Concrete
8. [ACI 318](#): Building Code Requirements for Structural Concrete
9. [ACI 350](#): Code Requirements For Environmental Engineering Concrete Structures

B. ASTM International (ASTM) Publications:

1. [A 123](#): Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
2. [A 153](#): Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
3. C 31: Standard Practice for Making and Curing Concrete Test Specimens in the Field
4. [C 33](#): Standard Specification for Concrete Aggregates
5. [C 39](#): Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
6. C 40: Standard Test Method for Organic Impurities in Fine Aggregates for Concrete

7. C 42: Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
8. C 87: Standard Test Method for Effect of Organic Impurities in Fine Aggregate on Strength of Mortar
9. [C 88](#): Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
10. [C 94](#): Standard Specification for Ready-Mixed Concrete
11. C 109: Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in or (50-mm) Cube Specimens)
12. C 123: Standard Test Method for Lightweight Particles in Aggregate
13. C 136: Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
14. C 138: Standard Test Method for Unit Weight, Yield, and Air Content (Gravimetric) of Concrete
15. [C 143](#): Standard Test Method for Slump of Hydraulic Cement Concrete
16. [C 150](#): Standard Specification for Portland Cement
17. [C 157](#): Standard Test Method for Length Change of Hardened Hydraulic Cement, Mortar and Concrete
18. [C 171](#): Standard Specification for Sheet Materials for Curing Concrete
19. [C 172](#): Standard Practice for Sampling Freshly Mixed Concrete
20. C 192: Standard Practice for Making and Curing Concrete Test Specimens in the Laboratory
21. [C 231](#): Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
22. [C 260](#): Standard Specification for Air-Entraining Admixtures for Concrete
23. C 295: Standard Guide for Petrographic Examination of Aggregates for Concrete
24. [C 309](#): Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
25. C 311: Standard Test Methods for Sampling and Testing Fly Ash or Natural Pozzolans for Use as in Portland Cement Concrete
26. [C 494](#): Standard Specification for Chemical Admixtures for Concrete
27. C 595: Standard Specification for Blended Hydraulic Cements

28. [C 618](#): Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
29. C 881: Standard Test Method for Epoxy Resin Base Bonding Systems for Concrete
30. C 882: Standard Test Method for Bond Strength of Epoxy Resin Systems Used with Concrete by Slant Shear
31. [C 989](#): Standard Specification for Slag Cement for Use in Concrete and Mortars
32. [C 1017](#): Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete
33. C 1064: Standard Test Method for Temperature of Freshly Mixed Portland Cement Concrete
34. [C 1107](#): Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)
35. [C 1116](#): Standard Specification for Fiber Reinforced Concrete
36. C 1240: Standard Specification for Silica Fume Used in Cementitious Mixtures
37. C 1260: Standard Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)
38. C 1293: Standard Test Method for Determination of Length Change of Concrete Due to Alkali-Silica Reaction
39. C 1567: Standard Test Method for Determining the Potential Alkali-Silica Reactivity of Combinations of Cementitious Materials and Aggregate (Accelerated Mortar-Bar Method)
40. C 1602: Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete
41. D 75: Standard Practice for Sampling Aggregates
42. [E 329](#): Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials used in Construction

1.16 SUBMITTALS:

A. Product Data:

1. Manufacturer's specifications and instructions for all admixtures and curing materials. Manufacturer's certification of compatibility of all admixtures.

B. Shop Drawings:

1. Provide certification that cement used complies with ASTM C150 and these specifications.

2. Provide certification that aggregates comply with ASTM C33. Submit gradation analysis with concrete mix designs.
3. Provide certification of compliance with these specifications from the manufacturer of the concrete admixtures.
4. Prepare mix designs in accordance with ACI 318, except as modified herein.
 - a. Submit concrete mix designs, laboratory 7-day and 28-day compressive test results and laboratory shrinkage test results for review and approval by DWR.
 - b. Alternatively, submit test reports of 7- and 28-day compressive tests and shrinkage test results of the proposed mix where that same mix has been used on two previous projects in the past twelve months.
 - c. Do not use any concrete mixes in the work that have not been approved by DWR.
5. Plant Qualification: Submit certification from the National Ready Mixed Concrete Association indicating compliance with the specified qualification requirements.

C. Test and Evaluation Reports

1. Provide results of drying shrinkage tests from trial concrete mixes by the Contractor's testing laboratory firm.

D. Manufacturers' Instructions

1. Provide epoxy bonding compound manufacturer's specific instructions for use. Provide manufacturer's certifications as to suitability of product to meet job requirements with regard to surface, pot life, set time, vertical or horizontal application, and forming restrictions.

E. Field Quality Control Submittals

1. Provide delivery tickets for ready-mix concrete or weigh masters certificate per ASTM C94, including weights of cement and each size aggregate and amount of water added at the plant and record of placements. Record the amount of water added on the job on the delivery ticket. Water added at the plant will account for moisture in both coarse and fine aggregate and liquid admixtures.
2. Batch tickets will include the following information:
 - a. Load number, truck number and driver's name
 - b. Strength of concrete (compression strength)
 - c. Amount of concrete (cu. yds. (cu. meters))
 - d. Time truck was charged with cement
 - e. Type, brand and amount of cement

- f. Type, brand and amount of admixtures
- g. Amount of water withheld at the plant (if any)
- h. Information necessary to calculate total mixing water
- i. Maximum size of aggregate
- j. Weights of fine and coarse aggregates
- k. Signature of ready-mix representative
- l. Concrete temperature at batching plant
- m. Type and amount of fly ash, other pozzolan or slag cement.

1.17 QUALITY ASSURANCE:

- A. Concrete not meeting the minimum specified 28-day design strength will be cause for rejection and removal from the work.
- B. Perform concrete work in conformance with ACI 301 unless otherwise specified.
- C. Do not use calcium chloride or admixtures containing calcium chloride.
- D. Do not place concrete until design mix, material tests and trial concrete batch mix compression and shrinkage test results are approved by DWR. Approvals will be obtained at least 30 days prior to the need for use on the job site.
- E. The Contractor will employ an independent testing laboratory, acceptable to DWR, to develop concrete mix designs and testing.
- F. The Contractor will employ an independent testing laboratory, acceptable to DWR, to test the conformity of materials proposed for use in the concrete mixes to the project specifications and to design and test concrete mixes proposed for use. Concrete testing will be performed by an ACI Concrete Field Technician, Grade I or equivalent. The Contractor will allow free access to obtain test samples.
- G. The Owner will employ an independent testing laboratory, acceptable to DWR, to test conformity of materials placed into the work during construction. Concrete testing will be performed by an ACI Concrete Field Technician, Grade I or equivalent. The Contractor will allow free access to obtain test samples.
- H. Methods of Sampling and Testing:
 - 1. Fresh Concrete Sampling: ASTM C 172
 - 2. Specimen Preparation: ASTM C 31
 - 3. Compressive Strength: ASTM C 39
 - 4. Air Content: ASTM C 231

- 5. Slump: ASTM C 143
- 6. Temperature: ASTM C 1064
- 7. Unit Weight: ASTM C 138
- 8. Obtaining Drilled Cores: ASTM C 42

- I. Acceptance of Structure: Acceptance of completed concrete work requires conformance with dimensional tolerances, appearance and strength as indicated or specified.
 - J. Hot weather concrete to conform to ACI 305 and as specified herein.
 - K. Cold weather concrete to conform to ACI 306 and as specified herein.
 - L. Reject concrete delivered to job site that exceeds the time limit specified.
 - M. Reject concrete delivered to job site that exceeds the concrete temperature limitations specified.
 - N. Do not place concrete in water or on frozen or uncompacted ground.
- 1.18 WORKABILITY:
- A. Concrete will be of such consistency and composition that it can be worked readily into the forms and around the reinforcement without excessive vibrating and without permitting the materials to segregate or free water to collect on the surface.
- 1.19 DELIVERY, STORAGE, AND HANDLING:
- A. Deliver concrete to discharge locations in watertight agitator or mixer trucks without altering the specified properties of water- cementitious materials ratio, slump, air entrainment, temperature and homogeneity.
 - B. Reject concrete not conforming to specification, unsuitable for placement, exceeding the time or temperature limitations or not having a complete delivery batch ticket.
- 1.20 SITE CONDITIONS:
- A. Do not place concrete until conditions and facilities for making and curing control test specimens are in compliance with ASTM C 31 and as specified herein.

PART 2- PRODUCTS

2.06 MATERIALS:

- F. Cement:
 - 1. Portland cement, ASTM C150, Type II; or blended hydraulic cement, ASTM C595, Type IP (MS).

2. Use only one brand of cement in any individual structure. Use no cement that has become damaged, partially set, lumpy, or caked. Reject the entire contents of the sack or container that contains such cement. Use no salvaged or reclaimed cement.
3. Maximum tricalcium aluminate will not exceed 8 percent. The maximum percent alkalis will not exceed 0.6 percent.

G. Fly Ash:

1. Provide fly ash conforming to the following requirements:
 - a. Class F fly ash conforming to ASTM C 618 for chemical and physical properties.
 - b. Supplemental requirements in percent:
 - (1) Maximum carbon content: 3%
 - (2) Maximum sulfur trioxide (SO₃) content: 4%
 - (3) Maximum loss on ignition: 3%
 - (4) Maximum water requirement (as a percent of control): 100%
 - (5) Fineness, maximum retained on No. 325 sieve: 25%

H. Slag Cement:

1. Slag cement, when used, will meet the requirements of ASTM C989, Grade 100 or better.

I. Fine Aggregates:

1. Clean, sharp, natural sand conforming to requirements of ASTM C33 with a fineness modulus between 2.50 and 3.0.
2. Confirm aggregates intended for use in concrete do not contain pyrrhotite or other deleterious materials by petrographic testing.
3. Test conformity of aggregate and confirm that aggregates intended for use in concrete are potentially non-reactive when tested in conformance with ASTM C1260, ASTM C1293 or ASTM C1567.

J. Coarse Aggregate:

1. Well graded crushed stone, natural rock conforming to requirements of ASTM C33.
2. Limit deleterious substances in accordance with ASTM C33, Table 3, Severe Weathering Regions, limit clay lumps not to exceed 5.0 percent by weight, and limit loss when tested for soundness using magnesium sulfate to 12 percent.

3. Test conformity of aggregate and confirm that aggregates intended for use in concrete are potentially non-reactive when tested in conformance with ASTM C1260, ASTM C1293 or ASTM C1567.
4. Confirm aggregates intended for use in concrete do not contain pyrrhotite or other deleterious materials by petrographic testing.

K. Water and Ice:

1. Use water and ice free from injurious amounts of oil, acid, alkali, salt, organic matter or other deleterious substances and conforms to requirements of ASTM C1602.
2. Water will not contain more than 500 mg/L of chlorides or more than 500 mg/L of sulfate.
3. Heat or cool water to obtain concrete temperatures specified, and in conformance with ACI 305.1 and ACI 306.1.

L. Concrete Admixtures:

Maintain compressive strength and maximum water-cementitious materials ratios specified in Table 03 30 00-2 when using admixtures. Include all admixtures in solution form in the water-cementitious materials ratio calculations. Do not use any admixture that contains intentionally-added chlorides or other corrosive elements. Admixtures will be used in compliance with the manufacturer's printed instructions. The manufacturer will certify the compatibility of multiple admixtures used in the same mix. Do not use admixtures in greater dosages than recommended by manufacturer.

4. Air Entrainment:

- a. Air-entraining admixture will conform to ASTM C260.
- b. Products:
 - (1) Master Builders Solutions – MasterAir AE Series
 - (2) Sika Corporation, AER.
 - (3) WR Grace & Co.; Darex II-AEA
 - (4) Or accepted equivalent product.
- c. Adjust the admixture content to accommodate fly ash or other pozzolan requirements, and other admixtures when used, in order to obtain the specified air content.

5. Water Reducing:

- a. Water-reducing admixture will conform to ASTM C494, Type A and be compatible with the air-entraining admixture.
- b. Products:

- (1) Master Builders Solutions; MasterPozzolith Series or MasterPolyHeed Series
 - (2) Sika Corporation, Plastocrete 161
 - (3) WR Grace & Co.; Daracem 65
 - (4) Euclid Chemical Company; Eucon NW
 - (5) Or accepted equivalent product.
6. Water Reducing and Retarding:
 - a. Water-reducing and retarding admixture will conform to ASTM C494, Type D and compatible with the air-entraining admixture.
 - b. Products:
 - (1) Master Builders Solutions; MasterSet R Series or MasterSet DELVO VO Series
 - (2) Sika Corporation; Plastiment
 - (3) WR Grace & Co.; WRDA 64
 - (4) Or accepted equivalent product.
7. Accelerating:
 - a. Accelerating admixture will conform to ASTM C494, Type C or E.
 - b. Products:
 - (1) Master Builders Solutions; MasterSet AC 534 or MasterSet FP 20
 - (2) WR Grace & Co.; Lubricon NCA or Polarset
 - (3) Euclid Chemical Company: Accelguard NCA
 - (4) Or accepted equivalent product.
8. High-Range Water-Reducing Admixture (Superplasticizer):
 - a. High-Range water-reducing admixture will conform to ASTM C494, Type F or ASTM C1017, Type I.
 - b. Products:
 - (1) Master Builders Solutions; MasterRheobuild 1000 or MasterGlenium Series
 - (2) WR Grace & Co.; Daracem 100

(3) Euclid Chemical company; Eucon SPC

(4) Or accepted equivalent product.

9. Workability-Retaining Admixture:

a. Workability-enhancing admixture will conform to ASTM C 494, Type S.

b. Products:

(1) Master Builders Solutions; MasterSure Z 60

(2) WR Grace & Co.; Adva XT2

(3) Or accepted equivalent product.

K. Fiber Reinforcement:

1. Fiber reinforcing will conform to ASTM C 1116, Type III.

2. Fibers will be 100 percent virgin polypropylene fibrillated fibers containing no reprocessed olefin materials and specifically manufactured to an optimum gradation for use as concrete secondary reinforcement

3. Dosage Rate: Volume of fibers will be a minimum of 3 pounds per cubic yard.

4. Physical Characteristics:

a. Specific gravity: 0.91

b. Tensile strength: 40,000 to 110,000 psi

c. Minimum Fiber length: 1/2 inch

5. Fibrous concrete reinforcement materials provided in this section will produce concrete conforming to the requirements for strength of concrete specified.

a. Products:

(1) Master Builders Solutions; MasterFiber MAC Series

(2) WR Grace & Co.; STRUX 90/40

(3) Propex Operating Company,LLC; Enduro 600

(4) Or accepted equivalent product.

L. Epoxy Bonding Agent:

1. Epoxy bonding agent will conform to ASTM C881 Type I, II, IV or V; Grade 2 for epoxy resin adhesives, depending on the application. The class of epoxy bonding agent will be suitable for all ambient and substrate temperatures.

2. Products:

- a. Sika Corp.; Sikadur 32 Hi-Mod
- b. Euclid Chemical Company; Duralcrete
- c. Master Builders Solutions; MasterEmaco ADH 326
- d. Or accepted equivalent product

M. Curing Compound:

- 1. Liquid form, which will form impervious membrane over, exposed surface of concrete when applied to fresh concrete by means of spray gun. Compound will not inhibit future bond of floor covering or concrete floor treatment. Use Type I-D compound with red fugitive dye, Class B, having 18 percent minimum solids conforming to ASTM C 309.

2. Products:

- a. Master Builders Solutions; MasterKure CC 1315
- b. Euclid Chemical Company; Super Diamond Clear VOX
- c. W. R. Meadows, Inc.; VOCOMP-30
- d. Dayton Superior Corp; Safe Cure and Seal 30% J23UV
- e. Or accepted equivalent product.

2.02 MIXES:

- A. Conform to ASTM C94, except as modified by these specifications.
- B. Air content as determined by ASTM C231:

6 ± 1 1/2 percent for concrete using 3/4 inch maximum aggregate size.
- C. Provide minimum cementitious material content as follows in Table 03 30 00-1:

Table 03 30 00-1		
Nominal Maximum Aggregate Size (in.)	Coarse Aggregate (ASTM C 33) Size No.	Minimum Cementitious Materials (lb/yd ³)
3/4	67	560

- D. Provide concrete with the following compressive strengths at 28 days and proportion it for strength and quality requirements in accordance with ACI 318 and ACI 350. The resulting mix will not conflict with limiting values specified in Table 03 30 00-2.

Table 03 30 00-2		
Type of Work	28-Day Minimum Compressive Strength (in psi)	Maximum Water/Cement Ratio
Concrete (fiber reinforced)	4,000	0.44

- E. Measure slump in accordance with ASTM C143:

1. Proportion and produce the concrete to have a maximum slump of 4 inches. A tolerance of up to 1 inch above the indicated maximum is allowed for individual batches provided the average for all batches or the most recent 10 batches tested, whichever is fewer, does not exceed the maximum limit. Concrete of lower than usual slump may be used provided it is properly placed and consolidated.
2. Mixes containing water reducers will have a maximum slump of 6 inches after the addition of a mid-range water reducer and maximum slump of 8 inches after the addition of a high range water reducer.

- F. Pozzolan Content:

1. Fly ash will not exceed 20 percent of the total cementitious content.
2. Slag cement will be permitted as a substitute for fly ash at no additional cost to the Owner, in the event that Class F Fly Ash is not available. The slag substitution will be in the same proportions and percentages of the total cementitious material as shown for fly ash.

- G. Aggregate Size:

1. The maximum aggregate size will be 3/4 inches with a combined aggregate grading will be No. 67 as per ASTM C33.

PART 3- EXECUTION

3.01 INSPECTION:

- A. Contractor will examine the substrate and the conditions under which work is to be performed and notify DWR in writing of unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions are corrected in a manner acceptable to DWR.

3.02 MIXING AND TRANSPORTING CONCRETE:

- A. General: Conform to concreting procedures set forth in ASTM C 94, ACI 304R and as specified herein.

1. Transport concrete to discharge locations without altering the specified properties of water-cement ratio, slump, air entrainment, temperature and homogeneity.
2. Discharge concrete into forms within 1-1/2 hours after cement has entered mixing drum or before the drum has revolved 300 revolutions after the addition of water, whichever occurs first.
3. Do not add water at the jobsite unless permitted by DWR. If it is necessary to add water to obtain the specified slump, add water per ASTM C 94, but do not exceed the amount of water that has been held back at the plant. Added water will be incorporated by additional mixing of at least 35 revolutions. Quality control sampling will be done after the water has been added and the batch thoroughly mixed.
4. Do not add water to concrete containing high range water reducing admixture.
5. Keep a record showing time and place of each placement of concrete, together with transit-mix delivery slips certifying the contents of the placement.
6. Discharge of concrete will be completed within 90 minutes.

B. Conveying: Convey concrete from agitator or mixer truck to place of final deposit in forms by one of the following methods:

1. Buckets or hoppers with discharge gates having a clear opening equal to not less than one-third the maximum interior horizontal area or five times the maximum aggregate size being used, whichever is greater, and side slopes of not less than 60 degrees to horizontal.
2. Buggies or wheelbarrows equipped with pneumatic tires.
3. Round bottom, metal or metal-lined chutes with inclined slope of between two to three feet horizontally to one foot vertically and of sufficient capacity to avoid overflow.
4. Circular drop pipes with a top diameter of at least eight times the maximum aggregate size, but not less than 6 inch, or tapered to not less than six times maximum aggregate size.

3.03 CONCRETE ACCEPTANCE:

- A. The Contractor will accept or reject each batch of concrete delivered to the point of agitator or mixer truck discharge. The signature of a Contractor's authorized representative on the delivery batch ticket will indicate concrete acceptance.
- B. The Contractor will reject concrete delivered without a complete concrete delivery batch ticket as specified herein. The concrete supplier will furnish copies of the signed batch ticket to the Contractor and DWR.
- C. The testing agency will perform field tests at the point of agitator or mixer truck discharge. Accept or reject concrete on the basis of conformity with slump, air content and temperature specified.

- D. The testing agency will inspect concrete transit truck's barrel revolution counter and gauge for measuring water added to the concrete. Reject concrete which exceeds the maximum barrel revolution of 300, the limits specified or concrete that has water content exceeding the specified water-cement ratio.
- E. The Contractor will reject concrete not conforming to specification before discharging into the forms.

3.04 PREPARATION AND COORDINATION:

- A. Contractor will notify DWR or DWR's Representative of readiness to place concrete in any portion of the work a minimum of 48 hours prior to concrete placement. Failure to provide this notification will be cause for delay in placing until inspections can be completed and arrangements for testing established.
- B. All reinforcement, positioning of embedded items, and condition of formwork will be inspected by DWR or DWR's representative prior to concrete placement.
- C. Schedule sufficient equipment for continuous concrete placement. Provide for backup equipment and procedures to be implemented in case of an interruption in placement.
- D. Where concrete is required to be placed and bonded to existing concrete, coat the contact surfaces with epoxy bonding agent. The method of preparation and application of the bonding agent will conform to the manufacturer's recommendations.

3.05 CONCRETE PLACEMENT:

- A. Placement will conform to ACI 304R as modified by these specifications.
- B. Do not place concrete until all free water has been removed from the forms, clear of the work. Do not permit free or storm water to flow over surfaces of concrete so as to injure the quality or surface finish.
- C. Do not place concrete during inclement weather. Protect concrete placed from inclement weather. Keep sufficient protective covering ready at all times for this purpose.
- D. Deposit concrete at or near its final position to avoid segregation caused by rehandling or flowing. Do not deposit concrete in large quantities in one place to be worked along the forms with a vibrator.
- E. Deposit concrete continuously and in level layers 1 to 2 feet thick. Avoid inclined layers and cold joints. Place concrete at lower portion of slope first on sloping surfaces.
- F. Do not deposit partially hardened concrete in forms. Retempering of partially hardened concrete is not permitted. Remove all partially hardened concrete from site at no additional compensation.
- G. Do not allow concrete to fall freely in forms to cause segregation (separation of coarse aggregate from mortar). Limit maximum free fall of concrete to 4 feet. Do not move concrete horizontally more than four feet from point of discharge. Space points of deposit not more than eight feet apart.

- H. Consolidate concrete using mechanical vibrators operated within the mass of concrete and/or on the forms conforming to procedures set forth in ACI 309R and as specified herein.
- I. Conduct vibration to produce concrete of uniform texture and appearance, free of honeycombing, streaking, cold joints or visible lift lines.
- J. Conduct vibration in a systematic manner with regularly maintained vibrators. Furnish sufficient backup units at job site. Use vibrators having minimum frequency of 8,000 vibrations per minute and of sufficient amplitude to consolidate concrete. Use not less than one vibrator with crew for each 35 to 40 cubic yards of concrete placed per hour.
- K. Insert and withdraw vibrator vertically at a uniform spacing over the entire area of placement. Space distances between insertions such that spheres of influence of each insertion overlap.
- L. Use additional vibration with pencil vibrators on vertical surfaces and on all exposed concrete to bring full surface of mortar against the forms so as to eliminate air voids, bug holes and other surface defects. Employ the following additional procedures for vibrating concrete as necessary to maintain proper consolidation of concrete:
 - 1. Reduce distance between internal vibration insertions and increase time for each insertion.
 - 2. Insert vibrator as close to face of form as possible without contacting form or reinforcement.
 - 3. Thoroughly vibrate area immediately adjacent to waterstops without damaging the waterstop.
 - 4. Use spading as a supplement to vibration where particularly difficult conditions exist.
- M. Pumping Concrete:
 - 1. Conform to the recommendations of ACI 304.2R except as modified herein.
 - 2. Use equipment and procedures and schedule deliveries to maintain steady flow of concrete at the discharge end of pipe.
 - 3. Maintain concrete properties of slump, air content and temperature. Make adjustments in concrete proportions as necessary to provide concrete properties in accordance with the approved concrete design mix and as specified herein.
 - 4. Use pipe with inside diameter of at least three times the maximum coarse aggregate size, but not less than 4 inches.
 - 5. Do not use aluminum pipes for delivery of concrete to the forms.
 - 6. Take samples at the point of agitator or mixer truck discharge.
 - 7. Furnish labor and assistance as required by the testing laboratory in obtaining and handling test specimens.

3.06 CURING AND PROTECTION:

A. General:

1. Protect concrete from premature drying, hot or cold temperatures, and mechanical injury, beginning immediately after placement and maintain concrete with minimal moisture loss at relatively constant temperature.
2. Comply with curing procedures set forth in ACI 301, ACI 308.1 and as specified herein.
3. Perform hot weather concreting in conformance with ACI 305.1 and as specified herein when the ambient atmospheric temperature is 80 degrees F or above.
4. Perform cold weather concreting in conformance with ACI 306.1 and as specified herein when the ambient atmospheric temperature is 40 degrees F or below.
5. Concrete required to be moist cured will remain moist for the entire duration of the cure. Repeated wetting and drying cycles of the curing process will not be allowed.

B. Curing Duration:

1. Start initial curing after placing and finishing concrete as soon as free moisture has disappeared from unformed concrete surfaces. Initial curing starts as soon as concrete achieves final set. Forms left tightly in place are considered as part of the curing system, provided that wooden forms are kept continuously moist. Keep continuously moist for not less than 72 hours.
2. Begin final curing procedures immediately following initial curing and before the concrete has dried. Continue final curing for at least 7 days and in accordance with ACI 301 procedures for a total curing period, initial plus final, of at least 10 days.
3. Avoid rapid drying at the end of the final curing period

C. Curing Requirements:

1. Unformed Surfaces: Cover and cure entire surface of newly placed concrete immediately after completing finishing operations and water film has evaporated from surface or as soon as marring of concrete will not occur. Protect finished slabs from direct rays of the sun to prevent checking, crazing and plastic shrinkage.
2. Formed Surfaces: Minimize moisture loss for formed surfaces exposed to heating by the sun by keeping forms wet until safely removed. Keep surface continuously wet by warm water spray or warm water saturated fabric immediately following form removal.
3. Other concrete: Moist cure by moisture-retaining cover curing, or by the use of curing compound.

D. Curing Methods:

1. Water Curing: Use water curing for unformed surfaces. Continuously water cure all exposed concrete for the entire curing period. Provide moisture curing by any of the following methods:
 - a. Keeping the surface of the concrete continuously wet by ponding or immersion.
 - b. Continuous water-fog spray or sprinkling.
 - c. Covering the concrete surface with curing mats, thoroughly saturating the mats with water, and keeping the mats continuously wet with sprinklers or porous hoses. Place curing mats so as to provide coverage of the concrete surfaces and edges, with a 4-inch lap over adjacent mats. Weight down the curing cover to maintain contact with the concrete surface, as necessary.
2. Sealing Materials:
 - a. Use common sealing materials such as plastic film or waterproofing (kraft) paper when permitted by DWR.
 - b. Lap adjacent sheets a minimum of 12 inches. Seal edges with waterproof tape or adhesive. Use sheets of sufficient length to cover sides of concrete member.
 - c. Place sheet materials only on moist concrete surfaces. Wet concrete surface with fine water spray if the surface appears dry before placing sheet material.
 - d. The presence of moisture on concrete surfaces at all times during the prescribed curing period is proof of acceptable curing using sheet material.
3. Membrane Curing Compound:
 - a. Apply membrane-curing compound uniformly over concrete surface by means of roller or spray at a rate recommended by the curing compound manufacturer, but not less than 1 gallon per 150 sq. ft. of surface area. Agitate curing material in supply container immediately before transfer to distributor and thoroughly agitate it during application for uniform consistency and dispersion of pigment
 - b. Do not use curing compounds on construction and expansion joints or on surfaces to receive liquid hardener, dustproofer/sealer, concrete paint, tile, concrete fills and toppings or other applications requiring positive bond.
 - c. Reapply membrane-curing compound to concrete surfaces that have been subjected to wetting within 3 hours after curing compound has been applied by method for initial application.

- E. Protection from environmental conditions: Maintain the concrete temperature above 50 degrees F continuously throughout the curing period. Make arrangements before concrete placing for heating, covering, insulation or housing as required to maintain the specified temperature and moisture conditions continuously for the curing period.

1. When the atmospheric temperature is 80 degrees F and above, or during other climatic conditions which will cause too rapid drying of the concrete, make arrangements before the start of concrete placing for the installation of wind breaks or shading, and for fog spraying, wet sprinkling, or moisture-retaining covering.
2. Protect the concrete continuously for the entire curing period.
3. Maintain concrete temperature as uniformly as possible and protect from rapid atmospheric temperature changes.
4. Avoid temperature changes in concrete that exceed 5 degrees F in any one hour and 50 degrees F in any 24-hour period.

F. Protection from physical injury: Protect concrete from physical disturbances such as shock and vibration during curing period. Protect finished concrete surfaces from damage by construction equipment, materials, curing procedures and rain or running water. Do not load concrete in such a manner as to overstress concrete.

G. Protection from Deicing Agents: Do not apply deicing chemicals to concrete.

3.07 FIELD QUALITY CONTROL:

A. Hot Weather Requirements

1. During hot weather, give proper attention to ingredients, production methods, handling, placing, protection, and curing to prevent excessive concrete temperatures or water evaporation in accordance with ACI 305.1 and the following.
2. When the weather is such that the temperature of the concrete as placed would exceed 90 degrees F, use ice or other means of cooling the concrete during mixing and transportation so that the temperature of the concrete as placed will not exceed 90 degrees F.
3. Take precautions when placing concrete during hot, dry weather to eliminate early setting of concrete. This includes protection of reinforcing from direct sunlight to prevent heating of reinforcing, placing concrete during cooler hours of the day, and the proper and timely application of specified curing methods.
4. There will be no additional reimbursement to the Contractor for costs incurred for placing concrete in hot weather.

B. Cold Weather Requirements

1. Provide adequate equipment for heating concrete materials and protecting concrete during freezing or near-freezing weather in accordance with ACI 306.1 and the following.
2. When the temperature of the surrounding atmosphere is 40 degrees F or is likely to fall below this temperature, use heated mixing water not to exceed 140 degrees F. Do not allow the heated water to come in contact with the cement before the cement is added to the batch.

3. When placed in the forms during cold weather, maintain concrete temperature at not less than 55 degrees F. All materials will be free from ice, snow, and frozen lumps before entering the mixer.
4. Maintain the air and the forms in contact with the concrete at temperatures above 40 degrees F for the first five days after placing, and above 35 degrees F for the remainder of the curing period. Provide thermometers to indicate the ambient temperature.
5. There will be no additional reimbursement made to the Contractor for costs incurred for placing concrete during cold weather.

C. Concrete Testing

1. Concrete Quality Test Specimen:
 - a. Perform sampling and curing of test specimen in accordance with ASTM C31.
 - b. Testing agency personnel will record truck and load number from the delivery batch ticket, the concrete placement location of each specimen, the date, concrete strength, slump, air content and temperature.
 - c. For each 50 cu. yd. of each mix design of concrete, the testing agency will cast a minimum of:
 - (1) One set of four (4) 6"x12" test specimens or
 - (2) One set of seven (7) 4"x8" test specimens
 - d. Once a cylinder size has been selected, the size and number of specimens representing a strength test for each concrete mix will remain constant.
 - e. For 6"x12" test cylinders:
 - (1) The testing agency will compression test one (1) of each set of four 6"x12" specimens at 7 days.
 - (2) Test two (2) of the remaining cylinders at 28 days for concrete strength acceptance.
 - (3) The fourth cylinder will be held for testing at 56 days only if the 28 day cylinder strengths are deficient. The fourth cylinder of each set will be discarded if the 28 day strengths meet or exceed the specified minimum strength.
 - f. For 4"x8" test cylinders:
 - (1) The testing agency will compression test two (2) of each set of seven 4"x8" specimens at 7 days.
 - (2) Test three (3) of the remaining cylinders at 28 days for concrete strength acceptance.

- (3) The last two cylinders will be held for testing at 56 days only if the 28 day cylinder strengths are deficient. The 6th and 7th cylinders of each set will be discarded if the 28 day strengths meet or exceed the specified minimum strength.
2. The laboratory firm will immediately notify the Contractor and DWR if the seven day strength is deficient.
3. The acceptance test result is the average of the strengths of the two specimens tested at 28 days.
4. The laboratory firm will submit compression test results to both the Contractor and DWR. Concrete acceptance will be based on the requirements of ACI 318 and ACI 350.
5. Field cured cylinders conforming to ASTM C31 will be required to determine field compressive strength of concrete. Laboratory cured cylinders for concrete quality testing will not be used for determining field compressive strength.

D. Concrete Coring:

- a. When the concrete quality test specimen compression tests fail to be in compliance with the Contract Documents or when DWR detects deficiencies in the concrete, the Contractor will take concrete cores at least 4 inches (100 mm) in diameter from the structure in conformance with ASTM C 42 at locations determined by DWR.
- b. Obtain at least three representative cores from each member or area of concrete that is considered potentially deficient.
- c. Obtain additional cores to replace cores that show evidence of having been damaged subsequent to or during removal from the structure.
- d. The testing agency will compression test the cores taken from the structure in conformance with ASTM C 39 and submit test strength test results of cores specified above to the Contractor and to DWR.
- e. All costs associated with coring and testing of cores will be borne by the Contractor at no additional cost to the Owner.

3.08 CONCRETE FINISHES:

- A. Do not use curing compound where epoxy, urethane, mortar bed, grout, additional concrete or other toppings or adhesive will be applied.
- B. Do not sprinkle with dry cement or add water when finishing concrete surfaces.
- C. Finish concrete surfaces by repairing defective concrete, remove fins, fill depressions 1/4-inch or deeper, and fill tie holes.
- D. Protect finished concrete surfaces from damage by construction equipment, materials, curing procedures and rain or running water.

END OF SECTION

SECTION 05 05 19

POST-INSTALLED CONCRETE ANCHORS PART 1 - GENERAL

1.21 DESCRIPTION:

- A. Provide open drilled in concrete anchors and concrete as indicated and specified.

1.22 REFERENCES:

ASTM International (ASTM):

1. ASTM A307: Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
2. ASTM A449: Specification for Quenched and Tempered Steel Bolts and
3. ASTM A563: Specification for Carbon and Alloy Steel Nuts
4. ASTM F436: Standard Specification for Hardened Steel Washers
5. ASTM A36: Specification for Carbon Structural Steel
6. ASTM A193: Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications
7. ASTM A510: Standard Specification for General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel, and Alloy Steel
8. ASTM A108: Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished
9. ASTM F593: Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs
10. ASTM F594: Standard Specification for Stainless Steel Nuts
11. ASTM B633: Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel
12. ASTM A153: Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
13. Reinforcing Dowels: ASTM A615

1.23 SUBMITTALS:

- A. Submit the following after award.

1. Product specifications with recommended design values and physical characteristics for epoxy dowels, expansion and undercut anchors.
2. Quality Assurance Submittals:

a. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.

b. Certificates: ICC ES Evaluation Reports.

3. Manufacturer's installation instructions.

4. Installer Qualifications & Procedures: Submit installer qualifications as stated in Section 1.03.B. Submit a letter of procedure stating method of drilling, the product proposed for use, the complete installation procedure, manufacturer training date, and a list of the personnel to be trained on anchor installation.

B. ICC ESR document for each type and size of anchor to be installed in the work.

1.24 QUALITY ASSURANCE:

1. Installer Qualifications:

a. Drilled-in anchors will be installed by an installer with at least five years of experience performing similar installations.

2. Installer Training: Conduct a thorough training with the manufacturer or the manufacturer's representative for the installer on the project. Training to consist of a review of the complete installation process for drilled-in anchors, to include but not limited to:

a. hole drilling procedure

b. hole preparation & cleaning technique

c. adhesive injection technique & dispenser training / maintenance

d. rebar dowel preparation and installation

e. proof loading/torqueing

3. Certifications: Unless otherwise authorized by DWR, anchors will have one of the following certifications:

a. ICC ES Evaluation Report indicating conformance with current applicable ICC ES Acceptance Criteria.

1.25 DELIVERY STORAGE AND HANDLING:

A. Store anchors in accordance with manufacturer's recommendations.

PART 2 - PRODUCTS:

2.15 FASTENERS AND ANCHORS:

A. Bolts and Studs: ASTM A307; ASTM A449 where "high strength" is indicated on the Drawings.

- B. Carbon and Alloy Steel Nuts: ASTM A563.
- C. Carbon Steel Washers: ASTM F436.
- D. Carbon Steel Threaded Rod: ASTM A36; or ASTM A193 Grade B7; or ISO 898 Class 5.8.
- E. Wedge Anchors: ASTM A510; or ASTM A108.
- F. Stainless Steel Bolts, Hex Cap Screws, and Studs: ASTM F593.
- G. Stainless Steel Nuts: ASTM F594.
- H. Zinc Plating: ASTM B633.
- I. Hot-Dip Galvanizing: ASTM A153.
- J. Reinforcing Dowels: ASTM A615

2.16 DRILLED-IN ANCHORS

- A. Wedge Anchors: Wedge type, torque-controlled, with impact section to prevent thread damage complete with required nuts and washers. Provide anchors with length identification markings conforming to ICC ES AC01 or ICC ES AC193. Type and size as indicated on Drawings.
 - 1. Interior Use: Unless otherwise indicated on the Drawings, provide carbon steel anchors with zinc plating in accordance with ASTM B633, Type III Fe/Zn 5 (SC1).
 - 2. Exterior Use: As indicated on the Drawings, provide stainless steel anchors. Stainless steel anchors will be AISI Type 316 stainless steel provided with stainless steel nuts and washers of matching alloy group and minimum proof stress equal to or greater than the specified minimum full-size tensile strength of the externally threaded fastener. Stainless steel nuts will conform to ASTM F594 unless otherwise specified. Avoid installing stainless steel anchors in contact with galvanically dissimilar metals.
 - 3. Where anchor manufacturer is not indicated, subject to compliance with requirements and acceptance by DWR, provide the following:
 - a. Hilti Kwik Bolt TZ, ICC ESR-1917 (carbon steel and AISI Type 304 Stainless Steel).
 - b. Or equal
- B. Cartridge Injection Adhesive Anchors: Threaded steel rod, inserts or reinforcing dowels, complete with nuts, washers, polymer or hybrid mortar adhesive injection system, and manufacturer's installation instructions. Type and size as indicated on Drawings.
 - 1. Interior Use: Unless otherwise indicated on the Drawings, provide carbon steel threaded rods conforming to ASTM A36, ASTM A 193 Type B7 or ISO 898 Class 5.8 with zinc plating in accordance with ASTM B633, Type III Fe/Zn 5 (SC1) [or

carbon steel HIT TZ rods conforming to ASTM A510 with chemical composition of AISI 1038].

2. Exterior Use: As indicated on the Drawings, provide stainless steel anchors. Stainless steel anchors will be AISI Type 316 stainless steel provided with stainless steel nuts and washers of matching alloy group and minimum proof stress equal to or greater than the specified minimum full-size tensile strength of the externally threaded fastener. All nuts will conform to ASTM F594 unless otherwise specified. Avoid installing stainless steel anchors in contact with galvanically dissimilar metals.
3. Reinforcing dowels will be A615 Grade 60.
4. Where anchor manufacturer is not indicated, subject to compliance with requirements and acceptance by DWR, provide the following:
 - a. Hilti HAS threaded rods with HIT-HY 200 Safe Set System using Hilti Hollow Drill Bit System for anchorage to concrete, ICC ESR-3187.
 - b. Hilti HIT-Z anchor rods with HIT-HY 200 Safe Set System for anchorage to concrete, ICC ESR-3187.
 - c. Hilti HAS threaded rods with RE 500 SD Injection Adhesive Anchoring System for anchorage to concrete, ICC ESR-2322.
 - d. Hilti HAS threaded rods with RE 500 Injection Adhesive Anchoring System for anchorage to concrete.
 - e. Or equal
5. Reinforcing dowels will be A615 Grade 60.
6. Where anchor manufacturer is not indicated, subject to compliance with requirements and acceptance by DWR, provide the following:
 - a. Hilti HAS threaded rods with HIT-HY 200 Safe Set System using Hilti Hollow Drill Bit System for anchorage to concrete, ICC ESR-3187.
 - b. Hilti HIT-Z anchor rods with HIT-HY 200 Safe Set System for anchorage to concrete, ICC ESR-3187.
 - c. Hilti HAS threaded rods with RE 500 SD Injection Adhesive Anchoring System for anchorage to concrete, ICC ESR-2322.
 - d. Hilti HAS threaded rods with RE 500 Injection Adhesive Anchoring System for anchorage to concrete.
 - e. Or equal

PART 3- EXECUTION

3.10 DRILLED-IN ANCHORS:

- A. Drill holes with rotary impact hammer drills using carbide-tipped bits or hollow drill bit system. Drill bits will be of diameters as specified by the anchor manufacturer. Unless otherwise shown on the Drawings, all holes will be drilled perpendicular to the concrete surface.
 - 1. Cored Holes: Where anchors are permitted to be installed in cored holes, use core bits with matched tolerances as specified by the manufacturer. Properly clean cored hole per manufacturer's instructions.
 - 2. Embedded Items: Identify position of reinforcing steel and other embedded items prior to drilling holes for anchors. Exercise care in coring or drilling to avoid damaging existing reinforcing or embedded items. Notify DWR if reinforcing steel or other embedded items are encountered during drilling. Take precautions as necessary to avoid damaging prestressing tendons, electrical and telecommunications conduit, and gas lines.
 - 3. Base Material Strength: Unless otherwise specified, do not drill holes in concrete or masonry until concrete, mortar, or grout has achieved full design strength.
- B. Perform anchor installation in accordance with manufacturer instructions.
- C. Wedge Anchors, Heavy-Duty Sleeve Anchors, and Undercut Anchors: Protect threads from damage during anchor installation. Heavy-duty sleeve anchors will be installed with sleeve fully engaged in part to be fastened. Set anchors to manufacturer's recommended torque, using a torque wrench. Following attainment of 10% of the specified torque, 100% of the specified torque will be reached within 7 or fewer complete turns of the nut. If the specified torque is not achieved within the required number of turns, the anchor will be removed and replaced unless otherwise directed by DWR.
- D. Cartridge Injection Adhesive Anchors: Clean all holes per manufacturer instructions to remove loose material and drilling dust prior to installation of adhesive. Inject adhesive into holes proceeding from the bottom of the hole and progressing toward the surface in such a manner as to avoid introduction of air pockets in the adhesive. Follow manufacturer recommendations to ensure proper mixing of adhesive components. Sufficient adhesive will be injected in the hole to ensure that the annular gap is filled to the surface. Remove excess adhesive from the surface. Shim anchors with suitable device to center the anchor in the hole. Do not disturb or load anchors before manufacturer specified cure time has elapsed.
- E. Observe manufacturer recommendations with respect to installation temperatures for cartridge injection adhesive anchors and capsule anchors.

3.11 REPAIR OF DEFECTIVE WORK

- A. Remove and replace misplaced or malfunctioning anchors. Fill empty anchor holes and patch failed anchor locations with high-strength non-shrink, nonmetallic grout. Anchors that fail to meet proof load or installation torque requirements will be regarded as malfunctioning.

3.12 FIELD QUALITY CONTROL

- A. Testing: 10% of each type and size of drilled-in anchor will be proof loaded by the independent testing laboratory. Adhesive anchors and capsule anchors will not be torque tested unless otherwise directed by DWR. If any of the tested anchors fail to achieve the specified torque or proof load within the limits as defined on the Drawings, all anchors of the same diameter and type as the failed anchor will be tested, unless otherwise instructed by DWR.
 - 1. Tension testing should be performed in accordance with ASTM E488.
 - 2. Torque will be applied with a calibrated torque wrench.
 - 3. Proof loads will be applied with a calibrated hydraulic ram. Displacement of adhesive and capsule anchors at proof load will not exceed $D/10$, where D is the nominal anchor diameter.
- B. Minimum anchor embedment, proof loads and torques will be as recommended by the manufacturer.

END OF SECTION

**EXHIBIT B
BUDGET DETAIL AND PAYMENT PROVISIONS
PRIVATE ENTITIES**

A. INVOICING AND PAYMENT

Contractor shall submit three copies of the invoice to the State only after receiving written notice of satisfactory completion or acceptance of work by the DWR Contract Manager. **The State will not accept an invoice for work that has not been approved and will return the invoice as a disputed invoice to the Contractor.**

Itemized invoices shall be submitted no more often than monthly, in arrears, bearing the contract number. Small business contractors must identify their certified small business status on the invoice.

Contractor must submit three copies of each invoice to the following address in order to expedite approval and payment:

DWR Accounting Office
Contracts Payable Unit
P.O. Box 942836
Sacramento, California 94236-0001

Undisputed invoices shall be **paid** within 45 days of the date received by the DWR Accounting Office.

B. BUDGET CONTINGENCY CLAUSE

It is mutually agreed that if the Budget Act of the current year and/or any subsequent years covered under this Agreement does not appropriate sufficient funds for the program, this Agreement shall be of no further force and effect. In this event, the State shall have no liability to pay any funds whatsoever to Contractor or to furnish any other considerations under this Agreement and Contractor shall not be obligated to perform any provisions of this Agreement.

If funding for any fiscal year is reduced or deleted by the Budget Act for purposes of this program, the State shall have the option to either: cancel this Agreement with no liability occurring to the State, or offer an Agreement Amendment to Contractor to reflect the reduced amount.

C. PROMPT PAYMENT CLAUSE

Payment will be made in accordance with and within the time specified in Government Code, Chapter 4.5 (commencing with Section 927).

**EXHIBIT B, ATTACHMENT 1
BID SHEET**

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State of California

DEPARTMENT OF WATER RESOURCES

California Natural Resources Agency

Contract # _____
Exhibit B, Attachment 2
Page 1 of 1

CONTRACTOR AND SUBCONTRACTOR
DEPARTMENT OF INDUSTRIAL RELATIONS (DIR) REGISTRATION CERTIFICATION

This form shall be submitted with every invoice and applies to work subject to California prevailing wage rate law.

All Contractors and Subcontractors, regardless of tier or amount, performing work under this invoice that is subject to California prevailing wage rate law are listed below. All such Contractors and Subcontractors were and are registered with DIR.

Contractor/Subcontractor Name	Contractor License Number (if applicable)	DIR Registration Number	Mailing Address	Email Address

(if more space is needed, attach additional sheets.)

Contractor Signature

Print Name

Date

Contractor License Number

DIR Registration Number

DWR 9777 (New 01/18)

EXHIBIT C
GENERAL TERMS AND CONDITIONS

This is a placeholder page.

Under the State of California's standardized contract process, a hardcopy of Exhibit C is not included in the standard agreement package or in this solicitation document. As indicated on the Std. 213, a copy of Exhibit C can be found at the internet site: [GTC 02/2025](#)

Or, you may copy and paste the following text for the GTC listing from the DGS website:

<https://www.dgs.ca.gov/OLS/Resources/Page-Content/Office-of-Legal-Services-Resources-List-Folder/Standard-Contract-Language>

If you do not have internet access, please contact the Bid Administrator below to receive a copy:

Wesley McCandless
(916) 902-7850

**EXHIBIT D – Special Terms and Conditions for
Department of Water Resources
(Over \$10,000 Standard Payable)**

1. **EXCISE TAX:** The State of California is exempt from Federal Excise Taxes, and no payment will be made for any taxes levied on employees' wages.
2. **RESOLUTION OF DISPUTES:** In the event of a dispute, Contractor shall file a "Notice of Dispute" with the Director or the Director's Designee within ten (10) days of discovery of the problem. The State and Contractor shall then attempt to negotiate a resolution of such claim and, if appropriate, process an amendment to implement the terms of any such resolution. If the State and Contractor are unable to resolve the dispute, the decision of the Deputy Director of Business Operations shall be final, unless appealed to a court of competent jurisdiction.

In the event of a dispute, the language contained within this agreement shall prevail over any other language including that of the bid proposal.

3. **PAYMENT RETENTION CLAUSE:** Ten percent of any progress payments that may be provided for under this contract shall be withheld per Public Contract Code Section 10346 pending satisfactory completion of all services under the contract.
4. **AGENCY LIABILITY:** The Contractor warrants by execution of this Agreement, that no person or selling agency has been employed or retained to solicit or secure this Agreement upon agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty, the State shall, in addition to other remedies provided by law, have the right to annul this Agreement without liability, paying only for the value of the work actually performed, or otherwise recover the full amount of such commission, percentage, brokerage, or contingent fee.
5. **POTENTIAL SUBCONTRACTORS:** Nothing contained in this Agreement or otherwise shall create any contractual relation between the State and any subcontractors, and no subcontract shall relieve the Contractor of its responsibilities and obligations hereunder. The Contractor agrees to be as fully responsible to the State for the acts and omissions of its subcontractors and of persons either directly or indirectly employed by any of them as it is for the acts and omissions of persons directly employed by the Contractor. The Contractor's obligation to pay its subcontractors is an independent obligation from the State's obligation to make payments to the Contractor. As a result, the State shall have no obligation to pay or enforce the payment of any moneys to any subcontractor.
6. **SUBCONTRACTING:** The Contractor is responsible for any work it subcontracts. Subcontracts must include all applicable terms and conditions of this Agreement. Any subcontractors, outside associates, or consultants required by the Contractor in connection with the services covered by this Agreement shall be limited to such individuals or firms as were specifically identified in the bid or agreed to during negotiations for this Agreement, or as are specifically authorized by the Contract Manager during the performance of this Agreement. Any substitutions in, or additions to, such subcontractors, associates or consultants shall be subject to the prior written approval of the Contract Manager. Contractor warrants, represents and agrees that it and its subcontractors, employees and representatives shall at all times comply with all applicable laws, codes, rules and regulations in the performance of this Agreement. Should State determine that the work performed by a subcontractor is substantially unsatisfactory and is not in substantial accordance with the contract terms and conditions, or that the subcontractor is substantially delaying or disrupting the process of work, State may request substitution of the subcontractor.

7. RENEWAL OF CCC: Contractor shall renew the Contractor Certification Clauses or successor documents every three (3) years or as changes occur, whichever occurs sooner.
8. REPORT OF RECYCLED CONTENT CERTIFICATION: In accordance with Public Contract Code Sections 12200-12217, et seq. and 12153-12158, et seq. the contractor must complete and return the form DWR 9557, Recycled Content Certification, for each required product to the Department at the conclusion of services specified in this contract. Form DWR 9557 is attached to this Exhibit and made part of this contract by this reference.
9. TERMINATION CLAUSE: The State may terminate this contract without cause upon 30 days advance written notice. The Contractor shall be reimbursed for all reasonable expenses incurred up to the date of termination.
10. COMPUTER SOFTWARE: For contracts in which software usage is an essential element of performance under this Agreement, the Contractor certifies that it has appropriate systems and controls in place to ensure that state funds will not be used in the performance of this contract for the acquisition, operation or maintenance of computer software in violation of copyright laws.
11. PRIORITY HIRING CONSIDERATIONS: For contracts, other than consulting services contracts, in excess of \$200,000, the Contractor shall give priority consideration in filling vacancies in positions funded by the contract to qualified recipients of aid under Welfare and Institutions Code Section 11200. (Public Contract Code Section 10353).
12. EQUIPMENT RENTAL AGREEMENTS: This provision shall apply to equipment rental agreements. The State shall not be responsible for loss or damage to the rented equipment arising from causes beyond the control of the State. The State's responsibility for repairs and liability for damage or loss to such equipment is restricted to that made necessary or resulting from the negligent act or omission of the State or its officers, employees, or agents.
13. CONTRACTOR COOPERATION DURING INVESTIGATION: Contractor agrees to cooperate fully in any investigation conducted by or for DWR regarding unsatisfactory work or allegedly unlawful conduct by DWR employees or DWR contractors. The word "cooperate" includes but is not limited to, in a timely manner, making Contractor staff available for interview and Contractor records and documents available for review.
14. CONFLICT OF INTEREST:
 - a. Current and Former State Employees: Contractor should be aware of the following provisions regarding current or former state employees. If Contractor has any questions on the status of any person rendering services or involved with the Agreement, the awarding agency must be contacted immediately for clarification.
 - (1) Current State Employees: (PCC §10410)
 - (a) No officer or employee shall engage in any employment, activity or enterprise from which the officer or employee receives compensation or has a financial interest and which is sponsored or funded by any state agency, unless the employment, activity or enterprise is required as a condition of regular state employment.
 - (b) No officer or employee shall contract on his or her own behalf as an independent contractor with any state agency to provide goods or services.
 - (2) Former State Employees: (PCC §10411)
 - (a) For the two-year period from the date he or she left state employment, no former state officer or employee may enter into a contract in which he or she engaged in any of the negotiations, transactions, planning, arrangements or any part of the decision-making process relevant to the contract while employed in any capacity by any state agency.

Contract # [REDACTED]
Exhibit D
Page 3 of 3

- (b) For the twelve-month period from the date he or she left state employment, no former state officer or employee may enter into a contract with any state agency if he or she was employed by that state agency in a policy-making position in the same general subject area as the proposed contract within the 12-month period prior to his or her leaving state service.

b. Penalty for Violation:

- (a) If the Contractor violates any provisions of above paragraphs, such action by Contractor shall render this Agreement void. (PCC §10420)

c. Members of Boards and Commissions:

- (a) Members of boards and commissions are exempt from this section if they do not receive payment other than payment of each meeting of the board or commission, payment for preparatory time and payment for per diem. (PCC §10430 (e))

d. Representational Conflicts of Interest:

The Contractor must disclose to the DWR Program Manager any activities by contractor or subcontractor personnel involving representation of parties, or provision of consultation services to parties, who are adversarial to DWR. DWR may immediately terminate this contract if the contractor fails to disclose the information required by this section. DWR may immediately terminate this contract if any conflicts of interest cannot be reconciled with the performance of services under this contract.

e. Financial Interest in Contracts:

Contractor should also be aware of the following provisions of Government Code §1090:

"Members of the Legislature, state, county district, judicial district, and city officers or employees shall not be financially interested in any contract made by them in their official capacity, or by any body or board of which they are members. Nor shall state, county, district, judicial district, and city officers or employees be purchasers at any sale or vendors at any purchase made by them in their official capacity."

f. Prohibition for Consulting Services Contracts:

For consulting services contracts (see PCC §10335.5), the Contractor and any subcontractors (except for subcontractors who provide services amounting to 10 percent or less of the contract price) may not submit a bid/SOQ, or be awarded a contract, for the provision of services, procurement of goods or supplies or any other related action which is required, suggested, or otherwise deemed appropriate in the end product of such a consulting services contract (see PCC §10365.5).

- 15. COMMERCIAL DRIVER MEAL PERIOD AND REST PERIOD: To comply with Supreme Court case *Dynamex Operations West, Inc. v. Superior Court* (2018) 4 Cal.5th 903, Contractor shall ensure that commercial drivers employed or subcontracted for under this contract shall receive meal periods and rest periods commensurate with those required by Department of Industrial Relations Wage Order 9, sections 11 and 12:
<https://www.dir.ca.gov/IWC/IWCArticle9.pdf>.
- 16. ORDER OF PRECEDENCE: In the event of any inconsistency between the terms, specifications, provisions or attachments which constitute this Contract, the following order of precedence shall apply:
 - a) The General Terms and Conditions;
 - b) The Std. 213;
 - c) The Scope of Work;
 - d) Any other incorporated attachments in the Contract by reference

EXHIBIT D, ATTACHMENT 1

State of California

DEPARTMENT OF WATER RESOURCES

California Natural Resources Agency

Contract #
Exhibit , Attachment
Page 1 of 2

RECYCLED CONTENT CERTIFICATION

To be completed by the vendor/bidder/contractor and returned to:

DEPARTMENT OF WATER RESOURCES
Recycling Coordinator
Purchasing Services Office
715 P Street, 7th Floor, Sacramento, CA 95814
FAX: (916) 654-5506

COMPANY:

PERSON COMPLETING FORM:

DATE:

DESCRIPTION Please include item name, brand, and product number	% POSTCONSUMER	RECYCLED MATERIAL TYPE

All businesses shall certify in writing to the contracting officer or his or her representative the minimum percentage, if not exact percentage, of postconsumer material in the productions, materials, goods, or supplies offered or sold to the state regardless of whether the product meets the minimum content requirements specified in law (see page 2 for minimum content requirements). The certification shall be furnished under penalty of perjury. The certification shall be provided regardless of content, even if the product contains no recycled material. A state agency may waive the certification requirements if the percentage of postconsumer material in the products, materials, good or supplies can be verified in a written advertisement, including, but not limited to, a product label, a catalog, or manufacturer or vendor internet website.

Public Contract Code Sections 12200-12217, et seq. and 12153-12156, et seq.

I certify that the above information is true. I further certify that these environmental claims for recycled content regarding these products are consistent with the Federal Trade Commission's Environmental Marketing Guidelines in accordance with PCC 12404.

NAME OF PERSON COMPLETING FORM	TITLE	AGENCY/COMPANY

➤ _____
SIGNATURE OF PERSON COMPLETING FORM DATE

1. Postconsumer material comes from products that were bought by consumers, used, then recycled. For example: a newspaper that has been purchased and read, next recycled, and then used to make another product would be postconsumer material.

If the product does not fit into any of the product categories, enter "N/A". Common N/A products include wood products, natural textiles, aggregate, concrete, electronics such as computers, TV, software on a disk or CD, telephone.

2. Product category refers to one of the product categories listed below, into which the reportable purchase falls. For products made from multiple materials, choose the category that comprises most of the product by weight, or volume.

Note: For reuse or refurbished products, there are no minimum content requirements.

For additional information visit State Agency Buy Recycled Campaign

Description Product Categories	Minimum Content Requirement
Paper Products – Recycled	30 percent postconsumer fiber, by fiber weight
Printing and Writing – Recycled	30 percent postconsumer fiber, by fiber weight
Compost, Co-compost, and Mulch – Recycled	80 percent recovered materials i.e., material that would otherwise be normally disposed of in a landfill
Glass – Recycled	10 percent postconsumer, by weight
Re-refined Lubricating Oil – Recycled	70 percent re-refined base oil
Plastic – Recycled	10 percent postconsumer, by weight
Printer or duplication cartridges	a. Have 10 percent postconsumer material, or b. Are purchased as remanufactured, or c. Are backed by a vendor-offered program that will take back the printer cartridges after their useful life and ensure that the cartridges are recycled and comply with the definition of recycled as set forth in Sections 12200-12217, et seq. and 12153-12156, et seq. of the Public Contract Code.
Paint – Recycled	50 percent postconsumer paint (exceptions when 50 percent postconsumer content is not available or is restricted by a local air quality management district, then 10 percent postconsumer content may be substituted)
Antifreeze – Recycled	70 percent postconsumer material
Retreated Tires – Recycled	Use existing casing that has undergone retreading or recapping process in accordance with Public Resource Code (commencing with section 42400).
Tire – Derived – Recycled	50 percent post consumer tires
Metals – Recycled	10 percent postconsumer, by weight

EXHIBIT E ADDITIONAL PROVISIONS

Executive Order N-6-22 – Russia 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 determine Contractor 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 shall provide Contractor advance written notice of such termination, allowing Contractor at least 30 calendar days to provide a written response. Termination shall be at the sole discretion of the State.

GenAI Technology Use & Reporting

The State of California seeks to realize the potential benefits of GenAI, through the development and deployment of GenAI tools, while balancing the risks of these new technologies.

Bidder / Offeror must notify the State in writing if it: (1) intends to provide GenAI as a deliverable to the State; or (2), intends to utilize GenAI, including GenAI from third parties, to complete all or a portion of any deliverable that materially impacts: (i) functionality of a State system, (ii) risk to the State, or (iii) Contract performance. For avoidance of doubt, the term “materially impacts” shall have the meaning set forth in State Administrative Manual (SAM) § 4986.2 Definitions for GenAI. Failure to report GenAI to the State may result in disqualification. The State reserves the right to seek any and all relief to which it may be entitled to as a result of such non-disclosure.

Upon notification by a Bidder / Offeror of GenAI as required, the State reserves the right to incorporate GenAI Special Provisions into the final contract or reject bids/offers that present an unacceptable level of risk to the State. Government Code 11549.64 defines “Generative Artificial Intelligence (GenAI)” as an artificial intelligence system that can generate derived synthetic content, including text, images, video, and audio that emulates the structure and characteristics of the system’s training data.

1. CERTIFICATE OF INSURANCE

a. General Provisions Applying to All Policies

- i. Coverage Term – Coverage needs to be in force for the complete term of the contract. If insurance expires during the term of the contract, a new certificate must be received by the State at least 30 days prior to the expiration of this insurance. Any new insurance must still comply with the original terms of the contract.
- ii. Policy Cancellation or Termination & Notice of Non-Renewal – Contractor shall provide to the Department, within five (5) business days following receipt by contractor, a copy of any cancellation or non-renewal of insurance required by this contract. In the event Contractor fails to keep in effect at all times the specified insurance coverage, the State may, in addition to any other remedies it may have, terminate this Contract upon the occurrence of such event, subject to the provisions of this Contract.
- iii. Deductible – Contractor is responsible for any deductible or self-insured retention contained within their insurance program.
- iv. Primary Clause – Any required insurance contained in this contract shall be primary, and not excess or contributory, to any other insurance carried by the State.

- v. Insurance Carrier Required Rating – All insurance companies must carry a rating acceptable to the Office of Risk and Insurance Management – A or better and financial size category of VII or better to the latest edition of the A.M. Best Key Rating Guide. If the Contractor is self-insured for a portion or all of its insurance, review of financial information including a letter of credit may be required.
 - vi. Endorsements – Any required endorsements requested by the State must be physically attached to all requested certificates of insurance and not substituted by referring to such coverage on the certificate of insurance.
 - vii. Inadequate Insurance – Inadequate or lack of insurance does not negate the contractor's obligations under the contract.
 - viii. Satisfying an SIR - All insurance required by this contract must allow the State to pay and/or act as the contractor's agent in satisfying any self-insured retention (SIR). The choice to pay and/or act as the contractor's agent in satisfying any SIR is at the State's discretion.
 - ix. Available Coverages/Limits - All coverage and limits available to the contractor shall also be available and applicable to the State.
 - x. Subcontractors - In the case of Contractor utilization of subcontractors to complete the contracted scope of work, contractor shall include all subcontractors as insured's under Contractor and insurance or supply evidence of insurance to The State equal to policies, coverages and limits required of Contractor.
- b. **Insurance Requirements:** The contractor shall furnish to the State evidence of the following required insurance:
- i. **Commercial General Liability** – Contractor shall maintain general liability on an occurrence form with limits not less than \$1,000,000 per occurrence/\$2,000,000 aggregate for bodily injury and property damage liability. The policy shall include coverage for liabilities arising out of premises, operations, independent contractors, products, completed operations, personal & advertising injury, and liability assumed under an insured contract. This insurance shall apply separately to each insured against whom claim is made or suit is brought subject to the Contractor's limit of liability. The policy must include the contract number and the following additional insured designation and endorsement:

“The State of California, Department of Water Resources, its officers, agents, and employees are to be covered as additional insureds with respect to liability arising out of work or operations.”

The endorsement must be supplied under form acceptable to the Office of Risk and Insurance Management.
 - ii. **Workers Compensation and Employers Liability** – Workers' Compensation insurance as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than \$1,000,000 per accident for bodily injury or disease.

Policy shall provide a Waiver of Subrogation endorsement in favor of the State of California and the California Department of Water Resources.
 - iii. **Automobile Liability** – Contractor shall maintain motor vehicle liability with limits not less than \$1,000,000 combined single limit per occurrence. Such insurance shall cover liability arising out of a motor vehicle including owned, hired and non-owned motor vehicles. **The**

State of California, Department of Water Resources, its officers, agents, and employees are to be covered as additional insureds with respect to liability arising out of work or operations.

Subsequent renewals of the insurance certificate will be sent to the following name and address which also will appear on the certificate as the certificate holder.

Department of Water Resources
Division of Flood Operations
Attn: Ran Singh
3310 El Camino Avenue
Sacramento, CA 95821

2. PUBLIC WORKS AGREEMENTS

Contractor shall comply with the language stated in the Standard Clauses for Public Works, DWR 4197, Exhibit E, Attachment 1, and the Standard California Nondiscrimination Construction Contract Specifications, in the California Code of Regulations ([2CCR §11122](#)). Contractor must use prevailing wage rates for the appropriate classifications used in the performance of the work specified in the Scope of Work that is considered "public works". Contractor can access these rates on the internet at <http://www.dir.ca.gov> or by calling the California Department of Industrial Relations at (415) 703-4774 for paper copies of the rates. Contractor understands that it is responsible for determination of proper classifications of work for prevailing wage purposes. Contractor is solely responsible for determining whether all or any portion of the work is considered "public works," such that prevailing rates are payable under this contract.

3. PREVAILING WAGES

Labor Code Certifications:

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

In accordance with the applicable provisions of the Labor Code, the Contractor and any subcontractors shall pay their employees prevailing wages for the performance of that portion of the work, which is "public works". The Director of the State Department of Industrial Relations has made the general prevailing wage rate determination covering the locality where work on this contract is to be performed. The general prevailing wage rates can be obtained from the Department of Industrial Relations or any source authorized by the Department of Industrial Relations. On the Internet, prevailing wage rates can be found at www.dir.ca.gov. The Contractor agrees to post a copy of the applicable general prevailing wage rates for the locality of each job site.

It is hereby mutually agreed that, pursuant to Labor Code section 1775 (a)(1), the Contractor shall forfeit to the State 200 dollars (\$200) for each calendar day, or portion thereof, for each worker paid by him or her, or subcontractor under him or her, less than the prevailing wage so stipulated and in addition, the Contractor further agrees to pay to each worker the difference between the actual amount paid for each calendar day, or portion thereof, and the stipulated prevailing wage rate for the same. This provision shall not apply to properly registered apprentices.

It is further agreed that the maximum hours a worker is to be employed is limited to eight hours a day and 40 hours a week and the contractor shall forfeit, as a penalty to the State, twenty-five dollars (\$25) for each worker employed in the execution of the contract for each calendar day during which a worker is required or permitted to labor more than eight hours in any calendar day or more than 40

hours in any calendar week, when done in violation of Labor Code sections 1810-1815, inclusive.

Properly registered apprentices may be employed in the prosecution of the work. Every such apprentice shall be paid the standard wage paid to apprentices under the regulations of the craft or trade at which he or she is employed, and shall be employed only at the work of the craft or trade to which he or she is registered. The Contractor and each subcontractor must comply with the requirements of Labor Code section 1775.5 and any related regulations regarding the employment of registered apprentices.

The Contractor and any subcontractors shall comply with all other applicable Labor Code requirements, including section 1776 regarding record keeping.

Labor Compliance Program:

For work which is funded pursuant to Public Resources Code Sections 75070-75079 (Proposition 84), Contractor may be required to comply with the Labor Compliance Program or (LCP) requirements of Labor Code Section 1771.5. Among the requirements under these sections are: pre-construction conference regarding payment of prevailing wages, providing of certified payroll reports and audit thereof, and potential withholding of contract payments for non-compliance. DWR will notify Contractor at the time of any work to which these LCP provisions apply.

Prevailing Wage Monitoring and Enforcement:

1. DIR Registration of Contractor and Subcontractor: Contractor agrees that it shall remain registered with the Department of Industrial Relations (DIR) pursuant to Labor Code Section 1725.5 (DIR Registered Contractor) at all times during the performance of work. Contractor shall independently verify that all subcontractors of every tier are DIR registered contractors at all time during performance of work.
2. Certified Payroll Records: Contractor shall comply with the Certified Payroll Record (CPR) requirements of section 1771.4 and Section 1776 of the Labor Code and shall require and verify that all subcontractors of every tier comply with just CPR requirements.
3. Posting of Job Site Notices: Pursuant to Labor Code Section 1771.4(a)(2), Contractor shall post any job site notices prescribed by DIR.
4. DIR Enforcement: This Contract is subject to prevailing wage compliance monitoring and enforcement by DIR.
5. Penalty assessment for non-compliance with CPR requests; withholding of payment: Pursuance to Labor Code Section 1776(b), is the requirements therein regarding production of CPRs within ten (10) days of written request have not been strictly complied with, the offending Contractor or subcontractor(s) shall forfeit the sum of One Hundred Dollars (\$100) per calendar day, or portion thereof, for each worker, until such offending party has fully complied with the requirements. Upon request of DIR, these penalties shall be withheld from progress payments then due to Contractor. Contractor is not subject to a penalty assessment for failure of a subcontractor to comply with the requirements of this paragraph.

13. PERMITS AND LICENSES

The Contractor shall procure all permits and licenses, pay all charges and fees and give all notices necessary and incidental to the due and lawful prosecution of the work.

14. CONTRACT AMENDMENTS – DVBE PROGRAM REQUIREMENTS

Disabled Veteran Business Enterprise (DVBE) program requirements shall be included and made a part of any subsequent contract amendment(s) when DVBE program requirements were included as part of the Department's original solicitation/contract effort. DVBE participation program goal percentage(s) committed by the contractor in the original contract are extended through the amended contract termination date and include any additionally encumbered funds that are a result of the

contract amendment. The Prime Contractor's Certification – DVBE Subcontractor Report (STD 817) shall be included in all subsequent contract amendment(s). The Contractor shall be responsible for continued program compliance and reporting.

15. CONTRACT AUDITS RELATED TO DVBE PROGRAM REQUIREMENTS

Contractor agrees that the State or its designee will have the right to review, obtain, or copy all records pertaining to performance of the contract as performance pertains to DVBE requirements. Contractor agrees to provide the State or its representative with any relevant information requested and shall permit the State or its representative access to its premises, upon reasonable notice, during normal business hours for the purpose of interviewing employees and inspecting and copying such books, records, accounts, and other material that may be relevant to a matter under investigation for the purpose of determining compliance with this requirement. Contractor further agrees to maintain such records for a period of no less than three (3) years after final payment under the contract.

16. SUBSTITUTION OF A DVBE SUBCONTRACTOR

Contractor understands and agrees that should award of this contract be based in part on their commitment to use the DVBE subcontractor(s) identified in their bid or offer, per [Military and Veterans Code \(MVC\) 999.5\(g\)](#) and [California Code of Regulations \(CCR\) 1896.73](#) a DVBE subcontractor may only be replaced by another DVBE subcontractor and must be approved by the Department of General Services in writing prior to the commencement of any work by another DVBE subcontractor. Changes to the scope of work that impact the DVBE subcontractor(s) identified in the bid or offer and approved DVBE substitutions will be documented by contract amendment.

Contractor must immediately notify the Department's SB/DVBE Advocate that substitution of a DVBE subcontractor is requested and refer to [2CCR 1896.73](#) for details. Failure of Contractor to seek substitution and adhere to the DVBE participation level identified in the bid or offer may be cause for contract termination, recovery of damages under rights and remedies due the State, and penalties as outlined in [MVC 999.9](#); [Public Contract Code Section \(PCC\) 10115](#), or [PCC Section 4110](#) (applies to public works only).

17. CONTRACTOR CERTIFICATION OF PAYMENT TO SMALL BUSINESS SUBCONTRACTOR(S)

If, for this Contract, Contractor made a commitment to achieve small business participation, then Contractor upon contract close out or completion must report to the awarding department the actual percentage of small business participation that was achieved. ([Government Code § 14841](#))

Contractor's certification of payments must be made using form DWR 9683 (Small Business Subcontractor Payment Certification), Exhibit E Attachment 2. Fully complete this form with the authorized signature and submit to DWR's Contract Manager with a copy to DWR's SB/DVBE Program Manager.

18. PRIME CONTRACTOR'S CERTIFICATION – DVBE SUBCONTRACTOR REPORT (STD 817)

a. STD 817 – Statutory Reporting Requirements

Upon completion of contracts that include commitments to DVBE subcontractors, the State's Prime Contractors are required to certify, under penalty of perjury, the total amount received from the State *and* the details of payments made to all DVBE subcontractors under those contracts.

Contract awarding departments are *required to withhold \$10,000* from the final payment (or the full payment if less than \$10,000) to Prime Contractors until their compliance with the certification requirements by submitting an accurate and appropriately signed Std. 817 to the awarding department. The withhold amount will be *permanently deducted* if Prime Contractors do not comply with Std. 817 requirements after given notice to cure deficiencies.

Prime Contractors are required to maintain supporting documentation for a minimum of six years for all payments to DVBE subcontractors identified in the Std. 817. Upon request, proof of payment must be provided. [[Military and Veteran Code 999.5\(d\)](#); [Government Code 14841](#); [California Code of Regulations 1896.78\(e\)](#); [Public Contract Code 10369](#)]

- b. STD 817 – Link to Form with Completion Instructions
<https://www.dgs.ca.gov/PD/Search-Results?search=817&divisionid=7bce8ca3ed8a4aedbdeaf52f5e77df36&activeFilters=division-or-office-facets>
- c. STD 817 – Filing Instructions
Upon completion of the contract submit one Std. 817 per contract, signed by the Prime's authorized representative, to DWR's SB/DVBE Program Manager by either option below.
 - 1. Option #1. Email electronic signed versions of the Std. 817 to: SB.DVBE@water.ca.gov and DWR Contract Manager (contact information in Exhibit A).
 - 2. Option #2. Mail or deliver signed hard copies of the Std. 817 to:

Department of Water Resources
Attention: SB/DVBE Program Manager
715 P St, 7th Floor, DBS #19
Sacramento, CA 94236-0001

EXHIBIT E, ATTACHMENT 1

State of California

DEPARTMENT OF WATER RESOURCES

California Natural Resources Agency

Contract # _____

Exhibit E, Attachment _____

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STANDARD CLAUSES – GENERAL CONDITIONS FOR PUBLIC WORKS AND/OR DRILLING CONTRACTS

1. **DEPARTMENT OF INDUSTRIAL RELATIONS (DIR) REGISTRATION.** Labor Code Section 1725.5 requires a contractor to be registered as a public works contractor to be qualified to bid on, or listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any public work contract. For the purposes of this section, "contractor" includes a subcontractor as defined by Labor Code Section 1722.1. DIR registration is a condition of the Contractor's ability to work under this contract. Should the contractor or any subcontractor fail to maintain DIR registration, this contract may be terminated at the discretion of DWR.
2. **LICENSE.** No bidder may bid on work for which it is not properly licensed by the Contractor's State License Board. Joint Venture bidders must possess a Joint Venture License. Bidders for this Agreement must have a classification(s) of their contractor's license. Provide license number and expiration date and certify under penalty of perjury that the foregoing is true and correct.
3. **EXAMINATION OF BID DOCUMENTS AND SITE.** Bidder shall carefully examine site of work, plans and specifications. The bidder shall investigate conditions, character, quality of surface, or subsurface materials or obstacles to be encountered. No additions to the contract amount will be made because of the Contractor's failure to examine the site of work, plans, and specifications.
4. **SUBCONTRACTORS.** (See Public Contract Code Section 4104.) The bidder shall set forth in its bid:
 - a. The name and business address of each subcontractor who will perform work or labor or render services in an amount in excess of one-half of one percent (.5%) of the General Contractor's total bid; and
 - b. The portion of work to be done by each subcontractor. (See Public Contract Code Section 4104.)
5. **PAYMENT AND/OR PERFORMANCE BOND.** The Contractor shall furnish, concurrently with signing the contract, a Payment Bond to Accompany Construction Contract, DWR Form 3373, in an amount not less than 100% of the amount of the contract when the contract exceeds \$10,000 (for non-construction drilling contracts, when the contract exceeds \$25,000). Such bond shall be executed by the Contractor and a corporate surety approved by the State. If the Department deems it necessary, a Performance Bond may be required in the same amount as the Payment Bond.
6. **NOTICE.** Failure to obtain a Payment Bond within ten (10) days of notification of award shall cause the State to reject the bid.
7. **WORKERS' COMPENSATION INSURANCE CERTIFICATION.** Upon execution of the contract, the Contractor shall provide the State either with a certificate of insurance issued by an insurance carrier licensed to write workers' compensation insurance in the State of California, including the name of the carrier and date of expiration of the insurance, or a certificate of consent to self-insure issued by the Director of the Department of Industrial Relations.
8. **PREVAILING WAGE.** It is hereby mutually agreed that, pursuant to Labor Code Section 1775 (a) (1), the Contractor shall forfeit to the State a penalty of \$200 for each calendar day, or portion thereof, for each worker paid by it, or subcontractor under it, less than the prevailing wage so stipulated. In addition, the Contractor further agrees to pay to each worker the difference between the actual amount paid for each calendar day, or portion thereof, and the stipulated prevailing wage rate for the same. This provision shall not apply to properly registered apprentices.
9. **MAXIMUM HOURS.** It is further agreed that the maximum hours a worker is to be employed is limited to 8 hours a day and 40 hours a week and the Contractor shall forfeit, as a penalty to the State, \$25 for each worker employed in the execution of the contract for each calendar day during which a worker is required or permitted to labor more than 8 hours in any calendar day or more than 40 hours in any calendar week in violation of Labor Code Sections 1810-1815, inclusive.
10. **TRAVEL AND SUBSISTENCE PAYMENTS.** Travel and subsistence payments shall be paid to each worker needed to execute the work, as such travel and subsistence payments are defined in the applicable collective bargaining agreements filed in accordance with Labor Code Section 1773.8.

State of California

DEPARTMENT OF WATER RESOURCES

California Natural Resources Agency

Contract # _____

Exhibit E, Attachment _____

Page 2 of 2

- 11. APPRENTICES.** Properly registered apprentices may be employed in the prosecution of the work. Every such apprentice shall be paid the standard wage paid to apprentices under the regulations of the craft or trade at which he or she is employed, and shall be employed only at the work of the craft or trade to which he or she is registered. The Contractor and each subcontractor must comply with the requirements of Labor Code Section 1777.5 and any related regulations regarding the employment of registered apprentices.
- 12. SUBSTITUTIONS.** Pursuant to Section 3400 of the Public Contract Code, should the Contractor seek to substitute a brand of materials other than specified, the Contractor shall submit data substantiating the request for substitution of "an equal" item. The substantiating data must be presented for approval within thirty-five (35) days after the award of the agreement. The State shall be the sole judge as the comparative quality and suitability of "an equal" item.
- 13. ANTI-TRUST CLAIMS.** The Contractor offers and agrees and will require all of their subcontractors and suppliers to agree to assign to the awarding body all rights, title, and interest in and to all causes of action they may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act [Chapter 2 (commencing with Sec. 165700) of Part 2 of Division 7 of the Business and Professions Code], arising from purchases of goods, services, or materials, pursuant to the public works contract or the subcontract. The assignment made by the Contractor and all additional assignments made by the subcontractors and suppliers shall be deemed to have been made and will become effective at the time the awarding body tenders final payment to the Contractor, without further acknowledgment or the necessity of tendering to the awarding body any written assignments.
- If an awarding body receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under Government Code Sections 4550-4554, the assignor shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the public body any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the public body as part of the bid price, less the expenses incurred in obtaining that portion of the recovery.
- Upon demand in writing by the assignor, the assignee shall, within one year from such demand, reassign the cause of action assigned under Government Code Section 4550-4554, if the assignor has been or may have been injured by the violation of law for which the cause of action arose and (a) the assignee has not been injured thereby, or (b) the assignee declines to file a court action for the cause of action.
- 14. PROGRESS PAYMENTS.**
- Ten percent of any progress payments that may be provided for under this contract shall be withheld pending satisfactory completion of all services under the contract. The Contractor may substitute securities for such retentions and receive any interest accrued provided in Section 22300 of the Public Contract Code.
 - Prior to execution of the contract, the Contractor shall furnish a faithful performance bond for not less than the total amount payable under the contract if the contract exceeds \$10,000 and progress payments will be made.
- 15. PAYROLL RECORDS.** The Contractor and each subcontractor shall comply with Labor Code Section 1776 regarding payroll records.
- 16. NONCOLLUSION DECLARATION.** All bidders shall submit with their bids a signed and notarized Noncollusion Declaration (DWR 4206).
- 17. LABOR CODE PROVISIONS.** Pursuant to Sections 1770 et seq. of the California Labor Code, the Director of the State Department of Industrial Relations has made the general prevailing wage determination covering the locality where work for this contract is to be performed. The general prevailing wage rates can be obtained from the Department of Industrial Relations or any source authorized by the Department of Industrial Relations. They are also made available at www.dir.ca.gov/.
- The Contractor agrees to post a copy of the **General Prevailing Wage Determination** for the locality of each job site. The Contractor also agrees to comply with all requirements of the California Labor Code and to pay for the forfeiture penalties and monies, which may become due as provided in Sections 1775 and 1813 of that Code.
- 18. UNDOCUMENTED ALIENS.** No bidder or Contractor shall be eligible to bid for or receive a public works or purchase contract, who has, in the preceding five years, been convicted of violating a State or federal law respecting the employment of undocumented aliens.
- 19. SUBSTITUTION OF SUBCONTRACTORS.** A prime contractor whose bid is accepted may not substitute a subcontractor listed in the original bid unless the provisions of PCC 4107 or 4107.5 apply and a hearing is held, if required.

EXHIBIT E, ATTACHMENT 2

State of California

DEPARTMENT OF WATER RESOURCES

California Natural Resources Agency

Contract No. _____

Exhibit _____

SMALL BUSINESS SUBCONTRACTOR PAYMENT CERTIFICATION

Government Code § 14841 states "Upon completion of an awarded contract for which a commitment to achieve small business or disabled veteran business enterprise participation goals was made, the contractor shall report to the awarding department the actual percentage of Small Business (SB) and Disabled Veteran Business Enterprise (DVBE) participation that was achieved."

This Small Business Subcontractor Payment Certification form (DWR 9683) must be completed and submitted to DWR once all work has been completed, and invoices have been paid under this contract.

Complete and sign a separate DWR 9683 form for each SB subcontractor and submit the form(s) in pdf format, by email, to DWR's Contract Manager identified in the Scope of Work and the SB/DVBE Program Manager at SB.DVBE@water.ca.gov

DVBE subcontractor participation information will be submitted by the Contractor on a separate form, Prime Contractor's Certification – DVBE Subcontractor Report (STD. 817).

PRIME CONTRACTOR

Company Name	Contract Number	Street Address	City	State	Zip Code

SMALL BUSINESS SUBCONTRACTOR

Company Name	Certification Type(s) (SB, SB-Micro, SB-PW)	OSDS No.	Street Address	City	State	Zip Code

PAYMENT INFORMATION

Total Contract Amount (\$) (including amendments)	Total Dollars (\$) Paid to Prime	Total Dollars (\$) Paid to SB Subcontractor	Total Percentage (%) Committed to SB Subcontractor	Total Dollars (\$) Committed to SB Subcontractor	Explanation for Difference Between Commitment Amount and What was Paid to SB Subcontractor

PRIME CONTRACTOR - AUTHORIZED REPRESENTATIVE

Print Name	Email	Signature
Title	Phone	Date Signed

EXHIBIT F

State of California

DEPARTMENT OF WATER RESOURCES

California Natural Resources Agency

BIDDER'S BOND

We _____

_____, as PRINCIPAL, and

as SURETY, are held and firmly bound unto the State of California in the penal sum of TEN PERCENT (10%) OF THE TOTAL AMOUNT OF THE BID of the Principal above named submitted by said Principal to the State of California, acting by and through the Department of Water Resources, for the work described below, for the payment of which sum in lawful money of the United States, well and truly to be made, to the Director of the Department to which said bid was submitted, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

In no case shall the liability of the surety here under exceed the sum of \$ _____.

THE CONDITION OF THIS OBLIGATION IS SUCH,

That whereas the Principal has submitted the above-mentioned bid to the State of California, as aforesaid, for certain construction specifically described as follows, for which bids are to be opened at

_____, California, on _____,
(Insert name of city where bids will be opened) (Insert date of bid opening)

for _____

(Copy here the exact description of work, including location, as it appears on the proposal)

NOW, THEREFORE, If the aforesaid Principal is awarded the contract and, within the time and manner required under the specifications, after the prescribed forms are presented to him for signature, enters into a written contract, in the prescribed form, in accordance with the bid, and files two bonds with the Department, one to guarantee faithful performance and the other to guarantee payment for labor materials, as required by law, then this obligation shall be null and void; otherwise, it shall be and remain in full force and virtue.

IN WITNESS WHEREOF, We have hereunto set our hands and seals on this _____
day of _____, 20____.

[Seal]

[Seal]

[Seal]

Principal

[Seal]

[Seal]

[Seal]

Surety

Address _____

NOTE: Signatures of those executing for the surety must be properly acknowledged.

EXHIBIT G

State of California

DEPARTMENT OF WATER RESOURCES

California Natural Resources Agency

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

The undersigned declares:

I am the _____ of _____ the party
making the foregoing bid.

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

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

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

Signed: _____

Print/Type Name _____

EXHIBIT H

State of California

DEPARTMENT OF WATER RESOURCES

California Natural Resources Agency

PAYMENT BOND

WHEREAS, The State of California acting by and through the

_____, has awarded
(insert name of the Department awarding the contract)

to _____,
as Contractor, a contract for the work described as follows:

AND WHEREAS, Said Contractor is required to furnish a bond in connection with said contract, to secure the payment of claims of laborers, mechanics, materialmen, and other persons as provided by law;

NOW, THEREFORE, We the undersigned Contractor and surety are held and firmly bound unto the State of California in the amount required by law, the sum of _____

_____ dollars
(\$ _____), for which payment well and truly to be made we bind ourselves, our heirs, executors and administrators, successors or assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH,

That if said Contractor, it or its heirs, executors, administrators, successors or assigns, or subcontractors, shall fail to pay any of the persons named in Civil Code Section 9100, or amounts due under the Unemployment Insurance Code with respect to work or labor performed by any such claimant, or amounts required to be deducted, withheld and paid over to the Employment Development Department from the wages of employees of the Contractor and subcontractors under Section 13020 of the Unemployment Insurance Code with respect to the work and labor, that the surety or sureties herein will pay for the same in an amount not exceeding the sum specified in this bond, otherwise the above obligation shall be void. In case suit is brought upon this bond, the said surety will pay a reasonable attorney's fee to be fixed by the court.

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

IN WITNESS WHEREOF, We have hereto set our hands and seals on this _____
day of _____, 20____

Contractor

Name of Surety

By _____
Attorney-in-Fact

[[Seal]]

Address _____

Telephone No. _____

NOTE: Signatures of those executing for the surety must be properly acknowledged.

EXHIBIT I

State of California

DEPARTMENT OF WATER RESOURCES

California Natural Resources Agency

(Approved by Attorney
General 10/17/68)

PERFORMANCE BOND TO ACCOMPANY CONTRACT

(Sec. 78(b) Title 11
Administrative Code)

WHEREAS, The State of California acting by and through the

_____, has awarded
(insert name of the Department awarding the contract)

to _____

as principal hereinafter designated as the "Contractor," a contract for

AND WHEREAS, The Contractor is required to furnish a bond in connection with said contract guaranteeing the faithful performance thereof;

NOW, THEREFORE, We the undersigned Contractor and surety are held and firmly bound unto the State of California in the sum of

_____ dollars (\$_____), to be paid to the said State or its certain attorney, its successors and assigns; for which payment, well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors or assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH,

That if the Contractor, his or its heirs, executors and administrators, successors or assign, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the foregoing contract and any alteration thereof made as therein provided, on his or its part to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the State of California, its officers and agents, as therein stipulated, then this obligation shall become and be null and void; otherwise it shall be and remain in full force and effect.

IN WITNESS WHEREOF, We have hereto set our hands and seals on this
day of _____, 20_____.

_____(Seal)

_____(Seal)

Contractor

_____(Seal)

_____(Seal)

Name of Surety

By _____(Seal)

Attorney-in-Fact

[Seal]

NOTE: Signatures of those executing for surety must be properly acknowledged.