

♦

**MAIN WASTEWATER TREATMENT PLANT
OXYGEN PLANT REHABILITATION
(SD-428)**

♦

CONTRACT DOCUMENTS

VOLUME I-A OF IV

BIDDING DOCUMENTS
AND SPECIFICATIONS
(DIVISIONS 00-01)

JUNE 2024

SPECIFICATION SD-428



EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

Bids will be opened at 1:30 pm, Wednesday, September 11, 2024 in the Board Room,
Second Floor of the District's Administration Building, 375 11th Street, Oakland, California

THIS PAGE IS INTENTIONALLY BLANK.



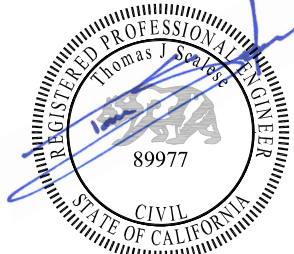
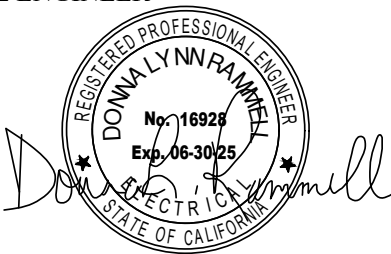
EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
OAKLAND, CALIFORNIA

SECTION 00 01 07

PROFESSIONAL SEALS AND CERTIFICATIONS

GENERAL

The following design professionals have signed and sealed the original specifications for this project in accordance with the List of Specification Sections.

CIVIL ENGINEER  Dave Richardson (D. Richardson) Woodard & Curran California License: 37097	CIVIL ENGINEER  Thomas Scalese (T. Scalese) Woodard & Curran California License: 89977
ELECTRICAL ENGINEER  Donna Rammell (D. Rammell) Woodard & Curran California License: E16928	CONTROLS ENGINEER  Kyle Tracy (K. Tracy) Woodard & Curran California License: C7556
CIVIL ENGINEER  John Law (J. Law) East Bay Municipal Utility District California License: 95046	FIRE PROTECTION ENGINEER  Christian Ng (C. Ng) Fire & Risk Alliance, California License: 2132

SPECIFICATION SECTION AND TITLE	DESIGN PROFESSIONAL SEAL BY
DIVISION 00 – PROCURMENT AND CONTRACTING DOCUMENTS - ALL SECTIONS	D. Richardson
DIVISION 01 – GENERAL REQUIREMENTS – ALL SECTIONS	D. Richardson
DIVISION 02 - EXISTING CONDITIONS – ALL SECTIONS	D. Richardson
DIVISION 03 – CONCRETE – ALL SECTIONS	T. Scalese
DIVISION 05 – METALS – ALL SECTIONS	T. Scalese
DIVISION 07 – THERMAL AND MOISTURE INSULATION – ALL SECTIONS	D. Richardson
DIVISION 09 – FINISHES – ALL SECTIONS	J. Law
DIVISION 21 – FIRE SUPPRESSION – ALL SECTIONS	C. Ng
DIVISION 22 – PLUMBING	
22 05 00 Air Compressor Motors	D. Richardson
22 05 29 Hangers and Supports for Plumbing Piping and Equipment, 22 05 53.05 Pipe Identification, 22 11 16 Domestic Water Piping, 22 11 19 Domestic Water Piping Specialties	J. Law
DIVISION 26 – ELECTRICAL – ALL SECTIONS	D. Rammell
DIVISION 27 – COMMUNICATIONS – ALL SECTIONS	K. Tracy
DIVISION 28 – ELECTRONIC SAFETY AND SECURITY – ALL SECTIONS	C. Ng
DIVISION 40 – PROCESS INTEGRATION – ALL SECTIONS	K. Tracy

END OF SECTION

SPECIFICATION SD-428

MAIN WASTEWATER TREATMENT PLANT OXYGEN PLANT REHABILITATION

TABLE OF CONTENTS

**VOLUME I-A - PROCUREMENT AND CONTRACTING REQUIREMENTS
(DIVISION 00), GENERAL REQUIREMENTS (DIVISION 01)**

DIVISION 00 - PROCUREMENT AND CONTRACTING DOCUMENTS

00 01 07	Professional Seals and Certifications
00 01 10	Table of Contents
00 11 13	Notice to Contractors
00 21 13	Instructions to Bidders
00 30 05	Offices to Contact
00 31 24	Materials Assessment Information
00 41 02	Bid Form
00 41 05	Description of Bid Items
00 42 00	Proposal
00 43 13	Bidder's Bond
00 43 39	Contract Equity Program and Equal Employment Opportunity Guidelines
00 43 39.01	Supplementary Contract Equity Program and Equal Employment Opportunity Guidelines
00 45 10	Escrow Bid Documents
00 45 11	Bid Documentation Certification
00 45 13	Bidder's Qualifications and References
00 45 13.01	Supplementary Bidder's Qualifications
00 45 14	Manufacturer Form
00 45 19	Declaration of Noncollusion
00 45 46	Declaration of Eligibility to Work on Public Works Projects
00 45 47	Iran Contracting Act Certification
00 51 00	Execution of Contract
00 52 00	Contract
00 61 13.13	Faithful Performance Bond
00 61 13.16	Payment Bond

00 62 00	Insurance Requirements
00 72 00	General Conditions
00 73 00	Supplementary General Conditions
00 73 05	Supplementary Requirements

DIVISION 01 - GENERAL REQUIREMENTS

01 11 00	Summary of Work
01 14 00	Work Restrictions
01 18 05	Project Utility Sources and Site Conditions
01 21 00	Allowances
01 24 13	Value Engineering
01 24 13A	Value Engineering Change Proposal
01 29 00	Payment Procedures
01 31 19	Project Meetings
01 31 20	Partnering
01 31 23.10	Construction Management Information System
01 31 23.15	Certified Payroll Electronic Submission
01 32 00	Construction Progress Documentation
01 33 00	Submittal Procedures
01 33 12	Seismic Design Criteria
01 35 13	Special Project Procedures
01 35 24	Project Safety Requirements
01 35 44	Environmental Requirements
01 35 53	Security Procedures
01 42 19	Reference Standards
01 43 09	Wind Design Requirements
01 45 00	Quality Control
01 45 27	Shop Inspection
01 50 00	Temporary Facilities and Controls
01 61 00	Common Product Requirements
01 64 01	District Furnished Equipment
01 64 03	District Furnished DCS Equipment

01 71 13	Mobilization
01 73 29	Cutting and Patching
01 74 05	Cleaning
01 75 17	Field Testing and Startup
01 77 00	Operational Completion and Project Closeout
01 78 39	Record Drawings
01 79 00	Demonstration and Training
01 91 13.10	Asset Identification Tags

VOLUME I-B – APPENDICES

APPENDICES

APPENDIX A – Forms and Schedules

APPENDIX B – Environmental Assessment Information

APPENDIX C – Sole Source Products

APPENDIX D – Reference Material

VOLUME II-A – TECHNICAL SPECIFICATIONS (DIVISIONS 02 THROUGH 26)

DIVISION 02 – EXISTING CONDITIONS

02 41 13	Selective Site Demolition
02 42 05	Demolition and Salvage
02 83 13	Lead Hazard Control Activities

DIVISION 03 - CONCRETE

03 01 30.61	Resurfacing of Cast-In-Place Concrete
03 01 30.62	Concrete Repair
03 11 00	Concrete Forming
03 20 00	Concrete Reinforcement
03 30 00	Cast-in-Place Concrete

DIVISION 05 - METALS

05 05 14	Hot-Dip Galvanizing
05 05 19	Anchor Systems
05 05 24	Shop and Field Welding
05 50 00	Metal Fabrications

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

07 21 23	Loose Fill Insulation

DIVISION 09 - FINISHES

09 90 00	Paints and Coatings

DIVISION 21 – FIRE SUPPRESSION

21 13 00	Dry Pipe Sprinkler Systems

DIVISION 22 – PLUMBING

22 05 00	Air Compressor Motor Replacement
22 05 29	Hangers and Supports for Plumbing Piping & Equipment
22 05 53.05	Pipe Identification

22 11 16	Domestic Water Piping
22 11 19	Domestic Water Piping Specialties

DIVISION 26 - ELECTRICAL

26 05 00	Common Work Results for Electrical
26 05 13	Medium-Voltage Cables
26 05 19	Low-Voltage Electrical Power Conductors and Cables
26 05 26	Grounding and Bonding for Electrical Systems
26 05 29	Hangers and Supports for Electrical Systems
26 05 33	Raceway and Boxes for Electrical Systems
26 05 53	Identification for Electrical Systems
26 08 00	Commissioning of Electrical Systems
26 09 16	Electrical Controls and Relays
26 24 16	Panelboards

VOLUME II-B – TECHNICAL SPECIFICATIONS (DIVISIONS 27 THROUGH 40)

DIVISION 27 – COMMUNICATIONS

27 05 00	Common Work Results for Communications
27 08 00	Commissioning of Communication Systems
27 11 19	Communications Terminal Blocks and Patch Panels
27 13 23	Communications Optical Fiber Backbone Cabling
27 13 23.13	Communications Fiber Splice and Terminations
27 15 13	Communications Copper Horizontal Cabling
27 15 43	Communications Faceplates and Connectors

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

28 31 00	Fire Alarm System

DIVISION 40 - PROCESS INTEGRATION

40 05 00	Common Work Results for Process Integration
40 05 13	Process Pipe and Fittings
40 05 15	Process Pipe Supports

40 05 23	Process Valves
40 61 01	Instrumentation and Controls General Requirements
40 70 00	Instrumentation and Control Devices for Process Systems
40 80 00	Commissioning of Process Systems
40 81 00	System Integrator Qualifications
40 95 13	Process Control Panels and Hardware

VOLUME III – DRAWINGS

VOLUME IV – DRAWINGS (*PART 2*)

END OF SECTION

NOTICE TO CONTRACTORS

Sealed proposals will be received in the office of the Purchasing Division, East Bay Municipal Utility District, 375 11th Street, First Floor, Oakland, California 94607, until 1:30 p.m. Wednesday, September 11, 2024, and will at that hour be publicly opened and read in the Board Room, Second Floor, of the District's Administration Building, for the Main Wastewater Treatment Plant Oxygen Plant Rehabilitation, under SD-428.

Work includes demolition and replacement of motors, valves, instruments, controls, and other appurtenances associated with the cryogenic oxygen production facility at East Bay Municipal Utility District's Main Wastewater Treatment Plant (MWWTP). Existing pneumatic controls will be replaced with new electronic instruments and controls. The work also includes re-coating of existing steel cold boxes, new controls, integration of controls into the MWWTP's distributed controls system (DCS), fire protection, fall protection, seismic retrofit of panels, and all materials, equipment, services, and construction inherent to the Work.

Estimated cost of this work is between \$9.0M and \$10.0M. All work covered by the contract shall be completed as follows: Operational Completion within 730 calendar days after the issuance of the Notice to Proceed, and Final Completion within 790 calendar days after issuance of the Notice to Proceed.

The District will conduct a MANDATORY pre-bid jobsite conference/inspection to familiarize prospective bidders with the project site and conditions. Bidders submitting a bid must attend the pre-bid conference for their bid to be responsive. Attendees will be required to sign a waiver prior to entering the plant site. See Appendix A for waiver. The pre-bid meeting will be conducted on July 30, 2024 at 9:00 a.m. Bidders/bid walk attendees (Attendees) shall assemble at 2020 Wake Avenue, Oakland, California 94607. This is the only time that the Oxygen Plant will be open for inspection. The conference/inspection will last approximately 2 hours. No photography by the Attendees will be allowed. The District will take photographs, as requested by the Attendees, restricted to the work zone. The District will release photographs to Attendees after the bid walk, pending review by District. All Attendees are required to have a photo ID and sign a confidentiality agreement not to share, sell, or publish photos.

The Prime Contractor and its subcontractors are strongly encouraged to attend the jobsite inspection where a "sign-in" sheet will be provided. Requirements of the District's Contract Equity Program, including the pilot Local Hire component, will be discussed and explained at the pre-bid meeting.

Project information, including plans, specifications, plan holders list, bid results, etc., can be found at <https://construction-bids.ebmud.com/CurrentorFutureBid.aspx?BidMode=Current>. The District will make its best efforts to include information provided by bidders obtaining plans and specifications, such as bidder's names, addresses, phone and fax numbers, and email and website addresses, on the website plan holders list.

For review purposes, prospective bidders may obtain the Contract Documents by downloading the files from the District's website. Prospective bidders who download the documents from the website shall register online or send an email to wwspecs@ebmud.com (include first and last name, business name, address, phone number, fax number, email address, MBE/WBE status if applicable, and the specification you wish to be listed for) in order to be included on the Plan Holders List. Hardcopy sets of the Contract Documents will not be provided. In order to submit a bid, prospective bidders shall request an electronic bid package (electronic copies of all forms required for submitting a bid) via email. Bidders shall print the forms out and submit their bid proposals via hardcopy. Wet-signed copies of all forms are required. To request the bid package, prospective bidders shall visit the project website at Current Construction Bids at <https://construction-bids.ebmud.com/Request.aspx> and submit a request through the "Request a Bid Set" link.

Proposals to perform the work shall be made on the forms provided and shall be submitted complete, including bid bond and list of subcontractors, in accordance with the requirements of the Specifications.

Refer to Appendix C in the Specifications for details pertaining to sole source products specified by the District.

Bidders shall have an active Class A (General Engineering) license from the Contractors' State License Board at the time of bid submission, which must remain valid throughout the duration of the contract. Refer to Article 21 of the Instruction to Bidders, Document 00 21 13.

A bidder's bond for not less than 10% of the total bid dollar amount is required. Performance and payment bonds for not less than 100% of the contract price are required. As provided in Section 22300 of the Public Contract Code of the State of California, the Contractor may substitute securities for monies withheld by the District to ensure performance of the work.

In accordance with Public Contract Code Section 3400, the District has established a procedure which permits bidders to have their proposed unlisted "or equal" product or service submittals evaluated prior to the project bid opening. See Instructions To Bidders, Document 00 21 13, Article 3 - "Submittals Prior To Opening Bid." This procedure does not apply where products or services have been limited by specific designation per Public Contract Code Section 3400 (c). The intent of the prequalification process is not for bidders to submit all of their proposed "or equal" products, but only those that would, if rejected, affect the bidder's bid amount.

This is a public works contract. Prevailing wages are required on this contract. The prevailing wage rates are available on the Internet at <http://www.dir.ca.gov/dlsr/DPreWageDetermination.htm>. A copy of the prevailing wage rates is on file and available for inspection by any interested party on request at the District's Wastewater Project and Construction Management Section. This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

Davis-Bacon prevailing wages are required on this contract. The Davis-Bacon prevailing wage rates are available on the Internet at <https://www.wdol.gov/dba.aspx>. The Contractor and its subcontractor of any tier shall pay no less than the locally prevailing wages and fringe benefits paid on projects of a similar character. This project is subject to compliance monitoring and enfo

rcement by the Department of Labor.

All Contractors bidding on a public works project and all Subcontractors of any tier shall be registered with the State Department of Industrial Relations pursuant to Section 1725.5 of the Labor Code. If awarded a contract, the Contractor and its subcontractors, of any tier, shall maintain active registration with the Department of Industrial Relations for the duration of the Project.

As provided in Section 22300 of the Public Contract Code of the State of California, the Contractor may substitute securities for monies withheld by the District to ensure performance of the work.

For information concerning this project, contact the District's Construction Manager, John Law, at 510-287-7186.

Rischa S. Cole
Secretary of the District
Oakland, California

END OF DOCUMENT

THIS PAGE IS LEFT INTENTIONALLY BLANK.

INSTRUCTIONS TO BIDDERS

1. QUESTIONS PRIOR TO OPENING BID

Questions regarding documents, discrepancies, omissions, or intent of specifications or drawings shall be communicated to the Engineer in writing at least ten days prior to opening of bids, to provide time for issuing and forwarding an addendum should the District consider an addendum necessary. The District will not be responsible for oral interpretation of the specifications and drawings.

2. DRAWINGS

The project drawings have been reduced to approximately one-half scale. Some standard and reference drawings may have been reduced also. Prior to bidding, prospective bidders may secure full-size prints of project and reference drawings by any of the following two methods:

- A. Download the project drawing files from the District's website (<http://www.ebmud.com/current-construction-bids>) and then print the drawing file at full-size on a large format printer or plotter. Alternatively, the electronic drawing files can be printed at many copying stores or blue print shops.
- B. Request drawings through the District's Engineering Records Unit, (510) 287-0425, at a charge of \$1.50 per 22-inch x 34-inch sheet. Five work days shall be allowed for processing of these drawing requests, which will then be sent via US Mail or may be picked-up in person (call for appointment).
- C. Unlocked project drawing files in pdf format are available for download at <http://www.ebmud.com/current-construction-bids>. These files are provided for the convenience of bidders. The District does not vouch for the accuracy or correctness of these files or any of their contents. The unlocked pdf drawing files are not considered part of the Contract Documents. Bidders assume all risks associated with the use of these files.

3. SUBMITTALS PRIOR TO BID OPENING

Pursuant to Section 3400 of the Public Contract Code, where a material, product, thing, or service has been designated by specific brand or trade name, and where such designation is not followed by the words, "no substitutions," bidders may propose to substitute the designated material, product, thing or service with another of equal quality and which possesses the required characteristics for the purpose intended. It is not the intent of the prequalification process for bidders to submit all of their proposed "or equal" products during the bid period; however, any proposed substitution of a designated material, product, thing or service listed on the Manufacturer Form (Document 00 45 14) or which if rejected, would affect the bidder's bid

amount, must be submitted for District consideration during the bid period and in accordance with Article 12 – Manufacturer Form additional requirements.

The bidder shall comply with the following:

- A. Proposals for “or equal” substitutions, requested during the bidding period, shall be furnished in writing to:

Purchasing Division, Contract Supervisor (MS #102)
East Bay Municipal Utility District
P.O. Box 24055
Oakland, CA 94623-1055

Proposals shall be received by the District no later than 26 days prior to the date of the bid opening. Proposals shall be identified as described in Section 01 33 00 – Submittal Procedures, and submitted in the quantities specified. Outside of mailing envelope shall be marked “Submittal Request for Substitution, Specification No. SD-428.”

- B. Proposals shall be accompanied by complete technical and descriptive data necessary to determine equality of the material, product, thing, or service. Samples shall be provided when requested. The burden of proof as to availability, comparative quality, suitability, and performance of the proposed substitution shall be upon the bidder. The bidder will not be reimbursed for any work or costs necessary for making the substitution workable. Proposals will be evaluated and deemed accepted, rejected, or incomplete by the District; the District will be the sole judge as to such matters. If the substitution is accepted, bidders will be notified by addenda.
- C. If a proposal for an “or equal” substitution is deemed incomplete by the District, the substitution may not be accepted prior to bid opening, but may be revised and resubmitted after the Notice to Proceed as a submittal pursuant to Section 01 33 00.

4. PROPOSAL FORMS SUBMITTAL

The proposal shall be made on the forms provided, with the blank spaces properly filled in. The phraseology shall not be changed, and no additions shall be made to the items mentioned therein. Unauthorized conditions, limitations, or provisos attached to a proposal will render it non-responsive and may cause its rejection.

Enclose all proposal forms (blue), except Contract Equity Participation (Form P040), Good Faith Outreach Efforts Documentation (Form P-041), Contract Equity Program Guidelines Certification (Form P-042), 00 45 13 Bidder’s Qualifications and References (Form E-061), 00 45 13.01 Supplementary Bidder’s Qualifications (Form E-061S), properly executed, in a sealed envelope. Type or write on the envelope "Proposal for" followed by the title and specification number and the date and time of bid opening as

they appear on the cover of this Specification book, and the bidder's name and address. The envelope may be mailed, hand delivered, or delivered by courier or package delivery service.

Mailed proposals shall be addressed as follows:

Manager of Purchasing
East Bay Municipal Utility District
P.O. Box 24055
Oakland, CA 94623-1055

Proposals that are hand delivered or delivered by courier or package delivery service shall be presented to:

Manager of Purchasing
Purchasing Division (MS #102)
East Bay Municipal Utility District
375 11th Street
Oakland, CA 94607

Proposals received after proposal opening time as stated on the cover of this Specification book(s) or at any place other than the office of the Purchasing Division will not be considered. Prior to the stated proposal opening time, the proposal may be withdrawn without prejudice to the Bidder by submitting a written request for its withdrawal to the Manager of Purchasing.

The apparent low Bidder shall turn in the specification book(s) used in the preparation of the bid within 2 Work Days of bid opening time at 1:30 pm.

A "Bidder's Checklist" is included at the end of these instructions to aid Bidders in providing all necessary information with their bid.

5. 00 41 02 - BID FORM

- A. The Bidder shall include in its bid price(s) any and all expense or costs that may be necessary to complete the project in accordance with the requirements of the contract. The Contractor's bid shall include sufficient job-site overhead, home office overhead, and all other overheads for the full contract duration.

The Bidder shall state for each item on the bid form, in clearly legible figures, the unit price and item total or lump sum, as the case may be, for which the Bidder proposes to supply labor, materials, and equipment and to perform the work required by this Specification. Alteration of a price by erasure or interlineation must be explained or noted in the proposal over the signature of the Bidder.

For any Unit Price item, the amount set forth as the Item Total shall be the product of the Estimated Quantity multiplied by the Unit Price bid. In the event of

a discrepancy between the Item Total and the actual product, the actual product shall prevail; however, if the Unit Price is ambiguous, unintelligible, omitted, or is the same amount as the entry for the Item Total, then the Item Total shall prevail and shall be divided by the Estimated Quantity for the item and the price thus obtained shall be the Unit Price.

In the event of a discrepancy between the actual sum of the Item Totals and the Total Amount Bid for All Items, the actual sum of the Item Totals will be the basis of the award.

- B. SMALL BUSINESS AND DISABLED VETERAN BUSINESS (SB/DVB) DISCOUNT – Bidders who are Small Businesses (SBs) or Disabled Veteran Businesses (DVBs), as described in the Contract Equity Program And Equal Employment Opportunity Guidelines, will be granted a bid discount resulting in an effective SB/DVB bid. The effective SB/DVB bid will be used solely for comparison of the bids submitted by small businesses/disabled veteran businesses against those submitted by non-small businesses/non-disabled veteran businesses. The Effective SB/DVB Bid is calculated as follows:

- Effective SB/DVB Bid = (SB bid amount or DVB bid amount) - discount amount
- Discount amount (not to exceed \$150,000) = 7% of the apparent lowest, responsive, and responsible bid

To be eligible for the SB/DVB discount, bidders must check the Small Business and/or Disabled Veteran Business box on the bid form. Bidders with both Small Business and Disabled Veteran Business status will receive only one 7% discount. Upon request, the bidder must submit the support documentation to the District within 2 work days.

ADDENDA – Bidder shall acknowledge addenda on the Bid Form. Failure of the bidder to acknowledge addenda may deem the bidder's bid non-responsive. Addenda, if any, will be issued to the Bidders via electronic mail not later than 72 hours before bid opening. Addenda will also be posted to the project website (<https://portal.ebmud.com/construction-bid-opportunities>) where the contract specifications and drawings are posted. The District will make its best effort to transmit the addenda to the Bidder, and will not be responsible if the contractor fails to acknowledge the addenda. Prior to the bid opening, the Bidder shall regularly view the project website to access any addenda.

6. NOT USED.

7. PROPOSAL (FORM E058)

The full name, business address, zip code, and business telephone number with area code of the individual, partnership, joint venture, or corporation submitting the proposal shall be typewritten or legibly printed on the proposal Form E-058. Provide complete information on the Bidder's California Contractor's License in the spaces provided. The

Bidder shall sign the proposal with its usual signature and complete information on California Contractor's license.

An individual submitting a proposal or a partner signing for a partnership shall sign in the presence of a Notary Public and the notarial acknowledgment shall be attached to the proposal.

A partner shall sign for a partnership and the names and addresses of all partners shall be given.

An officer shall sign for a corporation and the names and titles of all officers of the corporation shall be given. A signature other than a corporate officer's will be accepted if an authenticated power of attorney is attached.

8. BID SECURITY

Each Bidder shall submit with its proposal a bid security for not less than 10 percent of the total amount bid. The bid security shall be one of the following:

- A. Certified Check or Cashier's Check - Check shall be made payable to the order of East Bay Municipal Utility District. The District will return checks, a) to unsuccessful bidders as soon as practicable after opening of the bids and b) to the successful bidders upon execution of contractual documents and bonds.
- B. Surety Bond - The surety bond shall be properly executed by the Bidder and by a sufficient, admitted surety insurer (ie: as listed on website [http://interactive.web.insurance.ca.gov/webuser/idb_co_list\\$.startup](http://interactive.web.insurance.ca.gov/webuser/idb_co_list$.startup)) admitted to transact such business in California by the California Department of Insurance, using 00 43 13 "Bidder's Bond" (Form E-103) contained in this Specification. The corporate seal of the surety company must be affixed to the bond. The signature of the surety on the bond must be acknowledged before a Notary Public. The notarial acknowledgement and an executed power of attorney, indicating that the surety's representative is authorized to bind the surety, must accompany the bond. Any alteration of said form of bidder's bond, or imperfection in the execution thereof, as herein required, will render it informal and may, at the option of the District, result in the rejection of the proposal under which the bidder's bond is submitted. A Bidder submitting a bid bond may be required before the award of contract to furnish evidence that the persons signing such bond on behalf of the Bidder and the corporate surety are fully authorized to do so.

The bid security shall be a guarantee that the Bidder, if awarded the contract, will execute the required contract and bonds as provided in these Instructions to Bidders within fifteen days after such contract and bonds have been received by the Bidder or such additional time as may be allowed by the District. If the Bidder fails, is legally unable to, or refuses to execute the required contract and bonds within said time, the money and proceeds from bid security shall be applied toward payment of the damage to the District on account of the delay in the execution of the contract and bonds and the performance of

the work thereunder, and the necessity of accepting a higher or less desirable proposal, resulting from such failure or refusal to execute the contract and bonds as required. The amount of bid security shall not constitute a limitation upon the right of the District to recover the full amount of such damage.

9. CONTRACT EQUITY PROGRAM AND EQUAL EMPLOYMENT OPPORTUNITY GUIDELINES

Attention is directed to the articles in the document "Contract Equity Program and Equal Employment Opportunity Guidelines" outlining the business enterprise contracting objectives and requirements, and the equal employment opportunity requirements.

The Bidder shall include with its bid the completed Employment Data and Certification (Form P-025) as required by specification Document 00 43 39 Contract Equity Program and Equal Employment Opportunity Guidelines.

The apparent low and second low Bidders shall submit the Contract Equity Participation (Form P-040) to the Project and Construction Management Section within 2 Work Days of bid opening time. Any subsequent entries to the Form P-040 shall be identified and submitted with a Form P-025 as required in Article 9 below. All subcontractors included on the Designation of Subcontractors (Form P-046) shall also be listed on the Contract Equity Participation (Form P-040).

The apparent low Bidder shall submit the Good Faith Outreach Efforts Documentation (Form P-041) to the Project and Construction Management Section within 2 Work Days of bid opening time at 1:30 p.m., if Form P-040 Contract Equity Participation indicates that the Contracting Objectives will not be met. It is suggested that even if the Contracting Objectives appear to be met on Form P-040, this form still needs to be completed in case the Contracting Objectives are determined by District evaluation to have not been met.

The apparent low and second low Bidders shall submit Contract Equity Program Guidelines Certification (Form P-042) to the Project and Construction Management Section within 2 Work Days of bid opening time at 1:30 p.m.

Other Bidders shall complete and submit Forms P-040, P-041, and P-042 upon request if they are being considered for award of contract. Additional copies of Forms P-040, P-041, and P-042 may be obtained from the Contract Equity Office or from the Project and Construction Management Section.

In the evaluation of compliance with its Contract Equity Participation, the District reserves the right to waive technical defects as the interests of the District may require.

10. EMPLOYMENT DATA AND CERTIFICATION (FORM P-025) FOR SUBCONTRACTORS AND SUPPLIERS

The Employment Data and Certification forms for subcontractors are not required to be submitted with the bid proposal.

The apparent low Bidder shall, within 2 Work Days of bid opening time at 1:30 p.m., submit completed Employment Data and Certification forms for:

- A. All subcontractors and truckers, known at this time, that will perform work or provide services in an amount equal to or greater than \$80,000.
- B. All suppliers, known at this time, that will provide goods and/or services in an amount equal to or greater than \$80,000.

The District may request completed Employment Data and Certification forms for subcontractors, truckers, and suppliers from any other Bidder that is being considered for award of contract. Such Bidders shall, within 48 hours after request by the District, submit completed Employment Data and Certification forms for:

- A. All subcontractors and truckers that will perform work or provide services in an amount equal to or greater than \$80,000.
- B. All suppliers that will provide goods and/or services in an amount equal to or greater than \$80,000.

P-025 forms for subcontractors, truckers, and suppliers that are not known at the time of the initial submission of the Form P-040 shall be submitted as soon as they are known.

11. DESIGNATION OF SUBCONTRACTORS (FORM P046)

- A. Specify the name, the location of the place of business, and the California contractor license number of each subcontractor who will perform work or labor or render service to the Contractor in or about the construction of the work or improvement, or a subcontractor licensed by the State of California who, under subcontract to the Contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of one percent of the Contractor's total bid.
- B. Clearly state that portion of the work to be done by each subcontractor listed, by type and by estimated dollar amount. Designated subcontractors cannot be substituted after bid opening except as provided in Section 1725.5 of the Labor Code and Section 4107 of the Public Contract Code.

The Bidder's attention is called to the District's additional restrictions on subcontractor substitution as stated under Contract Equity Participation (Form P-040).

12. BIDDER'S QUALIFICATIONS AND REFERENCES (FORM E-061) and SUPPLEMENTARY BIDDER'S QUALIFICATIONS AND REFERENCES (FORM E-061S)

Complete all information required, on all pages of the forms. If no information is to be filled in a blank space, then write "none."

Sign the forms. The bidder signing the Bidder's Qualifications and References Form E-061 (00 45 13) and the Supplementary Bidder's Qualifications and References (Form E-061S, 00 45 13.01) shall meet all requirements for signing the proposal Form E-058.

The apparent low Bidder shall complete and submit Bidders Qualifications and References (Form E-061) and the Supplementary Bidder's Qualifications and References (Form E-061S) within 2 Work Days of bid opening time at 1:30 p.m.

13. MANUFACTURER FORM

The apparent low Bidder shall submit the Manufacturer Form (Document 00 45 14) to the Specifications and Engineering Support Section within 2 Work Days of bid opening time at 1:30 p.m. Indicate on the form the proposed manufacturer who will be manufacturing the materials and services corresponding to the listed product.

If the Contract Documents list acceptable manufacturer products, the Bidder shall enter only the manufacturers listed in the Contract Documents, or those accepted by the District as an "or equal" substitution per Article 3. Entering a non-listed or non-accepted manufacturer will cause the Bidder's bid to be deemed non-responsive. Otherwise, if the Contract Documents do not indicate acceptable manufacturer products, the Bidder shall enter the anticipated manufacturer to be utilized for each portion of Work listed. See Article 3 – Submittals Prior to Bid Opening for more information.

All the manufacturers entered on the Manufacturer Form shall also be listed on Form P-040.

14. ESCROW BID DOCUMENTS AND BID DOCUMENTATION CERTIFICATION

Within 5 Work Days of the bid opening, the apparent low bidder shall make arrangement with the District for submitting a set of Escrow Bid Documents to the District as described in Document 00 45 10 Escrow Bid Documents. The second and third low bidders shall be prepared to submit Escrow Bid Documents within 5 Work Days of a request by the District. The Escrow Bid Documents shall be accompanied by a completed Document 00 45 11 Bid Documentation Certification. See Document 00 45 10 – Escrow Bid Documents for more information.

15. DECLARATION OF NONCOLLUSION

Execute and submit with the proposal the Declaration of Noncollusion.

Sign the form. The Bidder signing the Declaration of Noncollusion shall meet all requirements for signing the proposal Form E-058.

16. DECLARATION OF ELIGIBILITY TO WORK ON PUBLIC WORKS PROJECTS (FORM E-102)

This contract is a public work and shall be performed as a public work as defined by Section 1771 of the California Labor Code. Execute and submit with the proposal the Declaration of Eligibility to Work on Public Works Projects.

Sign the form. The Bidder signing the Declaration of Eligibility to Work on Public Works Projects shall meet all requirements for signing the proposal Form E-058.

17. IRAN CONTRACTING ACT CERTIFICATION

Sign the form. The Bidder signing the Iran Contracting Act Certification shall meet all requirements for signing the proposal Form E-058.

The apparent low and second low Bidders shall complete and submit the Iran Contracting Act Certification to the Project & Construction Management Section within 2 Work Days of bid opening time.

18. EXAMINATION OF DRAWINGS, SPECIFICATIONS, AND SITE OF WORK

The Bidder shall examine carefully the site of the work contemplated and the proposal, drawings, and specifications therefor. The submission of a bid will be conclusive evidence that the Bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and quantities of work to be performed and materials to be furnished, the difficulties to be encountered, and to the requirements of the proposal, drawings, specifications, and other contract documents.

The Bidder is required to ascertain the locations of the existing utility services, and other underground facilities, and to provide for carrying out its operations so as to cause the minimum possible inconvenience to the occupants of property along any streets affected. All work and costs involved in the safeguarding of the property of others shall be at the expense of the Bidder to whom the contract may be awarded.

The Bidder hereby certifies that he has examined the local conditions, has read each and every clause of the specifications, and that it has included all costs necessary to complete the specified work in its bid prices, and the Bidder agrees that if it is awarded the contract it will make no claim against the District based upon ignorance of local conditions or misunderstanding of any of the provisions of the contract. Should the conditions turn out otherwise than anticipated by him, the Bidder agrees to assume all risks incident thereto.

19. OUT OF COUNTRY INSPECTION AND WITNESSING

The Contractor and its subcontractors shall not perform any portion of the Work, fabrication, or supply, that, per the contract documents, requires inspection or witnessing by the District or its agents, in a location that has been determined to be potentially unsafe by the U.S. Department of State (see their website http://travel.state.gov/travel/cis_pa_tw/cis_pa_tw_1168.html for “Travel Warnings” to countries and regions); see Section 01 45 27 for additional requirements and restrictions. If the Contractor has any questions, seek clarification from the District in advance of bid opening as per Article 1.

20. EXPERIENCE

Bidders, upon request, shall present satisfactory evidence that they have been regularly engaged in furnishing such material and equipment and constructing such work as they propose to furnish or construct and that they are fully prepared with necessary capital, equipment, and material to begin work promptly and to conduct it as required by this Specification.

21. LICENSES AND REGISTRATIONS REQUIRED

Bidders and all listed subcontractors shall be properly licensed by the Contractors' State License Board to perform the work of this contract. Pursuant to Section 7028.15 of the Business and Professions Code of the State of California, bids submitted by Bidders that are not properly licensed will be considered nonresponsive and will be rejected. At the time of bid, all listed subcontractors shall be properly licensed or the bid will be considered nonresponsive and will be rejected.

Bidders and all subcontractors of any tier shall be properly registered with the State Department of Industrial Relations at the time of bid opening pursuant to Section 1725.5 of the Labor Code. This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

The Contractor shall at the time of bid and for the duration of the contract possess such state and local licenses as are required by law, and shall, at any time during the period of the contract, furnish satisfactory proof to the Engineer upon request that such licenses are in effect.

22. PRICES AND PAYMENTS

Approximate quantities listed in the Notice to Contractors and quantities listed for unit-price items on the bid form are rough estimates given for comparing bids, and no claim shall be made against the District for excess or deficiency therein, actual or relative. Payment at the prices agreed upon will be in full for the completed work and will cover materials, supplies, labor, tools, equipment, and all other expenditures incident to a satisfactory compliance with the contract, unless otherwise specifically provided.

23. MODIFYING BID

Any Bidder may modify its bid by written communication, provided such communication is received by the Manager of Purchasing prior to the bid opening time. The modification shall have the original signature of the same individual who signed the bid proposal. The communication shall not reveal the bid price but shall state the addition or subtraction or other modification to the Bid Form so that the final prices or terms will not be known by the District until the sealed bid is opened. Bid modifications by facsimile transmission or electronic mail will not be accepted.

24. BID OPENING

All proposals will be opened and declared publicly at the time and place stated in the Notice to Contractors. Bidders, their representatives, and other interested parties are invited to be present.

After the bid opening, proposals may be inspected in the Board Room or at the Project and Construction Management Section until 3:00 p.m. on the day of the bid opening.

25. BID PROTEST PRIOR TO AWARD

Any party with an interest in the contract has the right to protest.

- A. Submitting a Protest - The protest shall be in writing, addressed to the Director of Wastewater, and received by the District no later than 7 work days after the date of the bid opening. The protest document shall contain a detailed and complete statement as to the basis of the protest and shall include the name, address, and telephone number of the protestor or its authorized representative. All correspondence to the Director of Wastewater shall be addressed as follows:

Director of Wastewater
East Bay Municipal Utility District
P.O. Box 24055
Oakland, California 94623-1055

The protest document may also be hand-delivered during business hours to:

Project and Construction Management Section (MS #59)
East Bay Municipal Utility District
2020 Wake Avenue
Oakland, CA 94607

Upon receipt of the protest, the District will send the protestor an acknowledgement of receipt and will promptly investigate the circumstances. The District will also transmit copies of the protest document and any attached documentation to all other interested parties which may be affected by the outcome of the protest. The Director of Wastewater will issue a written decision to the protestor.

- B. Submitting an Appeal - If the decision of the Director of Wastewater is not satisfactory to the protestor, the protestor can submit an appeal in writing to the Board of Directors. The appeal shall name the Board of Directors as the recipient and be sent to the following address , or hand-delivered as described above:

Secretary of the District
East Bay Municipal Utility District
P.O. Box 24055
Oakland, California 94623-1055

Such an appeal shall set forth the grounds for the appeal and shall be received by the District no later than 5 work days after the day of receipt by the protestor of the Director's decision.

- C. Documents submitted by facsimile transmission or electronic mail will not be considered. If any documents are mailed, the protestor shall allow sufficient time for postal transit to ensure that all mailings are received by the District within the specified time limits. The District may dismiss the protest if the protestor fails to submit the protest within the specified time.
- D. In addition to filing a written appeal, the protester may address the Board of Directors at the public meeting at which the contract is being considered for award.

26. AWARD

The right is reserved to reject any or all proposals and to waive technical defects, as the interest of the District may require. Award of contract or rejection of bid proposals will usually be made by the District at the second Board meeting following the bid opening.

District Board meetings are normally scheduled on 2nd and 4th Tuesdays of the month.

27. EXECUTION OF CONTRACT

Special attention is directed to Document 00 51 00 - Execution of Contract which outlines the procedure and time constraints for the receipt and execution of contract.

In order to meet the specified time constraints, the Bidders are encouraged to arrange with their sureties and insurance companies for prompt execution on award.

The Bidder to whom award is made shall execute a written contract with the District and shall furnish good and approved bonds and insurance as specified within fifteen days after receiving the forms of contract and bonds for execution. If the Bidder to whom award is made fails to enter into the contract as herein provided and furnish the said bonds and insurance, this shall be just cause for the annulment of the award and the forfeiture of the Bidder's bond, and an award may, in the discretion of the Board of Directors of the District, be made to the Bidder whose proposal is next most acceptable in

the opinion of the Board, and such Bidder shall fulfill every stipulation embraced herein as if it were the party to whom the first award was made.

A corporation, or a company, or partnership operating under a fictitious name, to which an award is made, will be required, before the contract is finally executed, to furnish evidence of its corporate existence and evidence that the persons signing the contract and bonds for the Contractor are duly authorized to do so.

28. CONTRACT

The Contract shall be on the form of contract of the District. The Notice to Contractors, Instructions to Bidders, Proposal, General Conditions, Specifications and addenda if any, and Drawings, contained in or by reference made part of this Specification will be deemed a part of the Contract.

BIDDER'S CHECKLIST

This checklist has been prepared and furnished to aid Bidders in including all necessary supporting information with their bid. Bidders' bid submittal must include the following:

<u>ITEM</u>	<u>CHECKED</u>
1. Proposal (Form E-058)	_____
2. Bid Form and Acknowledgement of Addendum (Form 00 41 01)	_____
3. Declaration of Noncollusion	_____
4. Declaration of Eligibility to Work on Public Works Projects (Form E-102)	_____
5. Bid Security - Bidder's Bond (Form E-103) or Check	_____
6. Power-of-Attorney for Surety's Agent to execute Bidder's Bond	_____
7. Designation of Subcontractors (Form P-046)	_____
8. Employment Data and Certification (Form P-025)	_____
9. Supplementary Bidder's Qualifications (Form 00 45 13.01, E-061S)	_____

OTHER

Items 10 through 20 shall be delivered to the Project and Construction Management Section, Mailstop 59, 2020 Wake Avenue, Oakland, CA, 94607-4240 within the times stated below.

10. Contract Equity Participation (Form P-040) (by low and second low bidders)	Within 2 Work Days of Bid Opening time at 1:30 pm
11. Good Faith Outreach Efforts Documentation (Form P-041) (by low bidder only)	Within 2 Work Days of Bid Opening time at 1:30 pm
12. Contract Equity Program Guidelines Certification (Form P-042) (by low and second low bidders)	Within 2 Work Days of Bid Opening time at 1:30 pm
13. "Good Faith Outreach Efforts" support documentation (by low bidder only)	Within 2 Work Days of Request
14. Employment Data and Certification (Form P-025) for all Subcontractors, Truckers, or Suppliers contracts of \$80,000 or more. (by low bidder only)	Within 2 Work Days of Bid Opening time at 1:30 pm
15. Small Business/Disabled Veteran Business Support Documentation. (by all bidders who check the Small Business and/or Disabled Veteran Business box on the bid form)	Within 2 Work Days of Request
16. Bidder's Qualifications and References (Form E-061) (by low bidder only)	Within 2 Work Days of Bid Opening time at 1:30 pm
17. Supplementary Bidder's Qualifications and References Form E-061S) (by low bidder only)	Within 2 Work Days of Bid Opening time at 1:30 pm
18. Manufacturer Form (Document 00 45 14) (by low bidder only)	Within 2 Work Days of Bid Opening time at 1:30 pm
19. Escrow Bid Documents (Document 00 45 10) and Bid Documentation Certification.(Document 00 45 11) (by low bidder and its subcontractors only)	See Instruction to Bidders Article 14
20. Iran Contracting Act Certification (Document 00 45 47) (by low and second low bidders only)	Within 2 Work Days of Bid Opening time at 1:30 pm

END OF DOCUMENT

OFFICES TO CONTACT WITHIN THE
EAST BAY MUNICIPAL UTILITY DISTRICT
Main Wastewater Treatment Plant
Oxygen Plant Rehabilitation

Mailing Address:

E.B.M.U.D.
P.O. Box 24055, MS 59
Oakland, CA 94623-1055

Street Address:

E.B.M.U.D.
2020 Wake Avenue, MS 59
Oakland, CA 94607-4240

NOTE: WHEN CORRESPONDING WITH ANY OF THE OFFICES, USE MAILING ADDRESS ONLY

OFFICE

TELEPHONE NUMBER

REQUEST FOR SPECIFICATIONS AND PREBID INFORMATION:

Project & Construction Management (510) 287-1754

Submit Questions Online through EBMUD's Website: www.ebmud.com

Select "BUSINESS CENTER" and then "Construction bids". Click on the "Current Construction Bid Opportunities" and submit a question through the online Questions & Answers link on the project page for this specification.

CONTRACT EQUITY OFFICE ADMINISTRATOR:

Beverly D. Johnson
375 11th Street
Oakland, CA 94607 (510) 287-0142

SUBMITTAL OF PROPOSALS:

Purchasing Division
375 11th Street
Oakland, CA 94607 (510) 287-0447

CONTRACT ADMINISTRATION:

John Law
Project & Construction Management
2020 Wake Avenue
Oakland, CA 94607 (510) 287-7186

THIS PAGE IS INTENTIONALLY LEFT BLANK.

DOCUMENT 00 31 24

MATERIALS ASSESSMENT INFORMATION

1.1 EXISTING ENVIRONMENTAL INFORMATION

- A. Site environmental studies have been conducted and are included in Appendix B.
- B. The following site environmental studies are available for inspection at the East Bay Municipal Utility District's Main Wastewater Treatment Plant, Project & Construction Management Section, 2020 Wake Avenue, Oakland, CA and at the project website at <https://construction-bids.ebmud.com/CurrentorFutureBid.aspx?BidMode=Current>:
 - 1. Appendix B1 – Metals Analysis for Paints for SD-428. A report titled “Metals Analysis of Paints”, prepared December 05, 2018, by Forensic Analytical Laboratories.
 - 2. Appendix B2 – V&A O2 Plant Corrosion Assessment Report. A report titled “Cryogenic High Purity Oxygen Facilities Condition Assessment”, prepared July 13, 2021, by V&A consulting engineers.
 - 3. Appendix B3 – Sherwin-Williams Hi-Solids Polyurethane 250 specification sheet.
 - 4. Appendix B5 – Bulk Asbestos Analysis for O2 MCC Dust, prepared in 2024.
 - 5. Appendix B6 – Bulk Asbestos Analysis for O2 MCC Shield, prepared in 2002.
- C. Contact the District's Construction Manager (see 00 11 13, Notice to Contractors) for an appointment to inspect the environmental information.
- D. The materials and conditions indicated in the reports are the result of investigations made by the District. There is no guarantee, either expressed or implied, that the conditions indicated are representative of those actually existing throughout the area or in any part of it, or that unforeseen developments may not occur. Interpretation of the reports presented is the responsibility of the Contractor.

1.2 MATERIALS ANALYSIS

- A. The District has conducted the following analysis of site materials:
 - 1. Coatings (at Cold Box)
 - 2. Dust (underneath MCCs)

- B. Copies of laboratory analytical data sheets are included in Appendix B, on the District's website, and available at the Project & Construction Management Section.

1.3 HAZARDOUS SUBSTANCES

- A. The Contractor may encounter existing hazardous substances when removing existing cold box coatings. See Sections 02 83 13, Lead Hazard Control Activities and 09 90 00, Painting and Coatings.
- B. Hazardous substances that have been detected in the existing cold box coatings are:
 - 1. Lead Paint

END OF DOCUMENT



DOCUMENT 00 41 02

Bid Form

SPECIFICATION SD-428

MAIN WASTEWATER TREATMENT PLANT OXYGEN PLANT REHABILITATION

NAME OF BIDDER _____

ITEM	DESCRIPTION	QUAN -TITY	UNIT MEAS -URE	UNIT PRICE (FIGURES)	LUMP SUM PRICE (IN FIGURES)
1	Mobilization and demobilization, and Construction to perform all work as shown on the drawings and as specified except for the following Bid Items.	1	Lump Sum	\$ _____	\$ _____
2	Oxygen Plant #1 Controls Upgrades	1	Lump Sum	\$ _____	\$ _____
3	Oxygen Plant #2 Controls Upgrades	1	Lump Sum	\$ _____	\$ _____
4	Cold Box Coatings Work (per plant)	2	Each	\$ _____	\$ _____
5	Main Air Compressor Motor Installation (per compressor)	4	Each	\$ _____	\$ _____
6	Per Specification Section 07 21 23: Remove and dispose of existing perlite from each cold box. Install new perlite in each cold box. (per plant) Remove and dispose of existing vermiculite and install new vermiculite in each turbine duct assembly. (per plant)	2	Each	\$ _____	\$ _____
7	Leak testing and oxygen pipe cleaning	1	Lump Sum	\$ _____	\$ _____
8	Allowance for partnership	1	Lump Sum	\$20,000	\$20,000
9	Allowance for unforeseen site conditions	1	Lump Sum	\$200,000	\$200,000



DOCUMENT 00 41 02

Bid Form

SPECIFICATION SD-428

MAIN WASTEWATER TREATMENT PLANT OXYGEN PLANT REHABILITATION

NAME OF BIDDER _____

ITEM	DESCRIPTION	QUAN -TITY	UNIT MEAS -URE	UNIT PRICE (FIGURES)	LUMP SUM PRICE (IN FIGURES)
10	Allowance for hazardous materials in addition to Bid Item 4	1	Lump Sum	\$100,000	\$100,000
11	Allowance for final record drawings	1	Lump Sum	\$75,000	\$75,000
12	Allowance for correcting electrical, instrumentation, and control wiring	1	Lump Sum	\$200,000	\$200,000
13	Allowance for relocating or repairing mechanical, electrical, instrumentation, control wiring, and pneumatic controls	1	Lump Sum	\$250,000	\$250,000
TOTAL AMOUNT BID FOR ALL ITEMS (1 through 13)					\$ _____

The Bidder shall bid on all items. See 00 41 05 DESCRIPTION OF BID ITEMS.

The price bid shall include all State, Federal, and other taxes applicable to the project, and shall be a firm offer for a period of one-hundred twenty (120) calendar days after the date of bid opening.

Award of Contract will be based on the "TOTAL AMOUNT BID FOR ALL ITEMS (1 through 13) above. In the event of any discrepancy, the award shall be based on Document 00 21 13 – Instructions to Bidders, Article 5.A

THE BID FORM CONTINUES ON THE FOLLOWING PAGE.



DOCUMENT 00 41 02

Bid Form

SPECIFICATION SD-428

MAIN WASTEWATER TREATMENT PLANT OXYGEN PLANT REHABILITATION

NAME OF BIDDER _____

BID DISCOUNT - To be eligible for the SB/DVB discount, bidders must check the Small Business and/or Disabled Veteran Business box below:

The Bidder is a:

☐ **Small Business and/or Disabled Veteran Business**, as described in the Contract Equity Program And Equal Employment Opportunity Guidelines (Document 00 43 39).

The District reserves the right to request support documentation, such as tax records, articles of incorporation and board minutes to verify composition of ownership and business size.

ADDENDA ACKNOWLEDGEMENT - Bidder shall check the project website for inclusion of addenda, if any, into this project and shall acknowledge the addenda, below.

ADDENDA - Receipt of the following addenda is hereby acknowledged:

Addendum Number

Date

DOCUMENT 00 41 05

DESCRIPTION OF BID ITEMS

Under each item listed on the Bid Form, perform the complete work indicated by that item. Payment for the various items will be made at the prices bid therefor, based on measurements and quantities (where applicable) as hereinafter described. Contract payment provisions, including adjustment of contract price on unit-price items, are covered by Section 01 29 00 Payment Procedures.

- ITEM 1 All work as shown on the Drawings and as specified for improvements to the MWWTP's oxygen production facility and miscellaneous work, including but not limited to replacement of four 1500-horsepower Main Air Compressor motors, installation of a new fire protection and alarm system, and seismic retrofit of power distribution panels, except work included in the following Items.
- ITEM 2 Material and equipment, services, installation, construction and testing inherent to the Work for upgrades to Oxygen Plant #1. This work includes, but is not limited to, valve replacement, demolition of pneumatic tubing, work to furnish and install new valves, conduits, wires, and control panels. This bid item includes all work associated with Oxygen Plant #1 shown on the Drawings and specified except Items specifically listed below.
- ITEM 3 Material and equipment, services, installation, construction and testing inherent to the Work for upgrades to Oxygen Plant #2. This work includes, but is not limited to, valve replacement, demolition of pneumatic tubing, work to furnish and install new valves, conduits, wires, and control panels. This bid item includes all work associated with Oxygen Plant #2 shown on the Drawings and specified except Items specifically listed below.
- ITEM 4 All material, equipment, services, installation, construction and testing inherent to the Work associated with replacement of the coating replacement for the lower level of both cold boxes. This work includes but is not limited to: removal of existing coatings and surface preparation; containment and other lead paint abatement activities; re-coating of the cold boxes, testing, curing, and other appurtenant work, as shown on Drawing SD428-W4400-C102, as specified in Section 09 90 00, and as called out in the Contract Documents. Contractor shall include costs for handling and disposing of existing coatings high in lead that are generated as a result of the work.
- ITEM 5 All equipment, services, installation, construction and testing inherent to the Work associated with replacement of four Main Air Compressor (MAC) Motors. This work includes but is not limited to removal of existing motors, rigging, protection of piping or conduits, temporary removal of piping, installation,

electrical and controls, testing, and all other work associated with the MAC motor replacement, as shown on the Contract Documents and in accordance with Section 22 05 00, Air Compressor Motor Replacement.

- ITEM 6 Contractor shall include this Item in the Total Bid. The Contractor shall remove and dispose of the existing perlite from each cold box. The Contractor shall washdown each cold box after the perlite is removed. The Contractor shall procure and install new perlite for each cold box. Volume of perlite meeting the requirements of Section 07 21 23, Loose-fill Insulation shall be 7,400 cubic-feet for each cold box (this volume pertains to the media volume only, supersack volume may be greater). Work shall be completed in accordance with Section 07 21 23, Loose-Fill Insulation. This Item shall also include removal and disposal of existing vermiculite from each turbine duct assembly and installation of new vermiculite.
- ITEM 7 Leak testing in accordance with Section 01 75 17, Field Testing and Startup. Contractor shall be responsible for testing and retesting until leaks are repaired. Contractor shall clean all high purity and liquid oxygen piping, including stainless steel piping, in accordance with 01 35 13, Special Project Procedures. Contractor shall be responsible for consulting with its cryogenic oxygen expert to ensure proper safety and cleaning protocols are observed prior to returning high purity or liquid oxygen processes to service.
- ITEM 8 Allowance for partnering, as described in Section 01 31 20. Contractor shall be reimbursed for actual expenses incurred with no mark-up. Any monies remaining shall be returned to the District.
- ITEM 9 Allowance to pay for unforeseen additional work related to structural repair work, inaccurate electrical or mechanical as-built drawings (or needed field modifications), or additional start-up and commissioning support. This work may include additional demolition, concrete work, reinforcing, piping, coatings work, or conduit installation, to install all required improvements. Any monies remaining shall be returned to the District.
- ITEM 10 Allowance for hazardous waste containment, treatment, and/or disposal with the exception hazardous materials generated in Bid Item 4. This allowance will pay for extra costs incurred due to the unexpected handling and disposal requirements if materials not specifically called out as hazardous in this contract are found to be hazardous. Any monies remaining shall be returned to the District.
- ITEM 11 Allowance for the completion, delivery, of detailed final record drawings as required by Section 01 78 39 Record Drawings. Contractor shall submit monthly record drawings for new work done. Any monies remaining shall be returned to the District.

- ITEM 12 Allowance will be made for an electrical subcontractor to correct existing electrical, instrumentation, communications, and control wiring issues in the construction area inconsistent with the drawings and/or as-builts. Any monies remaining shall be returned to the District.
- ITEM 13 Allowance for relocating or repairing mechanical, electrical, instrumentation, control wiring, and pneumatic controls for improvements related to safety, operability, conflicts with existing piping or equipment, and/or access. Repairs billed from this allowance shall be for existing leaky or damaged tubing, piping, cables, or conduits not damaged as a result of the Contractor's work activities.

THIS PAGE IS LEFT INTENTIONALLY BLANK.



PROPOSAL

DATE _____

TO THE EAST BAY MUNICIPAL UTILITY DISTRICT, OAKLAND, CALIFORNIA:

Pursuant to the foregoing notice to contractors, the undersigned bidder herewith submits a proposal on the bidding form or forms attached hereto and made a part hereof, and binds itself on award by the East Bay Municipal Utility District under this proposal to execute in accordance with such award a contract, of which this proposal and the said notice to contractors, instructions to bidders, general conditions, specifications, and drawings shall be a part, and to furnish the bond or bonds and insurance required by the specifications. The notice to contractors, instructions to bidders, general conditions, designation of subcontractors form, contract equity participation form, specifications, and drawings are made a part of this proposal and all provisions thereof are hereby accepted. The undersigned swears and affirms under penalty of perjury that the information provided on the bidding form or forms is true and correct.

The bidder further agrees that, in case of its default in executing the required contract and the required bond or bonds, or furnishing the required insurance, the money payable under the bid bond accompanying this proposal shall be applied by the District towards payment of the damage to the District on account of such default, as provided in the specifications.

Do Not Submit
In order to submit a
Bid, you must obtain
a hardcopy version of
the bid documents from
the District.

(Affix Notarial
Acknowledgment of
Signature – if partnership
or proprietorship)

FIRM _____
By (Signature) _____
TITLE _____
ADDRESS _____

ZIP _____

PHONE _____

Nature of firm (corporation, partnership, etc.) and names of individual members of the firm, or names and titles of officers of the firm, or names and titles of officers of the corporation.

Corporation organized under the laws of the State of _____

Contractor's License No. State of California _____

Class _____ License Expiration Date _____

Do Not Submit

In order to submit a

THIS PAGE IS INTENTIONALLY LEFT BLANK

Bid, you must obtain

*a hardcopy version of
the bid documents from
the District.*



BIDDER'S BOND

KNOW ALL PERSONS BY THESE PRESENTS:

That _____

as Principal (name and California address where service may be effected), and _____

as Surety (name and California address where service may be effected), are held and firmly bound unto the EAST BAY MUNICIPAL UTILITY DISTRICT, hereinafter called the District, in the sum equal to Ten Per Cent of the Total Amount of the Bid submitted by the Principal to the District under the Specifications accompanying this bond and which are incorporated by reference herein, or One Thousand Dollars (\$1,000), whichever is greater, for the payment of which sum in lawful money of the United States of America to the District we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The condition of the above obligation is such that, whereas the Principal has submitted said bid to the District;

NOW, THEREFORE, if the Principal is awarded a contract by the District and, within the time and in the manner required by said Specifications, enters into a written contract with the District and furnishes the requisite bond or bonds, then this obligation shall become null and void, otherwise to remain in full force and effect.

In the event suit is brought upon this bond by the District and judgment is recovered, the Surety shall pay all costs incurred by the District in such suit, including a reasonable attorney's fee to be fixed by the Court.

DATE: _____

*Do Not Submit
In order to submit a
Bid, you must obtain
a hardcopy version of
the bid documents from
the District.*

By _____ Principal

*Title _____

By _____

**Title _____

(SEAL OF SURETY)

Surety

By _____

Title _____

Note: The signature of the Surety on this bond must be acknowledged before a Notary Public. An executed Power of Attorney indicating that the Surety's representative is authorized to bind the Surety must accompany this bond.

Specifications / Proposal No. _____

THIS PAGE IS INTENTIONALLY LEFT BLANK

EAST BAY MUNICIPAL UTILITY DISTRICT



CONTRACT EQUITY PROGRAM
AND
EQUAL EMPLOYMENT
OPPORTUNITY GUIDELINES

MARCH 2019

TABLE OF CONTENTS

I. CONTRACT EQUITY PROGRAM	1
A. Good Faith Outreach Efforts	2
B. Exemptions From Outreach Requirements	3
C. Informational Meetings	5
D. Documentation	5
II. EQUAL EMPLOYMENT OPPORTUNITY	6
A. Employment Data & Certification (Form P-025)	6
B. Good Faith Outreach Efforts Towards Equal Employment Opportunity	7
C. Contractors' EEO Responsibilities Arising From The Performance Of The District Contract	8
D. Monitoring Compliance	8
III. CONTRACT COMPLIANCE	9
A. Records	9
B. Subcontractor Substitution or Replacement	10
IV. CONSEQUENCES OF NONCOMPLIANCE	12
A. Enforcement	12
B. Contractor's Noncompliance	12
C. Subcontractor's Noncompliance	13
V. SUMMARY OF FORMS	14
VI. APPENDIX	15
Policy Statements	15
Agencies With Business Directories	16
EBMUD Business Directory	16
Glossary Of Terms	17

I. CONTRACT EQUITY PROGRAM

The following Contract Equity (CE) Program Guidelines were established to enhance equal opportunities for business owners.

The District provides assistance to all prospective bidders/proposers in obtaining subcontractor participation by all availability groups, including identification of possible business enterprises.

The CE Program requires bidders/proposers to conduct outreach to potential subcontractors to ensure that opportunities to participate in District contracts are publicized as widely as possible. This outreach is intended to broaden the pool of competitive bidders, lower prices to the District, and help achieve diversity among District contractors and subcontractors. The District's expectation is that with bidders'/proposers' Good Faith Outreach Efforts to subcontractors of all races, ethnicities, genders, and sexes, the composition of District contractors and subcontractors will reflect the broad diversity present in the marketplace, consistent with the Contracting Objectives of the CE Program.

Additionally, contractors and workers located in the counties of Alameda, Contra Costa, San Joaquin, Calaveras, Amador and other counties that are directly impacted by District contracts and/or operations, should be targeted in outreach efforts.

A bidder's/proposer's noncompliance with these guidelines may deem its bid or proposal nonresponsive, and therefore, ineligible for contract award.

The requirement of the District's CE Program is that all bidders/proposers **shall document** Good Faith Outreach Efforts in the ten areas set forth in Section A. Section B provides an exemption from this requirement for bidders/proposers who meet the District's Contracting Objectives or obtain a waiver from the District's Contract Equity Administrator.

Materiality: The documentation and certification required by the District are material, will govern the potential contractor and its subcontractors' performance and will be made part of the bid/proposal and the resulting contract with the District.

Nondiscrimination: There shall be no discrimination against any person, or groups of persons, per Government Code Section 12940, Labor Code Section 1735, or any other applicable law or regulation in the performance of this contract.

There shall be no discrimination in the performance of this contract, against any person, or group of persons, on account of race, religious creed, color, national origin, ancestry, physical disability (including HIV and AIDS), mental disability, medical condition (including genetic characteristics or cancer), genetic information, marital or domestic partnership status, family or medical leave status, sex, gender, gender identity, gender expression, age (over 40), sexual orientation, military and veteran status, pregnancy, pregnancy disability leave status, or any other status protected by federal, state and local laws. The Contractor shall not establish or permit any such practice(s) of discrimination with reference to the contract. Contractors determined to be in violation of this section will be deemed to be in material breach of the contract.

Contractor and its subcontractors shall abide by the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified

individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex, sexual orientation, gender identity, or national origin in the performance of this contract. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, national origin, protected veteran status or disability.

The Contractor shall include the nondiscrimination and compliance provisions of this clause in all subcontracts.

The Contractor shall post applicable EEO policies and the District's "Working Together With Respect" poster to this effect in its workplace where the District contract is being performed.

Severability: Should any part of the CE Program be declared to be unconstitutional, invalid, or beyond the authority of the District to enter into or carry out, by a final decision of a court or tribunal of competent jurisdiction, such decision shall not affect the validity of the remainder of the Program, which shall continue in full force and effect.

A. GOOD FAITH OUTREACH EFFORTS

All bidders/proposers shall implement all ten of the Good Faith Outreach Efforts listed below which are based on California Public Contract Code Section 2000¹, subject to the provisions of Section B, and are encouraged to attend any pre-solicitation, pre-bid or pre-proposal meetings scheduled by the District to inform all bidders/proposers of the CE Program requirements.

The apparent low bidder/recommended proposer shall submit Form P-041 documenting such Good Faith Outreach Efforts, as applicable, within **2 Work Days** of bid opening time or in accordance with submittal guidelines in the request for proposal, bid document, or Instruction to Bidders.

To demonstrate Good Faith Outreach Efforts in each of the ten areas, the bidder/proposer shall have:

1. ***signed and submitted*** the Contract Equity Program Guidelines Certification, Form P-042, with the bid or proposal documents, certifying that the bidder is informed as to the Program requirements;
2. ***identified and selected*** specific subcontracting, supplying, and trucking areas of the contract to be performed by business enterprises in all availability groups as defined herein;
3. ***advertised*** not less than 10 calendar days before the date the bids/proposals are due, in one or more daily or weekly newspapers, minority, women or other association publications, trade-oriented journals, or other media, specified by the District, for all business enterprises that may be interested in participating in the contract;
4. ***provided*** written notice of interest in bidding/proposing on the contract to a reasonable number of enterprises in all availability groups not less than 10 calendar days before the date the bids/proposals are due. The District's business directory, which includes white men-,

¹ The District will apply Section 2000 to include ALL business enterprises (not limited to minority- and women-owned business enterprises); and the term "local agency" in that section has been changed to "District".

white women-, and ethnic minority-owned firms, is available free of charge². A list of agencies that also provide business directories can be found in the appendix of these guidelines;

5. ***followed up*** initial solicitations of interest by contacting the business enterprises to determine with certainty whether the enterprises are interested in performing specific items of the project;
6. ***provided*** interested business enterprises with information about the proposal, plans, specifications, and requirements for the selected subcontracting or material supply work;
7. ***requested*** assistance from community organizations or contractor groups; local, state, or federal business assistance offices, or other organizations that provide assistance in the recruitment and placement of business enterprises, if any is available;
8. ***negotiated*** in good faith with the business enterprises in all availability groups, and did not unjustifiably reject as unsatisfactory bids/proposals prepared by any such business enterprises, as determined by the District;
9. ***advised and/or made*** efforts, where applicable, to assist interested business enterprises in all availability groups in obtaining bonds, lines of credit, or insurance required by the District or potential contractor; and
10. ***implemented*** efforts that the District could reasonably expect to obtain business enterprise participation reflective of the broad diversity of contractors in the marketplace.

B. EXEMPTIONS FROM OUTREACH REQUIREMENTS

1. CONTRACTING OBJECTIVES

The District has Contracting Objectives³ based on the availability of all firms located in the District's geographic market areas that are interested in and able to do business with the District. Contracting Objectives apply to all contractors, regardless of their race, ethnicity, gender, or sex and to all contracts that are determined to have subcontracting opportunities, including supply opportunities and trucking. The CE Program groups all businesses into three (business owner) availability groups⁴:

- White Men
- White Women
- Ethnic Minority (both men and women)

Publicly held corporations managed and controlled by 51% of one of the three availability groups may count their participation towards meeting the contracting objective for that group.

²The names of the firms listed in these directories are offered as a service. EBMUD has no independent knowledge regarding the composition of the firm's ownership, or the quality of the work performed by any listed entity.

³ The Contracting Objectives represent percentages of the total value of a contract. The dollar value of the work performed by the contractor and his/her subcontractors is included in calculating the amount of participation by each availability group and determining if the Contracting Objectives are met. Contracting Objectives are based on the results of a Disparity Study conducted by the District which verified the number of businesses located within the District's geographic market area available to perform prime and subcontract work in all contracting categories.

⁴ For example, when subcontracting opportunities are available, a \$200,000 construction contract would have 25% (\$50,000) or more of the work performed by white men-owned businesses, 9% (\$18,000) or more by white women-owned businesses, and 25% (\$50,000) by ethnic minority-owned businesses (both men and women.)

Bidders/Proposers who already meet or exceed the Contracting Objectives for **all three availability groups**, as listed in the chart below, are exempt from the Good Faith Outreach Efforts requirements set forth in Section A.

CONTRACTING OBJECTIVES			
AVAILABILITY GROUP	CONTRACTING CATEGORIES		
	Construction	Professional or General Services	Materials & Supplies
White Men	25%	25%	25%
White Women	9%	6%	2%
Ethnic Minorities (Men and Women)	25%	25%	25%

Contract participation includes all written agreements with business enterprises for any goods and services required for the completion of the project. This includes participation as a:

- Contractor
- Joint Venture Partner
- Subcontractor (including Trucker)
- Supplier (including provider of other services necessary to fulfill the requirements of the contract, such as shipping, transportation, testing, equipment rental, insurance services, etc.)

All business enterprises shall perform a commercially useful function, i.e., shall be responsible for the execution of a distinct element of work and shall carry out their responsibility by actually performing, managing and/or supervising the work.

The dollar value of the following is included for determining the amount of participation by each availability group for the Contracting Objectives:

- the work to be performed by the contractor,
- the work to be performed by each member of a joint venture,
- the work to be performed by subcontractors at any tier,
- material or supplies purchased from a manufacturer or dealer of such material or supplies, if not previously counted by contractor, joint venture, or subcontractor in their dollar value,
- reasonable fees and commissions for providing bona fide services to procure and/or deliver essential personnel, facilities, equipment, materials, or supplies required for performance of the contract,
- reasonable fees and commissions for providing bonds or insurance specifically required for the performance of the contract, and
- the dollar value of trucking is based on the following:
 - the amount to be paid to a trucker who performs the trucking with his/her own trucks, tractors, and employees,
 - the amount to be paid to trucking brokers provided the broker has submitted to the District information identifying the availability groups of all truckers to be used on the project, or
 - twenty percent (20%) of the amount to be paid to a trucking broker who has not provided such information.

2. NO SUBCONTRACTING OPPORTUNITIES

Contracts which can be reasonably demonstrated to have no subcontracting, supplying, or trucking opportunities are exempt from the Good Faith Outreach Efforts requirements.

3. WAIVER

Under limited circumstances, at the discretion of the Contract Equity Administrator, and upon written request by the bidder/proposer, a waiver of the CE Program's Good Faith Outreach Efforts requirements may be granted.

C. INFORMATIONAL MEETINGS

The District may hold pre-solicitation, pre-bid, and/or pre-proposal meetings to explain the technical specifications and the Contract Equity Program and Equal Employment Opportunity Guidelines for an individual project. All prospective bidders/proposers/subcontractors are strongly advised to attend such pre-meetings. The time and place of the meeting, if any, will be announced in the front section of the bid/proposal document.

Pre-award and/or pre-notice-to-proceed meetings may be held with the recommended awardee to ensure that the technical specifications and the Contract Equity Program and Equal Employment Opportunity Guidelines for the project are fully understood, and to discuss the contents of the submitted forms and documents.

D. DOCUMENTATION

1. CONSTRUCTION AND MATERIALS AND SUPPLIES CONTRACTS WITH SUBCONTRACTABLE ITEMS ONLY

Apparent low bidders may be required to document Good Faith Outreach Efforts to achieve subcontractor participation within **2 Work Days** of bid opening time unless this requirement is otherwise stated in the Instruction to Bidders. Failure to submit the required information by the time specified may be grounds for determining the bid non-responsive.

II. EQUAL EMPLOYMENT OPPORTUNITY

Pursuant to Policy 1.04 – Contractors’ Compliance with Equal Employment Opportunity, approved by the Board of Directors, all business enterprises and their subcontractors performing work for the District shall be Equal Employment Opportunity (EEO) employers. All business enterprises and their subcontractors shall assure that there is no discrimination, harassment or retaliation against any person based on race, religious creed, color, national origin, ancestry, physical disability (including HIV and AIDS), mental disability, medical condition (including genetic characteristics or cancer), genetic information, marital or domestic partnership status, family or medical leave status, sex, gender, gender identity, gender expression, age (over 40), sexual orientation, military and veteran status, pregnancy, pregnancy disability leave status, or any other status protected by federal, state and local laws, and shall be bound by all laws prohibiting such discrimination, harassment or retaliation in employment.

District contractors shall have written policies and procedures that a) prohibit EEO discrimination, harassment and retaliation, and b) set forth the contractor’s investigation procedures for responding to EEO complaints. Contractors shall submit documentation of those written policies and procedures upon request by the District in order to be considered as eligible for contract award. Contractors shall also post applicable EEO policies, procedures and the District’s “Working Together With Respect” poster in their workplaces where the District contract is being performed.

A. EMPLOYMENT DATA & CERTIFICATION (Form P-025)

The Employment Data and Certification Form P-025 shall be completed as specified below or bid/proposal may be deemed nonresponsive:

1. For all Bidders/Proposers of the bid/proposal, to be submitted with bid package:

Complete Sections A and B of Form P-025. In Section B, the required employment data shall be for the bidder’s/proposer’s permanent workforce⁵ only. An EEO-1 Report may be submitted in lieu of completing Section B. For informational purposes, the P-025 Form provides for a comparison of the bidder’s/proposer’s current workforce with the composition of the labor market in the Metropolitan Statistical Area or Areas (MSA) from which the bidder’s/proposer’s workforce is drawn. The bidder/proposer shall also complete Section C of Form P-025.

2. For Subcontractors/Suppliers/Truckers of the apparent low bidder, to be submitted within 2 Work Days of bid opening time or proposal submission due date:

Each bidder/proposer shall submit a Form P-025 for each subcontractor/supplier/trucker known at this time performing work equal to or greater than **\$80,000** under this specification in accordance with submission requirements given in the Instructions to Bidders or the Request for Proposal. The form shall be completed as provided in Paragraph 1. For informational purposes, the P-025 Form provides for a comparison of the subcontractor’s/supplier’s/trucker’s current

⁵ Permanent workforce is defined as employees with 6 months or more of continuous service.

workforce with the composition of the labor market in the MSA from which the subcontractor's/supplier's/trucker's workforce is drawn.

B. GOOD FAITH OUTREACH EFFORTS TOWARDS EQUAL EMPLOYMENT OPPORTUNITY

Upon request, the apparent low bidder/proposer shall submit satisfactory documentation showing voluntary and legal Good Faith Outreach Efforts on its part to assure that its employment practices comply with EEO laws.

The District has not attempted to set forth either the minimum or maximum voluntary steps that contractors may take to address their respective employment situations. Contractors who do business with the District have flexibility to make those efforts that are best suited to their particular employment situation so long as those efforts are legal, in good faith and will best serve the goal of equal employment opportunity. Contractors have the option of submitting a copy of their Affirmative Action Plan, if they have one, or documentation of Good Faith Outreach Efforts which may include, but is not limited to, the following:

- Disseminating an equal employment opportunity and affirmative action policy both within the organization and externally.
- Having a recruitment program designed to attract qualified members of all ethnic and gender backgrounds available in the relevant job market such as by:
 - ✓ Notifying community organizations when employment opportunities are available and maintaining records of the organizations' responses;
 - ✓ Maintaining a file of the names and addresses of every worker referred as a result of outreach efforts, indicating what action was taken with respect to each referred person, and if the person was not employed, the reasons why;
 - ✓ Promptly notifying the District when the union(s) with whom the contractor or subcontractor has a collective bargaining agreement has not referred a worker, as requested; and
 - ✓ Making periodic recruitment efforts at schools, organizations, recruitment and training centers.
- Having a systematic plan to organize work and redesign jobs in ways that provide opportunities for persons lacking journey-level knowledge or skills to enter and, with appropriate training, to progress in a career field.
- Revamping selection procedures and seniority practices which have not yet been validated in order to reduce or eliminate exclusionary effects on particular groups in particular job classifications.
- Initiating measures designed to assure that members of all ethnic and gender backgrounds who are qualified to perform the job are included within the pool of persons from which the selection is made.
- Participating in community-based training programs and on-the-job training opportunities.
- Promoting after-school, summer and vacation employment for youth.
- Establishing a system to regularly monitor the effectiveness of the program for removing barriers to achieve equal employment opportunity, and the procedures for making timely adjustments in this program where effectiveness is not demonstrated.

C. CONTRACTORS' EEO RESPONSIBILITIES ARISING FROM THE PERFORMANCE OF THE DISTRICT CONTRACT

The District requires all contractors to comply with state and federal EEO laws.

Contractors are required to promptly and appropriately address all EEO concerns that arise from the performance of the District contract raised by:

- Their employees,
- Their job applicants,
- EBMUD employees who allege EEO discrimination or harassment by the contractor or contractor's employee, and/or
- Members of the public who allege EEO discrimination or harassment by the contractor or contractor's employees.

All contractors shall cooperate fully with any District investigation of EEO complaints arising from the performance of the District contract that involve District staff. In that event, the District will provide copies of its policies and procedures regarding such investigations, and will require the contractor's cooperation in accordance with those policies and procedures.

All contractors shall distribute copies of their EEO policy, EEO complaint procedure, and the District's "Working Together With Respect" brochure/poster to all of their employees and post them in a prominent and accessible location in the workplace or on the project site. These documents shall provide the name and contact information of the contractor's staff responsible for responding to EEO concerns.

Contractors are required to provide training to all of their supervisors and managers to assure that they are aware of the contractor's prohibition against EEO discrimination, harassment and retaliation, and understand the process to report EEO concerns; and supervisors and managers shall respond appropriately when they become aware of EEO concerns. This training shall comply with California Government Code Section 12950.1.

D. MONITORING COMPLIANCE

1. PRE-CONTRACT AWARD:

The District will evaluate the documentation provided by the apparent low bidder/proposer under Section II.B and may request further documentation. The apparent low bidder/proposer shall submit all additional documentation required by the District in a timely manner or may be deemed a nonresponsive bidder/proposer. A nonresponsive bidder/proposer may be deemed ineligible for contract award.

2. POST-CONTRACT AWARD:

The District will evaluate the documentation provided by the contractor in response to EEO complaints filed per Section II.C and may request further documentation. Contractors who fail to submit the required documentation in a timely manner may be denied future contracts with the District or have their contracts terminated.

III. CONTRACT COMPLIANCE

A. RECORDS

All firms doing business with the District shall:

- maintain records of all business enterprises performing work on the project, and records of total award and payments made to those enterprises,
- permit authorized District staff and/or authorized District representatives to review such records as may be required to assure the accuracy of the submitted information,
- submit a summary of subcontractor payments to the District with each payment request/invoice on the Subcontractor Payment Report (Form P-047) in the format required by the District,
- maintain all employment and personnel records of employees who worked on the District project for a minimum of two years, and
- maintain records of action(s) taken to address EEO discrimination, harassment, and retaliation complaints filed during and arising from the performance of the EBMUD contract.

NOTE: Failure to submit the required information in a timely manner may cause the District to hire an auditor, at the contractor's expense, to compile summary payment information, and/or may result in the withholding of payments and/or termination of the contract.

If requested by the District, the contractor shall submit the contractor's and/or subcontractors' records. These records are specified in the contract and may include any or all of the following:

- All contracts or purchase orders entered into with subcontractors, truckers, and suppliers;
- Payment records reflecting total contract award and total dollars actually paid to subcontractors, truckers, and suppliers. Such records shall indicate the name, business address, and actual monthly amount for each firm. Upon completion of the contract, the contractor shall submit, within thirty (30) calendar days, a summary of all the monthly summaries showing total dollars actually paid each firm during the whole contract;
- Certified weekly payroll records showing all employees and workers hired and dollar amounts and wage rates paid for work on this contract. Such payroll records shall include the name, address, social security number, sex, race, and other sufficient information for each employee to allow District verification of contractor and/or subcontractor compliance with the requirements for Equal Employment Opportunity;
- Monthly Employment Utilization Reports within ten (10) calendar days after the end of the month;
- Documentation of all Good Faith Outreach Efforts utilized in order to solicit, promote and increase all availability groups' participation;
- Records of action(s) taken to address EEO discrimination, harassment, and retaliation complaints filed during and arising from the performance of the EBMUD contract; and
- Any other records or documentation maintained by the contractor or its subcontractors which indicate their compliance with these Contract Equity Program and Equal Employment Opportunity Guidelines.

The contractor and all its subcontractors shall maintain records which include for each employee their:

- name,
- address,
- telephone number,
- construction trade/union affiliation/trade status (if any),
- dates of changes in trade status (if any),
- employee identification number (if any)/social security number,
- race,
- sex,
- hours worked per week in the indicated trade/task, and
- rate of pay.

Records shall be maintained in an easily understandable and retrievable form approved by the District.

B. SUBCONTRACTOR SUBSTITUTION OR REPLACEMENT

The contractor may request to substitute or replace any subcontractor, including truckers, and suppliers, listed on the Form P-040 - Contract Equity Participation. Such requests shall be in writing, clearly state the reasons for the substitution or replacement, and provide supporting evidence or documentation as appropriate. No substitution or replacement shall occur without the prior written authorization of the District.

Authorization to utilize another subcontractor may be requested for the following reasons:

1. When the subcontractor listed in the bid after having had a reasonable opportunity to do so fails or refuses to execute a written contract, when that written contract, based upon the general terms, conditions, plans and specifications for the project involved or the terms of such subcontractor's written bid, is presented to the subcontractor by the Contractor, or
2. When the listed subcontractor becomes bankrupt or insolvent, or
3. When the listed subcontractor fails or refuses to perform his subcontract, or
4. When the listed subcontractor fails or refuses to meet the bond requirements of the Contractor as set forth in Section 4108 of the Public Contract Code, or
5. When the Contractor demonstrates to the District, subject to the further provisions set forth in Section 4107.5 of the Public Contract Code, that the name of the subcontractor was listed as the result of an inadvertent clerical error, or
6. When the listed subcontractor is not licensed pursuant to the Contractors License Law, or
7. When the District determines that the work performed by the listed subcontractor is substantially unsatisfactory and not in substantial accordance with the plans and specifications, or that the subcontractor is substantially delaying or disrupting the progress of the work, or
8. When the listed subcontractor is ineligible to work on a public works project pursuant to Section 1725.5, 1777.1 or 1777.7 of the Labor Code, or
9. When the listed subcontractor is not a responsible contractor.

Prior to approval of the prime contractor's request for the substitution the District shall give notice in writing to the listed subcontractor of the prime contractor's request to substitute and of the reasons for the request. The notice shall be served by certified or registered mail to the last known address of the subcontractor. The listed subcontractor who has been so notified shall have five working days within which to submit written objections to the substitution to the awarding authority. Failure to file these written objections shall constitute the listed subcontractor's consent to the substitution.

If written objections are filed, the District shall give notice in writing of at least five work days to the listed subcontractor of a hearing by the awarding authority on the prime contractor's request for substitution.

The contractor whose bid is accepted may not:

- (a) permit a subcontract to be voluntarily assigned or transferred or allow it to be performed by anyone other than the original subcontractor listed on the P-040 Form, without the consent of the District.
- (b) Other than in the performance of "change orders" causing changes or deviations from the original contract, sublet or subcontract any portion of the work in excess of one-half of one percent of the prime contractor's total bid as to which his or her original bid did not designate a subcontractor.

If a subcontractor is replaced, the contractor shall make Good Faith Outreach Efforts as set forth in these Contract Equity Program and Equal Employment Opportunity Guidelines when replacing the original or listed subcontractor with another District-approved firm. The contractor shall not be entitled to any payment for such work or material unless it is performed or supplied by the listed subcontractor or by other forces (including those of the contractor) pursuant to prior written authorization of the District.

IV. CONSEQUENCES OF NONCOMPLIANCE

A. ENFORCEMENT

During the performance of the contract, the District may review the contractor's and its subcontractors' compliance with these Contract Equity Program and Equal Employment Opportunity Guidelines. Compliance shall be evaluated and measured from the initial day of performance under this contract. Noncompliance may be deemed a substantial material breach of the contract and the contract may be terminated.

Where the District finds the contractor or any of its subcontractors to be in noncompliance, the District may take such actions and impose such sanctions and penalties, described below, as may be appropriate to enforce compliance and recover District costs for damages caused by the breach of contract.

The District will notify the contractor in writing where the contractor or any of its subcontractors are not in compliance with these Contract Equity Program and Equal Employment Opportunity Guidelines. The contractor shall then notify the District in writing within five (5) working days as to what corrective measures shall be implemented by the contractor and/or subcontractor, trucker, and supplier to effect compliance.

In the event that the contractor or any of its subcontractors is still in noncompliance fifteen (15) working days after the date of the District's written citation, the contractor shall provide the District, within two (2) working days from the District request to do so, written documentation of all corrective measures and Good Faith Outreach Efforts implemented and their results.

B. CONTRACTOR'S NONCOMPLIANCE

In the event of the contractor's noncompliance with these Contract Equity Program and Equal Employment Opportunity Guidelines during bidding/proposing, the contractor's bid/ proposal may be deemed nonresponsive, and therefore, ineligible for contract award.

In the event of the contractor's noncompliance with these Contract Equity Program and Equal Employment Opportunity Guidelines during the performance of the contract, the contractor may be considered in material breach of contract. In addition to any other remedy which the District may have under this contract or by operation of law, the District in its sole discretion may impose the following provisions against the contractor:

- Withhold progress payments to the contractor starting from the date of the District's written notification of noncompliance to the contractor and continuing for up to sixty (60) working days after the notification date or until compliance is verified by the District, or the contractor demonstrates to the satisfaction of the District that Good Faith Outreach Efforts have been implemented to correct the noncompliance, whichever occurs first.

In the event of willful noncompliance as determined by the District, the District may cancel or suspend the contract in whole or in part with continuance thereof conditioned upon showing a satisfactory to the District of the contractor's ability to comply.

C. SUBCONTRACTOR'S NONCOMPLIANCE

The contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Contract Equity Program and Equal Employment Opportunity Guidelines.

The contractor shall take such action, including sanctions and penalties as appropriate, with respect to any subcontract or purchase order as necessary to enforce the terms and conditions of these Contract Equity Program and Equal Employment Opportunity Guidelines. In the event that the District determines that a subcontractor is in noncompliance, the District may also ask the contractor to terminate any such subcontract and substitute an eligible subcontractor in lieu thereof, at no increase in the contract price or time for performance.

Failure of the contractor to enforce subcontractor compliance with these guidelines may also be deemed a substantial material breach of the contract. The District, in its sole discretion, may impose against the contractor any or all of the provisions noted for contractor's noncompliance until such time that subcontractor's compliance is achieved.

V. SUMMARY OF FORMS

CONSTRUCTION BIDDERS SHALL COMPLETE AND SUBMIT:

- ☐ **Form P-025**– Employment Data and Certification
*(all Bidders shall submit with their bid; the apparent low Bidder **shall**, within 2 Work Days of bid opening time, **also submit** for all known Subcontractors doing \$80,000 or more worth of work)*
 - ☐ **Form P-040**– Contract Equity Participation
(apparent low and second low Bidders within 2 Work Days of bid opening time)
 - ☐ **Form P-041**– Good Faith Outreach Efforts Documentation
(apparent low Bidder within 2 Work Days of bid opening time)
 - ☐ **Form P-042**– Contract Equity Program Guidelines Certification Form
(apparent low and second low Bidders within 2 Work Days of bid opening time)
 - ☐ **Form P-046**– Designation of Subcontractors
*(all Bidders **shall** submit with bid; for all subcontractors doing over one-half of one percent of the Contractor's total bid amount)*
-

MATERIALS AND SUPPLIES BIDDERS SHALL COMPLETE AND SUBMIT:

- ☐ **Form P-025**– Employment Data and Certification
*(all Bidders shall submit with their bid; the apparent low Bidder **shall**, within 2 Work Days of bid opening time, **also submit** for all known Subcontractors doing \$80,000 or more worth of work)*
 - ☐ **Form P-040**– Contract Equity Participation
(apparent low and second low Bidders within 2 Work Days of bid opening time)
 - ☐ **Form P-041**– Good Faith Outreach Efforts Documentation
(apparent low Bidder within 2 Work Days of bid opening time)
-

PROFESSIONAL/GENERAL SERVICES PROPOSERS SHALL COMPLETE AND SUBMIT WITH PROPOSAL:

- ☐ **Form P-025**– Employment Data and Certification
(all Proposers and their known Subcontractors doing \$80,000 or more worth of work)
- ☐ **Form P-040**– Contract Equity Participation
(all Proposers)
- ☐ **Form P-041**– Good Faith Outreach Efforts Documentation
(recommended Proposer as requested)

VI. APPENDIX

POLICY STATEMENTS

Policy 1.03 – Contract Equity Program

Prevent the District from participating in or perpetuating discrimination in the marketplace or granting of preferences based on race, sex, ethnicity or other protected categories as prohibited by Article 1, Section 31, of the California Constitution. The District will encourage balanced opportunities among all sexes, and racial and ethnicity groups by establishing contract participation objectives based on the availability, in its geographic market areas, of businesses by race, sex and ethnicity that are willing and able to do business with the District. The contracting objectives will be reviewed regularly and the progress toward achievement of the objectives will be reported to the Board of Directors in order to monitor achievement of equitable parity in contract participation.

Policy 1.04 – Contractors’ Compliance With Equal Employment Opportunity

Ensure that all enterprises that do business with the District take lawful and adequate steps to assure that their employment practices comply with EEO laws.

Contractors shall furnish all information and reports required by the District to ensure their compliance with these policies. Notification of these policies will serve as official notice in determining responsiveness and compliance. Contractors who fail to comply with these policies may be denied contracts with the District or have their contracts terminated.

AGENCIES WITH BUSINESS DIRECTORIES

- **State of California – Department of Transportation**
Civil Rights Program – MS 79
1823 – 14th Street, Sacramento, CA 95814
916-324-8347, Fax: 916-324-1949, Toll Free: 866-810-6346
Email: DBE_Certification@dot.ca.gov
Website: http://www.dot.ca.gov/hq/bep/find_certified.htm
Publication Distribution Unit - Disadvantaged Business Enterprise Directory
1900 Royal Oaks Drive, Sacramento, CA 95815-3800
916-445-3520
- **City of Oakland – Contract Compliance & Employment Services Division**
250 Frank H. Ogawa Plaza, Suite 3341, Oakland, CA 94612
510-238-3970, Fax: 510-238-3363
Email: cces@oaklandnet.com
Website: <http://cces.oaklandnet.com/ContComp>
- **City and County of San Francisco – Human Rights Commission**
25 Van Ness Avenue, Suite 800, San Francisco, CA 94102-6033
415-252-2530
Email: hrc.info@sfgov.org Website: <http://sf-hrc.org/>
- **Port of Oakland**
530 Water Street, Oakland, CA 94607
510-627-1419
Email: pbell@portoakland.com – Pamela Bell, SRD Contract Compliance
Website: <http://www.portofoakland.com/srd/>
- **Alameda County General Services Agency**
1221 Oak Street, Room 249, Oakland, CA 94612
510-891-5500;
Email: Patricia McFadden for SLEB Certification – patricia.mcfadden@acgov.org
Susan Wewetzer for Contract Compliance – susan.wewetzer@acgov.org
Website: <http://www.acgov.org/auditor/sleb>
- **Department of General Services – Office of Small Business & DVBE Services**
707 3rd Street, 1st Floor, Room 400, West Sacramento, CA 95605
916-375-4940, Fax: 916-375-4950
Email: OSDSHelp@dgs.ca.gov
Website: <http://www.dgs.ca.gov/pd/programs/osds.aspx>

EBMUD BUSINESS DIRECTORY

- **Contract Equity Office**
375 – 11th Street, Oakland, CA 94623
510-287-0114, Fax: 510-287-2158
Email: cntrteq@ebmud.com

GLOSSARY OF TERMS

AVAILABILITY GROUPS:

- **White Men-Owned Business:** An independent business that is at least 51% owned, operated and controlled by one or more non-ethnic minority men who are citizens or lawful permanent residents of the United States.
- **White Women-Owned Business:** An independent business that is at least 51% owned, operated and controlled by one or more non-ethnic minority women who are citizens or lawful permanent residents of the United States.
- **Ethnic Minority-Owned Business:** An independent business that is at least 51% owned, operated and controlled by one or more ethnic minority persons from the following groups who are citizens or lawful permanent residents of the United States:
 - **Black/African American**
Persons having origins in any of the racial groups of Africa
 - **Hispanic/Latin American**
Persons of Mexican, Puerto Rican, Cuban, Central or South American origin
 - **Asian-Pacific Island American**
Persons having origins from Japan, China, Taiwan, Korea, Vietnam, Laos, Cambodia, the Philippines, Samoa, Guam, the U. S. Trust Territories of the Pacific, or the Northern Marianas
 - **Asian-Indian American**
Persons having origins from India, Pakistan, or Bangladesh
 - **Native American**
Persons having origins in any of the original peoples of the Americas who maintain cultural identification through tribal affiliation or community recognition

CONTRACTING OBJECTIVES:

The minimum percentage of the total value of a contract to be represented by businesses in each availability group, depending on the type of contract.

CONTRACTOR:

The individual, partnership, joint venture, or corporation with whom the contract is made by the District. A contractor may be a construction contractor, a consultant, a supplier, a trucker, or a service provider.

CONTROL:

There are two aspects of control: operational and managerial control; both of which are required. Under operational control, the 51%-or-more owner shall show that he or she independently makes the basic decisions in daily and long-term business operations. To determine managerial control, the 51%-or-more owner shall demonstrate that he or she makes independent and unilateral business decisions that guide the future and destiny of payroll clerks, letters of credit, contractual matters, banking services, and other such agreements.

DISABLED VETERAN BUSINESS ENTERPRISE:

See **SMALL BUSINESS ENTERPRISE**.

INDEPENDENT BUSINESS:

A business that is not inextricably associated with another firm through ownership, affiliation, or sharing of employees, facilities, profits, and losses.

GEOGRAPHIC MARKET AREA:

Counties where most of the businesses are located which receive District contracts.

- **Construction:** Alameda, Contra Costa, San Francisco, and San Mateo Counties
- **Professional & General Services:** Alameda, Contra Costa, San Francisco, Santa Clara, and Marin Counties
- **Supplies:** Alameda, Contra Costa, San Francisco, Santa Clara, and San Joaquin Counties

JOINT VENTURE:

An undertaking by two or more persons, without a corporate or partnership designation, formed for the purpose of carrying out a single business enterprise for profit.

LOCAL BUSINESS ENTERPRISE:

A business whose primary place of business is a fixed office located in counties, such as Alameda, Contra Costa, San Joaquin, Calaveras, Amador and other counties that are directly impacted by District contracts and/or EBMUD operations. A fixed office is not a post office box, a temporary location, a movable property, a location that was established to oversee a project such as a construction project office, or work space provided in exchange for services, as opposed to monetary rent.

LOCAL RESIDENT:

An individual employee who resides in Alameda, Contra Costa, San Joaquin, Calaveras, or Amador County or in any county(ies) directly impacted by this EBMUD project.

POTENTIAL CONTRACTOR:

An individual, partnership, joint venture, or corporation who has participated in a competitive bid process or a qualification selection process to do business with the District as a construction contractor, consultant, supplier, trucker, or service provider.

REASONABLE FEES AND COMMISSIONS:

Fees and commissions that are not excessive as compared with those customarily allowed for similar services.

SMALL BUSINESS ENTERPRISE:

“Small business” means an independently owned and operated business that is not dominant in its field of operation, the principal office of which is located in California, the officers of which are domiciled in California, and which, together with affiliates, has 100 or fewer employees, and average annual gross receipts of fifteen million dollars (\$15,000,000) or less over the previous three years, or is a manufacturer, as defined in Government Code Section 14837 subdivision (c), with 100 or fewer employees.

For the purposes of public works contracts, as defined in Section 1101 of the Public Contract Code, and engineering contracts, as described in Section 4525 of the Government Code, for public works projects, awarded through competitive bids or otherwise, “small business” means an independently owned and operated business that is not dominant in its field of operation, the principal office of which is located in California, the officers of which are domiciled in California, and which, together with affiliates, has 200 or fewer employees, and average annual gross receipts of thirty-six million dollars (\$36,000,000) or less over the previous three years.

A Disabled Veteran Business that meets the following requirements shall also fall under the definition of a small business.

DISABLED VETERAN BUSINESS ENTERPRISE:

An independent business that is at least 51% owned and managed or controlled by one or more disabled veteran(s) who are citizens or lawful permanent residents of the United States and meets all the following:

- A veteran of the U.S. military, naval, or air service;
- The veteran must have a service-connected disability of at least 10% or more; and
- The veteran must be domiciled in California.

SUBCONTRACTOR:

The person or persons, co-partnership, firm or entity in direct contract with the Contractor or with any other Subcontractor for the purpose of furnishing materials, equipment, and/or performing a part of the contract work.

SUPPLIER:

A manufacturer, fabricator, distributor, or any person or organization who supplies materials or equipment for the contract work, including that fabricated to a special design, but who does not ordinarily perform labor at the jobsite.



EMPLOYMENT DATA AND CERTIFICATION INSTRUCTIONS (P-025)

**COMPLETION OF THIS FORM IS REQUIRED FOR ALL BIDS AND PROPOSALS.
AN IMPROPER OR INCOMPLETE FORM MAY RESULT IN REJECTION OF YOUR BID OR PROPOSAL OR
TERMINATION OF YOUR CONTRACT**

The East Bay Municipal Utility District **REQUIRES** the completion of this form when submitting any formal bid in response to a Notice to Contractors (NTC), Request for Statement of Qualifications (RSOQ), Request for Quotation (RFQ), or Request for Proposal (RFP) for materials, equipment, construction or professional or general services. Bidder/Proposer who fails to complete all applicable sections of this form may be denied contracts with the District.

Note: If you have difficulty completing this form or need clarification of the instructions, contact the Contract Equity Office at 510-287-0114.

SECTION A

FIRM NAME		☐ PRIME ☐ SUBCONTRACTORS/TRUCKERS/ SUPPLIERS Submit a separate P-25 form for each subcontractor/trucker/supplier doing work for \$80,000 or more.	
PARENT COMPANY			
STREET ADDRESS (City, State, ZIP)			
MAILING ADDRESS (City, State, ZIP)			
PHONE NO.	FAX NO.	WEBSITE	E-MAIL

A1. TYPE OF ORGANIZATION

☐ INDIVIDUAL	NAME OF OWNER:	
☐ NONPROFIT CORP.	☐ PUBLICLY HELD CORP.	STATE OF INCORPORATION:
☐ PRIVATE CORP.	☐ FOREIGN-OWNED	

Name(s), title, family relationship(s) and percentage of stock ownership for all shareholders who own 25% or more of stock in the corporation.

NAME	TITLE	FAMILY RELATIONSHIP	PERCENTAGE
			%
			%
			%

☐ **JOINT VENTURE**

List of Participants – Indicate percentage of work to be realized by each.

	%
	%

☐ **PARTNERSHIP**

Names of Partners – Indicate whether (G) General or (L) Limited.

A2. COMPOSITION OF OWNERSHIP

Indicate the percent of ethnic and gender ownership below

	Non-Hispanic Origin		Hispanic/ Latin American	Asian			Native American	Other	Refuse to State*
	White/ Caucasian	Black/ African American		Asian American	Asian-Pacific Islander American	Asian- Indian American		Indicate	
MALE									
FEMALE									
TOTAL									

* Firms that refuse to state will be classified as "Other".

SECTION B

B1. EMPLOYMENT DATA

Indicate below the number of employees in each occupational category for each of the ethnic groups listed for your firm's permanent workforce. *(Report employees in only one category. Permanent workforce is defined as full- and part-time employees with 6 months or more of continuous service.)* You may attach your EEO1 report in lieu of completing the form below. Please provide both your firm's consolidated and individual establishment EEO1 reports.

JOB CATEGORIES	RACE/ETHNICITY (number of employees)														Total A–N	
	Hispanic or Latino		Not Hispanic or Latino													
			Male						Female							
	Male	Female	White	Black or African American	Native Hawaiian or Other Pacific Islander	Asian	American Indian or Alaska Native	Two or More Races	White	Black or African American	Native Hawaiian or Other Pacific Islander	Asian	American Indian or Alaska Native	Two or More Races		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
Executive/Senior Level Officials & Managers																
First/Mid-Level Officials & Managers																
Professionals																
Technicians																
Sales Workers																
Administrative Support Workers																
Craft Workers																
Laborers & Helpers																
Service Workers																
Firm's Total																
Bay Area* Total																

* Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Solano, Sonoma, and Santa Clara Counties

B1a. Identify the metropolitan statistical area (MSA) from which your firm's total permanent workforce is drawn. (See page 5)

B1c. Name of person responsible for affirmative action and compliance with equal employment opportunity laws in your firm:

B1b. If your firm's total permanent workforce is located in one county or parish, please identify:

PRINT NAME

TITLE

TELEPHONE NUMBER

SECTION C

CERTIFICATION OF FIRM'S OWNERSHIP AND COMPLIANCE WITH EQUAL EMPLOYMENT OPPORTUNITY REQUIREMENTS REGARDING EQUAL OPPORTUNITY AND AFFIRMATIVE ACTION REPORTING AND COMPLIANCE PROGRAMS INCLUDING HAVING A DISTRICT APPROVED PROCESS FOR RESPONDING TO COMPLAINTS OF DISCRIMINATION, HARASSMENT, AND RETALIATION

The undersigned has been (is) authorized to execute this certificate on behalf of _____
NAME OF FIRM

_____ and
swears under penalty of perjury that the foregoing statements are true and correct and that they include all material information necessary to identify and explain the operations of this firm as well as the ownership thereof. Any material misrepresentation will be grounds for terminating any purchase orders or contracts which may be or were awarded and for initiating actions under Federal or State laws concerning false statements. The District reserves the right to request support documentation, such as tax records, articles of incorporation and board minutes to verify composition of ownership.

The undersigned does further certify that the firm named above complies with the following non-discrimination clauses:

There shall be no discrimination against any person, or groups of persons, per Government Code Section 12940, Labor Code Section 1735, or any other applicable law or regulation in the performance of this contract.

There shall be no discrimination in the performance of this contract, against any person, or group of persons, on account of race, color, religion, religious creed, national origin, ancestry, gender including gender identity or expression, age, marital or domestic partnership status, mental disability, physical disability (including HIV and AIDS), medical condition (including genetic characteristics or cancer), genetic information, sexual orientation, or military and veteran status. The Contractor shall not establish or permit any such practice(s) of discrimination with reference to the contract. Contractors determined to be in violation of this section will be deemed to be in material breach of the contract.

Contractor and its subcontractors shall abide by the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex, sexual orientation, gender identity, or national origin in the performance of this contract. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, national origin, protected veteran status or disability.

The Contractor shall include the nondiscrimination and compliance provisions of these clauses in all subcontracts

EXECUTED IN _____

CITY, COUNTY, STATE

ON _____

DATE

BY _____

PRINT NAME

TITLE

SIGNATURE

PHONE NUMBER

P-025 SUPPLEMENT

Instructions to Determine Your Statistical Areas (SA): If you operate a business solely or predominantly within one of the SA's listed below, use that location. If you have multiple facilities within a single state, use a State SA. If you have multiple facilities throughout the United States, use Total United States percentage. If you have any questions, call 510-287-0114.

CA STATISTICAL AREAS	WM%	WW%	EM%	CA STATISTICAL AREAS	WM%	WW%	EM%
BAKERSFIELD	29.7%	24.6%	45.7%	SAN JOSE	26.9%	21.0%	52.1%
FRESNO	25.1%	21.6%	53.3%	SAN LUIS OBISPO-ATASCADERO-PASA ROBLES	42.3%	36.6%	21.1%
LOS ANGELES-LONG BEACH	20.2%	16.4%	63.5%	SANTA BARBARA-SANTA MARIA-LOMPOC	31.8%	28.6%	39.6%
MERCED	24.9%	21.1%	54.0%	SANTA CRUZ-WATSONVILLE	37.5%	32.1%	30.4%
MODESTO	33.0%	28.4%	38.6%	SANTA ROSA	39.8%	36.9%	23.4%
OAKLAND	28.0%	24.2%	47.8%	STOCKTON-LODI	28.1%	24.5%	47.4%
REDDING	46.6%	41.5%	11.9%	VALLEJO-FAIRFIELD-NAPA	30.2%	26.8%	42.9%
RIVERSIDE-SAN BERNADINO	28.2%	23.4%	48.3%	VENTURA	33.3%	27.6%	39.1%
SACRAMENTO	36.1%	32.3%	31.6%	YUBA CITY	34.9%	31.0%	34.1%
SAN DIEGO	32.4%	27.5%	40.2%				
SAN FRANCISCO	30.8%	25.1%	44.0%				

CA COUNTIES	WM%	WW%	EM%	CA COUNTIES	WM%	WW%	EM%
9 BAY AREA COUNTIES*	32.3%	27.8%	39.9%	SAN BERNARDINO	26.5%	22.3%	51.1%
ALAMEDA/CONTRA COSTA	28.9%	24.9%	46.2%	SAN DIEGO	32.4%	27.5%	40.2%
ALAMEDA	24.5%	21.6%	53.9%	SAN FRANCISCO	29.2%	22.5%	48.3%
CONTRA COSTA	33.3%	28.2%	38.5%	SAN JOAQUIN	28.1%	24.5%	47.4%
EL DORADO	46.7%	39.4%	13.9%	SAN LUIS OBISBO	42.3%	36.6%	21.1%
FRESNO	24.7%	21.4%	54.0%	SAN MATEO	28.6%	23.6%	47.9%
LOS ANGELES	20.2%	16.4%	63.5%	SANTA CLARA	26.9%	21.0%	52.1%
MARIN	42.8%	38.4%	18.8%	SANTA CRUZ	37.5%	32.1%	30.4%
MENDOCINO	40.4%	37.0%	22.6%	SHASTA	46.6%	41.5%	11.9%
MERCED	24.9%	21.1%	54.0%	SOLANO	27.8%	24.6%	47.6%
MONTEREY	23.8%	21.3%	54.9%	SONOMA	39.8%	36.9%	23.4%
NAPA	37.6%	33.5%	28.8%	ST ANISLAUS	33.0%	28.4%	28.6%
ORANGE	30.9%	25.5%	43.6%	YOLO	31.7%	29.8%	38.5%
RIVERSIDE	30.1%	24.7%	45.3%	YUBA	36.7%	34.0%	29.4%
SACRAMENTO	32.7%	30.0%	37.3%	*ALAMEDA, CONTRA COSTA, MARIN, NAPA, SAN FRANCISCO, SAN MATEO, SOLANO, SONOMA, AND SANTA CLARA			

STATES	WM%	WW%	EM%	STATES	WM%	WW%	EM%
ALABAMA	40.8%	33.2%	26.0%	MONTANA	49.1%	42.5%	8.4%
ALASKA	40.2%	33.1%	26.7%	NEBRASKA	47.1%	42.7%	10.2%
ARIZONA	37.0%	31.7%	31.3%	NEVADA	37.8%	31.3%	30.9%
ARKANSAS	44.0%	37.5%	18.5%	NEW HAMPSHIRE	50.6%	45.0%	4.4%
CALIFORNIA	28.0%	23.6%	48.4%	NEW JERSEY	36.7%	31.5%	31.7%
COLORADO	42.2%	36.2%	21.6%	NEW MEXICO	26.6%	23.1%	50.3%
CONNECTICUT	42.4%	37.8%	19.8%	NEW YORK	35.0%	30.9%	34.1%
DELEWARE	39.3%	35.5%	25.3%	NORTH CAROLINA	39.1%	34.0%	26.9%
DISTRICT OF COLUMBIA	19.2%	18.0%	62.8%	NORTH DAKOTA	49.6%	44.4%	6.0%
FLORIDA	35.7%	30.9%	33.4%	OHIO	46.1%	40.2%	13.7%
GEORGIA	35.9%	30.0%	34.2%	OKLAHOMA	41.7%	35.4%	22.9%
HAWAII	13.1%	11.1%	75.8%	OREGON	45.5%	39.5%	15.0%
IDAHO	48.6%	40.8%	10.5%	PENNSYLVANIA	46.4%	40.2%	13.4%
ILLINOIS	38.6%	33.6%	27.8%	RHODE ISLAND	44.1%	41.4%	14.5%
INDIANA	47.1%	40.6%	12.3%	SOUTH CAROLINA	37.6%	32.4%	30.0%
IOWA	49.2%	44.8%	6.0%	SOUTH DAKOTA	48.0%	43.6%	8.4%
KANSAS	45.6%	40.1%	14.3%	TENNESSEE	44.1%	37.1%	18.8%
KENTUCKY	48.4%	41.9%	9.7%	TEXAS	31.5%	26.1%	42.4%
LOUISIANA	37.3%	30.0%	32.7%	UTAH	47.7%	39.1%	13.2%
MAINE	50.6%	46.5%	2.9%	VERMONT	50.4%	46.3%	3.3%
MARYLAND	34.0%	30.2%	35.8%	VIRGINIA	38.6%	34.0%	27.3%
MASSACHUSETTS	44.0%	40.6%	15.3%	WASHINGTON	43.6%	37.6%	18.8%
MICHIGAN	44.1%	37.5%	18.4%	WEST VIRGINIA	51.9%	43.3%	4.9%
MINNESOTA	47.6%	43.1%	9.3%	WISCONSIN	47.5%	42.8%	9.6%
MISSISSIPPI	36.1%	29.6%	34.3%	WYOMING	49.0%	41.4%	9.6%
MISSOURI	45.6%	40.3%	14.1%				

TOTAL USA 39.0% 33.7% 27.2%

WM = White Men, **WW** = White Women, **EM** = Ethnic Minority.

Figures compiled from the 2010 Census of Population, U.S. Department of Commerce, Bureau of the Census.



CONTRACT EQUITY PARTICIPATION (P-040)

BIDDER'S /
PROPOSER'S NAME

PROJECT NAME

ADDRESS

SPEC. / PROPOSAL NO. (If applicable)

E-MAIL ADDRESS

BID / PROPOSAL AMOUNT \$

PHONE NO.

FAX NO.

This form shall be submitted by **first and second** apparent low bidders within 2 Work Days of bid opening time for construction projects and by **all proposers** with their proposal for professional and general services. All subcontractors¹, truckers and suppliers at any tier level of participation, known at this time shall be listed on this form. Submit a separate P-025 form for each Subcontractor/Trucker/Supplier with a subcontract amount of \$80,000 or more.

COMPANY AND CONTACT NAME, ADDRESS, PHONE NUMBER AND E-MAIL ADDRESS	OWNERSHIP			TYPE OF WORK TO BE DONE ³	ESTIMATED DOLLAR AMOUNT
	ETHNICITY ²	GENDER			
		M	F		

Do Not Submit

In order to submit a Bid, you must obtain a hardcopy version of the bid documents from the District.

*Do Not Submit
In order to submit a
Bid, you must obtain
a hardcopy version of
the bid documents from
the District.*

Note: Additional spaces are provided on the back of this form.

The subcontractors, truckers, and suppliers listed in this schedule shall be utilized for the Work conditioned upon execution of a contract with East Bay Municipal Utility District. Substitution or replacements of these subcontractors, truckers, and suppliers must comply with Section III.B. Substitution or Replacement in the Contract Equity Program and Equal Employment Opportunity Guidelines.

Signature of Authorized Bidder / Proposer's Official

Date

Print Name

Title

¹ The person or persons, co-partnership, firm or entity in direct contract with the Contractor or with any other Subcontractor for the purpose of furnishing materials, equipment, and/or performing part of the contract work.

² Ethnic Classifications: **A/PIA** Asian-Pacific Islander American **H/LA** Hispanic/Latin American **W/CA** White/Caucasian American
B/AA Black/African American **NA** Native American

³ Describe exact portion, location (if necessary) of item to be performed or furnished by that subcontractor.



Do Not Submit
In order to submit a Bid, you must obtain a hardcopy version of the bid documents from the District.



GOOD FAITH OUTREACH EFFORTS DOCUMENTATION (P-041)

The apparent low bidder shall submit the following information to demonstrate that a good faith outreach effort to meet the Contracting Objectives has been made if its Form P-040 Contract Equity Participation indicates that the Contracting Objectives will not be met. It is suggested that even if the Contracting Objectives appear to be met on Form P-040, this form still needs to be completed in case the Contracting Objectives are determined by District evaluation to have not been met.

The *complete* description of the following items along with all of the Good Faith Outreach Efforts (GFOE's) are in the Section IA of the Contract Equity Program and Equal Employment Opportunity Guidelines:

- Items of works for which the bidder requested subbids, trucking or materials to be supplied by subcontractors in all availability groups
- Information furnished interested subcontractors, truckers, or suppliers in the way of plans, specifications and requirements for the work
- Any breakdown of items of work into economically feasible units to facilitate subcontractor participation (GFOE's #2 & 6)

ITEMS OF WORK OR SUPPLIES IDENTIFIED	
1	6
2	7
3	8
4	9
5	10
INFORMATION FURNISHED	
BREAKDOWN OF ITEMS	

*Do Not Submit
In order to submit a
Bid, you must obtain
a hardcopy version of
the bid documents from
the District.*



GOOD FAITH OUTREACH EFFORTS DOCUMENTATION (P-041)

- The names and dates of advertisements in the project's geographic market area of each newspaper, trade paper, and availability group focus paper in which a request for subcontractor participation for this project was placed by the bidder (GFOE #3)

NAME OF PUBLICATION	DATES OF ADVERTISEMENT

- The names and dates of notices of all subcontractors in the project's geographic market area solicited by direct mail, and the dates and methods used for following up initial solicitations to determine with certainty whether the subcontractors were interested (GFOE's #4 & 5)

NAME OF SUBCONTRACTOR SOLICITED	SOLICITATION DATES	FOLLOW UP METHODS	FOLLOW UP DATES
	<i>Do Not Submit In order to submit a Bid, you must obtain a hardcopy version of the bid documents from the District.</i>		



GOOD FAITH OUTREACH EFFORTS DOCUMENTATION (P-041)

- The names of subcontractors, truckers, and suppliers who submitted bids for any of the work indicated on page one of this form whose bids were not accepted
- A summary of the bidder's discussions and/or negotiations with them
- The name of the subcontractor, trucker or supplier that was selected for that portion of the work, and the reasons for the bidder's choice. *(If the reason for rejecting a bid was price, give the price bid by the rejected subcontractor and the price bid by the selected subcontractor, trucker, or supplier.) (GFOE #8)*

NAME OF REJECTED SUBCONTRACTOR	SUMMARY OF DISCUSSIONS / NEGOTIATIONS	NAME OF SELECTED SUBCONTRACTOR AND REASONS FOR THAT CHOICE

*Do Not Submit
In order to submit a
Bid, you must obtain
a hardcopy version of
the bid documents from
the District.*

Please Note: Use additional sheets of paper, if necessary.



GOOD FAITH OUTREACH EFFORTS DOCUMENTATION (P-041)

- Assistance that the bidder has extended to rejected subcontractors identified above to remedy the deficiency in their subbids (GFOE #9)

NAME OF REJECTED SUBCONTRACTOR	ASSISTANCE EXTENDED

Do Not Submit

- Any additional data to support a demonstration of good faith efforts, such as contacts with subcontractor's assistance agencies (GFOE #7):

In order to submit a Bid, you must obtain a hardcopy version of the bid documents from the District.

NAME OF COMMUNITY ORGANIZATIONS OR CONTRACTORS GROUPS	ADDITIONAL GOOD FAITH OUTREACH EFFORTS

Please Note: Use additional sheets of paper, if necessary. Appropriate documentation, such as copies of newspaper ads, letters soliciting bids, and telephone logs, should accompany this form.



CONTRACT EQUITY PROGRAM GUIDELINES CERTIFICATION (P-042)

Pursuant to the East Bay Municipal Utility District's ("District") Contract Equity Program Guidelines, Section I, Paragraph A.1, I hereby declare, under the penalty of perjury under the laws of the State of California, that

- 1) I am duly authorized to execute this certification on behalf of my company, corporation, joint-venture or sole-proprietorship, which has submitted a bid/proposal to
District Specification/Proposal/Quotation No. _____ ;
- 2) I am familiar with the District's Contract Equity Program and Equal Employment Opportunity Guidelines and understand all of the program's requirements;
- 3) I understand and agree to comply with the District's Contract Equity Program, and all of the requirements therein, including each of the Good Faith Outreach Efforts;
- 4) I will post and distribute applicable District-supplied Equal Employment Opportunity material. My firm has a process for responding to complaints of Equal Employment Opportunity discrimination, harassment, and retaliation and a copy will be provided upon request;
- 5) I understand and agree that promoting local access to jobs that pay prevailing wages may improve the workforce diversity and may benefit employment in communities being impacted by this project; and
- 6) I understand, and expressly agree, on behalf of my company, corporation, joint-venture or sole-proprietorship, that the District may disqualify the bid/proposal submitted if we have not complied with the District's Contract Equity Program, and all of the requirements therein.

EXECUTED IN _____
(City, County, State)

ON _____ FOR _____
(Month, Date, Year) (Bidder's / Proposer's Company Name)

BY _____
(Print Name) (Title)

(Signature) (Phone Number)

Do Not Submit

*In order to submit a
Bid, you must obtain
a hardcopy version of
the bid documents from
the District.*



DESIGNATION OF SUBCONTRACTORS (P-046)

Name of Bidder/Proposer _____

In compliance with the provisions of the Subletting and Subcontracting Fair Practices Act (Division 2, Part 1, Chapter 4 of the Public Contract Code of the State of California, and any amendments thereof), each bidder shall set forth below:

1. The name, the location of the place of business, and the California Contractor license number of each Subcontractor who will perform work or labor or render service to the Contractor in or about the construction of the work or improvement, or a Subcontractor licensed by the State of California who, under subcontract to the prime Contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of one percent of the Contractor's total bid. List all Subcontractors meeting these criteria, including sole-source Subcontractors.
2. The portion and estimated dollar amount of the work that will be done by each Subcontractor listed below. The Contractor shall list only one Subcontractor for each portion as is defined by the Contractor in its bid.
3. The California State Department Industrial Relations (DIR) registration number of each subcontractor.

All Contractors bidding on a public works project and all Subcontractors of any tier shall be registered with the State Department of Industrial Relations pursuant to Section 1725.5 of the Labor Code.

Please type or legibly print (attach additional sheets as necessary)

SUBCONTRACTOR'S COMPANY NAME CONTACT NAME / ADDRESS / PHONE NO.	CALIFORNIA LICENSE NUMBER and DIR REGISTRATION NUMBER	DESCRIPTION OF WORK TO BE PERFORMED	ESTIMATED \$ AMOUNT

*Do Not Submit
In order to submit a
Bid, you must obtain
a hardcopy version of
the bid documents from
the District.*



DESIGNATION OF SUBCONTRACTORS (P-046)

SUBCONTRACTOR'S COMPANY NAME CONTACT NAME / ADDRESS / PHONE NO.	CALIFORNIA LICENSE NUMBER	DESCRIPTION OF WORK TO BE PERFORMED	ESTIMATED \$ AMOUNT
	<i>Do Not Submit</i> <i>In order to submit a Bid, you must obtain a hardcopy version of the bid documents from the District.</i>		

Designation of Subcontractors – From Public Contract Code Section 4105 - 4110

4105. Circumvention by a general contractor who bids as a prime contractor of the requirement under Section 4104 for him or her to list his or her subcontractors, by the device of listing another contractor who will in turn sublet portions constituting the majority of the work covered by the prime contract, shall be considered a violation of this chapter and shall subject that prime contractor to the penalties set forth in Sections 4110 and 4111.

4106. If a prime contractor fails to specify a subcontractor or if a prime contractor specifies more than one subcontractor for the same portion of work to be performed under the contract in excess of one-half of 1 percent of the prime contractor's total bid, the prime contractor agrees that he or she is fully qualified to perform that portion himself or herself, and that the prime contractor shall perform that portion himself or herself. If after award of contract, the prime contractor subcontracts, except as provided for in Sections 4107 or 4109, any such portion of the work, the prime contractor shall be subject to the penalties named in Section 4111.

4107. A prime contractor whose bid is accepted may not:

- (a) Substitute a person as subcontractor in place of the subcontractor listed in the original bid, except that the awarding authority, or its duly authorized officer, may, except as otherwise provided in Section 4107.5, consent to the substitution of another person as a subcontractor in any of the following situations:
 - (1) When the subcontractor listed in the bid, after having had a reasonable opportunity to do so, fails or refuses to execute a written contract for the scope of work specified in the subcontractor's bid and at the price specified in the subcontractor's bid, when that written contract, based upon the general terms, conditions, plans, and specifications for the project involved or the terms of that subcontractor's written bid, is presented to the subcontractor by the prime contractor.
 - (2) When the listed subcontractor becomes insolvent or the subject of an order for relief in bankruptcy.
 - (3) When the listed subcontractor fails or refuses to perform his or her subcontract.
 - (4) When the listed subcontractor fails or refuses to meet the bond requirements of the prime contractor as set forth in Section 4108.
 - (5) When the prime contractor demonstrates to the awarding authority, or its duly authorized officer, subject to the further provisions set forth in Section 4107.5, that the name of the subcontractor was listed as the result of an inadvertent clerical error.
 - (6) When the listed subcontractor is not licensed pursuant to the Contractors License Law.
 - (7) When the awarding authority, or its duly authorized officer, determines that the work performed by the listed subcontractor is substantially unsatisfactory and not in substantial accordance with the plans and specifications, or that the subcontractor is substantially delaying or disrupting the progress of the work.
 - (8) When the listed subcontractor is ineligible to work on a public works project pursuant to Section 1777.1 or 1777.7 of the Labor Code.
 - (9) When the awarding authority determines that a listed subcontractor is not a responsible contractor.

Prior to approval of the prime contractor's request for the substitution, the awarding authority, or its duly authorized officer, shall give notice in writing to the listed subcontractor of the prime contractor's request to substitute and of the reasons for the request. The notice shall be served by certified or registered mail to the last known address of the subcontractor. The listed subcontractor who has been so notified has five working days within which to submit written objections to the substitution to the awarding authority. Failure to file these written objections constitutes the listed subcontractor's consent to the substitution.

If written objections are filed, the awarding authority shall give notice in writing of at least five working days to the listed subcontractor of a hearing by the awarding authority on the prime contractor's request for substitution.

- (b) Permit a subcontract to be voluntarily assigned or transferred or allow it to be performed by anyone other than the original subcontractor listed in the original bid, without the consent of the awarding authority, or its duly authorized officer.
- (c) Other than in the performance of "change orders" causing changes or deviations from the original contract, sublet or subcontract any portion of the work in excess of one-half of 1 percent of the prime contractor's total bid as to which his or her original bid did not designate a subcontractor.

4107.2. No subcontractor listed by a prime contractor under Section 4104 as furnishing and installing carpeting, shall voluntarily sublet his or her subcontract with respect to any portion of the labor to be performed unless he or she specified the subcontractor in his or her bid for that subcontract to the prime contractor.

4107.5. The prime contractor as a condition to assert a claim of inadvertent clerical error in the listing of a subcontractor shall within two working days after the time of the prime bid opening by the awarding authority give written notice to the awarding authority and copies of that notice to both the subcontractor he or she claims to have listed in error and the intended subcontractor who had bid to the prime contractor prior to bid opening.

Any listed subcontractor who has been notified by the prime contractor in accordance with this section as to an inadvertent clerical error shall be allowed six working days from the time of the prime bid opening within which to submit to the awarding authority and to the prime contractor written objection to the prime contractor's claim of inadvertent clerical error. Failure of the listed subcontractor to file the written notice within the six working days shall be primary evidence of his or her agreement that an inadvertent clerical error was made.

The awarding authority shall, after a public hearing as provided in Section 4107 and in the absence of compelling reasons to the contrary, consent to the substitution of the intended subcontractor:

- (a) If (1) the prime contractor, (2) the subcontractor listed in error, and (3) the intended subcontractor each submit an affidavit to the awarding authority along with such additional evidence as the parties may wish to submit that an inadvertent clerical error was in fact made, provided that the affidavits from each of the three parties are filed within eight working days from the time of the prime bid opening, or
- (b) If the affidavits are filed by both the prime contractor and the intended subcontractor within the specified time but the subcontractor whom the prime contractor claims to have listed in error does not submit within six working days, to the awarding authority and to the prime contractor, written objection to the prime contractor's claim of inadvertent clerical error as provided in this section.

If the affidavits are filed by both the prime contractor and the intended subcontractor but the listed subcontractor has, within six working days from the time of the prime bid opening, submitted to the awarding authority and to the prime contractor written objection to the prime contractor's claim of inadvertent clerical error, the awarding authority shall investigate the claims of the parties and shall hold a public hearing as provided in Section 4107 to determine the validity of those claims. Any determination made shall be based on the facts contained in the declarations submitted under penalty of perjury by all three parties and supported by testimony under oath and subject to cross-examination. The awarding authority may, on its own motion or that of any other party, admit testimony of other contractors, any bid registries or depositories, or any other party in possession of facts which may have a bearing on the decision of the awarding authority.

4107.7. If a contractor who enters into a contract with a public entity for investigation, removal or remedial action, or disposal relative to the release or presence of a hazardous material or hazardous waste fails to pay a subcontractor registered as a hazardous waste hauler pursuant to Section 25163 of the Health and Safety Code within 10 days after the investigation, removal or remedial action, or disposal is completed, the subcontractor may serve a stop notice upon the public entity in accordance with Chapter 4 (commencing with Section 9350) of Title 3 of Part 6 of Division 4 of the Civil Code.

4108. (a) It shall be the responsibility of each subcontractor submitting bids to a prime contractor to be prepared to submit a faithful performance and payment bond or bonds if so requested by the prime contractor.

- (b) In the event any subcontractor submitting a bid to a prime contractor does not, upon the request of the prime contractor and at the expense of the prime contractor at the established charge or premium therefor, furnish to the prime contractor a bond or bonds issued by an admitted surety wherein the prime contractor shall be named the obligee, guaranteeing prompt and faithful performance of the subcontract and the payment of all claims for labor and materials furnished or used in and about the work to be done and performed under the subcontract, the prime contractor may reject the bid and make a substitution of another subcontractor subject to Section 4107.

- (c) (1) The bond or bonds may be required under this section only if the prime contractor in his or her written or published request for subbids clearly specifies the amount and requirements of the bond or bonds.

(2) If the expense of the bond or bonds required under this section is to be borne by the subcontractor, that requirement shall also be specified in the prime contractor's written or published request for subbids.

(3) The prime contractor's failure to specify bond requirements, in accordance with this subdivision, in the written or published request for subbids shall preclude the prime contractor from imposing bond requirements under this section.

4109. Subletting or subcontracting of any portion of the work in excess of one-half of 1 percent of the prime contractor's total bid as to which no subcontractor was designated in the original bid shall only be permitted in cases of public emergency or necessity, and then only after a finding reduced to writing as a public record of the awarding authority setting forth the facts constituting the emergency or necessity.

4110. A prime contractor violating any of the provisions of this chapter violates his or her contract and the awarding authority may exercise the option, in its own discretion, of (1) canceling his or her contract or (2) assessing the prime contractor a penalty in an amount of not more than 10 percent of the amount of the subcontract involved, and this penalty shall be deposited in the fund out of which the prime contract is awarded. In any proceedings under this section the prime contractor shall be entitled to a public hearing and to five days' notice of the time and place thereof.

SUPPLEMENTARY CONTRACT EQUITY PROGRAM AND
EQUAL EMPLOYMENT OPPORTUNITY GUIDELINES

The following supplements shall modify, delete, and/or add to the Contract Equity Program And Equal Employment Opportunity Guidelines (CEP&EEO Guidelines). Where any article, paragraph, or subparagraph in the CEP&EEO Guidelines is supplemented by one of the following paragraphs, the provisions of such article, paragraph, or subparagraph shall remain in effect and the supplemental provisions shall be considered as added thereto. Where any article, paragraph, or subparagraph in the CEP&EEO Guidelines is amended, voided, or superseded by any of the following paragraphs, the provisions of such article, paragraph, or subparagraph not so amended, voided, or superseded shall remain in effect.

1. On Page 1 after the end of the 4th paragraph, add:

“ Consistent with this objective, the District also has a local hire target of 50 percent of total work hours from Local Residents, as described in Glossary of Terms of this Document, with 30 percent of total work hours being from the county(ies) directly impacted by the project. This applies to the total work hours of the Contractor and all its subcontractors. Contractors should track the actions taken to comply with these objectives, including but not limited to, seeking referral assistance from organizations that provide community job training and employment services to individuals and businesses such as West Oakland Resource Center, EASTBAY Works, Cypress Mandela Training Center, Tradewomen, Inc., Rising Sun Energy Center, Associated Builders & Contractors, and by requesting local referrals from a union hall, as applicable.

The Contractor shall submit the Anticipated Jobsite Workforce Projection Form for the Contractor including all of its subcontractors, truckers, and suppliers performing work or providing goods and/or services in an amount equal to or greater than \$80,000.

Submit the Anticipated Jobsite Workforce Projection Form to the Engineer with the return of the signed contract.”

2. Supplements

A. The following supplements follow END OF DOCUMENT and are a part of this document:

1) Anticipated Jobsite Workforce Projection Form.

END OF DOCUMENT

ANTICIPATED JOBSITE WORKFORCE PROJECTION

DATE	NAME OF FIRM
SIGNATURE OF CONTRACTOR'S AUTHORIZED OFFICIAL	TITLE

TRADE OR WORK CLASS	DATES OF EMPLOYMENT		WORK LEVEL	TOTAL WORKFORCE		LOCAL RESIDENTS		
	FROM mo/yr	TO mo/yr		NO. EMPL	TOTAL PERSON DAYS	NO. EMPL	TOTAL PERSON DAYS	% OF TOTAL
	-		J					
	-		A					
	-		T					
	-		J					
	-		A					
	-		T					
	-		J					
	-		A					
	-		T					
	-		J					
	-		A					
	-		T					
	-		J					
	-		A					
	-		T					
	-		J					
	-		A					
	-		T					
	-		J					
	-		A					
	-		T					

KEY: J = Journeyman, A = Apprentice, T = Trainee

09/23/2015

ESCROW BID DOCUMENTS

1.1 REQUIREMENTS FOR ESCROW BID DOCUMENTS

- A. Within the time period established in Document 00 21 13 Instructions to Bidders, the apparent low bidder shall submit to District a set of Escrow Bid Documents as defined in paragraph 1.2 below. The second and third low bidders shall be prepared to submit Escrow Bid Documents within 3 work days of a request by the District. Escrow Bid Documents will be used only in the manner and for the purposes described in this Document 00 45 10.
- B. The submission of the Escrow Bid Documents is considered an essential part of the bid submission. Should Contractor fail to make the submission of the Escrow Bid Documents within the time specified, the Contractor's bid may be deemed non-responsive. Such failure to submit shall constitute an improper withdrawal and the Contractor shall forfeit the amount of its bid security and District may award the Contract to the next lowest responsive/responsible Bidder.
- C. No payments will be made, nor will District accept change order requests until the above-required information is submitted and approved. Alternatively, District may declare the bid non-responsive.
- D. Submit the Escrow Bid Documents, in person by an authorized representative of the Contractor. Contact John Law at (510) 287-7186 for delivery instructions.

1.2 SCOPE OF ESCROW BID DOCUMENTS

- A. Contractor represents and agrees, as a condition of award of the Contract, that the Escrow Bid Documents constitute all written information used in the preparation of its bid, and that no other written bid preparation information shall be considered in resolving disputes or claims or may be considered in dispute resolutions or legal proceedings. Contractor also agrees that nothing in the Escrow Bid Documents shall change or modify the terms or conditions of the Contract Documents.

1.3 OWNERSHIP OF ESCROW BID DOCUMENTS

- A. The Escrow Bid Documents are, and shall always remain, the property of Contractor, subject to joint review by District and Contractor.
- B. District stipulates and expressly acknowledges that the Escrow Bid Documents constitute trade secrets. This acknowledgement is based on District's express understanding that the information contained in the Escrow Bid Documents is not known outside Contractor's business, is known only to a limited extent and only by a limited number of Contractor's employees, is safeguarded while in Contractor's

possession, is extremely valuable to Contractor and could be extremely valuable to Contractor's competitors by virtue of it reflecting Contractor's contemplated construction techniques. District further acknowledges that the Escrow Bid Documents and the information contained in them are made available to District only because such action is an express pre-requisite to award of the Contract. District agrees to safeguard the Escrow Bid Documents, and all information contained in them, against disclosure to the fullest extent permitted by law, consistent with paragraph 1.4 of this Document.

1.4 PURPOSE OF ESCROW BID DOCUMENTS

- A. Escrow Bid Documents may be used in the determination of price adjustments and change orders and in the settlement of disputes and claims that may arise during performance of the Work. If used in legal proceedings, Escrow Bid Documents shall be subject to an appropriate protective order limiting their disclosure should the Contractor choose to timely prepare one. A Bidder's Escrow Bid Documents will not be used for pre-award evaluation of the Bidder's anticipated methods of construction, nor to assess the Bidder's qualifications for performing the work. The District's examination of the Escrow Bid Documents will not include a review of, nor will it constitute its approval of, the Contractor's proposed construction means and methods, estimating assumptions or interpretations of the Contract Documents.

1.5 FORMAT AND CONTENTS OF ESCROW BID DOCUMENTS

- A. Submit Escrow Bid Documents in their usual cost-estimating format. Prepare and submit the Escrow Bid Documents in English and on paper. Documents in an electronic format will not be accepted.
- B. If the Bidder is a joint venture, the Escrow Bid Documents shall include the joint venture agreement, and any and all comparisons of estimates by the joint venture partners, along with the final reconciliation of the joint venture bid submitted with the Proposal.
- C. Itemize clearly in the Escrow Bid Documents the estimated costs of performing the work of each Bid item contained in Contractor's Bid. Separate Bid items into sub-items consistent with the Schedule of Costs (see Section 01 29 00 Payment Procedures) format to present a detailed cost estimate and allow a detailed cost review. The Escrow Bid Documents shall include all Subcontractor bids, quotes, or requests for quotes, supplier bids or quotes, quantity take-offs, crews, equipment, calculations of rates of production and progress, and memoranda, narratives, add/deduct sheets, and all other information used by Contractor to arrive at the prices contained in the Bid. Manuals which are standard to the industry and used by the Contractor in determining their bid may be included in the Escrow Bid Documents by reference, such reference to include the name and date of the publication and publisher. Escrow Bid Documents shall include costs of scheduled maintenance, depreciation, fleet rental expense discounts and incentives, and similar cost adjustments if used by Contractor to calculate its Bid prices. Estimated costs shall be broken down into Contractor's usual estimate categories such as direct

labor, repair labor, equipment ownership and operation, expendable materials, permanent materials and subcontract costs as appropriate. Plant and equipment and indirect costs shall be detailed in Contractor's usual format. Contractor shall identify its allocation of indirect costs, contingencies, markup and other items to each Bid item.

- D. Identify all costs. For bid items amounting to less than \$10,000, Contractor may estimate costs without a detailed cost estimate, provided that Contractor includes applicable labor, equipment, materials and subcontracts, and allocates applicable indirect costs, contingencies and markup.
- E. Identify all persons responsible for preparing the Bidder's estimate along with an identification of those persons who had reviewed the bid prior to submission of the bid to the District.
- F. Bid documents provided by District shall not be included in the Escrow Bid Documents unless needed to comply with these requirements.

1.6 SUBMITTAL OF ESCROW BID DOCUMENTS

- A. Submit the Escrow Bid Documents in a sealed container. The container shall be clearly marked on the outside with Contractor's name, date of submittal, project name and the words "Escrow Bid Documents - Open only in the presence of Authorized Representatives of both District and (Contractor's name)."
- B. The Escrow Bid Documents shall be accompanied with an index of the inventory of the contents of the submittal and Document 00 45 11 Bid Documentation Certification, signed by an individual authorized to execute the proposal. See the Bid Documentation Certification form located at the end of this document.
- C. The Escrow Bid Documents containers will be immediately opened by the District and the contents examined to ensure that the index to the Escrow Bid Documents is detailed and complete.
- D. The Contractor's representative shall be present from the opening of the container until the District indicates that the examination is concluded. Upon the conclusion of the District's examination, the Contractor shall re-seal the Escrow Bid Documents container.
- E. District has 3 work days after receipt of Bidder's Escrow Bid Documents to demand additional information or replacement of documents that are illegible. The Bidder shall supply the missing documents and a revised inventory index within 2 work days of the District's request. Document submittal shall be as described above except the container shall also be marked "Supplemental Escrow Bid Documents". The contents of the supplemental submittal shall be reviewed with same procedure used to review the original container.

- F. If Contractor's proposal is based upon subcontracting any part of the Work, each Subcontractor whose total subcontract price exceeds 5 percent of the total Contract Sum proposed by Contractor, shall provide separate Escrow Documents to be included with those of Contractor. The Escrow Bid Documents of subcontractors shall be enclosed with the prime Bidder's submittal of the Escrow Bid Documents, but may be separately sealed from the prime Bidder's Escrow Bid Documents. Such documents shall be accompanied by a Bid Documentation Certification form and an index to inventory the contents of the submittal. The documents will be opened and examined in the same manner and at the same time as the examination described above for the Contractor except that a representative for the Subcontractor shall be present. If requested by the Subcontractor, the Contractor shall not be present during the examination of the Subcontractors Escrow Bid Documents. Upon the conclusion of the District's examination, the Subcontractor shall re-seal the Escrow Bid Documents container.
- G. If Contractor wishes to subcontract any portion of the Work after award, District retains the right to require Contractor to submit Escrow Documents for the Subcontractor before approval of the subcontract.

1.7 STORAGE AND EXAMINATION OF ESCROW BID DOCUMENTS

- A. Upon completion of the examination, the Escrow Bid Documents will be placed in a double-locked storage container provided by the Contractor. The District and the Contractor will each provide a separate lock for the container. The container will be maintained at the District's SD1 Administration Building located at 2020 Wake Avenue, Oakland, California.
1. Both District and Contractor shall examine the Escrow Bid Documents, at any time deemed necessary by either District or Contractor, to assist in the negotiation of price adjustments and change orders or the settlement of disputes and claims. Upon examination, the District may reproduce any portion of the Escrow Bid Documents. These reproduced documents will be handled as per Article 1.3.B.
 2. Examination of the Escrow Bid Documents is subject to the following conditions:
 - a. As trade secrets, the Escrow Bid Documents are proprietary and confidential under Article 1.3, Ownership of Escrow Bid Documents.
 - b. District and Contractor (and any Subcontractor, to the extent Escrow Bid Documents are required by a Subcontractor) shall each designate in writing to the other party(s) at least 7 work days prior to any examination, representatives who are authorized to examine the Escrow Bid Documents. Except as otherwise provided in a court order, no other persons shall have access to the Escrow Documents.

- c. Except as otherwise provided in a court order, access to the documents may take place only in the presence of duly designated representatives of both District and Contractor. If Contractor fails to designate a representative or appear for joint examination on 7 work days' notice, then the District may unilaterally access the Escrow Bid Documents upon an additional three work days' notice.

1.8 FINAL DISPOSITION

- A. When all the following conditions have been satisfied, the Escrow Bid Documents and reproduction made during examination, if any, will be returned to the Contractor and to the Subcontractors who have submitted separate Escrow Documents.
 - 1. The Contract has been completed.
 - 2. Final payment has been issued by the District.
 - 3. All litigation has been completed, and a written agreement has been executed between the District and the Contractor that no further litigation will be made.

1.9 DOCUMENT 00 45 11 BID DOCUMENTATION CERTIFICATION

- A. Document 00 45 11 Bid Documentation Certification follows the END OF DOCUMENT and is a part of this document.

END OF DOCUMENT

THIS PAGE IS LEFT INTENTIONALLY BLANK

BID DOCUMENTATION CERTIFICATION

PROJECT NAME: SD-428, MAIN WASTEWATER TREATMENT PLANT OXYGEN
PLANT REHABILITATION

The undersigned hereby certifies that the Escrow Bid Documents contained herein constitute all the documentary information used in the preparation of the bid and that as an authorized representative of the entity identified below I have personally examined the contents of the Escrow Bid Documents container and have found that the documents are complete and organized as shown by the index. No other bid preparation documents will be introduced or relied upon in any claim, litigation, or other dispute resolution process.

SUBMITTED BY: _____

(PRINTED)

(SIGNATURE)

TITLE: _____

FIRM: _____

DATE: _____



Bidder's Qualifications and References

Name of Bidder: _____

THE BIDDER SHALL COMPLETE THE FOLLOWING STATEMENTS:

1. The bidder has been engaged in the contracting business, under the present business name, for _____ years.
2. Experience in work of a nature similar to that covered in the proposal extends over a period of _____ years.
3. The bidder, as a contractor, has never failed to satisfactorily complete a contract awarded to him, except as follows: (Name any and all exceptions and reasons therefore.)

4. The following contracts have been satisfactorily completed in the last three years for the persons, firm, or authority indicated; and to whom reference is made. (Name five contracts.)

YEAR	TYPE OF WORK	CONTRACT AMOUNT	LOCATION AND FOR WHOM PERFORMED
(a) _____	_____	_____	_____
(b) _____	_____	_____	_____
(c) _____	_____	_____	_____
(d) _____	_____	_____	_____
(e) _____	_____	_____	_____

5. The following persons may be contacted for information concerning the contract work listed above. (List a reference for each contract named.)

NAME	TITLE	ADDRESS	TELEPHONE
(a) _	—	—	—
(b) _	—	—	—
(c) _	—	—	—
(d) _	—	—	—
(e) _	—	—	—

(see other side)

Bidder's Qualifications and References

6. Reference is hereby made to the following bank or banks as to the financial responsibility of the bidder:

Bank	_____	Branch	_____
Bank	_____	Branch	_____
Bank	_____	Branch	_____

7. Reference is hereby made to the following surety company or companies as to the financial responsibility and general reliability of the bidder:

Surety Company	_____	Phone	_____
Surety Company	_____	Phone	_____

8. Following is a list of plant and equipment that is owned by the bidder and is definitely available for use on the proposed work:

<i>Do Not Submit</i> <i>In order to submit a Bid, you must obtain a hardcopy version of the bid documents from the District.</i>			
QUANTITY	NAME, TYPE AND CAPACITY	CONDITION	LOCATION
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(attach additional sheets as necessary)

9. All of the above statements as to experience, financial qualifications, and available plant and equipment are submitted in conjunction with the proposal, as part thereof, and the truthfulness and accuracy of the information is guaranteed by the bidder.

Signature of Bidder _____



Supplementary Bidder's Qualifications and References (E-061S)

Specification SD-428

Name of Bidder: _____

THE BIDDER SHALL COMPLETE THE FOLLOWING FORMS TO VERIFY ITS EXPERIENCE AND QUALIFICATIONS. FAILURE TO INCLUDE THIS INFORMATION OR FAILURE TO DEMONSTRATE THE MINIMUM QUALIFICATIONS WILL CAUSE THE BID TO BE DEEMED NON-RESPONSIVE.

INCLUDE ADDITIONAL 8-1/2" X 11" PAGES AS NECESSARY.

Item 1. To be completed by the firm removing perlite insulation per Specification Section 07 21 23:

Required qualifications experience for the firm performing this work: The firm performing the perlite removal and cleaning work in each of the District's two cold boxes shall be regularly engaged in the business of removing and replacing cryogenic-grade perlite in cryogenic cold boxes for at least the past five (5) years and shall meet ALL of the following criteria:

- Performed at least five cryogenic cold box perlite installations for which perlite was removed in the past five years.
- At least one project shall be of similar size to one of the District's cold boxes.

List at least five (5) projects below that were completed and accepted during the last five (5) years; EACH project must have been directly performed by the firm that will perform the perlite removal and disposal work as part of Spec SD-428. Perlite removal only is considered maintenance work and does not require a California's Contractors license.

1. Perlite Removal Project Name: _____	
2. Project Location: _____	
3. Owner: _____	4. Owner's Address: _____
5. Owner's Contact Person: Email Address: _____ Phone Number: _____	
6. Perlite Removal Project Description: • Perlite media removed, cubic-yards: _____ • Type of storage vessel (i.e. cold box, storage tank): _____ • Product (gas): _____ • Completion Date: _____	7. Identify whether perlite removal work was performed by you as a prime or sub. Prime: ☐ Sub: ☐

This Supplementary Bidder's Qualifications and References Form continues on the following Page

Supplementary Bidder's Qualifications and References (Cont'd) – Spec SD-428

(continued from previous page)

1. Perlite Removal Project Name:	
2. Project Location:	
3. Owner:	4. Owner's Address:
5. Owner's Contact Person: Email Address: Phone Number:	
6. Perlite Removal Project Description: • Perlite media removed, cubic-yards: _____ • Type of storage vessel (i.e. cold box, storage tank): _____ • Product (gas): _____ • Completion Date: _____	7. Identify whether perlite removal work was performed by you as a prime or sub. Prime: ☐ Sub: ☐

*Do Not Submit
In order to submit a
Bid, you must obtain
a hardcopy version of
the bid documents from
the District.*

1. Perlite Removal Project Name:	
2. Project Location:	
3. Owner:	4. Owner's Address:
5. Owner's Contact Person: Email Address: Phone Number:	
6. Perlite Removal Project Description: • Perlite media removed, cubic-yards: _____ • Type of storage vessel (i.e. cold box, storage tank): _____ • Product (gas): _____ • Completion Date: _____	7. Identify whether perlite removal work was performed by you as a prime or sub. Prime: ☐ Sub: ☐

This Supplementary Bidder's Qualifications and References Form continues on the following Page

Supplementary Bidder's Qualifications and References (Cont'd) – Spec SD-428

(continued from previous page)

1. Perlite Removal Project Name:	
2. Project Location:	
3. Owner:	4. Owner's Address:
5. Owner's Contact Person: Email Address: Phone Number:	
6. Perlite Removal Project Description: • Perlite media removed, cubic-yards: _____ • Type of storage vessel (i.e. cold box, storage tank): _____ • Product (gas): _____ • Completion Date: _____	7. Identify whether perlite removal work was performed by you as a prime or sub. Prime: ☐ Sub: ☐

*Do Not Submit
In order to submit a
Bid, you must obtain
a hardcopy version of
the bid documents from
the District.*

1. Perlite Removal Project Name:	
2. Project Location:	
3. Owner:	4. Owner's Address:
5. Owner's Contact Person: Email Address: Phone Number:	
6. Perlite Removal Project Description: • Perlite media removed, cubic-yards: _____ • Type of storage vessel (i.e. cold box, storage tank): _____ • Product (gas): _____ • Completion Date: _____	7. Identify whether perlite removal work was performed by you as a prime or sub. Prime: ☐ Sub: ☐

This Supplementary Bidder's Qualifications and References Form continues on the following Page

Do Not Submit
*In order to submit a
Bid, you must obtain
a hardcopy version of
the bid documents from
the District.*

Supplementary Bidder's Qualifications and References (Cont'd) – Spec SD-428

(continued from previous page)

Item 2. To be completed by the firm supplying Perlite insulation per Specification Section 07 21 23:

Required qualifications experience for the firm supplying perlite: The firm supplying perlite to be installed in each of the District's two cold boxes shall be regularly engaged in the business of providing cryogenic-grade perlite for use as insulation in cryogenic processes for at least the past five (5) years and shall meet ALL of the following criteria:

- Supplied cryogenic-grade perlite for at least five cryogenic cold box installations for which cryogenic-grade perlite was sourced from the supplier in the past five years and include the quantity of perlite provided.
- At least one project supplying perlite for a cryogenic oxygen production plant used for treatment of municipal wastewater in the past ten years.

List at least five (5) projects below that were completed and accepted during the last five (5) years; EACH project shall have been a project the perlite supplier proposed for Specification SD-428 supplied perlite for. Perlite supplier does not need to possess a California's Contractors license.

1. Perlite Supplier Project Name:	
2. Project Location:	<i>Do Not Submit</i> <i>In order to submit a Bid, you must obtain a hardcopy version of the bid documents from the District.</i>
3. Owner:	
4. Owner's Address:	
5. Owner's Contact Person:	
Email Address:	
Phone Number:	
6. Perlite Project Description:	
• Perlite media supplied, cubic-yards: _____ • Type of storage vessel (i.e. cold box, storage tank) : _____ • Product (gas): _____ • Completion Date: _____	

Supplementary Bidder's Qualifications and References (Cont'd) – Spec SD-428

(continued from previous page)

1. Perlite Supplier Project Name:	
2. Project Location:	
3. Owner:	4. Owner's Address:
5. Owner's Contact Person: Email Address: Phone Number:	
6. Perlite Project Description: • Perlite media supplied, cubic-yards: _____ • Type of storage vessel (i.e. cold box, storage tank) : _____ • Product (gas): _____ • Completion Date: _____	

Do Not Submit
In order to submit a Bid, you must obtain a hardcopy version of the bid documents from the District.

1. Perlite Supplier Project Name:	
2. Project Location:	
3. Owner:	4. Owner's Address:
5. Owner's Contact Person: Email Address: Phone Number:	
6. Perlite Project Description: • Perlite media supplied, cubic-yards: _____ • Type of storage vessel (i.e. cold box, storage tank) : _____ • Product (gas): _____ • Completion Date: _____	

Supplementary Bidder's Qualifications and References (Cont'd) – Spec SD-428

(continued from previous page)

Item 3. To be completed by the firm installing Perlite insulation per Specification Section 07 21 23:

Required qualifications for the firm installing perlite: The firm installing perlite in each of the District's two cold boxes shall possess a current California's Contractors Class A or Class C-2 (Insulation and Acoustical) License. This License shall remain active for the duration of the Work.

1. Perlite Installer Name:
2. California's Contractor's License Class (A or C-2): Number: Expiration:

Do Not Submit
*In order to submit a
Bid, you must obtain
a hardcopy version of
the bid documents from
the District.*

Supplementary Bidder's Qualifications and References (Cont'd) – Spec SD-428

(continued from previous page)

Item 4. To be completed by the firm installing and wiring the four 1500-horsepower Main Air Compressor motors per Specification Section 22 05 00:

The firm installing the 1500-horsepower, Main Air Compressor (MAC) motors shall be regularly engaged in the business of installing medium voltage equipment with voltage ratings 1kV or higher. The MAC motors are 3600 rpm, 4160V, 60 Hz, three-phase induction motors. The firm installing the MAC motors shall have installed motors for at least three (3) projects in the past five (5) years meeting ALL of the following criteria:

- Motors installed shall have been rated as medium-voltage or greater (1kV or more)
- For at least one (1) project, motors installed shall have been tested for vibration and alignment after installation in accordance with NEMA MG-1 or equal.

1. Project Name:	
2. Project Location:	
3. Owner:	4. Owner's Address:
5. Owner's Contact Person: Email Address: Phone Number:	
6. Project Description: • Type of equipment for which motor was installed or replaced: _____ • Motor (voltage): _____ • Was vibration and alignment checked after installation? (Y/N): _____ • Completion Date: _____	

Supplementary Bidder's Qualifications and References (Cont'd) – Spec SD-428

(continued from previous page)

1. Project Name:	
2. Project Location:	
3. Owner:	4. Owner's Address:
5. Owner's Contact Person: Email Address: Phone Number:	
6. Project Description: • Type of equipment for which motor was installed or replaced: _____ • Motor (voltage): _____ • Was vibration and alignment checked after installation? (Y/N): _____ • Completion Date: _____	

Do Not Submit

In order to submit a Bid, you must obtain a hardcopy version of the bid documents from the District.

1. Project Name:	
2. Project Location:	
3. Owner:	4. Owner's Address:
5. Owner's Contact Person: Email Address: Phone Number:	
6. Project Description: • Type of equipment for which motor was installed or replaced: _____ • Motor (voltage): _____ • Was vibration and alignment checked after installation? (Y/N): _____ • Completion Date: _____	

Supplementary Bidder's Qualifications and References (Cont'd) – Spec SD-428

(continued from previous page)

Item 5. To be completed by the firm installing coatings for the two cold boxes per Specification Section 09 90 00:

Required qualifications: The firm installing coatings for the District's two cold boxes shall possess a current California's Contractors Class C-33 (Painting and Decorating) License. This License shall remain active for the duration of the Work.

1. Coating Installer Name:
2. California's Contractor's License Class (C-33) Number: Expiration:

Do Not Submit
*In order to submit a
Bid, you must obtain
a hardcopy version of
the bid documents from
the District.*

Supplementary Bidder's Qualifications and References (Cont'd) – Spec SD-428

(continued from previous page)

Item 1. To be completed by the firm removing the Perlite:

All of the above statements as to experience are submitted in conjunction with the proposal, as part thereof, and the truthfulness and **accuracy of the information is guaranteed by the firm removing perlite.**

Perlite Removal Firm
Name:

Signature:

Name (print):

Title:

Item 2. To be completed by the firm supplying the Perlite:

All of the above statements as to experience are submitted in conjunction with the proposal, as part thereof, and the truthfulness and **accuracy of the information is guaranteed by the firm supplying the perlite.**

Perlite Supplier Name:

Signature:

Name (print):

Title:

Supplementary Bidder's Qualifications and References (Cont'd) – Spec SD-428

(continued from previous page)

Item 3. To be completed by the firm installing the Perlite:

All of the above statements as to experience are submitted in conjunction with the proposal, as part thereof, and the truthfulness and **accuracy of the information is guaranteed by the firm installing perlite.**

Perlite Installation
Contractor/Subcontractor
Name:

.....
(as it appears on Contractor's License)

Signature:

Name (print):

Title:

Item 4. To be completed by the firm installing the Main Air Compressor (MAC) Motors:

All of the above statements as to experience are submitted in conjunction with the proposal, as part thereof, and the truthfulness and **accuracy of the information is guaranteed by the firm installing the MAC Motors.**

MAC Motor Installation
Contractor/Subcontractor
Name:

.....
(as it appears on Contractor's License)

Signature:

Name (print):

Title:

Supplementary Bidder's Qualifications and References (Cont'd) – Spec SD-428

(continued from previous page)

Item 5. To be completed by the firm installing the coatings for the cold boxes:

All of the above statements as to experience are submitted in conjunction with the proposal, as part thereof, and the truthfulness and **accuracy of the information is guaranteed by the firm installing the coatings for the cold boxes.**

Cold Boxes Coatings
Installation
Contractor/Subcontractor
Name:

(as it appears on Contractor's License)

Signature:

Name (print):

Title:

Item 6. To be completed by the Bidder:

All of the above statements as to experience are submitted in conjunction with the proposal, as part thereof, and the truthfulness and accuracy of the information is guaranteed by **the bidder.**

Signature of Bidder

Name(print):

Title:

THIS PAGE IS LEFT INTENTIONALLY BLANK

Do Not Submit

*In order to submit a
Bid, you must obtain
a hardcopy version of
the bid documents from
the District.*

MANUFACTURER FORM

Project Name: Specification – SD-428, MWWTP Oxygen Plant Rehabilitation

Contractor: _____

Enter below the name and the location of the place of business of each manufacturer who will furnish materials, products or equipment render services, or perform other work or service to Contractor, for the portion of Work listed.

If the Contract Documents list acceptable manufacturer products, the Bidder shall enter only the manufacturers listed in the Contract Documents, or those accepted by the District as an “or equal” substitution per Instructions to Bidders Article 3. Entering a non-listed or non-accepted manufacturer will cause the Bidder’s bid to be deemed non-responsive. Otherwise, if the Contract Documents do not indicate acceptable manufacturer products, the Bidder shall enter the anticipated manufacturer to be utilized for each portion of Work listed. See Instructions to Bidders Article 3 – Submittals Prior to Bid Opening and Article 12 – Manufacturer Form for more information.

Do Not Submit

In order to submit a Bid, you must obtain a hardcopy version of the bid documents from the District.

Manufacturer/Vendor (Name)	Place of Business (City/State)	Work to be performed by Manufacturer
		01 75 17 Field Testing and Startup – Paragraph 1.5 B – cryogenic oxygen specialist and qualifications
		26 09 16 Electrical Controls and Relays – SEL Motor Relay Protection
		40 81 00 System Integrator Qualifications
		40 05 23 Process Valves (enter for each type of valve listed)
		40 70 00 Instrumentation for Process Systems

Do Not Submit

*In order to submit a
Bid, you must obtain
a hardcopy version of
the bid documents from
the District.*

THIS PAGE IS LEFT INTENTIONALLY BLANK

DECLARATION OF NONCOLLUSION

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

The undersigned declares, under penalty of perjury under the laws of the State of California, that the bid submitted to the East Bay Municipal Utility District for _____

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

Firm: _____

By: _____ Date: _____
(Signature of Bidder)

Signed At: _____ County, State of: _____

Do Not Submit

In order to submit a
This page intentionally left blank.

*Bid, you must obtain
a hardcopy version of
the bid documents from
the District.*



DECLARATION OF ELIGIBILITY TO WORK ON PUBLIC WORKS PROJECTS

The undersigned hereby certifies under penalty of perjury under the laws of the State of California that in connection with bidding on this project:

The bidder is eligible to bid on public works projects in the State of California;

The bidder is not barred from bidding on or being awarded a contract for public works pursuant to California Labor Code Sections 1725.5, 1777.1 or 1777.7;

The bidder has obtained from each and every sub-contractor it intends to employ on this project, a statement of eligibility to work on public works projects in the State of California indicating that the subcontractor is not barred from performing work on a public works project pursuant to California Labor Code Sections 1725.5, 1777.1 or 1777.7;

If at any time during the course of performing work for East Bay Municipal Utility District, the contractor (formerly known as the bidder) becomes, or any of its sub-contractors become, ineligible to work on public works projects in the State of California, the contractor will immediately notify East Bay Municipal Utility District of this fact in writing.

Date: _____

*In order to submit a
Bid, you must obtain
a hardcopy version of
the bid documents from
the District.*

Signature of Bidder

Title: _____

Signed at: _____
(County)

State of: _____

Do Not Submit

In order to submit a
This page intentionally left blank.

*Bid, you must obtain
a hardcopy version of
the bid documents from
the District.*



IRAN CONTRACTING ACT CERTIFICATION

Pursuant to Public Contract Code (PCC) § 2204, an Iran Contracting Act Certification is required for solicitations of goods or services of \$1,000,000 or more.

To submit a bid or proposal to East Bay Municipal Utility District (District), you must complete **ONLY ONE** of the following two paragraphs. To complete paragraph 1, check the corresponding box **and** complete the certification for paragraph 1. To complete paragraph 2, check the corresponding box and attach a copy of the written permission from the District.

- ☐ 1. We are not on the current list of persons engaged in investment activities in Iran created by the California Department of General Services ("DGS") pursuant to PCC § 2203(b), and we are 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.

CERTIFICATION FOR PARAGRAPH 1:

I, the official named below, CERTIFY UNDER PENALTY OF PERJURY, that I am duly authorized to legally bind the proposer/bidder to the clause in paragraph 1. This certification is made under the laws of the State of California.

Firm: _____

By: _____ Date: _____
(Signature of Bidder)

Title: _____

Signed at: _____ County, State of: _____

OR

- ☐ 2. We have received written permission from the District to submit a bid or proposal pursuant to PCC § 2203(c) or (d). A copy of the written permission from the District is included with our bid or proposal.

This page intentionally left blank.

DOCUMENT 00 51 00

EXECUTION OF CONTRACT

1.1 SPECIMEN FORMS

- A. The forms of contract, faithful performance bond, and payment bond included in the Contract Documents shall be examined by each bidder, but are to be executed only by the Contractor to whom award is made.

1.2 EXECUTION OF CONTRACT AND BONDS

- A. After award of contract, the District will mail to the Contractor two copies of contracts, bonds, and insurance forms. Within fifteen (15) days after receiving the forms, the Contractor shall execute and return all forms by mail to:

Project & Construction Management Section
East Bay Municipal Utility District
Main Wastewater Treatment Plant
2020 Wake Avenue, MS 59
Oakland, CA 94607
Attn: John Law

- B. Both copies of the contract and bonds shall be properly executed and signed by the Contractor. If the Contractor is a corporation, the contract and bonds shall be signed by the corporate officers authorized to do so.
- C. Both copies of the bonds shall be executed by a sufficient, admitted surety insurer (ie: as listed on website [http://interactive.web.insurance.ca.gov/webuser/idb_co_list\\$.startup](http://interactive.web.insurance.ca.gov/webuser/idb_co_list$.startup)) admitted to transact such business in California by the California Department of Insurance and as described in Article 9 of Document 00 72 00 General Conditions. After the contract is executed on behalf of the District, one copy will be returned to the Contractor.

1.3 INSURANCE

- A. After award of contract, the Contractor shall promptly obtain the insurance certificates required by Document 00 62 00 Insurance Requirements of this Specification, and shall submit them to the Engineer as specified with the contract and bonds.
- B. Insurance requirements shall be met within the same period allowed for execution of the contract and bonds.

1.4 NOTICE TO PROCEED

- A. See Article 8 of Document 00 72 00 General Conditions and Section 00 73 05 Supplementary Requirements.

END OF DOCUMENT



CONTRACT

DATE OF CONTRACT	CONSTRUCTION OR INSTALLATION
CONTRACTOR	
CONTRACT FOR (Specification title, brief description of work, and bid items)	
Sample Only	
CONTRACT PRICE (Words and figures)	
CONTRACT COMPLETION	
CONTRACT DOCUMENTS: The Contract Documents include the District's contract form and any exhibits attached thereto, Notice to Contractors, Instruction to Bidders, Proposal, General Conditions, Supplementary General Conditions, Designation of Subcontractors, Contract Equity Program Forms, Specifications, Addenda, Appendices, Approved Change orders, if any, and Drawings, contained in and by reference made part of the Specifications.	

WITNESSETH: That the East Bay Municipal Utility District, a public corporation of the State of California, hereinafter called the District, and the individual, partnership, joint venture, or corporation named above, hereinafter called the Contractor, agree as follows:

1. The Contractor, at its own risk and expense, agrees to perform and complete the work set forth in the Contract Documents named above, all now on file in the office of the Secretary of the District, which said Contract Documents are hereby referred to for a definite and distinct description of the work to be performed under this Contract and are made part of this Contract the same as though fully set forth herein.

CONTRACT

2. The Contractor agrees to perform this Contract in compliance with and in conformity to said Contract Documents.
3. The District, in consideration of the performance of this Contract, agrees to pay the Contractor the Contract Price entered on the first page hereof in accordance with the bid of the Contractor which is hereby expressly referred to and made part of this Contract.
4. Payment(s) shall be made to the Contractor in accordance with the provisions set forth in the Contract Documents and the amount(s) to be paid the Contractor shall be paid in legally executed and regularly issued check(s) of the District, drawn on the appropriate fund or funds, as required by law and the order of the Board of Directors thereof.
5. The Contractor is skilled in the trade or calling necessary to perform this Contract, and the District relies upon the skill of the Contractor to perform this Contract in the most skillful and durable manner, and the Contractor guarantees so to do, and the acceptance of the work will not operate as a release to the Contractor or the Surety on the Contractor's bonds from said guarantee.
6. The attention of the Contractor is directed to Article 12 of the General Conditions of the Specification entitled "Labor Provisions."
7. The Contractor is aware of the provisions of Section 3700 of the Labor Code of the State of California which requires every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that Code, and the Contractor agrees to comply with such provisions before commencing the performance of the work of this Contract.
8. The Contractor and all Subcontractors of any tier shall be properly registered with the State Department of Industrial Relations for the duration of the project pursuant to Section 1725.5 of the Labor Code.

IN WITNESS WHEREOF the parties hereto have executed this agreement the day and year entered on the first page hereof.

(SEAL OF DISTRICT)

EAST BAY MUNICIPAL UTILITY DISTRICT

By _____
Secretary of the District

Sample Only

Contractor

By _____

*Title _____

By _____

**Title _____



DATE _____

FAITHFUL PERFORMANCE BOND

CONTRACTOR (Name and California address where service may be effected)

SURETY (Name and California address where service may be effected)

AMOUNT OF BOND (Sum in words and figures)

CONTRACT DOCUMENTS (As named in the Contract)

SAMPLE ONLY

KNOW ALL PERSONS BY THESE PRESENTS:

THAT, the contractor named above, hereinafter called the Contractor, as Principal, and the Surety named above, as Surety, are held and firmly bound unto the East Bay Municipal Utility District, hereinafter called the District, in the sum entered above, lawful money of the United States of America, for the payment of which sum well and truly to be made to the District, we, and each of us, bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

The condition of the above obligation is such that whereas the Contractor and the District entered into a Contract of even date herewith, by the terms and conditions of which the Contractor agreed to perform and complete the work, or manufacture, complete, and deliver the material or equipment, set forth in the Contract Documents named in the Contract, all now on file in the office of the Secretary of the District, as will more fully appear by reference to said Contract, which is made a part of this bond;

FAITHFUL PERFORMANCE BOND

NOW, THEREFORE, if the Contractor shall well and truly carry out, execute and perform all things by the Contractor to be carried out, executed and performed, according to the terms and conditions of said Contract, including any and all warranty and guaranty obligations contained therein, then this obligation shall become null and void, otherwise to remain in full force and effect throughout the period of performance, including any warranty or guaranty period.

No prepayment or delay in payment, and no change, extension, addition, or alteration of any provision of said Contract or Contract Documents agreed to between the Contractor and the District, and no forbearance on the part of the District shall operate to release the Surety from liability on this Bond, and consent to make such alterations without further notice to or consent by the Surety is hereby given, and the Surety hereby waives the provisions of Section 2819 of the Civil Code and Section 359.5 of the Code of Civil Procedure of the State of California.

Each signator to this bond hereby declares under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Dated the day and year entered on the first page hereof.

SAMPLE ONLY

Contractor

By _____

*Title _____

By _____

**Title _____

(SEAL OF SURETY)

Surety

By _____

Title _____

Note: The signature of the Surety on this bond must be acknowledged before a Notary Public. An executed Power of Attorney indicating that the Surety's representative is authorized to bind the Surety must accompany this bond.

The foregoing Bond was accepted and approved this _____ day of _____, 20 _____

_____, East Bay Municipal Utility District

Specifications / Proposal No. _____

*If corporation, Corporate President or CEO; if Partnership, Partner.

**Corporate Secretary or financial officer.



DATE _____

PAYMENT BOND

CONTRACTOR (Name and California address where service may be effected)

SURETY (Name and California address where service may be effected)

AMOUNT OF BOND (Sum in words and figures)

CONTRACT DOCUMENTS (As named in the Contract)

Sample Only

KNOW ALL PERSONS BY THESE PRESENTS:

THAT, WHEREAS, the contractor named above, hereinafter called the Contractor, has this day entered into a Contract with East Bay Municipal Utility District, hereinafter called the District, to perform and complete the work set forth in the Contract Documents named in the Contract, all now on file in the office of the Secretary of the District, as will more fully appear by reference to said Contract, which is made a part hereof; and

WHEREAS, Sections 9550 to 9566 inclusive of the Civil Code of the State of California, and any amendments thereof, require contractors upon public work to file with the body by whom such contract was awarded a good and sufficient bond to secure the claims to which reference is made in said sections, NOW THESE PRESENTS

WITNESSETH: That the Contractor, as Principal, and the Surety named above, as Surety, are held and firmly bound unto any and all materialmen, persons, firms, or corporations furnishing materials, provisions, or other supplies used in, upon, for, or about the performance of the work contracted to be done, and to all persons, firms or corporations renting or hiring implements or machinery for or contributing to the said work to be done and to all persons who perform work or labor of any kind or nature thereon, or in connection therewith, and to all persons who supply both work and materials, in the sum entered on the first page hereof, lawful money of the United States of America, being not less than the total amount payable by the terms of said Contract, for which payment well, truly and promptly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly, and severally, firmly by these presents.

PAYMENT BOND

The condition of the above obligation is such that if the Contractor, or the Contractor’s subcontractors, fail to pay for any materials, provisions or other supplies used in, upon, for, or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Act with respect to such work or labor, the Surety will pay for the same, in an amount not exceeding the sum specified in this Bond, provided that any and all claims hereunder shall be filed and proceedings had in connection therewith as required by the provisions of said Sections 9550 to 9566 inclusive of the Civil Code of the State of California, and any amendments thereof: PROVIDED ALSO, that in case suit is brought upon this Bond a reasonable attorney’s fee shall be awarded by the court to the prevailing party in said suit, said attorney’s fee to be fixed as costs in said suit, and to be included in the judgment therein rendered.

No prepayment or delay in payment and no change, extension, addition, or alteration of any provision of said Contract or Contract Documents agreed to between the Contractor and the District, and no forbearance on the part of the District, shall operate to release the Surety from liability on this Bond, and consent to make such alterations without further notice to or consent by the Surety is hereby given, and the Surety hereby waives the provisions of Section 2819 of the Civil Code of the State of California.

Dated the day and year entered on the first page hereof.

Each signator to this bond hereby declares under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Sample Only _____ Contractor
By _____
*Title _____

By _____
**Title _____

(SEAL OF SURETY) _____ Surety

By _____
Title _____

Note: The signature of the Surety on this bond must be acknowledged before a Notary Public. An executed Power of Attorney indicating that the Surety’s representative is authorized to bind the Surety must accompany this bond.

The foregoing Bond was accepted and approved this _____ day of _____, 20 _____
_____, East Bay Municipal Utility District
Specifications / Proposal No. _____

INSURANCE REQUIREMENTS

1.1 GENERAL – INDEMNIFICATION

- A. See Article 4.7.5 of Document 00 72 00 – General Conditions.

1.2 PROVISIONS APPLICABLE TO ALL REQUIRED INSURANCE

- A. Prior to the beginning of and throughout the duration of the Contract, and for any additional period of time as specified below, the Contractor shall, at its sole cost and expense, maintain insurance in conformance with the requirements set forth below and Article 9 of the General Conditions.
- B. Contractor shall provide Verification of Insurance as required by the Contract by providing the completed Verification of Insurance as requested below signing and submitting this Document 00 62 00 to the District. This Document shall be signed by an officer of the Contractor (Agent) or by the Insurance Broker for the Contractor. Contractor shall update this Document throughout the specified term of the insurance required by the Contract by resubmitting the completed Document prior to the expiration date of any of the required insurance. The updated Document 00 62 00 shall become a part of the Contract but shall not require a change order to the Contract. The Notice to Proceed will not be issued until such insurance has been accepted by the District.
- C. Contractor shall carry and maintain the minimum insurance requirements as defined in the Contract. Contractor shall require any subcontractor to carry and maintain the minimum insurance required in the Contract to the extent they apply to the scope of work to be performed by such subcontractor.
- D. Acceptance of Verification of Insurance by the District shall not relieve Contractor of any of the insurance requirements, nor decrease liability of Contractor.
- E. The insurance required hereunder may be obtained by a combination of primary, excess and/or umbrella insurance, and all coverage shall be at least as broad as the requirements listed in the Contract.
- F. Any deductibles, self-insurance, or self-insured retentions (SIRs) applicable to the required insurance coverage shall be declared to and accepted by the District.
- G. At the option and request of the District, the Contractor shall provide documentation of its financial ability to pay the deductible, self-insurance, or SIR.
- H. Any policies with a SIR shall provide that any SIR may be satisfied, in whole or in part, by the District or the additional insured at its sole and absolute discretion.
- I. Unless otherwise accepted by the District, all required insurance shall be placed with insurers with a current A.M. Best's rating of no less than A- V.

- J. Contractor shall defend the District and pay any damages as a result of failure to provide the waiver of subrogation from the insurance carrier.
- K. For any coverage that is provided on a claims-made coverage form (which type of form is permitted only where specified) the retroactive date shall be shown and shall be on or before the date of the Contract.
- L. Insurance shall be maintained and updated Verification of Insurance be provided to the District before the expiration of insurance by having Contractor's insurance broker or agent update, sign and return this Document to the District's contract manager. For all claims-made policies the updated Verification of Insurance shall be provided to the District for a minimum of three (3) years after Contract Completion.
- M. If claims-made coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a retroactive date on or before the effective date of the Contract, Contractor shall purchase an extended reporting period for a minimum of three (3) years after Contract Completion.
- N. If requested by the District, a copy of the policies' claims reporting requirement shall be submitted to the District for review.
- O. Where additional insured coverage is required, the additional insured coverage shall be "primary and non-contributory," and shall not seek contribution from the District's insurance or self-insurance.
- P. Contractor agrees to provide immediate Notice to the District of any loss or claim against Contractor arising out of, pertaining to, or in any way relating to the Contract, or Work performed under the Contract. The District assumes no obligation or liability by such Notice, but has the right (but not the duty) to monitor the handling of any such claim or claims if they are likely to involve the District.
- Q. Contractor agrees, upon request by the District, to provide complete, certified copies of any policies and endorsements within 10 days of such request (copies of policies may be redacted to eliminate premium details.)
- R. It is the Contractor's responsibility to ensure its compliance with the insurance requirements. Any actual or alleged failure on the part of the District to obtain proof of insurance required under the Contract shall not in any way be construed to be a waiver of any right or remedy of the District, in this or any regard.
- S. Notice of Cancellation/Non-Renewal/Material Reduction
 - 1. The insurance requirements hereunder are mandatory and the District may, at its sole and absolute discretion, terminate the Contract provided by Contractor, should Contractor breach its obligations to maintain the required coverage and limits set forth in the Contract. No coverage required hereunder shall be cancelled, non-renewed or materially reduced in coverage or limits without the District being provided at least thirty (30) days prior written notice, other than cancellation for the non-payment of premiums, in which event the District shall

be provided ten (10) days prior written notice. Replacement of coverage with another policy or insurer, without any lapse in coverage or any reduction of the stated requirements shall not require notice beyond submission to the District of an updated Verification of Insurance which shall be met by having the Contractor's insurance broker or agent update, sign and return this Document.

1.3 WORKERS' COMPENSATION AND EMPLOYER'S LIABILITY INSURANCE COVERAGE

- A. Workers' Compensation insurance including Employer's Liability insurance with minimum limits as follows:
 - 1. Coverage A. Statutory Benefits Limits
 - 2. Coverage B. Employer's Liability of not less than:
 - a. Bodily Injury by accident: \$1,000,000 each accident
 - b. Bodily Injury by disease: \$1,000,000 each employee
 - c. Bodily Injury by disease: \$1,000,000 policy limit
- B. Contractor's insurance shall be primary and any insurance or self-insurance procured or maintained by the District shall not be required to contribute to it.
- C. If there is an onsite exposure of injury to Contractor, subcontractor, and/or subcontractor's employees under the U.S. Longshore and Harbor Workers' Compensation Act, the Jones Act, or under laws, regulations or statutes applicable to maritime employees, coverage is required for such injuries or claims.
- D. If Contractor is self-employed, a sole proprietorship or a partnership, with no employees, and is exempt from carrying Workers' Compensation Insurance, Contractor shall return the completed Verification of Insurance confirming that Contractor has no employees and is exempt from the State of California Workers' Compensation requirements.
- E. If Contractor is self-insured with respect to Workers' Compensation coverage, Contractor shall provide to the District a Certificate of Consent to Self-Insure from the California Department of Industrial Relations. Such self-insurance shall meet the minimum limit requirements and shall waive subrogation rights in favor of the District as stated in the following paragraph.
- F. Waiver of Subrogation. Workers' Compensation policies, including any applicable excess and umbrella insurance, shall contain a waiver of subrogation endorsement providing that Contractor and each insurer waive any and all rights of recovery by subrogation, or otherwise, against the District, its directors, board, and committee members, officers, officials, employees, agents, and volunteers. Contractor shall defend and pay any and all damages, fees, and costs, of any kind arising out of, pertaining to or in any way relating to the Contractor's failure to provide waiver of subrogation from the insurance carrier.

Verification of Workers' Compensation and Employer's Liability Insurance Coverage

☐ By checking the box and signing below, I hereby verify that the Contractor is exempt from the State of California's requirement to carry workers' compensation insurance.

As the Contractor's insurance broker/agent, I hereby verify that I have reviewed and confirmed that the Contractor carries workers' compensation insurance as required by the Contract Documents, including the relevant provisions applicable to all required insurance.

Self-Insured Retention: Amount: \$ _____

Policy Limit: \$ _____

Policy Number: _____

Policy Period: from: _____ to: _____

Insurance Carrier Name: _____

Insurance Broker or Agent: Print Name: _____

Insurance Broker or Agent's Signature: _____

**THE INSURANCE REQUIREMENTS DOCUMENT CONTINUES ON THE
FOLLOWING PAGE.**

1.4 COMMERCIAL GENERAL LIABILITY INSURANCE COVERAGE

- A. Contractor's insurance shall be primary and any insurance or self-insurance procured or maintained by the District shall not be required to contribute to it.
- B. The insurance requirements under the Contract shall be the greater of (1) the minimum coverage and limits specified in the Contract; or (2) the broader coverage and maximum limits of coverage of any insurance policies or proceeds available to the Named Insured. It is agreed that these insurance requirements shall not in any way act to reduce coverage that is broader or that includes higher limits than the minimums required herein. No representation is made that the minimum insurance requirements of the Contract are sufficient to cover the obligations of the Contractor.
- C. Minimum Requirements. CGL insurance with minimum per occurrence and aggregate limits as follows:
 - 1. Bodily Injury and Property Damage: \$5,000,000 per occurrence & aggregate
 - 2. Personal Injury/Advertising Injury: \$5,000,000 per occurrence & aggregate
 - 3. Products/Completed Operations: \$5,000,000 per occurrence & aggregate
- D. Coverage shall be on an occurrence basis.
- E. Coverage for Products, and Completed Operations, and Ongoing Operations shall be included in the insurance policies and shall not contain any "prior work" coverage limitation or exclusion applicable to any Work performed by Contractor and/or subcontractor under the Contract.
- F. Insurance policies and Additional Insured Endorsement(s) Coverage shall be included for all premises and operations in any way related to the Contract.
- G. There shall be no exclusion for explosions, collapse, or underground liability (XCU).
- H. Insurance policies and Additional Insured Endorsement(s) shall not exclude liability and damages to work arising out of, pertaining to, or in any way relating to Work performed by Subcontractors on the Contractor's behalf.
- I. Contractual liability coverage shall be included and shall not limit, by any modification or endorsement, coverage for liabilities assumed by Contractor under the Contract as an "insured contract."
- J. Waiver of Subrogation
 - 1. The policy shall be endorsed to include a Waiver of Subrogation ensuring that the Contractor and its insurer(s) waive any rights of recovery by subrogation, or otherwise, against the District, its directors, board, and committee members, officers, officials, agents, volunteers, and employees. Contractor shall defend

and pay any and all damages, fees, and costs, of any kind, arising out of, pertaining to, or in any way resulting from Contractor's failure to provide the waiver of subrogation from its insurance carrier(s).

- K. "Independent Contractor's Liability" shall not limit coverage for liability and/or damages arising out of, pertaining to, or in any way resulting from Services provided under the Contract.
- L. To the fullest extent permitted by law, the District, its directors, board, and committee members, officers, officials, employees, agents, and volunteers shall be covered as Additional Insureds on a primary and noncontributory basis on all underlying, excess and umbrella policies that shall be evidenced in each case by an endorsement. The Additional Insureds shall be covered for liability arising in whole, or in part, from any premises, Products, Ongoing Operations, and Completed Operations by or on behalf of Contractor, in any way related to the Work performed under the Contract.
- M. A severability of interest provision shall apply for all the Additional Insureds, ensuring that Contractor's insurance shall apply separately to each insured against whom a claim is made or suit is brought, except with respect to the policies' limit(s).

Verification of Commercial General Liability (CGL) Insurance Coverage

As the Contractor's insurance broker/agent, I hereby verify that I have reviewed and confirmed that the Contractor carries Commercial General Liability insurance, as required by the Contract Documents, including the relevant provisions applicable to all required insurance:

Self-Insured: Amount: \$ _____

Policy Limit: Per Occurrence: \$ _____ **Aggregate: \$** _____

Policy Number: _____

Policy Period: from: _____ **to:** _____

Insurance Carrier Name: _____

Insurance Broker or Agent: Print Name: _____

Insurance Broker or Agent's Signature: _____

**THE INSURANCE REQUIREMENTS DOCUMENT CONTINUES ON THE
FOLLOWING PAGE.**

1.5 BUSINESS AUTO LIABILITY INSURANCE COVERAGE

- A. Contractor's insurance shall be primary and any insurance or self-insurance procured or maintained by the District shall not be required to contribute to it.
- B. The insurance requirements under the Contract shall be the greater of (1) the minimum coverage and limits specified in the Contract; or (2) the broader coverage and maximum limits of coverage of any insurance policies or proceeds available to the Named Insured. It is agreed that these insurance requirements shall not in any way act to reduce coverage that is broader or that includes higher limits than the minimums required herein. No representation is made that the minimum insurance requirements of the Contract are sufficient to cover the obligations of the Contractor.
- C. Minimum Requirements. Auto insurance with minimum coverage and limits as follows:
 - 1. Each Occurrence Limit (per accident) and in the Aggregate: \$2,000,000
 - 2. Bodily Injury and Property Damage: \$2,000,000
- D. Coverage shall include either "owned, non-owned, and hired" autos or "any" automobile
- E. This provision ensures the policy covers losses arising out of use of company-owned vehicles ("owned autos"), employee's personal autos ("non-owned autos" meaning not owned by company/insured) or autos that are rented or leased ("hired autos").
- F. If Contractor is transporting hazardous materials or contaminants, evidence of the Motor Carrier Act Endorsement-hazardous materials clean-up (MCS-90, or its equivalent) shall be provided.
- G. If Contractor's Scope of Work under the Contract exposes a potential pollution liability risk related to transport of potential pollutants, seepage, release, escape or discharge of any nature (threatened or actual) of pollutants into the environment arising out of, pertaining to, or in any way related to Contractor's and/or Subcontractor's work performed under the Contract, then Auto Liability Insurance policies shall be endorsed to include Transportation Pollution Liability insurance. Alternatively, coverage may be provided under the Contractor's Pollution Liability Policies if such policy has no exclusions that would restrict coverage under the Contract. Coverage shall also include leakage of fuel or other "pollutants" utilized as part of the normal functioning of covered autos.
- H. To the fullest extent permitted by law, the District, its directors, board, and committee members, officers, officials, employees, agents, and volunteers shall be covered as Additional Insureds on a primary and noncontributory basis on all underlying and excess and umbrella policies. The Additional Insureds shall be covered for liability arising in whole, or in part, from any premises, Products,

Ongoing Operations, and Completed Operations by or on behalf of Contractor, in any way related to the Work performed under the Contract.

- I. A severability of interest provision shall apply for all the Additional Insureds, ensuring that Contractor's insurance shall apply separately to each insured against whom a claim is made or suit is brought, except with respect to the insurer's limits of liability.

Verification of Business Auto Liability Insurance Coverage

As the Contractor's insurance broker/agent, I hereby verify that I have reviewed and confirmed that the Contractor carries Business Automobile Liability insurance, as required by the Contract Documents, including the relevant provisions applicable to all required insurance:

Self-Insured: Amount: \$ _____

Policy Limit: Per Accident/Occurrence \$ _____ **Aggregate: \$** _____

Policy Number: _____

Policy Period: from: _____ **to:** _____

Insurance Carrier Name: _____

Insurance Broker or Agent: Print Name: _____

Insurance Broker or Agent's Signature: _____

**THE INSURANCE REQUIREMENTS DOCUMENT CONTINUES ON THE
FOLLOWING PAGE.**

1.6 PROFESSIONAL LIABILITY (ALSO KNOWN AS ERRORS AND OMISSIONS)
INSURANCE COVERAGE

- A. Contractor's insurance shall be primary and any insurance or self-insurance procured or maintained by the District shall not be required to contribute to it.
- B. The insurance requirements under the Contract shall be the greater of (1) the minimum coverage and limits specified in the Contract; or (2) the broader coverage and maximum limits of coverage of any insurance policies or proceeds available to the Named Insured. It is agreed that these insurance requirements shall not in any way act to reduce coverage that is broader or that includes higher limits than the minimums required herein. No representation is made that the minimum insurance requirements of the Contract are sufficient to cover the obligations of the Contractor.
- C. Minimum Requirements: Professional Liability Insurance with minimum limits as follows:
 - 1. Each Claim or Occurrence Limit: \$4,000,000
 - 2. Aggregate Limit: \$4,000,000
- D. If Coverage is written on a claims-made form, the following shall apply:
 - 1. The retroactive date shall be shown, and shall be on or before the date of the Contract.
 - 2. Insurance shall be maintained and evidence of insurance shall be provided for a minimum of three (3) years after Contract Completion.
 - 3. If claims-made coverage is canceled or non-renewed, and not replaced with another claims-made policies form with a retroactive date on or before the date of the Contract, Contractor shall purchase an extended period of coverage for a minimum of three (3) years after Contract Completion.
- E. Insurance shall include prior acts coverage sufficient to cover the Work under the Contract.
- F. Coverage shall be included for all premises and operations in any way related to the Contract.

Verification of Professional Liability (Errors and Omissions) Insurance Coverage

As the Contractor's insurance broker/agent, I hereby verify that I have reviewed and confirmed that the Contractor carries Professional Liability insurance as required by the Contract Documents, including the relevant provisions applicable to all required insurance.

Self-Insured: Amount: \$ _____

Policy Limit: Per Claim \$ _____ **Aggregate: \$** _____

Policy Number: _____

Policy Period: from: _____ **to:** _____

Insurance Carrier Name: _____

Insurance Broker or Agent: Print Name: _____

Insurance Broker or Agent's Signature: _____

**THE INSURANCE REQUIREMENTS DOCUMENT CONTINUES ON THE
FOLLOWING PAGE.**

1.7 POLLUTION LIABILITY INSURANCE COVERAGE

- A. Contractor's insurance shall be primary and any insurance or self-insurance procured or maintained by the District shall not be required to contribute to it.
- B. The insurance requirements under this Agreement shall be the greater of (1) the minimum coverage and limits specified in this Agreement; or (2) the broader coverage and maximum limits of coverage of any insurance policies or proceeds available to the Named Insured. It is agreed that these insurance requirements shall not in any way act to reduce coverage that is broader or that includes higher limits than the minimums required herein. No representation is made that the minimum insurance requirements of this Agreement are sufficient to cover the obligations of the Contractor.
- C. Minimum Requirements: Pollution Liability Insurance with minimum limits, as follows:
 - 1. Each Claim or Occurrence Limit: \$2,000,000;
 - 2. Aggregate Limit: \$2,000,000.
- D. Coverage shall be included for bodily injury and property damage, including coverage for loss of use and/or diminution in property value, and for clean-up costs arising out of, pertaining to, or in any way related to the actual, alleged or threatened discharge, dispersal, seepage, migration, release or escape of contaminants or pollutants, arising out of, pertaining to, or in any way resulting from any work performed by Contractor under the Contract; including any transportation of hazardous wastes, hazardous materials, or contaminants.
- E. If Coverage is written on a claims-made form, the following shall apply:
 - 1. The retroactive date shall be shown, and shall be on or before the date of the Contract.
 - 2. Insurance shall be maintained and evidence of insurance shall be provided for a minimum of three (3) years after Contract Completion.
 - 3. If claims-made coverage is canceled or non-renewed, and not replaced with another claims-made policies form with a retroactive date on or before the date of the Contract, Contractor shall purchase an extended period of coverage for a minimum of three (3) years after Contract Completion.
- F. Insurance shall include prior acts coverage sufficient to cover the Work under the Contract.

Verification of Pollution Liability Insurance Coverage

As the Contractor's insurance broker/agent, I hereby verify that I have reviewed and confirmed that the Contractor carries Pollution Liability insurance, as required by the Contract Documents, including the relevant provisions applicable to all required insurance.

Self-Insured: Amount: \$ _____

Policy Limit: Per Claim \$ _____ **Aggregate: \$** _____

Policy Number: _____

Policy Period: from: _____ **to:** _____

Insurance Carrier Name: _____

Insurance Broker or Agent: Print Name: _____

Insurance Broker or Agent's Signature: _____

**THE INSURANCE REQUIREMENTS DOCUMENT CONTINUES ON THE
FOLLOWING PAGE.**

1.8 NOT USED.

1.9 NOT USED.

GENERAL CONDITIONS

TABLE OF CONTENTS

	PAGE
ARTICLE 1 GENERAL PROVISIONS.....	3
1.1 Interpretation	3
1.2 Definitions	3
1.3 Contract Documents.....	7
ARTICLE 2 RIGHTS-OF-WAY AND PROPERTY	9
2.1 Provided by the District.....	9
2.2 Additional Property	9
ARTICLE 3 ADMINISTRATION OF THE CONTRACT	9
3.1 Authority of the Engineer	9
3.2 Inspection and Non-Conforming Work	9
3.3 Lines, Grades, and Measurements	10
3.4 Disputes and Claims	11
ARTICLE 4 CONTRACTOR'S RESPONSIBILITIES	17
4.1 Responsibility of the Contractor	17
4.2 Supervision of the Work	18
4.3 Contractor's Employees	18
4.4 Materials and Workmanship	19
4.5 District's Right to Perform Separate Work	19
4.6 Patents and Copyrights	20
4.7 Contractor's Responsibility for Losses and Liabilities	20
4.8 Protection of Property	22
4.9 Contractor Use of Premises	23
4.10 Documents On-Site	23
4.11 Review of Contract Documents and Field Conditions	23
ARTICLE 5 SUBCONTRACTORS AND SUPPLIERS.....	24
ARTICLE 6 SAFETY OF PERSONS AND PROPERTY	24
6.1 Contractor's Responsibility	24
6.2 Public Safety	25
6.3 Engineer's Responsibility	25
6.4 Emergency Work	25
ARTICLE 7 CHANGES	26
7.1 General	26
7.2 Change Orders	26
7.3 Determination of Costs for Force Account Change Order Work	27

7.4	Lump Sum or Force Account Adjustments	31
7.5	Variation in Quantity in Unit Price Work	31
7.6	Deleted Work	32
7.7	Differing or Unusual Site Conditions	33
ARTICLE 8	TIME	33
8.1	Commencement, Prosecution, and Completion of Work	33
8.2	Liquidated Damages	34
8.3	Use of Facilities Prior to Completion of Contract	34
8.4	Delays and Extensions of Time	35
8.5	Weather Conditions Unfavorable for Prosecution of Work	37
ARTICLE 9	INSURANCE AND BONDS	38
9.1	Faithful Performance and Payment Bonds	38
9.2	Insurance Requirements.....	38
ARTICLE 10	WARRANTY	39
ARTICLE 11	TERMINATION OR SUSPENSION OF THE CONTRACT	40
11.1	Termination by the District for Cause or Default	40
11.2	Termination by the District for Convenience	41
11.3	Termination of the Contract - Act of God or Force Majeure	42
11.4	Suspension by the District	43
ARTICLE 12	LABOR PROVISIONS	43
12.1	Prevailing Wages	43
12.2	Payroll Records	44
12.3	Hours of Labor	45
12.4	Employment of Apprentices	46
ARTICLE 13	MISCELLANEOUS PROVISIONS	46
13.1	Governing Law	46
13.2	Antitrust Claims	46
13.3	Non-Discrimination Clause	47
13.4	Trenching and Shoring	47
13.5	Third Party Claims	47

GENERAL CONDITIONS

ARTICLE 1 - GENERAL PROVISIONS

1.1 Interpretation

1.1.1 The following interpretative rules apply throughout the Contract Documents.

- .1 The provisions of the Contract Documents are complementary and should be interpreted viewing the Contract Documents as a whole.
- .2 A concept phrased in the singular should be interpreted in the plural as required.
- .3 Masculine includes feminine, and feminine includes masculine.
- .4 The words “shall,” “will” and “must,” in any of their tenses, indicate mandatory requirements.
- .5 The use of examples like “such as” or “including” does not limit or exclude examples not specifically mentioned.
- .6 The words “provide,” “perform,” “construct,” and “install” mean, unless preceded by the word “only,” that the Contractor shall provide, perform, construct, and install and include all services necessary to provide, perform, construct and install.

1.2 Definitions

1.2.1 Throughout the Contract Documents, the terms below will have the following defined meanings:

- .1 **Addendum:** A written change, clarification, or correction to the Contract Documents issued by the East Bay Municipal Utility District prior to bid opening.
- .2 **Bidder:** Any individual, partnership, joint venture, or corporation submitting a proposal for the work contemplated, acting directly or through a duly authorized representative.
- .3 **Board or Board of Directors:** The Board of Directors of the East Bay Municipal Utility District.
- .4 **Change Order:** A Change Order is a written instrument used for modifying the contract with regards to the scope of Work, Contract Sum, and/or Contract Time. An approved Change Order is a Change Order signed by the District. An

executed Change Order is a Change Order signed by both the District and the Contractor.

- .5 Compensable Delay:** A period of delay to the Contractor's performance of the Work that meets all of the following criteria:

 - a) the delay directly prevents the Contractor from performing critical path Work;
 - b) the delay is caused directly and solely by the District or by causes within the exclusive control of the District;
 - c) the delay is not concurrent with any other type of delay;
 - d) the delay could not have been avoided by the Contractor through work-arounds, rescheduling or other mitigation measures; and
 - e) the Contractor gave timely notice of the delay to the District in compliance with the terms of this contract.
- .6 Concurrent Delay:** Two or more independent causes of delay to the Contractor's performance of the Work that meet all of the following criteria:

 - a) the delays occur at the same time during all or a portion of the delay period being considered;
 - b) the delays directly prevent the Contractor from performing critical path Work;
 - c) each of the delays would have delayed the Contractor's performance of critical path work even in the absence of any of the other delays;
 - d) none of the delays could have been avoided by the Contractor through work-arounds, rescheduling or other mitigation measures required under this contract; and
 - e) the Contractor gave timely notice of the delays to the District in compliance with the terms of this contract.
- .7 Contract Completion:** The Work has been fully completed in accordance with the Contract Documents as determined by the Engineer and all governmental authorities with jurisdiction over the project have issued acceptance or a certificate of occupancy.
- .8 Contract Documents:** See Article 1.3.
- .9 Contract Sum:** The contract price stated in the contract form (Document 00 52 00) plus all Approved Change Orders.
- .10 Contract Time:** The number of days set forth in the contract to achieve Contract Completion. The required completion date is computed by adding the number of days to the effective date of the Notice to Proceed. If the required completion date falls on a District holiday or non-Work Day, that day is excluded and the following Work Day is counted. The Contract Time may only be adjusted by approved Change Order.

- .11 Contractor:** The individual, partnership, joint venture, or corporation with whom the contract is made by the District.
- .12 Critical Path:** The sequence of schedule activities that determines the duration of the Work.
- .13 Day:** Unless otherwise specified, days are calendar days, measured from midnight to the next midnight.
- .14 Deficiency Notice:** A written notice issued by the Engineer informing the Contractor of non-conforming Work.
- .15 District:** The East Bay Municipal Utility District.
- .16 Engineer:** The Director of Engineering and Construction or the Director of Wastewater of the District acting directly or through authorized agents acting within the duties entrusted to them.
- .17 Excusable Delay:** A period of delay to the Contractor's performance of the Work that meets all of the following criteria:
- a) the delay prevents the Contractor from performing critical path work;
 - b) the delay is directly caused by events beyond the control of both the District and the Contractor (including, but not limited to, adverse weather);
 - c) the delay is not concurrent with an Inexcusable Delay as defined in this contract;
 - d) the delay could not have been avoided by the Contractor through work-arounds, rescheduling or other mitigation measures required under the contract; and
 - e) the Contractor gave timely notice of the delay to the District in compliance with the terms of this contract.
- .18 Fixed Costs (also known as Fixed Price):** Any necessary labor, material, and equipment costs directly expended which remain constant regardless of the quantity of work done.
- .19 Force Account:** Method of compensation for Work performed that is billed at actual cost for labor, materials, equipment, taxes and other costs plus a specified percentage of markup for overhead and profit. Compensation rate for certain cost elements may be specified in the contract.
- .20 Free Float (also known as Activity Float):** The amount of time that a scheduled activity can be delayed without delaying the early start of any immediately following schedule activity.
- .21 Inexcusable Delay:** A period of delay to the Contractor's performance of the Work caused by circumstances within the Contractor's control or within the scope of the Contractor's contract responsibilities. Delays attributable to or

within the control of a Subcontractor of any tier, or a Supplier, shall be deemed to be delays within the control of the Contractor. Inexcusable Delays include, but are not limited to, any of the following:

- a) delays caused by the Contractor's failure to perform its cooperation and coordination responsibilities required by this contract;
- b) delays caused by the District's enforcement of any government act or regulation, or the provisions of the contract;
- c) delays caused by the District's right to sequence the Work in a manner that would avoid disruption to the District's tenants, customers, contiguous property owners, and their contractors or other prime contractors and their respective Subcontractors;
- d) any delay that is neither a Compensable Delay nor Excusable Delay as defined in this contract; and
- e) delays of any kind that the Contractor fails to give timely notice to the District in compliance with the terms of this contract.

.22 Lump Sum Price: Pricing arrangement where the Contractor agrees to perform the scope of work for a fixed price that cannot be adjusted unless there is a Change Order. For the purpose of this contract, the terms Lump Sum Price and Fixed Price adjustment are used interchangeably.

.23 Notice to Proceed: A written directive, issued by the District, authorizing the Contractor to start performance of the work and establishing date of commencement of the work. The effective date is the date the Contractor acknowledges receipt of the Notice to Proceed or five days from mailing, whichever is earlier.

.24 Shop Drawings: Includes all drawings, specifications, diagrams, calculations, illustrations, product samples, brochures, catalog cuts, schedules, and other data which are prepared by the Contractor, a Subcontractor, tier-subcontractor, manufacturer, Supplier, or distributor, illustrating how specific portions of the Work shall be fabricated or installed.

.25 Shoring: A temporary structural system designed to support any and all loads for the purposes of excavation. Sloping of the soil shall not be considered as shoring.

.26 Subcontractor: The person or persons, co-partnership, firm or entity in direct contract with the Contractor or with any other Subcontractor for the purpose of furnishing materials, equipment, and/or performing a part of the contract Work.

.27 Superintendent: The Contractor's authorized on-site representative in charge of supervising the Work. Instructions and information given by the Engineer to the Superintendent shall be considered to have been given to the Contractor.

.28 Supplier: A manufacturer, fabricator, distributor, or any person or organization who supplies materials or equipment for the contract Work, including that

fabricated to a special design, but who does not ordinarily perform labor at the jobsite.

.29 Total Float: The amount of time that a schedule activity may be delayed from its early start without delaying the Contract Completion date, or violating a schedule constraint.

.30 Underground Utilities: All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities that are installed underground to furnish any of the following services or materials: water, sewage and drainage removal, electricity, gases, steam, liquid petroleum products, telephone or other communication systems, cable television, traffic, or other control or information systems.

.31 Unit Price: Pricing arrangement in which the total amount of compensation for performance of the work is computed by multiplying the actual quantity of Work performed by the line item unit price except as noted in Article 7.5. Measurement of the quantity of work performed shall be determined by the Engineer.

.32 Work: All labor, material, equipment, submittal, and appurtenances required to be furnished to properly complete construction of the work under the Contract Documents.

.33 Work Day: Unless specified elsewhere, work day includes all days of the year except Saturdays, Sundays, and District Holidays.

1.3 Contract Documents

1.3.1 The Contract Documents comprise the entire agreement between the District and the Contractor concerning the Work. The Contractor shall properly perform all requirements of the Contract Documents.

1.3.2 The Contract Documents include the District's contract form and any exhibits attached thereto, including the Notice to Contractors, Instructions to Bidders, Bidding Form, Proposal, General Conditions, Supplementary General Conditions, Designation of Subcontractors, Contract Equity Program Forms, specifications, addenda, appendices, and approved Change Orders, if any.

1.3.3 The Contract Documents are intended to be complementary and include all items necessary for the Contractor's proper execution and completion of the Work. Anything mentioned in the specifications and not shown on the drawings or shown on the drawings and not mentioned in the specifications shall be as if shown or mentioned in both. Any part of the Work not shown or mentioned on the drawings or in the specifications that is reasonably implied by either, or is necessary or usual

for proper performance of the Work, shall be provided by the Contractor at its expense.

- .1** In the case of conflicts, errors, or discrepancies in any of the Contract Documents, the order of precedence is as follows. Within the same order of precedence, specific requirements shall take precedence over general requirements.

1. Change Orders
2. Contract Forms
3. Addenda
4. Contractor's Bid (Bid Form)
5. Supplementary General Conditions
6. General Conditions
7. Specifications (Divisions 01 - 49)
8. Drawings/Plans
9. Referenced Standard Specifications
10. Remainder of Specifications (Division 00)

- .2** With reference to the Drawings:

1. Numerical dimensions govern over scaled dimensions
2. Detailed drawings govern over general drawings
3. Addenda/Change Order drawings govern over contract drawings
4. Contract drawings govern over standard drawings
5. Notes apply only to the drawing where the notes appear, unless classified as "typical" or intended to apply elsewhere in which case they apply to all drawings where the conditions or circumstance noted occurs
6. Typical details apply to all drawings unless a specific different detail is shown

1.3.4 "Related Sections" are referenced solely for the convenience of the Contractor and its Subcontractors and Suppliers, but does not, whether by omission or otherwise, lessen the requirements of the specification section where the related section is referenced.

1.3.5 Command type sentences used in the specifications refer to and are directed to the Contractor.

1.3.6 No interest in the contract shall be transferred to any other party without permission of the Board of Directors.

ARTICLE 2 - RIGHTS-OF-WAY AND PROPERTY

2.1 Provided by the District

- 2.1.1** The District will provide reasonable access to the site for performance of the Work. Upon approval by the Engineer, the Contractor may use a suitable portion of the District's rights-of-way or property for working space and for storage of equipment and materials. The Contractor is responsible for any damage resulting from its use of the District's rights-of-way or property and shall return and restore it to its pre-existing condition. The District will not be responsible for any loss or damage to equipment or materials stored on the work site or on the District's rights-of-way or property.
- 2.1.2** The Contractor does not have exclusive use of the site or the rights-of-way and must coordinate its use with the District and others.

2.2 Additional Property

- 2.2.1** If the Contractor's operations cause the contractor to require additional property that is not within the District's rights-of-way or property for its operations, the Contractor shall, at its own expense, arrange with the property owners to use the additional property.
- 2.2.2** Agreements with property owners for storing materials and equipment, or other purpose related to the Work shall be made in writing with a copy submitted to the Engineer.

ARTICLE 3 - ADMINISTRATION OF THE CONTRACT

3.1 Authority of the Engineer

- 3.1.1** The decision of the Engineer will be final and binding on both parties with respect to all questions concerning the intent of the Contract Documents, the acceptability of material or equipment, the classification of material, the execution of the Work, and/or conflicting interests of separate contractors performing related work.

3.2 Inspection and Non-Conforming Work

- 3.2.1** All materials furnished and Work completed under the contract is subject to inspection by the Engineer. The Engineer's inspections are solely for the District's benefit and do not constitute acceptance of any of the Contractor's work or waiver of the requirement that the Contractor's work conform to the requirements of the Contract Documents. The Contractor shall furnish, without extra charge, all necessary test pieces and samples, including facilities and labor for obtaining those pieces, as requested by the Engineer. The Engineer will have safe access to the work site or shop where the work, material or equipment subject to inspection is

being performed or manufactured or where any off-site work is being performed, including shops, sites, and assembly facilities of Subcontractors and Suppliers.

- 3.2.2** All material, equipment or Work that does not conform to the Contract Documents is non-conforming work and will be rejected regardless of whether it may have been inspected by the Engineer or its representative. Installation of unapproved materials and equipment is non-conforming work until the materials or equipment are approved by the Engineer. Deficiency Notices may be issued by the Engineer to advise the Contractor of non-conforming work. However, lack of a Deficiency Notice shall not waive the Contractor's obligation to correct any and all non-conforming work, patent or latent, through the expiration of the warranty period, or other such longer period as specified in the Contract Documents.
- 3.2.3** Within 10 Work Days after receipt of a Deficiency Notice, the Contractor shall submit its proposal and schedule for correcting all non-conforming work. The District may withhold 150% of the installed value identified or such reasonable costs as determined by the Engineer until the non-conforming work is completed in accordance with the requirements of the Contract Documents. Additional costs for engineering, observation, administrative, clerical or other work associated with or resulting from the Contractor's failure to perform its work in conformance with the Contract Documents shall be borne solely by the Contractor, and the Engineer may elect to deduct the District's additional costs from any future payments to the Contractor. If the Contractor refuses or neglects to replace the non-conforming work, the District may correct or replace the non-conforming work at the Contractor's expense. The District's expenses in correcting any non-conforming work will be calculated as fully burdened costs for labor, plus actual costs for materials and equipment, plus a 15% markup on materials and equipment.
- 3.2.4** Work completed without the Engineer's inspection and approval may be required to be reconstructed or replaced upon the Engineer's inspection. Work covered without prior approval of the Engineer may be required to be uncovered to the extent necessary for the Engineer to determine if the covered Work is satisfactory. The entire cost of replacing or uncovering and re-covering the Work, including the cost of materials furnished by the District, shall be borne by the Contractor, whether or not the Work uncovered or replaced is found to be defective.

3.3 Lines, Grades, and Measurements

- 3.3.1** Lines and grades will be established by the Engineer, unless otherwise noted, and the Contractor shall provide such assistance and materials as may be required. The Contractor shall be responsible for transferring grades from the survey stakes provided by the Engineer. The Contractor shall carefully preserve all stakes and reference points. Should any stakes, points or monuments be removed or destroyed without the approval of the Engineer, the stakes, points or monuments shall be reset, as necessary, at the Contractor's expense.

- 3.3.2** The Contractor shall inform the Engineer at least four full Work Days in advance of the times and places that the Contractor requires establishment of lines, grades, or quantity surveys.
- 3.3.3** If the Contractor fails to provide timely notice to the Engineer regarding its survey requirements, no compensation will be made for the impact to the Contractor for resulting delays.

3.4 Disputes and Claims

3.4.1 Disputes

- .1** If the Engineer issues an order or decision that requires the Contractor to perform Work that the Contractor believes is not required by the Contract Documents, the Contractor shall, within 48 hours of the order or decision, notify the Engineer in writing that it disputes the order or decision. The Contractor's notice shall include the date and circumstances of the Engineer's order or decision and the detailed basis for disputing the order or decision. Regardless of the basis of the dispute, the Contractor shall immediately perform the disputed Work or conform to the Engineer's order or decision.
- .2 Notice of Intent To File a Claim:** The Engineer will consider and investigate the dispute and issue a written and final decision regarding the dispute. If the Contractor disagrees with the Engineer's final decision, the Contractor shall, within 10 days of receipt of the decision, send the Engineer a written Notice of Intent To File a Claim.
- .3 Waiver:** Failure of the Contractor to comply with the notifications of Articles 3.4.1.1 and 3.4.1.2 within the specified time constitutes a waiver of the Contractor's right to assert a Claim concerning such matter.

3.4.2 Claims

- .1 Time to Submit Claim:** The Contractor shall submit a written Claim within 30 days after submitting a Notice of Intent to File a Claim. The Claim shall relate directly to the circumstances addressed in the Notice of Intent to File a Claim, must identify the date of the Notice of Intent to File a Claim to which the Claim relates, and may not raise new issues or circumstances that were not identified in the Notice of Intent to File a Claim. The Claim shall clearly state that it is a Claim being submitted under this Article. Failure to submit a written Claim within the 30-day period waives any right to recover compensation or obtain an extension of Contract Time due to the issues referenced in the Notice of Intent to File a Claim.
- .2 Contents of Written Claim:** The written Claim shall provide detailed information sufficient to allow the Engineer to evaluate entitlement and value of the Claim, including:

- a) Description of the event or events giving rise to the Claim;
- b) Identification of the date or dates of the event, or events giving rise to the Claim;
- c) Identification of all statutory or contractual support for the Claim; and
- d) Detailed analysis of the asserted effect on the Contract Sum and the Contract Time.

- .3 Extensions in Contract Time:** The Claim shall provide an analysis of schedule impact that describes how the Contractor will incorporate the alleged changed Work in the schedule and how that Work impacts the current accepted schedule. The analysis of schedule impacts shall contain a written narrative and a schedule diagram per Construction Progress Documentation set forth in Section 01 32 00 of the specifications depicting how the alleged changed Work affects other schedule activities and an analysis of the potential mitigation efforts. The written narrative shall describe the sequence of events surrounding the alleged change, the affect the events had or will have on the progress of the Work, an explanation regarding the cause of delay, the Contractor's mitigation efforts taken to minimize time impacts to the project, and the Contractor's determination whether additional compensation and/or an extension of the Contract Time is sought for delay. If the Contractor is requesting an extension in the Contract Time, the magnitude and cause of the delay shall be demonstrated in the analysis of schedule impacts.
- .4 Delay Analysis Diagrams:** The same scheduling software used for the project schedule and schedule update shall be used to create the analysis diagram. The analysis diagram shall be provided in an editable, electronic, file format as well as a printed copy. The results of the analysis diagram shall be tied to the affected sequence of schedule activities to enable the Engineer to evaluate the impact to the critical path as a result of the alleged changed work. The schedule diagram shall also show logic relationships and durations of new activities associated with the alleged change and logic and duration revisions to existing schedule activities due to the alleged change and mitigations taken to minimize impacts to the project. The Contractor is responsible for requesting extensions to its Contract Time based on the analysis of schedule impact.
- .5 Adjustments to Contract Sum:** The Claim shall also provide adequate financial data supporting any request for a change in Contract Sum. The Claim shall include a detailed cost breakdown of all items claimed, including all costs associated with delays, acceleration, overhead and profit, and the computations used in determining such costs. The Contractor's proposal shall include detailed estimates with cost breakdowns for each Subcontractor whose break down will include the following categories: labor, material, equipment, overhead, and profit. Labor shall be broken down into hours and rate per hour. If applicable, the proposal shall include a breakdown for off-site labor (including factory labor, engineering, etc.). If the exact amount of a Claim is not ascertainable at the time the claim is made, the available supporting data

shall be submitted and any supplemental data supporting the exact amount of the Claim shall be submitted as soon as available.

.6 Claim Format:

a) The Contractor shall submit the claim in the following format:

- 1)** Cover letter and certification.
- 2)** Summary of claim including:
 - (a)** Underlying Facts.
 - (b)** Entitlement.
 - (c)** Mitigation Efforts.
 - (d)** Calculations.
 - (e)** Contract Provisions Supporting Relief.
- 3)** List of documents relating to claim:
 - (a)** Specifications.
 - (b)** Drawings.
 - (c)** Clarifications/Requests For Information.
 - (d)** Schedules.
 - (e)** Other.
- 4)** Chronology of Events and Correspondence.
- 5)** Analysis of Claim Merit.
- 6)** Analysis of Claim Cost.
- 7)** Analysis of Schedule Impact.
- 8)** Attachments:
 - (a)** Specifications.
 - (b)** Drawings.

- (c) Clarifications/Requests For Information.
 - (d) Correspondence.
 - (e) Schedules.
 - (f) Other.
- b) The Contractor, through a corporate officer or general partner, shall certify under penalty of perjury pursuant to the laws of the State of California for any Claim filed on behalf of itself or its Subcontractors or Suppliers, that:
 - 1) The Claim is made in good faith;
 - 2) Supporting data are accurate and complete to the best of the Contractor's knowledge and belief; and
 - 3) The amount requested accurately reflects the contract adjustment for which the Contractor believes the District is liable.
- .7 If Contractor does not certify the Claim as required above, the Claim will be denied without any further recourse by, or remedy to, the Contractor.
- .8 Condition Precedent (Government Code, Sections 930, et seq.):**
 - a) The Disputes and Claims procedures set forth in Article 3.4 are the exclusive procedures for presenting any Claims exceeding \$375,000 and are a condition precedent to filing a Government Code Claim, which, in turn, is a condition precedent to the right to initiating any action against the District related to the Claim. Claims may not be divided into amounts less than \$375,000 to avoid the requirements of this Article 3.4 and any claims arising from the same facts or circumstances, or related facts or circumstances, will be deemed a single claim valued as the sum of all related claims. Failure to comply with the Disputes and Claims procedures set forth in Article 3.4 is a waiver of any Claim arising from or related to the facts and circumstances described in the Claim or the Notice of Intent to File a Claim.
- .9 For claims less than or equal to \$375,000, the Contractor shall comply with Public Contract Code, Section 20104, et seq., which is set forth below in relevant part (as used therein, the term "local agency" means East Bay Municipal Utility District). This Public Contract Code section on Claim resolution does not supersede the Claim documentation requirements in this Article 3.4 and only becomes operative upon the timely notice and submittal of a Claim under the contract.

“20104. (a) (1) This article applies to all public works claims of three hundred seventy-five thousand dollars (\$375,000) or less which arise between a contractor and a local agency.

(2) This article shall not apply to any claims resulting from a contract between a contractor and a public agency when the public agency has elected to resolve any disputes pursuant to Article 7.1 (commencing with Section 10240) of Chapter 1 of Part 2.

(b) (1) "Public work" means "public works contract" as defined in Section 1101 but does not include any work or improvement contracted for by the state or the Regents of the University of California.

(2) "Claim" means a separate demand by the contractor for (A) a time extension, (B) payment of money or damages arising from work done by, or on behalf of, the contractor pursuant to the contract for a public work and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or (C) an amount the payment of which is disputed by the local agency.

20104.2. For any claim subject to this article, the following requirements apply:

(a) The claim shall be in writing and include the documents necessary to substantiate the claim. Claims must be filed on or before the date of final payment. Nothing in this subdivision is intended to extend the time limit or supersede notice requirements otherwise provided by contract for the filing of claims.

(b) (1) For claims of less than fifty thousand dollars (\$50,000), the local agency shall respond in writing to any written claim within 45 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the local agency may have against the claimant.

(2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the claimant.

(3) The local agency's written response to the claim, as further documented, shall be submitted to the claimant within 15 days after receipt of the further documentation or within a period of time no greater than that taken by the claimant in producing the additional information, whichever is greater.

(c) (1) For claims of over fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the local

agency shall respond in writing to all written claims within 60 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the local agency may have against the claimant.

(2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the claimant.

(3) The local agency's written response to the claim, as further documented, shall be submitted to the claimant within 30 days after receipt of the further documentation, or within a period of time no greater than that taken by the claimant in producing the additional information or requested documentation, whichever is greater.

(d) If the claimant disputes the local agency's written response, or the local agency fails to respond within the time prescribed, the claimant may so notify the local agency, in writing, either within 15 days of receipt of the local agency's response or within 15 days of the local agency's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the local agency shall schedule a meet and confer conference within 30 days for settlement of the dispute.

(e) Following the meet and confer conference, if the claim or any portion remains in dispute, the claimant may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) or Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time the claimant submits his or her written claim pursuant to subdivision (a) until the time that claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

(f) This article does not apply to tort claims and nothing in this article is intended nor shall be construed to change the time periods for filing tort claims or actions specified by Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code."

All civil actions filed to resolve claims under this Act are subject to the provisions of Public Contract Code Section 20104.4 and 20104.6(b).

.10 The parties specifically and expressly agree that Government Code, Section 12650, et seq., applies. If a false claim is knowingly submitted (as the terms "claim" and "knowingly" are defined in the California False Claims Act, Government Code, Section 12650, et seq.), the District will be entitled to civil

remedies set forth in the California False Claim Act. It may also be considered fraud and the Contractor may be subject to criminal prosecution.

- .11 Under no circumstances will the Contractor be entitled to indirect, consequential, special and incidental damages.

ARTICLE 4 - CONTRACTOR'S RESPONSIBILITIES

4.1 Responsibility of the Contractor

- 4.1.1 Means and Methods.** The Contractor shall complete the entire Work to the satisfaction of the Engineer in accordance with the Contract Documents. The Contractor is solely responsible for the means, methods, techniques, sequence, scheduling, workforce, and procedures of construction unless otherwise specified. The Contractor is solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with performance of Work under the contract and shall comply and enforce all Cal/OSHA requirements on this project. The Contractor is the “controlling employer” for this project as defined by Cal/OSHA.
- 4.1.2 Work.** The Contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, transportation, utilities, and other facilities and services required for the proper execution and completion of the Work included in this contract.
- 4.1.3 Permit, Fee and Licenses.** Unless otherwise specified, the Contractor shall secure and pay for all licenses, royalties, government fees, and permits necessary for proper execution and completion of the Work. The Contractor shall give notices as required by permits prior to commencement of the Work, and provide copies of all permits to the Engineer before starting on the Work.
- 4.1.4 Contractor’s Licensing Requirements.** The Contractor shall have all required California State and local licenses and certificates for performance of the Work, and shall furnish satisfactory proof of licensing and certifications to the Engineer upon request. All required licenses and certificates shall be valid throughout construction of the project.
- 4.1.5 Taxes.** The Contractor shall pay all State, Federal, and local taxes applicable to the project, including all sales, use, gross receipts and similar taxes properly assessed against its equipment, materials, or property used or required in connection with the Work.
- 4.1.6 Compensation for Employees.** In accordance with the provisions of Section 3700 of the Labor Code, the Contractor shall secure the payment of compensation to its employees, Subcontractors and Suppliers.

4.2 Supervision of the Work

- 4.2.1 Superintendent.** The Contractor shall provide a qualified, competent superintendent at the project site to supervise and direct all Work being performed by the Contractor, Subcontractors, and their respective agents and employees to ensure that the Work is being carried out in accordance with the Contract Documents. The Contractor shall designate, in writing, the scope and authority of the superintendent before the Work begins. Instructions and information given by the Engineer to the Contractor's superintendent about the Work are binding on the Contractor.
- 4.2.2 Coordination of the Work.** Before starting each portion of the Work, the Contractor shall: (i) review and compare the various Contract Documents relative to that portion of the Work, as well as any additional information furnished by the Engineer and approved Subcontractor submittals that may affect proper installation of the Work; (ii) field measure existing conditions related to that portion of the Work; and (iii) observe any conditions at the site that may directly impact that portion of the Work, promptly reporting any improper or defective Work to the Engineer. Any errors or inconsistencies in the Contract Documents shall be promptly reported to the Engineer in writing as a request for information or clarification.
- 4.2.3 Duty of Care.** All Work shall be performed in a workmanlike manner meeting construction industry standards for a similar project located in California, regardless of any omission from the Contract Documents.

4.3 Contractor's Employees

- 4.3.1** The Contractor shall employ competent qualified personnel to construct the Work and shall maintain discipline and order at the project site.
- 4.3.2 Substitution of Key Personnel.** The Contractor cannot substitute key personnel, lessen their level of effort, or reduce the amount of time key personnel are assigned to the project without written consent from the Engineer. If the Contractor proposed specific key personnel during prequalification, or in response to an invitation to bid, the Contractor shall provide the same personnel at the same level of effort and for the same duration and amounts of time per week.
- 4.3.3 Removal of Personnel.** The Contractor shall not remove or replace any key personnel without the prior written consent of the Engineer, which will not be unreasonably withheld. When required by the Engineer, the Contractor shall remove from the project any person who, in the Engineer's opinion, is unfit, disorderly, dangerous, insubordinate, incompetent, or otherwise objectionable. Removed personnel may not be reemployed on the project without the Engineer's prior written consent. Such removal shall not be the basis of any claim for compensation or damages against the District or any of its officers, directors or employees. Within one week of removal, the Contractor shall propose a replacement to the Engineer. The replacement person shall hold the same position

or title and have approximately the same number of years of experience or more as the person that was removed from the project.

4.4 Materials and Workmanship

- 4.4.1 Materials and Workmanship.** All materials and equipment incorporated into the Work shall be new, unexpired, of good quality, and of current manufacture unless otherwise specified. All materials shall be of the specified quality and equal to approved samples, if samples were required.
- 4.4.2 Substitution of Materials or Equipment.** Materials, products, services or equipment specified or designated in the Contract Documents are intended to indicate the measure of quality and utility. Unless the Contract Documents specifically state that there are no substitutions, the Contractor may submit other brands of the specified product provided that the submitted product is of equal or better quality, possesses the required characteristics for the purpose intended and shall not involve additional cost to the District. By proposing a substitute, the Contractor warrants that it is equal to that specified and takes complete responsibility for any errors, omissions, conflicts, all modifications to existing piping, ductwork or electrical connections, or inconsistencies caused by using the substitute, including any additional costs of engineering or inspection, or necessary coordination with connections to make the substitute perform as specified. All submittals shall receive written approval from the Engineer prior to installation.
- 4.4.3 Procurement and Storage.** All materials and equipment shall be furnished in ample quantities and procured in a timely manner to ensure uninterrupted progress of the Work. All materials and equipment shall be properly stored and protected and any loss or damage due to improper storage or protection shall be borne by the Contractor.
- 4.4.4 Site Logistics.** The Contractor shall maintain its storage area and shall keep its storage areas clean, safe and secure. Any materials or equipment stored offsite shall be insured. The risk of loss shall remain on the Contractor for all materials and equipment stored off-site.

4.5 District's Right to Perform Separate Work

- 4.5.1 Separate Work.** The District reserves the right to perform separate work at or near the project site at any time by the use of its own forces or other contractors. The Contractor shall coordinate its Work with the District and/or the District's other contractors and shall cooperate with the District to avoid any delay or hindrance to the project schedule and the other's work.
- 4.5.2 Delays and Defective Construction.** The District shall be reimbursed by the Contractor for costs incurred by the District that are payable to its separate contractors as a result of the Contractor caused delays, improperly timed activities, damaged work, or defective construction.

4.6 Patents and Copyrights

4.6.1 The Contractor shall pay all license fees and royalties and all other costs incidental to use in the Work of any patented or copyrighted design, process, or product. The Contractor shall indemnify and hold harmless the District, its officers, agents, and employees against all costs and claims arising from any infringement of patents or copyrights incidental to use in the Work of any design, process, or product not specified in the Contract Documents.

4.7 Contractor's Responsibility for Losses and Liabilities

4.7.1 Risk of Loss. Until acceptance of the Work by the District, the Contractor bears all risk of loss or damage to the Work or to any part of the Work and to any materials or equipment ordered or purchased for the Work whether located at the project, suitably stored off-site or in transit regardless of the cause of loss or damage. However, the Contractor is not responsible for the cost of repair or restoration of damage to the Work caused by an Act of God as that term is defined in Section 7105 of the Public Contract Code.

4.7.2 Protection of Materials and Facilities

- .1** The Contractor is responsible for the preservation, protection and care of equipment, materials and facilities whether located on the project site or elsewhere and if it does not do so, the District may, at its option, do so at the Contractor's expense.
- .2** The Contractor is responsible for any District-furnished material upon receipt and for protection of the Work until it is completed and accepted. The Contractor shall at its own expense replace damaged or lost material and repair damaged parts of the Work.
- .3** The Contractor shall protect District facilities from damage resulting from its Work. District facilities damaged by or as a result of the Contractor's Work shall be repaired or replaced, at the Contractor's expense.
- .4** The Contractor shall maintain the project site in a clean, safe and orderly condition. Upon completion of the Work, the Contractor shall remove all temporary buildings and structures, rubbish, debris, abrasive blast media, unused material, concrete forms, and other materials used during construction that are not part of the completed work.
- .5** The Contractor shall provide fire watch and be responsible for all fire prevention in connection with the Work. Open fires will not be permitted on the project site. The Contractor shall notify the Engineer before undertaking any torch cutting and welding operations. The Contractor shall take all necessary safety precautions during torch cutting and welding operations including, but not limited to, fire watch, providing fire extinguishers and fire blankets at the location where the operations are occurring. The Contractor shall be

responsible for any damages caused by the Contractor or Subcontractor during such operations.

4.7.3 Laws and Regulations

- .1 The Contractor, its agents and employees shall observe and comply with all Federal, State, Municipal and local laws, ordinances, rules, regulations, building codes and standards, orders, notices and requirements applicable to its Work on this project. Nothing in these Contract Documents may be construed to permit Work not conforming to such laws, ordinances, and regulations. If the Contractor should discover any aspect or portion of the Contract Documents that conflicts with any law, ordinance, regulation, order, or decree, the Contractor shall immediately report the conflict in writing to the Engineer. Where the applicable legal requirements of public authorities differ from those of the Contract Documents, the more stringent requirements shall apply.
- .2 If an applicable law requirement was not in effect on the date of submission of bids, the Contract Sum and the Contract Time will be adjusted, if necessary, as provided in Article 7. Under no other circumstance will the Contract Sum or Contract Time be adjusted because of the effect of any applicable law, ordinance, regulation, order, decree or other legal requirement of public authorities in effect on the date of bid submission.

4.7.4 Duty to Defend. Notwithstanding assertions that the District, the Board, any member of the Board, or the District's officers, agents, or employees may have been actively or solely negligent, the Contractor shall assume the defense of the District, the Board, each member of the Board, and the District's officers, agents, and employees from all claims of any kind arising directly or indirectly out of the performance of, or on account of, the Work.

4.7.5 Indemnity

- .1 To the fullest extent allowed by law (including, but not limited to, Civil Code Section 2782), the Contractor shall indemnify and save harmless the District, the Board, each member of the Board, and the District's officers, agents, and employees (collectively "Indemnitees") from all liability, claims, damage and loss, of any kind, including attorneys' fees, subject to the limitations set forth by law, that arise out of, on account of, or in connection with the performance of the Work, including, but not limited to, liability or claims arising out of or resulting from:
 - a) Any act or omission of the Contractor, its Subcontractors and Suppliers, or anyone directly employed by any of them for whom the Contractor may be liable, during the performance of the Work; in guarding or maintaining the Work; or from any improper materials, implement, or appliances used in construction of the Work;

- b) Violation of any law, ordinance, regulation, order, or decree, whether by the Contractor, its Subcontractors, Suppliers or anyone directly employed by any of them for whom the Contractor may be liable;
 - c) The use or manufacture by the Contractor, its agents, or the District of any copyrighted composition, secret process, patented invention, article, or appliance, unless specifically specified in the Contract Documents;
 - d) Any breach of warranties, whether express or implied, made to the District by the Contractor, its Subcontractors, Suppliers or anyone directly employed by any of them for whom the Contractor may be liable;
 - e) The willful misconduct of the Contractor, its Subcontractors, Suppliers or anyone directly employed by any of them for whom the Contractor may be liable;
 - f) Any breach or default of the obligations assumed by the Contractor under this contract;
 - g) Injuries, sickness, disease or death of employees of the Contractor or its Subcontractors, Suppliers or anyone directly employed by any of them for whom the Contractor may be liable in connection with performance of the Work; and
 - h) Destruction of tangible property (other than the Work itself).
- .2 The Contractor's duty to indemnify is not affected or in any way diminished because the District, the Board, any member of the Board, or the District's officers, agents, or employees jointly caused or contributed to the liability or claim by their acts, omissions, conduct, or negligence, except that the Contractor is not obligated to indemnify an Indemnatee against its sole or active negligence, willful misconduct, or for defects in designs furnished by the Indemnatee. The Contractor's indemnification obligation is not limited by the Contractor's insurance, if any, or by the amount or type of damages, compensation, or benefits payable by or for the Contractor or any Subcontractor or other person or organization under the Workers' Compensation Act, Disability Benefit Act, or other employee benefit act. Said duty to indemnify shall not apply to the District's active negligence, consistent with Civil Code Section 2782.

4.8 Protection of Property

- 4.8.1** The Contractor shall take all necessary precautions to provide for the safety and protection of all persons who may come in contact with the Work and for all property within and adjacent to the project site including, but not limited to, adequate precautions to protect existing sidewalks, curbs, pavements, utilities, shrubs, trees, and other adjoining property and structures. Should any facility,

structure, or property be damaged by the operations of the Contractor, the Contractor shall immediately notify the proper owners or authorities and the Engineer. The precautionary measures shall apply continuously and not be limited to normal work hours.

4.8.2 If damage to persons or property occur as a result of the Work, the Contractor shall be responsible for proper investigation, documentation, including video or photography, to adequately memorialize and make a record of what transpired. The Contractor, at its own expense, shall rebuild, repair and restore, to the Engineer's satisfaction, all damage resulting from its operations as a condition of contract acceptance.

4.8.3 Pursuant to Public Contract Code, Section 9201, the District will provide timely notification to the Contractor of the receipt of any third-party claims relating to damaged property.

4.9 Contractor Use of Premises

4.9.1 The Contractor shall confine operations at the project site to areas permitted by the Contract Documents and shall not encumber the site with excessive material or equipment. The Contractor shall not impose load on any structure that will damage or endanger the structure. The Contractor shall take all actions necessary to prevent annoyance to occupants adjacent to or in the vicinity of the Work and shall not hinder access or operations of District personnel or equipment.

4.10 Documents On-site

4.10.1 Contract Documents. The Contractor shall maintain a copy of all Contract Documents at the project site, including but not limited to, subcontracts; Change Orders; requests for information; site, health and safety plan; material safety data sheets; the current construction progress schedule; updated as-built drawings; all approved submittals and samples pertaining to the Work; and any governing authority required documents. The Engineer shall have access to the Contract Documents during the Contractor's normal business hours.

4.11 Review of Contract Documents and Field Conditions

4.11.1 The Contractor shall carefully study and compare the Contract Documents for any errors, omissions, or discrepancies; and shall take field measurements and carefully compare such field measurements with the Contract Documents. The Contractor shall immediately inform the Engineer in writing of any apparent errors, omissions, or discrepancies and shall await instructions before proceeding with the Work. Instructions given by the Engineer, which are manifestly necessary to carry out the intent of the Contract Documents or which are customarily performed, shall be performed by the Contractor as if fully and correctly set forth in the Contract Documents at no additional cost to the District.

- 4.11.2** If the Contractor performs any construction activity that it either knows or should have known involves an error, omission, or discrepancy referred to in Article 4.11.1 without notifying and receiving written instructions from the Engineer, the Contractor shall be responsible for resultant losses, including without limitation, the costs and time of correcting the defective Work.
- 4.11.3** Drawings indicate general and typical details of construction. Where conditions are not specifically indicated but are of similar character to details shown, similar details for construction shall be used, subject to review by the Engineer.

ARTICLE 5 – SUBCONTRACTORS AND SUPPLIERS

- 5.1.1** The Contractor is fully responsible to the District for the acts and omissions of Subcontractors, Suppliers, and of persons and/or persons or entities employed by the Contractor to the same extent the Contractor is responsible for its own acts and omissions.
- 5.1.2** All Subcontractors shall possess the appropriate California State contractor's license and certifications at time of bid and during the performance of the Work. The Contractor shall comply with all requirements of the Subletting and Subcontracting Fair Practices Act commencing with Public Contract Code, Section 4100, et seq. Violation of the Subletting and Subcontracting Fair Practice Act are grounds for cancellation of the Contract under Public Contract Code, Section 4110, and disciplinary actions under Section 4111.
- 5.1.3** The Contractor shall coordinate all Subcontractors and Suppliers engaged in the Work. The Contractor shall ensure that all of its Subcontractors commence their respective work at the proper time and proceed with due diligence to avoid delays and/or damage to the Work. Any property damage caused by Subcontractors or Suppliers during the Work shall be repaired or paid for by the Contractor.
- 5.1.4** Nothing contained in the Contract Documents shall be construed as creating any contractual relationship between any Subcontractor, or Supplier, and the District. The District will not undertake to settle differences between the Contractor and its Subcontractors or Suppliers.

ARTICLE 6 - SAFETY OF PERSONS AND PROPERTY

6.1 Contractor's Responsibility

- 6.1.1** Notwithstanding any other provision of the specifications, the Contractor is solely and completely responsible for conditions of the jobsite, including safety of all persons and property, during performance of the Work. This requirement applies continuously and is not limited to normal work hours. Health and safety provisions shall conform to applicable Federal, State, County, and local laws, regulations, ordinances, standards, and codes, including the Federal Occupational Safety and

Health Act of 1970 (29 U.S.C., Section 651, et seq.) and California Code of Regulations, Title 8, Industrial Relations Division 1, Department of Industrial Relations, Chapter 4. Where any of these are in conflict, the more stringent requirement shall be followed.

6.2 Public Safety

6.2.1 During the performance of the Work, the Contractor shall erect and maintain necessary temporary fences, bridges, railings, lights, signals, barriers, or other safeguards as appropriate under the circumstance for the prevention of accidents. In addition, the Contractor shall take other precautions as necessary for public safety including, but not limited to, traffic control.

6.3 Engineer's Responsibility

6.3.1 The Engineer's review of the Contractor's construction performance and submittal documents is not intended to include review of the adequacy of the Contractor's safety measures in, on, or near the construction site.

6.3.2 The Engineer may suspend operations if it determines that an imminent safety hazard exists.

6.4 Emergency Work

6.4.1 During Work Hours. The Contractor shall act, without previous direction from the Engineer in case of an emergency arising from the performance of the Work that threatens loss or injury to property and/or safety of life. The Contractor shall notify the Engineer of the emergency as soon as possible. Any compensation claimed by the Contractor, together with substantiated documents in regard to expense, shall be submitted to the Engineer within 15 calendar days after the emergency. Additional compensation, if allowed, will be paid for through Article 7.

6.4.2 Outside of Work Hours. The Engineer will notify the Contractor of all emergencies for which it is aware that arise outside of regular work hours as a result of the Work. The Contractor shall respond to the emergency immediately without delay and shall, with the least practicable inconvenience, make the necessary repairs, replacements, or perform other necessary work. If the Contractor does not act promptly in accordance with this requirement, or should the circumstances of the case require repairs, replacements, or performance of other necessary work before the Contractor can be notified or can respond, the District may, at its option, make the necessary repairs, replacements, or perform the necessary work and deduct its cost of labor, materials and equipment from the Contractor's next progress payment. Performance of emergency work by District forces will not relieve the Contractor of any of its responsibilities, obligations, or liabilities under the contract.

ARTICLE 7 - CHANGES

7.1 General

The District reserves the right to make such alterations, deviations, additions to or deletions from the drawings and specifications, including increases or decreases to the quantity of any item or portion of work or omitting any item or portion of the work or any other changes in the Work that the Engineer determines to be necessary or advisable for proper completion or construction of the whole work. No change in the scope of work shall be authorized, and the Contractor shall not be eligible for compensation for any extra work performed, unless the change is ordered by the Engineer in writing.

7.2 Change Orders

7.2.1 Changes in the Work can only be made through a written contract Change Order issued by the Engineer. If the change causes an increase or decrease in the Contractor's Contract Sum, or a change in the Contract Time, an adjustment may be made as determined by the Engineer. The approved Change Order will specify increase or decrease to the Contract Sum and adjustment to the Contract Time, if any.

7.2.2 Prior to issuing an approved Change Order, the Engineer may request that the Contractor submit a proposal covering the changes. The Change Order request will include a description of the work or revised drawings or specifications reflecting the proposed changes. Within 10 Work Days after receiving the request, the Contractor shall submit its proposal to the Engineer of all costs associated with the proposed change and any request for an extension of Contract Time. Contractor's proposal shall include detailed estimates with cost breakdowns for each Subcontractor, including labor, material, equipment, overhead, and profit. Labor shall be broken down into hours and rate per hour. If applicable, the proposal shall include a breakdown for off-site labor (including factory labor, engineering, etc.). The Contractor's proposal shall include an Analysis of Schedule Impact (See Article 3.4.2) when the Contractor is requesting an adjustment in Contract Time. Costs associated with preparation of the proposal, including the Analysis of Schedule Impact, are considered to be covered in the markup allowances in Article 7.3.4. The Contractor shall be responsible for any delay associated with its failure to submit its change proposal within the time specified. If the Engineer decides not to issue an approved Change Order after requesting a proposal from the Contractor, the Contractor will be notified in writing. The Contractor is not entitled to reimbursement for Change Order preparation costs for cancelled Change Order requests.

7.2.3 If the Contractor agrees with the terms and conditions of the approved Change Order, the Contractor shall indicate its acceptance by signing the original copy and returning it to the Engineer within 10 Work Days after receipt or with reasonable promptness and in such sequence as to not delay the Work or activities of the District or of separate contractors, whichever is sooner. If notice of any change is

required to be given to a surety by the provisions of any bond, the Contractor shall provide notice and the amount of each applicable bond shall be adjusted separately. Payment in accordance with the terms and conditions set forth in the executed Change Order shall constitute full compensation for all Work included in the Change Order and the District will be released from any and all claims for direct, indirect, and impact expenses and additional time impact resulting from the Work. If the Contractor disagrees with the terms and conditions of the approved Change Order, the Contractor shall indicate specific areas of disagreement and return the approved Change Order to the Engineer. The Contractor shall submit a written dispute in accordance with Article 3.4. No payment will be made on the disputed work until the approved Change Order is returned to the Engineer. However, whether or not the Contractor agrees with the terms and conditions of an approved Change Order, the Contractor shall immediately revise its sequence of operations as required to facilitate timely completion of the changed work and shall proceed with the revised work sequence.

7.2.4 The Engineer may, after having received a written cost quotation from the Contractor, order the Contractor, in writing, to proceed with the work prior to issuance of an approved Change Order through a change directive. The change directive will authorize the Contractor to proceed with the work subject to the cost quotation submitted by the Contractor. Within five days following receipt of the change directive, the Contractor shall submit a detailed change proposal as described in Article 7.2.2 documenting the amount of compensation. The Engineer will review the change proposal and, at its option, will either issue an approved Change Order for the work or direct the Contractor to perform the work through Force Account. Until the method of compensation is determined and the approved Change Order is received, the Contractor shall keep full and complete time and material records of the cost of the ordered work and shall permit the Engineer to have access to such records. An approved Change Order shall supersede any previously issued written change directive covering the same Work.

7.2.5 Accord and Satisfaction and Reservations of Rights: Every executed Change Order shall constitute a full accord and satisfaction, and release of all Contractor (and, if applicable, Subcontractor) claims for additional time, money or other relief arising from or relating to the subject matter of the change including, without limitation, impacts of all types, cumulative impacts, inefficiency, overtime, delay, and any other type of claim.

7.3 Determination of Costs for Force Account Change Order Work

7.3.1 Labor. The cost of labor used in performing the Change Order work, whether the employer is the Contractor and/or its Subcontractor, shall be the sum of the following:

- .1 Actual Wages:** Actual wages paid to workers, including foremen devoting their exclusive attention to the work in question. The actual wages shall include payments to, or on behalf of, workers for health and welfare, pension, vacation,

travel, subsistence, and similar purposes, and shall be paid at the wage rate demonstrated by submitted certified payrolls or, if the certified payrolls were not available, at the rate set forth in the pertinent prevailing wage determinations issued by the Director of Industrial Relations for the wage class common to the work performed. Superintendent's wages are included under the allowance for overhead and profit and shall not be included as part of these computations.

- .2 Labor Surcharge:** To the actual wages, as defined in Article 7.3.1.1 above less those for travel and subsistence, will be added 27 percent, which shall constitute full compensation for all payments imposed by State and Federal laws, such as taxes, and for insurance and all other payments made to, or on behalf of, the workers, other than actual wages as defined in Article 7.3.1.1 above.

7.3.2 Materials. Only materials incorporated in the Change Order work will be paid for, the cost of which shall be the cost to the purchaser, including sales tax, if applicable, whether the Contractor and/or its Subcontractor, from the Supplier thereof, except as the following are applicable:

- .1** If a cash or trade discount by the actual Supplier is offered or available to the purchaser, it shall be credited to the District notwithstanding the fact that such discount may not have been taken.
- .2** If materials are procured by the purchaser by any method which is not a direct purchase from a direct billing by the actual Supplier to such purchaser, the cost of such materials shall be deemed to be the price paid to the actual Supplier as determined by the Engineer. No markup except for actual costs incurred in the handling of such materials will be permitted, and only application of one common markup to cover multiple handling.
- .3** If the materials are obtained from a supply or source owned wholly or in part by the purchaser, payment therefor will not exceed the price paid by the purchaser for similar materials furnished from said source on contract items or the current wholesale price for such materials delivered on the job site, whichever price is lower.
- .4** If the cost of such materials is excessive in the opinion of the Engineer, then the cost of such materials shall be deemed to be the lowest current wholesale price at which such materials are available in the quantities concerned and timely delivered to the job site, less any discounts as provided in Article 7.3.2.1 above.

7.3.3 Equipment. The Contractor and/or its Subcontractor will be paid for the use of equipment at the rental rates established as provided in Articles 7.3.3.1 and 7.3.3.2 below, which rates shall include the cost of fuel oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals. Operators of rented equipment will be paid for as provided in Article 7.3.1 above.

Unless otherwise specified, manufacturers' ratings shall be used to classify equipment for the determination of applicable rental rates.

.1 Equipment on the Work: For the use of any equipment normally required for the contract regardless of whether the equipment is already on the work or is to be delivered to the project, the Contractor and/or its Subcontractor will be paid for the use of such equipment as follows:

- a) If equipment is owned by the Contractor and/or its Subcontractor, payment will be at the rental rates listed for such equipment in the State of California's Department of Transportation publication titled "Labor Surcharge and Equipment Rental Rates" that is in effect on the date that the Work is performed. The rental rates for equipment not listed under the schedules of rental rates set forth by the State of California shall be those agreed upon by the Contractor and/or its Subcontractor, and the Engineer, except that in no case shall the rental rates exceed those of established distributors or equipment rental agencies within the locality of the project. The Contractor and/or its Subcontractor shall provide full documentation to the satisfaction of the Engineer to support any proposed equipment rental rates. Documentation shall include a breakdown of costs per Article 7.3.3, including amortized depreciation versus wear and tear, and maintenance expenses versus operating expenses. Compensation for idle time of equipment through delays caused by the District will be made by applying the delay factor listed in the Caltrans User's Guide for Labor Surcharge and Equipment Rental Rates (current version), or if unlisted at 50 percent of the rental rates listed in the State of California Department of Transportation publication entitled "Labor Surcharge and Equipment Rental Rates." Compensation for idle time shall not exceed eight (8) hours per day and forty (40) hours per week.
- b) If equipment is rented, payment will be the actual rental cost as indicated on the rental invoice.

Individual pieces of equipment or tools not listed and having a replacement value of \$1,000 or less, whether or not consumed by use, shall be considered to be small tools and no payment will be made for their use on the Work.

In computing the rental of equipment, the minimum rental time to be paid per day shall be one hour. Rental time shall not be allowed while equipment is inoperative due to breakdowns or non-Work Days. Loading and transporting costs shall be allowed when the equipment is moved by means other than its own power.

.2 Equipment for Change Order Work: For the use of equipment not required under the Contract Documents, moved on the Work and used exclusively for Change Order work, the Contractor will be paid at the rates agreed upon by the

Contractor and/or Subcontractor, and the Engineer through the Change Order process, except that in no case shall the rental rates paid exceed those of established distributors or equipment rental agencies.

The rental period shall begin at the time the equipment is required and unloaded at the site and shall terminate on the day that the Change Order work is completed, except that the minimum total rental time to be paid for shall be not less than four hours.

The Contractor and/or its Subcontractor will be reimbursed for the cost of transporting the equipment to and from the Work. Should the equipment be transported by low bed trailers, hourly rates charged by established haulers will be paid. Also, the District will pay for loading and unloading costs. Should the Contractor and/or its Subcontractor desire the return of the equipment to a location other than its original location, the District will pay the cost of transportation in accordance with the above provisions, provided such cost does not exceed the cost of moving the equipment to the project.

7.3.4 Markup Allowances. The Contractor and/or its Subcontractors or Suppliers that perform on-site work are entitled to compensation for overhead and profit for the performance of Change Order work. This compensation shall be in the form of markup percentages applied to the costs computed as provided for in Articles 7.3.1 through 7.3.3 and is full and complete payment for overhead and profit. Overhead includes, but is not limited to, superintendent costs, bond and insurance premiums, financing costs, project engineer, project manager, scheduler, estimator, drafting, small tools, home office expenses, field office expenses, and utilities (gas, electricity, sewer, water, telephone, fax, copier, etc.). The Contractor shall not receive payment for itemized costs which are considered to be included under the profit and overhead percentage markup.

.1 For work by the Contractor's own organization or by its Subcontractor's own workforce, the Contractor may apply, as a maximum, the following markup percentages as overhead and profit:

1. Labor	20 percent
2. Materials	15 percent
3. Equipment (owned or rented)	15 percent

.2 Under a fixed price adjustment basis, if work is performed by a Subcontractor with its own workforce, the Contractor may apply an additional 5 percent markup to the total which has been computed in accordance with Article 7.3.4.1. The Contractor shall reach agreement with the Subcontractor and any intermediate Subcontractor as to the division of the markup percentages between them.

- .3 Under a force account basis, if work is performed by a Subcontractor with its own workforce, the Contractor may not apply an additional 5 percent markup, as provided for under Article 7.3.4.2, to the total which has been computed in accordance with Article 7.3.4.1. The Contractor shall reach agreement with the Subcontractor and any intermediate Subcontractor as to the division of the markup percentages between them.

7.4 Lump Sum or Force Account Adjustments

- 7.4.1 Change Order work will be paid for by either a Lump Sum adjustment of the Contract Sum or on a Force Account basis, or a combination of both, as determined by the Engineer. Change Order work will not be paid for unless ordered in writing by the Engineer.
- 7.4.2 In the event the Contractor fails to submit its proposal within 15 days after receipt of a written request for proposal, or the Engineer and the Contractor fail to agree upon a negotiated Lump Sum adjustment, within a reasonable time, or if in the judgement of the Engineer, it is impracticable because of the nature of the Work or for any other reason to fix the price for completion before the work order is issued, the Engineer has the option of authorizing payment on the basis of a Force Account.
- 7.4.3 The Contractor shall notify the Engineer in writing of the day and time on which Force Account work will commence prior to beginning work. All Force Account work shall be reported daily on daily extra work reports furnished by the Engineer to the Contractor and signed by both parties, which daily reports shall thereafter be considered the true record of Force Account work completed. Completely detailed invoices covering the Force Account work shall be submitted for payment consideration not later than 15 days after the completion of the work. The charges for Work performed by the Contractor or a Subcontractor shall be reported separately. Substantiating invoices from Suppliers and Subcontractors shall be included with the Contractor's invoices. The Contractor shall permit examination of accounts, bills, and vouchers relating to the Force Account work when requested by the Engineer. Payment for the Work done under Force Account will be made after receipt of an executed Change Order issued to cover the increase in the Contract Sum.
- 7.4.4 Payment for the Work completed under Lump Sum adjustment will be made after receipt of an executed Change Order issued to cover the change in the Contract Sum and/or Contract Time.

7.5 Variation in Quantity in Unit Price Work

- 7.5.1 **General.** The estimated quantities for Unit Price work listed in the Bid Form are established for the sole purpose of bid comparison and do not constitute a guarantee to the Contractor of the quantities of work to be performed under this contract. The Contractor shall be compensated only for the actual quantities of work performed which were directed by the Engineer. The amount of compensation for each item of

Work shall be computed by multiplying the actual quantity by the appropriate bid Unit Price except as follows:

- .1 Increases of more than 20 percent:** If the actual quantity of work performed on an item of Work exceeds the estimated quantity by more than 20 percent, the quantity in excess of 120 percent of the estimated quantity shall be paid for based upon (a) actual unit cost or (b) as mutually agreed to by the Contractor and the Engineer. The Engineer will determine which method is to be utilized. If the actual unit cost method is utilized, the actual unit cost is determined by calculating the total cost incurred for completing 120 percent of the estimated quantity using the markups allowed under Article 7.3.4, which is then divided by the quantity of work performed, i.e., 120 percent of the estimated quantity. If costs applicable to the Work performed include fixed costs, such fixed costs shall be deemed to have been recovered by the Contractor by the payments made to the Contractor for 120 percent of the estimated quantity at the bid Unit Price. In computing the actual unit cost, such fixed costs shall be excluded.

At the discretion of the Engineer, the Engineer can make payment on the quantity in excess of 120 percent of the estimated quantity using exactly the provisions and procedures in the "Force Account" Articles 7.3 and 7.4.3.

- .2 Decreases of more than 20 percent:** If the actual quantity of work performed on an item of Work is less than 80 percent of the estimated quantity, the quantity shall be paid for (a) based upon actual cost using the markups allowed under Article 7.3.4, or (b) as mutually agreed to by the Contractor and the Engineer.

Payment for the actual quantity of work performed shall, in no case, exceed the payment which would have been made for performance of 80 percent of the estimated quantity at the bid Unit Price.

7.6 Deleted Work

- 7.6.1 Deleted Work.** If work is deleted, payment will be made to the Contractor for costs incurred in connection with the deleted work if incurred prior to notification of deletion by the Engineer.

If approved material is ordered by the Contractor for the deleted work prior to the notification by the Engineer, and if orders for such materials cannot be canceled, payment for such material will be the actual cost to the Contractor. In such case, the material shall become the property of the District. If the material can be returned to the vendor, and if the Engineer so directs, the material shall be returned and the Contractor will be paid for the actual costs or charges made by the vendor for returning the material including any stocking charges.

The costs incurred or charges paid to the Contractor for Work completed prior to deletion shall be computed using the markups allowed in Article 7.3.4. Payment for

deleted work will be based on the approved schedule of costs or other mutually agreed value. A minimum of a 10 percent credit shall be provided to the District for overhead, profit and markup associated with the deleted work.

7.7 Differing or Unusual Site Conditions

- 7.7.1** Pursuant to Public Contract Code, Section 7104, the Contractor shall promptly, and before such conditions are disturbed, notify the Engineer in writing of: (1) material that the Contractor believes may be hazardous waste, as defined in Section 25117 of the Health and Safety Code (other than material indicated in the Contract Documents) and that is required by law to be removed to a Class I, Class II, or Class III disposal site; (2) subsurface or latent physical conditions at the site differing materially from those indicated in this contract; or (3) unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this contract.
- 7.7.2** The Engineer will promptly investigate the conditions. If the Engineer finds that the conditions do materially differ, or do involve hazardous waste, and do cause an increase or decrease in the Contractor's Contract Sum and/or the Contract Time a contract adjustment will be made through the Change Order process, as determined by the Engineer.
- 7.7.3** If the Contractor and the Engineer disagree whether the conditions do materially differ or whether a hazardous waste is involved or whether the conditions cause an increase or decrease in the Contractor's Contract Sum and/or Contract Time, the Contractor shall nevertheless proceed with all Work to be performed under the contract and shall comply with the completion dates required by the contract. The Contractor waives any rights to an increase in Contract Time, or an increase in Contract Sum, unless it timely follows the Disputes and Claims procedures in Article 3.4.

ARTICLE 8 - TIME

8.1 Commencement, Prosecution, and Completion of Work

- 8.1.1 Notice to Proceed.** The Notice to Proceed will not be issued until the contract is properly executed, bonds are furnished, proof of insurance submitted by the Contractor, and both the bonds and the insurance are approved by the District. The Contract Time will not be extended, and the Contractor will not receive any additional compensation, because of delays caused by receipt, review and approval by the District of the Contractor's bonds and insurance. Except as required elsewhere, the Contractor is not authorized to perform any Work under this contract until it has received an official Notice to Proceed.

- 8.1.2 Prosecution of the Work.** Work shall proceed at all times with such force and equipment as will be sufficient to complete the Work within the Contract Time.
- 8.1.3 Required Contract Completion.** The Contractor expressly agrees that it will complete the Work within the Contract Time, subject to approved Change Orders that impact time.
- 8.1.5 Early Completion.** The Contractor shall not be entitled to claim damages for expenses due to the District not authorizing early completion.

8.2 Liquidated Damages

- 8.2.1** Should the Contractor fail to complete all or any portion of the Work within the specified time therefor or within such extra time as may be allowed for delays by formal extensions granted by the District, deductions will be made from the Contractor's earnings for the time that the Work remains incomplete beyond the specified completion time. Liquidated damages will be apportioned such that the Contractor will be responsible for all delays not otherwise properly subject to time extensions.
- 8.2.2** Liquidated damages cover only certain damages and are limited to the cost of administration, overhead, and general loss of use of the facility by the District as a result of a delay, and does not cover any other type of damages set forth in Section 8.2.3. It being impracticable or extremely difficult to fix the actual amount of damage for the above-referenced categories of damages, the parties agree that the amounts set forth in this Contract as liquidated damages will be deducted from any money due the Contractor under the contract. Should the amount of the damages exceed the amount due the Contractor, the Contractor and its sureties shall be liable for the excess.
- 8.2.3** Liquidated damages shall not be deemed to include within their scope additional damages or administrative costs arising from defective work, lost revenues, interest expenses, cost of completion of the Work, cost of substitute facilities, claims and fines of regulatory agencies, damages suffered by others or other forms of liability claimed against the District as a result of delay (e.g., delay or delay-related claims of other contractors, Subcontractors or tenants), and defense cost thereof. The Contractor shall be fully responsible for the actual amount of any such damages it causes, in addition to the liquidated damages otherwise due the District.

8.3 Use of Facilities Prior to Completion of Contract

- 8.3.1** If the Contractor has received and provided to the District a temporary certificate of occupancy from governmental authorities having jurisdiction over the project and/or in the Engineer's opinion, the Work under the contract, or any portion of the Work, is in a condition suitable for the District's use, the District may, after written notice from the Engineer to the Contractor, use (which includes, but is not limited

to, taking over or placing into service) any portion or portions of the project designated by the Engineer.

- 8.3.2** Even if the District elects to use the Work or a portion of the Work prior to Contract Completion, the Contractor will nonetheless make all necessary repairs, renewals, changes, or modifications in the Work or any portion of the Work that does not meet the requirements of the Contract Documents or is deficient due to defective materials or workmanship, unless the deficiency is solely caused by ordinary wear and tear.
- 8.3.3** The use of any portion of the Work by the District does not relieve the Contractor of any of its responsibilities or liabilities under the Contract Documents or constitute a waiver by the District of any claims. Said use shall not cancel liquidated damages as of the first date of use, or any continuance thereof, nor impair, reduce, or change the amount of liquidated damages.

8.4 Delays and Extensions of Time

- 8.4.1** The Contractor shall take reasonable precautions to foresee and prevent delays to the Work including, but not limited to, maintaining construction schedules that are properly updated to reflect current conditions and the actual critical path, and continuous monitoring of critical and dependent activities of the Contractor, Subcontractors, Suppliers, the District, agencies and other third parties. When the Contractor foresees a delay event, and in any event upon the occurrence of a delay event, the Contractor shall immediately notify the Engineer in writing of the probability or the actual occurrence of a delay in the Contract Time, and its cause. With respect to all delays (compensable, excusable and/or inexcusable), the Contractor shall reschedule its Work and/or revise its operations, to the extent possible under the terms of the contract, to mitigate the effects of the delay through work-arounds, overtime and acceleration of the project schedule, re-sequencing the Work, or other methods commonly utilized in the construction industry.
- 8.4.2** For Inexcusable Delay (as defined in Article 1.2.1.21), the Contractor shall not be entitled to an extension of time or compensation for any loss, cost, damage, expense or liability resulting directly or indirectly from the Inexcusable Delay including, but not limited to, extended field or home office overhead, field supervision, cost of capital, interest, escalation charges, labor costs, materials expense, or acceleration costs.
- 8.4.3** For Excusable Delay (as defined in Article 1.2.1.17), the Engineer will grant the Contractor an extension of time in an amount equal to the period of Excusable Delay based on the analysis of schedule impact and delay analysis diagram, which shall be the Contractor's sole and exclusive remedy for such delay. Excusable Delays shall include labor strikes, adverse weather as defined in Article 8.5, and Acts of God.

- 8.4.4** For Compensable Delay (as defined in Article 1.2.1.5), the Engineer will grant the Contractor an extension of Contract Time with compensation in an amount that represents the Contractor's actual direct costs incurred as a direct result of the Compensable Delay. The Contractor may recover its direct costs only and may not recover (and waives) all other types of indirect, consequential, special and incidental damages.
- 8.4.5** For Concurrent Delay (as defined in Article 1.2.1.6), the following rules apply: if one or more of the Concurrent Delays are excusable or compensable, then the District will treat the period of Concurrent Delay as an Excusable Delay; and if all of the Concurrent Delays are inexcusable, then the District will treat the Concurrent Delay as inexcusable. These rules for Concurrent Delay shall be the Contractor's sole and exclusive remedy for periods of Concurrent Delay, and the Contractor's entitlement shall be limited to the measures of recovery defined herein for Inexcusable, Excusable and Compensable Delay, as applicable.
- 8.4.6** No time extension will be granted to the Contractor for encountering delays while performing Work after the specified or formally extended Contract Completion date, except for causes of delay specified in Article 8.4.4.
- 8.4.7** The Contractor shall provide notice and documentation of delays in accordance with the following rules:
- .1** Within five days of knowing about an event that may cause a delay in the project schedule, the Contractor shall notify the Engineer in writing about the delay in the Work, the impact it may have on the project schedule, and the causes of the delay. The Contractor's notice shall set forth the anticipated impact of the delay on the critical path, specify any additional time requested, and provide a detailed description of the cause or causes of the delays.
 - .2** If the Contractor intends to request an extension of time or compensation for damages resulting from delay, then the Contractor shall make the request in writing to the Engineer not more than 15 days after the end of such delay. If any delay exceeds 30 days, however, then the request shall be made monthly and then updated every month after that (as applicable). The Contractor shall provide an Analysis of Schedule Impact of the delay (see Article 3.4.2.3 and 3.4.2.4) and update it monthly (as applicable). The Contractor shall also provide documentation showing that the delay was either excusable or compensable and that the Contractor has revised its construction schedule, to the extent possible, to mitigate the delay. No compensation for damages resulting from delay will be granted unless supported by cost records justifying the costs claimed in connection with the delay.

- 8.4.8** The Contractor's failure to give written notice of a delay or to submit or document a request for an extension of time or for damages resulting from delay in the manner and within the times stated above shall constitute a waiver of all rights thereto.
- 8.4.9** An extension in Contract Time must be approved by the Engineer to be effective. An extension of Contract Time with or without consent of the sureties, shall not release the sureties from their obligations, which shall remain in full force until the discharge of the contract.
- 8.4.10** The Engineer will investigate the facts and ascertain the extent of the delay, and issue a written statement regarding its findings. If the Contractor disagrees with any decision of the Engineer regarding delays and extensions in Contract Time, the Contractor may dispute the Engineer's decision in accordance with Article 3.4.

8.5 Weather Conditions Unfavorable for Prosecution of Work

- 8.5.1** The Engineer may suspend the Work whenever weather conditions or conditions resulting from inclement weather are unfavorable for the prosecution of the Work. The delay caused by such suspension may entitle the Contractor to an extension in Contract Time, but not to any other compensation.
- 8.5.2** If the Contractor believes that the Work should be suspended under this Article, the Contractor may request such suspension. The delay caused by the suspension may entitle the Contractor to an extension of Contract Time, but not to any other compensation. The Contractor's request for suspension must be agreed to by the Engineer in order to be granted an extension of Contract Time.
- 8.5.3** No extension of time will be granted for suspension of Work unless the suspension impacts the Contract Completion date or the timely completion of a milestone completion date for a portion of the Work. Determination that suspension of the Work for inclement weather conditions or conditions resulting from inclement weather impacts timely completion and entitles the Contractor to an extension of Contract Time shall be made and agreed to in writing by the Engineer and the Contractor for each day that work is suspended. In the event of failure to agree, the Contractor may protest under the provisions of Article 3.4.
- 8.5.4** If the Work is suspended and an extension of Contract Time is granted under this Article, the Contractor will be entitled to a one Work Day extension of time for each Work Day that the Contractor is unable to perform the Work for at least one-half of its current normal Work Day; and if the Work is suspended at the regular starting time on any Work Day and the Contractor's workforce is dismissed as a result of the suspension, then the Contractor will be entitled to a one Work Day extension of Contract Time whether or not conditions change thereafter and the major portion of the day is suitable for work.

- 8.5.5** The Contractor shall use best available technologies to secure the site to mitigate/minimize the effects of inclement weather in conformance with applicable Federal, State, and regional regulatory requirements.

ARTICLE 9 - INSURANCE AND BONDS

9.1 Faithful Performance and Payment Bonds

- 9.1.1** The Contractor shall furnish to the District a Faithful Performance Bond, and maintain it in an amount not less than 100 percent of the current Contract Sum, conditioned upon the faithful performance by the Contractor of all covenants and stipulations in the contract.
- 9.1.2** The Contractor shall furnish to the District a Payment Bond and maintain it, in an amount not less than 100 percent of the current Contract Sum.
- 9.1.3** The Payment Bond and the Faithful Performance Bond shall be on the forms of the District as provided for in Documents 00 61 13.16 and 00 61 13.13 and shall be properly executed as described therein.
- 9.1.4** If, at any time, during the performance of the Work any of the sureties, in the opinion of the District, are or become financially irresponsible, the District may require the Contractor to furnish other or additional sureties to the satisfaction of the District within 10 days after receipt of notice. If the Contractor fails to provide satisfactory sureties within the 10-day period, the contract may be terminated for cause under Article 11, and the materials purchased or the Work completed as provided in Article 11.
- 9.1.5** The Contractor and its sureties understand and agree that no modifications or alterations made in the Contract Documents shall operate to release any surety from liability on any bond or bonds required to be provided in this contract.

9.2 Insurance Requirements

- 9.2.1** The Contractor shall procure and maintain during the period of the contract all required insurance and shall submit certificates of insurance and additional insured endorsements to the policies to the Engineer for review and approval. The certificates of insurance shall be on the forms provided by the District. The insurance requirements must be met within the same period allowed for contract execution, as provided for in the Instructions to Bidders.
- 9.2.2** The Contract will not be executed until the certificates of insurance and endorsements to the policies have been received and accepted by the District. Acceptance of the certificates of insurance and endorsements by the District shall not relieve the Contractor from compliance with any of the insurance requirements or liability arising from said failure.

- 9.2.3** The District may require the Contractor to provide insurance policies to the Engineer for review. If requested, the Contractor agrees to provide the District with complete copies of the policies within 10 days following the request.
- 9.2.4** If the Contractor does not maintain all of the required insurance, or fails to timely deliver requested insurance policies to the District, the District reserves the right to stop the Work, and/or terminate the Contractor's right to proceed under the contract, in whole or in part. Any delay caused by the Work stoppage is an Inexcusable Delay.

ARTICLE 10 - WARRANTY

- 10.1** The Contractor warrants that any Work performed under the contract shall be performed in a competent manner in accordance with the duty of care set forth in Section 4.2.3; that any material furnished will be the best of its class; and that the Work shall fully meet the requirements of the Contract Documents.
- 10.2** The Contractor warrants workmanship, including subcontracted work, against defects for a period of one year from the date of Contract Completion unless a longer period of time is required by the Contract Documents.
- 10.3** The Contractor shall provide a similar one-year warranty for all materials and equipment provided under this contract unless a longer period of time is required by the Contract Documents.
- 10.4** If the District elects to use any portion or portions of the Work before Contract Completion, the warranty for those portions shall begin upon commencement of such use. The warranty for the remainder of the Work shall begin on the Contract Completion date.
- 10.5** If the District notifies the Contractor, within one year from the Contract Completion, or within any longer period of time required by the Contract Documents or another warranty period for partial occupancy as established under Section 10.4, that any portion of the Work fails to fulfill any of the requirements of the Contract Documents, the Contractor shall repair or replace the defective, non-conforming or otherwise unsatisfactory Work, without delay or further cost to the District in a manner that least inconveniences the District's operations. With regard to any defective work or material repaired or replaced by the Contractor, the one-year warranty will be measured from the date of the latest repair or replacement.
- 10.6** Should the Contractor fail to act promptly in accordance with this requirement, or should the exigencies of the case require repairs or replacements to be made before the Contractor can be notified or can respond to the notification, the District may, at its option, make the necessary repairs or replacements, or perform the necessary Work, and the Contractor shall pay to the District the actual cost of such repairs plus the markup percentages shown in Article 3.2.3.

10.7 If equipment has repeatedly malfunctioned, is unreliable, requires excessive maintenance, or if repair of the equipment will not result in equipment that is equivalent to that required by the Contract Documents (both in functionality and useful life), the Contractor shall replace, rather than repair, the equipment under the warranty.

10.8 The Contractor is responsible for all costs incidental to making good any and all of its warranties and agreements. These warranties and agreements are covenants that are binding on the Contractor and its sureties.

ARTICLE 11 - TERMINATION OR SUSPENSION OF THE CONTRACT

11.1 Termination by the District for Cause or Default

11.1.1 The District may terminate the Contractor's right to proceed under the contract, in whole or in part, for cause at any time after the occurrence of any of the following events:

- .1** The Contractor becomes insolvent or files for relief under the bankruptcy laws of the United States.
- .2** The Contractor makes a general assignment for the benefit of its creditors or fails to pay its debts as the same become due.
- .3** A receiver is appointed to take charge of the Contractor's property.
- .4** The Contractor abandons the Work. Abandonment is conclusively presumed when the District requests a written plan to cure a default and the Contractor does not submit the plan within five Work Days of the District's request.

11.1.2 If any of the following events occur, the District may require that the Contractor submit a written plan to cure its default:

- .1** The Contractor fails to supply skilled supervisory personnel, an adequate number of properly skilled workers, proper materials, or necessary equipment to prosecute the Work in accordance with the Contract Documents.
- .2** The Contractor fails to make progress so as to endanger performance of the Work within the Contract Time.
- .3** The Contractor disregards legal requirements of agencies having jurisdiction over the Work, the Contractor, or the District.
- .4** The Contractor materially fails to execute the Work in accordance with the Contract Documents.

.5 The Contractor is in default of any other material obligation under the Contract Documents.

11.1.3 The District may terminate the Contractor's right to proceed under the contract in whole or in part for default if the written plan is not received by the District within five days after the District's request or if the District does not accept the Contractor's plan for curing its default.

11.1.4 Upon any of the occurrences referred to in Articles 11.1.1, 11.1.2 and 11.1.3, the District may, at its election and by notice to the Contractor, terminate the contract in whole or in part; accept the assignment of any or all of the subcontracts; and then complete the Work by any method the District may deem expedient. If requested by the District, the Contractor shall remove any part or all of the Contractor's materials, supplies, equipment, tools, and construction equipment and machinery from the Work within seven days of such request; and, if the Contractor fails to do so, the District may remove or store, and after 90 days sell, any of the same at the Contractor's expense.

11.1.5 If the contract is terminated by the District as provided in Article 11.1, the Contractor shall not be entitled to receive any further payment until the expiration of 35 days after acceptance of all Work by the District.

11.1.6 No termination or action taken by the District after termination shall prejudice any other rights or remedies of the District provided by law or by the Contract Documents.

11.1.7 If, after termination for default, it is determined that the Contractor was not in default, or that default was excusable, the rights and obligations of the parties shall be the same as if the termination had been issued for convenience pursuant to Article 11.2.

11.2 Termination by the District for Convenience

11.2.1 The District may, at its option, and for its convenience, terminate this contract at any time by giving written notice to the Contractor specifying the effective date of termination. Upon such termination, the Contractor agrees to comply with the notice and further agrees to waive any claims for damages, including loss of anticipated profits, on account of the termination in accordance with Article 11.2.5; and, as the sole right and remedy of the Contractor, the District shall pay the Contractor in accordance with Article 11.2.4.

11.2.2 Upon receipt of notice of termination under Article 11.2, the Contractor shall, unless the notice directs otherwise, do the following:

.1 Immediately discontinue the Work to the extent specified in the notice.

- .2 Place no further orders or subcontracts for materials, equipment, services, or facilities, except as may be necessary for completion of a portion of the Work that is not discontinued or is necessary to secure the project site.
- .3 Promptly cancel, on the most favorable terms reasonably possible, all subcontracts to the extent they relate to the performance of the discontinued portion of the Work.
- .4 Thereafter, do only such Work as may be necessary to preserve and protect Work already in progress and to protect materials, plants, and equipment in transit to or on the project site.

11.2.3 Upon termination, the obligations of the contract shall continue as to portions of the Work already performed and, subject to the Contractor's obligations under Article 11.2.2, as to bona fide obligations assumed by the Contractor prior to the date of termination.

11.2.4 Upon such termination, the District will pay to the Contractor the sum of the following:

- .1 The amount of the Contract Sum allocable to the portion of the Work properly performed by the Contractor as of the effective date of termination, less sums previously paid to the Contractor.
- .2 Previously unpaid costs of any items delivered to the project site that were already fabricated for subsequent incorporation into the Work.
- .3 Any proven losses with respect to materials and equipment directly resulting from the termination.
- .4 Reasonable demobilization costs.

11.2.5 The above reimbursement is the sole and exclusive remedy to which the Contractor is entitled in the event the contract is terminated for convenience; and the Contractor expressly waives any other claims, damages, demands, compensation or recovery related to this contract or project. The Contractor agrees to sign a general release incorporating this waiver.

11.3 Termination of the Contract - Act of God or Force Majeure

11.3.1 "Act of God" has the meaning set forth in Section 7105 of the Public Contract Code. "Force Majeure" shall solely have the meaning set forth in Section 1511, Subparagraph 2 of the Civil Code. If an Act of God or Force Majeure occurs, the Engineer may, by written notice, suspend or terminate this contract. If the contract is not suspended or terminated, or if the contract is resumed after suspension, the Contractor shall fully restore the work except as limited by Public Contract Code, Section 7105(a), in the case of an "Act of God."

- 11.3.2** If the contract is terminated because of an Act of God or Force Majeure, the Contractor will be paid for Work performed prior to the Act of God or Force Majeure at either (i) the Unit Prices named in the contract; or (ii) in the event no unit prices are named, a sum equal to the percentage that the Contract Sum for the Work completed, at the time of occurrence of the Act of God or Force Majeure bears to the Contract Sum for all Work to be performed under the contract as determined by the Engineer. In no event will the District be liable to the Contractor for breach of contract, extra work, or damages because the contract is terminated due to an Act of God or Force Majeure.

11.4 Suspension by the District

- 11.4.1** The Engineer may, in his or her sole discretion, order the Contractor, in writing, to suspend, delay, or interrupt the Work in whole or in part for as long as 90 days from the date of delivery of a written order of suspension. The order shall be specifically identified as a "suspension order" under this Article. The work may be suspended for a longer period or periods if the parties agree. Upon receipt of a suspension order, the Contractor shall comply with its terms and take all reasonable steps to minimize costs related to the suspension of the Work or the portion of the Work. Within 90 days after the issuance of the suspension order, or such extension to that period as is agreed upon by the Contractor and the District, the District will either cancel the suspension order or delete the suspended Work.
- 11.4.2** If a suspension order is canceled or expires, the Contractor shall resume the suspended Work. A Change Order may be issued to cover any adjustments of the Contract Sum or an extension of Contract Time necessarily caused by the suspension. If the Contractor disputes the adjustment of the Contract Sum or the Contract Time, the Contractor shall submit a claim per Article 3.4.
- 11.4.3** Costs directly associated with the suspension will be at the District's expense if the suspension is not due to any fault of the Contractor.
- 11.4.3** A suspension order shall not be required to stop the Work as permitted or required under any other provision of the Contract Documents.

ARTICLE 12 - LABOR PROVISIONS

12.1 Prevailing Wages

- 12.1.1** Pursuant to Section 1773 of the Labor Code, the District has obtained from the Director of Industrial Relations of the State of California, the general prevailing rates of per diem wages and the general prevailing rates for holiday and overtime work in the locality in which the Work is to be performed, for each craft, classification, or type of worker needed to execute the contract. A copy of the prevailing wage rates is on file and available for inspection by any interested party on request at the District's Specifications and Engineering Support Section.

- 12.1.2** The holidays upon which such rates shall be paid shall be all holidays recognized in the collective bargaining agreement applicable to the particular craft, classification, or type of worker employed on the Work.
- 12.1.3** The Contractor shall post a copy of the general prevailing rate of per diem wages at the jobsite pursuant to Section 1773.2 of the Labor Code.
- 12.1.4** Pursuant to Section 1774 of the Labor Code, the Contractor and any of its Subcontractors shall not pay less than the specified prevailing rate of wages to all workers employed in the execution of the contract.
- 12.1.5** As set forth with more specificity in Section 1773.1 of the Labor Code, "per diem" wages include employer payments for health and welfare, pension, vacation, travel, subsistence and, in certain instances, apprenticeship or other training programs, and shall be paid at the rate and in the amount spelled out in the pertinent prevailing wage determinations issued by the Director of Industrial Relations.
- 12.1.6** The Contractor shall, as a penalty to the State or the District, forfeit not more than the maximum set forth in Section 1775 of the Labor Code for each calendar day, or portion thereof, for each worker paid less than the prevailing rates for the work or craft in which the worker is employed under the contract by the Contractor or by any Subcontractor under him. The difference between the prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which such worker was paid less than the stipulated prevailing wage rate shall be paid to such worker by the Contractor.
- 12.1.7** The specified wage rates are minimum rates only and the District will not consider and shall not be liable for any claims for additional compensation made by the Contractor because of its payment of any wage rate in excess of the general prevailing rates. All disputes in regard to the payment of wages in excess of those specified herein shall be adjusted by the Contractor at its own expense.
- 12.1.8** General prevailing wage determinations have expiration dates with either a single asterisk or a double asterisk. Pursuant to California Code of Regulations, Title 8, Section 16204(b), the single asterisk means that the general prevailing wage determination shall be in effect for the specified contract duration. The double asterisk means that the predetermined wage modification shall be paid after the expiration date. Notwithstanding what is stated in Article 3.4 and Article 4.7 of the General Conditions, no adjustment in the Contract Sum will be made for the Contractor's payment of these predetermined wage modifications.

12.2 Payroll Records

- 12.2.1** The Contractor and each Subcontractor shall keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages

paid to each journeyman, apprentice, worker or other employee employed in connection with the Work. The payroll records shall be certified and shall be available for inspection in accordance with the provisions of Section 1776 of the Labor Code.

12.2.2 The Contractor shall submit for each week in which any contract Work is performed a copy of all payroll records to the Engineer. The Contractor shall be responsible for submission of copies of payroll records of all Subcontractors. Payroll records shall be completed and submitted by the 25th of the month for the previous 30-day period which started on the 15th of the previous month to the 15th of the current month.

12.2.3 Certified payroll records shall be on the forms provided by the Department of Industrial Relations (reduced size sample in Appendix A) or contain the same information required on the Department's form. Copies of the form may be obtained from:

Division of Labor Standards Enforcement
Bureau of Field Enforcement
2031 Howe Avenue, Suite 100
Sacramento, CA 95825-5378
(916) 263-1811
(916) 263-5378

The Contractor or Subcontractor shall certify the payroll records as shown on the reverse of the State form. In addition, the records shall be accompanied by a statement signed by the Contractor or Subcontractor certifying that the classifications truly reflect the Work performed and that the wage rates are not less than those required to be paid.

12.2.4 In the event of noncompliance with the requirements of Section 1776 of the Labor Code, the Contractor shall have 10 days in which to comply subsequent to receipt of written notice specifying in what respects such Contractor must comply with said Section. Should noncompliance still be evident after such 10-day period, the Contractor shall, as a penalty to the State or the District, forfeit the amount set forth in Section 1776(h) of the Labor Code for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, such penalties shall be withheld from progress payments then due.

12.3 Hours of Labor

12.3.1 Pursuant to the provisions of Sections 1810, et seq. of the Labor Code and any amendments thereof:

.1 Eight hours of labor constitutes a legal day's Work under the contract.

- .2 The time of service of any worker employed upon the work shall be limited and restricted to eight hours during any one calendar day, and forty hours during any one calendar week except as provided in Article 12.3.1.4 below.
- .3 The Contractor shall, as a penalty to the State or the District, forfeit the amount set forth in Section 1813 of the Labor Code for each worker employed in the execution of the contract by the Contractor or by any Subcontractor for each calendar day during which such worker is required or permitted to work more than eight hours in any calendar day and forty hours in any one calendar week in violation of this Article and the provisions of Labor Code, Sections 1810, et seq.
- .4 Work performed by employees of the Contractor in excess of eight hours per day, and forty hours during any one calendar week, shall be permitted upon compensation for all hours worked in excess of eight hours per day at not less than one and one-half times the basic rate of pay.
- .5 The Contractor and every Subcontractor shall keep an accurate record showing the name of and the actual hours worked each calendar day and each calendar week by each worker employed by him in connection with the Work; the record shall be kept open at all reasonable hours to the inspection of the District and to the Division of Labor Standards Enforcement of the State of California.

12.4 Employment of Apprentices

- 12.4.1 In the performance of the contract, the Contractor and any Subcontractor shall comply with the provisions concerning the employment of apprentices in Section 1777.5 of the Labor Code and any amendments thereof.
- 12.4.2 In the event the Contractor or any Subcontractor willfully fails to comply with the aforesaid section, such Contractor or Subcontractor shall be subject to the penalties for noncompliance in Labor Code, Section 1777.7.

ARTICLE 13 - MISCELLANEOUS PROVISIONS

13.1 Governing Law

The contract is governed by the laws of the State of California.

13.2 Antitrust Claims

By entering into the contract, the Contractor offers and agrees to assign to the District all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the contract. The Contractor shall

include in each subcontract a provision corresponding to the foregoing binding the Subcontractor to offer and agree to assign to the District such rights, title, and interest held by the Subcontractor. Such assignment shall be made and become effective at the time the District tenders final payment to the Contractor without further acknowledgment by the parties.

13.3 Non-Discrimination Clauses

13.3.1 There shall be no discrimination against any person, or groups of persons, per Government Code Section 12940, Labor Code Section 1735, or any other applicable law or regulation in the performance of this contract.

13.3.2 There shall be no discrimination in the performance of this contract, against any person, or group of persons, on account of race, color, religion, religious creed, national origin, ancestry, gender including gender identity or expression, age, marital or domestic partnership status, mental disability, physical disability (including HIV and AIDS), medical condition (including genetic characteristics or cancer), genetic information, sexual orientation, or military and veteran status. The Contractor shall not establish or permit any such practice(s) of discrimination with reference to the contract. Contractors determined to be in violation of this section will be deemed to be in material breach of the contract.

13.3.3 Contractor and its subcontractors shall abide by the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex, or national origin in the performance of this contract. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, national origin, protected veteran status or disability.

13.3.4 The Contractor shall include the nondiscrimination and compliance provisions of these clauses in all subcontracts.

13.4 Trenching and Shoring

The Contractor shall comply with Labor Code, Sections 6500, 6705, and 6707, and Public Contract Code, Section 7104, regarding trenching and shoring, and notwithstanding any other provisions of the Contract Documents.

13.5 Third Party Claims

Pursuant to Public Contract Code, Section 9201, the District will provide Contractor with timely notification of the receipt of any third-party claims relating to this contract.

END OF DOCUMENT

DOCUMENT 00 73 00

SUPPLEMENTARY GENERAL CONDITIONS

TABLE OF CONTENTS

	<u>Page</u>
Definitions	SGC - 1
Lines, Grades, and Measurements	SGC - 2
Materials and Workmanship	SGC - 3
Contractor Use of Premises	SGC - 3
Review of Contract Documents and Field Conditions	SGC - 3
Differing or Unusual Conditions	SGC - 3
Weather Conditions Unfavorable for Prosecution of Work	SGC - 4

SUPPLEMENTARY GENERAL CONDITIONS

The following supplements shall modify, delete, and/or add to Document 00 72 00 General Conditions. Where any article, paragraph, or subparagraph in Document 00 72 00 General Conditions is supplemented by one of the following paragraphs, the provisions of such article, paragraph, or subparagraph shall remain in effect and the supplemental provisions shall be considered as added thereto. Where any article, paragraph, or subparagraph in Document 00 72 00 General Conditions is amended, voided, or superseded by any of the following paragraphs, the provisions of such article, paragraph, or subparagraph not so amended, voided, or superseded shall remain in effect.

1. Article 1.2, "DEFINITIONS", add the following:

"Act of God": An occurrence or condition and effect as defined in Public Contract Code § 7105.

"Demolition": The removal and disposal by the Contractor of designated equipment, materials, structures, piping, utilities, and appurtenances as specified and shown in the Contract Documents.

"Equipment": (Construction) - All machinery and equipment, together with the necessary supplies for upkeep and maintenance, and also tools and apparatus necessary for the proper construction and acceptable completion of work. (Installed) - All material or articles used in equipping a facility as furnishings or apparatus to fulfill a functional design.

"Force Majeure": An event of force majeure is an event or circumstance which is beyond the control and without the fault or negligence of the Contractor or the District, and which by the exercise of reasonable diligence the Contractor or the District is unable to anticipate or prevent, provided that the event or circumstance is limited to: adverse weather conditions, including, but not limited to, National Weather Service Red Flag Warnings, public safety power shutoffs, drought, fires, or floods; wars; civil or military disturbances; acts of terrorism;; epidemics; acts of civil or military authority; or government actions, that affect the Contractor's or District's ability to perform its contractual scope of work.

"Laboratory": The established materials testing laboratory of the District or other laboratories acceptable to or authorized by the Engineer to test materials and work involved in the Contract.

"Manufacturer": The person, firm, or corporation in the business of manufacturing.

"Materials": Material incorporated in the project, and equipment and other material consumed in the performance of the work.

"Notice of Acceptance": A written notice is issued by the District notifying the Contractor and other interested parties of the date of final acceptance of the work, except

for those uncompleted items identified in the notice (punch list) still remaining to be completed.

“Operational Completion”: Operational completion is the stage in the progress of the Work when the Work or designated phase thereof is sufficiently complete in accordance with the Contract Documents and as determined by the Engineer so the District can occupy or utilize the Work for its intended use. Specific items required for operational completion are defined in Section 01 77 00.

“Partial Utilization”: Placing a portion of the work in service by the District, for the purpose for which it is intended (or a related purpose) before the whole work or designated phase thereof is accepted as Operationally Complete. The District may occupy or utilize any completed or partially completed portion of the Work. Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

“Project”: The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

“Proposal”: The offer of a bidder, on the prescribed form, to perform the Work.

“Referenced Documents”: Bulletins, Standards, Rules, Methods of Analysis or Test, Codes and Specifications of public or private agencies, Engineering Societies, or Industrial Associations. Reference shall be to the latest edition thereof, including Amendments, which are in effect and published at the time the NOTICE TO PROCEED is issued, unless a specific edition is identified, in which case reference shall be to such specific edition.

“Salvage”: The preservation, removal, and delivery by the Contractor to the District of designated equipment, materials, and facilities as specified and shown in the Contract Drawings.

“Specifications”: That part of the Contract Documents consisting of written descriptions of the technical features of materials, equipment, construction systems, standards, and workmanship.

“State Specifications”: The Standard Specifications, State of California, Business and Transportation Agency, Department of Transportation (Cal Trans).

“Title and Headings”: The titles or headings of the section and subsections in the contract documents are intended for convenience of reference and shall not be considered as having bearing on their interpretation.

2. In Article 1.3.3.1, delete Items **9** and **10**, and replace with:

**“9. Remainder of Division 00
10. Appendices
11. Referenced Standard Specifications”**

3. Article 3.3, “LINES, GRADES, AND MEASUREMENTS”, delete the Article in its entirety (3.3.1 – 3.3.3) and substitute the following:

“The Engineer will provide one benchmark and baseline near or on the site of the work. A Registered Land Surveyor in the State of California shall establish all other lines, grades, and benchmarks required for proper execution of the work. All records and field notes prepared by the Contractor’s Surveyor shall be provided to the District prior to acceptance of the work.

The Contractor shall preserve all bench marks, stakes, and other survey marks, and in case of their removal or destruction by its own employees or by its subcontractor's employees, the Contractor shall be responsible for the accurate replacement of such reference points by a Registered Land Surveyor in the State of California at no additional cost to the District. Any work that is governed by reference points which are disturbed shall be held in abeyance until the reference points are reestablished.”

4. In Article 3.4, replace Paragraphs 3.4.2.7 through 3.4.2.9 with:

“.7 If Contractor does not certify the Claim as required above, the Claim will be considered incomplete and subject to denial without any further recourse by, or remedy to, the Contractor.

.8 A claim complying with the requirements of Article 3.4 by the Contractor sent to the District through the District’s Construction Management Information System (“CMIS”, see Section 01 31 23.10) and by registered or certified mail with return receipt requested, either on its own behalf, or on behalf of one of its subcontractors of any tiers that is a separate demand for a time extension, including without limitation, for relief from damages or penalties for delay, for money or damages arising from work done by, or on behalf of, the Contractor for which payment is not otherwise provided or to which the Contractor is not otherwise entitled, or payment of an amount disputed by the District shall be subjected to the following procedures:

- a) Upon receipt of a Claim, the District will conduct a reasonable review of the Claim and will provide to the Contractor a written statement identifying what portion of the Claim is disputed and what portion is undisputed within 45 days from the date of receipt. The time for providing the written statement may be extended by mutual agreement between the District and the Contractor. If the District requires approval from its governing Board, and its Board does not meet within the 45-day period from receipt of a Claim, then the 45-day period shall be extended to three days following the next duly publicly noticed meeting of the District’s Board.
- b) Upon request by the District, the Contractor shall furnish reasonable documentation to support the Claim, as outlined in Article 3.4.2.

- c) Any payment due on an undisputed portion of the Claim will be paid within 60 days after the District issues the written statement referenced in Subparagraph 3.4.2.8.a, above.
- d) If the Contractor disputes the District's written statement, or if the District fails to timely respond to a Claim, the Contractor may demand in writing, sent through the CMIS and by registered or certified mail with "return receipt requested", an informal conference to meet and confer for settlement of the issues in dispute with the District. Within 30 days from the date of receipt of such demand to meet and confer, the District will schedule and hold a meet and confer conference, unless the timing is extended by mutual agreement of the Contractor and the District.
- e) Within 10 business days following the conclusion of the meet and confer conference, if the Claim or any portion of the Claim remains in dispute, the District will provide the Contractor a written statement identifying the portion of the Claim that remains in dispute and the portion that is undisputed. If additional unpaid undisputed portions of the Claim are identified, payment on such undisputed portions will be made within 60 days after the District issues the written statement referenced in this Subparagraph 3.4.2.8.e.
- f) Following receipt of the District's written statement in Subparagraph 3.4.2.8.e, the Contractor may identify in writing any disputed portion of the Claim and request mediation. The disputed portion of the Claim, as identified in writing by the Contractor, shall be submitted to nonbinding mediation. The costs of mediation shall be shared equally by the District and the Contractor. The District and the Contractor shall mutually agree to a mediator within 10 business days after the disputed portion of the Claim has been identified in writing as provided herein. If the District and the Contractor cannot agree upon a mediator, they shall each select a mediator, and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the Claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. Alternatively, the parties may agree to any nonbinding process, included but not limited to neutral evaluation or a dispute review board, and such nonbinding process shall be considered to comply with the mediation requirements set forth herein. Unless otherwise agreed by the District and the Contractor in writing, the mediation shall excuse any further obligation under Public Contract Code § 20104.4 to mediate after litigation has been commenced. The District and the Contractor may mutually agree to waive mediation in writing, at which time the procedures set forth in Article 3.4 shall be deemed complete and complied with, other than the mediation provided herein.
- g) If mediation of the disputed portion of the Claim is unsuccessful, the Contractor shall be required to follow all of the other claim procedures set forth in Article 3.4.
- h) Failure by the District to respond to a Claim within the time periods set forth herein will result in the Claim being deemed rejected in its entirety. A Claim that is denied by reason of the District's failure to have responded to a Claim, or its failure to otherwise meet the time requirements of Subparagraph 3.4.2.8, shall not constitute an adverse finding with regard to the merits of the Claim or the responsibility or qualifications of the Contractor.
- i) Amounts not paid in a timely manner as required in Subparagraph 3.4.2.8 will bear interest at 7 percent per annum.

- j) It is intended that the provisions stated in this Subparagraph 3.4.2.8 be a summary of the requirements of Public Contract Code § 9204, and it is not intended that the provisions herein shall waive or alter the requirements of Public Contract Code § 9204, except to the extent permitted by law upon mutual written agreement by the Contractor and the District.

.9 Condition Precedent (Government Code, Sections 930, et seq.):

- a) The Disputes and Claims procedures set forth in Article 3.4 are the exclusive procedures for presenting any Claims and are a condition precedent to filing a Government Code Claim, which, in turn, is a condition precedent to the right to initiating any action against the District related to the Claim. Failure to comply with the Disputes and Claims procedures offset forth in Article 3.4 is a waiver of any Claim arising from or related to the facts and circumstances described in the Claim or the Notice of Intent to File a Claim.”

- 5. Article 4.2, “SUPERVISION OF THE WORK”, replace Article 4.2.1 in its entirety with:

“Superintendent. The Contractor shall employ a qualified, competent superintendent who shall be present at the project site at all times whenever work is being performed and who shall supervise and direct all Work being performed by the Contractor, Subcontractors, and their respective agents and employees to ensure that the Work is being carried out in accordance with the Contract Documents. The superintendent shall be a regular employee of the Contractor and shall have been so for at least 30 days prior to work on this project. The Contractor shall designate, in writing, the name, scope, and authority of the superintendent before the Work begins. Instructions and information given by the Engineer to the Contractor’s superintendent about the Work are binding on the Contractor. Failure of the Contractor to have a designated superintendent at the project site as required by this paragraph shall constitute a material breach of this Contract, and shall further constitute grounds for suspension of all work until the Contractor has fully complied with the requirements of this paragraph. Any such suspension shall be considered an inexcusable delay by the Contractor, and may serve as grounds for termination for default at the election of the District.”

- 6. After Article 4.3.3, add:

“**4.3.4** All personnel including sole proprietors performing electrical work covered by Division 26 of the contract documents shall be journeymen or registered apprentices or shall be certified as electricians pursuant to certification standards established by the Division of Labor Standards Enforcement. Personnel shall submit satisfactory proof of certification or registration to the Engineer prior to commencement of field work.”

- 7. Article 4.4, “MATERIALS AND WORKMANSHIP”, add the following Paragraph 4.4.5:

“Within thirty-five (35) days after the Notice to Proceed, the Contractor shall provide the Engineer with a listing of all materials, products or equipment for which the Contractor proposes to provide an alternate to the manufacturer and model numbers named in the specifications, under these “or equal” provisions.

Except for the items so listed and approved by the Engineer, the Contractor shall provide one of the named materials, products, or equipment.

This "Proposed Alternates List" shall identify the material, product or equipment by description and specification section and shall list the manufacturer(s) and model number(s) of the alternate(s) which the Contractor is proposing to supply. The Contractor shall be responsible to provide all information required to demonstrate that the proposed alternate has equivalent function and utility as the named products.

Provision of "or equal" alternate shall be subject to the Engineer's approval, and any contract delay due to rejection of proposed alternates that do not comply with the requirements of the Contract Documents shall be sole responsibility of the Contractor.

For proposed alternates, the District reserves the right to require a minimum of forty working days for the review. This time for the District to review the proposed alternate (plus any additional time required for resubmittal) shall not constitute a cause for delay in contract completion nor a reason for an extension of contract time."

8. Article 4.7, delete the following sentence from Paragraph 4.9.2:

"However, the Contractor is not responsible for the cost of repair or restoration of damage to the Work caused by an Act of God as that term is defined in Section 7105 of the Public Contract Code."

9. Article 4.9, "CONTRACTOR USE OF PREMISES", add the following Paragraph 4.9.2:

"Roads subject to interference from the work covered by this contract shall be kept open unless otherwise stated in Section 01 35 13. Fences subject to interference shall be kept up by the Contractor until the work is finished."

10. Article 4.11, "REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS", Paragraph 4.11.1, add the following after the first sentence:

"The Contractor shall be responsible to field verify the depth and location of all underground utilities and all other systems (i.e., piping conduit, ducting, civil/structural work, etc.) during construction."

11. Article 7.7, "DIFFERING OR UNUSUAL SITE CONDITIONS", Paragraph 7.7.2, add the following:

"If the Contractor believes that as a result of differing site conditions the work involved comprises Extra Work, or will affect the contract duration, the Contractor shall submit a Change Order Request along with all substantiating documentation and justification, within five working days of commencing the work. The Contractor shall also maintain complete Daily Extra Work Reports for the work that is being claimed as Extra Work. Failure to submit a Change Order Request within five working days shall constitute agreement by the Contractor that the work involved is included in the original Scope of Work, and that no additional compensation or additional time is warranted."

12. Delete Article 11.3 in its entirety. Renumber Article 11.4 to 11.3.
13. After Article 11.3, insert:

“11.4 Termination or Suspension of the Contract - Act of God or Force Majeure

11.4.1 If an Act of God or Force Majeure occurs, the Engineer may, by written notice, either suspend this contract pursuant to Article 11.3, or terminate this contract pursuant to Article 11.2. In the case of suspension pursuant to Article 11.4, the 90-day suspension period limitation in Article 11.3.1 shall not apply. If the contract is not suspended or terminated, or if the contract is resumed after suspension, the Contractor shall fully restore the work except as limited by Public Contract Code, Section 7105(a), in the case of an “Act of God.”

11.4.2 If the contract is terminated because of an Act of God or Force Majeure, the Contractor will be paid for Work performed prior to the Act of God or Force Majeure at either (i) the Unit Prices named in the contract; or (ii) in the event no unit prices are named, a sum equal to the percentage that the Contract Sum for the Work completed, at the time of occurrence of the Act of God or Force Majeure bears to the Contract Sum for all Work to be performed under the contract as determined by the Engineer. In no event will the District be liable to the Contractor for breach of contract, extra work, or damages because the contract is terminated due to an Act of God or Force Majeure.”
14. In Article 12.2.4, replace “Section 1776(g)” with “Section 1776(h)”.
15. After Article 12.1.8, add:

“12.1.9 The Contractor and all Subcontractors of any tier shall be properly registered with the State Department of Industrial Relations at the time of bid opening and for the duration of the project pursuant to Section 1725.5 of the Labor Code. This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.”
16. After Article 12.2.4, add:

“12.2.5 The Contractor and all Subcontractors are required to submit certified payroll records monthly online to the Labor Commissioner.”
17. In Article 13.3, replace Articles 13.3.2 and 13.3.3 in their entirety with:

“13.3.2 There shall be no discrimination in the performance of this contract, against any person, or group of persons, on account of race, color, religion, religious creed, national origin, ancestry, gender including gender identity or expression, age, marital or domestic partnership status, mental disability, physical disability

(including HIV and AIDS), medical condition (including genetic characteristics or cancer), veteran or military status, family or medical leave status, genetic information, or sexual orientation. The Contractor shall not establish or permit any such practice(s) of discrimination with reference to the contract. Contractors determined to be in violation of this section will be deemed to be in material breach of the contract.

- 13.3.3 **Contractor and its subcontractors shall abide by the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex, sexual orientation, gender identity, or national origin in the performance of this contract. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, national origin, protected veteran status or disability.”**

END OF SECTION

DOCUMENT 00 73 05

SUPPLEMENTARY REQUIREMENTS

1.1 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK

- A. Notice to Proceed. See Article 8 of Document 00 72 00 General Conditions. The Contractor expressly asserts that it has taken into consideration and made allowances for all ordinary delays and hindrances to the work to be performed.
- B. Following issuance of the Notice to Proceed (NTP), the Contractor shall commence with identifying, gathering, and turning in all required submittals for review and approval of the District. The Contractor is not allowed to perform any work on the site(s) until the Safety Record has been submitted (see Article 1.5 of this section) and the Site Health and Safety Plan (see Section 01 35 24 Project Safety Requirements) has been submitted and accepted by the Engineer.
 - 1. Pre-NTP submittals: Contractor will be allowed to submit Pre-NTP submittals identified in 01 35 13, Special Project Procedures for procurement of materials and equipment with long lead times prior to the issuance of NTP. The cost to prepare pre-NTP submittals, respond to comments on pre-NTP submittals, and coordination with the District on pre-NTP submittals shall be paid for by the District.
- C. Required Contract Completion
 - 1. All work shall be operationally complete within 730 calendar days after receipt by the Contractor of the Notice to Proceed.
 - 2. All contract work shall be complete within 790 calendar days after receipt by the Contractor of the Notice to Proceed.
 - 3. The Contractor's bid shall include sufficient job-site overhead, home office overhead, and all other overheads for the full contract duration. The Contractor shall not have the right to finish early.
 - 4. One of the two oxygen plants shall be made "ready for integration programming" within three hundred sixty-five (365) calendar days after the Notice to Proceed.
 - 5. "Ready for integration programming" means the time, as determined by the Engineer, when the Work has progressed to the point when (i) all required functional and performance testing has been successfully completed and accepted for all components, devices, equipment, and instrumentation and controls, (ii) all required training (as specified in Section 01 79 00) has been completed and accepted by the District, (iii)

the Contractor has successfully installed and tested all communications networks including fiber-optic, leased telephone data circuits, and local Ethernet and serial networks, and (iv) all Work specified as prerequisite to the control systems functional tests (as specified in Section 01 75 17) has been completed by the Contractor to the satisfaction of the Engineer.

D. Responsibility for Completion

Whenever it becomes apparent from the Construction Schedule, or from monthly progress review meetings that phasing or contract completion dates will not be met, the Contractor shall take some or all of the following actions at no additional cost to the District:

1. Increase construction manpower in such quantities and crafts as will bring the progress of the work into conformance with all other specified requirements.
2. Increase the number of hours of work per shift, shifts per days of work, days of work per week, the amount of construction equipment or any combination of the foregoing, to bring the scheduling and progress of the work in conformance with all other specified requirements.
3. Reschedule the work under this contract in conformance with all other contract requirements to demonstrate completion of the contract work within the contract time.
4. Any additional steps necessary to ensure timely completion of the project.
5. Float in the Construction Schedule shall be for the benefit of the project and shall be available to the District as well as the Contractor in the event of contract change.

1.2 LIQUIDATED DAMAGES

A. The deduction for liquidated damages for delay to the first oxygen plant's readiness for integration programming (as defined in Paragraph 1.1C-5) shall be \$8,000/day from the date of required readiness for integration programming until the actual date for which the plant was ready for integration programming.

1. Each oxygen plant can only operate a maximum 365 days before needing to be taken offline for maintenance. For delays to the first oxygen plant's readiness for integration programming, Contractor shall deduct as liquidated damages the cost to the District for any liquid oxygen delivered to the MWWTP to allow the District to take offline the in-service oxygen plant for maintenance.

- B. The deduction for liquidated damages for delay in operational completion shall be \$8,000/day from the date of actual operational completion until the actual operational completion date for all distinct areas referenced in Section 01 77 00 Operational Completion and Project Closeout.
- C. The deduction of liquidated damages for delay in contract completion shall be \$4,000/day from the date of actual operational completion or required contract completion, whichever occurs later, until Final Acceptance.
- D. The above liquidated damages are necessary to ensure timely completion and to defray costs of additional construction inspection, contract administration, and allow operation of the MWWTP to maintain compliance with the District's National Pollutant Discharge Elimination System permit. Time is of the essence. See Article 8.2 of Document 00 72 00 General Conditions.
- E. After the specified or formally extended completion time, no time extension will be granted for delays caused by the climatic conditions.
- F. The total deduction for liquidated damages shall be the greater of the applicable amounts.

1.3 COMMUNICATIONS REGARDING THE WORK

- A. No directions or information regarding the work shall have contractual effect unless directed to the Contractor and authorized by the District.
- B. After award of contract, all communications regarding the work covered by this Specification shall be made to:

East Bay Municipal Utility District
Wastewater Department, MS 59
P.O. Box 24055
Oakland, CA 94623
Attention: John Law

or hand delivered to the:

Project and Construction Management Section
Main Wastewater Treatment Plant
2020 Wake Avenue
Oakland, California 94607
Attention: John Law

District contact is subject to change.

- C. The Contractor shall prioritize all communications regarding the work which require a response by the District. The Contractor shall initiate all communication regarding work as far in advance as is practical to permit timely District response.
- D. Appendix A contains standard communication forms that shall be used by the Contractor in communications regarding the work. The Contractor shall fill in all information required by the forms. If a space on the forms calls for information that is not applicable to the specific communication involved, the Contractor shall fill in "None", "N/A" or other similar comment. If additional information is required beyond that called for on the forms, it shall be provided by the Contractor as an attachment to the form.

The standard communication forms and their intended use are as follows:

1. Submittal Transmittal: This form shall accompany the transmittal of all submittals by the Contractor in accordance with Section 01 33 00, Submittal Procedures.
2. RFI: This form shall be used by the Contractor in its Request for Information (RFI) regarding any clarifications, interpretation or additional details that the Contractor may need concerning the requirements of the Contract Documents; as well as any questions or comments concerning any conflicts, errors or discrepancies which the Contractor may discover. The Contractor shall provide sequential numbering for each RFI to simplify subsequent reference to the questions involved.
3. RFI Response Form: This form will be used by the Engineer when responding to an RFI submitted by the Contractor.
4. SOR: This two-sided form shall be used by the Contractor when it submits a request to interrupt a utility, operating treatment unit or other similar action that may affect operations or processes at any treatment plant, pipeline or pump station. The System Outage Requests (SOR) shall be numbered sequentially, and shall be submitted in full compliance with the requirement of Section 01 35 13, Special Project Procedures, Article 1.5.
5. COR: The form shall be used by the Contractor when it submits a Change Order Request (COR) for a change in the Contract Documents. The Contractor shall provide sequential numbering for each COR. Change Order Requests shall be submitted by the Contractor in accordance with the provisions of Document 00 72 00 General Conditions. All subsequent correspondence regarding the items addressed in the COR shall include the COR number.

6. Contract Change Order Form: All Change Orders to the contract under the provisions of Article 7 of Document 00 72 00 General Conditions shall be executed on copies of the attached form.
7. Daily Extra Work Reports: All work involved with Force Account Compensation shall be recorded by the Contractor on copies of the attached Daily Extra Work Reports, in accordance with the requirements of Article 7.4 of Document 00 72 00 General Conditions. These reports shall be used as the basis of computing all costs involved with Force Account work, and shall be submitted by the Contractor to the District on the day the work is performed. These reports shall be signed by a District representative and shall be the express form used for documentation of Force Account work unless otherwise approved in writing by the Engineer.
8. Deficiency Notice: This form will be used by the District to inform the Contractor of defective work in accordance with Document 00 72 00 General Conditions, Article 3.2. The Contractor shall sign and date this form upon receipt.
9. Public Works Payroll Reporting Form: This form shall be used for certified payroll records.
10. Time and Material Work Record: This form shall be used by the Contractor for daily time and material records for protested work and work authorized to proceed prior to an approved change order as described in Articles 7.2 of Document 00 72 00 General Conditions.
11. Hot Work Permit: This two-sided form shall be used for any welding, burning, brazing, grinding, chipping or spark producing work performed by the Contractor at Wastewater Department facilities. The Contractor shall be responsible for all atmosphere testing and monitoring, as well as other listed items on permit form.
12. Safe Work Notice: This form will be completed on a routine basis by the District for the work performed by the Contractor. This form represents a communication tool for the Contractor to notify District plant staff of ongoing work and potential safety hazards. The form will be completed based on information provided by the Contractor at each progress meeting.

1.4 SAFETY RECORD

- A. After contract award but prior to commencement of field work, the Contractor shall provide information regarding its own and its subcontractors safety records for each of the last three calendar years to the Engineer. The information provided shall include:

1. Copy of OSHA history including records of any OSHA inspection and citation
 2. Copy of OSHA 300 Log including identification and description of the top four serious injuries and accidents. A sample OSHA 300 log is included in Appendix A.
 3. Number of employee hours worked.
 4. Number of cases with days away from work, job transfer, or restriction, (add totals from columns H and I from OSHA 300 log).
 5. Number of other recordable cases, but not included in item 4 above (column J from OSHA 300 log).
 6. Total number of recordable cases (add items 4 and 5 above).
 7. Total incident rate (item 6 x 200,000 hrs / item 3).
 8. Incident rate for cases with days away from work, job transfer, or restrictions (item 4 x 200,000 hrs / item 3).
 9. Total number of deaths (column G on OSHA 300 Log)
- B. Safety record information shall ideally be submitted to the Engineer within the same fifteen-day period allowed for execution of the contract and bonds, but shall be submitted no later than two weeks prior to the commencement of field work. Any delay to the commencement of field work resulting from the late submittal of safety record information shall be the responsibility of the contractor, and no time extension shall be granted.

1.5 WAGE RELATED WORKPLACE POSTINGS

- A. The Contractor and every Subcontractor shall post at the workplace and comply with all required wage related workplace postings. Copies of the required postings may be downloaded or ordered electronically from the Department of Industrial Relations website at <http://www.dir.ca.gov/wpnodb.html>.

1.6 DISTRICT EQUAL EMPLOYMENT OPPORTUNITY (EEO) POSTERS

- A. Post in a prominent accessible location on the project site District-furnished EEO posters. The posters shall be maintained for the duration of the project. Request additional posters from the Engineer if their replacement becomes necessary.

1.7 LOCAL EMPLOYMENT AND TRAINING PROGRAM

- A. The District encourages Contractors (and their subcontractors), who have active District contracts, to provide job training and employ local residents with little work experience and/or residents who are returning to work from welfare.

END OF SECTION

THIS PAGE IS INTENTIONALLY BLANK

SECTION 01 11 00

SUMMARY OF WORK

PART 1 - GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

- A. Work covers the construction of site improvements, and performing related required work, located as shown on these Plans and Specifications including the following.
 - 1. Demolition and replacement of motors, valves, instruments, conduits, controls and other appurtenances associated with the cryogenic oxygen production facility at East Bay Municipal Utility District's Main Wastewater Treatment Plant (MWWTP).
 - 2. Existing pneumatic controls will be upgraded with new electronic instruments and controls. The work also includes re-coating of existing steel cold boxes, new controls and controls integration into the MWWTP's DCS controls system, replacement of four 1500-horsepower Main Air Compressor motors, installation of a new fire protection system, installation of a new fall protection system for the cold boxes, seismic retrofit for power distribution panels and cabinets.
 - 3. Removal and replacement of perlite in the two cold boxes at the Oxygen Production Plant. Removal and replacement of vermiculite in the two turbine duct assemblies/boxes.
 - 4. The work includes all materials, equipment, services and construction inherent to the Work.
- B. The Contractor is cautioned that the work specified herein involves activities and connections to existing wastewater facilities. All safety regulations shall be strictly complied with to protect work forces in potentially hazardous conditions such as excavation, dewatering, confined spaces and exposure to pathogens.
- C. The work is located in the City of Oakland, California. Note that schedule constraints for work on the site are specified in Section 01 35 13, Special Project Procedures.
- D. In addition to the requirements of Article 4 of Document 00 72 00 General Conditions, the Contractor shall:
 - 1. Provide and pay for traffic control and dust control measures.

2. Specifically acquire and pay for California DOSH excavation permits, permits required for work in City streets and State highways (as applicable), utility connection fees or charges, and all permits required by the local fire marshall or other agency having jurisdiction on the work.
3. Pay Government fees and all fees required in permits furnished by the District. District provided permits are listed in Section 01 14 00, Work Restrictions.
4. NOT USED.
5. Comply with codes, ordinances, rules, regulations, orders, and other legal requirements of public authorities which bear on performance of work.
6. Upon completion of the work, provide releases from all property owners from whom the Contractor obtained easements or permits for material storage or other such needs as specified in Section 01 14 00, Work Restrictions.
7. Maintain overall coordination for the execution of the work.
8. Provide, and designate in writing, a Project Manager, separate and distinct from the Project Superintendent, from initialization of mobilization until Certification of Operational Completion. The Project Manager shall be the Contractor's representative on all matters concerning execution of the work and compliance with the Contract Documents. The Project Manager shall not be replaced without written acceptance of the Engineer.

1.2 WORK BY OTHERS

- A. Interference with work on utilities: The Contractor shall cooperate fully with all utility forces of the District or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities which interfere with the progress of the work. The Contractor shall schedule the work so as to minimize interference with said relocation, altering, or other rearranging of facilities. (See also Section 01 14 00 Work Restrictions, Article 1.6)
- B. If any part of the work depends upon the work of others for proper execution or results, the Contractor shall inspect and promptly report to the Engineer any apparent discrepancies or defects in such work of others that render it unsuitable for such proper execution and results. Failure of the Contractor to inspect and report shall constitute an acceptance of the work of others as fit and proper except as to defects which may develop in the work of others after execution of the work by the Contractor.

1.3 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK

- A. Notice to Proceed. See Article 8 of the General Conditions.
- B. Following issuance of the Notice to Proceed, the Contractor shall commence with identifying, gathering, and turning in all required submittals for review and approval of the District. The Contractor is not allowed to perform any work on the site(s) until the issuance of the Notice to Commence Field Work. Submittals requiring approval or acceptance by the District prior to the issuance of this notice shall include, at a minimum, the following:
 - 1. A Schedule of Costs as specified in Section 01 29 00.
 - 2. A completed Certified Payroll Electronic Submission Account Sign-up Form as specified in Section 01 31 23.15.
 - 3. Initial CPM Construction Schedule as specified in Section 01 32 00.
 - 4. A Schedule of Submittals as specified in Section 01 33 00.
 - 5. Project Safety and Health Plan and Fall Protection Procedures as specified in Section 01 35 24.
 - 6. Water Control and Disposal Plan, Spill Prevention and Response Plan, and Dust Control and Monitoring Plan as specified in Section 01 35 44.
 - 7. NOT USED.
- C. A Notice to Commence Field Work for the site(s) will be issued within 60 calendar days after the Notice to Proceed, pending receipt of acceptable required submittals. No site work shall occur prior to issuance of the Notice to Commence Field Work.

PART 2 - NOT USED

PART 3 - NOT USED

END OF SECTION

THIS PAGE IS LEFT INTENTIONALLY BLANK

SECTION 01 14 00
WORK RESTRICTIONS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section describes special requirements and construction constraints that may affect the work. These requirements and constraints are in addition to those appearing elsewhere in the specifications.
- B. Related Sections:
 - 1. Section 01 35 13 – Special Project Procedures.
 - 2. Section 01 35 24 – Project Safety Requirements.
 - 3. Section 01 35 44 – Environmental Requirements.
 - 4. Section 01 35 53 – Security Procedures.
 - 5. Section 01 50 00 – Temporary Facilities and Controls.

1.2 SUBMITTALS

- A. Certification that all requirements of agencies having jurisdiction over the work have been satisfied.
- B. Submit for approval detailed facility outage plans and system outage requests (SOR).

1.3 WORKING HOURS

- A. Work or activity of any kind shall be limited to the hours from 7:00 a.m. to 3:30 p.m. Monday through Friday with the exception of required outages, as described in Section 01 35 13 Special Project Procedures.
- B. Work in excess of eight hours per day, work on Saturdays, work on Sundays, or work on District holidays requires prior consent of the Engineer and is subject to Cost of Overtime Construction Inspection. Contractor shall notify the Engineer no less than 96 hours prior to beginning scheduled work at night or on a Saturday, Sunday or District holidays.

C. District holiday dates may vary from year to year. Contractor shall coordinate with the District.

1. Holidays are:

New Year's Day
Martin Luther King Day (3rd Monday in January)
Lincoln's Birthday
Washington's Birthday (3rd Monday in February)
Cesar Chavez's Birthday
Memorial Day (last Monday in May)
Juneteenth (June 19)
Independence Day
Labor Day (1st Monday in September)
Columbus Day (2nd Monday in October)
Veteran's Day
Thanksgiving Day and following Friday
Christmas Day
Day after Christmas

2. When a holiday falls on Sunday, the following Monday shall be observed as the holiday. When a holiday falls on Saturday, the preceding Friday shall be observed as the holiday.

a. Day after Christmas Exception:

- 1) When the Day after Christmas falls on a Saturday, the Day after Christmas holiday shall be observed on the following Monday.
- 2) When the day after Christmas falls on a Monday, the Day after Christmas holiday shall be observed on the following Tuesday.

1.4 COST OF OVERTIME CONSTRUCTION INSPECTION

A. Overtime construction work performed at the option of, or for the convenience of, the Contractor will be inspected by the District at expense of the Contractor. For any such overtime beyond the regular eight (8) hour day and for any time worked on Saturday, Sunday, or holidays the charges will be as shown in the following schedule:

B.	<u>Charge per Hour</u>
Senior Engineer	\$150.57
Associate Engineer	\$129.90
Assistant Engineer	\$117.64
Senior Construction Inspector	\$114.76
Junior Engineer	\$101.47

- C. There will be no charges for the inspection of overtime work ordered by the Engineer or required by the specifications.

1.5 COOPERATION WITH OTHER WORK FORCES

- A. Other contractors, other utilities and public agencies or their contractors, other District contractors, and District personnel may be working in the vicinity during the project construction period.
- B. Any costs for providing cooperation with other work forces shall be considered as included in the bid price for the various contract items of work and no separate payment will be made therefore.
- C. The Contractor's attention is directed to the fact that work will be conducted at and near the site by Cisco Air Systems and its agents during the period specified for the contract work. Work by others shall include but not be limited to maintenance and overhaul of the four Main Air Compressors (MACs). Contractor shall coordinate their work on the MACs with the Engineer to avoid any conflicts.
- D. The Contractor shall conduct its operations so as to cause a minimum of interference with the projected work of the projects listed above and its agents to provide safe access for investigative purposes to their future respective work sites. The Contractor's failure to do so shall not constitute the basis for delay claims by the Contractor against the District or other parties.

1.6 NOT USED.

1.7 CONTRACTOR PARKING RESTRICTIONS

- A. Contractor employees and subcontractors shall only park personal vehicles in designated parking areas.
 - 1. Main Wastewater Treatment Plant: Contractor shall only park at the Contractor employees' parking lot immediately to the right (south) after entering the main gate. Contractor employees shall not park their personal vehicles in any other location without Engineer's approval.

PART 2 - NOT USED

PART 3 - NOT USED

END OF SECTION

THIS PAGE IS LEFT INTENTIONALLY BLANK.

SECTION 01 18 05

PROJECT UTILITY SOURCES AND SITE CONDITIONS

PART 1 - GENERAL

1.1 SITE INVESTIGATION AND REPRESENTATION

- A. The Contractor acknowledges that it has satisfied itself as to the nature and location of the work, the general and local conditions, particularly those bearing upon availability of transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads, and uncertainties of weather, tide stages, or similar physical conditions at the site, the conformation and conditions of the ground, the character of equipment and facilities needed preliminary to and during the prosecution of the work and all other matters which can in any way affect the work or the cost thereof under this Contract.
- B. The Contractor further acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials to be encountered from inspecting the site and from evaluating information derived from exploratory work that may have been done by the District or included in these Contract Documents. Any failure by the Contractor to become acquainted with all the available information will not relieve the Contractor from responsibility for properly estimating the difficulty or cost of successfully performing the work.
- C. Before undertaking each part of the work, the Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. As the work proceeds, the Contractor shall field verify the depth and location of all buried utilities, and existing systems, and location of hazardous waste and contaminants. The Contractor shall promptly report in writing to the Engineer any conflict, error, or discrepancy which the Contractor may discover and shall obtain a written interpretation or clarification from the Engineer before proceeding with any work affected thereby.

1.2 EXISTING UTILITIES AND IMPROVEMENTS

- A. The Contractor shall notify Underground Service Alert (USA) at least four (4) days prior to excavation, telephone 811. The Contractor shall also contact all utility owners not registered with USA but known to have utilities in the project area to field locate underground utilities at least four (4) days prior to excavation.
- B. Known existing underground conduits, pipelines and other utilities have been shown on the contract drawings in their approximate locations (within 3 feet of actual location). However, the accuracy or completeness of utilities indicated on the drawings is not guaranteed. It shall be the responsibility of the Contractor to

determine the exact location of all utilities and their service connections. All potholing or other procedures for verifying utility location shall be performed by the Contractor as necessary to prepare for its excavation at least four (4) working days in advance of scheduled excavation. The Contractor shall immediately notify the Engineer as to any utility located by the Contractor which has been incorrectly shown or omitted from the drawings.

- C. Existing utilities that are shown or that are made known and located to the Contractor prior to excavation, and that are to be retained and all utilities that are constructed during excavation operations shall be properly supported and protected from damage during the progress of the work.
- D. Attention is directed to the possible existence of underground utilities not indicated on the plans and to the possibility that underground utilities may be in a location different from that indicated on the plans. The Contractor shall ascertain the exact locations of underground utilities whose presence is indicated on the plans, the locations of their service laterals and the location of any other underground utilities and service laterals which can be inferred from the presence of visible facilities such as buildings, meters and junction boxes prior to doing work that may damage such utilities or interfere with their service. All potholing or other procedures for verifying underground utility locations shall be performed by the Contractor at least four (4) working days in advance of scheduled excavation.

If the Contractor cannot locate an underground utility whose presence is indicated on the plans, the Engineer shall be notified in writing. If the Engineer determines that the underground utility for which such notice has been given has not been depicted on the plans with reasonable accuracy (within three (3) feet of actual location), the additional cost incurred in locating the utility will be paid for as extra work as provided in Article 7 of Document 00 72 00 General Conditions.

If the Contractor discovers underground utilities not indicated on the plans, Contractor shall immediately give the Engineer and the Utility Company written notification of the existence of such utility. Such utilities shall be located and protected from damages as directed by the Engineer and the cost of such work will be paid for as extra work as provided in Article 7 of Document 00 72 00 General Conditions.

- E. The Contractor shall notify all Owners of utilities when its work is in progress and shall make arrangements as are necessary to make any emergency repairs. Known utilities in the area are listed in Article 1.4 of this Section.
- F. Should any damage to a utility occur during the progress of the work, the Contractor shall notify the District and the utility at once and render every assistance possible to repair the damage and restore the service. No extra compensation will be made for the repair of any services or utility damaged by the

Contractor nor any damage incurred through neglect or failure to provide adequate protection to existing utilities. The provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.

- G. Damaged water pipelines will be repaired by the District at the Contractor's expense. Repair work will be coordinated by the District's Water Department (if in public right-of-way: (866) 403-2683) or the District's Maintenance Superintendent, (if at the Wastewater Treatment Plant: (510) 287-1450). If the Contractor fails to pay the cost of repairs to water pipelines within thirty days of receipt of the invoice, the District reserves the right to withhold the amount owed from the Contractor's Progress Payment.
- H. In the event that the Contractor damages any underground utilities not shown on the plans or not depicted on the plans with reasonable accuracy (within three (3) feet of actual location) or any lateral service the location of which could not be inferred by the Contractor, a written report thereof shall be made immediately to the Engineer. The Contractor's report shall also advise the Engineer of any schedule delays. Compensation for such delays will be determined in accordance with Article 8 of Document 00 72 00 General Conditions. The Contractor shall be entitled to no other compensation for any such damage.
- I. All utilities encountered along the line of the work shall remain continuously in service during all work under the Contract, unless otherwise shown on the drawings, or unless other arrangements satisfactory to the Engineer are made with the Owner of said utilities.

1.3 CONTRACTOR'S RESPONSIBILITY FOR UTILITY FACILITIES AND SERVICE

- A. Where the Contractor's operations could cause damage or inconvenience to railway, telegraph, telephone, television, power, oil, gas, water, sewer, fuel lines or irrigation systems, the Contractor shall make all arrangements necessary for the protection of these utilities and services.
- B. The Contractor shall be solely and directly responsible to the owner and operators of such properties for any damage, injury, expense, loss, inconvenience, delay, suits, actions, or claims of any character brought because of any injuries or damage which may result from the construction operations under this Contract.
- C. Neither the District nor its officers or agents shall be responsible to the Contractor for damages as a result of the Contractor's failure to protect utilities encountered in the work.
- D. In no event shall interruption of any utility service be allowed outside working hours unless granted by the Utility owner.

- E. No sand, mud, rocks or other construction debris shall be disposed of in the sanitary sewers or storm sewers.
- F. Where bypassing of sewage is required to perform sewer repairs or service relocations and where temporary pumps are required to bypass any sewage across traffic lanes, the discharge lines crossing the traffic lanes shall be buried a minimum of 4 inches below the pavement surface and backfilled with temporary asphalt concrete surfacing. Contractor shall take all necessary steps to assure continuous flow of sewage. Bypassing of untreated wastewater to surface waters or courses shall not be permitted.
- G. The Contractor shall replace, at its own expense, any and all existing utilities or structures removed or damaged during construction, to their existing condition unless otherwise provided for in these Contract Documents.
- H. The Contractor shall repair or replace, at its own expense, all pavement damaged during the construction, to its existing condition unless otherwise provided for in these Contract Documents.

1.4 NAMES OF KNOWN UTILITIES SERVING THE AREA

- A. The following is a list of the known public utilities serving the area:

Name of Utility

East Bay Municipal Utility District (Water and Sewer)
PG&E (Electric and Gas)
AT&T (Telephone)
Oakland Terminal Railway (Railroad)

1.5 RAILROADS

- A. The Contractor shall not perform work or occupy any part of railroad property without a permit authorizing the same.

1.6 INTERFERING STRUCTURES

- A. The Contractor shall take necessary precautions to prevent damage to existing structures whether on the surface, aboveground, or underground. An attempt has been made to show major structures on the plans. While the information has been compiled from the best available sources, its completeness and accuracy cannot be guaranteed, and it is presented as a guide to avoid possible difficulties.
- B. The Contractor shall protect all existing structures, trees, shrubs, and other items on the project site that are to be preserved, by substantial barricades or other devices commensurate with the hazard, from injury or destruction by vehicles, equipment, workers, or other agents.

- C. Where existing fences, gates, buildings, or any other structure must be removed to properly execute the work, or are damaged during the work, they shall be restored at the Contractor's expense to their original condition or better.
- D. Without additional compensation, the Contractor may remove and replace in a condition as good as or better than original, any small structures such as fences, and signposts that interfere with the Contractor's operations.

1.7 FIELD RELOCATION

- A. During the progress of construction, it is expected that minor relocations of the work will be necessary. Such relocations shall be made only by direction of the Engineer. If existing structures are encountered that will prevent construction as shown, notify the Engineer before continuing with the work in order that the Engineer may make such field revisions as necessary to avoid conflict with the existing structures.
- B. If the Contractor fails to notify the Engineer when a structure which interferes with construction is encountered, and proceeds with the work despite this obstruction, the Contractor shall do so at its own risk and at no additional cost to the District. Any Contractor request(s) for additional compensation or contract time resulting from necessary field relocations will be considered as set forth in Articles 7 and 8 of Document 00 72 00 General Conditions.

PART 2 - NOT USED

PART 3 - NOT USED

END OF SECTION

SECTION 01 21 00

ALLOWANCES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work Included: All items noted in Schedule of Allowances.
- B. Related contract documents:
 - 1. Document 00 41 05 - Description of Bid Items
 - 2. Section 01 31 20 – Partnering
- C. Contractor shall sequence Allowance work requiring outages to take place during planned outages when appropriate, to minimize the number and duration of outages to key equipment.

1.2 SCHEDULE OF ALLOWANCES

- A. The following monetary amount shall be included in the bid on the Bid Form.

8.	Partnership	\$20,000
9.	Unforeseen Site Conditions	\$200,000
10.	Hazardous Materials	\$100,000
11.	Record Drawings	\$75,000
12.	Correcting electrical, instrumentation, and control wiring	\$200,000
13.	Relocating or repairing mechanical, electrical, instrumentation, control wiring, and pneumatic controls	\$250,000

1.3 COSTS INCLUDED IN ALLOWANCES

- A. Cost of product and material to Contractor, less applicable trade discounts.
- B. Cost of labor required.
- C. Cost of equipment required.

- D. Applicable taxes and fees.

1.4 USE OF ALLOWANCES

- A. All work under allowances shall be approved in writing by the Engineer prior to commencement of work by the Contractor.
- B. All labor, material, and equipment shall be subject to approval of the Engineer.
- C. Contractor shall provide shop drawings, product data, and samples for materials provided under allowances.
- D. Unused portions of the allowances shall be credited to the District.
- E. Activities covering allowances for sitework or procurement activities shall be included in the initial construction schedule. Include sufficient time in the activities to accommodate the budget based on the crew size intended for the type of work.

1.5 PAYMENT

- A. Payment for work completed under allowances shall be in accordance with Article 7.3 of Document 00 72 00 General Conditions, Determination of Costs for Change Order Work or in accordance with unit prices listed on the bid form, as applicable.
- B. Contractor shall maintain complete and accurate daily records of the costs of any portion of the work completed under allowances.

PART 2 - NOT USED

PART 3 - NOT USED

END OF SECTION

SECTION 01 24 13

VALUE ENGINEERING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This Section applies to Contractor developed value engineering change proposals (VECPs) that:
 - 1. Require a change to the existing contract to implement.
 - 2. Reduce the contract price without impairing essential functions or characteristics.
 - 3. Will not have an adverse financial impact on the District when the costs of operating and maintenance through the life-cycle of the item are considered.
 - 4. Are not based solely on changes in deliverable quantities.
- B. Contractor will share in the net contract savings realized from accepted VECPs.

1.2 DEFINITIONS

- A. Gross Savings: The difference between Contractor's estimated cost of performing the work in accordance with the existing requirements and Contractor's estimated cost of performing work in accordance with the proposed change. Cost of performing work may include overhead but not profit.
- B. Contractor Development and Implementation Costs: Reasonable costs incurred by the Contractor in developing, testing, preparing, and submitting the VECP and costs incurred by the Contractor to make contractual changes required by District acceptance of the VECP.
- C. District Costs: Reasonable costs incurred by the District for evaluating and implementing the VECP, such as analyzing, testing, and redesign, where required. Does not include normal administrative costs of processing the VECP.
- D. Net Savings: Gross Savings less Contractor Development and Implementation Costs and District Costs.

1.3 SUBMITTALS

- A. As a minimum, the following information shall be submitted by the Contractor with each VECP:

1. Description of existing contract requirements
 2. Description of proposed change
 3. Discussion of differences between existing requirements and proposed change. Give advantages and disadvantages of each, justify any changes to function or characteristics, and give effect of the change on performance of the item.
 4. Analysis - Identify and describe each part of the existing requirements that must be changed to implement this VECP, and recommend how to make such change.
 5. Life-Cycle Cost Effects - State the estimated effect of the proposed change on cost of operating and maintenance throughout the life-cycle of the item.
 6. Time for Implementation of this VECP - State the latest time for acceptance of this VECP by the District to obtain maximum cost reduction during remainder of contract.
 7. Time of Completion - State the effect on contract completion if this VECP is accepted.
 8. Cost Analysis:
 - a. Detailed estimate of the cost of performing the work in accordance with existing contract requirements
 - b. Detailed estimate of the cost of performing the work in accordance with proposed contract change
 - c. Gross Savings to the Contractor
 - d. Implementation Costs:
 - 1) Detailed breakdown of Contractor Development and Implementation Costs
 - 2) Estimated District Costs
 9. Estimated Value Engineering Savings
 10. Estimated Net Savings to Contractor (c. minus d. above)
- B. Submit using a format similar to that of Value Engineering Change Proposal following this section.

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 CONTRACTOR

- A. Submit VECP in accordance with the applicable provisions of Section 01 33 00 Submittal Procedures.
- B. After Notice to Proceed, Contractor may request a preliminary determination from the Engineer that the proposed VE change does not impair an essential function or characteristic, and that a formal VECP may be accepted. Prior to Notice to Proceed, the District will not comment on any VECP.
 - 1. Requests should be in writing and sufficiently detailed to enable an Engineer determination.
 - 2. Requests should be submitted prior to any significant expenditure of time or effort to develop a VECP.
- C. Until a VECP is accepted by the District and an implementing change order is issued by the Engineer and executed by the Contractor, the Contractor shall perform in accordance with the existing contract.
- D. The Contractor shall have the right to withdraw, in whole or in part, any VECP at any time prior to acceptance by the District.

3.2 DISTRICT

- A. The Engineer will evaluate the VECP. Final determination of the effect of the proposed change on essential functions and characteristics, of the effect of the proposed change on performance of the item, and of the life-cycle costs and District implementation costs will be made by the Engineer.
- B. The District will not be liable for any delay in acting upon any proposal submitted.
- C. The Engineer will notify the Contractor of the status of the VECP within fifteen (15) working days after receipt. If additional time is required, the Engineer will notify the Contractor within the fifteen (15) day period and provide the reason for the delay and the expected date of decision.
- D. The Engineer may request additional data for clarification or for modification of the proposal.
- E. If the formal VECP is not accepted, the Engineer will notify the Contractor in writing, explaining the reasons for rejection.

3.3 ACCEPTANCE

- A. The Engineer may, within its sole discretion, accept or reject, in whole or in part, any VECP submitted. Acceptance will be by contract change order.
- B. The decision of the Engineer to accept or reject, in whole or in part, any VECP under this contract shall be final and shall not be subject to protest.
- C. If a VECP submitted by the Contractor is accepted, the contract price will be reduced by an amount equal to 50% of Net Savings expressed by the formula:

$$\text{Reduction} = 0.5 \times (\text{Net Savings})$$

- D. If a VECP submitted by the Contractor is not accepted, the Contractor will not be entitled to an extension of time or to any other compensation for the effort expended in developing and submitting the VECP.

3.4 SUBCONTRACTS

- A. Contractor shall include VE provisions in any subcontract of \$25,000 or greater, and may include such provisions in subcontracts of lesser value. Subcontracts shall contain a provision that any benefits accruing to Contractor as a result of an accepted VECP initiated by a subcontractor shall be shared by Contractor and subcontractor.
- B. To compute adjustment of the contract price, the Contractor's cost of development and implementation of a VECP which is accepted under this contract shall include any development and implementation costs of a subcontractor.

3.5 DATA RESTRICTION

- A. The District reserves the right to duplicate, use, and disclose any part of a VECP or any part of the supporting data submitted by the Contractor, in any manner and for any purpose whatsoever, except that the Contractor's estimated cost of performing work or of developing and implementing the VECP will not be disclosed outside the District.

END OF SECTION

SECTION 01 24 13A

VALUE ENGINEERING CHANGE PROPOSAL

SPECIFICATION NO. _____

DATE _____

PROJECT TITLE _____

CONTRACTOR _____ VECF NO. _____

1. DESCRIPTION OF EXISTING CONTRACT REQUIREMENT:

2. DESCRIPTION OF PROPOSED CHANGE:

3. DISCUSSION OF DIFFERENCES BETWEEN EXISTING REQUIREMENTS AND PROPOSED CHANGE: Give advantages and disadvantages of each, justify any changes to function or characteristics, and give effect of the change on performance of the item.

4. **ANALYSIS:** Identify and describe each part of the existing requirement which must be changed to implement this VECP, and recommend how to make such change.
5. **LIFE-CYCLE COST EFFECTS:** State the estimated effect of the proposed change on cost of operating and maintenance throughout the life-cycle of the item.
6. **DEADLINE DATE FOR IMPLEMENTATION OF THIS VECP:** State the latest time for acceptance of this VECP by the District in order to obtain maximum cost reduction during remainder of contract.
7. **TIME OF COMPLETION:** State the effect on contract time of completion if this VECP is accepted.
8. **COST ANALYSIS:**
- a. Cost of performing the work in accordance with existing requirement. Attach detailed breakdown \$_____
 - b. Cost of performing the work in accordance with proposed VECP. Attach detailed breakdown. \$_____
 - c. Gross Savings to the Contractor. \$_____
 - d. Implementation Costs.
 - (1) Contractors Development and Implementation Cost. Attach detailed breakdown. \$_____
 - (2) Estimated District Cost. \$_____
9. **ESTIMATED VALUE ENGINEERING SAVINGS** \$_____
10. **ESTIMATED NET SAVINGS TO CONTRACTOR** \$_____
- (c. minus d. above)

SECTION 01 29 00

PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 GENERAL

- A. Payment will be made at the price bid for each item listed on the bid form or as extra work as provided in Document 00 72 00 General Conditions.
- B. Payment for unit-price items will be based on the measurements and quantities described therefor. Variations in bid quantity will be as provided in Article 7.5 of Document 00 72 00 General Conditions.
- C. Initial progress payment will not be made prior to approval by the Engineer of the Schedule of Costs, the CPM Construction Progress Schedule, the Subcontractor Payment Report (Form P-047), and the Schedule of Submittals, except for a single mobilization payment as described in Article 1.4 below.
- D. No subsequent progress payment will be made prior to receipt by the Engineer of the monthly revision of the Construction Progress Schedule and of the Subcontractor Payment Report (Form P-047) as specified in Article 1.3. below.
- E. No subsequent progress payment will be made prior to receipt by the Engineer of Certified Payrolls for the previous month. If the Certified Payrolls are not complete or contain errors, the Engineer will withhold from payment the gross amount of the portion of previous month's payroll that is in question until the matter is resolved.
- F. The Contractor and its subcontractors of any tiers shall furnish the payroll records specified in Labor Code Section 1776 directly to the Labor Commissioner.

1.2 SCHEDULE OF COSTS FOR PAYMENTS

- A. Submit to the Engineer, within 5 days of acceptance of the Construction Schedule, five (5) copies of a Schedule of Costs. The Schedule of Costs shall be a detailed breakdown for each bid item of the quantities and prices of work and materials required to perform and complete the contract.
- B. To facilitate adjustments to bid item quantities and costs during construction, the Schedule of Costs shall include a breakdown of all costs included in each Bid Item, such as labor, material, equipment, fixed cost elements, incidental expenses, jobsite and home office overhead, and profit.
- C. To facilitate payment of Lump Sum Bid Items, the Schedule of Costs shall also include a breakdown by items of the work for each Lump Sum Bid Item. The total

of the price breakdown shall agree with the lump-sum price bid. The price breakdown shall, as a minimum, show the cost of each item of the Construction Progress Schedule, Section 01 32 00. Any additional breakdown of the Schedule of Costs, by quantities and prices of work and materials, considered necessary by the Engineer will be as determined by the Engineer. The price breakdown shall not be unbalanced, shall be subject to adjustment between the Engineer and the Contractor, and will be used as a basis for progress payments.

- D. Acceptance of the Schedule of Costs by the Engineer shall not relieve the Contractor of the responsibility of performing all the work needed to complete the project at the price bid.

1.3 SUBCONTRACTOR PAYMENT REPORT (FORM P-047)

- A. List all subcontractors on Subcontractor Payment Report (Form P-047, Appendix A). Furnish the following information:
 - 1. Name, address, phone number, and type of work to be performed
 - 2. Contact name.
 - 3. White Male (WM), White Women (WW), or Ethnic Minority (EM) composition of ownership
 - 4. Original dollar amounts, revised dollar amounts, total payments to date, and projected total payments.
- B. The listing of subcontractors shall be obtained from Contract Equity Program Summary (Form P-035) which will be prepared by the District after verifying information provided by the Contractor on Contract Equity Participation (Form P-040). A copy of Form P-035 will be furnished to the Contractor after award.
- C. Submit an updated Subcontractor Payment Report (Form P-047), showing dollars expended for each listed subcontractor no later than the 25th day of each month thereafter.

1.4 PAYMENT FOR MOBILIZATION

- A. As soon as practicable after receipt of the Notice to Proceed, the Contractor shall submit a breakdown to the Engineer for approval, which shall show the estimated value of each major component of mobilization. When approved by the Engineer, the breakdown will be the basis for initial progress payments in which mobilization is included. Said breakdown shall not be "front end loaded" or unbalanced.
- B. One Contractor payment may be made prior to acceptance of the Construction Schedule, Schedule of Costs, and list of anticipated submittals. Payment shall be limited to mobilization items only. The Construction Schedule is described in Section 01 32 00 Construction Progress Documentation. Mobilization items are

described in Section 01 71 13 Mobilization. The Schedule of Costs is described in Article 1.2 of this Section. The list of anticipated submittals is described in Section 01 33 00 Submittal Procedures.

1.5 PROGRESS PAYMENTS

- A. The Engineer will make an approximate measurement of all approved materials delivered to the jobsite and work performed by the Contractor through the 25th day of each calendar month for the purpose of making a progress payment. No payment will be made for the fabrication or production of materials off the jobsite, or for materials stored off the jobsite. However, at the discretion of the Engineer, payment may be made for approved materials that have been properly stored and insured off the jobsite. The Engineer will classify the work according to items listed on the Bid Form and will estimate the value thereof on the basis of the prices shown, or as extra work. The classification of the work performed and the value thereof will be based on the Schedule of Costs submitted by the Contractor.
- B. From the amount thus determined, five percent thereof will be deducted as retention by the District for performance security. The amount of all payments previously made to the Contractor and any amounts due the District from the Contractor for supplies, materials, services, damages, or otherwise deductible under the terms of the contract will be deducted from the remainder.
- C. In addition to the retention under Paragraph B above, the whole or part of any payment of the estimated amount due the Contractor may be withheld as an additional retention if such course be deemed necessary to protect the District from loss due to the Contractor's failure to perform any of the following: (1) meet its payment obligations; (2) execute or expedite the work; (3) correct rejected or defective work; (4) settle damages as provided; or (5) produce substantial evidence that no claims or stop notices will or have been filed, and/or if it has been determined that unpaid balances may be insufficient to complete the work.
- D. The remaining amount, after the deductions given above, will be paid as a progress payment by the District to the Contractor. Payment will normally be made on the third Friday of the succeeding month. If payment is not made within 30 days from the 25th day of the month for undisputed progress payments, then the District will pay interest to the Contractor in accordance with Section 20104.50 of the Public Contract Code.
- E. All material and work covered by progress payments thereupon become the sole property of the District, but this provision shall not be construed as relieving the Contractor from sole responsibility for all materials and work upon which payments have been made or the restoration of any damaged work or as a waiver of the District's right to require fulfillment of all of the contract terms. Said Contractor's obligation extends through the close of the warranty period.

- F. In the event that the Contractor fails to provide the District with an acceptable Monthly Contract Record Drawing Submittal in accordance with Section 01 78 39 Record Drawings, the District shall deduct compensation for such monthly submittal. Said deduction shall become the sole property of the District.
- G. No payment shall be made for materials stored offsite. Payment may be made for those materials delivered to the site but not incorporated in the work to the extent that the materials are included in the Construction Schedule as cost-loaded material delivery activities. Only material items manufactured specifically for this project and that cost individually in excess of \$20,000 will be considered for partial payment as stored materials.

Partial payment for materials delivered will not be made before the respective shop drawings, installation instructions and O&M manuals have been submitted, reviewed, and accepted in accordance with Section 01 33 00.

To receive partial payment for materials delivered to the site, but not incorporated in the work, it shall be necessary for the Contractor to submit to the Engineer, at least seven (7) days prior to the end of said month, a list of such materials. At the Contractor's sole discretion, the Engineer will approve items for which partial payment is to be made. The list of materials and invoices shall be clearly identified by referencing the associated activity or item on the price breakdown.

Partial payment for materials delivered to the District site or a bonded warehouse in Oakland, CA near the worksite will be made in an amount equal to 75% of the respective suppliers invoices(s) for the actual net cost for the item(s) delivered plus delivery charges. The Contractor's actual net cost for the materials must be supported by invoices of suppliers.

Proper storage and protection of materials shall be provided by the Contractor. Final payment shall be made only for materials actually incorporated in the work and, upon final acceptance of the work, all materials remaining for which advance payments had been made shall revert to the Contractor, unless otherwise agreed, and partial payments made for these items shall be deducted from the final payment for the work.

1.6 SUBSTITUTION OF SECURITIES

- A. Pursuant to Public Contract Code Section 22300 and upon Contractor's request, the District will make payment of funds retained from progress payments for performance security under Article 1.4, Paragraph B if the Contractor deposits in escrow with the District Treasurer or with a state- or federal-chartered bank acceptable to the District as escrow agent, securities eligible for the investment of District funds under Government Code Section 16430 or bank or savings and loan certificates of deposit, upon the following terms and conditions:

1. The Contractor shall bear the expense of the District and the escrow agent, either the District Treasurer or the bank, in connection with the escrow deposit made.
2. Securities or certificates of deposit shall be of a value at least 100 percent of the amounts of retention to be paid to the Contractor pursuant to this section.
3. The Contractor shall enter into an escrow agreement using the District's standard Retention Agreement form, which includes provisions governing inter alia:
 - a. The amount of securities to be deposited
 - b. The Contractor shall be the beneficial owner of any securities substituted and shall receive any interest or dividends thereon.
 - c. The providing of powers of attorney or other documents necessary for the transfer of the securities to be deposited
 - d. Conversion to cash to provide funds to meet defaults by the Contractor
 - e. The decrease in value of securities on deposit
 - f. The termination of the escrow upon completion of the Contract
4. The Contractor shall obtain the written consent of the surety to the escrow agreement.
5. A copy of the District's standard escrow agreement form is in Appendix A. Submit three original copies executed by the escrow agent and the Contractor to the District.

1.7 FINAL PAYMENT AND RELEASE OF CLAIMS

A. Notice of acceptance and final payment:

Upon the completion of the work as determined by the Engineer, a notice of Contract Acceptance will be issued and recorded with the County. The District will pay to the Contractor within 35 days after filing of the notice of acceptance, or as soon thereafter as practicable, the remaining amount due the Contractor, less all prior payments and advances withheld whatsoever to or for the account of the Contractor for supplies, materials, services, damages, or otherwise deductible under the terms of the contract. All prior estimates and payments including those relating to extra work shall be subject to correction by this payment, which throughout this contract is called "final payment".

B. Release of claims:

Neither the final payment nor any part of the retained percentage shall become due until the Contractor shall have delivered to the District a complete release of all claims against the District arising under and by virtue of this contract and related to undisputed amounts, including claims of subcontractors and suppliers of either materials or labor. If disputed contract claims in stated amounts are unresolved 35 days after filing of the notice of Contract Acceptance, a progress payment of undisputed amounts and retained funds will be made by the District upon receipt of a release specifically excluding the disputed contract claims. Claims by the District against the Contractor for liquidated damages or actual damages or other causes will be a valid basis for withholding of funds by the District. Upon resolution of disputed claims, the Contractor shall execute a supplemental release and, upon delivery, the District will make final payment. A copy of the release form is included in Appendix A.

PART 2 - NOT USED

PART 3 - NOT USED

END OF SECTION

SECTION 01 31 19

PROJECT MEETINGS

PART 1 - GENERAL

1.1 PRECONSTRUCTION CONFERENCE

- A. Upon receipt of the Notice to Proceed, or at an earlier time if mutually agreeable, the Engineer will arrange a preconstruction conference to be attended by the Contractor's project representative authorized to commit on the behalf of the Contractor and to direct the performance of the Work by others as well as the Contractor's superintendent, the Engineer, District representatives, major subcontractors, and others involved in the execution of the Work.
- B. The purpose of this conference will be to establish a working relationship and understanding between the parties and to discuss project organization, job communications, the Construction Schedule, shop drawing submittals and processing, cost breakdown payment applications and their processing, extra work procedures, safety requirements, permits and inspections, and such other subjects as may be pertinent for the execution of the Work.

1.2 WEEKLY PROGRESS MEETINGS

- A. The Engineer will arrange and conduct weekly progress meetings. The Engineer will prepare and circulate an agenda for each meeting.
- B. Progress meetings will be conducted at a time that is mutually agreed upon by the Engineer and the Contractor. Progress meetings shall be attended by the Engineer, District Operations and Maintenance personnel, Contractor's project representative and superintendent, and representatives of all subcontractors required by the Contractor or requested by the Engineer.
- C. Progress meetings will be held at any of the following locations, as determined by the Engineer:
 - 1. The administrative office at SD-1 at 2020 Wake Avenue, Oakland, CA 94607.
- D. The purpose of the meetings will be to facilitate the work of the Contractor and any subcontractor or other organization that is not up to schedule, resolve conflicts, identify and resolve any potential delays or necessary changes in the work and, in general, coordinate and facilitate the execution of the Work.
- E. The agenda of progress meetings shall include review of work progress and the latest Construction Progress Schedule, potential project delays, status of key shop drawings, submittal reviews, information requests, safety concerns, system outage

requests (SORs), including but not limited to lock out/tag out plans, environmental concerns including but not limited to storm water management, record drawings, and extra work items.

- F. The Construction Progress Schedule will be reviewed for conformance to the requirements of Section 01 32 00 and to verify at a minimum:
1. Actual start and finish dates of completed activities since the last progress meeting
 2. Durations, progress, and productivity rates of all activities not completed
 3. Critical submittals/materials delivery problems
 4. Potential project delays
 5. Any activity behind schedule and the Contractor's plan to bring it back on schedule
 6. Coordination of system outage requests or access restrictions
 7. Labor and equipment availability
 8. Contractor readiness to implement contingency plans necessary to keep the project on schedule
 9. Potential impacts from District operation and maintenance activities
 10. Reason, logic, time, and cost data for Change Order work that is to be incorporated into the Construction Schedule or payment request form.
 11. Payment due to the Contractor based on percentage complete of items in the submittal payment request form.
- G. If the logic of the submitted Look-Ahead Schedule deviates significantly from the current schedule, a reconciliation of the two schedules shall be required.
- H. The Engineer will prepare and distribute minutes of the meetings.
- I. Progress meetings may be conducted using remote meeting software applications such as Microsoft (MS) Teams, Zoom etc. at the option of the District. Contractor shall have equipment available for this remote communication

1.3 FIELD TESTING COORDINATION MEETINGS

- A. Field testing coordination mandatory meetings (see Section 01 75 17, Article 3.3) will be required to coordinate detailed commissioning procedures for complicated work or work with high potential impact to operations and schedule with the

contractor, subcontractors, and vendors. These meetings will be scheduled as needed by the Commissioning Engineer.

- B. Contractor shall at minimum schedule the following field preconstruction meetings with the Engineer prior to start of each scope of work for each oxygen plant, Contractor shall provide minimum 4 weeks advance notice to the Engineer:
1. Demolition of cold box pneumatic tubing, controls, and instruments for each plant.
 2. Cold box coatings for each plant; if a subcontractor is performing the coatings work, a representative from the subcontractor shall be in attendance.
 3. Loose-fill insulation removal; all firms and subcontractors performing the work shall be in attendance.
 4. Main air compressor motor replacement.
 5. Preconstruction meeting to coordinate handoff of DCS Equipment and schedule with DCS Equipment Manufacturer.
 6. Functional testing for each plant.
 7. Performance testing, start-up and commissioning for each plant.

1.4 SUBMITTALS

- A. A combined three (3) week Look-Ahead Schedule with a one (1) week As-Constructed Schedule for the previous week shall be submitted by Contractor to Engineer for review and approval before each progress meeting. This Look-Ahead Schedule may be derived from the General Superintendent's notes in a format other than Primavera Project Planner; however, the Look-Ahead Schedule logic shall be a representation of the approved Baseline Construction Schedule or the approved Monthly Construction Progress Schedule logic, whichever is most current (i.e. activity identification numbers and descriptions). See Section 01 32 00 Construction Progress Documentation.

PART 2 - NOT USED

PART 3 - NOT USED

END OF SECTION

SECTION 01 31 20

PARTNERING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. It is the policy of the District to encourage the Contractors to enter into a “Partnering” arrangement with the District as described below. The Contractor is not obligated to enter into a Partnering arrangement with the District. There will be no penalties of any kind imposed on the Contractor if it elects not to participate in a Partnering arrangement.
- B. Partnering consists of a voluntary effort by the District, the District’s Consultant(s), the Contractor and their sub-contractor(s) to develop joint goals and to establish a cooperative atmosphere regarding execution of the construction project. To initiate the Partnering arrangement, the parties will conduct an open discussion prior to the start of the job at a meeting arranged through a Professional Facilitator. It is expected that, at the conclusion of the initial discussion, the parties will express a consensus regarding, among other things, the respective goals in completing the contract. Thereafter, the parties will continue discussions as necessary and will conduct periodic joint evaluations of performance throughout the life of the contract. It is expected that the parties will use the services of a Professional Facilitator not only at the initial discussion, but, if needed, to assist in later discussions. The Contractor proposes a Professional Facilitator for Engineer’s approval.
- C. The Goals of Partnering are as follows:
 - 1. For the District, the District’s Consultant(s), the Contractor and subcontractor(s) to work as partners;
 - 2. To avoid confrontation and litigation among the parties;
 - 3. To reach a mutual understanding on how the construction project is to be conducted;
 - 4. To establish an atmosphere of trust and communication;
 - 5. To draw on the strengths of each organization to identify and achieve reciprocal goals;

6. To effectively and efficiently perform the contract as intended to achieve completion within budget, on schedule, and in accordance with plans and specifications;
 7. To resolve disputes in a timely, professional, and non-adversarial manner.
- D. The Contractor's bid price shall include an allowance of \$20,000 to pay for joint expenses such as the facilitator and meeting room expenses. The allowance will not be used to pay for any Contractor or subcontractor labor costs associated with Partnering, which shall be borne by the Contractor or subcontractor. If the Contractor elects not to participate in Partnering, then a credit change order of \$20,000 will be executed. Any remaining funds in the allowance at the end of the project shall be returned to the District as a credit change order.
- E. Contract Rights. The Partnering arrangement will not alter either the District's or the Contractor's legal rights and obligations under the contract.
- F. To implement this partnership initiative, it is anticipated that within thirty (30) days of Notice to Proceed the Contractor's on-site Project Manager and the District's Construction Manager, and approximately ten (10) of the Contractor's key staff and six key District personnel would attend a two (2) day partnership development/team building workshop. The Contractor shall also invite key personnel from major subcontractors. Follow-up workshops of one to two days duration may be held periodically throughout the duration of the contract as agreed to by the Contractor and the District.

PART 2 - NOT USED

PART 3 - NOT USED

END OF SECTION

SECTION 01 31 23.10

CONSTRUCTION MANAGEMENT INFORMATION SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

- A. The Contractor, and its subcontractors and suppliers shall utilize the District's Construction Management Information System (CMIS) for submission of all data and documents (unless specified otherwise herein and in this Section) throughout the duration of the Contract. "Copy" or Copies" shall refer to electronic copies unless a hard copy is specified. Where a hard copy is specified, both electronic and paper versions shall be submitted.
 - 1. The District's current CMIS is Kahua, a web-based construction management software hosted by Kahua, Inc.
 - 2. The CMIS is paid for by the District.
 - 3. The CMIS will be made available to all Contractor's personnel, subcontractor personnel and suppliers working under the Contract.
 - 4. The joint use of this system is to facilitate electronic exchange of information, automation of key processes, and overall management of Contract Documentation.
 - 5. The CMIS shall be the primary means of project information submission and management.
- B. Related Sections:
 - 1. Section 01 32 00 – Construction Progress Documentation
 - 2. Section 01 33 00 – Submittal Procedures

1.2 USER ACCESS LIMITATIONS

- A. The Engineer will establish the Contractor's access to the CMIS by allowing access and assigning user profiles to accepted Contractor personnel. User profiles will define levels of access into the system, and determine assigned function-based authorizations and user privileges to enter and access information in the CMIS. Subcontractors and suppliers will be given access to the CMIS by and through the Contractor. Entry of information exchanged and transferred between the Contractor and its subcontractors and suppliers on the CMIS shall be the responsibility of the Contractor.

1.3 OWNERSHIP OF DATA

- A. Data entered in a collaborative mode (entered with the intent to share as determined by permissions and workflows within the CMIS) by the Engineer and the Contractor will be jointly owned.

1.4 AUTOMATED SYSTEM NOTIFICATION AND AUDIT LOG TRACKING

- A. Review comments made (or lack thereof) by the Engineer on Contractor-submitted documentation shall not relieve the Contractor from compliance with requirements of the Contract Documents. The Contractor is responsible for managing, tracking, and documenting the Work to comply with the requirements of the Contract Documents. District's acceptance via automated system notifications or audit logs extends only to the face value of the submitted documentation and does not constitute validation of the Contractor's submitted information.

1.5 PRECONSTRUCTION SUBMITTALS

- A. See Section 01 33 00 – Submittal Procedures.
- B. Within five work days after receiving the Notice to Proceed, Contractor shall submit:
 - 1. List of Contractor's personnel responsible for CMIS administration, as well as that for the Contractor's subcontractors and suppliers
 - 2. Include descriptions of key personnel's roles and responsibilities for this project. Contractor shall also identify its organization's administrator on the list.

1.6 COMPUTER REQUIREMENTS

- A. The Contractor shall use PC based computer hardware and software that meets the requirements of the CMIS as recommended by the host of the CMIS, and as described herein to access and utilize the CMIS. As recommendations are modified by the host of the CMIS, the Contractor shall upgrade its system(s) to meet or exceed the recommendations. Upgrading of the Contractor's computer systems shall not be justification for a cost or time modification to the Contract.
- B. The Contractor shall ensure that connectivity to the CMIS is accomplished through an internet connection with a minimum bandwidth requirement of 128 kb/s for using the system. It is recommended that a faster connection be used when uploading pictures and files into the system.
- C. The CMIS currently supports the current and prior two versions of Chrome, Firefox, Edge, and Safari.
- D. The Contractor shall use applications compatible with Adobe Acrobat Professional Version XI or later to create Portable Document Format (PDF) files.

1.7 CONTRACTOR RESPONSIBILITY

- A. Contractor shall be responsible for scanning or otherwise converting to electronic format all project submittals and Contractor correspondence, drawings, sketches, etc., and uploading them to the CMIS.
- B. The Contractor shall be responsible for the validity of its information placed in the CMIS.
- C. Accepted users shall be knowledgeable in the use of computers, including Internet Browsers, email programs, CAD drawing applications, and Portable Document Format (PDF) document distribution program.
- D. The Contractor shall utilize the existing forms in the CMIS to the maximum extent possible. If a required form does not exist in the CMIS, the Contractor shall include a form of its own or one provided by the Engineer (if available) as an attachment to a submittal. The District discourages the use of e-mails and other methods of submitting requests and documents. Unless approved in advance by the Engineer, requests and documents not submitted through the CMIS will not be recognized as official correspondence.
- E. PDF documents shall be created through electronic conversion rather than optically scanned whenever possible. If optically scanned, the document shall be converted through OCR (Optical Character Recognition) software so that all documents are searchable. If the documents have multiple sections then the Contractor shall provide a "bookmark" for each section. The Contractor is responsible for the training of its personnel in the use of the CMIS (outside what is provided by the District) and the other programs indicated above as needed. The Contractor shall disable all security so that copying and pasting of information from the PDF document is enabled.
- F. User Access Administration
 - 1. Provide a list of Contractor's key CMIS administration personnel for the Engineer's acceptance. Contractor is responsible for informing the Engineer of additional personnel, subcontractors and suppliers to be added to the system, or of personnel, subcontractors and suppliers to be removed from the system. The Engineer reserves the right to perform a background check on all potential users.

1.8 CONNECTIVITY LIMITATIONS

- A. The CMIS is a web-based environment and therefore, subject to the inherent speed and connectivity limitations of the Internet. The Contractor is responsible for its own connectivity to the Internet. CMIS response time is dependent on the Contractor's equipment, including processor speed, Internet access speed, etc. and current traffic on the Internet. The District will not be liable for any delays associated from the usage of the CMIS including, but not limited to: slow response time, down time periods, connectivity problems, or loss of information. The Contractor shall ensure connectivity to the CMIS (whether at the home office or job

site). Under no circumstances will usage of CMIS be grounds for a time extension or cost adjustment to the Contract.

1.9 TRAINING

- A. The host of the CMIS will provide training consisting of a 2-hour web-based seminar in conjunction with a conference call. The seminar will accommodate multiple participants. Contractor shall determine how many seminars it requires.
- B. Contractor shall arrange and pay for the facilities and hardware/software required to facilitate the Contractor's own training.
- C. Contractor shall be responsible for coordinating the provision of training from the host of the CMIS for its personnel and its subcontractors' personnel.

PART 2 - PRODUCTS

2.1 DESCRIPTION

- 1. Kahua project management application (no substitutions) provided Kahua, Inc.

PART 3 - EXECUTION

3.1 CMIS UTILIZATION

- A. The CMIS shall be utilized in connection with all document and information management required by these Contract Documents. Documents and information to be submitted electronically include, but are not limited to, the documents described below.

- 1. Submittals:

- a. Shop Drawings

- 1) Shop drawings and design data documents shall be submitted as MicroStation or AutoCAD format files and PDF attachments to the CMIS submittal work flow process and form. Examples include, but are not limited to:

- a) Standard manufacturer installation drawings
 - b) Drawings prepared to illustrate portions of the work designed or developed by the Contractor
 - c) Steel fabrication, piece, and erection drawings
 - d) Electrical interconnection drawings

- b. Product Data

- 1) Product data and manufacturers instructions shall be submitted as PDF attachments to the CMIS submittal work flow process and form. Examples include, but are not limited to:
 - a) Manufacturer's printed literature
 - b) Preprinted product specification data and installation instructions
- c. Samples
 - 1) Sample submittals shall be physically submitted as specified in Section 01 33 00 – Submittal Procedures; additionally, Contractor shall enter submittal data information into the CMIS with a copy of the submittal form(s) attached to the actual sample. Examples include, but are not limited to:
 - a) Product finishes and color selection samples
 - b) Product finishes and color verification samples
 - c) Finish/color boards
 - d) Physical samples of materials
- d. Administrative Submittals
 - 1) All correspondence and pre-construction submittals shall be submitted using the CMIS. Examples include, but are not limited to:
 - a) Permits
 - b) List of project personnel
 - c) Requests for Information (RFI)
 - d) System Outage Requests
 - e) Monthly Subcontractor Payment Reports (P-047 Form)
 - f) Certified payrolls for the Contractor and subcontractors of all tiers
 - g) Plant Inspection Requests
 - h) Survey Requests
 - i) Requests for Meetings

- 2) All schedules and associated reports and updates shall be submitted as specified in these Contract Documents and as a native backed-up file of the scheduling program being used. The schedule shall be posted as a PDF file in the format specified in these Contract Documents and as backed-up file.
 - 3) Plans for safety, demolition, environmental protection, and similar activities
 - 4) Outage Plans
 - 5) Meeting minutes for weekly construction meetings, progress meetings, pre-installation meetings, etc.
 - 6) Any general correspondence submitted
- e. Compliance Submittals
- 1) Test reports, certificates, and manufacturer field report submittals shall be submitted on the CMIS as PDF attachments. Examples include, but are not limited to:
 - a) Field test reports
 - b) Quality Control certifications
 - c) Manufacturers' documentation and certifications for quality of products and materials provided
- f. Record and Closeout Submittals
- 1) Operation and maintenance data closeout submittals shall be submitted via the CMIS as PDF documents during the approval and review stage as specified, with actual hardcopy set of documents submitted for final (in addition to the final being submitted via the CMIS). Examples include, but are not limited to:
 - a) Operation and Maintenance Manuals: Final documents shall be submitted as specified.
 - b) Extra Materials, Spare Stock, etc.: Submittal forms shall indicate when and where actual materials are submitted.
- g. Financial Submittals
- 1) Schedule of Costs, Pay Estimates, Daily Extra Work Reports, and Change Order Requests shall be submitted via the CMIS. Supporting material for Pay Estimates and Change Order Requests

shall be submitted via the CMIS as PDF attachments. Examples include, but are not limited to:

- a) Contractor's Schedule of Costs utilizing both the native CMIS Schedule of Costs format and as required by the Contract Documents in both PDF and Microsoft Excel
 - b) Contractor's Monthly Progress Payment Requests utilizing the CMIS
 - c) Contract Change proposals requested by the District
- 2) The Contractor shall provide the craft, material, and equipment data via the CMIS, which will be utilized for Daily Extra Work Reports and Change Order Requests.

END OF SECTION

SECTION 01 31 23.15

CERTIFIED PAYROLL ELECTRONIC SUBMISSION

PART 1 - GENERAL

1.1 SUMMARY

A. The Contractor, and its subcontractors and suppliers shall utilize LCPtracker (A registered trademark of LCPtracker, Inc.) for submission of all certified payrolls throughout the duration of the Contract. "Copy" or Copies" shall refer to electronic copies unless a hard copy is specified. This requirement applies to the Contractor and all its subcontractors of any tiers providing certified payroll.

1. LCPtracker is a web-based software hosted by LCPtracker, Inc.
2. LCPtracker is paid for by the District.
3. LCPtracker will be made available to all Contractor and subcontractor personnel working under the Contract.
4. The joint use of this system is to facilitate electronic exchange of information, automation of key processes, and overall management of certified payroll.
5. LCPtracker shall be the required means of certified payroll and labor compliance documentation submission and management.

B. Related Sections:

1. Section 00 73 00 – Supplementary General Conditions
2. Section 01 29 00 – Payment Procedures

1.2 USER ACCESS LIMITATIONS

A. The Contractor will establish a Log-on identification and password to access the LCPtracker. User profiles will define levels of access into the system, and determine assigned function-based authorizations and user privileges to enter and access information in LCPtracker. Subcontractors and suppliers will be given access to LCPtracker by and through the Contractor. Entry of information exchanged and transferred between the Contractor and its subcontractors on LCPtracker shall be the responsibility of the Contractor.

1.3 AUTOMATED SYSTEM NOTIFICATION AND AUDIT LOG TRACKING

A. Review comments made (or lack thereof) by the District on Contractor-submitted documentation shall not relieve the Contractor from compliance with requirements of the Contract Documents. The Contractor is responsible for managing, tracking, and documenting the Work to comply with the requirements of the Contract

Documents. District's acceptance via automated system notifications or audit logs extends only to the face value of the submitted documentation and does not constitute validation of the Contractor's submitted information.

1.4 SUBMITTALS

- A. See Section 01 29 00 – Payment Procedures.

1.5 CONTRACTOR RESPONSIBILITY

- A. Contractor shall be responsible for entering or otherwise converting to electronic format all certified payroll records and uploading them through the LCPtracker web site.
- B. Use of the system may entail additional data entry of weekly payroll information including; employee identification, labor classification, total hours worked and hours worked on this project, wage and benefit rates paid, etc. The Contractor's payroll and accounting software shall be capable of generating a "comma delimited file" that will interface with the LCPtracker software.
- C. The Contractor shall be responsible for the validity of its information placed in LCPtracker.
- D. The Contractor shall utilize the existing forms in LCPtracker to the maximum extent possible. If a required form does not exist in LCPtracker, the Contractor shall include a form of its own or one provided by the Engineer (if available) as an attachment to a submittal. The District discourages the use of e-mails and other methods of submitting documents. Unless approved in advance by the Engineer, documents not submitted through LCPtracker will not be recognized as official.

1.6 CONNECTIVITY LIMITATIONS

- A. LCPtracker is a web-based environment and therefore, subject to the inherent speed and connectivity limitations of the Internet. The Contractor is responsible for its own connectivity to the Internet. LCPtracker response time is dependent on the Contractor's equipment, including processor speed, Internet access speed, etc. and current traffic on the Internet. The District will not be liable for any delays associated from the usage of LCPtracker including but not limited to slow response time, down time periods, connectivity problems, or loss of information. The Contractor shall ensure connectivity to the LCPtracker system (whether at the home office or job site). Under no circumstances will usage of LCPtracker be grounds for a time extension or cost adjustment to the Contract.

1.7 TRAINING

- A. The Contractor will establish a user account on LCPtracker. Instructions will be provided to set up a password and to activate the account. Once the account is activated, LCPtracker will provide two convenient training options:

1. Computer-Based Training Courses

a. Pre-recorded videos can be viewed at any time by logging into the LCPtracker website and following these simple steps:

- Enter your user name/password
- Select the “E-Training” link located at the top of the page.
- Select Contractor Training Videos

2. Web-Based Training Sessions

a. Online training sessions facilitated by members of LCPtracker’s Customer Support team are available several times per week. The requirements to participate are a computer with Internet access, an email address and a microphone & speakers on your computer or access to a phone.

- Enter your user name/password
- Select “Book Now” on the Projects tab and register for the Online training sessions.

B. Contractor training for the options above is provided at no cost to the Contractor.

PART 2 - PRODUCTS

2.1 DESCRIPTION

1. LCPtracker certified payroll application (no substitutions) provided by LCPtracker, Inc.

PART 3 - EXECUTION

3.1 LCPtracker UTILIZATION

A. LCPtracker shall be utilized in connection with all certified payroll required by these Contract Documents. Documents and information to be submitted electronically include, but are not limited to, the documents described below.

1. Submittals:

a. All submittals shall be submitted using LCPtracker. Examples include, but are not limited to:

1) Certified payrolls

END OF SECTION

SECTION 01 32 00

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Work included:
 - 1. Submit an Initial Construction Schedule for the work with sub-schedules of related activities.
 - 2. Submit updated Monthly Construction Progress Schedules after Notice to Proceed until contract completion.
- B. By submitting the Initial Construction Schedule and each Monthly Construction Progress Schedule, the Contractor certifies that in the progress of preparing the initial contract schedule and the monthly updates, it has consulted with all key Subcontractors and suppliers, has incorporated all relevant scheduling information from the Subcontractors and suppliers, and has obtained their agreement that they will comply with the planned start dates, sequencing, durations and completion dates reflected in the Initial Construction Schedule and each monthly update. The Contractor, alone, is responsible for coordinating and scheduling all Work and is solely responsible for any claims from Subcontractors or suppliers arising from or related to the coordination and scheduling of their work.
- C. The Contractor's scheduler shall have verifiable training and credentials in preparing and maintaining a computerized CPM construction schedule using the specified software. The scheduler shall have performed CPM scheduling on two completed construction projects each having total contract values greater than 75% of this project's total contract value and having at least 75% as many schedule items as this project. Unless otherwise agreed by the Engineer, the identified scheduler shall remain actively responsible for project scheduling through completion.
- D. A cost of \$10,000 shall be assigned to preparation and submittal of each construction schedule beginning with the first Monthly Construction Progress Schedule. Payment will be made for schedules submitted by the required time indicated in Article 1.2 and which are acceptable to the Engineer. Payment will not be made for schedules submitted after the required time indicated in Article 1.2 or for schedules which fail to meet the requirements of this Section and are identified as unacceptable by the Engineer.
- E. By preparing and submitting the Construction Schedule the Contractor represents that it can and intends to execute the work and portions thereof within the

specified times and constraints and that its bid covers the costs associated with the execution of work in accordance with the Construction Schedule.

F. Related Sections:

1. Section 01 33 00 – Submittal Procedures
2. Section 01 31 23.10 – Construction Management Information System

1.2 SUBMITTALS

- A. All schedules shall be created using Primavera P6, latest version, CPM format.
- B. Initial and Monthly Construction Progress Schedules shall include seven (7) printed copies and an electronic copy of the schedules together with printouts of the associated supporting data. Submit the electronic copy on a USB flash drive or as an email attachment and include both the electronic file in its native format and as PDF format compatible with Adobe Acrobat 7.0.
- C. The Initial Construction Schedule shall be submitted within 10 workdays after the Notice to Proceed. The submittal shall identify the person responsible for preparing the Initial Construction Schedule and Monthly Construction Progress Schedules and verifications of his or her qualifications.
- D. The Monthly Construction Progress Schedules shall be submitted before the 25th day of each month beginning with the month after submission of the Initial Construction Schedule.
- E. Submit all required schedules to the Engineer for review. Engineer will review the schedules and if unacceptable, return the review copy. If required by Engineer, Contractor shall make any changes or corrections required by Engineer and resubmit the schedule within 5 work days after receiving it from the Engineer. Contractor is solely responsible for any means, methods, coordination or scheduling of the Work regardless of any review or comment by Engineer.

1.3 DESCRIPTION

- A. Initial Construction Schedule:
 1. Prepare an Initial Construction Schedule with details as noted below.
 2. The Initial Construction Schedule shall be a time-scaled computerized detailed task level CPM diagram in precedence diagramming method (PDM) format. A clear delineation of construction activities shall be shown on the Initial Construction Schedule. This schedule shall be manpower, resource and cost loaded.
 3. Network Logic Diagram:

- a. Network logic diagrams shall be printed on 24" x 36" paper with title block indicating:
 - 1) Contract name and specification number
 - 2) Data and plot dates.
 - 3) Contractor name
 - 4) Schedule revision number and update number.
4. Mobilization, bond and insurance costs may be shown separately in the Initial Construction Schedule; however, other general requirement costs, overhead, profit, etc., shall be prorated throughout all the activities. The activities of the Initial Construction Schedule shall roll up into cost accounts from the Schedule of Values, which shall be in Construction Specifications Institute (CSI) format and shall be the basis for establishing the distribution of costs within the Schedule of Values. Costs relating to each activity shall be distributed evenly over the duration of the activity.
5. The work activities comprising the Initial Construction Schedule shall be of sufficient detail to ensure adequate planning and execution of the Work and such that the schedules provide an appropriate basis for monitoring and evaluating the progress of the Work. A work activity is defined as a singular task that requires time and resources (manpower, equipment, and/or material) to complete in a continuous operation (excepting submittal activities, review/approval activities, and fabrication and procurement activities). Activities shall be organized by facility or major sub-area. Work activities shall be clearly labeled to identify the scope of work involved and shall have measurable beginning and ending points. Activities labeled "start", "continue" or "completion" without measurable increments of work will not be acceptable. No activity shall be less than one (1) nor more than fifteen (15) days in duration nor exceed \$50,000 in value for any on-site operation unless otherwise accepted in writing by the Engineer. This fifteen day duration requirement does not apply to submittal preparation, submittal review, or fabrication and delivery of materials.
6. Activities related to the same physical areas of the work shall be grouped in the same area of the diagram and numbered in separate sequential series, with no overlap of activity numbers between different areas of the work. At a minimum, areas of the work (identified in Primavera by an Activity Code-"Area") shall be as follows:
 - a. Cold boxes
 - 1) Panels and electrical equipment

- b. LOX Storage Area
 - c. Main Air Compressor (MAC) Area
 - 1) MAC motor replacement
 - 2) Panels and electrical equipment
 - 3) Fire protection system – dry pipe sprinkler
 - d. Main Controls Building (indoors)
 - 1) DCS controls and control panels
 - 2) Panels and electrical equipment
 - 3) Fire protection system – clean agent
7. In the preparation of Initial Construction Schedule, Contractor shall take into account all constraints and requirements specified.
8. Show the complete sequence of construction by activity. The sequence shall include the outage activities described in Section 01 35 13, Special Project Procedures.
9. The project critical path consisting of Critical Work Activities shall be clearly shown and highlighted in red. Duration and logic connections for each activity shall be identified.
- a. Critical Work Activities are defined as Work activities which, if delayed or extended, will delay the scheduled completion date of the Work. All other Work activities are defined as non-critical Work activities and are considered to have float.
10. Show the dates for the beginning and completion of each major element of construction conforming to all limitations listed.
11. Identify District activities necessary for completion of the Work.
12. Products availability schedule:
- a. Show the fabrication, delivery and availability dates for contractor furnished equipment affecting the progress of the work.
 - b. Indicate the required delivery dates for District furnished materials and equipment as detailed in Section 01 64 05 District-Furnished Materials.
 - c. Indicate required installation date for PG&E-furnished equipment.

13. Contractor shall provide the following information for all activities and print layouts for network diagrams and associated printouts:
 - a. Activity identification numbers and description. Activity identification numbers shall be in multiples of ten.
 - b. Status date and original/remaining duration
 - c. Activity duration and remaining duration
 - d. Activity early start and early finish dates.
 - e. Activity late start and late finish dates.
 - f. Activity Float
 - g. Total Float
 - h. Cost Loading
 - i. Responsibility (i.e. specific firm completing the work)
 - j. The predecessor and successor activities for each individual activity
 - k. Designation of the planned work day/work week for each activity. All observed holidays and non-work days shall be identified by way of calendar designations. If the work involves crews on different work schedules (e.g. different days per week or hours per day or shifts per day) then separate calendars shall be provided for each work schedule and the work activities linked to the appropriate calendar.
 - l. Scheduled and actual manpower loading by trade for each activity
 - m. Production rates for major operations including excavation, haul and placement of fill material and pipe installation.
 - n. Scheduled and actual resource utilization for each activity including major construction equipment. Subcontract work shall be clearly indicated.
14. The schedule shall include the project calendar(s) indicating all non-working periods and indicating all District Holidays that will be observed during construction.
15. Seasonal weather conditions shall be considered in the planning and scheduling of the Work. When weather days are experienced and are

approved by the District, a new activity will be added to the schedule to reflect the occurrence of the weather day(s).

16. The schedule shall indicate the sequence and interdependency of all work activities. Contractor shall not sequester float through strategies including extending activity duration estimates to consume available float, using preferential logic, using extensive or insufficient crew/resource loading, using Zero Total Float constraints or imposed dates. All activities shall be linked by finish-to-start (FS) relationships only. No other relationships including start to start, and finish to finish shall be permitted without prior written permission of the Engineer. If and only if approved, other relationships shall be clearly and explicitly identified. Constraints on activities shall be kept to a minimum, shall be explicitly identified, and are subject to the written permission of the Engineer. Positive lags on finish to start relationships and negative lags on start to start or finish to finish activities will not be permitted.
17. Specific items to be covered include, but are not limited to, the following:
 - a. Notice to Proceed and Notice to Commence Field Work.
 - b. Submittal Schedule including permit requirements.
 - c. Mobilization
 - d. Dewatering
 - e. NOT USED.
 - f. NOT USED.
 - g. NOT USED.
 - h. Backfill
 - i. Grading, subbase, base, paving, and curb and gutters
 - j. Fencing and landscaping.
 - k. Other site work
 - l. Concrete, including installation of forms and reinforcement, placement of concrete, curing, stripping, patching and finishing
 - m. NOT USED.
 - n. Metal fastenings, framing structures, and fabrications
 - o. NOT USED.

- p. Waterproofing and damp-proofing, insulation, roofing and flashing, and sealants
- q. NOT USED.
- r. Finishes including coating and painting, flooring, ceiling, and wall coverings.
- s. Building specialties including furnishings, equipment, and toilet and bath accessories
- t. Process equipment, including separate activities for manufacturing, delivery, and installation
- u. Pumps and drives, including separate activities for manufacturing, delivery, and installation.
- v. Conveying equipment including hoists and cranes, conveyor systems, and materials handling equipment, including separate activities for manufacturing, delivery and installation
- w. Other mechanical equipment including fans and heating, ventilating, and air conditioning equipment, with separate activities for manufacturing, delivery and installation
- x. NOT USED.
- y. Storage shelving, including separate activities for fabrication, delivery and installation
- z. Trenching and pipe laying
- aa. Piping, including a separate activity for ordering lead time
- bb. Valves and gates, including a separate activity for ordering lead time.
- cc. Plumbing specialties
- dd. Electrical transmission, service, and distribution equipment, including separate activities for ordering, manufacturing, delivery, installation
- ee. Other electrical work including lighting, heating and cooling, and special systems, including separate activities for ordering, manufacturing, delivery and installation
- ff. Instrumentation and controls, including separate activities for ordering lead time, manufacturing, delivery and installation.

- gg. Procurement of critical (long lead time) equipment
 - hh. Separate activities for design, ordering, delivery and installation of turnkey systems.
 - ii. Any items to be District-furnished which are to be incorporated into the work as part of these Contract Documents
 - jj. Monthly as-built drawing preparation and review in accordance with Section 01 33 00
 - kk. Submit O&M manuals (preliminary and final) for approval
 - ll. Training of District personnel
 - mm. Equipment functional testing
 - nn. Equipment performance testing
 - oo. Operational test
 - pp. Clean-up and demobilization
 - qq. Submit final as-built and record drawings including electronic copies
 - rr. Contract completion
 - ss. Insulation removal and installation
 - tt. Main air compressor motor replacement
 - uu. Outages of key District equipment, system outage request (SOR) approval deadlines
 - vv. Preconstruction meetings and sitewalks
 - ww. Panel demolition and new panel installation
18. Failure by Contractor to include any element of the work required for the performance of this Contract and completion of the Work shall not excuse Contractor from completing all work required within the time for completion, notwithstanding Engineer's acceptance of the Initial Construction Schedule.
19. Show cost of each item. The costs shall agree with the Schedule of Costs, Section 01 29 00.
20. See Section 01 78 39, Record Drawings.

1.4 CONTENTS OF REPORTS, LISTINGS AND ASSOCIATED SUPPORTING DATA

A. Identification of listings: Major elements of construction. See Article 1.3.

1. Provide supporting data reports including:

- a. Activity listings sorted by area and by total float, identifying the early start (ES), early finish (EF), late start (LS), late finish (LF) and Total Float for each activity or work item.
- b. Activity listings sorted by area and activity identification number, identifying the ES, LS, EF, LF and Total Float for each activity.
- c. Activity listings sorted by area and activity identification number, identifying the predecessor and successor links for each activity.
- d. Activity listings sorted by activity identification number showing resources required for each activity and total cost per activity.
- e. Activity Listings shall be printed on 8½" x 11" paper in chronological order of the start of each activity with the following header/footer information:
 - 1) Contract name and specification number
 - 2) Data date.
 - 3) Contractor name
 - 4) Schedule revision number and update number.
- f. A list of near-critical activities with ten (10) work days or less of total float

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 BASELINE SCHEDULE AND DELAY ANALYSIS

- A. If approved by the Engineer, the Initial Construction Schedule (including any revisions required based upon the Engineer's review), will be the Baseline Construction Schedule for the Project. Engineer's Approval of the Baseline Construction Schedule is for conformance with contract requirements and does not relieve Contractor from its sole responsibility for means, methods, coordination or scheduling of the Work.
- B. Delay analyses will be based upon the Approved Baseline Construction Schedule or the latest approved Monthly Schedule in effect at the time of start of the

alleged delay. No time extensions will be granted, nor delay damages paid until a delay occurs which extends the work beyond the contract milestones. In no event, however, will contract time be extended, or compensation granted, for potential delays that do not actually occur.

- C. The Baseline Construction Schedule shall be used by Contractor for executing the Work of the Contract, including planning, organizing and directing the Work, and reporting its progress until subsequently revised by a Monthly Construction Progress Schedule. No unilateral changes shall be made to the Baseline Construction Schedule or Monthly Construction Progress Schedule logic and activities without the prior approval and consent of the Engineer, excepting only the reporting of Actual Start, Actual Finish, and Activity Progress.
- D. Delays of any non-critical Work shall not be the basis for an extension of Contract Time until the delays consume the float associated with that non-critical Work activity and cause the Work activity to become critical. Contract Time will only be extended through written Change Orders signed by the Engineer or his/her designee.

3.2 FLOAT

- A. Activity Float is defined as the difference, in work days, between an activity's late finish and its early finish.
- B. Total Float is defined as the difference, in work days, between the contract duration and the sum of the work day duration of the critical path activities.
- C. Total Float and Activity Float is not for the exclusive use or benefit of either the District or the Contractor, but is a resource available to and shared by both parties as needed to meet contract milestones and the contract completion date.
- D. In the event the Contractor submits a viable, contractually compliant construction schedule that indicates project completion at a date earlier than the contractually provided contract duration, the acceptance of such a schedule will not change the contract time. Instead, a schedule activity entitled "project float", of a duration equal to the difference between the proposed construction duration and the contract duration, will be added to the schedule and will be a resource available to and shared by both parties as needed to meet contract milestones and the contract completion date. The Contractor shall not be entitled to claim damages for expenses due to the District not authorizing an early completion.
- E. District reserves the right to make changes to the Work that will reduce the amount of work to be performed, reduce the difficulty of the work, change performance, inspection or specification requirements, reduce work restrictions, or otherwise make changes to increase productivity. Any resulting reduction in delay, or increase in float, are to be used first by the District, in its sole discretion, to offset any existing or anticipated District-caused delays. Thereafter, any

remaining float created will be a resource available to and shared by both parties as needed to meet contract milestones and the contract completion date.

3.3 MONTHLY CONSTRUCTION PROGRESS SCHEDULES

- A. Revise and submit Monthly Construction Progress Schedules to reflect actual progress to date and any changes in the plan to complete the work. Identify the first Monthly Construction Progress Schedule update as Revision 1 and number sequentially thereafter. The Monthly Construction Progress Schedule will contain all of the information required in the Initial Construction Schedule and the following:
 - 1. Actual progress to date for each activity based on agreed percentage complete used for calculation of Monthly Progress Payments as described in Section 01 29 00.
 - 2. District directed work and Approved Change Orders including weather delays granted that affect Schedule logic, durations, milestones or add or delete activities.
 - 3. Actual Start and Finish dates for each activity started or finished since the last monthly update.
- B. For Monthly Construction Progress Schedules, include:
 - 1. Provide a comparison between the current update and the Baseline Construction Schedule or previously accepted Monthly Construction Progress Schedule. Revisions and updated information shall be clearly highlighted. Include agreed revisions as discussed in the Weekly Progress Meetings. See Section 01 31 19 Project Meetings.
 - 2. Submittal of the monthly reports and schedule updates by Contractor are required regardless of the approval status of the Baseline Construction Schedule or any monthly revision to the Baseline Construction Schedule.
- C. Provide a printed listing of any activities that have been added or deleted, or modifications to the schedule logic and dependencies, changes to planned activity durations, resources and quantities, and early-start and late finish dates or other change in the means and methods for performing the work which result in changes to the order, sequence, duration, or number of planned activities, or to the planned schedule logic. Do not change activity IDs or reuse activity IDs from deleted activities.
- D. Provide a narrative report as needed to define:
 - 1. Work completed since the last update and a list of activities clearly showing revised percent complete and actual start and finish dates and a description of overall project status.

2. Description of the current critical path, including changes to the critical path since the last update and a summary of days gained or lost on the critical path.
 3. Other changes in construction sequence.
 4. Describe areas of work where production rates have changed and how these changes have impacted work progress.
 5. Problem areas, including identification of activities where actual progress has lagged planned progress as well as anticipated delays, reference to pending change orders as appropriate and other possible impacts on the schedule.
 6. For any anticipated delays, indicate:
 - a. Cause of the delay,
 - b. Corrective action and schedule adjustments to correct the delay, including a detailed listing of labor, additional crews, overtime, additional supervision, equipment, materials, and material expediting for recovering lost progress on critical activities.
 - c. Known or potential impact of the delay on other activities and milestones
 7. Status of pending items, including pending change orders, time extension requests, and other issues relating to contract time
 8. Contract Completion Date Status, including number of calendar days behind or ahead of schedule
 9. The effect of changes on schedules of other contractors involved with the work.
- E. As a condition precedent to final acceptance of the Work, submit a final As-Constructed Schedule and all final reports which accurately reflect the manner in which the Work was constructed and includes actual start and completion dates for all work activities on the Baseline Construction Schedule.

END OF SECTION

THIS PAGE IS LEFT INTENTIONALLY BLANK.

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This Section outlines in general the items that the Contractor must prepare or assemble for submittal during the progress of the work. There is no attempt herein to state in detail all of the procedures and requirements for each submittal. The Contractor's attention is directed to the individual Specification sections in these Contract Documents which may contain additional and special submittal requirements. The District reserves the right to direct and modify the procedures and requirements for submittals as necessary to accomplish the specific purpose of each submittal. The Contractor shall anticipate resubmitting submittals for major pieces of equipment and for control systems. Should the Contractor be in doubt as to the procedure, purpose, or extent of any submittal, the Contractor shall direct its inquiry to the Engineer.
- B. Within 30 days of the Notice to Proceed, the Contractor shall submit a complete list of anticipated submittals, including Specification/Drawing references. This list shall be updated with "late start" submittal dates within fifteen (15) days of submittal of the Contractor's construction schedule. The submittal dates shall be updated upon approval of the construction schedule and periodically thereafter. Any additional submittals shall also be included in updates.

1.2 ADMINISTRATIVE SUBMITTALS

- A. General
 - 1. The Contractor is reminded of its obligation to make required submittals promptly to the applicable federal, state, or local agency. Failure to comply with this requirement may result in the withholding of progress payments and make the Contractor liable for other prescribed action and sanctions.
 - 2. The Contractor shall submit to the Engineer a copy of all letters relative to the Contract, transmitting notifications, reports, certifications, certified payrolls, and the like, that it submit directly to a federal, state, or other governing agency.
 - 3. During the performance of the Contract, the Contractor shall maintain on a daily basis, and submit to the Engineer as requested, full and correct information as to the number of persons employed in connection with each subdivision of the work, the classification, rate of pay, and address of each person, and the cost, source, and amount of each class of materials

delivered, equipment received, and major construction equipment used in each subdivision of the work.

1.3 TECHNICAL SUBMITTALS

A. General:

1. Requirements in this section are in addition to any specific requirements for submittals specified in other divisions and sections of these Contract Documents.
2. Submittals shall be submitted via the CMIS per Section 01 31 23.10 Construction Management Information System.
3. Submittals will be reviewed for general conformance with the Drawings and Specifications. The intent of the review is to determine if the Contractor is submitting materials and equipment which are in general conformance with the Contract Documents. Detailed review of dimensions, sizes, space requirements, coordination with other equipment, and other construction details is not performed. Additional work and costs, resulting from errors in the submittals shall be the Contractor's responsibility and liability. Accuracy, coordination, and completeness of submittals shall be the sole responsibility of the Contractor, including responsibility to back check comments, corrections, and modifications from the Engineer's review before fabrication. The Contractor shall indicate on the submittal transmittal form if and how the submittal deviates from the contract requirements.
4. Submit samples, drawings, and data for the Engineer's approval which demonstrate fully that the construction, and the materials and equipment to be furnished will comply with the provisions and intent of this Specification. All submittals shall be written in Standard American English and all numerical data, whether in drawings, test reports, engineering calculations, manufacturer's literature, or maintenance manuals, shall be in United States Customary System (USCS) measuring units (foot, pound, gallons, etc). If original design work was completed in metric units, their equivalent USCS dimension and unit shall be indicated. All submittals, in printed or electronic format, shall be original quality and completely legible. Any obfuscation or loss of clarity of original which may result in ambiguous interpretation is not acceptable.
5. Each submittal shall contain material pertaining to no more than one equipment or material item and shall have the Specification Section and applicable paragraph number clearly identified on the front of the submittal transmittal form contained in Section 00 73 05 Supplementary Requirements. Each submittal shall be sequentially numbered starting with the first one delivered. Resubmittals shall include the number of the original submittal plus the suffix ".1" for the first resubmittal, ".2" for the

second resubmittal, etc. (e.g. submittal 3.0, 3.1, 3.2, etc.). Submittals not conforming to these requirements will be rejected.

6. Shop drawing submittal and coordination are the responsibility of the Contractor; this responsibility shall not be delegated in whole or in part to subcontractors or suppliers. Designation of work "by others," if shown on shop drawings, shall mean that the work will be the responsibility of the Contractor rather than the subcontractor or supplier who has prepared the shop drawings.
7. No equipment or material for which listings, drawings, or descriptive material is required shall be fabricated, purchased, or installed until the Engineer has reviewed and accepted such lists, final shop drawings, or other descriptive material. Installation of such equipment or material without accepted submittals will be considered defective work.
8. The Contractor shall provide in its construction schedule the time for District review of each submittal (and resubmittal for major equipment and control systems) in accordance with the allowable time specified herein and in Section 01 32 00 Construction Progress Documentation. This required time for District review shall not be a cause for delay in contract completion nor a reason for an extension of contract time. If the Contractor is required by the District to resubmit data, then neither the time required for the Contractor to prepare and resubmit such data, nor the required time for District review, shall be a cause for delay in contract completion or for an extension of contract time. Responsibility for time required for preparing and submitting required data shall be assigned solely to the Contractor.
9. It is considered reasonable that the Contractor shall make a complete and acceptable submittal to the Engineer by the second submission of a submittal item. Additional costs of the Engineer's review beyond the second submission shall be the responsibility of the Contractor and may be deducted from the monthly progress payments. This applies to all submittals including shop drawings.
10. After a submittal has been reviewed and accepted, no changes or substitutions in that submittal will be allowed without the Engineer's approval. If allowed, the Contractor will be responsible for the additional costs for engineering, administrative, clerical or other work required for additional review.
11. The Contractor shall supply the Engineer with a copy of all reinforcing steel detail drawings. Changes to the Contract Documents made by the Contractor in reinforcing steel shop drawings shall be called out in the letter of submittal. Such changes will not be acceptable unless the Engineer has expressed consent to such changes in writing.

12. Shop drawings, layout diagrams, catalog cuts and data, test reports, and information in sufficient detail to show complete compliance with all specified requirements shall be furnished to the Engineer, covering but not limited to the following items:

Air compressors
Building specialties
Caulking and sealing compounds
Chemical systems
Concrete mixes
Control panels
Demolition plan
Detection systems
Electrical conduit, wire and specials
Electrical fixtures and appliances
Electrical load centers
Electrical substations
Electrical conduit, wire and specials
Engines and appurtenances
Equipment provided by the Contractor
Fences, barricades gates, and gate operators
Gas monitoring systems
Grout
Hardware
Indicators
Instrumentation
Landscaping
Meters
Miscellaneous fabricated metals
Miscellaneous furnishings
Motor control centers
Motors, starters and controls
Paints, coatings and finishes
Pipe, fittings and specials
Pipe supports and anchors
Plumbing fixtures
Precast concrete elements
Pressure gauges
Programmable logic controllers
Pumps
Reinforcing steel and layout drawings
Signs
Structural steel
Tanks
Temporary dewatering systems and equipment
Valve and gate operators and controllers
Valves and gates
Variable frequency drives

Workstations

1.4 PRODUCT HANDLING

- A. Submittals shall be accompanied by a letter of transmittal and shall be in strict accordance with the provisions of this section.
- B. Compact discs (CDs) or Digital Video Discs (DVDs) shall be packaged in a hard plastic case. The case and media shall be labeled as to content.
- C. Submit priority of processing when appropriate.
- D. Proposals for “or equal” substitutions made prior to bid opening, pursuant to Public Contract Code Section 3400 (see Document 00 21 13 Instructions To Bidders, Article 3), shall be delivered after coordinating the delivery with the District. Contractor shall coordinate with the District’s Purchasing Division at the following telephone numbers: (510) 287-0355, (510) 287-1253, or (510) 287-2017.

1.5 SCHEDULE OF SUBMITTALS

- A. Schedule of Submittals shall be in the form of a submittal log similar to that shown in Appendix A.
- B. Complete columns (a) through (e) showing all submittals required by the specifications.
 - 1. Dates in column (e) shall be coordinated with the construction progress schedule to ensure sufficient time is allowed for processing of submittals and procurement of material prior to start of a construction activity.

PART 2 - PRODUCTS

2.1 PREPARATION

- A. General Requirements
 - 1. Shop drawings shall be accurate, distinct, and complete, and shall contain all required information, including satisfactory identification of items, units, and assemblies in relation to the Contract Drawings and Specifications.
 - 2. Shop drawings shall be submitted only by the Contractor, who shall indicate by a signed stamp on the shop drawings, or other approved means, that the Contractor has checked and approved the shop drawings, and that the work shown is in accordance with Contract requirements and has been checked for dimensions and relationship with work of all other trades involved. Submitting incomplete or unchecked shop drawings for the Engineer to correct or finish will not be acceptable, and shop drawings

which, in the opinion of the Engineer, indicate that they have not been checked by the Contractor will be rejected and returned to the Contractor for resubmission in the proper form.

3. When the shop drawings have been reviewed by the Engineer, the submittals will be returned to the Contractor. If major changes or corrections are necessary, the shop drawing will be rejected and returned to the Contractor with the need for such changes or corrections indicated. The Contractor shall correct and resubmit rejected shop drawings in the same manner and quantity as specified for the original submittal. If changes are made by the Contractor (in addition to those requested by the Engineer) on the resubmitted shop drawings, such changes shall be clearly explained in a transmittal letter accompanying the resubmitted shop drawings.
 4. The review of such shop drawings and catalog cuts by the Engineer shall not relieve the Contractor from responsibility for correctness of dimensions, fabrication details, coordination with other work, and space requirements, or for deviations from the Contract Drawings or Specifications, unless the Contractor has called attention to such deviations in writing by a letter accompanying the shop drawings and the Engineer approves the change or deviation in writing at the time of submission; nor shall review by the Engineer relieve the Contractor from the responsibility for errors in the shop drawings.
 5. The Contractor agrees that shop drawing submittals processed by the Engineer do not become Contract Documents and are not Change Orders; that the purpose of the shop drawing review is to establish a reporting procedure and to permit the Engineer to monitor the Contractor's progress and understanding of the design.
 6. Where contents of submitted literature from manufacturers include data not pertinent to the submittal, clearly show which portions of the contents are being submitted for review. Clearly mark the literature with the materials and options being provided to illustrate conformance with the specification details. Provide the complete part number and include the legend containing the descriptive details that define the meaning of each digit of the number.
- B. Shop Drawing Requirements: Shop drawings referred to herein shall include shop drawings, catalog cuts and information schematic diagrams, and other submittals for both shop and field-fabricated items. The Contractor shall submit, as applicable, the following for all prefabricated or manufactured structural items, material, and equipment:
1. General:

- a. For structures, submit all shop, setting, equipment, miscellaneous iron and reinforcement drawings and schedules necessary for construction. The foregoing shall include detailed "pour drawings" which shall show the sequence of concrete placement, and the type, quantity and location of all embedment items (sleeves, anchor bolts, door frames, etc.)
- b. For pipelines, submit a detailed layout of the pipeline with details of bends, closure pieces and fabricated specials and furnish any other details necessary.
- c. For trench excavation, submit detailed plan showing the design of shoring, bracing, sloping or other provisions necessary for safety, as specified in Section 01 35 24 Project Safety Requirements.
- d. For boring and jacking, submit a detailed description of the process to be used.
- e. For equipment which requires electrical service, submit detailed information to show power supply requirements, MCC and control panel, elevations, wiring diagrams, control and protection schematics, shop test data, operation and maintenance procedures, outline drawings, and manufacturer's recommendation of the interface/interlock among the equipment.
- f. For mechanical equipment submit all data pertinent to the installation and maintenance of the equipment including shop drawings, anchorage requirements, manufacturer's recommended installation procedure, detailed installation drawings, test data and curves, operation and maintenance manuals, and other details necessary.
- g. For architectural fabrication submit all data pertinent to the installation of the fabrications, including shop drawings, manufacturer's recommended installation procedure, detailed installation drawings, and other details necessary.
- h. For shop drawings or equipment drawings, including dimensions, size and location of connections to other work, and weight of equipment.
- i. Installation or placing drawings for equipment, drives, and bases
- j. Supporting calculations for equipment and associated supports, or hangers required or specified to be designed by equipment manufacturers, including seismic restraint information and details.
- k. Complete coating manufacturer's specifications, including materials description and paint system.

- l. Performance data and head vs. flow curves for compressor and pumps.
 - m. Suggested spare parts list with current price information.
 - n. List of special tools required for checking, testing, parts replacement, and maintenance. (Special tools are those which have been specially designed or adapted for use on parts of the equipment, and which are not customarily and routinely carried by maintenance mechanics.)
 - o. List of special tools furnished with the equipment.
 - p. List of materials and supplies required for the equipment prior to and during startup.
 - q. Installation instructions
 - r. List of materials and supplies furnished with the equipment.
 - s. Samples of finish colors for selection
 - t. Special handling instructions
 - u. Requirements for storage and protection prior to installation
 - v. Requirements for routine maintenance required prior to plant startup.
 - w. Startup and operating instructions
 - x. Seismic design calculations and restraint details for equipment and piping supports. Calculations shall be stamped by a civil or structural engineer registered in the State of California.
2. Electrical:
- a. Wiring and control diagrams of systems and equipment. Local control panel details.
 - b. List of special motor features being provided (i.e., space heaters, altitude corrections, thermal protectors, mounting arrangement, etc.)
 - c. Complete motor rating for all motors, including motor no-load, starting, and full-load current at rated voltage; full-load speed and full-load current at 110 percent voltage; motor service factor; motor efficiency and power factor at 1/2, 3/4, and full-load at rated voltage; recommended maximum kVAR of power factor correction capacitors when capacitors are switched with motor.

- d. See electrical technical specifications for additional specific submittal requirements.
- 3. Instrumentation and Control:
 - a. See Technical Specifications for additional specific submittal requirements.
 - b. The submittals shall include satisfactory identification of items, units, and assemblies in relation to the Specification section number, and the system or equipment identification or tag number shown on the Drawings, the Process and Instrumentation Diagram (P&ID), or as provided in applicable Specification section.
- C. Submittals required for foreign-manufactured items:
 - 1. In addition to the submittal requirements stated above, suppliers of foreign-manufactured items shall submit the names and addresses of companies within the United States that maintain technical service representatives and a complete inventory of spare parts and accessories for each foreign-made item proposed for incorporation into the work. Failure to provide the foregoing capabilities shall be just cause for rejection of the foreign-manufactured items.
- D. Final shop drawings to be submitted to District:
 - 1. Complete sets of reproducible (full size), hardcopy, final shop drawings shall be submitted to the District, at the Engineer's discretion, before, or at the time of, delivery of equipment onto the site.
- E. Seismic loading design provisions:
 - 1. All equipment supports that are not specifically detailed on the Drawings or specified herein shall be the responsibility of the equipment manufacturers and shall be designed by a civil or structural engineer registered in the State of California. The design shall be in accordance with the seismic provisions of Section 01 33 12, Seismic Design Criteria, in addition to all other loading conditions.
- F. Submittal of interface information (connection and correlation with other work):
 - 1. Where called for on the Specifications, and as determined necessary by the Engineer to provide proper correlation with other equipment, complete interface information shall be submitted. This interface information shall be accurate, and contain all information necessary to allow the completion of detailed design and construction of the interfacing or connecting work. The Contractor shall include in its negotiation for subcontract work, such agreements as may be necessary to ensure the accuracy of subcontractor's interface submittal information. In the event additional costs are incurred

due to subsequent changes to information given in said interface information, such additional costs shall be borne by the Contractor.

G. Record Drawings

1. The Contractor shall deliver to the District one complete set of final Record Drawings for District records before the contract will be accepted by the District per Section 01 78 39 Record Drawings. The Record Drawings will consist of a set of reproducible drawings of all Contractor supplied equipment (including control systems). Monthly updates are also required; refer to Section 01 78 39 Record Drawings, for additional requirements.
2. Record Drawings of Contractor-Supplied Equipment
 - a. The drawings shall be reproducible and at the same dimensional scale as the originals.
 - b. Include one set of reproducible electronic files for Contractor-Supplied Equipment for major equipment, valued over \$25,000, including the following items:
 - 1) Mechanical equipment
 - 2) Electrical equipment
 - 3) InstrumentationElectronic files shall be one of the following types:
 - 1) AutoCAD.
 - 2) Microstation Intergraph.
 - 3) Bluebeam Revu 21 PDF.
 - c. The legibility and contrast of each reproducible and electronic drawing submitted to the District shall be such that every line, number, letter, and character is clearly readable in a full size drawing. Minimum text sizes shall be 1/10-inch and all text shall be typed.
 - d. The overall dimensions of each drawing submitted to the Engineer shall be equal to one of the District's standard sheet sizes. The title block area in the lower right hand corner of each drawing shall be clear of all linework, dimensions, details, and notes, except for the Contractor's title block. The dimensions of the title block area are a minimum and are measured from the edges of the drawing sheet.

DRAWING FORMAT	
Sheet Sizes Height x Width	Title Block Area Height x Width
11" x 8-1/2"	2-1/2" x 3-3/4"
11" x 17"	3" x 4"
22" x 34"	3-1/2" x 8"

H. Engineering Calculations or Reports

1. Engineering calculations/reports required by this specification shall be based on well-established engineering theories and principles. Each calculation/report shall be a complete and independent package.
2. The calculations/reports shall be comprehensive for each structure or item, in that all calculations/reports are contained within the individual structure or item's calculation/report document (i.e., no calculation/report references to other calculation documents).
3. As a minimum, all calculations/reports shall be bound in an appropriately labeled binder, and contain the following elements:
 - a. Facility title, including substructure number, equipment description, applicable equipment tag number(s), and applicable specification section.
 - b. Table of Contents
 - c. Introduction, including description of structure or item, purpose of calculation/report, design assumptions with justification, software utilized for the analysis including the version, and codes/standards used.
 - d. A list of references used to provide the bases for assumptions, equations, or data used in the calculation/report.
 - e. Calculations or reports appropriately prepared, including sketches, given or known information with the source of the data, equations with each variable defined and applicable units, cross-references, code/standard references, annotations and footnotes.

- f. Results shall be clearly identified. Summary tables shall be used for large amounts of data (especially if a software application is used).
 - g. Final design details, ready for transmittal to design drawings or shop drawings.
 - h. Professional Engineer's Seal or signature, as appropriate, of the individual(s) who prepared the calculations/reports.
 - i. Appendices, including input and output files from computer design, and photocopies of catalog sheets for any special material or equipment (e.g., manufacturer sheet for equipment, ICBO reports for anchors, etc.), and checker markups.
- 4. When any part of the calculation/report has been prepared by computer software, a copy of the input and output files, in native and PDF format, shall be included as part of the final design calculation. All material shall be uploaded to the CMIS or submitted in a USB flash drive.
 - 5. Shop drawings shall not be submitted until all design calculations/reports have been appropriately reviewed, checked and signed (or stamped if required). The checker markups and comments shall also be included in an appendix to each calculation.

I. Operation and Maintenance (O&M) Manuals:

- 1. All equipment manufacturers shall be made aware of these requirements and all associated costs shall be included in the costs for furnishing the equipment or system.
- 2. The manuals shall be furnished to the Engineer upon the delivery of the respective equipment. No payment will be made for equipment or materials or equipment installation before the respective O&M manuals have been approved by the Engineer.
- 3. Each instruction manual shall include, but not be limited to, the following:
 - a. Identification on, or readable through, the front cover stating the District's specification number and title, District facility or facilities where the equipment will be installed, and the system or equipment described in the manual.
 - b. Title page including applicable equipment tag numbers and equipment manufacturer's name, address, and telephone number. In addition, provide name, address and telephone number of the local manufacturer's representative.

- c. Table of contents organized and referenced to manual section dividers.
- d. Complete instructions regarding storage, handling, installation, operation, servicing, and maintenance of all equipment involved.
- e. Diagrams and illustrations, including pump curves indicating operating points.
- f. Detailed description of the function of each principal component of the system
- g. Performance and nameplate data
- h. Installation instructions
- i. Procedure for starting
- j. Proper adjustment
- k. Test procedures, and field and factory test data.
- l. Procedure for operating
- m. Shutdown instructions
- n. Emergency operating instructions and troubleshooting guide
- o. Safety instructions. Material Safety Data Sheets (MSDS).
- p. Maintenance and overhaul instructions which shall include detailed assembly drawings with part numbers, parts list, instructions for ordering spare parts, and complete preventive maintenance instructions required to ensure satisfactory performance and longevity of the equipment.
- q. Lubrication instructions which shall list points to be greased or oiled, shall recommend type, grade, and temperature range of lubricants, and shall recommend frequency of lubrication.
- r. List of electrical relay settings and control and alarm contact settings
- s. Electrical interconnection wiring diagram for equipment furnished, including all control and lighting systems
- t. Recommendations for spare parts and special tools

- u. Copies of all guarantees and warranties issued including the start and end dates for the warranty period or conditions for the initial start date and the duration.
 - v. Copies of calculations or reports appropriately prepared including sketches, given or known information with the source of the data, equations with each variable defined and applicable units, cross-references, code/standard references, annotations and footnotes.
4. The manual shall be complete in all respects for all equipment, controls, accessories, and associated appurtenances.
 5. Each copy of the manual shall be assembled in one or more binders, each with title page, typed table of contents, and heavy section dividers with numbered plastic index tabs. Each manual shall be divided into sections paralleling the equipment specifications. Binders shall be three-ring, hard-back type. All data shall be punched for binding and composition and printing shall be arranged so that punching does not obliterate any data. The project title, Division designation, and manual title printed thereon shall be as furnished by the Engineer.
 6. Where more than one binder is required, they shall be labeled "Vol. 1", "Vol. 2", and so on. The table of contents for the entire set, identified by volume number, shall appear in each binder. Submit manual organization and format to the Engineer for approval prior to manual preparation.
 7. Manuals shall be transmitted to the Engineer upon delivery of the equipment and all equipment shall be serviced in accordance with the manufacturer's recommendations prior to operation. A service record shall be maintained on each item of equipment and shall be delivered to the Engineer prior to final acceptance of the project.
 8. The Contractor shall include a completed submittal review checklist (Appendix A – O&M Manual Review Checklist) with each O&M Manual submittal. The checklist shall indicate that the O&M Manual as submitted complies in all respects to the contract requirements. Any O&M Manual submitted without a completed checklist will be rejected.
 9. O&M Manual Review Process – Preliminary review of the O&M Manuals shall be performed electronically via the CMIS per Section 01 31 23.10 Construction Management Information System. Submit a searchable Optical Character Recognition (OCR) or Portable Document Format (PDF) document. The preliminary review copies shall be complete in every way including format and content.

Final O&M Manuals: After the preliminary O&M manual submittal has received an acceptance status, then the Contractor shall submit five (5) hardcopies of final O&M Manuals. The final O&M manuals shall incorporate all comments made in the last preliminary O&M manual

submittal and otherwise shall be identical in every way to the preliminary O&M manuals.

In addition to the designated number of hard copies for each required Manufacturer's O&M Manual, provide an electronic copy. The O&M Manual shall be compatible with Adobe Acrobat Version X1 (PDF) format, and contain the separate text and drawing files used to create the O&M Manual. Text documents shall be in Microsoft Word 2010 or earlier, and drawings shall be in AutoCAD. An index shall be provided as a separate text file with the name "index" and shall include the file name and detailed description of each individual file. All electronic files shall be on a CD or DVD.

The security features of all submitted files shall be disabled so that the District can perform future editing without restriction. Custom-developed drawings included in the O&M manuals (e.g. loop diagrams, system interconnection diagrams, etc.) shall also be submitted electronically in both PDF and the native AutoCAD file format for future editing of the drawings by the Engineer. For AutoCAD files, the associated PDF files shall be saved such that all AutoCAD layering is preserved in the PDF file.

J. Maintenance Summary (Forms and Database):

1. General

- a. In addition to the O& M Manuals, the Contractor shall provide Maintenance Summary Forms and a Maintenance Summary Database as described below.
- b. The term "Maintenance Operation" as used in the Maintenance Summary is understood to mean any routine operation, and all typical, routine, or preventive maintenance required to ensure the satisfactory performance and longevity of the equipment. Examples of some typical Maintenance Operations are lubrication, belt tensioning, adjustment of pump packing glands, routine adjustments, etc.

2. Maintenance Summary Forms

- a. Contractor shall provide Maintenance Summary Forms (Appendix A) as described below. The Engineer will provide the Contractor with a standard electronic form. The time for submittal of these forms shall be the same as prescribed above for the Operation and Maintenance Manuals.
- b. Individual Maintenance Summary Forms for each equipment item shall be compiled following the outline provided; and two copies

submitted for review by the Engineer. The manufacturer's standard form will not be acceptable as a substitute for the Maintenance Summary Form.

- c. Furnish a completed Maintenance Summary Form as part of the O&M Manual. Include all typical, routine, or preventive maintenance required to ensure satisfactory performance during warranty period and longevity of the equipment. Manufacturer's representative shall sign and date the form certifying accuracy of the information.
- d. Briefly summarize each maintenance activity on the form. Specific references to more detailed maintenance information located elsewhere in the O&M manual may be placed in the "Comments" column. However, simply referencing other sections in the O&M manual without a brief description of the maintenance activity is not acceptable.
- e. The Maintenance Summary Form may take as many pages as required. However, the order and format shown must be adhered to. Only 8-1/2-inch by 11-inch paper will be accepted.

3. Maintenance Summary Database

- a. Contractor shall submit a Maintenance Summary Database. The template will be provided to the Contractor in Microsoft Excel format by the Engineer.
- b. An example of the required fields in the Maintenance Summary Database is included in Appendix A.
- c. Database shall be submitted in electronic form on a flash drive, CD, or DVD.
- d. Database shall be submitted 60 calendar days prior to the start of the Operational Testing.

K. Manufacturers' certificates and proper installation:

- 1. The Contractor shall submit manufacturers' certificates of proper installation for items of equipment as specified under Section 01 75 17, Field Testing and Startup.

L. Samples and test specimens:

- 1. Where required in the Specifications, and as determined necessary by the Engineer, test specimens or samples of materials, appliances, and fittings to be used or offered for use in connection with the work shall be submitted to the Engineer at the Contractor's expense, with information as

to their sources, with all cartage charges prepaid, and in such quantities and sizes as may be required for proper examination and tests to establish the quality or equality thereof, as applicable.

2. All samples and test specimens shall be submitted in ample time to enable the Engineer to make any tests or examinations necessary, without delay to the work. The Contractor will be held responsible for any loss of time due to its neglect or failure to deliver the required samples to the Engineer, as specified.
3. The Contractor shall submit additional samples as required by the Engineer to ensure equality with the original approved sample and/or for determination of Specification compliance.
4. Laboratory tests and examinations that the District elects to make in its own laboratory will be made at no cost to the Contractor, except that, if a sample of any material or equipment proposed for use by the Contractor fails to meet the Specifications, the cost of testing subsequent samples shall be borne by the Contractor.
5. All tests required by the Specifications to be performed by an independent laboratory shall be made by a laboratory approved by the Engineer. Certified test results of all specified tests shall be submitted in duplicate to the Engineer. The samples furnished and the cost for the laboratory services shall be at the expense of the Contractor and included in the prices bid for the associated work.
6. Approved sample items (fixtures, hardware, etc.) may be incorporated into the work upon approval, and when no longer needed by the Engineer for reference.

M. Material and equipment colors:

1. The Engineer will provide a schedule of selected colors within thirty (30) days after approval of materials and equipment, and after receiving samples of the manufacturers' standard colors for those items requiring District's selection.

N. Certificates of Compliance:

1. A Certificate of Compliance shall be furnished for materials specified to a recognized standard or code prior to the use of any such materials in the work. The Engineer may permit the use of certain materials or assemblies prior to sampling and testing if accompanied by a Certificate of Compliance. The certificate shall be signed by the manufacturer of the material or the manufacturer of assembled materials and shall state that the materials involved comply in all respects with the requirements of the Specifications. A Certificate of Compliance shall be furnished with each

lot of material delivered to the work and the lot so certified shall be clearly identified in the certificate.

O. Quality Assurance

1. Source limitations: To the greatest extent possible for each unit of work, the Contractor shall provide products, materials, or equipment of a singular generic kind from a single source.
2. Compatibility of options: Where more than one choice is available as options for Contractor's selection of a product, material, or equipment, the Contractor shall select an option which is compatible with other products, materials, or equipment already selected. Compatibility is a basic general requirement of product/material selections.

P. Equipment Record (Forms and Database)

1. General:
 - a. Contractor shall provide equipment record forms and a database for equipment items including, but not limited to, pumps, valves, gates, instruments, and electrical panels.
 - b. Each item shall be listed according to the equipment numbers shown on the Contract Drawings.
2. Equipment Record Forms
 - a. Provide Equipment Record forms for each equipment item as specified herein. The time for submittals for these forms shall be the same as prescribed for the Operation and Maintenance Manuals.
 - b. The Equipment Records forms shall be submitted on a flash drive, CD, or DVD using Microsoft Word 2003 or earlier. The Engineer will provide the Contractor with a standard electronic form. An example of the standard form is included in Appendix A.
3. Equipment Record Database
 - a. Contractor shall submit an Equipment Record Database. The template will be provided to the Contractor in Microsoft Excel format by the Engineer.
 - b. An example of the required fields in the Equipment Record Database is included in Appendix A.
 - c. Database shall be submitted in electronic form on a flash drive, CD, or DVD.

- d. Database shall be submitted 60 calendar days prior to the start of the Operational Testing.

2.2 SUBSTITUTIONS

A. Engineer's approval required:

1. The contract is based on the materials, equipment, and methods described in the Contract Documents. Any Contractor proposed substitutions are subject to the Engineer's approval.
2. The Engineer will consider proposals for substitution of materials, equipment, and methods only when such proposals are accompanied by full and complete technical data, and all other information required by the Engineer to evaluate the proposed substitution.
3. Where substitutions are proposed for consideration, Contractor shall submit a written request for the substitution and shall show that it is equal to the specified item. The proposed substitution shall be identified separately and included with the required submittal for the item. When submitting a variation or substitution the Contractor warrants that:
 - a. The contract has been reviewed to establish that the substitution, when incorporated, will be compatible with other elements of work.
 - b. The Contractor shall perform all necessary work for making substitutions workable and shall bear any additional cost necessary because of the proposed substitution.
4. Substitutions not specifically requested, although accepted through oversight, may be rejected at any stage of the work. The Contractor shall, at its own expense, reconstruct all work affected by the later rejection of a substitution that was not specifically requested.

B. Trade names and "or equal" provision:

1. See Article 4.4 of Document 00 72 00 General Conditions and Document 00 73 00 Supplemental General Conditions.
2. See Document 00 21 13 Instructions To Bidders, Article 3, for proposals for "or equal" substitutions made prior to bid opening as permitted pursuant to Public Contract Code, Section 3400.

PART 3 - EXECUTION

3.1 SUBMITTAL REVIEW AND APPROVAL

A. Submittal Procedure

1. The Contractor shall submit to the Engineer for his/her review electronic copies of each submittal (shop drawings, electrical diagrams, and catalog cuts for fabricated items and manufactured items furnished under this Contract, etc.) via the CMIS per Section 01 31 23.10 Construction Management Information System.
2. Shop drawings shall be submitted in sufficient time to allow the Engineer not less than twenty (20) working days for examining the shop drawings except for designs for turnkey items for which thirty (30) working days will be allowed, and substitutions for which (40) working days will be allowed.

B. Review by District

1. After review by the Engineer of each of the Contractor's submissions, the material will be returned to the Contractor with actions defined as follows:
 - a. NO EXCEPTIONS TAKEN: Accepted subject to its compatibility with further submittals and additional partial submittals for portions of the work not covered in this submittal. Does not constitute approval or deletion of specified or required items not shown in the partial submittal.
 - b. MAKE CORRECTIONS NOTED: Same as 1.a., except that minor corrections as noted shall be made by the Contractor.
 - c. REVISE AND RESUBMIT: Rejected because of major inconsistencies or errors which shall be resolved or corrected by the Contractor prior to subsequent review by the Engineer.
 - d. ACKNOWLEDGED RECEIPT: Indicates that the item is required to be submitted to the Engineer primarily for information or record purposes, and is not subject to Engineer's review.
 - e. RETURNED WITHOUT REVIEW: Indicates that the submittal was not reviewed by the Engineer due to the submittal being incomplete, illegible, inadequate, or otherwise failing to conform to the requirements of the specification. Contractor shall prepare a new submittal for this item.
 - f. REJECTED - RESUBMIT: Submitted material does not conform to Plans and Specifications in major respect, i.e.: wrong item, wrong size, model, capacity, or material.

C. Requests for Information

1. Requests for Information about the Contract Documents shall be directed by the Contractor to the Engineer using a Request for Information (RFI) form as described in Section 00 73 05 Supplementary Requirements. Such

requests shall not be transmitted directly to the Engineer from a Subcontractor or Supplier.

2. A separate form shall be used for each specific item for which information is required. Requests for Information for more than one item using a single RFI form will be permitted only when the items are so functionally related that expediency indicates review of the group of items as a whole.
3. The Engineer will reply to the Contractor's Request for Information as soon thereafter as practicable.

3.2 ACCEPTANCE BY DISTRICT

- A. Approval of each submittal by the Engineer will be general only and shall not be construed as:
 1. Permitting any departures from the contract requirements
 2. Relieving the Contractor of the responsibility for any errors and omissions in details, dimension, or of other nature that may exist.
 3. Approving departures from additional details or instructions previously furnished by the Engineer

3.3 CHANGES TO ACCEPTED SUBMITTALS

- A. A resubmittal is required for any proposed change to a submittal that has been accepted. Changes which require resubmittal include, but are not limited to, drawing revisions, changes in materials and equipment, changes to installation procedures and test data. All resubmittals shall include an explanation of the necessity for the change.
- B. Minor corrections to an accepted submittal may be accomplished by submitting a "Corrected Copy".

END OF SECTION

SECTION 01 33 12

SEISMIC DESIGN CRITERIA

PART 1 - GENERAL

1.1 DESCRIPTION

- A. All products to be furnished under this contract shall be designed, constructed, and installed in conformance with the seismic requirements contained within the 2022 California Building Code (CBC) and ASCE 41-17 Seismic Rehabilitation of Existing Buildings, and the following seismic design parameters as provided by District:

1. Risk Category IV
2. Design Spectral Response Acceleration for Short Period (S_{DS}) = 1.111g
3. Design Spectral Response Acceleration for 1-second Period (S_{D1}) = 1.056g
4. Site Modified Spectral Response for BSE-2E (0.2s) = 1.638g
5. Site Modified Spectral Response for BSE-2E (1s) = 1.039g
6. Site Modified Spectral Response for BSE-1E (0.2s) = 0.985g
7. Site Modified Spectral Response for BSE-1E (1s) = 0.600g
8. Site Class: D
9. Site Modified Spectral
10. Seismic Design Category D
11. Seismic Importance Factor I_e = 1.5

1.2 RELATED WORK

- A. NOT USED

1.3 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. California Building Standards Commission (CBSC)
1. 2022 California Building Code
- B. American Society of Civil Engineers (ASCE)

1. 2016 ASCE/SEI 7, Minimum Design Loads for Buildings and Other Structures
 2. 2017 ASCE/SEI 41, Seismic Rehabilitation and Retrofit of Existing Buildings
- C. American Concrete Institute (ACI)
1. ACI 318-19, Building Code Requirements for Structural Concrete
- D. International Code Council Evaluation Services (ICC-ES)
1. Manufacturer Evaluation Reports, as appropriate.
- E. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.4 SUBMITTALS

- A. Submit calculations and/or shop drawings, in accordance with Division 1, and for the seismic bracing of fire protection clean agent canisters. Submittals shall include the following information.
- B. Design Data:
1. Equipment Qualification – CONTRACTOR shall submit for review and approval (if required) structural seismic qualification of the equipment to demonstrate that it is capable of withstanding forces as specified.
 2. Anchorage System – CONTRACTOR shall submit for review and approval structural calculations, of the proposed anchorage system, certified by a Professional Civil or Structural Engineer licensed within the State of California.
- C. Certification:
1. Certification from equipment manufacturer stating that equipment is either "Pre-qualified Structurally and Functionally Rugged" or "Pre-qualified Structurally Rugged," as applicable.
 2. The seismic qualification for the Designated Seismic Systems shall be demonstrated by engineering shake table test(s) or experience data.
 3. Certification based on experience data shall include, at a minimum, the following information:
 - a. Address and year of installation of the “similar” equipment;
 - b. Certification that cited installation is/are essentially similar to that proposed for the Work; and

- c. Earthquake(s) experienced during equipment's lifetime, including but not limited to:
 - 1) Earthquake date, magnitude, distance from equipment location,
 - 2) Site-specific motion parameters, including but not limited to, Peak Ground Acceleration (PGA) and Spectral Acceleration (Sa).
 - d. Provide calculations to demonstrate the adequacy of the anchorage system for seismic forces. This calculation may be based on principles of structural analysis and engineering mechanics, or based on similarity to approved shake table tests or experience data. Test data for similar equipment types may be accepted subject to District approval. Similar equipment must be constructed of similar materials, have similar dimensions and weight, function similarly and be mounted with similar details.
 - 1) When evaluating the strength of a structural element, indicate applied stresses compared to strength, or show Demand/Capacity ratios.
 - 2) Evaluating the results by stating "Okay by Inspection" is not acceptable.
 - 3) When spreadsheets are used, provide referenced equations and the formulas used in the calculations.
 - e. Contractor shall submit for review and approval test data or calculations certified, stamped and signed by a Civil or Structural Engineer registered in the State of California to show compliance with the above requirements.
- 4. If the Contractor has not provided a complete and acceptable submittal by the second submission, the District, at its discretion, may provide the required seismic design services at the Contractor's expense. The cost of providing the required seismic design services shall be deducted from the Contractor's monthly progress payments.
 - 5. Reference Drawings: include plans, sections, details and equipment information necessary to understand the seismic calculations. Reference plans shall show the location of all relevant equipment and related items for loading calculations.
 - 6. Submittals shall be returned "REVISE AND RESUBMIT" if:
 - a. Submittals include only calculations without reference drawings.

- b. Calculations have no sheet numbers or sheets are missing.
- c. Calculations or reference drawings are illegible or insufficient to review.
- d. Calculations are based on wrong information, assumptions or design parameters.

7. No time extension will be allowed for the Contract due to time loss in the review process.

1.5 NOT USED

1.6 NOT USED

1.7 NOT USED

1.8 NOT USED

PART 2 - PRODUCTS

2.1 NOT USED

PART 3 - EXECUTION

3.1 GENERAL

A. NOT USED

3.2 STRUCTURAL INTEGRITY AND ANCHORAGE

- A. Determine the governing (maximum) design force for each element considering all possible load combinations including seismic or wind loads where applicable.
- B. Do not use friction to resist sliding due to seismic forces.
- C. When designing anchors for uplift due to seismic forces, include the vertical seismic load effects ($\pm 0.2S_{DS}W_p$) and reduced dead loads as required by the Basic Load Combinations of ASCE 7-16. For example: in Allowable Stress Design use only 60 percent of the equipment or tank dead load for resisting overturning.
- D. See Section 05 50 10, Anchor Systems, for approved anchor bolts or concrete anchors. Do not use other anchor types, such as powder actuated fasteners, flush shells, sleeve anchors or screw anchors, unless indicated on the drawings or accepted in writing by the Engineer.
- E. Anchor bolts used to resist seismic forces shall have a standard hex bolt head. Do not use anchor bolts fabricated from rod stock with L or J shaped ends.

- F. Seismic forces must be resisted by direct bearing on the fasteners. Do not use connections that rely on friction to resist seismic forces.
- G. Do not use screws to resist tension unless otherwise noted on the drawings.

END OF SECTION

THIS PAGE IS LEFT INTENTIONALLY BLANK

SECTION 01 35 13

SPECIAL PROJECT PROCEDURES

PART 1 - GENERAL

1.1 DEMOLITION OF EXISTING FACILITIES

- A. The extent and sequence of demolition of existing facilities shall be as shown on the plans; and as described herein and in Section 02 41 13, Selective Site Demolition.

1.2 LIMIT OF CONSTRUCTION ACTIVITIES ON WORK SITE

- A. All construction activities on the project site, including storage of equipment or materials, shall occur in the limits of work as shown on the plans. Access roads around the site must remain open at all times unless written approval has been given by the Engineer at least five (5) working days prior to temporary road closure.

1.3 WORK INVOLVED WITH EXISTING PLANT

A. General

Work shall include but not be limited to rehabilitation of the existing oxygen production facility. Work includes all work described herein the Plans and these Specifications and is summarized in 01 11 00, Summary of Work.

1. The work shall be executed while the oxygen production facility is in continuous operation. The operation of this facility shall not be jeopardized, nor shall the efficiency of the treatment process be reduced as a result of the execution of this work.
2. The oxygen production facility is in operation 24 hours per day, 7 days per week. The facility consists of two “cold boxes”, each of which is fed compressed air from two main air compressors (MACs). There are a total of four MACs. The work impacts both cold boxes and all four MACs. To maintain treatment capacity, no more than one cold box and one MAC may be out of service at any given time.
 - a. An additional (second) MAC may be taken out of service for brief (up to 4 hours) periods of time during dry weather flows and under normal plant operation with an approved System Outage Request (SOR) by the Engineer. Outages of more than one MAC at any given time shall be up to the jurisdiction of the District.

- b. Coordinate MAC work with District's Contractor Cisco Air Systems, in accordance with 01 14 00, Work Restrictions.
- 3. The oxygen production facility also contains four liquid oxygen (LOX) tanks which can be used to supply oxygen in the event of an outage or unanticipated failure at the main production facility. The LOX tank system, vaporizers, and associated controls, must remain online at all times during the project, until work on both cold boxes is complete and both cold boxes have been successfully started up using the new control systems. The four LOX tanks at max capacity provide approximately 1-2 days of inventory in the event of an unanticipated failure.
- 4. The work involves replacement of the existing analog Control Panels (or Main Control Panels) with new DCS-based controls. All functionality of each cold box, its associated two MACs, and its associated additional standby MAC, must remain via its Main Control Panel until the DCS-based controls are in place, operational, and fully tested and accepted by the District for the other cold box and its associated MACs.
 - a. If a temporary control system and/or workstation is needed to take an existing Main Control Panel out of service, the Contractor shall coordinate the design and functionality of the temporary control system with the Engineer no less than 30 business days prior to the requested start date of the outage. The Contractor shall provide a submittal for Engineer's approval of the temporary control system detailing how it will maintain the same functionality as the existing controls to be taken out of service. Submittal shall address how to test any temporary system. Failure to provide a functional temporary control system in a timely manner may result in delays for which the District shall not be responsible.
 - b. Contractor shall note that there is only one hydrocarbon analyzer and it is mounted in the Main Control Panel for plant 2. This hydrocarbon analyzer shall remain operational at all times.
 - c. Contractor shall note that there is only one single loop controller (PIC 635) for the LOX (or Driox) system and it is located in the main control panel for plant 1. This single loop controller for Driox shall remain operational throughout the upgrade to both cold boxes and all main air compressors at all times. Once the cold box and main air compressor upgrades are complete the Contractor shall fully install and wire the new electronic PID (proportional-integral-derivative) process controllers prior to replacing the associated control valve and instrumentation and transferring control from the existing single loop controller. The Contractor shall notify the District no less than four weeks ahead of the planned transfer of control.

- d. Air supply tubing associated with existing analyzers located in the existing Main Control Panels (W-44-O2-AIT-355-1 & 2; W-44-O2-AIT-312-1 & 2, W-44-O2-AIT-352-1 & 2) is scheduled for replacement as part of this work. New tubing shall be fully installed, tested and operational prior to demolition of the existing tubing serving this equipment.
 - e. Existing P/I panel in the Oxygen Plant Control Building shall not be demolished until successful startup of both oxygen plants after completion of the controls upgrade work. Verify power source for P/I (pressure to current) panel and provide temporary connection from LP1 (lighting panel 1) or LP2 (lighting panel 2) as needed to power P/I panel. Circuits 55/57/59 from LA-2 (breaker) feed LP1 and circuits 56/58/60 from LA-2 feed LP2.
- 5. The Contractor shall assume that certain work activities may temporarily disrupt the function of the plant and will require a planned outage. Article 1.5 of this Section details the requirements for outage, and the Contractor shall be required to meet the conditions of the outage restrictions and/or provide adequate temporary bypass facilities necessary for pumping, dewatering, chemical storage, temporary power, controls, instrumentation or alarms required to maintain control of the treatment plant process.
 - 6. All planned outages and construction constraints described in this section shall be included in the project CPM schedule (see also Section 01 32 00 Construction Progress Documentation). All dates for outages and constraints shall be updated on the Contractor's three-week lookaheads.
 - 7. When existing wire and/or conduit is reused for new installation, Contractor shall verify and confirm that all existing wires, cables, and conduits are functional, compatible, and in good condition when utilizing existing panels and junction boxes. If any discrepancies occur between the Drawings and field conditions, Contractor shall notify the Engineer.
 - 8. Contractor shall trace all existing and new wires from the source of power (or MCC) to the field equipment. Contractor shall label all existing and new wire at the MCC and the field equipment.
 - 9. Hearing protection is required when working near the main air compressors.

B. Outage of Treatment Process

- 1. Modifications to the existing facility, construction of new facility and connection of new to existing will necessitate temporary outage of the treatment process. The maximum duration of any outage shall be four hours unless specified otherwise in Article 1.6, Project Constraints or in

the Specifications. Treatment process outages shall not occur on consecutive days and shall be limited to two in any given seven (7) day period. The Contractor shall sequence its work activity to accommodate these outage restrictions. See also Article 1.6, Project Constraints.

2. The Contractor shall notify the Engineer in writing of any planned outage. See also Article 1.5, Outage Plan. The Engineer has the authority to modify any shutdown request if said work would adversely impact treatment processes.
3. The Contractor shall not begin an outage until the Engineer has granted specific permission for the outage.
4. The connections to existing facilities or other operations that interfere with the operations of the existing systems shall be thoroughly planned in advance, and all required equipment, materials and labor should be readily available on-site at the time of undertaking the connections.
5. Contractor shall notify the Engineer six weeks in advance of when it needs the oxygen plant shut down.

C. Operation of Equipment

1. Only District personnel shall perform operational functions or shutdown of existing facilities or systems required to facilitate the Contractor's work. The Contractor shall not adjust or operate any in-service equipment.
2. The District's plant operation and maintenance personnel will cooperate in a practical manner in order to facilitate Contractor's operation. However, certain shutdown and connections may only be permissible at times other than normal working hours, such as nights or weekends, at no additional cost to the District.

D. Protection of District Facilities

1. The Contractor shall take all necessary precautions to ensure that no damage occurs to the plant facility, including piping, utilities, roads, and structures that are to remain in operation and are not modified or replaced.

E. Cleaning for Oxygen and Liquid Oxygen Piping and Services

1. Cleaning Provider Qualifications
 - a. Experience minimum: 5 years in providing field cleaning services for equipment in high purity, liquid, or cryogenic-grade oxygen service in accordance with CGA publication No. G-4.1.

2. Contractor shall submit a SOR or specification for any oxygen piping cleaning work or oxygen assembly product cleaning work and indicate cleaning as a step on the SOR or submittal before handoff to the District. At a minimum, each cleaning submittal shall be approved by the Engineer and shall include:
 - a. Degree of cleaning in measurable terms.
 - b. Acceptable cleaning procedures per ASTM-G93-03.
 - c. Inspection procedures required and method of inspection and testing assure the desired level of cleaning.
 - d. Acceptable cleaning materials.
 - e. Acceptable lubricants, sealants, and testing equipment.
 - f. Procedures and requirements to assure that the equipment supplier has complied with the cleaning specifications.
 - g. Packaging, protection, and storage of cleaned items.
 - h. The product information on all materials used, including, but not limited to:
 - 1) Solvents.
 - 2) Detergents.
 - 3) Lubricants.
 - 4) Drying agents.
 - 5) Leak detection solutions.
 - 6) Provider qualifications, experience description, and references.
3. Execution
 - a. Provider's personnel shall be thoroughly trained in the proper cleaning techniques, shall keep their clothing and hands free of oil and grease, and, when necessary, wear clean gloves.
 - b. Flammable solvents such as gasoline, kerosene, naphtha, mineral spirits, or acetone shall be used for cleaning.

- c. The environment surrounding any high purity oxygen (>60%) and liquid oxygen equipment must be clean and dust free, with nearby grinding, welding, and sanding prohibited during cleaning procedures per ASTM-G93-03. For equipment requiring high degrees of cleanliness per ASTM-G93-03, classified clean rooms may be required for storing the equipment during final stages of cleaning until fully reassembled and installed.
- d. All high purity oxygen (>60%) and liquid oxygen piping and manufactured products such as valves, regulators, and pumps that are removed from service shall be cleaned for the full length of pipe (not just the section being replaced) and manufactured products must be completely disassembled for cleaning in accordance with ASTM-G93-03 before being returned to service. Contractor shall verify that the entire length of pipe or any assembled product for any oxygen pipe worked on is free of debris and contaminants in accordance with ASTM-G93-03 prior to startup. When the components have been disassembled, parts shall be grouped according to cleaning method per ASTM-G93-03.
- e. Purging any oxygen pipelines with nitrogen prior to removal of pipeline from service shall be done in coordination with the Engineer.
- f. Factory or field cleaned piping shall be protected from contamination until they are placed back in service using the following methods:
 - 1) Short-term protection for periods up to 1 week:
 - a) Pipe ends and other openings may be covered with metal or plastic caps or plugs, or with a double layer of 6-mil polyethylene film, sealed to the pipe or nozzle with waterproof tape.
 - 2) Medium-term protection for periods between 1 week and 1 month:
 - a) Welding ends: Ends shall be closed with clean wedge projects or equivalent galvanized steel caps, sealed with 2 turns of Tuck No. 90 or equivalent 2-inch waterproof tape.
 - b) Flanged ends: Flanged ends shall be closed with 10-gage or heavier oxygen-cleaned steel flange covers over solid neoprene or "Durabla" gaskets, held in place with a least 4 hex-head bolts.

- 3) Long-term protection for periods longer than 1 month:
 - a) The cleaned line shall be filled with dry nitrogen pressurized to 2 psi.
 - b) Pressurized lines shall be identified at all significant flanges and valves.
- 4) Small parts:
 - a) Small parts such as valves, expansion joints, pressure gauges, etc., should be kept in heavy polyethylene bags or wrapped and sealed in polyethylene sheeting until installation.
- 5) Identification:
 - a) Any piping or equipment cleaned in the field as specified shall be identified as follows: CLEANED FOR OXYGEN SERVICE.

4. Safety and Liability

- a. Contractor and Provider shall have full responsibility and liability for the safety aspects of the cleaning process.
- b. Contractor shall be fully and solely responsible for any damage resulting from inadequate cleaning of oxygen piping and manufactured products, and for any hazards associated with the cleaning process.
- c. Contractor shall have sole responsibility for ensuring that all high purity oxygen and liquid oxygen piping and manufactured products have been cleaned and recleaned, if necessary, and meet the requirements of this Section when placed into service.
- d. Contractor shall comply with the requirements of Section 01 35 44 – Environmental Requirements for sampling and disposal of hazardous and non-hazardous wastes generated from the oxygen piping and manufactured products cleaning process.

1.4 SEQUENCE OF WORK

- A. The following sequence of work for the oxygen production facility is provided for the Contractor's information as a potential sequence of work. Contractor may propose alternate sequencing as part of the baseline construction schedule submittal to the District.

1. Install new DCS control panel (Drop 23/73) associated with plant 2 along with associated network and power conduit and wire. Coordinate with the District to locate and install temporary workstation.
2. Contractor shall notify the Engineer six weeks in advance of when it needs the oxygen plant shut down. District will shut down oxygen (or cryogenic) plant, drain liquids and complete warm thaw.
3. Complete replacement of MAC motors associated with the cold box taken out of service, including installation of associated DCS control racks.
4. Allow District to shut off nitrogen purge to cold box.
5. Drain and dispose of perlite from cold box and vermiculite from turbine box.
6. Demolish cold box valves, instruments, tubing, conduit, cable tray and wiring.
7. Demolish oxygen plant controls.
8. Cover/protect all open piping, fittings, and process equipment to prevent contamination and damage.
9. Complete recoating of lower portion of cold box per drawings and specifications.
10. Install new DCS remote I/O panel associated with the turbine and cold box.
11. Install new valves, instruments, tubing, fittings, and other appurtenances.
12. Install new conduit, cable trays, wiring, and other electrical and controls items.
13. Complete internal cold box thermocouple installation, internal cold box valve replacement, maintenance and all leak testing.
 - a. Allow District to inspect inside of cold box prior to starting work.
14. Install new perlite and vermiculite in cold box.
15. Complete installation of all remaining DCS field wiring terminations.
16. Commission and loop check all DCS controls and field instruments.
17. Notify the Engineer at minimum 60 days in advance of when the Contractor is ready to begin start-up and commissioning of an oxygen

plant. Contractor's system integrator shall be on site during District start-up of the oxygen plant. Contractor shall begin performance testing once District has completed start-up of the oxygen plant.

18. Repeat steps for oxygen plant 1. Perform work on existing Drop 15/65.

B. Contractor shall follow the construction sequence as defined in this section and in consideration of other constraints in the specification.

1. Main Air Compressor 2-1 or Main Air Compressor 2-2. Only one of the four main air compressors shall be out of service at any given time.
2. Plant 2 Cold Box and Main Air Compressor 2-1 or Main Air Compressor 2-2, whichever main air compressor that was not replaced in step 1. Only one of the four main air compressors shall be out of service at any given time.
3. Main Air Compressor 1-1 or Main Air Compressor 1-2. Only one of the four main air compressors shall be out of service at any given time.
4. Plant 1 Cold Box and Main Air Compressor 1-1 or Main Air Compressor 1-2, whichever main air compressor that was not replaced in step 3. Only one of the four main air compressors shall be out of service at any given time.
5. LOX area work including valves, instrumentation, and controls associated with PIC-635 (LOX back-up control) shall begin only after both Cold Box 1, Cold Box 2, and all main air compressors have been fully commissioned and deemed fully operational.
6. Main Control Panel 1 and 2 selective equipment and tubing demolition and clean up. Demolish P/I panel (converter rack) and all associated tubing, conduit, and wire.

C. NOT USED.

D. Contractor shall sequence its operations such that one cold box and three Main Air Compressors (MAC) are in service at all times. Work shall proceed to upgrade one out-of-service cold box and its associated MAC(s) such that the complete assembly has been upgraded (including perlite replacement and painting work), tested, and is deemed ready for service by the District. Contractor shall note the time constraints for this work noted in Section 00 73 05.

1. Work shall not begin on a second oxygen plant until the first oxygen plant is upgraded and returned to service, and successfully undergoes a 90-day performance test.

2. Work shall not begin on a second oxygen plant until Drop 23/73 is installed, tested, and handed off to the District.
- E. Work associated with the seismic retrofits of existing electrical equipment, except for MCCs P16 and MAC Motor Control Centers 2-1, and 2-2 (adjacent to switchgear S3), shall take place after the first oxygen plant has been upgraded and successfully undergone a 90-day performance test.
- F. Work associated with the LOX tank area shall take place after the successful startup of both oxygen plants after the controls upgrades work is completed. LOX tanks shall remain in service at all times during the modifications to the cold boxes/oxygen plants.
- G. Work associated with the cold box loose fill insulation (perlite and vermiculite), cold box painting, and cold box fall protection shall take place concurrent with the other upgrades at each cold box – only one shutdown of each cold box will be permitted during the project. Cold box loose fill insulation and cold box painting work shall be completed prior to start up of each cold box.
- H. After removal of cold box loose fill insulation, hand over cold end check valves from cold box interior to District for refurbishment. Contractor shall hand over one set of cold end check valves for each cold box and replace any valves it damages or loses at no additional cost to the District.
 1. For the first cold box worked on, District will provide one set of refurbished check valves to the Contractor. The refurbished check valves are stored at the District's MWWTP warehouse. Contractor shall coordinate handoff of the refurbished valves with the Engineer.
 2. After Contractor hands off cold end check valves from the first cold box to the District, District will refurbish the check valves within 365 calendar days. After the check valves are refurbished, District will hand one set of cold end check valves to the Contractor for installation in the second cold box.
- I. Work on motor control center (MCC) P15 necessitating an outage lasting over three hours to the MCC shall be completed while oxygen plant 1 is out of service. For outages over multiple consecutive days, Contractor shall reenergize MCC at the end of each work day or coordinate with the District to provide a temporary backup power supply for critical equipment on MCC P15. Contractor shall obtain approved SOR at least 4 weeks before planned outage.
- J. Work on MCC P16 necessitating an outage lasting over three hours to the MCC shall be completed while oxygen plant 2 is out of service. Contractor shall reenergize MCC at the end of each work day or coordinate with the District to

provide a temporary backup power supply for critical equipment on MCC P16. Contractor shall obtain approved SOR at least 4 weeks before planned outage.

- K. Work on MCC P17, substation U10 and U11, and switchgear S3 shall take place after successful startup of both oxygen plants after the controls upgrade work has been completed. Contractor shall be limited to a 6-hour outage maximum each night between 11:00 P.M. and 5:00 A.M. Outages shall be limited to dry weather only. For the substations and switchgear, Contractor shall coordinate with the District to provide a temporary power supply for critical equipment during the outage. Contractor shall obtain approved SOR at least 4 weeks before planned outage.
 - 1. Contractor may submit a plan for Engineer's approval to provide temporary power to equipment fed from MCC P17 to waive the night work and consecutive hours requirement. Loading is anticipated to be 600 kW. In its plan, the Contractor shall include a design to show how it will supply power to equipment on MCC P17 to allow the equipment to continue to operate while P17 is taken out of service. Contractor shall provide all equipment, conduit, materials, and labor necessary to install the temporary system. Contractor shall remove the system once the outage is complete.
- L. Isolation for the 2-inch 1W line in the oxygen control building is in the building's south end. The 1W line branches to the south to service Septage A and B. Contractor shall install flow isolation on the north branch of the 1W line servicing the oxygen plant and breakrooms to allow Septage A and B to remain in service during the 1W work. Outage to Septage A and B shall be coordinated with the Engineer and shall not last more than 2 hours. If a longer outage is needed, Contractor shall provide accessible temporary portable eyewashes and handwashing stations at Septage A and B, to be handed off to the District.
- M. Isolation for the 5W main for fire protection work shall be limited to 2 hours. Contractor shall install new flow isolation at the stub-up to allow isolation of the 5W main from the new dry-action sprinkler system.

1.5 OUTAGE PLAN

- A. Modifications to existing facilities, the construction of new facilities, and the connection of new to existing facilities may require the temporary outage of treatment processes or facilities. In addition to the construction schedule required under Section 01 32 00 Construction Progress Documentation, the Contractor shall submit a detailed outage plan and time schedule for all construction activities which will make it necessary to remove a cold box, Main Air Compressor, Liquid Oxygen Storage Tank or other facilities from service. The outage plans shall be submitted for the District's review and acceptance a

minimum of four weeks in advance of the time that such outages are required. A System Outage Request (SOR) form as described in Document 00 73 05 Supplementary Requirements, shall accompany each outage plan. The outage plans shall be coordinated with the construction schedule specified in Section 01 32 00 Construction Progress Documentation and shall meet the restrictions and conditions specified in this section. The detailed plan shall describe the Contractor's method for preventing bypassing of other treatment units; the length of time required to complete said operation; any necessary pumping, dewatering, chemical storage, chemical feed, temporary power, controls, instrumentation or alarms required to maintain control, monitoring and alarms for the treatment plant processes; and the manpower, plant and equipment which the Contractor shall provide in order to ensure proper operation of associated treatment units. In addition, the outage plan shall describe the Contractor's contingency plan that shall be initiated in the event that its temporary facilities fail or it becomes apparent that the time constraints described in the approved SOR cannot be met. The contingency plan shall conform to all specified outage requirements. All costs for preparing and implementing both the outage and contingency plans shall be borne by the Contractor.

- B. The District reserves the right to reject or modify any shutdown request as required for, but not limited to weather, process changes, staff limitations, etc. The Contractor shall then reschedule its operations so there shall be no conflict with necessary operations or maintenance of the plant. The Contractor shall, within two (2) working days, provide the District with a plan for rescheduling of the work in accordance with the requirements of Section 01 32 00 Construction Progress Documentation.
- C. The District shall be notified in writing at least one week in advance of the required outage if the Contractor's schedule for performing the work has changed or if revisions to the outage plan are required.
- D. The Contractor shall provide written confirmation of the shutdown date and time and schedule a shutdown coordination meeting two (2) working days prior to the actual shutdown.

1.6 PROJECT CONSTRAINTS

- A. Critical events in the sequence of construction shall be utilized by the Contractor as a guideline. The construction constraints presented do not include all items affecting the completion of work, but are intended to describe critical events necessary to minimize disruption to the ongoing plant operation. It shall be understood and agreed by the Contractor that the critical events described are not all inclusive and that additional constraints not described may be required to minimize disruption and ensure compliance. Deviation from or modification of this suggested sequence may be permitted by the Engineer if techniques and methods known to the Contractor will result in reducing the disruption of the

facility operation and efficiency, and is accepted in advance by the Engineer in writing.

1.7 SITE ACCESS

- A. The project site is congested, and the Contractor shall conduct its operations to minimize interference with others. Access roads and circulation roads shall not be closed until dates are coordinated with the Engineer. An average of one hundred (100) trucks a day arrive and leave from the treatment plant site, consisting of sludge trucks, chemical deliveries, and other vehicles which will require daily access through the area. Continued road access shall be maintained by the Contractor for the activities indicated below.

- 1. All work at the oxygen plant, LOX fill station, and Septage A and B.

1.8 IMPACT ON DISTRICT OPERATIONS

- A. If, in the opinion of the Engineer, any of the Contractor's proposed work will unduly impact the District's operations, such that the required wastewater treatment will be disrupted, then the Engineer may require the Contractor to reschedule such work. If the rescheduling of the Contractor's work causes delay in the completion of the project, the Contractor shall follow General Conditions, Article 8 for request of time.

1.9 STORAGE OF TRENCH EXCAVATION

- A. Excavated trench material, which is acceptable for use as backfill in the adjacent trench, shall not be stored in roads, public streets or highways. Excess excavated material shall be immediately removed from the site. After placing backfill, all excess material shall be removed immediately from the site.

1.10 RELOCATION OF UTILITIES

- A. Work required in connection with utilities because of interference with contract work will be performed and paid for as specified in the following paragraph; however, when directed or approved by the Engineer, changes in line or grade of any structure being built may be made in order to avoid utilities. Any additional costs because of such changes in line or grade of any structure will be paid for as Extra Work.
 - 1. By the District: When it is stated in the Contract Documents that a utility is to be relocated, altered or reconstructed by other than the Contractor, the District will perform such work, which will be done at no cost to the Contractor.
 - 2. By the Contractor: When work on a utility is specified or indicated in the Contract Documents to be done by the Contractor, the Contractor shall

make all arrangements and coordinate with the District as to when the work is to be done. If this work is not included as a separate bid item, all costs for such work shall be absorbed in the lump sum amount bid.

a. No attempt has been made to show service connections on the plans. However, the alteration or temporary relocation of all service connections (including but not limited to: sewer, natural or manufactured gas, underground and/or overhead telephone and electrical) to adjacent property shall be the responsibility of the Contractor. The Contractor shall make all arrangements with the utility owners regarding such work. All work necessary to relocate water mains and services shall be performed by the District. The costs for work on service connections shall be included in the lump sum amount bid.

3. By the Contractor or by others; unknown utilities (other than service connections) disclosed during contract work: In the event that a utility is disclosed or installed subsequent to the award of contract, such utility not being indicated on the drawings, the alteration, relocation or proper support and protection shall be done and paid for as extra work.

1.11 CONVENIENCE AND ACCESS

- A. The Contractor shall conduct its operations so as to cause the minimum obstruction and inconvenience to the District's operations. No greater quantity of work shall be under construction at any one time than can be properly conducted with due regard for the District's operations. The Contractor shall notify the Engineer of the detailed sequence (daily activities) of its planned work at least ten working days in advance, to allow time for coordination of District's operations.
- B. The Contractor shall provide access to all fire hydrants at all times.
- C. Safe, adequate pedestrian access to all areas affected by the work shall be provided and maintained by the Contractor at all times.
- D. All costs of complying with requirements of this Article shall be included in the lump sum bid.

1.12 OUTAGE OF SERVICE TO NON-DISTRICT UTILITY

- A. Any utility (including electronic systems or traffic lane closures) outages shall be coordinated with the utility owner. At least two weeks' preliminary notice shall be given prior to any utility outage. Final notice shall be given a minimum of five (5) working days in advance of a utility outage. Any outage of utility service will be made by the utility owner upon such notice. Contractor shall not interrupt any utility service.

- B. All materials and supplies for completing the connection and restoring utility service shall be on hand before utility service is interrupted. Service outages shall be limited to eight (8) hour durations. Contractor shall not leave the site until service is restored each day.

1.13 SITE ADMINISTRATION

- A. Contractor shall be responsible for all areas of the site used by the Contractor and all subcontractors in the performance of the work. The Contractor shall exert full control over the actions of all employees and other persons with respect to the use and preservation of property and existing facilities, except such controls as may be specifically reserved to the District.

PARTS 2 AND 3 – NOT USED

END OF SECTION

THIS PAGE IS LEFT INTENTIONALLY BLANK.

SECTION 01 35 24

PROJECT SAFETY REQUIREMENTS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included:

1. Be solely and exclusively responsible for maintaining job-site safety and compliance with all pertinent Groups and Articles set forth in Title 8, California Code of Regulations (Cal/OSHA), and Title 29, Code of Federal Regulations (OSHA; where applicable).
2. Contractor shall be the Creating, Controlling, and Correcting Employer for purposes of compliance with Cal/OSHA's multi-employer worksite rule (8 CCR 336.10) for itself and all of its site workers.
3. Meet with the Engineer prior to commencement of the Work to review the project safety requirements as applicable to the Contractor's procedures and to develop mutual understandings relative to compliance with the safety requirements and administration of the Contractor's project safety programs.
4. Complete a Safe Work Notice prior to starting work at the Main Wastewater Treatment Plant (MWWTP). See Appendix A.
5. Complete a Hot Work Permit for any classified hot work associated with this Specification.
6. Complete a Job Hazard Analysis (JHA) for the following work activities at a minimum:
 - a. Cold box fall protection and coatings demolition and installation
 - 1) At minimum: fall protection, lead abatement (existing coatings), noise
 - b. Cold box insulation removal and installation
 - 1) At minimum: fall protection, permit confined space
 - c. Oxygen piping or tubing demolition, installation, and testing
 - d. Main air compressor motor replacement
 - 1) At minimum: noise

e. Substation, switchgear, MCC, and UPS work

1) At minimum: electrical safety, asbestos (MCCs)

B. Site Activities

1. Control all harmful dusts, fumes, mists, vapors and gases exposures for all job-site workers, regardless of employer, so that respective permissible exposure limits (PEL) are not met or exceeded. Such hazards are contained in Title 8, California Code of Regulations (Cal/OSHA) § 5155 - Airborne Contaminants; Article 110 - Regulated Carcinogens; and Construction Safety Order 1529 - Asbestos.
2. Physically delineate and assign work areas and restrict access by unauthorized persons during the course of Work. See Section 01 35 53, Security Procedures, for sign-in requirements.
3. Contractor shall not allow unsafe tools, equipment, or machinery to be brought onto the project. Unsafe tools, etc. shall be considered as those tools which are in need of repair, replacement, lacking proper maintenance, or are unsuitable for the task.
4. Contractor shall assemble, install, erect, and prepare safety related equipment, devices, and products in accordance with manufacturer specifications and recommendations. Manufacturer documentation shall be provided to the Engineer upon request.
5. Comply with the Federal Drug Free Workplace Act, Department of Transportation (DOT) testing regulations (49 CFR Part 32), CA State Vehicle Code (Section 34520) and all applicable legally valid rules and regulations regarding drug and alcohol misuse, including consumption, sale or possession.
6. Contractor personnel are specifically prohibited from bringing firearms, explosive devices, or other dangerous weapons on District property or while engaged in contract Work. If the Contractor requires the use of powder actuated tools to carry out the Work under this contract, the Contractor shall notify the Engineer prior to bringing such devices to the jobsite.
7. Contractor shall provide safe access for construction inspectors and other authorized District employees in order to inspect or review Work in progress.

C. Related Sections

1. Document 00 31 24 – Material Assessment Information
2. Document 00 62 00 – Insurance Requirements

3. Section 01 14 00 – Work Restrictions
4. Section 01 33 00 - Submittal Procedures
5. Section 01 35 44 – Environmental Requirements
6. Section 01 50 00 – Temporary Facilities and Controls
7. Section 02 83 13 – Lead Hazard Control Activities

1.2 DEFINITIONS

- A. Where used in the Contract Documents, the following words and terms shall have the meanings indicated. The meanings shall be applicable to the singular and plural of the words and terms.
- B. **Competent Person:** As defined in Section 1504 of the Construction Safety Orders, Title 8, California Code of Regulations, one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them.
- C. **Confined Spaces:** Shall mean any space not designed for human occupancy and having the characteristics identified in Title 8, California Code of Regulations (Cal/OSHA), Article 108 - Confined Spaces
- D. **Excavation:** Any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.
- E. **Hazardous Substance:** Defined as any substance included in the list (Director's List) of hazardous substances prepared by the Director, California Department of Industrial Relations, pursuant to Labor Code Section 6382. Includes hazardous waste as defined herein.
- F. **Exposure Assessment:** An assessment of potential chemical and physical hazards encountered on the project site.
- G. **LOTO:** Lock-Out Tag-Out as defined by Title 8, California Code of Regulations, § 3314.
- H. **OPU:** Order Prohibiting Use. A tag affixed to a dangerous workplace condition or practice which constitutes an imminent hazard to workers. An OPU tag may be posted prohibiting entry to the worksite, or part of the worksite, use of machinery, devices, or apparatus.
- I. **Safe Work Notice, or Safe Work Permit:** A Notice or Permit required to be completed by the Contractor and District staff at water treatment plants and wastewater facilities. The Notice/Permit communicates work to be performed, the areas and potential hazards.

- J. **Trench:** A narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet. If forms or other structures are installed or constructed in an excavation so as to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet or less, (measured at the bottom of the excavation), the excavation is also considered to be a trench.

1.3 SUBMITTAL OF PLANS AND PROCEDURES

A. General:

1. Prepare and submit in accordance with the applicable provisions of Section 01 33 00 Submittal Procedures.
2. Allow twenty (20) working days minimum for the Engineer's review plus transit time to and from the District offices.
3. The plans and procedures identified in this Article 1.3 shall be kept current. New hazards, mitigations, or procedures identified during the course of the Work shall be submitted as revisions to the identified plans and procedures within five (5) days of being identified.
4. One copy of each plan and procedure submitted will be returned marked "No Exceptions Taken", as described below, or "Make Corrections Noted" or "Revise and Resubmit" as described in Section 01 33 00, Submittal Procedures.
 - a. One copy of each plan and procedure submitted will be returned marked "No Exceptions Taken", as described below, or "Make Corrections Noted" or "Revise and Resubmit" as described in Section 01 33 00 Submittal Procedures.
 - 1) NO EXCEPTIONS TAKEN: Accepted subject to its compatibility with further submittals and additional partial submittals for portions of the work not covered in this submittal. Does not constitute approval or deletion of specified or required items not shown in the partial submittal.
 - 2) MAKE CORRECTIONS NOTED: Same as 1.a., except that minor corrections as noted shall be made by the Contractor.
 - 3) REVISE AND RESUBMIT: Rejected because of major inconsistencies or errors which shall be resolved or corrected by the Contractor prior to subsequent review by the Engineer.

- 4) REJECTED - RESUBMIT: Submitted material does not conform to Plans and Specifications in major respect, i.e.: wrong item, wrong size, model, capacity, or material.

B. Project Safety and Health Plan:

1. Submit prior to start of the Work for the Engineer's review a Project Safety and Health Plan for the Work to be performed only if actual, potential, or anticipated hazards include: a) hazardous substances; b) fall protection issues; c) confined spaces; d) trenches or excavations; or, e) lockout/tagout. If the actual, potential, or anticipated hazards do not include one or more of these five hazards, no Plan is required.
2. Submit prior to start of Work the name of individual(s) who has been designated as:
 - a. Contractor's Project Safety and Health Representative
 - b. Submit principal and alternate Competent/Qualified Persons for: 1) scaffolding; 2) fall protection systems and equipment; and 3) employee protective systems for trenches and excavations.
 - c. Qualified person to conduct and take samples and air measurements of known or suspect hazardous substance for personnel and environmental exposure. Sample results shall be submitted to the Engineer in writing and electronic format.
3. Plan shall include an emergency action plan in the event of an accident, or serious unplanned event (e.g.: gasoline break, fire, structure collapse, etc.) that requires notifying any responsive agencies (e.g.: fire departments, PG&E, rescue teams, etc.).
4. The Project Health and Safety Plan shall include a Threat to Public Health Response Plan

C. Confined Space Operating Procedures:

1. Submit confined space operating and rescue procedures to the Engineer for review. Procedures shall conform to the applicable provisions of Sections 5156 through 5158, Title 8, California Code of Regulations.
2. If a pipeline is required to be entered, the Project Safety and Health Plan shall include a description of a safe access and rescue plan.

D. Fall Protection Procedures

1. Submit fall protection procedures to the Engineer for review prior to any work at heights at the jobsite.

2. The fall protection plan shall address control of fall hazards for any work occurring at heights greater than 7½ feet.
3. Procedures shall conform to applicable provisions of Sections 1669 through 1671.2, Title 8, California Code of Regulations.
4. The plan shall address scaffolds when used on site.
5. The plan shall address manlift equipment when used on site.
6. The plan shall address rescue of workers who may fall.

E. Threat to Public Health Response Plan

1. The Contractor shall submit a plan outlining worker safety to be in compliance with OSHA guidelines, local, county, and state jurisdiction for a threat to public health event including the following:
 - a. Designate a Site Safety Representative (SSR) to monitor and implement all recommended safety practices regarding any threat to public health with all Contractor staff members. Labor supervisors shall have the authority, through consultation with the SSR, to halt all activities that do not adhere to the safety practices. The SSR shall have training commensurate with this hazard and all required industrial hygiene practices that may be required on the job site. This person shall be responsible to maintain supplies of appropriate disinfectants and make sure that workers follow decontamination, hand washing, distancing, and PPE rules.
 - b. Employee Screening: Establish an assembly point for staff and daily screening protocol before the start of work each day that complies with the recommended social distancing parameters. If workers leave and re-enter the work site during the shift, re-screen individuals prior to re-entry into the work site.
 - c. Informational Meetings: Provide a daily tailgate session reviewing site protocols to mitigate potential spread of the infection. Tailgates should occur daily and contractors should document attendance and require worker signatures.
 - d. Personal Protective Equipment (PPE): Employ a task-specific Job Hazard Analysis (JHA). Establish the level of PPE required for each specific task. This is especially important for tasks that may require staff to work inside of the recommended social distancing zone.
 - e. Disinfection Procedures: The Contractor shall clean and sanitize trailers, toilets and other enclosed spaces. Establish deep cleaning schedules on job sites to address exposed surfaces. Areas that

require a cleaning schedule include but not limited to: trailer/office spaces, elevators and lifts, operating equipment, electrical equipment, restrooms, and other “high touch” areas of the job site. The Contractor shall allow adequate time for proper cleaning and disinfection each day. In addition, the Contractor shall establish a cleaning and decontamination protocol prior to entry and exit of the job.

- f. Hand Washing Stations: Provide hand washing and sanitizing stations throughout the job site to provide for regular hand cleaning. Sanitizer used shall be appropriate for the control of the infection of concern. Stations should be of sufficient quantity to allow staff to remain within the work areas without exiting into break areas, and shall be maintained continuously.
 - g. Social Distancing Guidelines: Include a procedure to reduce contact between employees using social distancing. This procedure shall include progress meetings and how to hold these meetings while maintaining social distancing.
 - h. Sick Employee Action Procedures: Identify response procedure and disinfection if a field staff (Contractor’s staff, its subcontractors’ staff, and District field staff) is sick or symptomatic, including quarantine duration, notification procedures and a field staff return to work procedure. This Sick Employee Action Procedures shall also include back-up personnel for all critical staff.
 - i. For work sites where the Contractor, multiple subcontractors, and District staff share the same work space, inform all parties about all site-specific infection Site Specific Health and Safety Plan requirements. Where one contractor enters the space of another contractor, the most stringent requirements shall be followed.
- 2. The Engineer may require the Contractor to submit an updated Threat to Public Health Response Plan to conform with District practices as they are updated.
 - 3. Contractor shall draft and implement a Code of Safe Practices which will at a minimum, require staff, subcontractors, suppliers, etc. to comply with the following guidelines during the course of their work:
 - a. If you feel sick, and/or have been exposed to anyone who is sick, stay at home. You may be required to provide medical clearance before being allowed to return to work.
 - b. To ensure proper sanitation, the safe practices should include the following, or what is recommended by the CDC or other governmental authority having jurisdiction:

- 1) Wash hands frequently for at least 20 seconds with soap and water. Avoid touching your face with un-sanitized hands. Avoid touching common surfaces with bare hands.
- 2) Observe your work distances in relation to other staff. Maintain the recommended distance at all times when not wearing the necessary PPE for working in close proximity to another person.
- 3) Do not shake hands or make other direct contact with other staff.
- 4) Do not carpool with other staff unless they are family members living within your household.
- 5) Do not share phones. Use of microwaves, water coolers and other similar group equipment for breaks are suspended during a Threat to Public Health event, unless sanitized between uses.
- 6) Clean personal tools prior to use, as well as group tools.
- 7) If your task requires working in close proximity to another person, review the required JHA to ensure you are equipped with the proper PPE and are trained in and understand the directions for use. Do not start any task until you have been properly equipped and trained on procedures.
- 8) Ensure you clean and maintain your personal PPE and do not loan any items out to other staff.
- 9) Disposable PPE, paper towels, and similar waste must be deposited in non-touch waste bins.
- 10) Do not cough or sneeze into your hand; rather, direct coughs and sneezes into the crook of your arm at your elbow; follow established CDC guidelines.
- 11) Workers should change work clothes and shoes prior to arriving at home. All clothing should not be shaken out. Launder work clothes separate from other laundry.

F. NOT USED.

G. USA Marking Record

1. Submit utility locate and marking (USA marking) number and documents, and verification of markings. Make available to the Engineer the record of all subsequent utility marking events and meetings on the project.

H. Accident Reports

1. Upon request of the Engineer, complete and submit an accident investigation report. See Article 3.3.

I. Electrical Safety Plan

1. Submit a detailed plan for worker protection from hazardous voltages on pipelines and appurtenances as a result of electromagnetic induction from nearby electrical transmission lines and short-circuits at the high-voltage lattice steel towers and tubular steel poles.
2. The safety plan shall include the following details at minimum:
 - a. Procedures to limit worker contact with the bare metal on the pipeline and appurtenances, either through direct body contact or via equipment which has a direct metallic path to the pipeline (e.g., a crane or backhoe using metallic slings or chains).
 - b. Procedures to avoid placing equipment and materials near any PG&E lattice towers or tubular steel poles.
 - c. Details of protective equipment and clothing to be used when worker contact with the pipeline is unavoidable
 - d. Temporary pipeline grounding and bonding details to be used during construction
 - e. Procedures for the installation of temporary pipeline grounding and bonding by qualified personnel (e.g., electrician).
 - f. Procedures to notify all persons on the job site of the electrical hazard
 - g. Procedures to limit access to the pipeline to the public and unqualified personnel

J. Submit an Injury & Illness Prevention Plan (IIPP) in accordance with Title 8 of the California Code of Regulations, Section 3203.

K. Submit a Workplace Violence Prevention Plan (WVPP) in accordance with the Code of Civil Procedure §527.8, and Labor Code §6401.7 and 6401.9.

1. The WVPP shall either be addressed in the written Injury and Illness Prevention Program or maintained in a separate document.

2. Adhere to all requirements of the CA Labor Code §6401.9 in the workplace and follow any additional District-specific requirements when at a District facility or working on District projects. Such requirements may include safety measures specific to a facility, for maintenance of safety and security, and will be communicated by the District.
3. Notification of a workplace violence incident:
 - a. Should the Contractor become aware of an incident that meets the definition of workplace violence while working at District facilities, the Contractor shall perform an investigation and provide a report to the Engineer within 15 work days.
 - b. Immediate corrective action shall be taken to ensure the hazard is mitigated.
 - c. The incident shall be documented on the Workplace Violence Incident Log of the employer(s) whose employee(s) experienced the workplace violence.

1.4 TRAINING REQUIREMENTS

- A. Ensure that all personnel who, as the result of work on this contract, will likely be exposed to hazardous conditions or hazardous substances at the site have received the appropriate training for the hazards they may encounter. Establish minimum training requirements and do not allow untrained workers to enter or perform Work at the site.

1.5 SAFETY VIDEO

- A. All Contractor personnel shall view a plant safety video provided by the District prior to working on the site. The video will be provided to the Contractor at the pre-construction meeting. Contractor shall provide on a monthly basis an updated listing of Contractor personnel who have viewed the video.

1.6 FIRE PREVENTION AND PROTECTION

- A. Perform all Work in a fire-safe manner and supply and maintain on the site adequate fire-fighting equipment capable of extinguishing incipient fires. Comply with applicable federal, local, and state fire-prevention regulations. Where these regulations do not apply, applicable parts of the National Fire Prevention Standards for Safeguarding Building Construction Operations (NFPA No. 241) shall be followed.

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 PROJECT SAFETY AND HEALTH PLAN

A. General:

1. A copy of the Contractor's Project Safety and Health Plan shall be available at the construction site while excavations, confined spaces, fall protection, or LOTO are being performed, or hazardous substances are present
2. Contractor's Project Safety and Health Plan shall apply to all personnel working at, or visiting the site including, but not limited to, Contractor's employees, suppliers, truckers, and District personnel.
3. The Contractor's Project safety and health representative shall verify that all persons are in compliance with applicable safety and health requirements, and take action to ensure compliance where deficiencies are identified.
4. Provide the Engineer a minimum of forty-eight (48) hours advance notice of time and location of pre-entry briefings so that District personnel, who are required to enter the Project, may attend. A record of attendance shall be provided to the Engineer within 24 hours after the briefing.
5. Contractor shall take representative personnel air samples for employee exposure to dust, fume, mist, and vapors of materials and substances brought onto the project or generated during the course of Work on the project. See paragraph B. below.
6. Exercise extreme care when handling or disposing of materials or substances that are listed as hazardous substances in Section 339 of Chapter 3.2, California Occupational Safety and Health Regulations, Title 8, California Code of Regulations, or in Title 26 (Toxics) of the California Code of Regulations, or as evidenced by the manufacturer's MSDS.

B. Sampling and Testing of Samples Collected for Exposure Analysis:

1. Be responsible for all sampling, including sampling for airborne contaminants, and testing of materials suspected of containing hazardous substances to determine if such materials pose potential safety & health exposure hazards. All sampling shall be conducted by qualified persons, and testing shall be performed by an OSHA certified laboratory.
2. Copies of the results of testing and sampling shall be made available to the Engineer within 5-days of time of receipt from the certified laboratory.

3. Each sample shall have an identifying sample number assigned by the Contractor when the sample is taken with the prefix SD-428.
 - a. Each sample number shall be included on the sampling chain of custody and in all reports, correspondence, and other documentation related to the sample. Each sample shall have a sampling chain of custody.
 - b. Chain of custody shall show the name and organization of each person having custody of the sample, and shall also show the sample number, job name and location, time of day and date sample taken, material sampled, and tests to be performed.

3.2 HAZARDOUS CONDITIONS

A. Confined Spaces:

1. Attention is directed to the provisions of Article 108 of the General Industry Safety Orders, Title 8, California Code of Regulations, and Article 4 on Dusts, Fumes, Mists, Vapors, and Gases of Subchapter 4, the Construction Safety Orders, Title 8, California Code of Regulations.
2. All spaces shall be designated by Contractor as either PERMIT REQUIRED or NON-PERMIT REQUIRED. When designated PERMIT REQUIRED, a copy of the PERMIT shall be conspicuously posted for the duration of the Work within the space. Confined spaces designated as PERMIT REQUIRED after assessment shall be supported by a rescue team(s).
3. Tests for the presence of combustible or dangerous gases and/or oxygen deficiency in confined spaces shall be made with an approved device immediately prior to a worker entering the confined space and at intervals frequent enough to ensure a safe atmosphere during the time a worker is in such a structure. A record of such tests shall be kept at the jobsite.
4. No employee shall be permitted to enter a confined space, where tests indicate the presence of a hazardous atmosphere, unless the employee is wearing suitable and approved respiratory equipment, or until such time that continuous forced air ventilation has removed the hazardous atmosphere from the confined space.
5. Confined spaces that contain or that have last been used as containers of toxic gases, light oils, hydrogen sulfide, corrosives, or poisonous substances, shall, in every case, be tested by means of approved devices or chemical analysis before being entered without wearing approved respiratory equipment.
6. Sources of ignition shall be prohibited in any confined space until after the atmosphere within the confined space has been tested and found safe.

7. Tanks, vessels, or other confined spaces having openings or manholes in the side as well as in the top shall be entered from the side openings or manholes when practicable.
8. Coordinate entry operations with the Engineer when both Contractor personnel and District personnel require permit space entry.

B. Fall Protection:

1. Section 1670 of the Construction Safety Orders, Title 8, California Code of Regulations, requires protective measures to be implemented whenever a worker is exposed to falls greater than 7½ feet.
2. On site activities shall conform to the requirements set forth in Sections 1669 through 1671.2, Title 8, California Code of Regulations.
3. A walkway or bridge, with standard guardrails, shall be provided where employees are required to cross excavations and trenches 6 feet or greater in depth per Section 1541 of the Construction Safety Orders, Title 8, California Code of Regulations.

C. Electrical:

1. For Work in which the Contractor must install temporary electrical circuits:
 - a. An electrical safety assessment (that includes ARCFLASH) shall be performed and provided to the Engineer.
 - b. The assessment shall be based on the NFPA 70 E and NFPA 820 Standard, latest edition.
 - c. Appropriate hazard labeling shall be provided.
2. For Work in which the Contractor installs electrical circuits required by the specification:
 - a. An electrical shock and ARCFLASH assessment shall be performed in accordance to the NFPA 70E and NFPA 820 Standard, latest edition, on installed equipment.
 - b. Appropriate labels shall be made and installed on equipment rated in excess of 480V (for example MCC, switchboards, panelboards, industrial control panels, etc.).
 - c. Prior to labeling, the label shall be reviewed by the Engineer for acceptance.

- D. LOTO (Lock-Out Tag-Out): Title 8, California Code of Regulations requires control of hazardous energy sources where any employee may be exposed to potential harm.
1. The Contractor with its subs shall meet with the District to share and reach agreement for implementation with LOTO plans and planning for any District equipment, process, or machinery that shall be locked-out.
 2. The distinction between LOTO and operational shut-down shall be made.
 3. Share and implement the following components of the LOTO plan:
 - a. LOTO locations,
 - b. Lock-out and tag-out methods and equipment,
 - c. De-energization verification,
 - d. Log of locked and tagged locations,
 - e. Stated emergency types and breach policy,
 - f. Return-to-service practice and removal of lock and tags.
- E. NOT USED.

3.3 ACCIDENT REPORTS

- A. Report any serious injury to the Engineer immediately. Examples of reportable injuries: broken limbs, amputation, chemical asphyxia, etc. Contractor is solely and exclusively responsible for notifying Cal/OSHA within 8-hours of the occurrence of a serious injury or fatality. Also promptly report in writing to the Engineer all accidents whatsoever arising out of, or in connection with, the performance of the Work whether on, or adjacent to, the site, giving full details and statements of witnesses. Reports shall document the root cause of the accident, if the accident was preventable, and how the accident will be prevented from reoccurring. Furnish further information to the District as requested.
- B. If a claim is made by anyone against the Contractor or any subcontractor on account of any accident, arising out of or in connection with the performance of the Work, the Contractor shall promptly report the facts in writing to the Engineer, giving full details of the claim.
- C. Notify the Engineer if representatives of Cal/OSHA or any other regulatory agency arrives at the job-site for any purpose, including inspections, consultations, or investigations. The notification shall be made to the Engineer within 30-minutes of the arrival of the representative to the project.

END OF SECTION

SECTION 01 35 24

PROJECT SAFETY REQUIREMENTS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included:

1. Be solely and exclusively responsible for maintaining job-site safety and compliance with all pertinent Groups and Articles set forth in Title 8, California Code of Regulations (Cal/OSHA), and Title 29, Code of Federal Regulations (OSHA; where applicable).
2. Contractor shall be the Creating, Controlling, and Correcting Employer for purposes of compliance with Cal/OSHA's multi-employer worksite rule (8 CCR 336.10) for itself and all of its site workers.
3. Meet with the Engineer prior to commencement of the Work to review the project safety requirements as applicable to the Contractor's procedures and to develop mutual understandings relative to compliance with the safety requirements and administration of the Contractor's project safety programs.
4. Complete a Safe Work Notice prior to starting work at the Main Wastewater Treatment Plant (MWWTP). See Appendix A.
5. Complete a Hot Work Permit for any classified hot work associated with this Specification.
6. Complete a Job Hazard Analysis (JHA) for the following work activities at a minimum:
 - a. Cold box fall protection and coatings demolition and installation
 - 1) At minimum: fall protection, lead abatement (existing coatings), noise
 - b. Cold box insulation removal and installation
 - 1) At minimum: fall protection, permit confined space
 - c. Oxygen piping or tubing demolition, installation, and testing
 - d. Main air compressor motor replacement
 - 1) At minimum: noise

e. Substation, switchgear, MCC, and UPS work

1) At minimum: electrical safety, asbestos (MCCs)

B. Site Activities

1. Control all harmful dusts, fumes, mists, vapors and gases exposures for all job-site workers, regardless of employer, so that respective permissible exposure limits (PEL) are not met or exceeded. Such hazards are contained in Title 8, California Code of Regulations (Cal/OSHA) § 5155 - Airborne Contaminants; Article 110 - Regulated Carcinogens; and Construction Safety Order 1529 - Asbestos.
2. Physically delineate and assign work areas and restrict access by unauthorized persons during the course of Work. See Section 01 35 53, Security Procedures, for sign-in requirements.
3. Contractor shall not allow unsafe tools, equipment, or machinery to be brought onto the project. Unsafe tools, etc. shall be considered as those tools which are in need of repair, replacement, lacking proper maintenance, or are unsuitable for the task.
4. Contractor shall assemble, install, erect, and prepare safety related equipment, devices, and products in accordance with manufacturer specifications and recommendations. Manufacturer documentation shall be provided to the Engineer upon request.
5. Comply with the Federal Drug Free Workplace Act, Department of Transportation (DOT) testing regulations (49 CFR Part 32), CA State Vehicle Code (Section 34520) and all applicable legally valid rules and regulations regarding drug and alcohol misuse, including consumption, sale or possession.
6. Contractor personnel are specifically prohibited from bringing firearms, explosive devices, or other dangerous weapons on District property or while engaged in contract Work. If the Contractor requires the use of powder actuated tools to carry out the Work under this contract, the Contractor shall notify the Engineer prior to bringing such devices to the jobsite.
7. Contractor shall provide safe access for construction inspectors and other authorized District employees in order to inspect or review Work in progress.

C. Related Sections

1. Document 00 31 24 – Material Assessment Information
2. Document 00 62 00 – Insurance Requirements

3. Section 01 14 00 – Work Restrictions
4. Section 01 33 00 - Submittal Procedures
5. Section 01 35 44 – Environmental Requirements
6. Section 01 50 00 – Temporary Facilities and Controls
7. Section 02 83 13 – Lead Hazard Control Activities

1.2 DEFINITIONS

- A. Where used in the Contract Documents, the following words and terms shall have the meanings indicated. The meanings shall be applicable to the singular and plural of the words and terms.
- B. **Competent Person:** As defined in Section 1504 of the Construction Safety Orders, Title 8, California Code of Regulations, one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them.
- C. **Confined Spaces:** Shall mean any space not designed for human occupancy and having the characteristics identified in Title 8, California Code of Regulations (Cal/OSHA), Article 108 - Confined Spaces
- D. **Excavation:** Any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.
- E. **Hazardous Substance:** Defined as any substance included in the list (Director's List) of hazardous substances prepared by the Director, California Department of Industrial Relations, pursuant to Labor Code Section 6382. Includes hazardous waste as defined herein.
- F. **Exposure Assessment:** An assessment of potential chemical and physical hazards encountered on the project site.
- G. **LOTO:** Lock-Out Tag-Out as defined by Title 8, California Code of Regulations, § 3314.
- H. **OPU:** Order Prohibiting Use. A tag affixed to a dangerous workplace condition or practice which constitutes an imminent hazard to workers. An OPU tag may be posted prohibiting entry to the worksite, or part of the worksite, use of machinery, devices, or apparatus.
- I. **Safe Work Notice, or Safe Work Permit:** A Notice or Permit required to be completed by the Contractor and District staff at water treatment plants and wastewater facilities. The Notice/Permit communicates work to be performed, the areas and potential hazards.

- J. **Trench:** A narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet. If forms or other structures are installed or constructed in an excavation so as to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet or less, (measured at the bottom of the excavation), the excavation is also considered to be a trench.

1.3 SUBMITTAL OF PLANS AND PROCEDURES

A. General:

1. Prepare and submit in accordance with the applicable provisions of Section 01 33 00 Submittal Procedures.
2. Allow twenty (20) working days minimum for the Engineer's review plus transit time to and from the District offices.
3. The plans and procedures identified in this Article 1.3 shall be kept current. New hazards, mitigations, or procedures identified during the course of the Work shall be submitted as revisions to the identified plans and procedures within five (5) days of being identified.
4. One copy of each plan and procedure submitted will be returned marked "No Exceptions Taken", as described below, or "Make Corrections Noted" or "Revise and Resubmit" as described in Section 01 33 00, Submittal Procedures.
 - a. One copy of each plan and procedure submitted will be returned marked "No Exceptions Taken", as described below, or "Make Corrections Noted" or "Revise and Resubmit" as described in Section 01 33 00 Submittal Procedures.
 - 1) NO EXCEPTIONS TAKEN: Accepted subject to its compatibility with further submittals and additional partial submittals for portions of the work not covered in this submittal. Does not constitute approval or deletion of specified or required items not shown in the partial submittal.
 - 2) MAKE CORRECTIONS NOTED: Same as 1.a., except that minor corrections as noted shall be made by the Contractor.
 - 3) REVISE AND RESUBMIT: Rejected because of major inconsistencies or errors which shall be resolved or corrected by the Contractor prior to subsequent review by the Engineer.

- 4) REJECTED - RESUBMIT: Submitted material does not conform to Plans and Specifications in major respect, i.e.: wrong item, wrong size, model, capacity, or material.

B. Project Safety and Health Plan:

1. Submit prior to start of the Work for the Engineer's review a Project Safety and Health Plan for the Work to be performed only if actual, potential, or anticipated hazards include: a) hazardous substances; b) fall protection issues; c) confined spaces; d) trenches or excavations; or, e) lockout/tagout. If the actual, potential, or anticipated hazards do not include one or more of these five hazards, no Plan is required.
2. Submit prior to start of Work the name of individual(s) who has been designated as:
 - a. Contractor's Project Safety and Health Representative
 - b. Submit principal and alternate Competent/Qualified Persons for: 1) scaffolding; 2) fall protection systems and equipment; and 3) employee protective systems for trenches and excavations.
 - c. Qualified person to conduct and take samples and air measurements of known or suspect hazardous substance for personnel and environmental exposure. Sample results shall be submitted to the Engineer in writing and electronic format.
3. Plan shall include an emergency action plan in the event of an accident, or serious unplanned event (e.g.: gasoline break, fire, structure collapse, etc.) that requires notifying any responsive agencies (e.g.: fire departments, PG&E, rescue teams, etc.).
4. The Project Health and Safety Plan shall include a Threat to Public Health Response Plan

C. Confined Space Operating Procedures:

1. Submit confined space operating and rescue procedures to the Engineer for review. Procedures shall conform to the applicable provisions of Sections 5156 through 5158, Title 8, California Code of Regulations.
2. If a pipeline is required to be entered, the Project Safety and Health Plan shall include a description of a safe access and rescue plan.

D. Fall Protection Procedures

1. Submit fall protection procedures to the Engineer for review prior to any work at heights at the jobsite.

2. The fall protection plan shall address control of fall hazards for any work occurring at heights greater than 7½ feet.
3. Procedures shall conform to applicable provisions of Sections 1669 through 1671.2, Title 8, California Code of Regulations.
4. The plan shall address scaffolds when used on site.
5. The plan shall address manlift equipment when used on site.
6. The plan shall address rescue of workers who may fall.

E. Threat to Public Health Response Plan

1. The Contractor shall submit a plan outlining worker safety to be in compliance with OSHA guidelines, local, county, and state jurisdiction for a threat to public health event including the following:
 - a. Designate a Site Safety Representative (SSR) to monitor and implement all recommended safety practices regarding any threat to public health with all Contractor staff members. Labor supervisors shall have the authority, through consultation with the SSR, to halt all activities that do not adhere to the safety practices. The SSR shall have training commensurate with this hazard and all required industrial hygiene practices that may be required on the job site. This person shall be responsible to maintain supplies of appropriate disinfectants and make sure that workers follow decontamination, hand washing, distancing, and PPE rules.
 - b. Employee Screening: Establish an assembly point for staff and daily screening protocol before the start of work each day that complies with the recommended social distancing parameters. If workers leave and re-enter the work site during the shift, re-screen individuals prior to re-entry into the work site.
 - c. Informational Meetings: Provide a daily tailgate session reviewing site protocols to mitigate potential spread of the infection. Tailgates should occur daily and contractors should document attendance and require worker signatures.
 - d. Personal Protective Equipment (PPE): Employ a task-specific Job Hazard Analysis (JHA). Establish the level of PPE required for each specific task. This is especially important for tasks that may require staff to work inside of the recommended social distancing zone.
 - e. Disinfection Procedures: The Contractor shall clean and sanitize trailers, toilets and other enclosed spaces. Establish deep cleaning schedules on job sites to address exposed surfaces. Areas that

require a cleaning schedule include but not limited to: trailer/office spaces, elevators and lifts, operating equipment, electrical equipment, restrooms, and other “high touch” areas of the job site. The Contractor shall allow adequate time for proper cleaning and disinfection each day. In addition, the Contractor shall establish a cleaning and decontamination protocol prior to entry and exit of the job.

- f. Hand Washing Stations: Provide hand washing and sanitizing stations throughout the job site to provide for regular hand cleaning. Sanitizer used shall be appropriate for the control of the infection of concern. Stations should be of sufficient quantity to allow staff to remain within the work areas without exiting into break areas, and shall be maintained continuously.
 - g. Social Distancing Guidelines: Include a procedure to reduce contact between employees using social distancing. This procedure shall include progress meetings and how to hold these meetings while maintaining social distancing.
 - h. Sick Employee Action Procedures: Identify response procedure and disinfection if a field staff (Contractor’s staff, its subcontractors’ staff, and District field staff) is sick or symptomatic, including quarantine duration, notification procedures and a field staff return to work procedure. This Sick Employee Action Procedures shall also include back-up personnel for all critical staff.
 - i. For work sites where the Contractor, multiple subcontractors, and District staff share the same work space, inform all parties about all site-specific infection Site Specific Health and Safety Plan requirements. Where one contractor enters the space of another contractor, the most stringent requirements shall be followed.
- 2. The Engineer may require the Contractor to submit an updated Threat to Public Health Response Plan to conform with District practices as they are updated.
 - 3. Contractor shall draft and implement a Code of Safe Practices which will at a minimum, require staff, subcontractors, suppliers, etc. to comply with the following guidelines during the course of their work:
 - a. If you feel sick, and/or have been exposed to anyone who is sick, stay at home. You may be required to provide medical clearance before being allowed to return to work.
 - b. To ensure proper sanitation, the safe practices should include the following, or what is recommended by the CDC or other governmental authority having jurisdiction:

- 1) Wash hands frequently for at least 20 seconds with soap and water. Avoid touching your face with un-sanitized hands. Avoid touching common surfaces with bare hands.
- 2) Observe your work distances in relation to other staff. Maintain the recommended distance at all times when not wearing the necessary PPE for working in close proximity to another person.
- 3) Do not shake hands or make other direct contact with other staff.
- 4) Do not carpool with other staff unless they are family members living within your household.
- 5) Do not share phones. Use of microwaves, water coolers and other similar group equipment for breaks are suspended during a Threat to Public Health event, unless sanitized between uses.
- 6) Clean personal tools prior to use, as well as group tools.
- 7) If your task requires working in close proximity to another person, review the required JHA to ensure you are equipped with the proper PPE and are trained in and understand the directions for use. Do not start any task until you have been properly equipped and trained on procedures.
- 8) Ensure you clean and maintain your personal PPE and do not loan any items out to other staff.
- 9) Disposable PPE, paper towels, and similar waste must be deposited in non-touch waste bins.
- 10) Do not cough or sneeze into your hand; rather, direct coughs and sneezes into the crook of your arm at your elbow; follow established CDC guidelines.
- 11) Workers should change work clothes and shoes prior to arriving at home. All clothing should not be shaken out. Launder work clothes separate from other laundry.

F. NOT USED.

G. USA Marking Record

1. Submit utility locate and marking (USA marking) number and documents, and verification of markings. Make available to the Engineer the record of all subsequent utility marking events and meetings on the project.

H. Accident Reports

1. Upon request of the Engineer, complete and submit an accident investigation report. See Article 3.3.

I. Electrical Safety Plan

1. Submit a detailed plan for worker protection from hazardous voltages on pipelines and appurtenances as a result of electromagnetic induction from nearby electrical transmission lines and short-circuits at the high-voltage lattice steel towers and tubular steel poles.
2. The safety plan shall include the following details at minimum:
 - a. Procedures to limit worker contact with the bare metal on the pipeline and appurtenances, either through direct body contact or via equipment which has a direct metallic path to the pipeline (e.g., a crane or backhoe using metallic slings or chains).
 - b. Procedures to avoid placing equipment and materials near any PG&E lattice towers or tubular steel poles.
 - c. Details of protective equipment and clothing to be used when worker contact with the pipeline is unavoidable
 - d. Temporary pipeline grounding and bonding details to be used during construction
 - e. Procedures for the installation of temporary pipeline grounding and bonding by qualified personnel (e.g., electrician).
 - f. Procedures to notify all persons on the job site of the electrical hazard
 - g. Procedures to limit access to the pipeline to the public and unqualified personnel

J. Submit an Injury & Illness Prevention Plan (IIPP) in accordance with Title 8 of the California Code of Regulations, Section 3203.

K. Submit a Workplace Violence Prevention Plan (WVPP) in accordance with the Code of Civil Procedure §527.8, and Labor Code §6401.7 and 6401.9.

1. The WVPP shall either be addressed in the written Injury and Illness Prevention Program or maintained in a separate document.

2. Adhere to all requirements of the CA Labor Code §6401.9 in the workplace and follow any additional District-specific requirements when at a District facility or working on District projects. Such requirements may include safety measures specific to a facility, for maintenance of safety and security, and will be communicated by the District.
3. Notification of a workplace violence incident:
 - a. Should the Contractor become aware of an incident that meets the definition of workplace violence while working at District facilities, the Contractor shall perform an investigation and provide a report to the Engineer within 15 work days.
 - b. Immediate corrective action shall be taken to ensure the hazard is mitigated.
 - c. The incident shall be documented on the Workplace Violence Incident Log of the employer(s) whose employee(s) experienced the workplace violence.

1.4 TRAINING REQUIREMENTS

- A. Ensure that all personnel who, as the result of work on this contract, will likely be exposed to hazardous conditions or hazardous substances at the site have received the appropriate training for the hazards they may encounter. Establish minimum training requirements and do not allow untrained workers to enter or perform Work at the site.

1.5 SAFETY VIDEO

- A. All Contractor personnel shall view a plant safety video provided by the District prior to working on the site. The video will be provided to the Contractor at the pre-construction meeting. Contractor shall provide on a monthly basis an updated listing of Contractor personnel who have viewed the video.

1.6 FIRE PREVENTION AND PROTECTION

- A. Perform all Work in a fire-safe manner and supply and maintain on the site adequate fire-fighting equipment capable of extinguishing incipient fires. Comply with applicable federal, local, and state fire-prevention regulations. Where these regulations do not apply, applicable parts of the National Fire Prevention Standards for Safeguarding Building Construction Operations (NFPA No. 241) shall be followed.

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 PROJECT SAFETY AND HEALTH PLAN

A. General:

1. A copy of the Contractor's Project Safety and Health Plan shall be available at the construction site while excavations, confined spaces, fall protection, or LOTO are being performed, or hazardous substances are present
2. Contractor's Project Safety and Health Plan shall apply to all personnel working at, or visiting the site including, but not limited to, Contractor's employees, suppliers, truckers, and District personnel.
3. The Contractor's Project safety and health representative shall verify that all persons are in compliance with applicable safety and health requirements, and take action to ensure compliance where deficiencies are identified.
4. Provide the Engineer a minimum of forty-eight (48) hours advance notice of time and location of pre-entry briefings so that District personnel, who are required to enter the Project, may attend. A record of attendance shall be provided to the Engineer within 24 hours after the briefing.
5. Contractor shall take representative personnel air samples for employee exposure to dust, fume, mist, and vapors of materials and substances brought onto the project or generated during the course of Work on the project. See paragraph B. below.
6. Exercise extreme care when handling or disposing of materials or substances that are listed as hazardous substances in Section 339 of Chapter 3.2, California Occupational Safety and Health Regulations, Title 8, California Code of Regulations, or in Title 26 (Toxics) of the California Code of Regulations, or as evidenced by the manufacturer's MSDS.

B. Sampling and Testing of Samples Collected for Exposure Analysis:

1. Be responsible for all sampling, including sampling for airborne contaminants, and testing of materials suspected of containing hazardous substances to determine if such materials pose potential safety & health exposure hazards. All sampling shall be conducted by qualified persons, and testing shall be performed by an OSHA certified laboratory.
2. Copies of the results of testing and sampling shall be made available to the Engineer within 5-days of time of receipt from the certified laboratory.

3. Each sample shall have an identifying sample number assigned by the Contractor when the sample is taken with the prefix SD-428.
 - a. Each sample number shall be included on the sampling chain of custody and in all reports, correspondence, and other documentation related to the sample. Each sample shall have a sampling chain of custody.
 - b. Chain of custody shall show the name and organization of each person having custody of the sample, and shall also show the sample number, job name and location, time of day and date sample taken, material sampled, and tests to be performed.

3.2 HAZARDOUS CONDITIONS

A. Confined Spaces:

1. Attention is directed to the provisions of Article 108 of the General Industry Safety Orders, Title 8, California Code of Regulations, and Article 4 on Dusts, Fumes, Mists, Vapors, and Gases of Subchapter 4, the Construction Safety Orders, Title 8, California Code of Regulations.
2. All spaces shall be designated by Contractor as either PERMIT REQUIRED or NON-PERMIT REQUIRED. When designated PERMIT REQUIRED, a copy of the PERMIT shall be conspicuously posted for the duration of the Work within the space. Confined spaces designated as PERMIT REQUIRED after assessment shall be supported by a rescue team(s).
3. Tests for the presence of combustible or dangerous gases and/or oxygen deficiency in confined spaces shall be made with an approved device immediately prior to a worker entering the confined space and at intervals frequent enough to ensure a safe atmosphere during the time a worker is in such a structure. A record of such tests shall be kept at the jobsite.
4. No employee shall be permitted to enter a confined space, where tests indicate the presence of a hazardous atmosphere, unless the employee is wearing suitable and approved respiratory equipment, or until such time that continuous forced air ventilation has removed the hazardous atmosphere from the confined space.
5. Confined spaces that contain or that have last been used as containers of toxic gases, light oils, hydrogen sulfide, corrosives, or poisonous substances, shall, in every case, be tested by means of approved devices or chemical analysis before being entered without wearing approved respiratory equipment.
6. Sources of ignition shall be prohibited in any confined space until after the atmosphere within the confined space has been tested and found safe.

7. Tanks, vessels, or other confined spaces having openings or manholes in the side as well as in the top shall be entered from the side openings or manholes when practicable.
8. Coordinate entry operations with the Engineer when both Contractor personnel and District personnel require permit space entry.

B. Fall Protection:

1. Section 1670 of the Construction Safety Orders, Title 8, California Code of Regulations, requires protective measures to be implemented whenever a worker is exposed to falls greater than 7½ feet.
2. On site activities shall conform to the requirements set forth in Sections 1669 through 1671.2, Title 8, California Code of Regulations.
3. A walkway or bridge, with standard guardrails, shall be provided where employees are required to cross excavations and trenches 6 feet or greater in depth per Section 1541 of the Construction Safety Orders, Title 8, California Code of Regulations.

C. Electrical:

1. For Work in which the Contractor must install temporary electrical circuits:
 - a. An electrical safety assessment (that includes ARCFLASH) shall be performed and provided to the Engineer.
 - b. The assessment shall be based on the NFPA 70 E and NFPA 820 Standard, latest edition.
 - c. Appropriate hazard labeling shall be provided.
2. For Work in which the Contractor installs electrical circuits required by the specification:
 - a. An electrical shock and ARCFLASH assessment shall be performed in accordance to the NFPA 70E and NFPA 820 Standard, latest edition, on installed equipment.
 - b. Appropriate labels shall be made and installed on equipment rated in excess of 480V (for example MCC, switchboards, panelboards, industrial control panels, etc.).
 - c. Prior to labeling, the label shall be reviewed by the Engineer for acceptance.

- D. LOTO (Lock-Out Tag-Out): Title 8, California Code of Regulations requires control of hazardous energy sources where any employee may be exposed to potential harm.
1. The Contractor with its subs shall meet with the District to share and reach agreement for implementation with LOTO plans and planning for any District equipment, process, or machinery that shall be locked-out.
 2. The distinction between LOTO and operational shut-down shall be made.
 3. Share and implement the following components of the LOTO plan:
 - a. LOTO locations,
 - b. Lock-out and tag-out methods and equipment,
 - c. De-energization verification,
 - d. Log of locked and tagged locations,
 - e. Stated emergency types and breach policy,
 - f. Return-to-service practice and removal of lock and tags.
- E. MCC P15, P16, and P17 breakers contain line side conductor shields that are suspected of containing non-friable asbestos. District has not tested the shield material to verify whether they are asbestos containing. District has tested shield wipe samples and dust samples at the base of the MCCs and found these samples to be “non-detect” for asbestos.

3.3 ACCIDENT REPORTS

- A. Report any serious injury to the Engineer immediately. Examples of reportable injuries: broken limbs, amputation, chemical asphyxia, etc. Contractor is solely and exclusively responsible for notifying Cal/OSHA within 8-hours of the occurrence of a serious injury or fatality. Also promptly report in writing to the Engineer all accidents whatsoever arising out of, or in connection with, the performance of the Work whether on, or adjacent to, the site, giving full details and statements of witnesses. Reports shall document the root cause of the accident, if the accident was preventable, and how the accident will be prevented from reoccurring. Furnish further information to the District as requested.
- B. If a claim is made by anyone against the Contractor or any subcontractor on account of any accident, arising out of or in connection with the performance of the Work, the Contractor shall promptly report the facts in writing to the Engineer, giving full details of the claim.
- C. Notify the Engineer if representatives of Cal/OSHA or any other regulatory agency arrives at the job-site for any purpose, including inspections,

consultations, or investigations. The notification shall be made to the Engineer within 30-minutes of the arrival of the representative to the project.

END OF SECTION

SECTION 01 35 44

ENVIRONMENTAL REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Work includes:

1. Comply with applicable Federal, State and Local environmental regulations in the execution of the Work.
2. Meet with the Engineer prior to commencement of Work to review the project environmental requirements, permits, and issues.
3. NOT USED.
4. Procure and pay for all necessary local, state, and federal permits to perform the Work.
5. Implement all required environmental plans, procedures, and controls during performance of the Work.
6. Characterize all wastes and imported backfill materials per Contract Documents.
7. Handle and dispose of all wastes, including Hazardous Wastes, in a proper and lawful manner.
8. In the event of a conflict or inconsistency between this Section and any provisions of the Contract Documents, the more stringent provision shall prevail.

B. Site Activities

1. Protect storm drains and surface waters from impacts of project activity.
2. Store materials and wastes such as demolition material, soil, sand, asphalt, rubbish, paint, cement, concrete or washings thereof, oil or petroleum products, or earthen materials in a manner to prevent it from being washed by rainfall or runoff outside the construction limits.
3. Reuse or dispose of excess material consistent with all applicable legal requirements and disposal facility permits.
4. Clean up all spills and immediately notify the Engineer in the event of a spill.

5. Equip stationary equipment such as motors, pumps, and generators with drip pans.
6. Divert or otherwise control surface water and waters flowing from existing projects, structures, or surrounding areas from coming onto the work and staging areas. The method of diversions or control shall be adequate to ensure the safety of stored materials and of personnel using these areas.
7. Following completion of Work, remove ditches, dikes, or other ground alterations made by the Contractor. The ground surfaces shall be returned to their former condition, or as near as practicable, in the Engineer's opinion.
8. Prevent visible dust emissions from leaving the work areas.
9. Maintain construction equipment in good operating condition to reduce emissions.
10. Handle, store, apply, and dispose of any chemical or hazardous material used in the performance of the Work in a manner consistent with all applicable federal, state, and local laws and regulations.

C. Related Sections

1. Document 00 31 24 – Materials Assessment Information
2. Document 00 62 00 – Insurance Requirements
3. Document 00 73 00 – Supplementary General Conditions
4. Section 01 14 00 – Work Restrictions
5. Section 01 35 24 – Project Safety Requirements
6. NOT USED.
7. Section 01 50 00 – Temporary Facilities and Controls
8. Section 01 74 05 – Cleaning
9. Section 02 82 13 – Asbestos Hazard Control Activities
10. Section 02 83 13 – Lead Hazard Control Activities
11. Section 31 23 23 – Fill

1.2 ACRONYMS

AMS	Alternative Management Strategies

ARARs	Applicable or Relevant and Appropriate Requirements
BAAQMD	Bay Area Air Quality Management District
BMP	Best Management Practices
CCR	California Code of Regulations
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
CIH	Certified Industrial Hygienist
CUC	Clean Utility Corridor
DTSC	Department of Toxic Substances Control
ELAP	Environmental Laboratory Accreditation Program
EPA	Environmental Protection Agency
FSP	Field Sampling Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
MMRP	Mitigation Monitoring and Reporting Program
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Units
OSHA	Occupational Safety and Health Administration
PID	Photoionization Detector
PPMRP	Practices and Procedures Monitoring and Reporting Plan
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RWQCB	Regional Water Quality Control Board
SAP	Sampling and Analysis Plan
SMARTS	Storm Water Multi-Application and Report Tracking System
SOP	Standard Operating Procedure
SOW	Scope of Work
STLC	Soluble Threshold Limit Concentration
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TCLP	Toxicity Characteristic Leaching Procedure
TTLCL	Total Threshold Limit Concentration
TWW	Treated Wood Waste
USEPA	United States Environmental Protection Agency
WDR	Water Discharge Requirements

1.3 DEFINITIONS

- A. Characterization: Identification of chemical, microbiological, or radiological constituents of solid and liquid wastes. Characterization typically involves sampling and analysis performed by a laboratory that complies with and is certified under the Environmental Laboratory Accreditation Program (ELAP) of the State Water Resources Control Board for the purposes of classifying a waste as hazardous, non-hazardous, or other classification.

- B. Clean Utility Corridor: A utility corridor in an area with known or suspected contamination, which is designed in such a way as to allow unrestricted access to infrastructure to District employees without HAZWOPER training. It is often over-excavated and lined with geotextile fabric.
- C. Construction and Demolition Waste (or Debris): Materials resulting from construction, remodeling, repair, or demolition operations on any structure.
- D. Contamination: Any confirmed or anticipated release, spill, or emission, of any substance in the air, soil, surface water, or groundwater which may constitute a risk to the environment or human health. Note: Naturally occurring substances, such as asbestos, arsenic and chromium, may also be considered contaminants if they constitute a risk to human health.
- E. Divert/Diversion: The use of waste (or debris) for any purpose other than disposal in a landfill, incineration facility, or alternative daily cover. Methods to divert materials from landfills include reuse, salvage, and recycling.
- F. Excavation Soils: Material resulting from any excavation (cut, cavity, trench, or depression in the earth's surface formed by earth removal)
- G. Hazardous Waste: A waste or combination of wastes as defined in 40 CFR 261.3, or regulated as hazardous waste in California pursuant to Division 4.5, Title 22, California Code of Regulations, and Chapter 6.5, Division 20, California Health and Safety Code.
- H. Qualified Environmental Professional(s): A person with working knowledge of Federal, State, and local laws and regulations governing environmental compliance including hazardous materials management and disposal requirements. A person also with experience conducting environmental investigations including applicable methods and techniques of environmental sampling, analysis, and modeling.
- I. Sanitary Sewer Discharge: Any discharges to a sanitary sewer system, including the EBMUD collection system
- J. Staging Area: That area shown on the plans for the use of the contractors where construction related activities will occur, including long-term and short-term equipment storage and maintenance, materials storage (both temporary and long term), parking, office space, etc.

1.4 SUBMITTALS

- A. Storm Water Management
 - 1. Construction General Permit

- a. Submit the Notice of Intent, Storm Water Pollution Prevention Plan (SWPPP), and all other documents prepared for compliance with the General Construction Storm Water Permit (NPDES No. CAS000002) to the Engineer and upload them in the SWRCB's Storm Water Multi-Application & Report Tracking System (SMARTS).

- 1) The Engineer will electronically acknowledge appropriate submittals in SMARTS after review.
- 2) Contractor shall pay for all registration and annual fees under this permit/program.

2. Storm Water Management Plan

- a. Submit a Storm Water Management Plan that describes measures that shall be implemented to prevent the discharge of contaminated storm water runoff from the jobsite. Contaminants to be addressed include, but are not limited to soil, sediment, concrete residue, pH less than 6.5 or greater than 8.5, and any other contaminants known to exist at the jobsite location as described in Document 00 31 24 – Materials Assessment Information.

3. Local Storm Water Permits

- a. Obtain any local storm water permits (e.g. city, county, etc.), submit copies, and comply with their requirements.
- b. NOT USED.

B. Water Control and Disposal Plan:

- 1. Submit a detailed Water Control and Disposal Plan that complies with all requirements of the Specification and includes provisions for the types of discharges and permits in a through c below, if applicable to the project.

- a. NOT USED.

1)

- b. Non-Stormwater Discharges

- 1) Plan shall describe measures for containment, handling, treatment (as necessary), and disposal of discharges such as groundwater (if encountered), runoff of water used for dust control, stockpile leachate, tank heel water, wash water, sawcut slurry, test water and construction water.

- c. Sanitary Sewer Discharges
 - 1) Plan shall describe required applications and/or permits from the sanitary sewer system owner or agency having jurisdiction regarding the planned discharge.
 - a) Outline monitoring and reporting expected to support sanitary sewer discharge, including a sampling and analysis plan required in Paragraph 1.4.J. All monitoring results shall be submitted to the Engineer prior to the end of the Work.

C. Waste Management:

- 1. Prepare a Waste Management Plan and submit a copy of the plan for the Engineer's acceptance prior to start of work (except for water wastes which shall be addressed in the Water Control and Disposal Plan). The Waste Management Plan shall address all Construction and Demolition Waste, universal wastes, Hazardous Wastes, Excavation Soils, and any other solid debris intended to be removed from the project site(s).
 - a. Identify each type of material that will be generated during the project for disposal, recycling, salvage, or other management and estimate the volume/weight of each.
 - b. Identify how the Contractor will handle, transport, dispose of, or otherwise divert each type of material required to be removed under this contract in a safe, appropriate, and lawful manner in compliance with all applicable regulations of local, state, and federal agencies having jurisdiction over the removed materials.
 - c. Specify rules, regulations, and ordinances in the plan required by local agencies having jurisdiction over the handling, transportation, and disposal of waste. Identify diversion goals for all Construction and Demolition Wastes generated during the project. The specified diversion goals shall meet the minimum requirements of the local ordinances in the City/County/jurisdiction where each project site is located.
 - d. Identify any onsite or offsite soil reuse or recycling but note the limitations on this practice below.
 - 1) Excavation Soils shall not be reused or recycled without explicit approval from the Engineer. Do not assume approval for any reuse of soils. Any proposed reuse shall be initially discussed with the Engineer for evaluation. If soil reuse is planned onsite or offsite, include a Soil Reuse Plan within the Waste Management submittal outlining sites and specific locations where soil will be reused and

the estimated volumes of soil to be used at each site. Necessary sampling and **Error! Reference source not found..**

- 2) Soil reuse is not allowed in excavations for District drinking water pipelines.
 - 3) Soil reuse is not allowed at sites with land use covenants or other site restrictions.
 - 4) Notwithstanding items 2 and 3 above, soil reuse may be allowed in other circumstances with Engineer's approval. At a minimum, soil considered for reuse shall have no evidence of contamination (e.g. oil, sheen, chemical odors, discoloration, etc.) as found in excavated soil.
 - a) NOT USED.
 - i) NOT USED.
- e. Include a list of recycling facilities and processing facilities that will be receiving recyclable or recoverable materials, including, but not limited to concrete, asphalt, and metals.
 - f. Identify materials that are not recyclable or not recovered which will be disposed of in a landfill (or other means acceptable by the State of California and local ordinance and regulations). List the permitted landfill, or other permitted disposal facilities, which will be accepting the disposed waste materials. All landfills, hazardous waste, and universal waste disposal sites shall be approved for use by the Engineer.
 - g. NOT USED.
 - h. NOT USED.
 - i. Describe planned sampling and analysis for characterizing wastes or the Sampling and Analysis Plan below in Paragraph 1.4.J.
2. The following additional waste management provisions shall be included in the Waste Management Plan to demonstrate compliance with City of Oakland or Alameda County requirements.
 - a. Include a good faith quantity estimate of each type of Construction and Demolition Waste that would be generated if no diversion methods were implemented. Submit estimate with calculations based on weight of each material. The following materials are subject to the estimate requirement:
 - 1) Asphalt

- 2) Concrete
 - 3) Aggregates
 - 4) Brick, masonry, clay products, and ceramic tile
 - 5) Excavation Soils
 - 6) Wood products, including clean dimensional wood, palette wood, plywood, OSB, and particleboard
 - 7) Metals, including banding, ductwork, flashing, piping, rebar, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass and bronze
 - 8) Plant and tree trimmings (may be included in wood products if accepted by recycling service)
 - 9) Cardboard, paper products, and packaging
 - 10) Treated Wood Waste
 - 11) Drywall
 - 12) Mixed waste, including, but not necessarily limited to the following:
 - a) Beverage containers
 - b) Insulation
 - c) Roofing
 - d) Glass, excluding that used for containers
 - e) Gypsum board
 - f) Acoustical ceiling materials
 - g) Plastics, including ABS, PVC, and piping
 - h) Latex paint
 - i) Other materials
- b. Specify the haulers that will be used to transport or haul waste to landfills and disposal/reuse/recycling sites.

- c. Include an example of a waste log or other tracking mechanism that will clearly show each load and its destination. The record shall clearly distinguish between anything sent to landfill or recycling/reuse or salvage.
 - 1) Include in log the type of load, load weight, name of hauling service, recycling service or landfill, and date accepted by recycling service or by landfill (or other service).
 - d. Submit copies of any submittals to the City of Oakland or Alameda County required by their local ordinance. This includes permit applications, Waste Reduction and Recycling Plans, Construction and Demolition Summary Reports, or other similar documents. The permit application and Waste Reduction and Recycling Plan shall be submitted as an Appendix to the Waste Management Plan when possible.
- 3. For any proposed facility that is not on the District-approved disposal list, submit permission to reuse, recycle, reclaim, or dispose of material from the site owner along with any other information needed by the District to evaluate the acceptability of the proposed reuse, recycling, or disposal site and obtain acceptance of the Engineer prior to removing any material from the project site.
 - 4. All information pertinent to the characterization of the material or waste shall be disclosed to the District and the reuse, recycling, reclamation, or disposal facility. Submit copies of any profile forms and/or correspondence between the Contractor and the reuse, recycling, reclamation, or disposal facility.

D. Imported Fill

- 1. If use of imported fill from the categories below is proposed, submit an Imported Fill Plan outlining the source of imported fill and the specific sites and locations where imported soil will be used. 1.4. J1.4.J
 - a. Soil originating from sites with current or previous land use including industrial, manufacturing, maintenance, and waste storage sites
 - b. Soil originating from within 500 feet of a freeway
- 2. Virgin soil and fill from clean, undeveloped sites (e.g. quarry, soil pit) is not subject to the above requirements, however weighmaster tickets indicating source of material and weight shall be provided to the Engineer.
- 3. Proposed use of imported fill shall comply with the guidance and standards in the reference documents listed below

- a. DTSC Clean Imported Fill Material Information Advisory (October 2001)
- b. SF RWQCB Environmental Screening Levels, Version 2 (January 2019)
- c. Alameda County Department of Environmental Health Soil Import/Export Characterization Requirements (August 2019)
 - 1) These requirements apply to all District projects, including projects outside of Alameda County
- 4. Plan shall outline all of the required environmental and human risk-based screening levels that apply to the specific site where imported soil will be used and which compounds require sampling and analysis. Necessary sampling and analytical work shall be included in the Sampling and Analytical Plan submittal in Paragraph 1.4. J1.4.J
- 5. A certificate of analysis for soil from a soil recycler or supplier may be substituted for sampling and analysis of imported fill in the project.

E. Spill Prevention and Response Plan

- 1. Submit plan detailing the means and methods for preventing and controlling the spilling of known hazardous substances used on the jobsite or staging areas.
 - a. Include a list of the hazardous substances proposed for use or generated by the Contractor on site, including petroleum products.
 - b. Define measures that will be taken to prevent spills, monitor hazardous substances, and provide immediate response to spills.
 - c. Include provisions for notification of the Engineer or alternate contact and appropriate agencies including phone numbers; spill-related worker, public health, and safety issues; spill control, and spill cleanup.
 - d. Map showing hazardous materials project-related storage locations, names of the hazardous materials, and volumes/quantities.
 - e. Submit a Safety Data Sheet (SDS) for each hazardous substance proposed to be used prior to delivery of the material to the jobsite.

F. Dust Control and Monitoring Plan

- 1. Submit a plan detailing the means and methods for controlling and monitoring dust generated by demolition and other work on the site for the Engineer's acceptance prior to any work at the jobsite.

- a. Identify methods to comply with all applicable regulations including but not limited to the Bay Area Air Quality Management District (BAAQMD) visible emissions regulation and Public Nuisance Rule.
- b. Outline practices for preventing dust emissions and procedures to be used during operations and maintenance activities.
- c. Include measures for the control of paint overspray and abrasive blasting emissions, including, but not limited to containment, ventilation systems and monitoring for damage and leaks.
- d. Describe equipment and methods used to monitor compliance with the plan.
- e. For recoating of the cold boxes, see Section 09 90 00, Painting and Coatings, paragraph 1.5B.

G. Noise Control and Monitoring Plan

- 1. Submit a plan detailing the means and methods for controlling and monitoring noise generated by construction activities, including demolition, alteration, repair or remodeling of or to existing structures and construction of new structures, as well as by items of machinery, equipment or devices used during construction activities on the site. The plan shall detail the equipment and methods used to monitor compliance with the plan.
 - a. For surface preparation of the cold boxes for painting, see Section 09 90 00, Painting and Coatings, paragraph 1.5A.

H. Vibration Control and Monitoring Plan

- 1. Submit a plan detailing the means and methods for controlling and monitoring surface vibration generated by demolition and other work on the site. The plan shall detail the equipment and methods used to monitor compliance with the plan.

I. Waste Disposal Records

- 1. Copies of waste management and disposal records including bills of lading, manifests, weight tickets, and receipts from waste management facilities shall be submitted to the Engineer. This provision applies to Hazardous Wastes, universal wastes, treated wood wastes, solid wastes disposed at landfills, and radioactive wastes.
- 2. Hazardous Waste Manifests

- a. Use the “Uniform Hazardous Waste Manifest”, EPA form 8700-22. Contractor shall prepare and Engineer will review all hazardous waste manifests for acceptability prior to use.
- b. Submit the “Generator’s Initial Copy” and a legible photocopy of the first page of hazardous waste manifests, land disposal restriction forms, or other documentation required by applicable regulations governing transport and disposal of Hazardous Wastes for disposal of hazardous substances within 5 days of off haul.

J. Sampling and Analysis Plan

1. Submit a project-specific Sampling and Analysis Plan (SAP) for projects including but not limited to sanitary sewer discharge samples, waste characterization samples, air samples, and site characterization involving soil, groundwater, and soil gas samples requiring laboratory analysis. The SAP shall contain information noted below.
 - a. Project Description – Describe site history, data quality objectives (e.g. waste characterization), and any site background or other relevant information related to sampling.
 - b. Qualified Environmental Professional – Name the project manager(s) that will be in charge of overseeing sampling and analysis performed for this project and list their qualifications.
 - c. Sampling Objectives – Detail the location, number, type (e.g., grab or composite), material being sampled (e.g., soil, bead blast, groundwater, air, etc.), and the sampling methods and procedures to be used to obtain the samples. Include a site map showing sample locations when applicable.
 - d. Field Sampling Practices – Include the field practices to be used for sampling.
 - e. Analytical Laboratories and Methods – Include the name of the laboratory performing the analysis on the samples. Provide the Environmental Laboratory Accreditation Program (ELAP) certificate number of laboratory that will analyze samples for suspected hazardous substances.

K. Remedial Action Plan

1. A Remedial Action Plan shall propose a series of engineering and geological procedures, in order to feasibly perform contamination cleanup actions. The plan shall include the methodology, planning and design of necessary systems for the removal, treatment, and disposal of all identified soil and/or water

contaminants. The Contractor shall receive concurrence from the appropriate regulatory agencies if required, or if requested by the Engineer. The actions shall satisfy the requirements of agency regulators, achieve cleanup goals, and ensure worker safety. The plan shall be prepared by a Professional Engineer, Registered Geologist, or Certified Industrial Hygienist.

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 IMPORTED FILL MATERIAL

- A. Submit a certificate of analysis and/or laboratory analytical reports for approval by the Engineer prior to use on a project. Use of imported fill will be evaluated using guidance in the DTSC Clean Imported Fill Material advisory noted above as applied to the specific import fill and receiving site conditions.
 - 1. Engineer may witness sampling and may take samples for District records and for additional analyses if required. Notify the Engineer at least 3 work days prior to sampling.

3.2 STORM WATER

- A. Conduct all inspections, sampling, reporting, and other required provisions in the SWPPP.
- B. Upload all necessary documents to SMARTS to comply with the Construction General Permit.
- C. Follow all provisions in local storm water permits and/or rules during construction.
- D. Maintain sufficient best management practices or other controls as outlined in the storm water management plan to prevent impacts to storm water from pollution including soil, dust, stored hazardous materials, and construction activities.

3.3 WATER DISPOSAL

- A. Sanitary Sewer Discharges
 - 1. Conduct all required sampling specified in local discharge permits applicable to the sanitary sewer discharge.
 - 2. Maintain sufficient controls (e.g., settling tanks for suspended solids) on sanitary sewer discharges to meet or exceed local discharge permit requirements
 - 3. Submit all reports required in local discharge permits to the Engineer for review and approval prior to submitting them to an agency.

B. Non-Storm Water Discharges

1. Follow provisions in non-storm water discharge plan if discharging groundwater, wash water, or other non-storm water discharges.

3.4 WASTE MANAGEMENT & DISPOSAL

- A. Segregate, stage, label/mark, and properly manage waste at the jobsite in a manner that complies with applicable regulations and to facilitate proper disposal.
- B. Characterize all liquid wastes, solid wastes, and other wastes prior to removing from the project site. Sampling and analysis shall adhere to the Sampling and Analysis Plan.
- C. Engineer will review laboratory analysis results for District acceptance of Contractor Characterization of waste classification.
- D. Engineer will obtain a Hazardous Waste Generator's EPA ID Number if required for disposal of Hazardous Wastes and TWW.
- E. Engineer will give Contractor written notice to dispose of all or a portion of the waste material at a Class I disposal site if the Engineer determines that such disposal is required based on review of Contractors waste characterization and the analytical results of samples collected. Non-hazardous waste shall be disposed as outlined in the approved Waste Management Plan.
- F. Waste materials from different sites shall not be transported or mixed until the material is determined to be non-hazardous. Unless pre-approved by the Engineer for direct hauling, excavation materials shall be stored or stockpiled at each site until classified and accepted for movement by the Engineer.
- G. Transport materials and/or wastes in accordance with all local, state, and federal laws, rules, and regulations.
- H. Contractor shall not assume any soil is approved for offsite reuse. Offsite reuse is only permitted with explicit approval from the Engineer after a careful review of the Contractor's proposed reuse.
- I. Contractor shall be responsible for all costs of disposal of Construction and Demolition Waste material and liquid wastes, along with any waste generated by the Contractor's work including Hazardous Waste generated from hazardous materials identified in Document 00 31 24 – Material Assessment Information except as outlined in paragraph E above.

3.5 AIR QUALITY CONTROL

- A. Implement all necessary air pollutant construction measures per the Bay Area Air Quality Management District “Basic Construction Mitigation Measures” (BAAQMD CEQA Guidelines May 2017), including, but not limited to the following:
1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
 2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
 3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
 4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
 5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
 6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
 7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer’s specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
 8. The contractor shall post a District-furnished, publicly visible sign with District and Air District contact information regarding dust complaints.
- B. Implement all necessary air pollutant construction measures per the Bay Area Air Quality Management District “Additional Construction Mitigation Measures” (BAAQMD CEQA Guidelines May 2017) including but not limited to the following:
1. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.

2. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
3. Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
4. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
5. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
6. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
7. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel.
8. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
9. Minimizing the idling time of diesel-powered construction equipment to two minutes.
10. The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NO_x reduction and 45 percent PM reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.
11. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).
12. Requiring that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NO_x and PM.
13. Requiring all contractors use equipment that meets CARB's most recent certification standard for off-road heavy duty diesel engines.

- C. Implement all necessary District air pollutant construction measures, including but not limited to the following:
1. Gravel or apply non-toxic soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites. Submit specifications for any dust palliatives applied to unpaved roads to the Engineer.
 2. Water and/or cover soil stockpiles daily.
 3. All transitions from soil to a paved road shall have best management practices applied to prevent drag out of soil.
 4. Water used for dust control shall not run off the job site and cause erosion or other issues.
 5. Use of recycled water for dust control is encouraged.
 6. Use line power instead of diesel generators at all construction sites where line power is available.
 7. Temporary sources of air emissions (such as portable pumps, compressors, generators, etc.) shall be electrically powered unless the use of such equipment is not practical, feasible, or available.
 8. All portable engines and equipment units used as part of construction shall be properly registered with the California Air Resources Board or otherwise permitted by the appropriate local air district, as required
 9. Minimize the use of diesel generators where possible.
 10. Follow applicable regulations for fuel, fuel additives, and emission standards for stationary, diesel-fueled engines.
 11. Locate generators at least 100 feet away from adjacent homes, schools, and parks.
 12. Perform regular low-emission tune-ups on all construction equipment, particularly haul trucks and earthwork equipment.
 13. On road and off-road vehicle tire pressures shall be maintained to manufacturer specifications. Tires shall be checked and re-inflated at regular intervals.
 14. Demolition debris shall be recycled for reuse to the extent feasible. See the Construction and Demolition Waste Disposal Plan paragraphs above for requirements for wood treated with preservatives (TWW).
- D. Dust Control during Abrasive Blasting:

1. Provide a containment system for the structure prior to beginning abrasive blasting operations. The system shall remain in place during the abrasive blasting operations and the painting of exterior surfaces.

3.6 DUST MONITORING DURING DEMOLITION AND CONSTRUCTION:

- A. Provide air monitoring along the perimeter of the job site. A minimum of 4 stations, one on each side of the District property, shall be established, capable of continuous measurement of total particulate concentration when any dust generating activity is occurring.
- B. Conduct real-time air monitoring at appropriate locations onsite based on wind direction, type of construction activity, and sensitive receptors to ensure dust control measures are effective.
- C. All environmental and personal air sampling equipment shall be in conformance with the Association of Industrial Hygiene and National Institute of Safety and Health (NIOSH) standards.
 1. All analysis shall be completed by an ELAP certified laboratory for the specific parameters of interest.
 2. The Contractor shall provide to the Engineer, within 72 hours of sampling, all test results.
- D. The dust control system shall comply with the requirements of this section and any applicable laws and regulations. Specific limitations that shall be met include the following:
 1. Ringelmann No. 1 Limitation: Contractor shall not emit from any source for a period or periods aggregating more than three minutes in any hour, a visible emission which is as dark or darker than No. 1 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree.
 2. Opacity Limitation: Contractor shall not emit from any source for a period or periods aggregating more than three minutes in an hour an emission equal to or greater than 20% opacity as perceived by an opacity sensing device, where such device is required by Air Quality Management District regulations.

3.7 VIBRATION CONTROL

- A. Limit continuous surface vibration to no more than 0.5 in/sec Peak Particle Velocity (PPV), measured at the nearest residence or other sensitive structure. See Section 01 14 00.

3.8 NOISE CONTROL

- A. Comply with sound control and noise level rules, regulations, and local ordinances and in the CEQA documents which apply to any work performed pursuant to the contract. Noise-generating activities shall be limited to the hours specified in Section 01 14 00.
- B. Take appropriate measures, including muffling of equipment, selecting quieter equipment, erecting noise barriers, modifying work operations, and other measures as needed to bring construction noise into compliance.
- C. Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer.
- D. Use the best available noise control techniques (including mufflers, intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) for all equipment and trucks, as necessary.
- E. Truck operations (haul trucks and concrete delivery trucks) shall be limited to the daytime hours specified in Section 01 14 00.
- F. Stationary noise sources (e.g., chippers, grinders, compressors) shall be located as far from sensitive receptors as possible. Enclosure opening or venting shall face away from sensitive receptors. Enclosures shall be designed by a registered engineer regularly involved in noise control analysis and design.
- G. If impact equipment (e.g., jack hammers, pavement breakers, rock drills etc.) is used during project construction, Contractor is responsible for taking appropriate measures, including but not limited to the following:
 - 1. Hydraulically or electric-powered equipment shall be used wherever feasible to avoid the noise associated with compressed-air exhaust from pneumatically powered tools. However, where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed-air exhaust shall be used. External jackets on the tools themselves shall be used, where feasible. Quieter procedures, such as drilling rather than impact equipment, shall be used whenever feasible. It is the Contractor's responsibility to implement any measures necessary to meet applicable noise requirements.
 - 2. Impact construction including jackhammers, hydraulic backhoe, concrete crushing/recycling activities, vibratory pile drivers etc. shall be limited to the daytime hours specified in Section 01 14 00.
 - 3. Erect temporary noise barriers or noise control blankets around the construction site, particularly along areas adjacent to residential buildings.

4. Limit the noisiest phases of construction to 10 work days at a time, where feasible.
5. Notify neighbors/occupants within 300 feet of project construction at least thirty days in advance of extreme noise generating activities about the estimated duration of the activity.
6. Noise Monitoring shall be conducted periodically during noise generating activities. Monitoring shall be conducted using a precision sound-level meter that is in conformance with the American National Standards Institute (ANSI) Standard S1.4, Specification for Sound Level Meters. Monitoring results shall be submitted weekly to the Engineer.

3.9 LIGHTING USED DURING NIGHTTIME WORK

- A. Ensure that temporary stationary lighting used during nighttime construction is only used when needed. All lighting used for nighttime construction shall be designed, installed, and operated to minimize glare that affects traffic near the work zone or that causes annoyance or discomfort for residences near the work zone. Lighting fixtures shall be shielded and located and aimed to provide the required level of illumination and uniformity in the work zone without the creation of unnecessary glare.

3.10 CONTAMINATED SOILS AND GROUNDWATER SUSPECTED OR ENCOUNTERED DURING EXCAVATION

- A. If excavation site is on, or adjacent to a property with institutional controls or a land use covenant, ensure the following:
 1. Any existing remedial features will not be affected
 2. Preferential pathways will not be created
 3. Existing groundwater and/or soil gas contamination will not create health impacts related to the future use and maintenance of the infrastructure
 4. Soil disturbed during future maintenance can be managed by personnel without Hazardous Waste Operations and Emergency Response training.
- B. If unexpected environmental contamination is discovered during excavation, the Contractor shall immediately stop work and notify the Engineer.
- C. Monitor for unexpected environmental contamination during excavation. This will be identified based on visual evidence or PID screening, and may include the following:
 1. Oily or shiny soils.

2. Soils saturated with a liquid other than water (i.e., free-phase liquids).
 3. Soils with an appreciable chemical or hydrocarbon odor.
 4. Soils with elevated organic vapor measurements with a PID.
 5. Soil discoloration not related to lithologic changes.
 6. Color, odor, or sheen in groundwater.
- D. If a remedial plan is required to address contamination discovered during excavation, the District may require the installation of a Clean Utility Corridor (CUC) and regulatory concurrence with the remedial plan. The plan will be prepared by a Professional Engineer, Professional Geologist, CIH, or other qualified environmental professional(s), and will confirm the CUC is protective of District workers who are not HAZWOPER certified.
- E. If soil and/or groundwater contamination are anticipated or observed during trenching for, the installation of the new water mains, or during trenching for the new service laterals:
1. Provide a complete and specific written remedial plan prepared by appropriate qualified environmental professionals, with the Site-Specific Health and Safety Plan prepared by a Certified Industrial Hygienist.
 2. Install a CUC in accordance with specifications.
 3. Appropriately characterize soils and groundwater that exhibit evidence of contamination.
 4. Collect confirmation soil and groundwater waste samples for laboratory analysis to characterize the waste.
 5. Dispose of contaminated soils at a District-approved facility. Refer to Appendix B for a list of approved facilities.

3.11 SAMPLING AND ANALYSIS

- A. Sampling shall conform to the submitted Sampling and Analysis Plan and shall include all of the following:
1. Appropriate methods for handling, preservation, and container selection
 2. A documented chain of custody with:
 - a. An identifying sample number assigned for each sample
 - b. Name and organization of each person having custody of the sample

- c. Job name and location
 - d. Time of day and date sample taken
 - e. Material sampled
 - f. Tests to be performed
- 3. For projects involving acquisition or sampling conducted under regulatory oversight, Quality Assurance & Quality Control (QA/QC) samples shall be collected and analyzed.
- B. Analytical methods shall be appropriate and approved for the purpose of the sampling.
 - 1. Analysis of wastes shall be conducted according to methods listed in Environmental Protection Agency Document SW 846.
 - 2. Analysis of wastewaters and sanitary sewer discharges shall comply with methods outlined in 40 CFR 136.
- C. Submit laboratory analysis results that include:
 - 1. Sampling and analytical methods
 - 2. Sample locations
 - 3. Completed Chain of Custody
 - 4. QA/QC reports received from the laboratory
 - 5. Drawings, maps, photographs, or other descriptions that clearly identify what location or material is represented by the sample

3.12 NOT USED.

END OF SECTION

SECTION 01 35 53

SECURITY PROCEDURES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included:

1. Requirements of this section apply to work at the Main Wastewater Treatment Plant (MWWTP), 2020 Wake Avenue, Oakland, CA.
2. Contractor shall comply with the District's protocol as described herein for personnel identification, site access control, and contractor deliveries. All Contractor personnel shall be badged or temporarily badged. Contractor may obtain a temporary badge at the guard shack. Contractor's staff without a badge shall check in with the guard shack at the front of the MWWTP.
3. Security of the site(s) and Contractor's equipment and tools shall be the Contractor's responsibility from commencement of work through contract completion.
4. Contractor's site security monitor shall be on-site and available at all times while work is being performed ensuring that requirements of this section are met. This individual may be the superintendent.

B. Related Sections:

1. Section 01 11 00 – Summary of Work
2. Section 01 14 00 – Work Restrictions
3. Section 01 35 24 – Project Safety Requirements
4. Section 01 50 00 – Temporary Facilities and Controls

1.2 SUBMITTALS

- ###### A.
- Provide daily sign-in log to the Engineer identifying all personnel on the job for that workday. Logs shall be provided to the Engineer at the end of each workday. Log shall include: individuals' full name, company and company phone number. Logs shall be scanned as a PDF and uploaded to the CMIS for each day of work; scanned logs shall be legible. Hard copies shall be maintained by the Contractor for District's review when requested.

- B. Provide a legible photo copy of the personnel's current California Driver's License, California Identification Card (issued by the California Department of Motor Vehicles), or current driver's license or photo identification card from another State in the United States for all personnel working on site whether or not they have been issued a District photo identification badge. Provide these copies no later than the first day the personnel report to the work site. These copies shall be retained by the Engineer for the duration of the project and will be returned to the contractor or shredded, at Contractor's discretion, once the project is completed and all matters between District and Contractor are closed out.
- C. Submit to the Engineer the Key Control Plan per Article 1.5 B.
- D. Submit individual District photo identification badge application forms for all personnel who will work at the site and require badges per Article 1.3.B. Along with each application form, provide the Engineer with the following:
 - 1. A copy of the individual's current California Driver License, California DMV Issued ID card, or the equivalent from another state. Contractor shall verify that each employee provides valid proof of his/her identity and that those employees who drive are properly licensed.
- E. Submit name of individual(s) designated as the site security monitor(s), and that individual's cell phone contact number.
- F. Submit to the Engineer acknowledgement of Contractor Deliveries requirements prior to allowing deliveries to the site.
- G. Submit executed Photo Confidentiality Agreement prior to project mobilization.

1.3 PERSONNEL IDENTIFICATION AND BADGING

- A. Contractor's personnel and all people associated with the work will be issued individual District photo identification badges that will be valid for the duration of the project.
- B. Contractor shall make arrangements with the Engineer to schedule a day for employees to report to the MWWTP badging facility for preparation of photo identification badges. Proof of identification (e.g. driver's license) and a completed District Non-Employee Access Card Request Form (Form Number K-073A, see Appendix A) must be provided for each individual at the time they come to the District to have their photo taken upon issuance of a Photo ID Badge. The Contractor shall repeat this procedure on an as-needed basis when additional photographic identification badges are required. If a photographic identification badge cannot be immediately issued due to badging backlog, the Contractor's employee may perform work the same day using a temporary badge. The Contractor's employee is required to exchange the temporary badge for the photographic identification badge within five (5) days.

C. Record Keeping

1. Contractor shall keep a written record of the name, employer, work telephone number and a copy of the current driver's license or current State-issued identification card of each person issued a Photo ID Badge.
2. Lost or missing badges shall be reported immediately to the Engineer. Upon request, the District may issue a replacement card at the expense of Contractor.
3. A cumulative list of lost or missing Photo ID Badges shall be kept by the Contractor and submitted to the Engineer with monthly progress documentation, or upon the request of the Engineer.
4. All project specific Photo ID Badges shall be surrendered to the District no later than at the completion of the contract.
5. The Contractor shall immediately surrender to the District the badges of any Contractor's employee that is reassigned to other sites or terminated during the construction. The Contractor shall be responsible for collecting and returning the badges to the District when a contractor's staff leaves the company or is no longer assigned on that project; and all Photo ID Badges must be returned to the Engineer (who will return them to Security Administration) when the project is complete, with no exceptions.

D. The District will also issue badges at the MWWTP main gate badging station to delivery drivers and other temporary workers after reason for site visit is confirmed by the Contractor and the individual has signed in with the District's security officer. The badges shall be returned to the security officer upon leaving the site.

E. All personnel associated with the work shall be required to wear District-issued identification badge at all times while working at the site. Photo ID Badges shall be attached above the waist on outer garments or affixed to a hard hat and shall be visible at all times. Any Contractor employee or worker who does not display a photo identification badge while on site shall be required to leave the site or will be denied access until such time as they have an approved badge.

F. Upon request, badges shall be shown to District's staff or security officers. Persons without badges shall be required to immediately leave the site unless the Contractor's site security monitor can verify that the person is required on site.

G. Emergency (unplanned) occasional site access – For emergency access as determined by the Contractor and approved by the Engineer, the Contractor's site security monitor shall verify the identity of the visitor entering without a Photo ID Badge. That person will be deemed to be a visitor and must be escorted at all times while on the site, by a District employee or a Contractor employee that does

h

ave a Photo ID Badge and is held responsible for that visitor. A legible photo copy of the visitor's current California Driver's License, California Identification Card (issued by the California Department of Motor Vehicles), or current driver's license or photo identification card from another State in the United States must be made on the site by the Contractor or the Engineer, and attached to the daily log of site personnel for that day.

- H. The Contractor will be assessed \$250 for each unreturned Photo ID Badge or each replacement badge, which shall be withheld from final payment.
- I. Contractor and all other people associated with the work that enter the site are required to possess and carry a valid and current California Driver's License, California Identification Card (issued by the California Department of Motor Vehicles), or current driver's license or photo identification card from another State in the United States. This identification shall include a photograph and signature of the holder. Personnel without such identification shall be removed from the site by the Contractor.

1.4 BACKGROUND CHECKS

- A. Upon request and at no additional cost to the District, the Contractor shall provide such information as necessary and as allowed by law to complete a background check on any person that enters the site.
- B. The District reserves the right to deny access to the site to any person as allowed by law.

1.5 SITE ACCESS CONTROL

- A. At the end of each workday, any gates, hatches, doors, windows, manways, and exterior ladders, etc. shall be secured, closed, and locked. Any alarmed system which is activated or disabled during the workday shall be tested through to the alarm monitoring station for proper actuation.
- B. At the end of each workday, secure all equipment, hazardous materials, tools, materials, and flammable fluids. The Contractor shall maintain key control to assure only authorized personnel have access to equipment, hazardous materials, tools, materials, and flammable fluids. Prepare a Key Control Plan outlining the lock system to be used along with the list of personnel who will be issued keys and are authorized to use said keys. Upon loss of critical keys, the Contractor shall replace all corresponding locks and re-issue keys to prevent unauthorized access.
- C. Unless otherwise indicated on the Drawings, existing fences and gates at the site shall remain intact and in use throughout construction. The existing perimeter security of the site shall be maintained at all times. Fences and gates that are breached due to construction (e.g., construction of a utility crossing under a

fence), shall be restored by the end of working hours each day. The District reserves the right to request additional fencing around any areas of the construction site. Additional fencing shall be paid as extra work.

- D. Contractor-requested modifications to existing fences and gates are subject to Engineer's approval.
- E. NOT USED.
- F. At the Main Wastewater Treatment Plant, the District operates an existing security checkpoint officer at the Plant's main entry gate. The security checkpoint will be staffed by a District security officer during all regular working hours and other hours as may be determined by the District. As determined by the District, roving security officer(s) may also patrol the treatment plant property.
- G. Facility perimeter gates are normally opened only for emergency or infrequent vehicle ingress/egress. Perimeter gates are to be kept closed at all other times.
- H. The District reserves the right to establish a Security Check-in/Out location for any job site.
- I. The District reserves the right to assign a District's security officer to provide security for any job site.
- J. The Contractor is advised that all persons seeking entry to the site will be required to show proof of identification (e.g. driver's license). All Contractor's trucks and drivers are subject to the same identification and search requirements.
- K. At all times, security measures at the site shall, at a minimum, be equal to the security measures prior to initiation of the project as determined by the Engineer.

1.6 DAILY SITE ACCESS PATH

- A. General:
 - 1. All personnel shall take the most direct path from their point of site entry to their work area and shall not loiter in non-work areas.
- B. At the Main Wastewater Treatment Plant:
 - 1. All personnel shall enter the site through the main gate on Wake Avenue and proceed directly to the work area of Contractor's on-site office.
 - 2. Contractor's personnel shall use contractor-provided restroom facilities.
 - 3. Contractor shall only park at designated areas. Contractor shall observe speed limit.

1.7 VEHICLE AND EQUIPMENT SEARCH

- A. All vehicles and packages shall be subject to search by District designated security personnel or the Engineer.
- B. Vehicles typically may be required to wait depending upon the amount of traffic. If the driver/owner of a vehicle will not allow the search, access to the site will be denied. All vehicles on District property may be searched for items that may pose a threat to the facility or to personnel. Informational signage will be posted in clear view at the entrance gate.

1.8 PHOTO CONTROL

- A. Complete the Photo Confidentiality Agreement in Appendix A.
- B. Restrict photos to work zone.
- C. Photos, negatives, and other images of the project shall be destroyed at project completion when all claims are resolved.
- D. The District reserves the right, at any time, to disallow photography at any site, of any District facilities, equipment, or processes which are deemed to be sensitive in nature, either due to current threat-level conditions or internal assessment of the business need and benefit to the District.

1.9 CONTRACTOR DELIVERIES – SECURE SITE

- A. United States Postal Service, Federal Express, UPS, or similar mail and parcel deliveries may be addressed to the Contractor or any subcontractor or supplier to the Main Wastewater Treatment Plant, 2020 Wake Ave., Oakland, CA or other offsite point established by Contractor.
- B. All deliveries shall be made during normal working hours as defined in Section 01 14 00 Work Restrictions.
- C. Follow the guidelines in US Postal Inspection Service Publication 166, Mail Center Security Guidelines. A copy of these guidelines can be found at: <http://about.usps.com/publications/pub166/welcome.htm>.
- D. Mail and Packages:
 - 1. Contractor shall either:
 - a. Set up off-site package processing center with a separate address and then bring deliveries to the site with its own vehicles, or
 - b. Take delivery in a separate processing “shed” on site, but separated from main facility areas at a location approved by the Engineer. T

his site can be the Contractor's separate temporary office facility outside of the main treatment plant gate.

2. All mail and packages whether delivered to the Contractor's onsite or offsite facility shall not be allowed into the Main Wastewater Treatment Plant until such time as they have been screened by Contractor's personnel in accordance with the US Postal Inspection Service Publication 166 mail and package screening guidelines, or with the Contractor's submitted mail screening procedures.

E. Freight and bulk deliveries:

1. All deliveries will be stopped at the security gate.
2. District's security officer will notify Contractor's site security monitor.
3. Truck drivers will be subject to the identification requirements as specified in Article 1.3 of this section.
4. Deliveries of freight and bulk (larger packages, crates, equipment, or materials) are permitted to enter the site only after:
 - a. The vehicle is met at the main gate by Contractor's site security monitor,
 - b. The source and contents of the packages, crates, equipment, or materials are verified by the Contractor's site security monitor,
 - c. The driver and others provide the security officer with sign-in information and badge(s) are issued to the driver (and others as required).

- F. All freight and bulk deliveries made to the site may be subject to search and inspection regardless of the final delivery destination. The Contractor shall inform all delivery companies and drivers in advance that all freight entering the site is subject to search. Contractor shall submit acknowledgment from all freight and bulk delivery companies that the companies have been informed of and consent to such searches.

1.10 PRODUCTIVITY LOST AND COST INCURRED DUE TO SECURITY REQUIREMENTS

- A. Time lost and/ or costs incurred due to compliance with District security measures (e.g., deliveries or personnel held at the gate without badges or identification, refusal of package deliveries, etc.) shall be deemed an inexcusable delay.

- B. Failure to comply with these security measures may lead to the termination of the Contractor's right to proceed under the contract and may lead to termination of the contract, in accordance with 11.1 of Document 00 72 00 General Conditions.

1.11 PAYMENT

- A. Full compensation for doing all work and furnishing all materials required to comply with site security requirements as specified in these Specifications shall be included in the price bid for the contract.

PART 2 - NOT USED

PART 3 - NOT USED

END OF SECTION

SECTION 01 42 19

REFERENCE STANDARDS

1.1 GENERAL

A. Referenced Standards and Design Codes:

The standards referred to, except as modified, shall have full force and effect as though printed in this Specification, and shall be the latest edition or revision thereof in effect on the bid opening date, unless a particular edition or issue is indicated. Copies of these standards are not available from the District. The Engineer will furnish, upon request, information as to how copies may be obtained. Abbreviations and terms, or pronouns in place of them, shall be interpreted as follows:

AAMA:	Architectural Aluminum Manufacturer's Association
AAN:	American Association of Nurserymen
AAR:	Association of American Railroads
AASHTO:	American Association of State Highway and Transportation Officials, Standard Specifications
AATCC:	American Association of Textile Chemists and Colorists
ACI:	American Concrete Institute, Standards
AFBMA:	Anti-Friction Bearing Manufacturer's Association, Inc.
AGA:	American Gas Association
AGC:	Associated General Contractors
AGMA:	American Gear Manufacturer's Association
AHAM:	Association of Home Appliance Manufacturer's
AI:	The Asphalt Institute
AIA:	American Institute of Architects
AISC	American Institute of Steel Construction, Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings, and the AISC Code of Standard Practice

AISI:	American Iron and Steel Institute
AITC:	American Institute of Timber Construction
AMCA:	Air Moving and Conditioning Association, Standards
ANS:	American Nuclear Society
ANSI:	American National Standards Institute
APA:	American Plywood Association
API:	American Petroleum Institute
APWA:	American Public Works Association, Standard Specifications for Public Works Construction
ASA:	Acoustical Society of America
ASAE:	American Society of Agriculture Engineers
ASCE:	American Society of Civil Engineers
ASHRAE:	American Society of Heating, Refrigeration and Air Conditioning Engineers
ASLE:	American Society of Lubricating Engineers
ASME:	American Society of Mechanical Engineers
ASQC:	American Society of Quality Control
ASSE:	American Society of Sanitary Engineers
ASTM:	American Society for Testing and Materials, Standards
AWG:	American Wire Gauge
AWPA:	American Wood-Preservers' Association, Standards
AWPI:	American Wood Preservers Institute
AWS:	American Welding Society
AWWA:	American Water Works Association, Standards

BBC:	Basic Building Code, Building Officials and Code Administrators International
BHMA:	Builders Hardware Manufacturer's Association
CAL/OSHA:	California/Occupational Safety and Health Administration, Standards
CBM:	Certified Ballast Manufacturer's
CBC:	California Building Code
CCR:	California Code of Regulations
CEMA:	Conveyors Equipment Manufacturer's Association
CGA:	Compressed Gas Association
CISPI:	Cast Iron Soil Pipe Institute, Standards
CLPCA:	California Lathing and Plastering Contractors Association
CLFMI:	Chain Link Fence Manufacturer's Institute
CMAA:	Crane Manufacturers' Association of America
CMA:	Concrete Masonry Association
CMC:	California Mechanical Code
CPC:	California Plumbing Code
CRSI:	Concrete Reinforcing Steel Institute, Standards
CSS:	CalTrans Standard Specifications, State of California, Department of Transportation
DCDMA:	Diamond Core Drill Manufacturer's Association
DOSH:	Division of Occupational Safety and Health, State of California, Department of Industrial Relations
EIA:	Electronic Industries Association
ETL:	Electrical Test Laboratories

FED/OSHA:	Federal Occupational Safety and Health Administration, Standards
IBC:	International Building Code
ICBO:	International Conference of Building Officials
ICEA:	Insulated Cable Engineers Association
IEEE:	Institute of Electrical and Electronic Engineers
IES:	Illuminating Engineering Society
IME:	Institute of Makers of Explosives
IP:	Institute of Petroleum (London)
IPC:	Institute of Printed Circuits
IPCEA:	Insulated Power Cable Engineers Association
ISA:	Instrument Society of America
ISO:	International Organization of Standardization
ITE:	Institute of Traffic Engineers
MBMA:	Metal Building Manufacturer's Association
MPTA:	Mechanical Power Transmission of Association
MTI:	Marine Testing Institute
MSS:	Manufacturers Standardization Society
NAAM:	National Association of Architectural Metal Manufacturers
NACE:	National Association of Corrosion Engineers, Standards
NBS:	National Bureau of Standards
NCCLS:	National Committee for Clinical Laboratory Standards
NEC:	National Electric Code
NEMA:	National Electrical Manufacturers' Association, Standards

NFPA:	National Fire Protection Association
NFPA:	National Forest Products Association
NFPA 5000:	Building Construction and Safety Code
NGLI:	National Lubricating Grease Institute
NMA:	National Microfilm Association
NWMA:	National Woodwork Manufacturers Association
OSHA:	Occupational Safety and Health Administration
PCA:	Portland Cement Association
RIS:	Redwood Inspection Service, Standard Specifications
RVIA:	Recreational Vehicle Industry Association
RWMA:	Resistance Welder Manufacturer's Association
SAE:	Society of Automotive Engineers
SAMA:	Scientific Apparatus Makers Association
SDI:	Steel Door Institute
SIS:	Swedish Standards Association
SMA:	Screen Manufacturer's Association
SMACNA:	Sheet Metal and Air Conditioning Contractors National Association
SPR:	Simplified Practice Recommendation
SSBC:	Southern Standard Building Code, Southern Building Code Congress
SSPC:	Steel Structures Painting Council, Specifications
SSPWC:	Standard Specifications for Public Works Construction
TAPPI:	Technical Association of the Pulp and Paper Industry
TFI:	The Fertilizer Institute

UBC:	Uniform Building Code of the International Conference of Building Officials
UPC:	Uniform Plumbing Code
UL:	Underwriters Laboratories
WCLA:	West Coast Lumbermen's Association, Standard Grading and Dressing Rules
WCLIB:	West Coast Lumber Inspection Bureau
WCRSI:	Western Concrete Reinforcing Steel Institute
WIC:	Woodwork Institute of California
WRI:	Wire Reinforcement Institute, Inc.
WWPA	Western Wood Products Association

END OF SECTION

SECTION 01 43 09

WIND DESIGN REQUIREMENTS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Section Includes: Wind design requirements for the following:
 - 1. Anchorage of mechanical and electrical equipment
 - 2. Wind design of tanks and anchorage of tanks.
 - 3. Other structures or items as specified or indicated on the Drawings.
- B. Related Sections:
 - 1. Section 01 33 12 – Seismic Design Criteria

1.2 SYSTEM DESCRIPTION

- A. Design Requirements:
 - 1. Wind loads for Structures other than Tanks: In accordance with 2013 California Building Code (CBC), Section 1609 – Wind Loads, with design parameters listed below:
 - a. Ultimate Design Wind Speed: 115 miles per hour.
 - b. Risk Category: III or IV.
 - c. Exposure Category: C.
 - d. Load Combinations: In accordance with 2013 CBC:
 - 1) Section 1605.2, Load combinations using strength design or load and resistance factor design; or
 - 2) Section 1605.3, Load combinations using allowable stress design
 - 2. Wind loads for Tanks: In accordance with either:
 - a. ASCE 7-10 (Minimum Design Loads for Buildings and Other Structures) Chapter 29, using the design parameters in A. 1. of this Section, or;

- b. AWWA D100-11 (Welded Carbon Steel Tanks), Section 3 – General Design, with the design parameters listed below:
 - 1) Basic Wind Speed: 85 miles per hour.
 - 2) Wind Exposure: C.
 - 3) Wind Importance Factor, I: 1.15.
 - 4) Load Combinations: Per 2013 CBC Section 1605.3, Load combinations using Allowable Stress Design.
- 3. Anchorage to Concrete: In accordance with 2013 CBC Sections 1908, or 1909 with the following:
 - a. No one-third increases in the allowable loads of Table 1908.2 are permitted for wind loading;
 - b. Post-installed anchors must comply with ICC-ES AC 193 or ICC-ES AC 308.
- B. Resistance Requirements:
 - 1. Wind loads must be resisted by assemblies of welded plates, and anchor bolts embedded in concrete or bolts fastened to steel frames. All steel assemblies, anchor bolts and fasteners shall be of Type 316 Stainless Steel, unless otherwise indicated on Drawings.
 - 2. Wind loads must be resisted by direct bearing on anchors. Do not use connections in which wind forces are resisted by friction in any part.
 - 3. Anchor bolts shall have a standard hex bolt head unless otherwise indicated on Drawings
 - 4. Do not use sleeve anchors, flush shells, power actuated fasteners, or screws for resisting wind loads.

1.3 SUBMITTALS

- A. Submit in accordance with Section 01 33 00, Submittal Procedures.
- B. NOT USED.

PART 2 AND 3 – NOT USED

END OF SECTION

SECTION 01 45 00

QUALITY CONTROL

PART 1 - GENERAL

1.1 OBSERVATION AND SUPERVISION

- A. The Engineer or their appointed representative will review the Work and the Contractor shall provide facilities and access to the Work at all times as required to facilitate this review.
- B. The Contractor shall be solely responsible to supervise and direct the entire Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to complete the Work in accordance with the Contract Documents. The Contractor shall be solely responsible for the means, methods, techniques, sequences, quality control, and procedures of construction and safety precautions and programs incidental thereto. The foregoing includes work performed by the Contractor's subcontractors. The Contractor shall be responsible to see that the finished Work complies accurately with the Contract Documents.
- C. The Contractor shall designate in writing and keep on the work site at all times during its progress a technically qualified, English-speaking superintendent, who shall not be replaced without written acceptance of the Engineer. The superintendent shall be the Contractor's representative at the job site and shall have authority to act on behalf of the Contractor. All communications given to the superintendent shall be as binding as if given to the Contractor. See also Article 4.2 of Document 00 72 00 General Conditions.
- D. The Contractor's superintendent shall be present at the site of the Work at all times while work is in progress. Failure to observe this requirement shall be considered as suspension of the Work by the Contractor until such time as such superintendent is again present at the site.

1.2 RESPONSIBILITY

- A. The Contractor is responsible for conducting all testing and inspection specifically required by the Specifications and otherwise necessary to ensure compliance with the Contract Documents.
 - 1. Approval of Testing Laboratories: All laboratory work under this contract shall be performed by a laboratory approved by the Engineer, whether the laboratory is employed by the Contractor, or is owned and operated by the Contractor. The basis of approval includes the following:

- a. Testing laboratories performing work in connection with concrete, steel, and bituminous materials shall comply with ASTM E 329 and ASTM D 3666, respectively.
 - b. Testing laboratories performing work not in connection with concrete, steel, bituminous materials, soils and non-destructive testing shall comply with ASTM E 548.
- B. The Engineer may conduct periodic independent testing and inspection to verify compliance with the Contract Documents.
- C. The District reserves the right to back charge the Contractor for retesting of deficient or defective work or products upon written notification. Compensation for retesting on behalf of the District will be made through deductions from the Progress Payments.
- D. The Contractor is responsible for correcting all defective work discovered prior to final acceptance of the Contract, despite the failure of the Inspector(s) to discover it.

1.3 NOT USED.

1.4 AUTHORITY AND DUTIES OF INSPECTOR

- A. Inspectors employed by the District shall be authorized to inspect all work done and materials and equipment furnished to complement the contractor furnished independent inspector.
 - 1. Such inspection may extend to all or any part of the work, and to the preparation, fabrication, or manufacture of the materials and equipment to be used.
 - 2. The Inspector will not alter or waive the provisions of the Contract Documents.
 - 3. The Inspector will keep the Engineer informed as to the progress of the work and the manner in which it is being done.
 - 4. The Inspector will call the Contractor's attention to nonconformance with the Contract Documents that the Inspector may have observed.
 - 5. The Inspector will not be responsible for the adequacy or correctness of the Contractor's means, methods, techniques, sequences, or procedures for construction.
 - 6. The Inspector will not approve or accept any portion of the work, issue instructions contrary to the Contract Documents, or act as foreman for the Contractor.

7. The Inspector may reject defective materials, equipment, or work when it is not in compliance with the Contract Documents.
8. The Inspector will not be responsible for:
 - a. The Contractor's quality control program
 - b. The Contractor's safety program
 - c. Coordinating the work or activities of the Contractor or its subcontractor

PARTS 2 AND 3 - NOT USED

END OF SECTION

SECTION 01 45 27

SHOP INSPECTION

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Includes:

1. Provide the District with advanced notification for Short Term (three consecutive weeks or less at one facility), and Long Term (more than three consecutive weeks at one facility) inspection assignments, and reimburse the District for travel expenses described in this Section. Also see General Conditions Article 3.2.
2. Provide notification to the District of all work performed off the project site in fabrication, assembly, and coating plants; provide safe access to all areas where work is being performed.
3. The District reserves the right to use Third Party Inspectors in lieu of District personnel. All aspects of this section shall also apply to District contracted Third Party Inspectors.
4. For Long Term assignments provide the following:
 - a. Adequate office space including desk, office chair, lighting, and climate control;
 - b. A large format (up to 11 x 17 paper size) printer/scanner/copier and paper and printer supplies for the duration of the assignment;

B. Contractor and its Material Suppliers shall ensure that there shall be adequate lighting, ventilation, and safety procedures in place to permit safe and thorough inspection at all times.

C. All inspection and measurement tools and equipment employed by Contractor or Material Suppliers shall be made available to the District and remain in the area for inspection, and shall be subject to regular inspection and verification by the Contractor that such tools and equipment are properly calibrated and in an operable condition.

D. Contractor and its Material Suppliers shall identify in writing the person responsible for the receipt and coordination of all Inspector communications. A representative from the Material Supplier responsible for Quality Control shall be present and available to the Engineer at all times during the course of inspections.

- E. Contractor and its Material Suppliers shall respond promptly to address and correct all fabrication and inspection processes to comply with the Contract Documents. Corrective measures undertaken by the Contractor and/or Material Supplier shall be documented and the documentation made available for review, inspection and copying by the Engineer at all times.
- F. See individual sections, listed in Article 1.4, for specific processes requiring shop inspection.

1.2 WITNESS NOTIFICATION

- A. The Contractor shall provide advanced written notification including the following information:
 - 1. The related specification section(s);
 - 2. Details of materials, parts or components to be inspected/tested;
 - 3. Name and location of shop to be visited;
 - 4. Shop's contact information;
 - 5. Approved submittal number; and,
 - 6. Proposed dates for those processes described in this and related Sections (Quality Control) for each shop location.
- B. The shop where the inspections and tests will occur shall contact the Engineer to schedule all shop inspections. Visits will be scheduled based on Engineer's availability.
- C. Notification Schedule:

ONE-WAY DISTANCE FROM OAKLAND	SHORT TERM ASSIGNMENTS	LONG TERM ASSIGNMENTS
less than 75 miles	5 work days in advance	15 work days in advance
75 to 200 miles	10 work days in advance	15 work days in advance
greater than 200 miles	15 work days in advance	20 work days in advance
international	30 work days in advance	30 work days in advance

- D. Shift work outside of standard first shift work hours (7 AM to 5 PM), including changes to previously staffed shift work (excluding cancelation of

shift work), require advanced approval by the Engineer. Following approval by the Engineer, shift work shall start no sooner than the first Monday following 10 work days' notice for locations up to 200 miles from Oakland, and the first Monday following 15 work days' notice for locations over 200 miles from Oakland.

- E. If the required notification is not given, the District will schedule the witness inspection at its convenience and the activity to be witnessed shall not proceed until the Engineer arrives or the Engineer notifies the Contractor that it is choosing to waive its witness inspections. In the event that the required notification is not given and the activity has occurred in the absence of the Engineer, the Engineer may reject the processes completed to date and require the activity to be redone.

- 1. Delays resulting from failure to provide the required notification will be non-excusable. Expenses incurred by delays; repeat of the work process; or to correct unacceptable work shall be borne by the Contractor.

F. Out of Country Inspection and Witnessing

- 1. Equipment and items of supply that are subject to witness inspection by the District as identified in Article 1.4, "Witness Schedule" and other contractually required work and all places to be used for their production or testing, shall be available to District personnel. The District's decision that such equipment, items, or work cannot be safely inspected or observed, including a decision that the country, area, or facility in which production or testing is to occur may not be safe for District personnel shall be final and shall preclude the Contractor's utilization of such country, area or facility. The District will consult the US Department of State website (<https://travel.state.gov/content/passports/en/alertswarnings.html>) for "Travel Advisories" to countries and regions to determine the safety of international travel. Areas with travel advisories shall not be considered for procurement of items that require District inspection.

G. Confidentiality or Non-Disclosure Agreements

- 1. Facilities that require execution of a Confidentiality or Nondisclosure Agreement (NDA) shall submit a copy of the agreement for review to the District through the submittal process for the project or purchase agreement prior to requesting District inspection. The NDA will be considered an agreement between the District (not individual inspectors) and the requesting company. The requirements of the California Public Records Act shall supersede the terms of any NDA and language to that effect will be included in the NDA by the District.

1.3 TRAVEL EXPENSES

- A. The Contractor shall include in the bid price all travel expenses for the Engineer to conduct the witness inspections noted if any of the inspections are to be performed at a locality exceeding 125 miles one way from Oakland, CA.
- B. Travel expenses include hotel lodging at an establishment rated three diamond or better by American Automobile Association (AAA), or comparable listing, and a minimum \$61 meal and incidental expenses allowance per day, or at the rate established by US General Services Administration (for domestic) or US Department of State (for international), whichever is greater, for the duration of the trip.
- C. If travel exceeds 200 miles one way from Oakland, CA, in addition to the expenses described in 1.3.B, travel expenses shall also include round trip direct route coach airfare from Oakland, CA; San Francisco, CA; Sacramento, CA; or San Jose, CA Airports to manufacturer's plant or testing facility, mid-sized car rental or taxi services, fuel, tolls, ground transportation to and from the airport, and airport parking at the departing airport; the following expenses shall apply as determined by the Engineer:
 - 1. For international or travel outside the continental United States, per diem rates are those established by the US Department of State for the specific location and dates of travel. Travel expenses may include the direct cost of securing passports, visas, language interpreters, document translators, communications, and internet access.
 - 2. If weekend stays are requested to defray transportation costs, reimbursement for the Engineers' stay over the weekend will include meal allowance, hotel expenses, phone and internet access charges, rental car or transportation charges to and from eating establishments, laundry service, language interpreters, or other necessary business expenses or services.
 - 3. Reimburse the District for any inspection that has to be repeated due to repair or rework of unacceptable work. Reimbursement shall include District Engineers' wages, or if done by a District agent, the agent's complete invoice for the needed inspection.
- D. All fees incurred such as airline reservation change fees, loss of fare due to purchase of nonrefundable tickets, hotel cancellation/rebooking fees, etc., due to Contractor-requested changes to the inspection schedule after the initial notification shall be borne by the Contractor.

1.4 WITNESS SCHEDULE

- A. The District will witness the following processes as specified in the applicable specification sections listed below or as required elsewhere in the Contract Documents. For purposes of estimating, anticipate that one Engineer will cover only one shift of shop inspection work per plant site. The costs for additional inspection required by the operation of more than one work shift per day or by more than one shop inspection site per day shall be included in the bid costs.
- B. NOT USED.

Spec. Section	Section Title and Description
40 95 13	Process Control Panels and Hardware – enclosures assembled for DCS equipment, DCS controllers, all remote I/O cabinets, assembled DCS hardware, etc.

PART 2 - PART 2 – NOT USED

PART 3 - PART 3 – NOT USED

END OF SECTION

THIS PAGE IS LEFT INTENTIONALLY BLANK.

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes: Provide temporary construction facilities, utilities, and controls needed for the work.
- B. Furnished by the District:
 - 1. Water: The District will furnish water for hydrostatic testing of the completed facility. Supply of water will be subject to District operational requirements.
 - 2. Electric Power: The District will furnish 120/240 VAC electric power for the temporary office trailer. The supply of power will be subject to District operational requirements and may not be available during electrical system shutdowns.
- C. Related Sections
 - 1. Section 01 14 00 – Work Restrictions.
 - 2. Section 01 35 44 – Environmental Requirements
 - 3. Section 01 35 53 – Security Procedures

1.2 CONTRACTOR'S STAGING AREA AND WORK ACCESS PLAN

- A. The Contractor shall limit the location of its storage of equipment and materials to the staging area(s) designated on the Drawings and as directed by the Engineer. The Contractor shall make its own arrangements for additional space that may be required and shall bear all associated costs. The Contractor shall submit a work access plan showing its planned access route for deliveries of supplies and mobilization of work force for Engineer's approval prior to mobilization.
- B. The Contractor shall maintain near the work in progress a suitable office or other protected area in which shall be kept project copies of the Contract Documents, project progress records, project schedule, shop drawings and other relevant documents which shall be accessible to the District and Engineer during normal working hours. The Contractor shall make its own arrangements for additional space that may be required and bear all associated costs.

- C. The Contractor shall submit to the Engineer for approval, as part of its mobilization effort, its proposed plan and layout for all temporary offices, sanitary facilities, temporary construction roads, storage buildings, storage yards, temporary water service and distribution, temporary telephone and temporary power service and distribution. The plan shall show all temporary fencing and gates and all proposed access to the work areas. Prior to the removal of existing fence, the Contractor shall provide temporary security fencing at least equal to the existing chain link and barbed wire fencing to protect the existing facilities and structures.
- D. The Contractor shall "winterize" all access roads to provide a surface reasonably satisfactory for traffic during wet winter months. The roads shall be gravel surfaced, even, free from humps and depressions. All costs of complying with this requirement shall be included in the lump sum bid.

1.3 STORAGE - GENERAL

- A. The Contractor shall provide any temporary storage required for the protection of equipment and materials as recommended by manufacturers of such materials.

1.4 STORAGE BUILDINGS

- A. The Contractor shall erect or provide temporary storage buildings of the various sizes as required for the protection of mechanical and electrical equipment and materials as recommended by manufacturers of such equipment and materials, including District furnished materials. The buildings shall be provided with such environmental control systems that meet recommendations of manufacturers of all equipment and materials stored in the buildings. The buildings shall be of sufficient size and so arranged or partitioned to provide security for their contents and provide ready access for inspection and inventory. At or near the completion of the work, and as directed by the Engineer, the temporary storage buildings shall be dismantled, removed from the site, and remain the property of the Contractor.
- B. Combustible materials (paints, solvents, fuels, etc.) shall be safely stored and separated in accordance with the manufacturer's requirements and in compliance with hazardous material storage requirements. Contractor shall be responsible for providing proper storage buildings for combustible materials.

1.5 STORAGE YARDS

- A. The Contractor shall provide temporary storage yards as required for the storage of materials that are not subject to damage by weather conditions. Materials such as pipe, reinforcing and structural steel, shall be stored on pallets or racks, off the ground, and stored in a manner to allow ready access for inspection and inventory. Temporary gravel surfacing of the storage yards shall meet with the approval of the Engineer.

1.6 DELIVERY-STORAGE-HANDLING

A. General:

1. The Contractor shall deliver, handle, and store materials and equipment in accordance with supplier's written recommendations and by methods and means which will prevent damage, deterioration, and loss including theft. Delivery schedules shall be controlled to minimize long-term storage at the site and overcrowding of construction spaces. In particular, the Contractor shall provide delivery/ installation coordination to ensure minimum holding or storage for material or equipment recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other sources of loss.

B. Transportation and Handling:

1. Materials and equipment shall be transported by methods to avoid damage and shall be delivered in dry, undamaged condition in supplier's unopened containers or packaging.
2. The Contractor shall provide equipment and personnel to handle the materials, and equipment by methods that will prevent soiling and damage.
3. The Contractor shall provide additional protection during handling to prevent marring and otherwise damaging packaging, and surrounding surfaces.

C. Storage and Protection:

1. Materials and equipment shall be stored in accordance with supplier's written instructions, with seals and labels intact and legible. Exposed metal surfaces of valves, fittings and similar materials shall be coated with grease in accordance with manufacturer's recommendations to prevent corrosion. Sensitive materials and equipment shall be stored in weather-tight enclosures and temperature and humidity ranges shall be maintained within tolerances required by supplier's written instructions.
2. For exterior storage of fabricated materials, they shall be placed on sloped support above ground. Materials or equipment subject to deterioration shall be covered with impervious sheet covering; ventilation shall be provided to avoid condensation.
3. Loose granular materials shall be stored on solid surfaces in a well-drained area and shall be prevented from mixing with foreign matter.
4. Storage shall be arranged to provide access for inspection. The Contractor shall periodically inspect to assure materials and equipment is undamaged and is maintained under required conditions.

5. Storage shall be arranged in a manner to provide access for maintenance of stored items and for inspection.

1.7 PROJECT SECURITY

- A. The Contractor shall make adequate provisions for the protection of the work area against fire, theft and vandalism, and for the protection of the public and District forces against exposure to injury, and for the security of any offsite storage areas. All costs for this protection shall be included within the Contractor's bid.

1.8 TEMPORARY UTILITIES

- A. The Contractor shall provide and pay for all necessary temporary telephones, fuel, power, potable water, recycled water, sanitary, proper toilet accommodations, and electric power. Contractor shall not use District owned utilities.
- B. Recycled water may be available. Visit the District website at <https://www.ebmud.com/water/recycled-water/recycled-water-truck-program> for information on recycled water truck programs and conditions of use for recycled water. Contractor shall confirm with the Engineer whether the use of recycled water is acceptable.
- C. The temporary facilities to be provided by the Contractor as described above shall conform to all requirements in regard to operation, safety, and fire hazards of State and local authorities and of Underwriters.
- D. Contractor shall return the site and facilities to their original "asfound" condition, unless otherwise specified in the Contract Documents, at the completion of the project.

1.9 SOUND CONTROL

- A. The Contractor shall comply with all local sound control and noise level rules, regulations and ordinances which apply to any work performed pursuant to the contract. Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer, so as to produce a maximum noise level of 85 dBA at five (5) feet. No internal combustion engine shall be operated on the project without said muffler.
- B. In inhabited areas, particularly residential, operations shall be performed in a manner to minimize unnecessary noise generation. In residential areas, special measures shall be taken to suppress noise generated by repair and service activities during the night hours.
- C. Offices, shops and/or factories surround the project area and will be occupied during the course of construction. Every effort shall be made to minimize excessive levels of noise, particularly over a prolonged period of time. Scheduling of particularly noisy construction operation shall be coordinated with the District.

- D. Powder actuated anchors and fasteners may be used if approved, and where directed by the Engineer. Blasting of any description is strictly prohibited on any portion of the work of this contract.
- E. Use of radio or other music amplification devices will not be permitted on the job site.
- F. Refer to Section 01 35 44, Environmental Requirements for additional requirements.

1.10 DUST CONTROL

- A. The Contractor shall take whatever steps, procedures, or means as are required to prevent dust conditions being caused by its operations in connection with the execution of the work; and on any road which the Contractor or any of its subcontractors are using, excavation or fill areas, demolition operations, or other activities. Control shall be by sprinkling, use of dust palliatives, modification of operations, or any other means acceptable to agencies having jurisdiction. Contractor shall ensure that any deleterious effect from its work does not affect plant personnel, plant operation nor the Distributed Control System.
- B. Damage to personal property, etc., resulting from the Contractor's construction operations shall be borne by the Contractor at no cost to the District.
- C. The Contractor shall keep the streets and work area clean at all times by means of mechanical sweepers or hand sweeping. Water will be used for dust control only, and not for cleaning streets.
- D. Refer to Section 09 90 00, Painting and Coatings for containment related to abrasive blasting activities.

1.11 WASTE DISPOSAL

- A. The Contractor shall dispose of surplus materials, waste products, and debris and shall make necessary arrangements for such disposal. The Contractor shall obtain written permission from property owner prior to disposing surplus materials, waste products, or debris on private property.
- B. All waste disposal shall be done in accordance with applicable laws and regulations.
- C. If the Contractor proposes to dispose of construction debris, trench spoils, excavation spoils, etc., at a landfill, it shall be responsible to provide and pay for all permits and analyses required by the landfill. If the analyses determine that the material is hazardous, then an equitable adjustment of the Contract for the cost of hazardous waste disposal will be made in accordance with Article 7 of Document 00 72 00 General Conditions, and the following:
Time extension or contract costs will not be granted for delays that could have

been avoided by the Contractor redirecting its forces and equipment to perform other work on the contract.

- D. Ditches, washes, or drainage ways shall not be filled.
- E. Disposal operations shall not create unsightly or unsanitary nuisances.
- F. The Contractor shall maintain the disposal site in a condition of good appearance and safety during the construction period.
- G. Prior to final acceptance of the work, the Contractor shall have completed the leveling and cleanup of the disposal site.

1.12 CLEAN UP

- A. Throughout the period of construction, the Contractor shall keep the work site free and clean of all rubbish and debris. Contractor shall return the site and facilities to their original "as-found" condition, unless otherwise specified in the Contract Documents, at the completion of the project. Refer to Section 01 74 05 Cleaning.

1.13 TEMPORARY ENCLOSURES

- A. When sandblasting, spray painting, spraying of insulation, or other activities inconveniencing or dangerous to property or the health of employees, the public or construction workers, are in progress, the area of activity shall be enclosed adequately to contain the dust, over spray, or other hazard. In the event there are no permanent enclosures of the area, or such enclosures are incomplete or inadequate, the Contractor shall provide suitable temporary enclosures as required by the Engineer to meet field conditions in accordance with the recommendations of the owner-furnished equipment supplier (if applicable) and the Contractor's equipment supplier requirements. Said temporary or permanent enclosures shall be adequately ventilated to ensure the safety of the workers.

1.14 DRAINAGE

- A. The Contractor shall take all necessary actions as required to meet discharge requirements of the State of California Regional Water Quality Control Board (RWQCB) and other pertinent local ordinances and regulations pertaining to dewatering and/or site drainage discharged into storm drains and creeks. This may include, but may not be limited to, the use of retention basins and silt basins to settle most of the solids prior to discharge.
- B. In excavation, fill, and grading operations, care shall be taken to disturb the pre-existing drainage pattern as little as possible. Particular care shall be taken not to direct drainage water onto private property or into streets or drainage ways inadequate for the increase flow. Drainage means shall be provided to protect the work.

1.15 TEMPORARY LIGHTING

- A. The Contractor shall provide temporary lighting in all work areas sufficient to maintain a lighting level during working hours not less than the lighting level required by OSHA standards.

1.16 CONSTRUCTION FACILITIES

- A. Construction hoists, elevators, scaffolds, stages, shoring, and similar temporary facilities shall be of ample size and capacity to adequately support and move the loads to which they will be subjected. Railings, enclosures, safety devices, and controls required by law or for adequate protection of life and property shall be provided.
- B. Temporary supports shall be designed with an adequate safety factor to assure adequate load bearing capability. Whenever required by safety regulations, the Contractor shall submit design calculations for staging and shoring prior to application of loads. See also Section 01 35 24 Project Safety Requirements.

1.17 REMOVAL OF TEMPORARY FACILITIES AND UTILITIES

- A. At such time or times as any temporary construction facilities and utilities are no longer required for the work, the Contractor shall notify the Engineer of its intent and schedule for removal of the temporary facilities and utilities, and obtain the Engineer's approval before removing the same. As approved, the Contractor shall remove the temporary facilities and utilities from the site as its property and leave the site in such condition as specified, as directed by the Engineer, and/or as shown on the Drawings.
- B. In unfinished areas, such as planted medians, the condition of the site shall be left in a condition that will restore original drainage, evenly graded, seeded or planted as necessary, and left with an appearance equal to, or better than original.

1.18 ACCESS CONTROLS

- A. Public Access
 - 1. Convenient access to driveways and buildings in the vicinity of work shall be maintained at all times. Temporary approaches to, and crossing of, intersecting traffic lanes shall be provided and kept in good condition.
 - 2. When leaving a work area and entering a roadway carrying public traffic, the Contractor's equipment, whether empty or loaded, shall in all cases yield to public traffic.
- B. Private Property
 - 1. Conditions on Right-of-Way Agreements for private properties shall be adhered to by Contractor.

2. Contractor shall make provisions, as necessary, to protect private property from damage due to construction, including putting up and maintaining temporary fencing around the construction limit.

PART 2 - NOT USED

PART 3 – EXECUTION

3.1 TEMPORARY FACILITIES FOR DISTRICT STAFF

- A. Contractor shall provide, maintain, and subsequently remove as its property, one temporary mobile office trailer for the exclusive use of the District operations staff.
- C. The trailers shall be located as shown on the Drawings.
- D. The trailers shall be available for District use at least 30 days prior to the start of work on the Main Control Panels, and shall remain available for 30 days after final acceptance of all work.
- E. If the contract is not completed by the specified completion time, the Contractor shall be responsible for all costs associated with the temporary trailers in addition to the specified liquidated damages.
- F. If the restrooms in the Oxygen Production Plant across from the Main Instrument Panels are not accessible to District staff during construction, Contractor shall provide a restroom trailer for exclusive District use that is equipped with the following features and equipment, new or like new in appearance and function:
 1. Hitch-mounted restroom trailer with two separate restrooms that include heating/cooling, hot/cold fresh-water faucet, soap dispensers, paper towel dispensers, mirrors, and sinks.
 2. Units shall be serviced three times per week, or more frequently if directed by the District. Service shall include emptying, cleaning, filling with fresh water, and replacing all paper and soap products.
 3. Fresh water and wastewater tanks.
 4. Restroom trailer shall be staged next to the District's temporary office trailer.
 5. Manufacturer, or equal:
 - a. National Construction Rental Spa Series
- G. The office trailer shall be equipped with the following features and equipment, new or like new in appearance and function:
 1. Hitch mounted mobile office trailer with 10 ft x 32 ft (excluding hitch) minimum nominal dimensions.

2. One internal wall
 - a. Layout consisting of one break room, approximately 10 ft x 10 ft in size and one common office area, approximately 10 ft x 22 ft in size.
3. All-metal frame, exterior sides, and roof.
4. Insulated double walls, floor, and roof.
5. Self-contained, built-in thermostat controlled forced air handling unit with heating and cooling.
6. Fluorescent/LED ceiling lights.
7. 120V, 20 Amp wall receptacles.
8. Ethernet-equipped.
9. Vinyl composition tile floor.
10. Railed stairway to entrances.
11. Doors with solid core deadbolt locks, keyed alike.
12. Separate entrance and exit doors.
13. Number of locking windows with blinds or drapes: 4
14. Leveled, blocked, and tied down on compacted gravel.
15. NOT USED.
16. Work Surface, 48-inch by 96-inch conference tables: 1
17. Desks, 30" x 60": 3
18. Side tables, 30" x 60": 1
19. Swivel chairs: 4
20. Straight chairs: 8
21. Four-drawer steel file cabinet with lock (legal width): 1.
22. NOT USED.

- 23. Wastepaper basket: 2
 - 24. Clothes rack: 2
 - 25. 25-person contractor ANSI A+, Type I & II First-aid kit: 1
 - 26. Refrigerator, 10 CF, with freezer compartment: 1
 - 27. Microwave oven, small: 1
 - 28. Coffee Maker: 1
 - 29. Bottled Water Service with dispenser capable of producing hot water and cold water: 1
 - 30. Telephone, touch-tone with external conference speaker and 12-foot handset cord: 2
 - 31. Telephone answering machine: 1
 - 32. Outside telephone lines: 3 – Voice, fax, computer
 - 33. Printer, see below: 1
 - 34. Copier/OCR Scanner, see below: 1
- H. Contractor shall be responsible for providing utilities to the temporary facilities.
 - I. Temporary facilities shall not obstruct access to District facilities. Access to the cooling water towers and LOX fill station shall be maintained at all times.

END OF SECTION

SECTION 01 61 00

COMMON PRODUCT REQUIREMENTS (GENERAL EQUIPMENT STIPULATIONS)

PART 1 - GENERAL

1.1 SCOPE

- A. All equipment furnished and installed under this contract shall conform to the general stipulations set forth in this section except as otherwise specified in other sections.

1.2 COORDINATION

- A. Contractor shall coordinate all details of the equipment with other related parts of the work, including verification that all structures, piping, wiring, and equipment components are compatible. Contractor shall be responsible for all structural and other alterations in the work required to accommodate equipment differing in dimensions or other characteristics from that contemplated in the Contract Drawings or Specifications.

1.3 WORKMANSHIP AND MATERIALS

- A. Contractor shall guarantee all equipment against faulty or inadequate design, improper assembly or erection, defective workmanship or materials, and leakage, breakage, or other failure. Materials shall be suitable for service conditions.
- B. All equipment shall be designed, fabricated, and assembled in accordance with recognized and acceptable engineering and shop practice. Individual parts shall be manufactured to standard sizes and gages so that repair parts, furnished at any time, can be installed in the field. Like parts of duplicate units shall be interchangeable. Equipment shall not have been in service at any time prior to delivery, except as required by tests.
- C. Except where otherwise specified, structural and miscellaneous fabricated steel used in equipment shall conform to AISC standards. All structural members shall be designed for shock or vibratory loads. Unless otherwise specified, all steel which will be submerged, all or in part, during normal operation of the equipment shall be at least 1/4 inch thick.
- D. Except where otherwise specified, all metal which will be exposed to weather, submerged or otherwise exposed to moisture shall be either non-ferrous or stainless steel, as the application may require.

1.4 LUBRICATION

- A. Equipment shall be adequately lubricated by systems which require attention no more frequently than weekly during continuous operation. Lubrication systems shall not require attention during startup or shutdown and shall not waste lubricants.
- B. Lubricants of the type recommended by the equipment manufacturer shall be provided in sufficient quantity to fill all lubricant reservoirs and to replace all consumption during testing, startup, and operation prior to acceptance of equipment by Owner. Unless otherwise specified or permitted, the use of synthetic lubricants will not be acceptable.
- C. Lubrication facilities shall be convenient and accessible. Oil drains and fill openings shall be easily accessible from the normal operating area or platform. Drains shall allow for convenient collection of waste oil in containers from the normal operating area or platform without removing the unit from its normal installed position.

1.5 ELECTRIC MOTORS

Unless otherwise specified, motors furnished with equipment shall meet the following requirements:

- A. Designed and applied in accordance with NEMA, ANSI, IEEE, AFBMA, and NEC for the duty service imposed by the driven equipment, such as frequent starting, intermittent overload, high inertia, mounting configuration, or service environment.
- B. Rated for continuous duty at 40°C ambient, unless the application is well recognized for intermittent duty service as a standard industry practice
- C. Insulated with Class F insulation and designed for a service factor of 1.15, or greater.
- D. Three phase motors used in conjunction with variable speed drives shall have Class F insulation with a Class B temperature rise at rated nameplate horsepower, and 1.15 service factor.
- E. When operating at service factor load, maximum observable temperature rise of insulation and motor parts, as determined by resistance or thermometer methods, shall not exceed the NEMA allowable limits for the type of motor, the type of enclosure, and the particular application with regard to continuous or intermittent duty.
- F. To ensure long motor life, nameplate horsepower, regardless of service factor, shall be at least 115 percent of the maximum load imposed by the driven equipment.

- G. Designed for full voltage starting
- H. Designed to operate from an electrical system that may have a maximum of 5 percent voltage distortion per IEEE Standard 519
- I. Derated, if required, for the altitude at which the equipment is installed.
- J. Clamp-type grounding terminal shall be inside motor conduit box.
- K. External conduit boxes shall be oversized at least one size larger than NEMA standard.
- L. Totally enclosed motors shall have a continuous moisture drain which also excludes insects.
- M. Bearings shall be either oil or grease lubricated.
- N. Manufacturer's standard motor may be supplied on integrally constructed, packaged assemblies such as appliances, tools, unit heaters, and similar equipment specified by model number, in which case a redesign of the unit would be required to furnish motors of other than the manufacturer's standard design. However, in all cases, totally enclosed motors are preferred and shall be furnished if offered by the manufacturer as a standard option.
- O. Totally enclosed motors shall be furnished on:
 - 1. Equipment for installation below grade
 - 2. Equipment operating in wet or dust-laden locations
- P. Dripproof motors, or totally enclosed motors at the supplier's option, shall be furnished on equipment in indoor, above-grade, clean, and dry locations.
- Q. Explosionproof or submersible motors shall be furnished as required by applicable codes, as specified in other sections, or at the supplier's option.
- R. Motors shall be rated and constructed as follows:
 - 1. Below 1/2 hp: 115 volts, 60 Hz, single phase.
 - 2. Built-in manual-reset thermal protector, or integrally mounted stainless steel enclosed manual motor starter.
 - 3. 1/2 hp and above: 460 volts, 60 Hz, 3 phase.
 - 4. Where specified or required by the drawings, motors used on 240 volt systems shall be 230 volts, 60 Hz, 3 phase.

1.6 DRIVE UNITS

- A. The nominal input horsepower rating of each gear or speed reducer shall be at least equal to the nameplate horsepower of the drive motor. Drive units shall be designed for 24 hours continuous service.
- B. Unless otherwise specified, the use of gearmotors will not be acceptable.
- C. Gear reducers:
 - 1. Each gear reducer shall be a totally enclosed unit with oil or grease lubricated antifriction, rolling element bearings throughout.
 - 2. Helical, spiral bevel, combination bevel-helical, and worm gear reducers shall have a service factor of at least 1.50 based on the nameplate horsepower of the drive motor. Shaft-mounted and flange-mounted gear reducers shall be rated AGMA Class II. Helical gear reducers shall have a gear strength rating to catalog rating of 1.5. Each gear reducer shall bear an AGMA nameplate.
 - 3. The thermal horsepower rating of each unit shall equal or exceed the nameplate horsepower of the drive motor. During continuous operation, the maximum sump oil temperature shall not rise more than 100°F above the ambient air temperature in the vicinity of the unit and shall not exceed 200°F.
 - 4. Each grease lubricated bearing shall be installed in a bearing housing designed to facilitate periodic regreasing of the bearing by means of a manually operated grease gun. Each bearing housing shall be designed to evenly distribute new grease, to properly dispose of old grease, and to prevent overgreasing of the bearing. The use of permanently sealed, grease lubricated bearings will not be acceptable. An internal or external oil pump and appurtenances shall be provided if required to properly lubricate oil lubricated bearings. A dipstick or sight glass arranged to permit visual inspection of lubricant level shall be provided on each unit.
 - 5. Gear reducers which require the removal of parts or periodic disassembly of the unit for cleaning and manual regreasing of bearings will not be acceptable.
 - 6. Certification shall be furnished by the gear reducer manufacturer indicating that the intended application of each unit has been reviewed in detail by the manufacturer and that the unit provided is fully compatible with the conditions of installation and service.

D. V-belt drives:

1. Each V-belt drive shall include a sliding base or other suitable tension adjustment. V-belt drives shall have a service factor of at least 1.6 at maximum speed based on the nameplate horsepower of the drive motor.

1.7 SAFETY GUARDS

- A. All belt or chain drives, fan blades, couplings, and other moving or rotating parts shall be covered on all sides by a safety guard. Safety guards shall be fabricated from 16 USS gauge or heavier galvanized or aluminum-clad sheet steel or 1/2 inch mesh galvanized expanded metal. Each guard shall be designed for easy installation and removal. All necessary supports and accessories shall be provided for each guard. Supports and accessories, including bolts, shall be galvanized. All safety guards in outdoor locations shall be designed to prevent the entrance of rain and dripping water.

1.8 ANCHOR BOLTS

- A. Equipment suppliers shall furnish suitable anchor bolts for each item of equipment. Anchor bolts, together with templates or setting drawings, shall be delivered sufficiently early to permit setting the anchor bolts when the structural concrete is placed. Anchor bolts shall comply with the anchor bolts section and, unless otherwise specified, shall have a minimum diameter of 3/4-inch.
- B. Unless otherwise indicated or specified, anchor bolts for items of equipment mounted on baseplates shall be long enough to permit 1-1/2 inches of grout beneath the baseplate and to provide adequate anchorage into structural concrete.

1.9 EQUIPMENT BASES

- A. Unless otherwise indicated or specified, all equipment shall be installed on concrete bases at least 6 inches high. Cast iron or welded steel baseplates shall be provided for pumps, compressors, and other equipment. Each unit and its drive assembly shall be supported on a single baseplate of neat design. Baseplates shall have pads for anchoring all components and adequate grout holes. Baseplates for pumps shall have a means for collecting leakage and a threaded drain connection. Baseplates shall be anchored to the concrete base with suitable anchor bolts and the space beneath filled with grout as specified in the grout section.

1.10 SPECIAL TOOLS, HARDWARE AND SOFTWARE

- A. Equipment requiring periodic repair and adjustment shall be furnished complete with all special tools, instruments, and accessories required for proper maintenance and operations. Equipment requiring special devices for lifting or handling shall be furnished complete with those devices.
- B. Furnish all hardware devices and software necessary for operation, maintenance, calibration, setup, adjustment, testing, programming/reprogramming, and any

other activity associated with the equipment or systems furnished under this Contract. This includes all hardware devices necessary to interface with standard PCs. Furnish a minimum of one copy of all software and include all licenses and a minimum of 1 year software service agreement (where applicable).

- C. The Contractor shall make all subcontractors, suppliers, and manufacturers furnishing products under this contract aware of these requirements.

1.11 SHOP PAINTING

- A. All steel and iron surfaces shall be protected by suitable paint or coatings applied in the shop. Surfaces which will be inaccessible after assembly shall be protected for the life of the equipment. Exposed surfaces shall be finished smooth, thoroughly cleaned, and filled as necessary to provide a smooth uniform base for painting. Electric motors, speed reducers, starters, and other self-contained or enclosed components shall be shop primed or finished with a high-grade oil-resistant enamel suitable for coating in the field with an alkyd enamel. Coatings shall be suitable for the environment where the equipment is installed.
- B. Surfaces to be painted after installation shall be prepared for painting as recommended by the paint manufacturer for the intended service, and then shop painted with one or more coats of the specified primer. Unless otherwise specified, the shop primer for steel and iron surfaces shall be Cook "391-N-167 Barrier Coat", Koppers "No. 10 Inhibitive Primer", Tnemec "77 Chem-Prime", Valspar "13-R-28 Chromox Primer", or equal as approved by the Engineer.
- C. Machined, polished, and nonferrous surfaces which are not to be painted shall be coated with rust-preventive compound, Houghton "Rust Veto 344", Rust-Oleum "R-9", or equal as approved by the Engineer.

1.12 PREPARATION FOR SHIPMENT

- A. All equipment shall be suitably packaged to facilitate handling and protect against damage during transit and storage. All equipment shall be boxed, crated, or otherwise completely enclosed and protected during shipment, handling, and storage. All equipment shall be protected from exposure to the elements and shall be kept thoroughly dry at all times.
- B. Painted surfaces shall be protected against impact, abrasion, discoloration, and other damage. All painted surfaces which are damaged prior to acceptance of equipment shall be repainted to the satisfaction of Engineer.
- C. Grease and lubricating oil shall be applied to all bearings and similar items.
- D. Each item of equipment shall be tagged or marked as identified in the delivery schedule or on the Shop Drawings. Complete packing lists and bills of material shall be included with each shipment.

1.13 HANDLING

- A. Deliver manufactured products in the manufacturers' original unbroken containers or packaging, with identifying labels intact and legible.
- B. Immediately on delivery, assure and document product compliance with requirements of Contract Documents and reviewed submittals, and verify that products are properly protected and undamaged.
- C. Handle products and packages in a manner to avoid soiling or damaging.
- D. Promptly remove damaged or defective products from the site, and replace at no cost to the District.

1.14 STORAGE

- A. Upon delivery, all equipment and material shall immediately be stored and protected until installed in the work. Stored products subject to damage by the elements in weathertight enclosures. Maintain temperature and humidity within the ranges specified by the manufacturers.
- B. Pumps, motors, electrical equipment, and all equipment with antifriction or sleeve bearings shall be stored in weathertight structures maintained at a temperature above 60°F. Equipment, controls, and insulation shall be protected against moisture and water damage. All space heaters furnished in equipment shall be connected and operated continuously.
- C. Equipment and materials shall not show any pitting, rust, decay, or other deleterious effects of storage when installed in the work.

1.15 INSTALLATION AND OPERATION

- A. Equipment shall not be installed or operated except by, or with the guidance of, qualified personnel having the knowledge and experience necessary for proper results. When so specified, or when employees of Contractor or its subcontractors are not qualified, such personnel shall be field representatives of the manufacturer of the equipment or materials being installed.
- B. Qualified field representatives shall be provided by the equipment manufacturers as required to perform all manufacturer's field services called for in the specifications. Manufacturer's field representatives shall observe, instruct, guide, and direct Contractor's erection or installation procedures, or perform an installation check, as required. The field representative shall revisit the site as often as necessary to attain installation satisfactory to Engineer.
- C. All equipment installed under this Contract, including that furnished by Owner shall be placed into successful operation according to the written instructions of the manufacturer or the instructions of the manufacturer's field representative. All

required adjustments, tests, operation checks, and other startup activity shall be provided.

- D. Acceptance of work in connection with the installation of equipment furnished by others will be subject to approval of the field representative. Contractor shall be responsible for planning, supervising, and executing the installation of work, and the approval or acceptance of Engineer or the field representative will not relieve Contractor of responsibility for defective work.

END OF SECTION

SECTION 01 64 01

DISTRICT-FURNISHED EQUIPMENT

PART 1 - GENERAL

1.1 DESCRIPTION

The work specified in this Section includes the loading, unloading, handling, storage, installation, connection, and testing of District-furnished equipment as indicated on the Plans and as specified herein.

A. District-furnished equipment:

1. Main Air Compressor (MAC) Motor replacements – Four 1500 HP motors.
 - a. Half coupling for each motor.
 - b. Wilcoxon Model 993A triaxial vibration sensor for each motor.

B. Definitions:

As used in this Section, the following terms have the meaning indicated:

1. Equipment Manufacturer
TECO-Westinghouse, provided by Koffler Electrical.
2. Defective:
An adjective which when modifying the word "equipment" refers to District-furnished equipment and indicates that such equipment is unsatisfactory, faulty or deficient; that such equipment does not conform to the provisions of the Equipment Specifications; that such equipment does not meet the requirements of any inspection, test, or approval referred to in the Equipment Specifications; or that such equipment is damaged.
3. Equipment specifications:
The specifications and other Contract Documents covering the purchase and delivery of District-furnished equipment are included in the separate agreement between the District and the Equipment Manufacturer.
4. Approved shop drawings:

The drawings and data supplied by the Equipment Manufacturer for District-furnished equipment, as approved by the Engineer.

1.2 CONTRACTOR COORDINATION WITH EQUIPMENT MANUFACTURER

Contractor shall be in close coordination with service representatives of the manufacturer of the District-furnished equipment in every phase of installation. Both the Contractor and the Equipment Manufacturer have separate responsibilities, both of which must necessarily be interwoven as regards the installation, testing and acceptance of the equipment. The Agreement between the District and the Equipment Manufacturer, plus approved Shop Drawings, are available for inspection at the District's Main Wastewater Treatment Plant at 2020 Wake Avenue, Oakland CA, 94607. Not all Shop Drawings for District furnished equipment may be approved by the start of work; Contractor shall coordinate with equipment manufacturer to confirm key information. Key Shop Drawings and Agreement terms affecting this contract are included in the Reference Drawings and in Appendix D.

1.3 QUALITY ASSURANCE

A. Equipment specifications and approved shop drawings:

The Contractor shall be presumed cognizant, prior to entering into the Contract, of the provisions of the Equipment Specifications and approved Shop Drawings included in the Reference Drawings and in Appendix D.

1. One copy of the approved Shop Drawings will be made available to the Contractor to whom the Contract is awarded.

B. Installation:

District-furnished equipment shall be installed as specified in Article 1.5.

C. Operation:

District-furnished equipment shall be operated in accordance with the written instructions furnished with the equipment, and with the instructions issued by representatives of equipment manufacturers.

D. Testing:

After installation, and following certification in writing by the Equipment Manufacturer that the installation is ready for mechanical testing, the Contractor shall make mechanical tests (see Article 1.6) on District-furnished equipment. The tests shall prove that the equipment has been properly installed; that there are no leaks at connections of piping; that power, control, instrumentation, and alarms are properly connected and wired from the equipment to points of supply or receipt of signals and are properly calibrated; and that all other work performed by the Contractor renders the equipment operational as intended.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Delivery of District-furnished equipment:

1. Equipment will be delivered to the Contractor at the site of the work. Changes to the delivery procedure and schedule may be made if mutually agreed between the Contractor and the District, and if approved by the Equipment Manufacturer. Delivery of MAC motors will be according to the following schedule:
 - a. Motor 1: May 1, 2025
 - b. Motor 2: May 1, 2025
 - c. Motor 3: January 2, 2026
 - d. Motor 4: January 2, 2026
2. The Contractor shall notify the Engineer in writing not less than thirty-five (35) calendar days before the Contractor is ready to receive the District-furnished equipment.
3. The Contractor shall unload the equipment from the delivery vehicle within twenty-four (24) hours after arrival of the vehicle transporting such equipment to the site.
4. The Contractor shall assume responsibility for storage and handling of equipment at the time of delivery to the site.

B. Protection of District-furnished equipment:

1. The Contractor shall protect the equipment in accordance with the Equipment Manufacturer's recommendations against weather conditions, including construction of a temporary cover, and periodic lubrication, if required.

1.5 EQUIPMENT INSTALLATION

The Contractor shall install District-furnished equipment in accordance with the instructions and recommendations furnished with the equipment, approved shop drawings, instructions of the representatives of equipment manufacturers and installation manuals, and as indicated on the Plans. The Contractor shall be responsible to include in its bid all labor, materials, and equipment required to install the District-furnished equipment and make the complete system operate satisfactorily. The Contractor shall furnish and install all piping, valves, fittings, wiring, conduits, interconnections, and

accessories as required to make the District-furnished equipment and system complete and functional.

- A. The Contractor shall field verify clearance and access in the Main Air Compressor area and include in its bid all costs needed to install the four 1500 HP motors as described in the Plans, manufacturer's installation manuals, and these Specifications.

1.6 EQUIPMENT FIELD TESTING

- A. Field Testing - General:

Field Testing shall consist of Mechanical and Performance Testing performed by the Contractor, with assistance from the Equipment Manufacturer, and all other functional testing performed by the Contractor in accordance with Section 01 75 17 Field Testing and Startup.

The District's Contractor shall schedule, coordinate, and perform all mechanical tests required to prove that the equipment has been properly installed and is in satisfactory operating condition.

The Equipment Manufacturer will furnish a factory trained representative to provide technical guidance to assist the District's Contractor during mechanical testing.

- B. Mechanical testing: As specified in Section 22 05 00, Air Compressor Motor Replacement.

- C. Performance testing:

District-furnished equipment performance testing shall be conducted by the Contractor after the Contractor completes installation of all liquid lines, pumps, mechanical and electrical support systems, and building drainage system, and mechanical testing as described above has been successfully completed.

Performance testing shall be in the presence of the Equipment Manufacturer; Equipment Manufacturer shall sign off on the Manufacturer's Certificate of Proper Installation form following successful completion of performance testing.

1.7 SERVICES OF EQUIPMENT MANUFACTURER'S REPRESENTATIVES

The Equipment Manufacturers (through the District) will provide services of skilled representatives of equipment manufacturer's for inspecting the installation, adjustments, start-up and testing of District-furnished equipment. The extent of services provided by manufacturer's representatives is specified in the Equipment Specifications. The services will be provided as requested by the Engineer. The Contractor and its employees shall fully cooperate with the manufacturer's representatives.

The Contractor shall notify the Engineer in writing thirty (30) calendar days before equipment manufacturer's representative is required to be present on-site.

1.8 JOB CONDITIONS

A. The Contractor shall repair, replace or correct to the satisfaction of the Engineer all defective equipment items caused by the Contractor's improper placement and handling of District-furnished equipment.

B. Contractor's acceptance:

Upon Contractor's acceptance of District-furnished equipment, it shall be understood that the Contractor assumes the responsibilities assigned to them in these Specifications in relation to the installation, testing and operation of District-furnished equipment.

1. The Contractor shall verify the conditions of District-furnished equipment and shall submit to the Engineer within seven (7) days after delivery date a statement listing all defective equipment items. The list shall include the cost and extension to the Contract Time that the Contractor estimates for the correction and repair of each defective equipment item and a statement of the Contractor's opinion as of the cause of the defective equipment items.
 - a. If the Contractor makes no submittal within the time period specified, it shall be understood that the District-furnished equipment is in satisfactory condition and that the Contractor's acceptance has occurred as of the date of delivery.
 - b. If the Contractor makes a submittal listing defective equipment items within the time period specified, the Engineer will decide on the course of action to be taken.
2. The Engineer will decide the course of action on each defective equipment item. The possible courses of action by the Engineer include:
 - a. To authorize the Contractor to proceed with the correction and repair of defective equipment items through the issuance of a Change Order. The Contractor's consent to perform such repair and correction shall be construed as Contractor's acceptance for the items included in the Change Order.
 - b. To direct the Contractor to proceed with the correction and repair of defective equipment items through the procedures specified for force account work. It shall be understood that Contractor's acceptance has occurred for the items covered under force account work on the date of the issuance of the Engineer's directive.

- c. To have others perform the correction and repair of defective equipment items. The Contractor shall observe the work done by others and notify the Engineer in writing of all irregularities, faulty workmanship, or unsatisfactory work done by others. The Contractor observations shall be carried out without obstruction or interference to others performing work. Upon completion of the correction and repair, the Engineer will notify the Contractor and it shall be understood that Contractor's acceptance has occurred for items repaired by others upon receipt of the Engineer's notification.
- d. To modify the Plans and Specifications in order to meet changing conditions. It shall be understood that Contractor's acceptance has occurred upon receipt of the Engineer's modifications to Plans and Specifications.
- e. To state to the Contractor that an item listed by the Contractor is not a defective equipment item. Regarding such items, it shall be understood that Contractor's acceptance has occurred on the delivery date.

C. Scheduling:

It shall be understood that the Contractor's review of the Equipment Specifications has allowed the Contractor to schedule its operations in accordance with the specified dates for the delivery of District-furnished equipment.

END OF SECTION

SECTION 01 64 03 (DCS)

DISTRICT-FURNISHED DCS EQUIPMENT

PART 1 - GENERAL

1.1 DESCRIPTION

The work specified in this Section includes the unloading, handling, installation, connection, and testing of District-furnished Distributed Control System (DCS) equipment as indicated on the Plans, and as specified herein. The Contractor shall provide any DCS equipment that is not specified herein. The Contractor shall coordinate with the Engineer and the District's DCS supplier (Equipment Manufacturer) on Contractor's bill of materials and handoff of District-furnished equipment.

A. District-furnished equipment:

1. General: Distributed Control Unit (DCU), data highway cables, discrete output relay panel, and accessories.
2. Ovation hardware:

Table 1: Ovation hardware – Controllers

Item	Description	O2 Plant 1 (Existing Drop 15/65)	O2 Plant 2 (New Drop 23/73)
Ovation Controller, Remote Nodes and Expansion of Existing Controller			
1	Ovation OCR1100 Redundant Copper controller & Ovation IO mounted on sub-plate(s) (NEMA 12) ^a		1
2	Power supply 24V, 10A, with PWR Dist.		1
3	Remote Nodes Interface (RNI)	3	3
4	RTD Assembly Kit ^b		1
5	Fiber optic patch panel (12 FO-ST connections) ^b	1	1

Item	Description	O2 Plant 1 (Existing Drop 15/65)	O2 Plant 2 (New Drop 23/73)
6	Ethernet patch panel (with Mini-Com Cat 6A UTP RJ45 TG Jack Module) ^b	1	1
7	Fiber patch cord ^{b, c}	6	6
8	Ethernet patch cord ^{b, c}	4	4
9	RNI Ring switches (4-port) with SFPs ^b	2	2
I/O Modules (Local)			
10	Analog input (8pt/module, 4-20mA) (1C31224G01/1C31227G01)	1	1
11	Digital input (16pt/module, 24/48VDC Fused) (1C31232G02/15X00034G01)	1	1
12	Ethernet link controller (1 RJ45 Port for TCP/IP Interface and 1 RS232 Terminal for Serial Interface)		1

Table 2: Ovation hardware – Plant 1 Remote I/O panels

Item	Description	RIO 15-1 (MAC 1-1) Panel	RIO 15-2 (MAC 1-2) Panel	RIO 15-3 (Turbine/Cryo Plant 1) Panel
Ovation Remote Locations – Controller 15/65				
1	Remote Node Interface (RNI) Fiber, sub-plate ^a	1	1	1
2	Remote extended I/O sub-plate(s) ^a			1

Item	Description	RIO 15-1 (MAC 1-1) Panel	RIO 15-2 (MAC 1-2) Panel	RIO 15-3 (Turbine/Cryo Plant 1) Panel
3	Power supply 24V, 10A with PWR Dist.	1	1	1
4	RTD Assembly Kit ^b	1	1	1
5	Remote cabinet fiber optic patch panel (12 FO-ST connections) ^b	1	1	1
6	Ether Patch Panel (with Mini- Com Cat 6A UTP RJ45 TG Jack Module) ^b	1	1	1
7	Fiber patch cord ^{b, c}	2	2	2
8	Ethernet patch cord ^{b, c}	2	2	2
9	RNI din rail ring switches (4- port) ^b with SFP	2	2	2
I/O Modules (Remote)				
10	Analog input (8pt/module, 4- 20mA) (1C31224G01/1C31227G01)	2	2	3
11	T/C input (8pt/module, 50mV compensated) (5X00070G04/1C31116G04)			3
12	Analog output (4pt/module, 4- 20 mA) (1C31129G03/1C31132G01)	1	1	3
13	Digital input (16pt/module, 24/48VDC Fused) (1C31232G02/15X00034G01)	1	1	1
14	G2R Relay output (16pt/module, 10A@250VAC/ 3A@150VDC, 1 Form-C	1	1	2

Item	Description	RIO 15-1 (MAC 1-1) Panel	RIO 15-2 (MAC 1-2) Panel	RIO 15-3 (Turbine/Cryo Plant 1) Panel
	contact) (5A26457G01)			

Table 3: Ovation hardware – Plant 2 Remote I/O panels

Item	Description	RIO 23-1 (MAC 2-1) Panel	RIO 23-2 (MAC 2-2) Panel	RIO 23-3 (Turbine/Cryo Plant 2) Panel
Ovation Remote Locations – Controller 23/73				
1	Remote Node Interface (RNI) Fiber, sub-plate ^a	1	1	1
2	Remote extended I/O sub- plate(s) ^a			1
3	Power supply 24V, 10A with PWR Dist.	1	1	1
4	RTD Assembly Kit ^b	1	1	1
5	Remote cabinet fiber optic patch panel (12 FO-ST connections) ^b	1	1	1
6	Ether Patch Panel (with Mini- Com Cat 6A UTP RJ45 TG Jack Module) ^b	1	1	1
7	Fiber patch cord ^{b, c}	2	2	2
8	Ethernet patch cord ^{b, c}	2	2	2
9	RNI din rail ring switches (4- port) ^b with SFP	2	2	2

Item	Description	RIO 23-1 (MAC 2-1) Panel	RIO 23-2 (MAC 2-2) Panel	RIO 23-3 (Turbine/Cryo Plant 2) Panel
I/O Modules (Remote)				
10	Analog input (8pt/module, 4-20mA) (1C31224G01/1C31227G01)	2	2	3
11	T/C input (8pt/module, 50mV compensated) (5X00070G04/1C31116G04)			3
12	Analog output (4pt/module, 4-20 mA) (1C31129G03/1C31132G01)	1	1	3
13	Digital input (16pt/module, 24/48VDC Fused) (1C31232G02/15X00034G01)	1	1	1
14	G2R Relay output (16pt/module, 10A@250VAC/ 3A@150VDC, 1 Form-C contact) (5A26457G01)	1	1	2

- a. Plate size approximately 78-inch height by 27-inch width. Contractor's system integrator shall install in panels provided by Contractor.
- b. The hardware will ship loose. Contractor system integrator/panel manufacturer shall install hardware in panels provided by Contractor.
- c. Patch cables are supplied for ports that are used.
- d. General: Each Ovation local, extended, remote or extended remote I/O plate houses up to 16 I/O modules.
- e. New I/O modules for the existing Drop 15/65 will be shipped loose. Contractor shall install new I/O modules.

- f. General: Contractor shall provide 120VAC power feeds and provide power distribution in each cabinet.
- 3. User interface equipment
 - a. Each Remote I/O panel (total 6) will include the following:
 - 1) One Computer
 - 2) One 21-inch touch screen display
 - 3) Two Ethernet (10/100/1000 Mbps) RJ45
 - b. Equipment will ship loose. Contractor shall install in panels provided by the Contractor.
 - c. Contractor shall provide ethernet cables.
- 4. Communication network hardware
 - a. Hardware: One Field LAN router
 - b. Equipment will ship loose. Contractor shall install in Network Cabinet or as shown on the Plans.
 - c. Contractor shall provide ethernet cables.
- 5. Data link interfaces
 - a. Hardware:
 - 1) Two data link interfaces for Drop 15/65.
 - 2) Two data link interfaces for Drop 23/73.
 - b. Contractor shall connect data links to ethernet switch in accordance with Equipment Manufacturer's instructions. Contractor shall connect serial interfaces to link controller modules and install link controller modules in each remote I/O cabinet.
 - c. Contractor shall provide connections between equipment to data link.

B. Definitions:

As used in this Section, the following terms have the meaning indicated:

- 1. Equipment Manufacturer:

2. Defective:

An adjective which when modifying the word "equipment" refers to District-furnished equipment and indicates that such equipment is unsatisfactory, faulty or deficient; that such equipment does not conform to the provisions of the Equipment Specifications; that such equipment does not meet the requirements of any inspection, test, or approval referred to in the Equipment Specifications; or that such equipment is damaged.

3. Equipment specifications:

The specifications and other Contract Documents covering the purchase and delivery of District-furnished equipment are included in the separate agreement between the District and the Equipment Manufacturer.

4. Approved shop drawings:

The drawings and data supplied by the Equipment Manufacturer for District-furnished equipment, as approved by the Engineer.

1.2 CONTRACTOR COORDINATION WITH EQUIPMENT MANUFACTURER

Contractor shall be in close coordination with service representatives of the manufacturer of the District-furnished equipment in every phase of installation. Both the Contractor and the Equipment Manufacturer have separate responsibilities, both of which must necessarily be interwoven as regards the installation, testing and acceptance of the equipment. The Agreement between the District and the Equipment Manufacturer, is available for inspection at the EBMUD District Offices at 2020 Wake Avenue, Oakland CA, 94607.

1.3 QUALITY ASSURANCE

A. Equipment specifications and approved shop drawings:

The Contractor shall be presumed cognizant, prior to entering into the Contract, of the provisions of the Equipment Specifications.

1. One copy of the approved Shop Drawings will be made available to the Contractor to whom the Contract is awarded. The Shop Drawings will not be available until January 2025 at the earliest.

B. Installation:

District-furnished equipment shall be installed as specified in Article 1.5.

C. Operation:

District-furnished equipment shall be operated in accordance with the written instructions furnished with the equipment, and with the instructions issued by representatives of equipment manufacturers.

D. Testing:

After installation, and following certification in writing by the Equipment Manufacturer that the installation is ready for electrical testing, the Contractor shall make electrical tests (see Article 1.6) on District-furnished equipment. The tests shall prove that the equipment has been properly installed; that power, control, instrumentation, and alarms are properly connected and wired from the equipment to points of supply or receipt of signals and are properly calibrated; and that all other work performed by the Contractor renders the equipment operational as intended.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Delivery of District-furnished equipment:

1. Equipment will be delivered to the Contractor at the site of the work. Changes to the delivery procedure and schedule may be made if mutually agreed between the Contractor and the District, and if approved by the Equipment Manufacturer.
2. The Contractor shall unload the equipment from the delivery vehicle within twenty-four (24) hours after arrival of the vehicle transporting such equipment to the site.
3. The Contractor shall assume responsibility for storage and handling of equipment at the time of delivery to the site.
4. The Contractor shall coordinate with the District and DCS Equipment Manufacturer on date of delivery for each equipment. The Contractor shall attend a preconstruction meeting with the Equipment Manufacturer within one month of NTP. The Contractor can expect to receive DCS equipment for work on the first O2 plant beginning in June 2025. The Contractor can expect to receive DCS equipment for work on the second O2 plant beginning in March 2026.

B. Protection of District-furnished equipment:

1. The Contractor shall protect the equipment in accordance with the Equipment Manufacturer's recommendations against weather conditions, including construction of a temporary cover, if required.

1.5 EQUIPMENT INSTALLATION

- A. The Contractor shall install District-furnished equipment in accordance with the instructions and recommendations furnished with the equipment, approved shop

drawings, instructions of the representatives of equipment manufacturers and installation manuals, and as indicated on the Plans. The Contractor shall be responsible to include in its bid all labor, materials, and equipment required to install the District-furnished equipment and make the complete system operate satisfactorily. The Contractor shall furnish and install all fittings, wiring, conduits, interconnections, and accessories as required, to make the District-furnished equipment and system complete and functional.

- B. Equipment shall not be installed or operated except by, or with the guidance of, qualified personnel having the knowledge and experience necessary to obtain proper results. Such personnel shall be field representatives of the Equipment Manufacturer.
- C. Factory service representatives will be provided by the Equipment Manufacturer as required to perform all manufacturers' field services called for in these Specifications. Factory service representatives will observe, instruct, guide, and direct Contractor's erection or installation procedures, and perform an installation check, as required herein or as requested by the Engineer.

1.6 EQUIPMENT FIELD TESTING

A. General:

The Contractor shall lead and coordinate Field Testing. Field Testing shall consist of Functional Testing performed by the Contractor, and Performance Testing performed by the Contractor and Equipment Manufacturer with District assistance.

The Contractor shall schedule, coordinate, and perform all functional tests required to prove that the equipment has been properly installed and is in satisfactory operating condition.

The Equipment Manufacturer will furnish a factory trained representative to provide technical guidance to assist the Contractor during functional testing. The Contractor is responsible for scheduling the Equipment Manufacturer for any testing activities for which they are required to be present. Costs for scheduling the Equipment Manufacturer to be onsite shall be borne by the Contractor.

B. Functional Testing:

Instrumentation, loop testing, and grounding testing shall be performed by the Contractor as described in Section 01 75 17 Field Testing and Startup and the technical specifications.

C. Performance testing:

1. Installation Test:

- a. General: The Equipment Manufacturer will sign off on the installation of all DCS equipment being furnished under this project. The Equipment Manufacturer will forward all recommended installation practices to installers. If a DCS device (including data highway and cables) has been installed in a faulty manner, the Contractor shall notify the District and coordinate with the Equipment Manufacturer to replace and reinstall the device. Systems shall be exercised through operational tests in the presence of the Engineer in order to demonstrate achievement of the specified performance.
- b. A complete integrated DCS test shall be performed. All modes of operation and Human-Machine interactions as well as a complete I/O loop check from field wiring termination panels to HMI shall be exercised. Compliance to specified system failure detection and failover requirements shall be verified by selectively disabling individual CRTs, common logic files, data communication equipment and data links. Compliance to signal failure detection and response requirements shall be verified by employing analog test equipment to apply excessive signal amplitude and rate-of-change values. All discrete and analog process control loops shall be tuned for optimal operation. All data communication equipment shall be thoroughly tested for function and accuracy.
- c. The results of all distributed control system installation test activities shall be documented by the Contractor. All analog-to-digital converter and digital-to-analog converter accuracy tests shall be documented on test forms, approved by the Engineer, which include calculated Root Mean Square tolerance limits for each calibration step.
- d. Upon the satisfactory completion of all DCS installation tests, a certified report, including all test documentation, shall be furnished by the Contractor to the Engineer together with a clear and unequivocal statement that the installed system has been successfully calibrated, inspected and tested. The Engineer will give acceptance of the installation tests within ten (10) days of personal receipt of the test report if the results of the DCS installation tests are acceptable.

2. System Commissioning and Performance Testing

- a. General: System commissioning and performance testing shall comply with the provisions specified herein and the contract drawings and specifications. Further, system commissioning and performance testing shall commence after all installation tests and inspections have been conducted and accepted in accordance with the following items b, c, d, and e, and shall demonstrate that all

components of the control system can meet all contract requirements with the equipment operating optimally over full operating ranges under actual operating conditions.

- b. All commissioning and test activities shall follow detailed test procedures and check lists previously reviewed by the Engineer, submitted by the Contractor in accordance with 01 75 17, Field Testing and Startup. All test data shall be acquired using equipment as specified and recorded on test forms, previously reviewed by the Engineer, which includes calculated tolerance limits for each calibration step. Completion of all system commissioning and test activities shall be documented by a certified report, including all test forms with tests data entered, delivered to the Engineer with a clear and unequivocal statement that all system commissioning and test requirements have been satisfied. The Engineer will give acceptance of the system commissioning and test activities within ten (10) days of personal receipt of the report if the report is accepted.
- c. The proper control of all final control elements and control panels shall be verified by tests conducted in accordance with the requirements specified herein. Where feasible, system commissioning activities shall include the use of water to establish service conditions that simulate, to the greatest extent practical, normal final control element operating ranges and environmental conditions. Final control elements, control panels, and ancillary equipment shall be tested under start-up and steady-state operating conditions to verify that proper and stable control is achieved using the DCS and local field mounted control circuits. All hardwired control circuit interlocks and alarms shall be operational. The control of final control elements and ancillary equipment shall be tested using both manual and automatic (where provided) control modes.
- d. Each area of work specified in this specification shall be independently performance tested for a period of ninety (90) days following completion of the work. The commencement of the performance test will occur at a time mutually agreeable between the Contractor, Equipment Manufacturer, and the Engineer. In the test, the entire DCS shall be continuously operated and maintained (i.e. seven days per week, twenty-four hours per day) during the test period with zero downtime resulting from system failures. If a system failure occurs, the ninety (90) day test shall be considered a failure and not acceptable. The Contractor shall reinitiate the ninety (90) day test and coordinate activities with the Equipment Manufacturer following any corrective actions. The DCS shall be acceptable only after all equipment has satisfied the performance

test requirements and demonstrated a system availability of 99.98 percent.

- e. The system availability shall be calculated based on the following equation:

$$A = \frac{MTBF \times 100\%}{MTBF + MTTR}$$

where A = system availability in percent
 MTBF = average time interval between consecutive system failures
 MTTR = Average time required to repair system failure

- f. Downtime resulting from the following shall be considered system failures:

- 1) Downtime of any system component which is automatically "back-up" and the back-up unit fails to automatically assume control within the specified time or if a component failure cannot be repaired/replaced within two (2) hours.
- 2) Downtime of any component (exclusive of I/O) whose failure results in the inability of the Operator to monitor and manipulate control loops from the associated EC/OC using standard Human-Machine interface procedures.
- 3) Downtime resulting from concurrent failure of any two CRTs, Operator keyboards, or light pens which are associated with the EC/OC
- 4) Downtime in excess of two (2) hours resulting from any I/O component failure
- 5) Downtime resulting from concurrent failure of two (2) or more I/O components in a single DPU

- g. The Contractor, working with the Equipment Manufacturer, shall submit a performance test completion report which shall state that all contract requirements have been met and which shall include (1) a listing of all DCS equipment maintenance/repair activities conducted during testing and (2) a listing of all components which were unable to operate successfully. Final acceptance, in writing, of the DCS will be provided by the Engineer if the results of all of the performance tests are acceptable.

- h. NOT USED.
- i. District-furnished equipment performance testing will be coordinated by the Contractor and conducted by the Equipment Manufacturer after the Contractor completes installation of all mechanical and electrical support systems, and functional testing as described above has been successfully completed.

1.7 SERVICES OF EQUIPMENT MANUFACTURER'S REPRESENTATIVES

The Equipment Manufacturer (through the District) will provide services of skilled representatives of equipment manufacturer's trade for inspecting the installation, adjustments, start-up and testing of District-furnished equipment. The extent of services provided by manufacturer's representatives is specified in the Equipment Specifications. The services will be provided as requested by the Engineer. The Contractor and its employees shall fully cooperate with the manufacturer's representatives.

The Contractor shall notify the Engineer in writing at least sixty (60) calendar days before the Contractor needs the Equipment Manufacturer's representative is required to be present on-site. The Contractor shall include the District in all correspondence to the Equipment Manufacturer.

1.8 JOB CONDITIONS

- A. The Contractor shall repair, replace or correct to the satisfaction of the Engineer all defective equipment items caused by the Contractor's improper placement and handling of District-furnished equipment. After testing, the Contractor shall repair, replace, or correct faulty work.

- B. Contractor's acceptance:

Upon Contractors' acceptance of District-furnished equipment, it shall be understood that the Contractor assumes the responsibilities assigned to them in these Specifications in relation to the installation, testing and operation of District furnished equipment.

- 1. The Contractor shall verify the conditions of District-furnished equipment and shall submit to the Engineer within seven (7) days after delivery date a statement listing all defective equipment items. The list shall include the cost and extension to the Contract Time that the Contractor estimates for the correction and repair of each defective equipment item and a statement of the Contractor's opinion as of the cause of the defective equipment items.
 - a. If the Contractor makes no submittal within the time period specified, it shall be understood that the District-furnished equipment is in satisfactory condition and that the Contractor's acceptance has occurred as of the date of delivery.

- b. If the Contractor makes a submittal listing defective equipment items within the time period specified, the Engineer will decide on the course of action to be taken.
- 2. The Engineer will decide the course of action on each defective equipment item. The possible courses of action by the Engineer include:
 - a. To authorize the Contractor to proceed with the correction and repair of defective equipment items through the issuance of a Change Order. The Contractor's consent to perform such repair and correction shall be construed as Contractor's acceptance for the items included in the Change Order.
 - b. To direct the Contractor to proceed with the correction and repair of defective equipment items through the procedures specified for force account work. It shall be understood that Contractor's acceptance has occurred for the items covered under force account work on the date of the issuance of the Engineer's directive.
 - c. To have others perform the correction and repair of defective equipment items. The Contractor shall observe the work done by others and notify the Engineer in writing of all irregularities, faulty workmanship, or unsatisfactory work done by others. The Contractor observations shall be carried out without obstruction or interference to others performing work. Upon completion of the correction and repair, the Engineer will notify the Contractor and it shall be understood that Contractor's acceptance has occurred for items repaired by others upon receipt of the Engineer's notification.
 - d. To modify the Plans and Specifications in order to meet changing conditions. It shall be understood that Contractor's acceptance has occurred upon receipt of the Engineer's modifications to Plans and Specifications.
 - e. To state to the Contractor that an item listed by the Contractor is not a defective equipment item. Regarding such items, it shall be understood that Contractor's acceptance has occurred on the delivery date.

C. Scheduling:

It shall be understood that the Contractor's review of the Equipment Specifications has allowed the Contractor to schedule its operations in accordance with the specified dates for the delivery of District-furnished equipment.

END OF SECTION

SECTION 01 71 13

MOBILIZATION

PART 1 - GENERAL

1.1 GENERAL

- A. Mobilization shall include the obtaining of all bonds, insurance, and licenses; moving onto the site of all plant and equipment; furnishing and erecting plants, temporary buildings, and other construction facilities; all as required for the proper performance and completion of the work. Mobilization shall include but not be limited to the following principal items:
1. Moving on to the site of all Contractor's plant and equipment
 2. Installing temporary construction power, wiring, and lighting facilities
 3. Establishing fire protection system
 4. Developing construction water supply
 5. Furnishing the work access plan as specified in Section 01 50 00 Temporary Facilities and Controls, Article 1.1.
 6. Providing all on-site Contractor communication facilities, including telephones, and radio pagers and any radio communications facilities required for the Contractor to coordinate its forces.
 7. Providing on-site sanitary facilities and potable water facilities as specified in Section 01 50 00 Temporary Facilities and Controls, Article 1.7.
 8. Provide temporary trailer for District staff as specified in Section 01 50 00 Temporary Facilities and Controls, Article 3.1.
 9. Arranging for and erection of Contractor's work and storage yard, including site security
 10. Posting all EPA and OSHA required notices and establishment of safety programs.
 11. Post all required labor and EEOE notices.
 12. Have the Contractor's superintendent at the job site full time.
 13. Submittal and District acceptance of the Construction Schedule

14. Establishing site security, lighting, fencing, and signing
15. Obtaining all bonds, insurance and licenses
16. Providing an organization chart of the project and for the Contractor's firm. The project chart shall include the name, title and responsibilities of each position which is involved in the work.
17. Other mobilization items approved by the Engineer required to support the complete work (i.e. Health and Safety Plans).

PART 2 - NOT USED

PART 3 - NOT USED

END OF SECTION

SECTION 01 73 29

CUTTING AND PATCHING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included:

1. Patching and matching existing work altered or disturbed to accommodate new construction.
2. Patching and matching existing work damaged or defaced during new construction as required to restore to condition at time of award of contract.
3. Matching of new work in existing construction to adjacent existing work unless otherwise noted
4. Matching closures at former openings to adjacent undistributed work

1.2 SUBMITTALS

- ###### A. Product Literature and Shop Drawings: Submit for Engineer's review the materials, methods, or systems different from existing work to be matched.

1.3 QUALITY ASSURANCE

A. Design criteria:

1. Patching shall preserve the continuity of existing fire ratings and meet the fire protection criterion.
2. Patching and matching shall duplicate the undisturbed adjacent finishes, colors, textures, and profiles. Where there is dispute over whether the duplication is successful or has been achieved to a reasonable degree, the Engineer's judgment shall be final.

1.4 DELIVERY, STORAGE, AND HANDLING

- ###### A. Deliver materials in the original packages, containers or bundles with seals unbroken and labels intact until time of use.
- ###### B. In other respects, follow the manufacturer's directions.

1.5 PROJECT CONDITIONS

- ###### A. Environmental Requirements: Follow the manufacturer's recommendations.

1.6 GENERAL REQUIREMENTS

- A. Materials shall be as required to match the appearance, quality and performance of the existing finishes to be duplicated.
- B. Where the existing finish to be duplicated was achieved with materials now out of production or otherwise unavailable, obtain the Engineer's review and acceptance of substitutions.
- C. Provide primers, sealers, underlayments, backing, blocking, furring, suspension systems, and related items required for any purpose in patching existing work.
- D. Materials shall be subject to the Engineer's review and acceptance.
- E. Perform work in accordance with the manufacturer's instructions and recommendations.

1.7 PAINTING

- A. Extent of Painting:
 - 1. Paint over the entire surface plane, unless otherwise noted.
 - 2. Over patched wall, soffit, or ceiling surfaces, paint to the nearest cut-off line for the entire surface, such as the intersection with the adjacent wall or ceiling, a beam, a pilaster, or to nearest opening frame where a total cut-off does not occur within 10 feet of the patch, unless otherwise noted.
- B. Ensure painted surfaces do not present a spotty, touched-up appearance by a complete repaint after work in each area.

PARTS 2 AND 3 – NOT USED

END OF SECTION

SECTION 01 74 05

CLEANING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work Included: Perform the work necessary for cleaning during construction and final cleaning on completion of the work.
- B. Cleaning for specific products or work is specified in the individual specification sections.

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 GENERAL

- A. At all times maintain areas covered by the Contract and public properties free from accumulations of waste, debris, and rubbish caused by construction operations.
- B. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws. Do not burn or bury rubbish and waste materials on project site. Volatile wastes shall be properly stored in covered metal containers and removed daily. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains. Do not dispose of wastes into streams or waterways.
- C. Construction materials such as concrete forms and scaffolding shall be neatly stacked by Contractor when not in use. Contractor shall promptly remove splattered concrete, asphalt, oil, paint, corrosive liquids, and cleaning solutions from surfaces to prevent marring or other damage.
- D. Only use cleaning materials recommended by manufacturer of surface to be cleaned.
- E. Use cleaning materials only on surfaces recommended by cleaning material manufacturers.

3.2 CLEANING DURING CONSTRUCTION

- A. During execution of work, clean site and public properties and legally dispose of waste materials, debris, and rubbish to assure that buildings, grounds, and public properties are maintained free from accumulations of waste materials and rubbish.

All soil and any other material tracked onto the streets by the Contractor shall be cleaned immediately. The Contractor shall comply with all rules and regulations as applicable for its cleaning method.

- B. Dispose of all refuse off District property as often as necessary so that at no time shall there be any unsightly or unsafe accumulation of rubbish.
- C. Wet down dry materials and rubbish to lay dust and prevent blowing dust.
- D. Provide approved containers for collection and disposal of waste materials, debris, and rubbish.
- E. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from exposed and semi-exposed surfaces.
- F. Repair, patch, and touch up marred surfaces to specified finish to match adjacent surfaces.
- G. Vacuum clean all interior spaces, including inside cabinets. Broom clean paved surfaces; rake clean other surfaces of grounds.
- H. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.
- I. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.
- J. Vacuum clean interior of shop building areas when ready to receive finish painting and continue vacuum cleaning on an as-needed basis until successful completion of the Startup Test as defined in Section 01 75 17, Field Testing and Startup.

3.3 FINAL CLEANING

- A. At the completion of work on all portions of the contract and immediately prior to final inspection, cleaning of the entire project will be accomplished according to the following provisions:
 - 1. Thoroughly clean, sweep, wash, and polish all work and equipment, including finishes. The cleaning shall leave the structures and site in a complete and finished condition to the satisfaction of the Engineer.
 - 2. Should the Contractor not remove rubbish or debris or not clean buildings and site as specified above, the District reserves the right to have the cleaning done at the expense of the Contractor.
 - 3. Employ professional cleaners for final cleaning.

4. In preparation for contract completion, conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces.
5. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed interior and exterior finished surfaces; polish surfaces so designated to shine finish.
6. Repair, patch, and touch up marred surfaces to specified finish, to match adjacent surfaces.
7. Broom clean paved surfaces; rake clean other surfaces of grounds.
8. Replace air-handling filters if units were operated during construction.
9. Clean ducts, blowers, and coils, if air-handling units were operated without filters during construction.
10. Clean luminaries in accordance with manufacturer's recommendations and relamp. Clean all light fixtures.
11. Clean debris from roofs, gutters, and downspouts.
12. Remove from District property all temporary structures and all material, equipment, and appurtenances not required as a part of, or appurtenant to, the completed work.
13. Leave watercourses, storm drains, inlets, and ditches open and clear.
14. Remove any loose-fill insulation (perlite or vermiculite) not used for the work.

END OF SECTION

SECTION 01 75 17

FIELD TESTING AND STARTUP

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section covers general equipment and system testing and startup requirements, services of the manufacturer's representatives and special coordinating services required of the Contractor that shall apply during construction. Specific testing and tracking procedures and requirements found in the Technical Specifications shall also apply. Where testing and tracking procedures and requirements differ from requirements of this section, the more stringent shall apply.
- B. The Contractor shall inform all subcontractors and manufacturers of the requirements herein and include the required services in the costs for the work specified in these Contract Documents. Where a minimum amount of time is stated in the Technical Specifications for manufacturers' services, any additional time required to perform the specified services shall be provided at no additional cost to the District.
- C. Equipment testing and plant startup are requisite to satisfactory completion of the Contract and, therefore, shall be completed within the contract time. All equipment testing and plant startup activities shall be realistically allowed for and shown on the Contractor's Construction Progress Schedule, in accordance with Section 01 32 00 Construction Progress Documentation.
- D. All equipment testing and plant startup activities shall be scheduled in conformance with the restrictions specified in Sections 01 14 00 Work Restrictions and 01 35 13 Special Project Procedures.
- E. Equipment testing shall be satisfactorily completed prior to commencing plant startup associated with the particular equipment item or equipment package. The equipment shall not be considered ready for testing until the following conditions are satisfied:
 - 1. Manufacturer's certification of equipment installation has been accepted by the Engineer.
 - 2. Electrical and/or instrumentation subcontractor certification of motor control logic has been accepted by the Engineer.
 - 3. Related Technical Submittals, O&M Manual and Final Shop Drawings have been accepted by the Engineer.

- 4. Operator training services have been furnished by the Contractor (must be completed prior to operational testing only), per Section 01 79 00 Demonstration and Training.
- 5. Testing procedures have been submitted in writing and accepted by the Engineer in accordance with Section 01 33 00, Submittal Procedures. All testing procedures and results shall be submitted in writing.
- F. The requirements of plant startup specified herein shall also apply to the startup of individual treatment plant processes and facilities.

1.2 DEFINITIONS

- A. Test Procedures: Test procedures shall include testing methods, acceptance criteria, procedures, and test data forms for functional, performance and startup tests.
- B. Functional Test: The field testing required to determine if installed equipment or system will operate in a satisfactory manner and as specified. The Functional Test is a point-by-point test to confirm that all components associated with the equipment or system is operating properly. Functional testing is not intended to measure efficiency and performance.
- C. Performance Test: The field testing required to demonstrate the individual equipment or system meets all of the specified performance requirements.
- D. Startup Operational Test: A test of all systems operating together to demonstrate satisfactory performance of the facility as a whole for a continuous period.
- E. Startup: The process of performing startup testing of the facility, which includes functional test, performance test, and startup/operational test.

1.3 FIELD TESTING INSTRUMENTS

- A. Contractor shall provide all instruments and materials necessary to complete the field tests unless otherwise specified.
- B. All instruments shall be calibrated. Certificates of calibration shall be current, and shall be at the job site during testing and provided upon request or when specified.

1.4 QUALITY ASSURANCE

- A. All tests shall be subject to approval of the Engineer, and shall be witnessed by the District.

1.5 SUBMITTALS

- A. Not less than ninety (90) calendar days prior to initial equipment or system startup, the Contractor shall submit to the Engineer for review, a detailed Facilities Startup Plan for the associated items of equipment and/or systems. The Plan shall be updated and/or revised as necessary prior to subsequent Construction Progress Meetings. Testing shall not be scheduled until the Plan is approved. Said Plan shall include:
 - 1. A detailed sub-network of the Contractor's Construction Progress Schedule including the following activities: Manufacturer's Services; Installation Certifications; O&M Manual submittal; Functional Testing; Performance Testing; Operator Training; Startup Operational Testing; and all other activities necessary to effect a coordinated and successful Testing, Training and Startup.
 - 2. Written test procedures with proposed checklists for each item of equipment to be tested and acceptance criteria indicating an acceptable test result. Separate procedures shall be provided for functional, performance, and operational testing.
 - 3. A discussion of any coordination required with District staff and/or any system or equipment outage requirements.
- B. Furnish names and telephone numbers of manufacturer's and vendor's current technical service representatives for use by the Engineer.
 - 1. For startup of the oxygen production system, including Main Air Compressors and cold boxes, Contractor shall employ a Cryogenic Oxygen Plant specialist firm with a record of having successfully executed startups at least five Union Carbide "U" series cryogenic oxygen plants in the previous five years. Submit firm's qualifications, including reference contacts from at least five Union Carbide "U" series plants to the District for review.
- C. At least sixty (60) calendar days prior to startup, provide a list of the manufacturer's recommended lubricants for use in the plant. All equipment lubrication shall be listed with the lubricant types and quantities recommended and approved by the equipment manufacturers. Provide the necessary lubricants for startup and the initial sixty (60) days of operation.
- D. Upon completion of testing for each equipment item or system, the Contractor shall submit typewritten or word processed test reports and forms for review and acceptance. Submit test results with signed statement by manufacturer's representative that results meet specification requirements and manufacturer standards; when a manufacturer's representative is not required to be present during testing, this signed statement shall be provided by the Contractor. Upon

acceptance, all test reports (including all factory and field testing) shall be inserted by the Contractor into their respective O&M manuals.

- E. Final cold box leak check plan and P&ID markups of as-built conditions at least sixty (60) calendar days prior to startup of a cold box.

1.6 SYSTEM STARTUP AND TESTING

A. General:

- 1. The Contractor shall provide the effective coordination of all parties necessary for the successful project startup.

The Engineer shall not be responsible to instruct the Contractor in the startup of the project, however, the Engineer will be available prior to and during startup to provide operational and technical support to the Contractor.

The Engineer will be available to advise the contractor on any equipment or system startup that has, or could, have an effect on a plant operating process.

- 2. The Contractor shall furnish all labor, consumables (power, water, chemicals, air, etc.) tools, equipment, instruments, and services required and incidental to completing all functional, performance and operational testing of installed equipment.
- 3. The Contractor shall give the Engineer written notice confirming the date of testing at least five (5) working days before the time the equipment is scheduled to be tested.
- 4. All testing shall be witnessed by the Engineer to be considered valid.
- 5. Contractor shall submit written detailed results of all functional, performance and operational testing.

B. Functional Testing:

- 1. All items of mechanical and electrical equipment shall be functionally tested by the Contractor after installation for proper operation. A minimum of ten (10) days prior to the start of functional testing, the Contractor shall submit interconnection diagrams for the equipment and for the alarms, controls and instruments associated with the equipment. This requirement shall not relieve the Contractor of meeting any requirements in the technical specifications for earlier submittal of the interconnection diagrams.

2. The functional test of each piece of mechanical equipment shall continue for not less than eight (8) continuous hours without interruption.
3. The functional test, shall include checking for proper rotation, adjustment, alignment, mechanical and electrical connections, proper lubrication, speed, flows, pressure, vibration, sound level, etc. Initial equipment and system adjustment and calibrations shall be performed in the presence of and with the assistance of the manufacturer's representative.
4. The functional test shall include a demonstration of the proper performance of all alarms, local and remote controls (including DCS), instrumentation, equipment functions, and all other electrical, mechanical and piping systems.
5. All parts shall operate satisfactorily in all respects, under continuous full load, and in accordance with the specified requirements, for the full duration of the eight (8) hour test period.
6. If any part of a unit shows evidence of unsatisfactory or improper operation during the eight-hour test period, correction or repairs shall be made and the full eight (8) hour test operation, as specified herein, shall be repeated after all parts operate satisfactorily.

C. Performance Testing:

1. Where performance testing is required by the Technical Specifications, the testing shall be supervised by the manufacturer's representative. These services shall continue until such times as the applicable equipment or system has been successfully tested for performance and has been accepted by the Engineer for operational testing.
2. Performance testing shall take place after functional testing is successfully completed in accordance with Article 1.6 B.
3. Performance testing shall demonstrate that the equipment meets all performance requirements specified.

D. Startup/Operational Testing:

1. Upon successful completion of operator training and the functional, performance and leakage testing, the Contractor shall startup the plant facilities and test the equipment operation and performance by conducting a seven (7) day, continuous operational test of the completed facilities as an operational process unit to demonstrate to the Engineer's satisfaction that all equipment and systems required by these specifications will operate in the manner in which they are intended to perform. Upon successful completion of operational testing, all equipment installation, testing, and maintenance records, shall be submitted to the Engineer. Said

records shall be bound separately for each piece of equipment or system and shall be collected by type of record.

2. The District will provide Contractor-trained operating personnel for the duration of the operational test. Said operation shall be conducted and under the supervision and direction of the Contractor and/or manufacturer's representative.
3. All piping, conduit, equipment, and systems have been properly tagged and labeled.
4. All defects in materials or workmanship which appear during the operational test shall be immediately corrected by the Contractor. In the event of a malfunction or deficiency that results in shutdown or partial operation of a system or process unit or results in performance that is less than that specified, the startup duration shall be repeated for that corresponding system or process unit and any other affected equipment so its proper operation and performance as required by the Contract Documents is demonstrated for a minimum of seven (7) continuous and trouble free days.
5. If the operational test is interrupted through no fault of the Contractor, the test may resume at the earliest mutually agreeable time. The Contractor shall maintain a log of equipment or system deficiencies along with a description of required repairs to correct the problem.
6. No unit process or part thereof shall be placed in service until it has successfully completed operational testing.
7. During plant startup, the Contractor shall provide the appropriate construction trades and the services of authorized Manufacturer's representatives for operational testing and as necessary, to correct faulty equipment operation. All costs for corrective work and retesting shall be born by the Contractor.
8. After completion of all startup/operational testing, the Contractor shall repaint, hose, scrub, clean up and otherwise return the work to a "like new" condition, prior to District acceptance.

E. Factory testing:

1. The District reserves the right to witness manufacturer's factory testing. Costs associated with witnessing by two (2) District representatives shall be included in the Contractor's bid. These costs shall include travel costs, costs of transport to and from lodging, lodging, and a meal allowance per person per day. The lodging and meal allowance shall at minimum be the rates advertised by the U.S. General Services Administration for locations in the U.S and rates advertised by the U.S. Offices of Allowances for

locations outside the U.S. The District reserves the right to witness factory testing of the following equipment:

- a. New DCS Control Panels – Panels to be witnessed by District at panel fabricator shop after installation of DCS equipment (provided by Emerson). See 40 95 13, Process Control Panels and Hardware for more details.
2. If any of the witnessed tests cannot be accomplished in five 8-hour working days, or a test or portion of a test fails to the point where it needs to be rescheduled at a later date, additional tests shall be required at the Contractor's expense. Included shall be expenses for the Engineer's travel, accommodations, and sustenance of the same quality used for the original test.
3. Written factory test results shall be submitted to the Engineer at least ten (10) days prior to shipment. Equipment requiring factory tests shall not be delivered to the job site until the Contractor submits acceptable certified test results to the Engineer.

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 GENERAL

- A. The Contractor shall perform all functional and performance testing of installed equipment unless other specified.
- B. The Contractor, at a minimum, shall maintain and provide to the District, the following records:
 1. Daily logs indicating all equipment testing and startup activities and activities of all manufacturer's representatives.
 2. Records of all tests, calibrations, inspections, adjustments, services and corrective actions taken
- C. In addition to the tests specified in the individual technical specifications, the Contractor shall perform additional tests as required by the Engineer to demonstrate to the Engineer's satisfaction that all equipment and systems required by the specifications will operate as intended.
- D. If the testing of any equipment may affect the operation of existing District facilities, the testing shall be done under direct supervision of the Engineer. The Contractor shall comply with directions given by the Engineer.

- E. Table 1 and 2 are a summary of equipment/systems that require functional, and performance tests. Additional testing may be required when specified elsewhere.

Table 1: Testing Summary			
(Additional tests may be required in other specification sections)			
Specification Section & Paragraph	System/Equipment Name	Functional Test Required	Performance Test Required
26 08 00, Part 3	Commissioning of Electrical Systems	Refer to Section	Refer to Section
40 80 00, 3.2	Commissioning of Process Systems	Refer to Section	Refer to Section
All equipment/systems required by these specifications shall be included in the Startup Test.			

Table 2: Power Equipment Testing Summary			
(Additional tests may be required in other specification sections)			
System/Equipment Name	Associated Circuit Breaker or Component	Circuit Breaker Test Required	Thermographic Survey Required
Switchgear S-3	Main breaker for Bus A and Bus B and Tie Breaker	N/A	Yes
U10, U11, U10-U11 Tie	Breakers	NETA	No
Main Air Compressor Motor (Qty 4)	Motor Protection Termination Box	N/A	Yes
MCC-P15	Main breaker and all feeder breakers	NETA	Yes
MCC-P16	Main breaker and all feeder breakers	NETA	Yes
MCC-P17	Main breaker and all feeder breakers	NETA	Yes
Main Air Compressor Motor Starter (Qty 4)	New MV Cable lug connection	N/A	Yes

3.2 SERVICES DURING CONSTRUCTION

- A. General:

1. The Contractor shall provide the services of competent and experienced technical representatives of the manufacturers of all equipment and systems furnished under the contract, for as many days as may be necessary for assembly, installation and testing assistance. In each case, the Contractor shall arrange to have the manufacturer's representative revisit the job site as often as necessary until testing and startup problems have been resolved to the satisfaction of the Engineer. This requirement applies to manufacturers of all equipment furnished (excluding manually operated valves smaller than twenty-four (24) inches in size, and any other items of equipment specifically exempted by the Engineer in writing), whether or not specifically set forth in the Technical Specifications. The Contractor shall maintain a service record on each item of equipment and shall deliver these service records to the Engineer prior to acceptance of operational testing.

B. Fulfillment of Specified Minimum Services:

1. The Contractor shall obtain prior written approval from the Engineer for providing manufacturers' services. All requests to the Engineer for prior approval shall 1) be in writing, 2) be submitted not less than ten (10) calendar days prior to providing of the subject services, 3) state the service to be provided, and 4) state the reason(s) why the timing of the service is appropriate. Request made to the Engineer less than ten (10) calendar days prior to the manufacturers' services may not receive consideration and response prior to the times the services are provided. Visits of manufacturers and their representatives to the jobsite or training classroom without prior approval as provided herein may not act to fulfill the specified minimum man-day requirements.

C. Certificate of Proper Installation:

1. Equipment shall not be considered ready for functional testing until after the following certifications have been submitted and accepted by the Engineer.
 - a. The Contractor shall require that each manufacturer's representative furnish to the Engineer a written and signed report addressed to the District certifying that the equipment has been properly installed, adjusted, lubricated, is in accurate alignment, is free from any undue stress imposed by connecting piping or anchor bolts, has been operated satisfactorily under full-load conditions and is ready for full-time operation. For pumps, compressors, blowers, engines, motors, and other rotating or reciprocating equipment, the report shall certify that the equipment operates within the manufacturer's allowable limits for vibration. The report shall also certify that all controls, protective devices, instrumentation, and control panels furnished as part of the

manufacturer's equipment package are properly installed and calibrated; and that the control logic for equipment startup, shutdown, sequencing, interlocks, and emergency shutdown has been tested and is properly operating. The Contractor shall also sign said certification. The Contractor shall submit "Manufacturer's Certification of Proper Installation" on the District form, provided at the end of this Section.

- b. The Contractor shall require that the electrical and/or instrumentation subcontractor furnish a written and signed report to the Engineer certifying that the motor control logic for the equipment item that resides in motor control centers, control panels, control boards, microprocessors, distributed processing units, computers, and the like furnished by the electrical and/or instrumentation subcontractor has been properly tested and calibrated. The report shall certify that the control logic for equipment startup, shutdown, sequencing, interlocks, and emergency shutdown has been tested and is properly operating. The Contractor shall also sign said certification.

3.3 RECORD KEEPING

- A. The Contractor shall maintain as a minimum, the following records:
 - 1. Equipment manufacturer's shop drawings
 - 2. Daily logs indicating all equipment testing and startup activities.
 - 3. Log and time sheets of all manufacturers' representatives performing services on the jobsite
 - 4. Updated equipment testing and startup schedules
 - 5. Records of system cleaning
 - 6. Hydrostatic and pressure test records
 - 7. Equipment alignment and vibration measurements and corrective actions
 - 8. Equipment lubrication records
 - 9. Insulation resistance measurements
 - 10. Electrical phase, voltage and amperage measurements
 - 11. Electrical breaker inspection, test, and adjustment records
 - 12. Logs of abnormal circuits and lifted wires

13. Testing and validation of all central and alarm functions
14. Data sheets of all testing and calibration of instrumentation devices and control loops including documentation of set points
15. Equipment and system release logs (from construction to startup)
16. Daily work reports
17. Adequate manufacturer's instruction file so that the information will be readily available during equipment testing and startup.
18. A record of flushing and chemical/mechanical cleaning
19. Prior to startup, provide the Engineer with a record of all test data and the work completed.

3.4 CONSTRUCTION

A. Removal of temporary bracing:

1. Prior to equipment testing, remove all temporary supports, bracing, or other foreign objects that were installed in vessels, transformers, rotating machinery, or other equipment to prevent damage during shipping, storage, and erection, and repair any damage sustained.

3.5 FIELD QUALITY CONTROL

The general work procedures listed below outline the work to be performed by the Contractor. Additional procedures applicable to specific equipment items are specified elsewhere.

A. General

1. Operate the equipment and check for excessive vibration, abnormal operating noises, overheating and lubricant leakage, etc., and test any safety shutdown/alarm devices for proper operation, and make any operating tests required by the Engineer. The adjustments required for proper operation shall be made prior to operational testing.
2. Prior to startup, all sidewalks, gratings, handrails, safety chains, safety shields, etc., shall be installed.
3. Prior to startup, demonstrate to the Engineer's satisfaction that all chemical solution pipelines are connected to the intended tank(s), feeder(s), pump(s), and application points, and that the pipes, appurtenances contained therein and diffusers will operate at the intended flow rates.

4. Prior to startup, the applicable safety equipment, emergency shower and eyewash units, fire extinguishers, fire suppression equipment, self-contained breathing apparatus, toxic and/or combustible gas detectors (including the respective personnel warning system), protective clothing, emergency repair kits, etc., shall be installed in an acceptable manner-subject to the Engineer's approval, and be fully ready for operation.
5. All safety hazards, e.g., exposed drive shafts or rotating equipment members, exposed electrical circuitry, open electrical junction boxes and panels, improperly supported piping and conduits, missing safety devices, etc., shall be corrected prior to supplier training of the District's personnel.
6. The Contractor shall perform a comprehensive safety inspection and correct any safety deficiencies found before implementing plant startup.
7. Roadways that are required for ambulance service, fire fighting access, delivery of treatment chemicals and supplies, and disposal of the treatment byproducts shall be completed prior to startup.
8. Prior to startup, install all warning and safety signs, labels, and devices.
9. Test all tanks and internals, as required to demonstrate conformance to the Contract Documents. Dispose of test media in a manner that is acceptable to and approved by the District and the applicable regulatory agencies.

B. Electrical power and lighting systems:

1. Provide the Engineer with 3-day advance notification in writing of the test schedule. The Contractor is advised that the tests shall be witnessed by the Engineer.
2. Perform insulation resistance tests on all wiring 120 volt and larger. Do not meggar instruments or solid-state devices.
3. Perform insulation resistance tests on all motor and transformer windings from phase to phase and phase to ground.
4. Perform grounding system tests to determine the continuity of connections and the value of resistance to ground.
5. Fill electrical gear with oil and/or other media as recommended by the equipment manufacturer.
6. Prior to substantial completion and startup, test and set switchgear and circuit breaker relays for proper coordination and operation.
7. The Contractor shall obtain the services of a qualified "independent testing service", member of the National Electric Testing Association, to perform

a thermographic survey on all switchgear buses, insulators and power connections when energized and under at least 20 percent load. Significant hot spots shall be further checked by infrared pyrometer for exact temperature rise. The Contractor shall troubleshoot and correct the thermographic hot spots. Correction shall be verified by repeating the thermographic survey at no additional cost to the Owner.

8. The Contractor shall obtain the services of a qualified "independent testing service", member of the National Electric Testing Association, to inspect and test the protective relays and the 800-ampere and larger drawout breakers for proper installation, adjustment, and operation in accordance with the manufacturer recommendations.
9. The Contractor shall obtain the services of a qualified "independent testing service", member of the National Electrical Testing Association, to perform DC high potential tests on all cables that will operate at more than 2,000 volts to ground.
10. Obtain local electrical inspector's approval where required.
11. Energize all substations, with approval of the Utility Company and the Engineer after completion of all electrical testing.
12. Prior to startup, perform tests and adjustments on all switchgear and motor control equipment to demonstrate proper operation and conformance to the Contract Documents and manufacturer's recommended settings.
13. Prior to startup, test installation of emergency power and lighting systems for proper operation, including light intensity.
14. Vacuum clean all electrical equipment prior to startup and acceptance.

C. Cryogenic Oxygen Production Piping Systems and Valves Leak Testing:

1. Provide the Engineer with three (3) day advance notification in writing of the schedule for nonoperating field leak tests or field pressure tests on piping and field fabricated equipment, unless otherwise directed by the Engineer.
2. Contractor shall submit their plan for leak testing at least 60 days prior to startup of a cold box. Contractor shall identify any existing leaks prior to start of Work that will not be repaired as part of the Work. Contractor shall repair any leaks found as a result of its Work.
3. Contractor shall submit sample test forms that will be used for all tests.
4. Pressure Zones in Cryogenic Oxygen Plant:

- a. There are two pressure zones in the cryogenic oxygen plant. They can be described as high pressure and low pressure.
 - b. The high pressure passages and vessels of the plant operate at between 60-70 PSIG. The high pressure passages and vessels include, but are not limited to, the lower column, the cold end gel trap, the reversing heat exchanger, the switch valves, the cold end check valves, and the high pressure side of all the miscellaneous piping.
 - c. The low pressure passages and vessels operate at between 4-6 PSIG. The low pressure passages and vessels include, but are not limited to, the upper column, the recirculating gel trap, the low pressure side of the cold end check valves and switch valves, and the low pressure side of all the miscellaneous piping and heat exchangers
5. Leak testing shall be performed before an isolated system of the plant is put online. Leak testing shall be performed around any breakage in process piping, flanges, or fittings throughout the project. All fittings, fasteners, and process piping and vessels that contain pressure shall be leak tested before access is lost to those areas of the plant. This applies both inside and outside the cold box. Leak testing shall occur for each individual valve, flange, and fitting included in the Work.
6. One final leak check of the cold box as a system is required prior to filling the cold box with insulation and proceeding with the start-up of the cold box.
7. Leak testing shall be performed by pressurizing the line associated with the flange, fitting, or valve which had undergone work. The line shall be pressurized to operating pressure using air from the main air compressor. Once the line is pressurized the entire area shall be sprayed with an approved leak check solution. The area shall then be monitored for a period of ten minutes for bubbles. Any bubbles are an indication of a leak. Areas with leaks shall be re-fastened and re-checked until no bubbles appear. No leaks are acceptable. Testing pressures for low pressure areas of the plant shall not exceed 7 PSIG and higher pressure areas of the plant shall not exceed 70 PSIG.
8. Valve testing occurs when the valve is fully open and when the valve is fully closed. Both flanges shall be fully sprayed with a leak check solution. The valve packing shall be sprayed as well to ensure that there are no packing leaks. The valve shall be actuated twice during this process, fully open and fully closed, to ensure the valve is not being jarred into a leaking position.

9. All pressure vessels and process piping internal to the cold box shall be sprayed with leak check solution and check for full system integrity. This includes but is not limited to heat exchanger seams, thermowells, threaded fittings, compression fittings, flanges, valves, and welded caps to ensure absolutely no leaks are present inside the cold box.
10. Compression fittings shall be sprayed with a leak check solution on both sides of the fitting. It is important that the fittings are not applied incorrectly and not overtightened. If this occurs the Contractor shall replace the fitting.
11. Blind flanges inside the cold box shall be leak tested by spraying a leak check solution around the entire flange when the associated pressure vessel is at operating pressure or slightly below relief valve settings. The area shall be monitored for a period of 10 minutes if any bubbles or leaks are formed or detected the blind flange should be re-fastened and re-tested.
12. A leak down test shall occur after all valves are installed to ensure that no valves are leaking across their seat. This test would show that pressure is not migrating across valve seats and into other areas of the plant. Measure pressure upstream and downstream of the valve.
13. Insulate or paint piping, flanges, threaded joints, or field welds after the specified testing of each item has been completed unless instructed otherwise by the Engineer.
14. Prior to substantial completion and startup, check pipehangers, supports, guides, and pipe specialties for the removal of all shipping and erection stops and for the correctness of the cold and hot settings for the design service. Make adjustments as necessary to obtain proper installation. Provide the Engineer with instructions for the hot settings.
15. Prior to startup, install all of the valve and piping system identification labels.
16. Prior to startup, check and record the position of all process system valves.
17. Prior to startup, correct support, vibration, and thermal expansion problems detected during the preliminary equipment testing.
18. Prior to the startup, retorque all hot and cold service bolting as required to ensure a permanent and proper installation.
19. Prior to startup, demonstrate to the Engineer's satisfaction that each piping system (e.g., chemical, sample, utility, irrigation process, etc.) functions as designed and required by the contract documents.

D. Final Cryogenic Leak Check Procedure:

1. A final leak check shall take place after all valve and fitting work has been completed. This final leak check shall be fully documented and marked up on a copy of updated P&IDs to ensure that each valve, fitting, and fill port has been thoroughly checked and monitored for a ten minute period for any bubbling and leaking. In order to properly leak check valves in and around the cold box, the cold box must be set up properly in order to maintain proper pressure without setting off relief valves or putting low pressure components at risk. The Contractor shall work with the District during the leak check to assist in starting the compressor and operating various manual valves to complete the check. A sample procedure is provided below, Contractor may propose modifications to this procedure except where leak checks are called out.
 - a. Align valves and remove any blind flanges blocking air flow from the chosen main air compressor to the cold box to be tested.
 - b. Ensure that the interconnection valve between the two plants is closed so the running plant is not impacted by the leak test.
 - c. Close all manual process valves including the cold end gel trap isolation valves.
 - d. Ensure that all work in and around the cold box is completed and that valves are operational and in their fail-safe positions. All calibration of transmitters, valves, and flow meters should be completed to verify pressures throughout the plant.
 - e. Start the intended main air compressor with the assistance from District and allow the compressor to come online. The compressor should be allowed to idle for ten minutes before loading to operating pressure.
 - f. After approximately ten minutes load the compressor to 60-65 PSIG. Once pressure has stabilized set the pressure in auto to maintain 60-65 PSIG throughout the leak check procedure.
 - g. Air should be flowing and pressurized at the inlet switch valves. Using a listening device check that no air is moving past the switch valves. If air is moving past the switch valves then the closed stop on the actuator will need adjusted to close the valve completely.
 - h. After checking that the inlet switch valves are leak free, introduce air through the switch valve bypasses and allow pressure in the reversing heat exchanger up to HV-X201A which should be closed, to balance with the MAC pressure. Air flow into the plant should stop when equalized.

- i. Check that there is no air flowing out of the waste nitrogen switch valves with a listening device. If any air is flowing from these valves their closed stop will need to be adjusted prior to continuing with the test.
- j. Spray both pairs of switch valves with leak check solution and ensure they are not leaking.
- k. Spray the inlet check valves (HV-Y113A and HV-Y112A) on both flanges to ensure there are no leaks.
- l. After waiting for the check to be completed the inlet air switch valves should be actuated and rechecked. The packings on all switch valves shall also be checked at this time.
- m. Once the inlet check valve leak check is complete the cold end gel trap should be pressurized by cracking open HV-X201A to allow flow into the gel trap. Once pressurized close HV-X201A and keep track of how long it takes for pressure to drop in the cold end gel trap. Leak check HV-X201A while waiting for a pressure drop.
- n. Once the leak check of HV-X201A is complete slowly open HV-B201A to allow air to flow into the lower column. Allow the lower column to pressurize to 60-65 PSIG. Once the lower column is pressurized check that no pressure or flow is going into the upper column which is the low-pressure column.
- o. If pressure is flowing into the upper column, adjust FV-213A, LV-330A, and FV-340N until no flow is present.
- p. Perform a flow test on FV-213A, LV-330A, and FV-340N.
- q. To perform a flow test with the above valves, the upper column will need to be at or close to 0 PSIG. Slowly open the valve to be tested and wait for the upper column pressure to rise. Once the pressure has risen to 2-3 PSIG close the valve and vent out the FV-601X product oxygen vent valve. Repeat test for the above valves.
- r. Once the flow test has been completed the entire system needs to be pressurized. Open FV-213A, LV-330A, and FV-340N about 15-20% and open FV-601X until the pressure in the upper column reaches at least operating pressure (5 PSIG) but no greater than 7 PSIG. At this time all valves all sides of the valves will be pressurized. Leak check all valves, fittings, fill ports, and valve packings including instrument tubing external to the cold box.

- s. All found leaks shall be noted on approved test forms and corrected. After correcting the leaking point shall be rechecked to ensure proper seating.
- t. After testing, close the switch valve bypasses and open the waste nitrogen switch valves (FCV-113N & FCV-114N) to depressurize the plant through the upper column. Check the packings on these valves to ensure they are not leaking.
- u. Once the plant has depressurized close all valves and return them to their fail-safe position.

3.6 ADJUSTING AND CLEANING

A. Mechanical equipment:

1. Level baseplates and soleplates and grout under all load bearing surfaces.
2. Install suitable supports and flexible connections to alleviate any piping stresses that may be imposed on pumps, compressors, and drivers.
3. In accordance with the manufacturer's recommendations, chemically clean lube oil, seal oil, and cooling systems. Dispose of waste and cleaning media in a manner that is acceptable to and approved by the District and applicable regulatory agencies.
4. In accordance with the manufacturer's recommendations, charge the lube oil, seal oil, and cooling systems with flushing media and circulate for cleaning purposes. Dispose of any flushing media in a manner that is acceptable to and approved by the District and applicable regulatory agencies.
5. Charge the lube oil systems, seal oil systems, and cooling systems with the amount and type of operating oil or coolant recommended by the manufacturer.

B. Tanks:

1. Prior to startup, conduct chemical cleaning or flushing operations as specified. Dispose of wastes and cleaning media in a manner that is acceptable to and approved by the District and the applicable regulatory agencies.
2. Prior to startup, install all chemical identification, warning, and safety signs and labels.

C. Removal of rust preventives:

1. Prior to equipment testing, remove all rust preventives and oils used to protect the equipment during the construction period whenever these protective materials will be detrimental to operation or equipment maintenance.

D. Lubricants:

1. Flush systems and install the initial charge of all lubricants. Dispose of flushing oil in accordance with applicable regulations.
2. The Contractor shall lubricate the equipment in accordance with the manufacturer's recommendations until the equipment is accepted by the District.
3. Maintain a lubrication record for each item of equipment. The Contractor shall submit the lubrication records to the Engineer prior to equipment testing.

E. Packing and seals:

1. Install, adjust, and replace packing, mechanical seals, and accessories, as necessary, during the equipment testing and startup period.
2. Adjust seal water and flushing water flow rates in accordance with the equipment manufacturer's recommendations.

F. Rotation, alignment, and vibration:

1. Prior to equipment testing, check rotating machinery for correct direction of rotation and for freedom of moving parts before connecting the driver.
2. Prior to equipment testing, perform the cold alignment and hot alignment to the manufacturer's tolerances.
3. Prior to equipment testing, test equipment vibration and correct any vibration in excess of the manufacturer's recommendation.

G. Tie-ins at the contract limits:

1. Obtain approval and make the necessary tie-ins at the unit limits as required by the Contract Documents and as approved by the Engineer.
2. Prior to startup, remove the temporary blind flanges, plugs, bulkheads, seals, etc.

H. Pressure/vacuum safety relief devices:

1. Prior to equipment testing, test and adjust all safety devices as recommended by the equipment manufacturer.

2. Prior to plant startup, provide the Engineer with a list of all field or factory equipment settings.
- I. Flushing and chemical/mechanical cleaning:
1. Prior to equipment operation, conduct all flushing, blowing, and chemical/mechanical cleaning operations without using the permanently installed equipment.
 2. Provide any special media needed for flushing and/or cleaning purposes.
 3. Dispose of all media in a manner that is acceptable to and approved by the District and the applicable regulatory agencies.
 4. All systems shall be free of trash and construction debris before initiating startup.
- J. Screens and strainers:
1. Provide and install temporary strainers and screens necessary to protect the equipment and to test the equipment and pipelines.
 2. Prior to startup, remove all of the temporary blinds and temporary appurtenances.
 3. Clean the screens and strainers as required during startup.
 4. At the end of startup, clean all of the permanently installed screens and strainers.
- K. Purging/inerting:
1. Prior to startup, purge and/or passivate the facilities as specified.
 2. Install purge/inerting connections in accordance with the manufacturer's recommendations.
 3. Provide purge or inerting materials and conduct the necessary operations as recommended by the equipment manufacturer.
- L. Drying out:
1. Prior to startup, dry out the facilities as specified or recommended by the equipment manufacturer to prevent contamination of catalysts, operating materials, and/or product
 2. Dry out systems, protective coatings, refractories, and linings as specified or recommended by the equipment manufacturers.

M. Cryogenic equipment and piping:

1. Prior to returning oxygen piping to service, clean all oxygen valves and piping in accordance with ASTM-G93-03.

END OF SECTION

THIS PAGE IS LEFT INTENTIONALLY BLANK.

MANUFACTURER'S CERTIFICATE OF PROPER INSTALLATION

This is to certify that the equipment supplied by (MANUFACTURER'S NAME) and described as (NAME OF EQUIPMENT) has been installed in accordance with manufacturer's recommendations. The equipment was inspected by an authorized manufacturer's representative on (DATE) and has been serviced with the proper initial lubricants and is free from any undue stress imposed by piping or supports. Applicable safety equipment has been properly installed and proper electrical and mechanical connections have been made. Proper adjustments have been made and the equipment and or system is ready for operation. All reports have been submitted to the District and the equipment and or system is certified for field testing and startup in accordance with Specification SD-[number] [project title], Section 01 75 17 Field Testing and Startup.

Authorized Manufacturer's Representative

Contractor's Representative

Title

Date

Title

Date

MANUFACTURER'S CERTIFICATE OF FUNCTIONAL TESTING ASSISTANCE

Functional testing, including checks for proper rotation, alignment, speed, excessive vibration, and noisy operation has been performed. The equipment has been operated under full-load conditions and is ready for full-time operation. Controls, protective devices, instrumentation, and control panels are properly installed and calibrated. The control logic for startup, shutdown, sequencing, interlocks, etc. has been tested and is properly operating. This testing, including initial equipment and system adjustment and calibrations, was performed in the presence of the manufacturer's representative on (DATE).

Authorized Manufacturer's Representative

Title

Date

THIS PAGE IS LEFT INTENTIONALLY BLANK.

SECTION 01 77 00

OPERATIONAL COMPLETION AND PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Specification sections, apply to work of this section.

1.2 DESCRIPTION OF OPERATIONAL COMPLETION

- A. The work will be considered operationally complete when all technical and administrative submittals, testing, training and startup are completed satisfactorily in accordance with Specification Section 01 75 17 Field Testing and Startup, and the Technical Specifications.
- B. Work under Paragraph 1.2A excludes:
 - 1. None.
- C. Work under Paragraph 1.2A shall include but is not limited to the following components, all of which must be completed prior to operational completion.
 - 1. All work indicated on the Contract documents, including but not limited to replacement of all valves, installation of conduit & wiring, installation of new MAC motors, re-coating of the cold boxes, controls upgrades, programming, integration, and startup services.
 - 2. All work as necessary for successful startup and performance testing of each oxygen plant.
 - 3. All work as described in Section 01 11 00, Summary of Work.

1.3 CERTIFICATION OF OPERATIONAL COMPLETION

- A. When the Contractor considers that the Work, or a portion or phase thereof which the District agrees to accept separately, is operationally complete, the Contractor shall certify in writing that the work is operationally complete and shall prepare and submit to the Engineer a comprehensive list of items to be completed or corrected prior to contract completion (punchlist). The Engineer may add additional work items to the punchlist. Failure to include an item on the punchlist does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Upon receipt of the Contractor's punchlist, the Engineer will make an inspection to determine whether the Work or designated portion thereof is operationally complete. If the Engineer's inspection

discloses any item, whether or not included on the Contractor's list, which is not in accordance with the requirements of the Contract Documents, the Contractor shall, upon notification by the Engineer and before an issuance of the Certificate of Operational Completion is provided, complete or correct such item. The Contractor shall then submit a request for another inspection by the Engineer. When the Work or designated portion thereof is accepted by the Engineer to be operationally complete, the Engineer will prepare a Certificate of Operational Completion. The date of Operational Completion shall be the date of the Engineer's inspection and acceptance.

1.4 DESCRIPTION OF PROJECT CLOSEOUT

- A. Closeout is hereby defined to include general requirements near the end of the Contract Time, in preparation for final acceptance, final payment, normal completion of contract, occupancy by District and similar actions evidencing completion of the work. Individual specification sections may contain additional requirements.

1.5 SUBMITTALS

- A. Project Closeout items: Required prior to release of final payment.
 - 1. Record Drawings: As required in Section 01 78 39 Record Drawings.
 - 2. Equipment and Parts Close-out List: A summary list of materials and parts required by the individual specification sections.
 - 3. Operations and Maintenance Manuals: As required in Section 01 33 00 Submittal Procedures.
 - 4. Special Bonds, Special Warranties, and Service Agreements: As required by individual specification sections. Provide written evidence that these bonds, warranties, and agreements have been satisfactorily performed.
 - 5. Releases of Claims: As required in Section 01 29 00 Payment Procedures.
 - 6. Releases from Agreements: As required by individual specification sections.
 - 7. Spare Parts, Special Tools and Extra Material: As required by individual specification sections. Include inventory.
 - 8. Cleaning: As required in Section 01 74 05 Cleaning.
 - 9. Field Records: As required by individual specification sections.
 - 10. Training: As required by Section 01 79 00 Demonstration and Training.

11. Inspections and certifications from outside agencies: As required by individual specification sections.

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 FINAL CLEANUP

- A. At completion, leave project clean and ready for use.
 1. Legally dispose of waste materials, debris and rubbish off the site.
 2. Remove grease, dust, dirt, stains, labels, fingerprints and other foreign materials from exposed and enclosed surfaces.
 3. Repair, patch and touch up all affected curbs, gutters, and sidewalks to match adjacent surfaces.
 4. Broom clean paved surfaces, rake clean other surfaces of grounds.
Vacuum clean all interior surfaces, rake clean other surfaces of grounds.

3.2 RESTORATION OF DAMAGED WORK

- A. Restore or replace damaged materials and finishes caused by movement of equipment or other operations as specified or directed by the Engineer, at no additional cost to the District.
- B. Restoration shall be equal to the original Work, and finishes shall match the appearance of existing adjacent Work.
- C. Restore or repair damaged utilities designated as protect in place that became damaged as a result of the Work. Damages caused by Contractor shall be repaired at no additional cost to the District.

3.3 RECORD DRAWINGS

- A. The Contractor shall prepare and submit contract Record Drawings to the District.
 1. The Contractor shall make a record of changes during construction on prints of the Drawings provided by the District for this purpose (Contract Record Drawings) as described in Section 01 78 39 Record Drawings.
 2. The reproducible drawings on which changed conditions are recorded shall be returned to the Engineer prior to project completion.

3.4 WARRANTIES

- A. Document 00 72 00 General Conditions, Article 10 cover the Contractor's responsibility to remedy defects due to faulty workmanship and materials which appear within one year from the date of final acceptance.
- B. Special guarantees are required by various sections of the Specifications. Assemble written guarantees, label and submit to the Engineer.
 - 1. Equipment guarantees shall be written in the manufacturer's standard form and shall be countersigned by the subcontractor or supplier and the Contractor.
 - 2. All other guarantees shall be written on the subcontractor's or supplier's letterhead and shall be countersigned by the Contractor.
- C. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.
- D. Additional Requirements
 - 1. Related Damages and Losses: When correcting warranted work that has failed, remove and replace other work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted work.
 - 2. Reinstatement of Warranty: When work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
 - 3. District's Recourse: Written warranties made to the District are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the District can enforce such other duties, obligations, rights, or remedies.
 - a. Rejection of Warranties: The District reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.
 - 4. The District reserves the right to refuse to accept work for the Project where a special warranty, certification, or similar commitment is required on such work or part of the work, until evidence is presented that entities required to countersign such commitments are willing to do so.

3.5 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Spare parts and maintenance materials are required by various sections of the Specifications.
 - 1. Parts and materials shall be packaged so as to preclude damage in normal handling and storage.
 - 2. Packages shall be labeled with full description of contents and project name and clearly identified as to which item of equipment they belong to. Contractor shall maintain a spare parts inventory list which shall be provided to the District prior to final acceptance.
 - 3. Submit packaged parts and materials to Engineer.
 - 4. Submit the value of all spare parts.
 - 5. Submit inventory of all spare parts handed off to the District at the end of the Work.

3.6 FINAL INSPECTION AND ACCEPTANCE

- A. Prior to requesting Engineer's final inspection for certification of final acceptance and final payment, complete the following and list known exceptions (if any):
 - 1. Submit copy of final punchlist of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, endorsed and dated by Engineer.
 - 2. Submit Consent of Surety.
 - 3. Revise and submit evidence of final, continuing insurance coverage complying with insurance requirements.
 - 4. Submit specific warranties, maintenance agreements and final certifications.
 - 5. Deliver all tools, spare parts, and extra stock of materials.
 - 6. Change over all locks to District cores/key. Return all badges.
- B. Certify in writing that the work has been completed in accordance with the Contract Documents, and request Engineer's final inspection.
- C. Within seven (7) days after receipt of the Contractor's notice that the work has been completed, including punchlist items resulting from earlier inspections, and excepting incomplete items delayed because of acceptable circumstance, the Engineer will re-inspect the work. Upon completion of re-inspection, Engineer will either prepare a certificate of final acceptance or advise the Contractor of

work not complete or obligations not fulfilled as required for final acceptance. If necessary, inspection procedure will be repeated.

3.7 RELEASES FROM AGREEMENTS

- A. Furnish District written releases from property owners or public agencies where agreements or special easements have been made, or where Contractor's operations have not been kept within the District's construction right-of-way.

- B. In the event Contractor is unable to secure written releases, inform the Engineer of the reasons:
 - 1. District or its representatives will examine the site, and Engineer will direct Contractor to complete work that may be necessary to satisfy terms of the agreement.
 - 2. Should Contractor refuse to perform this work, District reserves the right to have it done by separate contract and deduct the cost of same from the contract price, or require the Contractor to furnish a satisfactory bond in a sum to cover legal claims for damages.
 - 3. When Engineer is satisfied that work has been completed in agreement with the Contract Documents and terms of agreements, the right is reserved to waive the requirement for written release if: (1) Contractor's failure to obtain such statement is due to the grantor's refusal to sign, and this refusal is not based upon any legitimate claims that Contractor has failed to fulfill the terms of the agreement, or (2) Contractor is unable to contact or has had undue hardship in contacting the grantor.

END OF SECTION

SECTION 01 78 39

RECORD DRAWINGS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This Section outlines the items that the Contractor shall prepare and assemble for submittal of record drawings during the progress of the work including monthly updates and a final set of record drawings following completion of the work.
- B. Refer to Section 01 33 00, Submittal Procedures, for additional requirements.

1.2 QUALIFICATIONS

- A. Surveyor:
 - 1. Survey data required to survey the lateral and vertical positions of buried underground utilities or structures as part of this Contract shall be within one inch accuracy vertically and six inch accuracy horizontally of the benchmark and baseline provided by the District.
 - 2. NOT USED.

1.3 PAYMENT

- A. Payment for preparing record drawings as specified in this Section shall be based on a separate line item as indicated in the Contractor's Bid Schedule. Submittals shall be reimbursed for monthly and the final submittals following approval of each submittal and starting after the Contractor has mobilized and started the work.
 - 1. The total amount for record drawings shall not exceed \$75,000.
- B. If no monthly or final submittal is made by the time the Contractor submits his monthly invoice, no payment shall be made for record drawings for that month. Contractor forfeits that payment for the month.
- C. If the quality of the monthly or final submittal is inadequate or does not comply with the contract requirements, as determined by the Engineer, no payment shall be made for record drawings for that month. Contractor forfeits that payment for the month.

PART 2 - PRODUCTS

2.1 CONTRACT RECORD DRAWINGS

- A. The Contractor shall keep an up-to-date set of marked-up Contract Drawings on a District-supplied set of Drawings. The District-supplied set of Drawings will consist of one set of full-size copy of the Contract Drawings, supplied to the Contractor at the start of the work.
- B. During the progress of the work, the Contractor shall record on the Contract Record Drawings any changes from or additions to the work described in the Drawings and Specifications. All information recorded on the Contract Record Drawings shall be clearly legible and should follow the color code standards for marking drawings. The colors below refer to pencil, pen, linetype, highlight, text, and/or other markups.
 - 1. Red shall be used to indicate additions and/or modifications to the drawings.
 - 2. Green shall be used to indicate deletions to the drawings.
 - 3. Yellow shall be used to indicate portions of drawing that have been field verified to confirm portions installed as designed and to show construction progress.
 - 4. Blue shall be used to indicate notes or instructions to drafters.
 - 5. All marks on drawings shall be dark and legible. Text shall be legibly printed in block style letters.
 - 6. Only symbols and abbreviations shown on District Standard Drawings included in the contract reference shall be used. Where no District symbol or abbreviation is available, industry association standards such as ISA, IEEE, ANSI, etc. shall be applicable. Contractor shall add any new symbols used to standard drawing legends.
 - 7. Revisions shall be clouded and dated to indicate when the changes were made.
 - 8. Markups shall be specific and detailed, and show the actual change on the drawings. Contractor shall incorporate modifications made from Requests for Information or Change Orders as detailed markups. Callouts to reference a specific Request for Information or Change Order without an accompanying detailed markup shall be considered incomplete.
- C. Information to be recorded on the Contract Record Drawings shall include, but not be limited to, the following:

1. Actual routing of piping, electrical conduits and wire ways, whose routing is only indicated in general on the Drawings.
 2. For all electrical duck banks, the conduit size and number of conduits shall be noted adjacent to the duck bank routings, along with the width and depth of the concrete encasement.
 3. Actual location of manhole structures, handholes, junction boxes, and terminal boxes.
 4. Actual alignment of all installed pipe including location and type of fittings, pipe joints, restrained joints, thrust blocks, concrete encasements and other special features.
 5. Specific details of pipe, including size, material of construction, any connections, coatings and linings, corrosion protection system details and related appurtenances and structures.
 6. Specific details on the installation and connection of mechanical and electrical equipment, including all electrical schematic diagrams, interconnection diagrams, distributed control system (DCS) and programmable logic controller (PLC) input/output (I/O) drawings, equipment tag names and numbers, etc.
 7. Specific details on sizes, quantity, color, etc. associated with schedules, such as conduit schedules, lighting schedules, panel board schedules shall be updated to reflect field conditions.
 8. Field dimensions or any deviations where they differ from those shown on the Drawings
 9. Additions to and/or deletions from the work, including all requests for information and contract change orders
 10. Other details showing as-built conditions, including structures and foundations, which are shown differently or only in general on the Drawings
 11. Addenda
 12. Location of buried features located during construction.
- D. It is the Contractor's responsibility to ensure that any changes, deletions, specific construction details, etc., performed by a subcontractor are recorded on the Contract Record Drawings.
- E. Survey Underground Portions of Work: The Contractor shall survey the lateral and vertical position of any buried underground work as part of this Contract to within one inch accuracy vertically and six inch accuracy horizontally of the

benchmark and baseline provided by the District. The survey information shall be included on the record drawings and the Contractor shall not be allowed to cover the buried materials until after the District's inspector has verified the information as accurate and complete, and is shown on the record drawings.

F. Schedule for Submittals:

1. Monthly Submittals: Once every month, starting from the completion of mobilization as defined in Section 01 71 13 Mobilization, the Contractor shall provide the District with a copy of the then up-to-date set of marked-up Contract Record Drawings in accordance with the provisions under Section 01 29 00 Payment Procedures and Section 01 32 00 Construction Progress Documentation. Only sheets with changes from the previous month shall be submitted.
2. Final Submittal: At the end of the work, prior to Contract Acceptance, the Contractor shall provide the District with the Contract Record Drawings, showing all "as-built" conditions.

G. Type of Drawings for Submittals: Create marked-up Contract Record Drawings on District furnished PDF Drawings, sized 22-inch by 34-inch or 11-inch by 17-inch in Bluebeam Revu 21. Manually drafted mark-ups in pencil or ink are not acceptable. The Marked-up Contract Record Drawings shall be submitted electronically into the CMIS.

H. See also Section 01 77 00 Operational Completion and Closeout Procedures.

PART 3 - EXECUTION

3.1 SUBMITTAL REVIEW AND APPROVAL

A. Submittal Procedure

1. The Contractor shall submit to the Engineer for her/his review one color copy of each submittal. One copy with any review comments will be returned to the Contractor.
2. Marked-up Contract Record Drawings shall be submitted in sufficient time to allow the Engineer the following:
 - a. Not less than fifteen (15) working days for examining monthly updates.
 - b. See also Article 2.1 E. above regarding buried items.
 - c. Not less than thirty (30) working days for examining the final submittal.

B. Review by District: See Section 01 33 00 Submittal Procedures.

- C. Record Drawing Markups Review Meeting: The Contractor project manager and superintendent shall attend two 1.5-hour virtual meetings with the District to review clarity, accuracy, and comprehensiveness of mark-ups and comments.

3.2 ACCEPTANCE BY DISTRICT

- A. Approval of each submittal by the Engineer will be general only and shall not be construed as:
 - 1. Permitting any departures from the Contract requirements
 - 2. Relieving the Contractor of the responsibility for any errors and omissions in details, dimensions, quantities, or of other nature that may exist
 - 3. Approving departures from additional details or instructions previously furnished by the Engineer

3.3 CHANGES TO ACCEPTED SUBMITTALS

- A. A re-submittal is required for any change to a submittal that has been accepted. Changes which require re-submittal include, but are not limited to, drawing revisions, changes in materials and equipment or locations of such items, connection details, and any other changes to the installation. All re-submittals shall include an explanation of the necessity for the change. Changes to monthly updates may be accomplished in the subsequent monthly update immediately following the occurrence of the change.
- B. Minor corrections to an accepted submittal may be accomplished by submitting a "Corrected Copy".

END OF SECTION

SECTION 01 79 00

DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work Included: Perform training of District personnel for furnished or installed equipment, systems and facilities operation. Develop training program including scheduling, and coordination of training activities and training materials. Specific training procedures and requirements found in the technical sections shall also apply. Coordinate training program with District's Consultant who is the designer of record for this project.
- B. Related Sections:
 - 1. Section 01 32 00 – Construction Progress Documentation
 - 2. Section 01 75 17 – Field Testing and Startup
 - 3. Section 40 80 00 – Commissioning of Process Systems
- C. All training activities shall be shown on the Contractor's construction schedule in accordance with Section 01 32 00 Construction Progress Documentation.
- D. Contractor and Contractor's cryogenic oxygen plant specialist shall meet with the Engineer to review training requirements including, training schedules, lesson plans, learning objectives, content outline, instructional delivery methods, and other details as determined by the Contractor and/or the District. This meeting shall occur prior to submitting training documentation, and will be held at the Main Wastewater Treatment Plant, 2020 Wake Avenue, Oakland, CA, or other location as determined by the Engineer. Subsequent meetings may be required if all issues cannot be adequately addressed. All manufacturers' training representatives should be present at this meeting. The Contractor shall bring O&M manuals (hardcopy and electronic format), for all systems requiring training, to the meeting.

1.2 SUBMITTALS

- A. Submit a minimum of ninety (90) calendar days prior to training and include within the Facilities Startup Plan as specified in Section 01 75 17 Field Testing and Startup:
 - 1. Comprehensive training schedule identifying all training by specification section and paragraph number
 - 2. The Contractor's Training Coordinator name

3. Training lesson plans for each specification section requiring training. Each lesson plan shall include learning objectives and a content outline with approximate time scheduled for each topic.
 4. Manufacturer's training representative's resume demonstrating their qualifications and ability to perform the specified training services.
 5. Contractor shall advise the Engineer in writing of any special coordination required for any system or equipment outages.
- B. Submit a minimum of one (1) working day after final training session the attendance list(s).

1.3 TRAINING OF DISTRICT PERSONNEL

A. General

1. Operation and maintenance training of District personnel shall be provided as specified under this section (see Table 1 at end of section) or as required under other sections. These training services shall be provided by the manufacturer's representative and shall include classroom and hands-on instruction.
2. The Contractor shall provide all equipment and materials required for training.
3. Training shall be conducted by competent representatives who are certified by the manufacturer to be thoroughly familiar with the subject matter as well as instructional methods.
4. Training materials shall be submitted to the District (see Paragraph C below) for review. Acceptance of training materials is required prior to start of training.
5. All training shall be completed prior to beginning operational testing.
6. The District shall have the right to videotape any or all training sessions, or may designate separate sessions or portions thereof for the sole purpose of videotaping.
7. Training Locations: All classroom training shall be at District facilities or other locations within the San Francisco Bay Area as determined by the District unless otherwise specified. Coordinate the exact locations for training sessions with the District.
8. Training shall ensure measurable and observable means that District personnel are qualified to perform equipment task requirements, including essential knowledge, skills, and abilities. If the Contractor or the manufacturer's representative fails to provide training which qualifies the

District personnel to perform equipment task requirements, the Contractor hereby agrees to provide remedial training to ensure District personnel proficiency at no additional cost to the District.

9. The Contractor shall require that all training instructors prepare and utilize an attendance list. The Contractor shall submit the completed list to the District within one (1) working day following completion of each training session.

B. Training Schedule

1. The Contractor's coordinator shall coordinate the training periods with District personnel and manufacturer's representatives, and shall submit a training schedule and the training materials for each piece of equipment or system for which training is to be provided. Said training schedule shall be submitted not less than 21 calendar days prior to the time that the associated training is to be provided and shall be based on the then current Plan of Operation.
2. Equipment and/or systems shall be deemed suitable for use in training upon satisfactory completion of functional testing.
3. All training with regards to a unit process or part thereof shall be completed prior to the start of operational testing.
4. The Contractor shall provide distinct and separate training sessions for both operations and maintenance personnel, meeting the following criteria:
 - a. Maintenance training shall be provided for each piece of equipment listed in Table 1. The Contractor shall provide two (2) separate training sessions at a time agreed to by the Engineer. One training session shall focus on mechanical equipment and the other shall concentrate on electrical, instrumentation, and control. Training shall emphasize theory of operations, troubleshooting, and preventative maintenance and repair procedures.
 - b. Operations training shall be provided for each piece of equipment listed in Table 1. The Contractor shall provide two (2) separate training sessions for each of three (3) operating shifts (total of 6 training sessions). Sessions are to be provided for each shift, on Tuesday through Thursdays only, within the following time periods.
 - 1) Day Shift 8:00 a.m. - 2:00 p.m.
 - 2) Swing Shift 4:00 p.m. - 10:00 p.m.
 - 3) Grave Shift 12:00 a.m. - 6:00 a.m.

Training session schedules shall be approved by the Engineer. Training shall emphasize theory of operations, startup instructions, emergency and normal shutdown instructions, lockout procedures, troubleshooting, preventative maintenance, and alarm and control logic.

5. The Contractor shall confirm each training period a minimum of three (3) working days prior to the schedule time.
6. If a manufacturer's representative fails to conduct a scheduled training class, the Contractor hereby agrees to compensate the District for labor costs, including overhead, for all District personnel in attendance for the entire scheduled training period.

C. Training Content:

1. O&M Manual Review: Provide a thorough discussion of the contents of the final approved O&M Manuals, including the following:
 - a. Procedures for contacting the manufacturer's representative for equipment field service.
 - b. Procedures for ordering parts
 - c. Discussion of equipment warranty
2. Maintenance Training:
 - a. Training objectives
 - b. Routine and preventive maintenance
 - c. Adjustment procedures
 - d. Overhaul procedures
 - e. Identify lubrication and adjustment locations
 - f. Maintenance access locations
 - g. Maintenance safety precautions
 - h. Trouble shooting guide
 - i. Field test procedures
3. Operations Training:
 - a. Training objectives

- b. Principles of operation
 - c. Discussion of all design features
 - d. Startup, shutdown, and emergency operating procedures
 - e. Operational safety precautions
- D. Training Acceptance: Training that does not meet the following training criteria may not be accepted, and the training shall be repeated at the Contractor's expense including all costs for District trainee time.
 - 1. Training shall present all information necessary to properly operate and maintain the system or equipment.
 - 2. Training shall present all material as submitted in the approved training lesson plan.
 - 3. The trainer's expertise shall be sufficient to accurately respond to questions posed by the trainees related to the system or equipment operation, maintenance, or principles of operation.
 - 4. Training shall be efficient and without unrelated or irrelevant discussion. Breaks during training sessions shall be limited to 30-minutes total for each four-hour session.
 - 5. Training Evaluation: Training will be evaluated at the end of each training session by the trainees. The evaluations will be one means used by the District to determine if the training adequately instructed District personnel on the proper operation and maintenance of the systems and equipment provided. A typical training evaluation form is included in Appendix A.

1.4 TRAINING COORDINATOR

- A. The Contractor shall designate one member of the Contractor's staff to be the Training Coordinator. To maintain training continuity, the Training Coordinator shall not be replaced throughout the duration of the Contract unless the Training Coordinator is unable to continue the work (termination of employment, long-term illness, etc.), or unless specifically agreed to by the District.
- B. The Training Coordinator's responsibilities shall include, but not be limited to:
 - 1. Develop a training schedule that is coordinated with all project schedules, and is acceptable to the District.
 - 2. Work with the District Training Administrator to identify and schedule training locations at District facilities or other locations as needed.

3. Coordinate and supervise all facets of each training session. Provide any necessary training materials including computers, overhead projectors, screens, white boards, flip charts, etc.
4. Coordinate scheduling of manufacturer visits for training.
5. Coordinate professional video taping of all training sessions, and participate in editing of the final training videotapes before submittal to the District.
6. Provide refreshments for each training session (coffee, tea, juice, cold soft drinks, a selection of bakery items and fresh fruit, etc.).

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 GENERAL

- A. Table 1 is a summary of equipment/systems that require training. Additional training may be required when specified elsewhere.

Table 1: Training Summary	
(Additional Training May be Required in Other Sections)	
Specification Section & Paragraph	System / Equipment Name
26 09 16	Schweitzer Engineering Laboratories (SEL) 710-5, motor protection relay for main air compressors. SEL 2600, motor stator RTD.
40 80 00	DCS drops, all equipment and instrumentation being integrated into DCS, remote I/O cabinets, and new DCS workstations.

END OF SECTION

TRAINING MATERIAL REVIEW CHECKLIST

Lesson Title: _____

Project: _____

Contractor: _____

Date: _____ Reviewed by: _____

YES NO

_____	_____	1.	Are learning objectives identified for the lesson material?
_____	_____	2.	Are the objectives/lesson plan contents sequenced properly?
_____	_____	3.	Do the learning objectives describe skills and knowledge appropriate for the position?
_____	_____	4.	Do the lesson plan contents support the learning objectives?
_____	_____	5.	Do the lesson plans include adequate teaching and evaluation methods?
_____	_____	6.	Do the lesson contents include industry events, facility events, or other experience-related items?
_____	_____	7.	Are learning activities included which involve the trainees and enable learning?
_____	_____	8.	Do the references and texts sufficiently support the lesson material?
_____	_____	9.	Do the lesson plans incorporate the use of audio-visual materials?
_____	_____	10.	Is the use of handouts and other trainee materials consistent with the objectives, usable and complete?
_____	_____	11.	Are the lesson materials current?

Lesson Materials Approved _____

Revise Lesson Materials and Resubmit _____

Comments: _____

THIS PAGE IS INTENTIONALLY BLANK.

INSTRUCTOR QUALIFICATION CHECKLIST

Date: _____

Project: _____

Contractor: _____

Instructor: _____

Documents Provided for Assessing Instructor Qualification: (Resume, Certificates, Letters of Reference, etc.)

YES NO

_____	_____	1.	Instructor has necessary educational, experiential and technical qualifications to present subject matter.
_____	_____	2.	Instructor has necessary knowledge of instructional methods, strategies and objectives as well as skills to conduct training.

THIS PAGE IS INTENTIONALLY BLANK.

SECTION 01 91 13.10

ASSET IDENTIFICATION TAGS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Furnish and install equipment identification tags on all valves, equipment, cabinets, instruments, and assets not covered under “Electrical System equipment identification” as listed on the Drawings and as specified herein. Develop and provide Asset List spreadsheet.
- B. For Electrical System equipment identification, see Division 26, except instrument tags.
- C. Related work specified elsewhere:
 - 1. Section 26 05 53 – Identification for Electrical Systems
 - 2. Division 33 - Utilities
 - 3. Division 40 – Process Integration

1.2 SUBMITTALS

- A. Submit in accordance with Section 01 33 00 Submittal Procedures.
- B. The Asset List Spreadsheet: The Contractor shall use the MS Excel spreadsheet provided by the District for all Asset List Spreadsheet submittals. All submittals of this spreadsheet shall be in MS Excel electronic format; pdf or other formats are not acceptable for these submittals. The District will transmit the Asset List Spreadsheet template to the Contractor upon request.
- C. Submit prior to tag procurement:
 - 1. Descriptive Literature for the Tags and Tag Attachment products (e.g. hanging tag cables, clamping sleeves, mounting adhesive and screws). Literature shall include but is not limited to the following: Manufacturer's name, description, manufacturers' product data, and the full item number or designation.
 - 2. For buried valves and equipment, Contractor shall provide proposed tag location.

D. Submit prior to startup:

1. Final Asset List Spreadsheet: After all tags have been installed and accepted by the District, submit a final Asset List Spreadsheet with all applicable columns completed, which includes all tags actually installed with any revisions or additions to the preliminary Asset List Spreadsheet. Submit hard copies of the asset list along with 2 CDs containing the Final Asset List Spreadsheet in MS Excel format. Upload native and PDF version of Final Asset List to CMIS as a submittal.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Tag Text Format: Tags shall include labeling information as shown on the Equipment Tag Detail on Drawing STD-G-005. Tag fields including the location, system code, equipment code, equipment ID and modifiers shall be per the P&IDs, civil drawings, mechanical drawings, or as called out in the individual specification section.
- B. Tag Construction
 1. For Cabinets:
 - a. Two ply laminated plastic.
 - b. Dimensions: $\frac{3}{4}$ " x 2- $\frac{1}{2}$ " x $\frac{1}{16}$ " thick, minimum
 - c. Tag lettering and background colors shall be per the table "Equipment Tag System Codes & Tag Colors" on Drawing STD-G-005.
 - d. Acceptable Manufacturers:
 - 1) Seton, Setonply
 - 2) Johnson Plastics, Rowmark
 - 3) Or Equal
 2. For Valves and Equipment (including electrical instrumentation):
 - a. Stainless steel Type 304 or 316 lettering hanging tag with black enamel filled engraving.
 - b. Tag Dimensions: 1"x 3- $\frac{1}{2}$ " x 0.03" thick, minimum.
 - c. Engraving depth: 0.005"-0.007"

- d. Acceptable Manufacturers:
 - 1) McMaster-Carr 1632T66
 - 2) Marking Services, Inc.
 - 3) Or equal.

C. Tag Attachment (unless otherwise noted):

- 1. Hanging Tags: Tag fasteners shall be coated, flexible, multi-stranded 18-8 stainless steel cable. Cable shall be 7x7 strand core 0.035" cable diameter minimum with 0.044" coated outside diameter. Nylon ties are not acceptable. Clamps shall be stainless steel crimped compression/clamping sleeves. Lead clamps are not acceptable.
 - a. Acceptable cable products:
 - 1) McMaster-Carr 8930-T28
 - 2) Or equal
 - b. Acceptable clamping sleeve products:
 - 1) McMaster-Carr 3755T11
 - 2) Or equal
- 2. Cabinet Mounted Tags: Epoxy adhesives
- 3. Buried Valves: Attach with either SST screws, epoxy adhesive, or stainless steel cable as specified for hanging tags, as appropriate.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Equipment tags shall be installed in a neat and workmanlike manner, and firmly secured by the specified attachment method.
- B. Cable attachment: Cable clamps shall be affixed so that the cable ends are contained within the clamp. Frayed cable ends are not acceptable. Tag cables shall be attached so that tag removal is only possible by cutting the cable.
- C. Where attachment of tags to the equipment by cable is not appropriate, tags shall be affixed with stainless steel screws or epoxy (adhesive as approved by the Engineer).

D. General Tag Placement:

1. All equipment tags shall be installed on the equipment that it identifies.
2. Equipment tag installation position shall not impede the operation of the device to which it is attached.
3. Equipment tags shall be located in a readily visible location.
4. Specific placement of each tag is subject to approval by the Engineer.

E. Buried valves: Attach the tag to the inside face of the valve pot or to the valve access sleeve, whichever location provides greater visibility from above. Attach the tag so that it does not interfere with the cover or access to the nut. Tag may be attached by these methods as appropriate:

1. Bend the tag to the curvature of the sleeve or pot and epoxy or screw to the face.
2. Cable the tag to predrilled holes in the face of the access sleeve.
3. Do not allow dissimilar metals to come into contact.

END OF SECTION