

EAST BAY MUNICIPAL UTILITY DISTRICT

REQUEST FOR QUOTATION (RFQ) No. 1603 for 54-inch High Performance Butterfly Valve

For complete information regarding this project, see RFQ posted at <http://www.ebmud.com/business-opportunities> or contact the EBMUD representative listed below. Thank you for your interest!

Contact Person: Casey Leblanc, Associate Civil Engineer
Phone Number: (510) 287-0567
E-mail Address: cleblanc@ebmud.com

Please note that prospective bidders are responsible for reviewing <http://ebmud.com/business>, during the RFQ process, for any published addenda regarding this RFQ.

RESPONSE DUE
by
1:30 p.m.
on
September 30, 2015
at
EBMUD, Purchasing Division
375 Eleventh St., First Floor
Oakland, CA 94607



375 Eleventh Street, Oakland, CA 94607
Website: ebmud.com

EAST BAY MUNICIPAL UTILITY DISTRICT

RFQ No. 1603

for

54-inch High Performance Butterfly Valve

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Specification Section 01 33 00 – Submittal Procedures

Specification Section 01 45 27 – Shop Inspection

Specification Section 33 12 16.16 – High Performance Butterfly Valves

Specification Section 33 12 16.32 –Electric Motor Valve Actuator

Drawing: 510.00-M-108

Drawing: 510.00-M-108.1

Manufacture’s Certificate of Proper Installation

O&M Manual Review Checklist Form

Maintenance Summary Form

I. STATEMENT OF WORK**A. SCOPE**

It is the intent of these specifications, terms, and conditions to provide one (1) 54-inch high performance butterfly valve that meet the requirements of this proposal.

B. BIDDER QUALIFICATIONS**1. Bidder Minimum Qualifications**

- a. Bidder, bidder's principal, or bidder's staff shall have been regularly engaged in the business of providing stainless steel high performance butterfly valves for at least ten (10) years.

C. SPECIFIC REQUIREMENTS

The products supplied shall comply with the requirements of the following specification sections:

Item #	Product	Specification Sections
1	54-inch High Performance Butterfly Valve with Electric Actuator	32 12 16.16 - High Performance Butterfly Valve 32 12 16.32 – Electric Motor Valve Actuators

All products shall be in new and unused condition and shall be of the most current and up to date model.

D. FAILURE TO MEET SPECIFICATIONS

In the event any shipment or shipments of a Contractor's product do not meet the specification or delivery requirements, the District may reject the shipment or shipments and, at its option, may purchase this material from any supplier on the open market who can meet the District's specification requirements or the District may demand immediate replacement by Contractor of the non-conforming product. Any costs over and above the original contract price will be charged back to the Contractor. In addition, Contractor shall bear the costs of removal and disposition for any delivery which fails to conform to the specifications.

E. INSPECTION

The District will inspect material after its arrival at the delivery point. If the rejection rate of a sample of components is 10% or higher, all components will be rejected. Contractor is solely responsible for ensuring the material arrives at the District's ship-to location free of defects and manufactured in strict conformance with the specifications.

The District reserves the right-of-access to the Contractor's facility to verify conformance to this specification at the District's expense.

II. CALENDAR OF EVENTS

EVENT	DATE/LOCATION
RFQ Issued	September 4, 2015
Proposed Preapproved Equals Due	September 10, 2015 by 4:30 p.m.
Addendum to Announce Pre-Approved Equivalents (if necessary)	September 16, 2015
Response Due	September 30, 2015 by 1:30 p.m.
Anticipated Contract Start Date	October 27, 2015
Required Date for Approved Submittal	November 17, 2015
Factory Acceptance and Approval	No Later than September 1, 2016
Delivery Date (FIRM)	No later than October 15, 2016
Approximate Dates for Start-up Assistance	February 1, 2017 – February 27, 2017 (Approximate)

Note: All dates are subject to change.

Bidders are responsible for reviewing <http://ebmud.com/business> for any published addenda. Hard copies of addenda will not be mailed out.

III. DISTRICT PROCEDURES, TERMS, AND CONDITIONS

A. RFQ ACCEPTANCE AND AWARD

1. RFQ responses will be evaluated to determine that they are responsive, responsible, and that they meet the specifications as stated in this RFQ.
2. The District reserves the right to award to a single or to multiple Contractors, dependent upon what provides the lowest overall cost to the District.
3. The District has the right to decline to award this contract or any part of it for any reason.
4. Any specifications, terms or conditions, issued by the District, or those included in the bidder's submission, in relation to this RFQ, may be incorporated into any PO or contract that may be awarded as a result of this RFQ.
5. Award of contract. The right is reserved to reject any or all proposals, to accept one part of a proposal and reject the other, unless the bidder stipulates to the contrary, and to waive technical defects, as the interest of the District may require. Award will be made or proposals rejected by the District as soon as possible after bids have been opened.

B. BRAND NAMES, APPROVED EQUIVALENTS, DEVIATIONS, AND EXCEPTIONS

Any references to manufacturers, trade names, brand names, and/or catalog numbers are intended to be descriptive, but not restrictive, unless otherwise stated, and are intended to indicate the quality level desired. Bidders may offer an equivalent product that meets or exceeds the specifications.

The District reserves the right to be the sole judge of what shall be considered equal and/or acceptable, and may require the bidder to provide additional information and/or samples. If the bidder does not specify otherwise, it is understood that the brand and/or product referenced in this RFQ will be supplied.

Taking exception to the RFQ, or failure on the part of the bidder to comply with all requirements and conditions of this RFQ, may subject the RFQ response to rejection. If no deviations are shown, the bidder will be required to furnish the material exactly as specified. The burden of proof of compliance with the specifications will be the responsibility of the bidder.

This RFQ is subject to acceptance only on the terms and conditions stated in this RFQ. Any additional or different terms and conditions proposed by the bidder are hereby rejected, and shall be of no force or effect unless expressly assented to in writing by the District.

Proposals for “pre-approved or equal” substitutions requested during the bidding period shall be furnished in writing **NO LATER THAN 9/10/15 @ 4:30 p.m.** to:

Purchasing Division, Becky Sharpe (MS#102)
ofc (510) 287-0644, rsharpe@ebmud.com
East Bay Municipal Utility District
P. O. Box 24055
Oakland, CA 94623-1055

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 and 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. PRICING

1. All prices are to be F.O.B. destination. Any freight/delivery charges are to be included.
2. All prices quoted shall be in United States dollars.
3. Price quotes shall include any and all payment incentives available to the District.
4. Bidders are advised that in the evaluation of cost, if applicable, it will be assumed that the unit price quoted is correct in the case of a discrepancy between the unit price and extended price.

D. PROTESTS

Protests must be in writing and must be received no later than seven (7) business days after either of the following: posting of the RFQ results on the District’s website (www.ebmud.com), or notification of selection/non-selection, whichever is sooner. The District will reject the protest as untimely if it is received after this specified time frame. Protests will be accepted from bidders or potential bidders only. If the protest is mailed and not received by the District, the protesting party bears the burden of proof to submit evidence (e.g., certified mail receipt) that the protest was sent in a timely manner so that it would be received by the District within the RFQ protest period.

Bid protests must contain a detailed and complete written statement describing the reason(s) for protest. The protest must include the name and/or number of the bid, the name of the firm protesting, and include a name, telephone number, email address and physical address of the protestor. If a firm is representing the protestor, they shall include their contact information in addition to that of the protesting firm.

Protests must be mailed or hand delivered to the Manager of Purchasing, East Bay Municipal Utility District, 375 Eleventh Street, Oakland, CA 94607 or P.O. Box 24055, Oakland, California 94623. Facsimile and electronic mail protests must be followed by a mailed or hand delivered identical copy of the protest and must arrive within the seven day time limit. Any bid protest filed with any other District office shall be forwarded immediately to the Manager of Purchasing.

The bid protester can appeal the determination to the requesting organization's Department Director. The appeal must be submitted to the Department Director no later than five working days from the date of receipt of the requesting organization's determination on the protest.

Such an appeal must be made in writing and must include all grounds for the appeal and copies of the original protest and the District's response. The bid protester must also send the Purchasing Division a copy of all materials sent to the Department Director. The Department Director will make a determination of the appeal and respond to the protester by certified mail in a timely manner. If the appeal is denied, the letter will include the date, time, and location of the Board of Directors meeting at which staff will make a recommendation for award and inform the protester it may request to address the Board of Directors at that meeting.

The District may transmit copies of the protest and any attached documentation to all other parties who may be affected by the outcome of the protest. The decision of the District as to the validity of any protest is final. This District's final decision will be transmitted to all affected parties in a timely manner.

E. METHOD OF ORDERING

1. Written POs may be issued upon approval of written itemized quotations received from the Contractor.
2. Individual order price quotations shall be provided upon request per project and shall include, but not be limited to, an identifying (quotation) number, date, requestor name and phone number, ship to location, itemization of products and/or services with complete description (including model numbers, fabric and finish grade, description, color, etc.) and price per item, and a summary of total cost for product, services, shipping, and tax.

3. POs and payments for products and/or services will be issued only in the name of Contractor.
4. Any and all change orders shall be in writing and agreed upon, in advance, by Contractor and the District.

F. TERM / TERMINATION / RENEWAL

1. The term of the contract, which may be awarded pursuant to this RFQ, will be 2 years.
2. This Agreement may be terminated for convenience by the District provided the Contractor is given written notice of not less than 30 calendar days. Upon such termination, the District shall pay the Contractor the amount owing for the products ordered and satisfactorily received by the District. This shall be the sole and exclusive remedy to which the Contractor is properly entitled in the event of termination by the District.
3. This Agreement may be terminated for cause at any time, provided that the District notifies Contractor of impending action.

G. WARRANTY

1. Bidder expressly warrants that all goods and services to be furnished pursuant to any contract awarded it arising from the Bid will conform to the descriptions and specifications contained herein and in supplier catalogs, product brochures and other representations, depictions or models, and will be free from defects, of merchantable quality, good material, and workmanship. Bidder expressly warrants that all goods and services to be furnished pursuant to such award will be fit and sufficient for the purpose(s) intended. This warranty shall survive any inspections, delivery, acceptance, payment, or contract termination for any reason, by the District. Bidder warrants that all work and services furnished hereunder shall be guaranteed for a period of 2 years from the date of acceptance by the District.

H. INVOICING

1. Payment will be made within thirty (30) days following receipt of a correct invoice and upon complete satisfactory receipt of product and/or performance of services. The payment shall be made according to the following schedule
 - a. Ten (10) percent upon approval of design submittals as outlined in Specification Section 33 12 16.16;

- b. Seventy Five (75) percent upon successful factory observed testing of the equipment as outlined in Specification Section 33 12 16.16;
 - c. Ten (10) percent upon delivery of equipment and acceptance by the District;
 - d. Five (5) percent upon receipt and District acceptance of all delivery O&M submittals as outlined in as outlined in Specification Section 33 12 16.16;
2. The District shall notify Contractor of any invoice adjustments required.
3. Invoices shall contain, at a minimum, District PO number, invoice number, remit to address, and itemized products and/or services description.
4. The District will pay Contractor in an amount not to exceed the total amount quoted in the RFQ response.

I. LIQUIDATED DAMAGES

1. A deduction for liquidated damages will be assessed for not meeting performance requirements as prescribed in this RFQ as follows:
 - a. Liquidated damages of \$500/calendar-day from October 30, 2015 – November 30, 2015 if the entire equipment scheduled in this RFQ has not meet the requirements of factory inspection testing listed in the specifications. After November 30, 2015, the following will apply
 - b. Liquidated damages of \$1,000/calendar-day from November 30, 2015 – December XX, 2015 until the entire equipment scheduled in this RFQ has met the requirements of the factory inspection testing, and has been delivered to the District's Orinda Water Treatment Plant.
 - c. Liquidated damages shall be a maximum of 10 percent of the total bid price.
2. It being impracticable or extremely difficult to fix the actual damage, the amount set forth above is hereby agreed upon as liquidated damages and will be deducted from any money due under the agreement arising from this RFQ.
3. In the event performance and/or deliverables have been deemed unsatisfactory, the District reserves the right to withhold future payments until the performance and/or deliverables are deemed satisfactory.

IV. RFQ RESPONSE SUBMITTAL INSTRUCTIONS AND INFORMATION

A. DISTRICT CONTACTS

All contact during the competitive process is to be through the contact listed on the first page of this RFQ. The following persons are only to be contacted for the purposes specified below.

TECHNICAL SPECIFICATIONS:

Attn: Casey Leblanc, Associate Civil Engineer

EBMUD- Design Division

E-Mail: cleblanc@ebmud.com

PHONE: (510) 287-0567

CONTRACT EQUITY PROGRAM:

Attn: Contract Equity Office

PHONE: (510) 287 0114

AFTER AWARD:

Attn: Casey Leblanc, Associate Civil Engineer

EBMUD- Design Division

E-Mail: cleblanc@ebmud.com

PHONE: (510) 287-0567

B. SUBMITTAL OF RFQ RESPONSE

1. Late and/or unsealed responses will not be accepted.
2. RFQ responses submitted via electronic transmissions will not be accepted. Electronic transmissions include faxed RFQ responses or those sent by electronic mail ("e-mail").
3. RFQ responses will be received only at the address shown below, must be SEALED, and must be received at the District Purchasing Division by 1:30 p.m. on the due date specified in the Calendar of Events. Any RFQ response received after that time or date, or at a place other than the stated address, cannot be considered and will be returned to the bidder unopened.

All RFQ responses must be received and time stamped at the stated address by the time designated. The Purchasing Division's timestamp shall be considered the official timepiece for the purpose of establishing the actual receipt of RFQ responses.

4. RFQ responses are to be addressed/delivered as follows:

Mailed:

Andrew Akelman, Manager of Purchasing
East Bay Municipal Utility District
High Performance Butterfly Valve
RFQ No. 1603
EBMUD–Purchasing Division
P.O. Box 24055
Oakland, CA 94623

Hand Delivered or delivered by courier or package delivery service:

Andrew Akelman, Manager of Purchasing
East Bay Municipal Utility District
High Performance Butterfly Valve
RFQ No. 1603
EBMUD–Purchasing Division
375 Eleventh Street, First Floor
Oakland, CA

Bidder's name, return address, and the RFQ number and title must also appear on the mailing package.

5. Bidders are to submit one (1) original hardcopy RFQ response (Exhibit A – RFQ Response Packet, including Contract Equity Program forms and all additional documentation stated in the “Required Documentation and Submittals” section of Exhibit A), all with original ink signatures.
6. All costs required for the preparation and submission of an RFQ response shall be borne by the bidder.
7. California Government Code Section 4552: In submitting an RFQ response to a public purchasing body, the bidder offers and agrees that if the RFQ response is accepted, it will assign to the purchasing body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. 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, materials, or services by the bidder for sale to the purchasing body pursuant to the RFQ response. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the bidder.
8. Bidder expressly acknowledges that it is aware that if a false claim is knowingly submitted (as the terms “claim” and “knowingly” are defined in the California False Claims Act, Cal. Gov. Code, §12650 et seq.), the District will be entitled to civil remedies set forth in the California False Claim Act.

9. The RFQ response shall remain open to acceptance and is irrevocable for a period of one hundred eighty (180) days, unless otherwise specified in the RFQ documents.
10. It is understood that the District reserves the right to reject any or all RFQ responses.

C. RESPONSE FORMAT

1. **Bidders shall not modify any part of Exhibits A, B, C, or D, or qualify their RFQ responses. Bidders shall not submit to the District a re-typed or otherwise re-created version of these documents or any other District-provided document.**
2. RFQ responses, in whole or in part, are NOT to be marked confidential or proprietary. The District may refuse to consider any RFQ response or part thereof so marked. RFQ responses submitted in response to this RFQ may be subject to public disclosure. The District shall not be liable in any way for disclosure of any such records.



EXHIBIT A

RFQ RESPONSE PACKET

RFQ No. 1603 – High Performance Butterfly Valve

To: The EAST BAY MUNICIPAL UTILITY District (“District”)

From: _____
(Official Name of Bidder)

RFQ RESPONSE PACKET GUIDELINES

- **AS DESCRIBED IN SECTION IV- RFQ RESPONSE SUBMITTAL INSTRUCTIONS AND INFORMATION, BIDDERS ARE TO SUBMIT ONE (1) ORIGINAL HARDCOPY RFQ RESPONSE WITH ORIGINAL INK SIGNATURES, ONE COPY, AND ONE (1) ELECTRONIC COPY (preferably in PDF format and on a CD or flash drive) CONTAINING THE FOLLOWING, IN THEIR ENTIRETY:**
 - **EXHIBIT A – RFQ RESPONSE PACKET, INCLUDING CONTRACT EQUITY PROGRAM FORMS AND ALL ADDITIONAL REQUIRED DOCUMENTATION AS DESCRIBED IN EXHIBIT A - “REQUIRED DOCUMENTATION AND SUBMITTALS”**
- **ALL PRICES AND NOTATIONS MUST BE PRINTED IN INK OR TYPEWRITTEN; NO ERASURES ARE PERMITTED; ERRORS MAY BE CROSSED OUT AND CORRECTIONS PRINTED IN INK OR TYPEWRITTEN ADJACENT, AND MUST BE INITIALED IN INK BY PERSON SIGNING THE RFQ RESPONSE.**
- **BIDDERS THAT DO NOT COMPLY WITH THE REQUIREMENTS, AND/OR SUBMIT AN INCOMPLETE RFQ RESPONSE MAY BE SUBJECT TO DISQUALIFICATION AND THEIR RFQ RESPONSE REJECTED IN TOTAL.**
- **IF BIDDERS ARE MAKING ANY CLARIFICATIONS AND/OR AMENDMENTS, OR TAKING EXCEPTION TO ANY PART OF THIS RFQ, THESE MUST BE SUBMITTED IN THE EXCEPTIONS, CLARIFICATIONS, AND AMENDMENTS SECTION OF THIS EXHIBIT A – RFQ RESPONSE PACKET. THE DISTRICT, AT ITS SOLE DISCRETION, MAY ACCEPT AMENDMENTS/EXCEPTIONS, OR MAY DEEM THEM TO BE UNACCEPTABLE, THEREBY RENDERING THE RFQ RESPONSE DISQUALIFIED.**



BIDDER INFORMATION AND ACCEPTANCE

1. The undersigned declares that all RFQ documents, including, without limitation, the RFQ, Addenda, and Exhibits, have been read and that the terms, conditions, certifications, and requirements are agreed to.
2. The undersigned is authorized to offer, and agrees to furnish, the articles and services specified in accordance with the RFQ documents of RFQ No. 1603.
3. The undersigned acknowledges acceptance of all addenda related to this RFQ. List Addenda for this RFQ on the lines below:

Addendum #	Date

4. The undersigned hereby certifies to the District that all representations, certifications, and statements made by the bidder, as set forth in this RFQ Response Packet and attachments, are true and correct and are made under penalty of perjury pursuant to the laws of California.
5. The undersigned acknowledges that the bidder is, and will be, in good standing in the State of California, with all the necessary licenses, permits, certifications, approvals, and authorizations necessary to perform all obligations in connection with this RFQ and associated RFQ documents.
6. It is the responsibility of each bidder to be familiar with all of the specifications, terms, and conditions and, if applicable, the site condition. By the submission of an RFQ response, the bidder certifies that if awarded a contract it will make no claim against the District based upon ignorance of conditions or misunderstanding of the specifications.
7. Patent indemnity: Contractors who do business with the District shall hold the District, its Directors, officers, agents, and employees, harmless from liability of any nature or kind, including cost and expenses, for infringement or use of any patent, copyright, or other proprietary right, secret process, patented or unpatented invention, article, or appliance furnished or used in connection with the contract or purchase order.

8. Insurance certificates are not required at the time of submission. However, by signing Exhibit A – RFQ Response Packet, the bidder agrees to meet the minimum insurance requirements stated in the RFQ. This documentation must be provided to the District prior to execution of an agreement by the District, and shall include an insurance certificate which meets the minimum insurance requirements, as stated in the RFQ.
9. The undersigned bidder hereby submits this RFQ response and binds itself on award to the District under this RFQ to execute in accordance with such award a contract and to furnish the bond or bonds and insurance required by the RFQ. The RFQ, subsequent Addenda, bidder's Response Packet, and any attachments, shall constitute the Contract, and all provisions thereof are hereby accepted.
10. The undersigned acknowledges **ONE** of the following (please check only one box)*:

- ☐ Bidder is not an SBE and is ineligible for any bid preference; **OR**
- ☐ Bidder is an SBE as described in the Contract Equity Program (CEP) and Equal Employment Opportunity (EEO) Guidelines, is requesting a 5% bid preference, and has completed the Contract Equity Program and Equal Employment Opportunity forms at the hyperlink contained in the Contract Equity Program and Equal Opportunity section of this Exhibit A.

*If no box is checked, it will be assumed that the bidder is ineligible for bid preference and none will be given. For additional information on SBE bid preference, please refer to the Contract Equity Program and Equal Employment Opportunity Guidelines at the above referenced hyperlink.

Official Name of Bidder (exactly as it appears on Bidder's corporate seal and invoice): _____

Street Address Line 1: _____

Street Address Line 2: _____

City: _____ State: _____ Zip Code: _____

Webpage: _____

Type of Entity / Organizational Structure (check one):

- | | |
|--|--|
| <input type="checkbox"/> Corporation | <input type="checkbox"/> Joint Venture |
| <input type="checkbox"/> Limited Liability Partnership | <input type="checkbox"/> Partnership |
| <input type="checkbox"/> Limited Liability Corporation | <input type="checkbox"/> Non-Profit / Church |
| <input type="checkbox"/> Other: _____ | |

Jurisdiction of Organization Structure: _____

Date of Organization Structure: _____

Federal Tax Identification Number: _____

Primary Contact Information:

Name / Title: _____

Telephone Number: _____ Fax Number: _____

E-mail Address: _____

Street Address Line 1: _____

City: _____ State: _____ Zip Code: _____

SIGNATURE: _____

Name and Title of Signer (printed): _____

Dated this _____ day of _____ 20_____



BID FORM(S)

Cost shall be submitted on this Bid Form as is. The prices quoted shall not include Sales Tax or Use Tax; said tax, wherever applicable, will be paid by the District to the contractor, if licensed to collect, or otherwise directly to the State.

No alterations or changes of any kind to the Bid Form(s) are permitted. RFQ responses that do not comply may be subject to rejection in total. The cost quoted below shall be the cost the District will pay for the term of any contract that is a result of this RFQ process.

Quantities listed herein are annual estimates based on past usage and are not to be construed as a commitment. No minimum or maximum is guaranteed or implied.

Item #	Description	Manufacturer or Supplier	Unit of Measure	Estimated Quantity	Unit Cost	Extended Cost
1	54-inch High Performance Butterfly Valve With Electric Actuator		EA	1	\$	\$
2	Travel Costs, Factory Inspection, and Testing of Valve	N/A	LS	1	\$	\$
3	Factory Representative Inspection of Valve Installation	N/A	LS	1	\$	\$
		TOTAL COST				\$

REQUIRED DOCUMENTATION AND SUBMITTALS

All of the specific documentation listed below is required to be submitted with the Exhibit A – RFQ Response Packet. Bidders shall submit all documentation, in the order listed below, and clearly label each section of the RFQ response with the appropriate title (i.e. Table of Contents, Letter of Transmittal, Key Personnel, etc.).

1. **Description of the Proposed Equipment/System:** RFQ response shall include a description of the proposed equipment/system, as it will be finally configured during the term of the contract. The description shall specify how the proposed equipment/system will meet or exceed the requirements of the District and shall explain any advantages that this proposed equipment/system would have over other possible equipment/systems. The description shall include any disadvantages or limitations that the District should be aware of in evaluating the RFQ response. Finally, the description shall describe all product warranties provided by bidder.
2. **Implementation Plan and Schedule:** The RFQ response shall include an implementation plan and schedule. The plan for implementing the proposed equipment/system and services shall include an Acceptance Test Plan. In addition, the plan shall include a detailed schedule indicating how the bidder will ensure adherence to the timetables for the final equipment/system and/or services.
3. **References:**
 - (a) Bidders must use the templates in the “References” section of this Exhibit A – RFQ Response Packet to provide references.
 - (b) References should have similar scope, volume, and requirements to those outlined in these specifications, terms, and conditions.
 - Bidders must verify the contact information for all references provided is current and valid.
 - Bidders are strongly encouraged to notify all references that the District may be contacting them to obtain a reference.
 - (c) The District may contact some or all of the references provided in order to determine Bidder’s performance record on work similar to that described in this RFQ. The District reserves the right to contact references other than those provided in the RFQ response.
4. **Exceptions, Clarifications, Amendments:**
 - (a) The RFQ response shall include a separate section calling out all clarifications, exceptions, and amendments, if any, to the RFQ and associated RFQ documents, which shall be submitted with Bidder’s RFQ response using the template in the “Exceptions, Clarifications, Amendments” section of this Exhibit A – RFQ Response Packet.
 - (b) **THE DISTRICT IS UNDER NO OBLIGATION TO ACCEPT ANY EXCEPTIONS, AND SUCH EXCEPTIONS MAY BE A BASIS FOR RFQ RESPONSE DISQUALIFICATION.**

5. **Contract Equity Program:**

- (a) Every bidder must fill out, sign, and submit the appropriate sections of the Contract Equity Program and Equal Employment Opportunity documents located at the hyperlink contained in the last page of this Exhibit A. **Special attention should be given to completing Form P-25, "Contractor Employment Data and Certification"; and Form P-46, "Designation of Subcontractors."** Any bidder needing assistance in completing these forms should contact the District's Contract Equity Office at (510) 287-0114 prior to submitting an RFQ response.



REFERENCES

RFQ No. 1603 – HIGH PERFORMANCE BUTTERFLY VALVE

Bidder Name: _____

Bidder must provide a minimum of five (5) references.

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	



EXCEPTIONS, CLARIFICATIONS, AMENDMENTS

RFQ No. 1603 – Large Diameter Valves

Bidder Name: _____

List below requests for clarifications, exceptions, and amendments, if any, to the RFQ and associated RFQ Documents, and submit with bidder's RFQ response. **The District is under no obligation to accept any exceptions and such exceptions may be a basis for RFQ response disqualification.**

Reference to:			Description
Page No.	Section	Item No.	
p. 23	D	1.c.	<i>Bidder takes exception to...</i>

*Print additional pages as necessary



CONTRACT EQUITY PROGRAM & EQUAL EMPLOYMENT OPPORTUNITY

The District's Board of Directors adopted the Contract Equity Program (CEP) to enhance equal opportunities for business owners of all races, ethnicities, and genders who are interested in doing business with the District. The program has contracting objectives, serving as the minimum level of expected contract participation for the three availability groups: white-men owned businesses, white-women owned businesses, and ethnic minority owned businesses. The contracting objectives apply to all contracts that are determined to have subcontracting opportunities, and to all contractors regardless of their race, gender or ethnicity.

All Contractors and their subcontractors performing work for the District must be Equal Employment Opportunity (EEO) employers, and shall be bound by all laws prohibiting discrimination in employment. There shall be no discrimination against any person, or group of persons, on account of race, color, religion, 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, or sexual orientation.

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.

All Contractors shall include the nondiscrimination provisions above in all subcontracts.

Please include the required completed forms with your bid.

Non-compliance with the Guidelines may deem a bid non-responsive, and therefore, ineligible for contract award. Your firm is responsible for:

- 1) Reading and understanding the CEP guidelines.
- 2) Filling out and submitting with your bid the appropriate forms.

The CEP guidelines and forms can be found at the following direct link:

[Contract Equity Program Guidelines and Forms](#)

The CEP guidelines and forms can also be downloaded from the District website at the following link:

<http://ebmud.com/business-center/contract-equity-program/>

If you have questions regarding the Contract Equity Program please call (510) 287-0114.



EXHIBIT B

INSURANCE REQUIREMENTS

Insurance certificates are not required at the time of submission; however, by signing Exhibit A – RFQ Response Packet, the bidder agrees to meet the minimum insurance requirements stated in the RFQ. This documentation must be provided to the District, prior to award.

The following are the minimum insurance limits, required by the District, to be held by the Contractor performing on this RFQ:

INDEMNIFICATION AND INSURANCE

A. Indemnification

CONTRACTOR expressly agrees to defend, indemnify, and hold harmless the District and its Directors, officers, agents, and employees from and against any and all loss, liability, expense, claims, suits, and damages, including attorneys' fees, arising out of or resulting from CONTRACTOR's, its associates', employees', subcontractors', or other agents' negligent acts, errors or omissions, or willful misconduct, in the operation and/or performance under this Agreement.

B. Insurance Requirements

CONTRACTOR shall take out and maintain during the life of the Agreement all the insurance required in this section, and if requested shall submit certificates for review and approval by the District. The Notice to Proceed shall not be issued, and CONTRACTOR shall not commence work until such insurance has been approved by the District. The certificates shall be on forms approved by the District. Acceptance of the certificates shall not relieve CONTRACTOR of any of the insurance requirements, nor decrease the liability of CONTRACTOR. The District reserves the right to require CONTRACTOR to provide insurance policies for review by the District.

C. Workers Compensation Insurance

CONTRACTOR shall take out and maintain during the life of the Agreement Workers Compensation Insurance for all of its employees on the project. In lieu of evidence of Workers Compensation Insurance, the District will accept a Self-Insured Certificate from the State of California. CONTRACTOR shall require any subcontractor to provide it with evidence of Workers Compensation Insurance.

D. Commercial General Liability Insurance

CONTRACTOR shall take out and maintain during the life of the Agreement Automobile and General Liability Insurance that provides protection from claims which may arise from

operations or performance under this Agreement. If CONTRACTOR elects to self-insure (self-fund) any liability exposure during the contract period above \$50,000, CONTRACTOR is required to notify the District immediately. Any request to self-insure must first be approved by the District before the changed terms are accepted. CONTRACTOR shall require any subcontractor to provide evidence of liability insurance coverages.

The amounts of insurance shall be not less than the following:

\$2,000,000/Occurrence, Bodily Injury, Property Damage -- Automobile.

\$2,000,000/Occurrence, Bodily Injury, Property Damage -- General Liability.

The following coverages or endorsements must be included in the policy(ies):

1. The District, its Directors, officers, and employees are Additional Insureds in the policy(ies) as to the work being performed under the contract.
2. The coverage is *Primary and non-contributory* to any other applicable insurance carried by the District.
3. The policy(ies) covers *contractual liability*.
4. The policy(ies) is written on an *occurrence* basis.
5. The policy(ies) covers the District's Property in Consultant's care, custody, and control.
6. The policy(ies) covers *personal injury* (libel, slander, and wrongful entry and eviction) liability.
7. The policy(ies) covers explosion, collapse, and underground hazards.
8. The policy(ies) covers *products and completed operations*.
9. The policy(ies) covers the use of *owned, non-owned* and hired automobiles.
10. The policy(ies) and/or a separate pollution liability policy(ies) shall cover pollution liability for claims related to the release or the threatened release of pollutants into the environment arising out of or resulting from Consultant's performance under this agreement.
11. The policy(ies) will not be canceled nor the above coverages/endorsements reduced without 30 days written notice to East Bay Municipal Utility District at the address above.

GENERAL REQUIREMENTS

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1. DEFINITIONS

The following terms shall be given the meaning shown, unless context requires otherwise or a unique meaning is otherwise specified.

- a. **"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.

- b. **“Contract”** means the agreement between the District and Contractor as memorialized in the Contract Documents.
- c. **“Business Entity”** means any individual, business, partnership, joint venture, corporation, sole proprietorship, or other private legal entity recognized by statute.
- d. **“Buyer”** means the District’s authorized contracting official.
- e. **“Contract Documents”** comprise the entire agreement between the District and the Contractor and can include the District’s contract form if used, any purchase order, RFP, RFQ or Contractor response packet, and any addenda, appendices and District approved changes or amendments. The Contract Documents are intended to be complementary and include all items necessary for the Contractor’s proper execution and completion of the Work. Any part of the Work not shown or mentioned in the Contract Documents that is reasonably implied, or is necessary or usual for proper performance of the Work, shall be provided by the Contractor at its expense.
- f. **“Contractor”** means the Business Entity with whom the District enters into a contractual agreement. Contractor shall be synonymous with “supplier”, “vendor”, “consultant” or other similar term.
- g. **“Day”** unless otherwise specified, days are calendar days, measured from midnight to the next midnight.
- h. **“District”** means the East Bay Municipal Utility District, its employees acting within the scope of their authority, and its authorized representatives.
- i. **“Goods”** means off the shelf software and all types of tangible personal property, including but not limited to materials, supplies, and equipment.
- j. **“Project Manager”** shall be the District designated individual responsible for administering and interpreting the terms and conditions of the Contract Documents, for matters relating to the Contractor’s performance under the Contract with the District, and for liaison and coordination between the District and Contractor.
- k. **“Work”** means all labor, tasks, materials, supplies, and equipment required to properly fulfill the Contractor’s obligations as required in the Contract Documents.
- l. **“Work Day”** Unless otherwise specified, work day includes all days of the year except Saturdays, Sundays and District holidays.

2. BOND

- a. When required in the District’s bid or proposal solicitation documents, the Contractor to whom award is made shall furnish a good and approved faithful performance bond and/or payment bond within ten business days after receiving the forms for execution.
- b. The bonds shall be executed by a sufficient, admitted surety insurer (i.e.: 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. After acceptance of the bond(s) by the District, a copy of the bond(s) will be

returned to the Contractor.

- c. If, during the continuance of the Contract, any of the sureties, in the opinion of the District, are or become irresponsible, the District may require other or additional sureties, which the Contractor shall furnish to the satisfaction of the District within ten days after notice. If the Contractor fails to provide satisfactory sureties within the ten-day period, the Contract may be terminated for cause under Article 18.

3. CONTRACTOR'S FINANCIAL OBLIGATION

The Contractor shall promptly make payments to all persons supplying labor and materials used in the execution of the contract.

4. SAMPLES OR SPECIMENS

The Contractor shall submit samples or prepare test specimens of such materials to be furnished or used in the work as the Project Manager may require.

5. MATERIAL AND WORKMANSHIP

- a. All goods and materials must be new and of the specified quality and equal to approved sample, if samples have been required. In the event any goods or materials furnished or services provided by the Contractor in the performance of the Contract fail to conform to the requirements, or to the sample submitted by the Contractor, the District may reject the same, and it shall become the duty of the Contractor to reclaim and remove the item promptly or to correct the performance of services, without expense to the District, and immediately replace all such rejected items with others conforming to the Contract. All work shall be done and completed in a thorough, workmanlike manner, notwithstanding any omission from these specifications or the drawings, and it shall be the duty of the Contractor to call attention to apparent errors or omissions and request instructions before proceeding with the work. The Project Manager may, by appropriate instructions, correct errors and supply omissions, which instructions shall be binding upon the Contractor as though contained in the original Contract Documents.
- b. All materials furnished and all Work must be satisfactory to the Project Manager. Work, material, or machinery not in accordance with the Contract Documents, in the opinion of the Project Manager, shall be made to conform.

6. DEFECTIVE WORK

The Contractor shall replace at its own expense any part of the work that has been improperly executed, as determined by the Project Manager. If Contractor refuses or neglects to replace such defective work, it may be replaced by the District at the expense of the Contractor, and its sureties shall be liable therefor.

7. WARRANTY OF TITLE

Contractor shall warrant to the District, its successors and assigns, that the title to the materials, supplies or equipment covered by the Contract, when delivered to the District or to its successors or assigns, is free from all liens and encumbrances.

8. WARRANTY OF FITNESS

Contractor hereby warrants that all materials furnished shall meet the requirements and conditions of the Contract Documents; shall be fit for the purposes intended and fulfill its design functions; be free of all patent and latent defects in design, materials and workmanship; and perform satisfactorily. It is understood and agreed that by acceptance of this warranty and the acceptance of the materials or supplies to be manufactured or assembled pursuant to these specifications, the District does not waive any warranty either expressed or implied in Sections 2312 to 2317, inclusive, of the Commercial Code of the State of California or any products liability of the Contractor as determined by any applicable decision of a court of the State of California or of the United States.

9. SAFETY AND ACCIDENT PREVENTION

In performing work under the Contract on District premises, Contractor shall conform to any specific safety requirements contained in the Contract or as required by law or regulation. Contractor shall take any additional precautions as the District may reasonably require for safety and accident prevention purposes. Any violation of such rules and requirements, unless promptly corrected, shall be grounds for termination of this Contract or Contractor's right to precede in accordance with the default provisions of the Contract Documents.

10. CHARACTER OF WORKFORCE

The Contractor shall employ none but skilled competent qualified personnel to perform the Work, and shall maintain discipline and order in the conduct of the Work at all times.

11. PREVAILING WAGES & DIR REGISTRATION

- a. Please see www.dir.ca.gov for further information regarding the below.
- b. All Contractors and Subcontractors of any tier bidding on, or offering to performing work on a public works project shall first be registered with the State Department of Industrial Relations (DIR) pursuant to Section 1725.5 of the Labor Code. No bid will be accepted nor any contract entered into without proof of the Contractor and Subcontractors' current registration with the DIR (LC § 1771.1).
- c. All public works projects awarded after January 1, 2015, are subject to compliance monitoring and enforcement by the DIR (LC § 1771.4) and all Contractors are required post job site notices, "as prescribed by regulation" (LC § 1771.4).
- d. To the extent applicable, 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. Pursuant to Section 1773.2 of the Labor Code, a copy of the prevailing wage rates is on file with the District and available for inspection by any interested party at www.dir.ca.gov.
- e. 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.

- f. 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.
- g. 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.
- h. 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.
- i. 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.
- j. 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.
- k. 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, 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. No adjustment in the Contract Sum will be made for the Contractor's payment of these predetermined wage modifications.

12. PAYROLL RECORDS & ELECTRONIC SUBMISSION

- a. 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. Certified payroll records shall be on the forms provided by the DIR or contain the same information required on the Department's form.

- b. 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.
- c. The Contractor or Subcontractor shall certify the payroll records as shown on the DIR 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.
- d. For public works projects awarded on or after April 1, 2015, or that are still ongoing after April 1, 2016, no matter when awarded, each Contractor and Subcontractor shall furnish the certified payroll related records as more specifically described above and in Labor Code section 1776 directly to the Labor Commissioner (see LC § 1771.4). These records shall be provided to the Labor Commissioner at least monthly or more frequently if required by the terms of the Contract. For exception on projects covered by collective bargaining agreements like a PLA, please see Labor Code section 1771.4.
- e. 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 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.
- f. 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>.

13. HOURS OF LABOR

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

- a. Eight hours of labor constitutes a legal day's Work under the contract.
- b. 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 13.iv below.
- c. 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.
- d. 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.

- e. 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.

14. EMPLOYMENT OF APPRENTICES

- a. 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.
- b. 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.

15. CHANGES

- a. Changes in the Work can only be made in writing signed by an authorized employee of the District. If the change causes an increase or decrease in the contract sum, or a change in the time for performance under the Contract, an adjustment may be made as determined by the Project Manager.
- b. The District reserves the right to make changes in the design of materials, equipment, or machinery, to make alterations or additions to or deviations or subtractions from the Contract and any specifications and drawings, to increase or decrease the required quantity of any item or portion of the Work or to omit any item or portion of the Work, as may be deemed by the Project Manager to be necessary or advisable and to order such extra work as may be determined by the Project Manager to be required for the proper execution and completion of the whole Work contemplated. Any such changes will be ordered in writing by the Project Manager. The determination of the Project Manager on all questions relating to changes, including extra work, shall be conclusive and binding.
- c. Prior to issuing an amendment or change to the Contract, the Project Manager may request that the Contractor submit a proposal covering the changes. Within 10 business days of receiving the request, the Contractor shall submit its proposal to the Project Manager of all costs associated with the proposed amendment or change and any request for an extension of Contract time. Contractor's proposal shall include detailed estimates with cost breakdowns, 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 when the Contractor is requesting an adjustment in contract time. The Contractor shall be responsible for any delay associated with its failure to submit its change proposal within the time specified. If the Project Manager decides not to issue an amendment or change 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 if the Contractor's proposal is not accepted by the Project Manager.

- d. 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 Project Manager 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 Project Manager with a detailed written dispute. No payment will be made on the disputed work until the approved Change Order is returned to the Project Manager. 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.
- e. The Project Manager 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 documenting the amount of compensation. The Project Manager 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 Project Manager to have access to such records. An approved Change Order shall supersede any previously issued written change directive covering the same Work.

16. EFFECT OF EXTENSIONS OF TIME

The granting, or acceptance, of extensions of time to complete the Work or furnish the labor, supplies, materials or equipment, or any one of the aforementioned, will not operate as a release of Contractor or the surety on Contractor's faithful performance bond.

17. DELAYS

- a. The Contractor shall take reasonable precautions to foresee and prevent delays to the Work. When the Contractor foresees a delay event, and upon the occurrence of a delay event, the Contractor shall immediately notify the Project Manager of the probability or the actual occurrence of a delay, and its cause. With respect to all delays (compensable, excusable or inexcusable), the Contractor shall reschedule the Work and revise its operations, to the extent possible, to mitigate the effects of the delay. Within 15 days from the beginning of a delay the Contractor shall provide the Project Manager with a

detailed written description of the delay, its cause, its impact and the Contractor's mitigation plans. Failure to provide the notification required above waives the Contractor's right to any additional time or compensation resulting from the delay for whatever cause. The Project Manager will investigate the facts and ascertain the extent of the delay, and the Project Manager's findings thereon shall be final and conclusive, except in the case of gross error. An extension of time must be approved by the Project Manager to be effective, but an extension of time, whether 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.

- b. For inexcusable delays (delays caused by circumstances within the Contractor's control, the control of its subcontractors or supplies of any tier, or within the scope of the Contractor's contract responsibilities) the Contractor shall not be entitled to an extension of time or additional compensation for any loss, cost, damage, expense or liability resulting directly or indirectly from the inexcusable delay.
- c. For excusable delays (delays to completion of the Work within the time limits set forth in the Contract Documents directly caused by events beyond the control of both the Contractor and the District, which delay is not concurrent with an inexcusable delay and which could not have been avoided by the Contractor through reasonable mitigation measures).
- d. For compensable delays (delays to completion of the Work within the time limits set forth in the Contract Documents that could not be avoided by Contractor mitigation, caused directly and solely by the District or by causes within the exclusive control of the District, and which were not concurrent with any other type of delay) the Project Manager will grant the Contractor an extension of the time to perform under the Contract and 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.
- e. For concurrent delays (two or more independent causes of delay directly preventing the Contractor from completing the Work within the time limits set forth in the Contract Documents where the delays occur at the same time during all or a portion of the delay period being considered, and where each of the delays would have caused delay to the Contractor even in the absence of any of the other delays, and none of the delays could have been avoided by Contractor mitigations) the following rules apply:
 - i. One or more of the concurrent delays are excusable or compensable, then the period of concurrent delay will be treated as an excusable delay; and
 - ii. All of the concurrent delays are inexcusable, then the period of concurrent delay will be inexcusable.

18. TERMINATION

- a. Termination by the District for Cause:

- i. 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, each of which constitutes a default:
 - 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 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.
 - 5. The Contractor fails to make progress so as to endanger performance of the Work within the contractually required time.
 - 6. The Contractor disregards legal requirements of agencies having jurisdiction over the Work, the Contractor, or the District.
 - 7. The Contractor fails to provide the District with a written plan to cure a District identified default within five business days after the District's request for a plan to cure; the District does not accept the Contractor's plan for curing its default; or the Contractor does not fully carry out an accepted plan to cure.
 - 8. 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 business days of the District's request.
 - 9. The Contractor materially fails to meet its obligations in accordance with the Contract Documents.
 - 10. The Contractor is in default of any other material obligation under the Contract Documents.
- ii. If any of the above events occur, the District may, in its discretion, require that the Contractor submit a written plan to cure its default, which plan must be provided to the District within 5 business days of the request and must include a realistic, executable plan for curing the noted defaults.

- iii. Upon any of the occurrences referred to in Article 18.a.i. above, 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 machinery from the site of 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.
- iv. 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.
- v. Conversion: If, after termination for other than convenience, it is determined that the Contractor was not in default or material breach, or that the default or material breach 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 18.b. below.

b. Termination by the District for Convenience:

- i. The District may, at its option, and for its convenience, terminate the 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; and, as the sole right and remedy of the Contractor, the District shall pay the Contractor as set forth below.
- ii. Upon receipt of a notice of termination for convenience, the Contractor shall, unless the notice directs otherwise, do the following:
 - 1. Immediately discontinue its performance of the Contract 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 that is necessary for an orderly cessation of the Work.
 - 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 site of performance.

- iii. Upon such termination for convenience, 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.
- iv. 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.
- c. Effect of Termination: 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 18.b.ii, as to bona fide obligations assumed by the Contractor prior to the date of termination.
- d. Force Majeure: If the contract is suspended or terminated by the District because Contractor's performance is prevented or delayed by an event including an irresistible, superhuman cause, or by the act of public enemies of the State of California or of the United States ("Force Majeure"), the Contractor will be paid for Work performed prior to the Force Majeure event 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 of the total contract amount that matches the percentage of the total contract Work performed prior to the Force Majeure event.

19. DAMAGES

All losses or damages to material or equipment to be furnished pursuant to the Contract Documents occurring prior to receipt and final acceptance of the Work shall be sustained by the Contractor. The Contractor shall sustain all losses arising from unforeseen obstructions or difficulties, either natural or artificial, encountered in the prosecution of the Work, or from any action of the elements prior to final acceptance of the work, or from an act or omission on the part of the Contractor not authorized by the Contract Documents.

20. ORDER OF PRECEDENCE

- a. 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.
 - i. Approved Change Orders.
 - ii. Addenda.
 - iii. RFQ or RFP.
 - iv. Referenced Standard Specifications and Drawings.
 - v. Contractor's Response Packet
- b. With reference to drawings:
 - i. Numerical dimensions govern over scaled dimensions.
 - ii. Detailed drawings govern over general drawings.
 - iii. Addenda/Change Order drawings govern over contract drawings.
 - iv. Contract drawings govern over standard drawings.
 - v. 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.
 - vi. Typical details apply to all drawings unless a specific different detail is shown

21. INDEMNIFICATION/RESPONSIBILITY

- a. Contractor shall indemnify, keep and save harmless the District and each of its directors, officers, agents and employees against any and all suits, claims or actions arising out of any of the following:
 - i. Any injury to persons or property that may occur, or that may be alleged to have occurred, arising from the performance or implementation of this Contract; or
 - ii. Any allegation that materials or services developed, provided or used for this Contract infringe or violate any copyright, trademark, patent, trade secret, or any other intellectual-property or proprietary right of any third party.
- b. Contractor further agrees to defend any and all such actions, suits or claims and pay all charges of attorneys and all other costs and expenses of defenses as they are incurred. If any judgment is rendered, or settlement reached, against the District or any of the other agencies or individuals enumerated above in any such action, Contractor shall, at its expense, satisfy and discharge the same.

c. This indemnification shall survive termination or expiration of the Contract.

22. PROHIBITION OF ASSIGNMENT

The Contractor shall not assign, transfer, or otherwise dispose of any of its rights, duties or obligations under this Contract.

23. NEWS RELEASES

The Contractor, its employees, subcontractors, and agents shall not refer to the District, or use any logos, images, or photographs of the District for any commercial purpose, including, but not limited to, advertising, promotion, or public relations, without the District's prior written consent. Such written consent shall not be required for the inclusion of the District's name on a customer list.

24. TRANSFER OF INTEREST

Contractor shall not assign, transfer or otherwise substitute its interest in the Contract or any of the contract obligations without prior written consent from the District.

25. SEVERABILITY

Should any part of the Contract be declared by a final decision by a court or tribunal of competent jurisdiction to be unconstitutional, invalid or beyond the authority of either party to enter into or carry out, such decision shall not affect the validity of the remainder of the Contract, which shall continue in full force and effect, provided that the remainder of the Contract can be interpreted to give effect to the intentions of the parties.

26. COVENANT AGAINST GRATUITIES

The Contractor warrants that no gratuities (in the form of entertainment, gifts, or otherwise) were offered or given by the Contractor, or any agent or representative of the Contractor, to any officer or employee of the District with a view toward securing the Contract or securing favorable treatment with respect to any determinations concerning the performance of the Contract. For breach or violation of this warranty, the District shall have the right to terminate the Contract, either in whole or in part, and any loss or damage sustained by the District in procuring on the open market any items which Contractor agreed to supply shall be borne and paid for by the Contractor. The rights and remedies of the District provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or in equity.

27. RIGHTS AND REMEDIES OF THE DISTRICT

The rights and remedies of the District provided herein shall not be exclusive and are in addition to any other rights and remedies provided by law or under the Contract.

28. WAIVER OF RIGHTS

Any action or inaction by the District or the failure of the District on any occasion, to enforce any right or provision of the Contract, shall not be construed to be a waiver by the District of its rights and shall not prevent the District from enforcing such provision or right on any future

occasion. Rights and remedies are cumulative and are in addition to any other rights or remedies that the District may have at law or in equity.

29. CONFIDENTIALITY

Contractor agrees to maintain in confidence and not disclose to any person or entity, without the District's prior written consent, any trade secret or confidential information, knowledge or data relating to the products, process, or operation of the District. Contractor further agrees to maintain in confidence and not to disclose to any person or entity, any data, information, technology, or material developed or obtained by Contractor during the term of the Contract. The covenants contained in this paragraph shall survive the termination of this Contract for whatever cause.

Exhibit D - Technical Specifications

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included:

1. 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.
2. Specific items to be covered by the submittals shall include, as a minimum, the following:
 - a. For equipment which requires electrical service, submit detailed information to show power supply requirements, 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.
 - b. For mechanical equipment submit all data pertinent to the installation and maintenance of the equipment including shop drawings, manufacturer's recommended installation procedure, detailed installation drawings, test data and curves, maintenance manuals, and other details necessary.
 - c. Substitutions.

1.2 PRODUCT HANDLING

- ###### A.
- Compact disks or DVDs shall be packaged in a hard plastic case. The case and media shall be labeled as to content.

1.3 SUBMITTALS

- A. Submittals shall include the following information:
- B. A copy of the applicable section(s), with addendum updates included as appropriate, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements.
- C. A check mark shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated, and therefore requested by the Contractor, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Engineer is the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined will signify compliance on the part of the Contractor with the specifications.
- D. Any deviation from the contract documents not specifically requested and clearly identified, although accepted through oversight, may be rejected at any stage of the Work. The Contractor shall, at his own expense, reconstruct all work affected by the later rejection of a contract deviation that was not specifically called and explained for review and acceptance by the District as detailed above.

PART 2 - PRODUCTS

2.1 SHOP DRAWINGS

- A. Scale required:
 - 1. Make all shop drawings accurately to a scale sufficiently large to show all pertinent features of the item and its method of connection to the work.
- B. Type of prints required:
 - 1. Make all shop drawing prints in blue or black line on white background. Reproductions of District drawings are not acceptable.

2.2 MANUFACTURERS' LITERATURE

- A. Where contents of submitted literature from manufacturers includes data not pertinent to the submittal, clearly show which portions of the contents are being submitted for review.
- B. Clearly mark the literature with the materials and options being provided to illustrate conformance with the specification details.
- C. Provide the complete part number and include the legend containing the descriptive details that define the meaning of each digit of the number.

2.3 OPERATIONS AND MAINTENANCE MANUALS

- A. The provisions of this article are considered minimal requirements and do not supersede any requirements in individual sections of this specification.
- B. When O&M manuals are required to be submitted covering items included in this work, prepare all such manuals in approximately 8-1/2" x 11" format in durable, three ring plastic binders. Each manual shall be identical and include at a minimum information identified on the O&M Manual Review Checklist attached in Appendix A. In addition, furnish the following:
 - 1. Binder Cover: Identification on, or readable through, the front cover stating the District's specification (project) number and project title, District facility or facilities where the equipment will be installed, specification section number, and the system or equipment described in the manual.
 - 2. Binder Spine Label: Include the system or equipment name as shown on the binder cover along with the specification section number.
 - 3. 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.
 - 4. Table of contents organized and referenced to manual section dividers.
 - 5. Complete instructions regarding storage, handling, installation, operation, servicing, and maintenance of all equipment involved.
 - 6. Comprehensive replacement parts list, with complete nomenclature of all replaceable parts, their part numbers, current cost, and name and address of nearest vendor of parts.
 - 7. Detailed description of handling, replacement, and disposal of all fluids and replacement parts.
 - 8. Copies of Material Safety Data Sheets (MSDS) as required.
 - 9. 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.
 - 10. Copies of drawings with all data concerning changes made during construction.
 - 11. 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.
 - 12. All field and factory test data.

13. Engineering calculations or reports pertinent to the content of the O&M manual. See Article 2.8 Engineering Calculations or Reports.
 14. Provide a separate section with tab divider for documents developed in the field after the O&M manual has been approved. These documents include, but not limited to the following: manufacturer's certificate of proper installation, field test results, etc.
- C. Materials shall be word-processed.
- D. Manufacturer's literature shall be originals, or original quality copies. Specifically identify all equipment models and features being provided. Delete or cross out any extra information provided in standard manufacturer's literature that does not apply to the equipment furnished.
- E. Three-hole punch shall not obliterate any information. Reduce original material as necessary to provide a suitable margin for three-hole punching or provide three-hole punched clear plastic pockets for inserting single sheet material.
- F. O&M Manual Review Checklist:
1. The manufacturer's representative shall fill out a minimum of one O&M Manual Review Checklist form per submittal and include a copy in each submitted manual. Provide more than one checklist when specified in the technical specification sections. Clearly identify the location in the O&M Manual for each element in the Technical Content section (O&M tab number and page number). If the content is in multiple locations or on multiple pages, identify each location in the space provided or in the Comments column on the form.
 2. All portions of the form shall be completed prior to submittal, or the submittal may be returned unreviewed. Submittals may also be returned unreviewed if the O&M Manual Checklist form contains multiple error and/or omissions.
- G. O&M Manual Review Process
1. Preliminary O&M Manuals: Submit five (5) copies of the O&M Manuals for review. The District may return all copies of the O&M Manuals to the Contractor along with comments identifying necessary corrections or additions to the manuals. The District reserves the right to keep possession all of the O&M manuals, and have the Contractor arrange to correct the manuals to comply with the reviewer comments.
 2. Final O&M Manuals:
 - a. The manuals shall not be consider final until the submittal has received an "Approved" review status, and the District has possession of all five manuals.

- b. Final O&M manuals shall be submitted and accepted prior to the delivery of the respective equipment or system.

H. Electronic Files:

1. After the District has approved each O&M Manual, two copies of an electronic version shall be supplied in addition to the required number of hard copies.
2. Electronic files shall be created in both Portable Document Format (PDF) compatible with Adobe Acrobat Version 7.0 and Word format compatible with Microsoft Word 2007 or 2010. The security features of all submitted files shall be disabled so that the District can perform future editing. Custom-developed drawings included in the O&M manuals (i.e. loop diagrams, system interconnection diagrams, etc.) shall also be submitted electronically in both PDF and the native CAD file format for future editing of the drawings by the District. For AutoCAD files, the associated PDF files shall be saved such that all AutoCAD layering is preserved in the PDF file.
3. Electronic versions shall match the hard copy page for page with blank pages deleted. Electronic files shall be converted to PDF directly rather than using optical scanning. For any document not already in electronic format, the documents shall be scanned using optical character recognition to provide searching capability in the document.
4. All electronic files shall be supplied to the Engineer on CD +/-R 700 MB CD or DVD +/-R4.7 GB DVD if the file is larger than 700 MB along with the approved O&M manuals.

I. Maintenance Summary Forms

1. Furnish a completed Maintenance Summary Form (see Appendix A for typical format) 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.
2. 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.
3. Information on the form shall be word-processed, or typewritten.
4. Maintenance Summary Forms shall be on 8-1/2 inch by 11-inch paper and may be as many pages as required to completely summarize the required maintenance. However, the order and format must be in accordance with the

supplied form. The Maintenance Summary Forms will be provided in electronic format (MS Word) upon request.

2.4 ENGINEERING CALCULATIONS OR REPORTS

- A. 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.
- B. 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).
- C. Presentation format shall be similar to that described in Article 2.6-Operations and Maintenance Manuals. As a minimum, all calculations/reports shall be bound in an appropriately labeled binder, and contain the following elements:
 - 1. Facility title, including substructure number, equipment description, applicable equipment tag number(s), and applicable specification section.
 - 2. Table of Contents.
 - 3. 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.
 - 4. A list of references used to provide the bases for assumptions, equations, or data used in the calculation/report.
 - 5. 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.
 - 6. Results shall be clearly identified. Summary tables shall be used for large amounts of data (especially if a software application is used).
 - 7. Final design details, ready for transmittal to design drawings or shop drawings.
 - 8. Professional Engineer's Seal or signature, as appropriate, of the individual(s) who prepared the calculations/reports.
 - 9. 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.

- D. When any part of the calculation/report has been prepared by computer software, a copy of the input and output files, contained in CD +/-R or DVD +/-R, shall be included as part of the final design calculation.
- E. Shop drawings shall not be submitted until all design calculations/reports have been appropriately reviewed, checked and signed. The checker markups and comments shall also be included in an appendix to each calculation.

2.5 SUBMITTAL QUANTITIES

- A. Submit four (4) copies of all data and drawings unless specified otherwise.
- B. Submit one (1) electronic copy of the scanned data and drawings in PDF (compatible with Adobe Acrobat Version 7.0). Submit scanned copy on CD +/-R, DVD +/-R or e-mail attachment.
- C. Submit five (5) copies of each manual unless specified otherwise.

2.6 ELECTRONIC SUBMITTALS

- A. Provide electronic submittals in PDF (compatible with Adobe Acrobat Version 7.0). All portions of the electronic submittals shall be legible and shall be in full color identical to the original material. Provide manufacturer's literature in original electronic file, if available.
- B. Provide one electronic submittal file for each submittal except as noted hereinafter. The electronic submittal file name shall use the following format: submittal number – specification section number - description (e.g.: "001.1-01 33 00-Coating of Widgets"). Providing multiple electronic files for a single submittal (except as noted hereinafter) is not acceptable. The Contractor shall merge multiple files into a single electronic file.
- C. For larger submittals containing multiple volumes, submit one electronic file for each hardcopy volume and each electronic submittal file name shall include the corresponding hard copy volume number (e.g. "001.1-01 33 00-Coating of Widgets – Volume 3").
- D. Upon acceptance of the electronic submittal (noted as Approved, Accepted, Approved As Noted, or Acknowledged Receipt), submit three (3) hardcopy sets of the submittal. The hardcopies shall be edited with highlighting, addressing/incorporating District review comments. A revised electronic file shall accompany the hardcopy submission, and shall match the hard copy submittal page for page including cover transmittal forms, title pages, and blank pages.
- E. Exceptions requiring hardcopy material initially, are:
 - 1. O&M processing,

2. As-built processing,
 3. When hardcopy material is originally in a form larger than 11" x 17"; the material shall not only be included in the electronic submittal, but shall also be submitted in hardcopy form along with the original electronic submittal required in Paragraphs A and B above. Seven (7) submittal copies of the large materials shall be provided.
- F. The Contractor is solely responsible for verifying that the hardcopy submittal and accompanying electronic submittal are identical and address/incorporate prior District review comments.
- G. All portions of the electronic submittals shall be provided with text searching capabilities whenever possible. For any document not already in electronic format, the documents shall be scanned using optical character recognition to provide text searching capability in the document.
- H. Electronic files shall be submitted to the Engineer in the following manner:
1. For files 10 MB or less, one copy via email, with the subject line matching the file name.
 2. For files more than 10 MB but not larger than 700 MB, provide three copies on CD +/-R 700 MB CD.
 3. For files larger than 700MB, provide three copies on DVD +/-4.7 GB DVD.

PART 3 - EXECUTION

3.1 GENERAL

- A. Prepare and use a transmittal form for submittals that includes the following information:
1. Project name and specification number
 2. Date of submittal
 3. "To: Construction Division, MS #62
East Bay Municipal Utility District
P.O. Box 24055
Oakland, CA 94623-1055
ATTN: Supervising Administrative Engineer"
- B. Stamp or permanently print on each submittal the following certification statement.

"I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated into Specification Number _____, is in compliance with the Contract drawings and specifications, can be installed in the allocated spaces, and is submitted for District (record/approval).

Certified by _____ Date _____ "

3.2 APPROVAL 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, or of other nature that may exist.
 3. Approving departures from additional details or instructions previously furnished by the Engineer.
- B. One copy of each submittal, except manuals and as-built drawings, will be returned to the Contractor marked "Approved", "Approved as Noted", "Revise and Resubmit", or "Acknowledged Receipt", except that in some cases, all copies of a submittal may be returned to the Contractor marked "Returned without Review". See paragraph 3.5.E. for proposals for "or equal" substitutions made prior to bid opening pursuant to PCC Section 3400 (see Instructions To Bidders, Article 3).
1. "Approved" indicates that item covered by the submittal may proceed provided it complies with requirements of the specifications. Final acceptance will depend upon that compliance.
 2. "Approved as Noted" indicates that item covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the specifications. Final acceptance will depend on that compliance.
 3. "Revise and Resubmit" indicates that the Contractor shall not proceed with any phase of the item covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations and requirements of the specifications.
 4. "Acknowledged Receipt" indicates that the item is required to be submitted to the District primarily for information or record purposes, and is not subject to District review.
 5. "Returned without Review" indicates that the submittal was not reviewed by the District 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.

- C. Resubmit revised drawings or data as indicated, in seven (7) copies unless otherwise specified.
- D. Work requiring District approval shall not begin until the submittals for that work have been returned as "Approved" or "Approved as Noted".

3.3 CHANGES TO APPROVED SUBMITTALS

- A. A resubmittal is required for any proposed change to a submittal that has been "Approved" or "Approved as Noted". 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 approved submittal may be accomplished by submitting a "Corrected Copy".

END OF SECTION

SECTION 01 45 27

SHOP INSPECTION

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included:

1. Provide the District's Plant Inspection Section 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's Plant Inspection Section 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 District Plant Inspection Section at (510) 287-1132 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 (http://travel.state.gov/travel/cis_pa_tw/cis_pa_tw_1168.html) for "Travel Warnings" to countries and regions to determine the safety of international travel. Areas with travel warnings shall not be considered for procurement of items that require District inspection.

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.

Spec. Section	Section Title and Description
33 12 16.16	High Performance Butterfly Valves
33 12 16.32	Electric Motor Valve Actuators

PART 2 - NOT USED

PART 3 - NOT USED

END OF SECTION

SECTION 33 12 16.16

HIGH PERFORMANCE BUTTERFLY VALVES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included:

1. Furnish high performance butterfly valves with, electric and actuators per the drawings and Table A.
 - a. The District will hire a separate Contractor to install and test the valve defined as "Others."

B. Related work specified elsewhere:

1. Section 01 33 00 – Submittal Procedures.
2. Section 01 45 27 – Shop Inspection.
3. Section 33 12 16.32 – Electric Motor Valve Actuators.

TABLE A
HIGH PERFORMANCE BUTTERFLY VALVES

TAG NUMBER	QTY	SIZE	ASME CLASS	TYPE	MAXIMUM VELOCITY ³ (FT/SEC)	UPSTREAM / DOWNSTREAM PRESSURE (PSIG)	Cv, MIN ²	ACTUATOR TYPE ³ / SERVICE ⁴
233-FWS-FCV-602	1	54"	150	Lugged	16	15 psig/ 0 psig	125,000	Electric/ MOD
<p>1. Handwheel Rotation To Open: Counterclockwise.</p> <p>2. Cv given is approximate for valve full open position; refer to Table B for detailed flow requirements for modulating service valves.</p> <p>3. Section 33 12 16.32 – Electric Motor Valve Actuators.</p> <p>4. Actuator Service: OC = Open-Close service, MOD = Modulating service</p>								

TABLE B FLOW CRITERIA							
Tag Number	Controllable Flow Point	Flow (gpm)	Upstream Pressure (psig)	Downstream Pressure (psig)	Estimated Required Cv (gpm)	Estimated Pipe Velocity (feet/sec)	Approx. Valve Position (% open)
233-FWS-FCV-602	Minimum	13,888	4.5	0	6500	2.0	15%
	Maximum	97,221	3	0.5	61500	13.6	65%
1. Fluid is water at 60 deg F. 2. The appropriate upstream and downstream reducers must be included in valve sizing. The Contractor shall coordinate any change of valve basic size and be responsible for any resulting cost change. 3. Maximum sound level shall not exceed 80 dBA measured 6 feet from valve.							

1.2 SUBMITTALS

- A. All butterfly valves furnished shall be by the same manufacturer, unless approved in writing by the Engineer prior to submittals or manufacture.
- B. Submittals shall include electric motor (as required in Table A); see Sections 33 12 16.32 for additional requirements.
- C. Submit the following prior to fabrication:
 - 1. See the submittal content requirements listed in “High-Performance Butterfly Valve Technical Submittal Checklist” attached at the end of this section.
 - 2. Each page of the submittal shall have a unique sequential page number (hand-written is acceptable, but must be completely legible).
 - 3. The first page of the submittal shall include the “High-Performance Butterfly Valve Technical Submittal Checklist” completed by the manufacturer’s representative. Each submittal requirement listed in the checklist shall include the corresponding submittal page number(s).
 - 4. If the “High-Performance Butterfly Valve Technical Submittal Checklist” is not included with the submittal, or if all portions of the checklist are not completed accurately by the manufacturer’s representative, the submittal will be returned without review.
- D. Submit the following prior to shipping:
 - 1. Operation and Maintenance (O&M) manuals in accordance with Section 01 33 00.
 - 2. Certified copies of shop tests.

3. Affidavit of Compliance: The manufacturer shall furnish the District with an affidavit stating that the valve and valve actuator and all materials used in its construction conform to the applicable requirements of this specification, and that all tests specified therein have been performed and all test requirements have been met.

E. Submit the following prior to field testing:

1. Manufacturer's Certificate of Proper Installation (a copy shall also be included in the final O&M Manuals).

F. Submit after field testing:

1. Field Test Results (a copy shall also be included in the final O&M Manuals).

1.3 REFERENCES

- A. MSS SP-68 – "High Pressure Offset Seat Butterfly Valves".
- B. API 609 – "Butterfly Valves – Lug Type and Wafer Type".
- C. ANSI/AWWA C504-10 – "AWWA Standard for Rubber-seated Butterfly Valves."
- D. ANSI/ISA-S75.11 – "Inherent Flow Characteristics and Rangeability of Control Valves".

1.4 QUALITY ASSURANCE

A. General

1. Dimensional and materials check shall be made against approved submittals. Motor actuated valves shall be tested.

B. Shop Inspection:

1. The District will witness the following tests at the valve manufacturer for each valve: shell hydrostatic test and seat leakage test(s).
2. The District will release the valves for shipping after satisfactory completion of all tests.
3. Provide notification for Engineer to be present for testing. See Section 01 45 27 for inspection advance notification requirements and District travel expenses.
4. Failure by the Engineer to inspect or witness tests at the manufacturer's plant shall not be construed as waiving inspection upon delivery.

1.5 MANUFACTURER'S FIELD SERVICES:

- A. Manufacturer's Representative: the Contractor shall furnish the services of a factory trained field representative designated by the equipment/system manufacturer, who shall be present at the project site to provide the services listed below. The manufacturer's representative shall have superior knowledge of all aspects of the equipment/system being furnished in this section. The manufacturer through their field representative shall advise Others (installer) and the Engineer of the proper procedures for each of the services listed.

Minimum Total Time (Person-Days*)	Manufacturer's Service
2	Installation assistance and certification.
1	Field testing and startup
* The person-days shown are total days for each service listed. One person-day is equivalent to 8 hours. The person-days shown are the minimum days required for each service, and travel time to and from the site and/or classroom is not included.	

1.6 PACKAGE RESPONSIBILITY

- A. The valve manufacturer shall be responsible to supply the complete valve package including the valve, gear, actuator, and attached instrumentation. The valve manufacturer shall enlist the services of the gear and actuator manufacturer(s) as required to meet all requirements of this Section.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Service Conditions and Environmental Requirements: Treated water (potable) with a 2 ppm chloramine residual. .
- B. Complete Assembly:
1. The Valve/Actuator shall be delivered fully assembled with valve and actuator as required by Tables A and B.
- C. Shaft extensions with epoxy coated extension bonnets shall be provided as part of the actuator connection to the valve as required by Table A.
- D. Valve shall be suitable for continuous throttling service, within the ranges given in Table B.

- E. Valve shall provide a range of flows controllable by PID logic as listed in Table B.

2.2 VALVE

- A. All valves shall be NSF-61 approved and certified. Each valve shall be accompanied with a certified NSF-61 document with detailed model number and description.
- B. Valve shall have a minimum (full open) flow coefficient, C_v , as required by Table A in gpm of water at 60 degrees F (at 1 psi of pressure differential). Valves for modulating service shall also conform with the flow requirements listed in Table B, and the published C_v shall be within the maximum deviation range permitted by ISA-S75.11 over the entire opening range.
- C. Body shall be threaded lug, also known as a "single flange", or flanged as shown in Table A and sized for installation between two ASME B16.5 standard flanges, pressure class as shown in Table A.
- D. Valves shall be of double off-set seat design to minimize seat wear and eliminate torque peaks in the control range.
- E. Valve Materials:
1. Body and disc: Stainless Steel ASTM A-351 Gr CF8M, A-744 Gr CF8M, or A182 F304 or F316.
 2. Retaining Ring: Stainless Steel, Type 304 or 316.
 3. Stem - Stainless Steel: Type 304, 316, or 17-4PH ASTM A564-Type 630. Other types of manufacturer recommended stainless steel may be submitted for approval by the Engineer.
 4. Seat: Reinforced TFE.
 5. Bearings: 316 SS, TFE-coated graphite, or reinforced TFE. Other types of manufacturer recommended corrosion resistant materials may be submitted for approval by the Engineer.
 6. Packing: Reinforced TFE.
 7. Seal Rings: Viton (FKM).
 8. Retaining Ring Screws: Stainless Steel, Type 304 or 316.
 9. Stem/Disc Pins: Stainless Steel, Type 304 or 316.
 10. Bolting: Stainless steel conforming to the same material and grade requirements as the flange bolting requirements as follows:

- a. Bolts: ASTM A193 Class 1, B8M (Type 316)
 - b. Nuts: ASTM A193 Class 1, B8M (Type 316)
 - c. Type 316 to match bolts and nuts
 - F. The valve shall comply with MSS SP-68 and API-609.
 - G. Acceptable products (modulating service):
 - 1. Bray/McCannalok Series 41
 - 2. Or equal as approved by the Engineer.
- 2.3 VALVE FACTORY TESTING
- A. Shell and Seat Test: In accordance with MSS SP-68.
- 2.4 ELECTRIC-MOTOR ACTUATORS
- A. Valves that require electric motor actuators (see Table A) shall be provided with actuators conforming to the requirements of Sections 33 12 16.32.
- PART 3 - EXECUTION
- 3.1 INSTALLATION
- A. Installation of the valve shall be done by Others.
 - B. Notify the Engineer of the scheduled delivery date for the valves a minimum of ten work days prior to the actual delivery. The District will inspect the valves prior to offloading. All defects shall be repaired prior to installation.
 - C. The manufacturer's authorized representative and Others (installer) shall insure that the valves are installed in accordance with the instructions supplied by the manufacturer and in accordance with the drawings.
 - D. Contractor to provide manufacturer's instructions and certify installation is correct.
 - 1. The manufacturer's authorized representative shall complete the Manufacturer's Certificate of Proper installation prior to operating the valves.
 - E. Initial adjustments and startup of the valves shall be done in the presence of the package manufacturers' authorized representative.
 - F. Field Finish: Stainless steel parts, including valve bodies and bolting shall not be coated.

3.2 FIELD TESTING

A. Functional Testing:

1. Contractor shall provide manufacture's assistance for required functional testing to Others (installer).

3.3 SUPPLEMENTS

A. The following supplements follow END OF SECTION are a part of this section:

1. High-Performance Butterfly Valve Technical Submittal Checklist
2. Field Functional Test Data Form (to be completed by installer – Others - with assistance from Contractor in the presence of the Engineer)

END OF SECTION

**HIGH-PERFORMANCE BUTTERFLY VALVE
TECHNICAL SUBMITTAL CHECKLIST**
(Manufacturer's Representative to complete one form per type of valve)

SPEC. SECTION TITLE & NO:		
Valve Tag No.		
SUBMITTAL CONTENT REQUIREMENTS		Page Number(s)
1. Certified manufacturers' drawings shall show dimensions, construction details, and materials used for all parts of valves including:		
a. Drawings showing valve and operator dimensions, construction details, parts list, weights, and materials, including ASTM material information. Copper alloys shall have the ASTM specification and UNS designation numbers provided.		
b. Electrical wiring diagrams for position switches, power and control systems.		
2. Control valve sizing data sheet demonstrating conformance with Table B, including the following information at minimum flow, typical flow, maximum flow, and valve full open:		
a. Flow rate in gpm, inlet and outlet pressures in psig, pressure drop in psid, inlet temperature in degrees F, Cv, valve % open, calculated noise level in dBA, pipeline inlet and outlet size and thickness.		
3. Curve of valve Cv versus degrees open for all valves. Minimum Cv at 90 degrees must meet or exceed Cv's given in Table "A".		
4. Curve of valve flow (GPM) vs. % open valve stem position with inlet/outlet conditions given in Table B.		
5. Calculations for predicted cavitation.		
6. Curve for dBA (noise level) with inlet/outlet conditions given in Table B.		
7. Torque calculations for submitted valve. Include the complete equations and the basis and references for any coefficients used. Calculations shall be verifiable with AWWA M49. The flow velocity shall and the differential pressure conditions shall be per "Pressure Class" in Table A.		
a. Valve bearing torque = (e.g. 100 ft-lbs)		
b. Valve hydrostatic torque = (e.g. 100 ft-lbs)		
c. Valve seating/unseating torque = (e.g. 100 ft-lbs)		
d. Valve dynamic torque = (e.g. 100 ft-lbs)		
e. Valve total torque = (e.g. 100 ft-lbs)		
8. Manual valve actuators. Calculations shall be verifiable with AWWA M49. For Powered Valve Actuators, see Specification 33 12 16.32.		
a. Data sheet for actuator including torque output capability and gear ratio, open direction, position indicator and limit switches (if applicable).		
b. Net output torque of actuator assembly (including gear box, if applicable) confirming a minimum of 150 percent of the total valve torque requirement = (e.g. 150 ft-lbs)		
c. Handwheel diameter = (e.g. 18")		

SPEC. SECTION TITLE & NO:		
Valve Tag No.		
SUBMITTAL CONTENT REQUIREMENTS		Page Number(s)
d. Actuator Mechanical Advantage = (e.g. 24.9)		
e. Handwheel rimpull/ AWWA nut input = (e.g. 35 lbs)		
9. NSF/ANSI 61 certification for each size and type of valve or all materials in contact with potable water. Provide NSF/ANSI 61 certification with model number of valve showing compliance.		
Append Powered Valve Actuator Technical Submittal Checklist (see Table A).		

FIELD FUNCTIONAL TEST DATA FORM

EBMUD Project Title: _____ Test Date(s): _____

Equipment Name: **High Performance Butterfly Valves** Section No.: **33 12 16.16**

Tag No.: _____ P&ID No.: _____

I. Pretest Documentation/Setup

Documents:

Yes No NA

Comments:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|--|
| a) Interconnection & Loop diagrams provided | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| b) Mfr Cert of Proper Installation provided | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| c) Technical Submittal complete (contractor show EDOCs record) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| d) Spare Parts provided | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| e) Final O&Ms provided (contractor show final O&Ms) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| f) Pipe pressure tests completed for adjacent piping (contractor to show test records). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

Field Test Setup (Identify any test instrument, special setups like tanks, hoses, etc.): _____

II. Field Functional Test

1. Calibration/Loop/Electrical

Yes No NA

Comments:

☐ ☐ ☒

2. Installation Check

Pass Fail NA

Comments:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|--|
| 2.1 Correct equipment tags have been installed (tags shall match P&IDs). Valve pots for buried services shall be properly tagged. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 2.2 All fields on Asset List Spreadsheet completed for device (Contractor shall show inspector at the time of the test that the asset list is complete and accurate for this system) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

FIELD FUNCTIONAL TEST DATA FORM

EBMUD Project Title: _____	Test Date(s): _____
Equipment Name: High Performance Butterfly Valves	Section No.: 33 12 16.16
Tag No.: _____	P&ID No.: _____

3. Operations Check	<u>Pass</u> <u>Fail</u> <u>NA</u>	Comments:
3.1 Stroke each valve fully open to fully closed, using the valve's actuator (electric, hydraulic, etc.), three times with valves under operating pressure. Verify valve opens and closes smoothly.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
3.2 For valves with manual operating features (handwheels, nuts, chainfall), count and record the number of turns of the manual operator needed to fully open and close the valve (two values). Account for any discrepancies between actual number turns and the number of turns shown in the valve O&M manual.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
3.4 <u>Handwheel Rim Pull Test</u> : Verify the maximum rim pull is less than 40 lbs under any operating condition including breakaway.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
3.5 <u>Leakage Test</u> : Close the valve and apply the corresponding system test pressure given in the Mechanical Piping Schedule in Section 40 20 20 to one side of the valve and atmospheric pressure to the other. Test duration shall be a minimum of 30 minutes. Verify that the valve seat leakage is drop tight. Open a drain, or loosening a nearby flange as necessary to verify the valve is leak tight. If there are any signs of leakage, the valves shall be adjusted, or replaced, and the valve shall then be retested until it is leak tight.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
4. Controls Check none	<u>Pass</u> <u>Fail</u> <u>NA</u> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	Comments:
5. Alarms Check none	<u>Pass</u> <u>Fail</u> <u>NA</u> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	Comments:
6. Run Check none	<u>Pass</u> <u>Fail</u> <u>NA</u> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	Comments:

FIELD FUNCTIONAL TEST DATA FORM

EBMUD Project Title: _____ Test Date(s): _____
Equipment Name: **High Performance Butterfly Valves** Section No.: **33 12 16.16**
Tag No.: _____ P&ID No. _____

7. Other Tests and Checks

Pass Fail NA

Comments: _____

7.1 For valves with electric actuators, complete the actuator tests and append that form to this data form (valve and actuator functional tests shall be completed together).

☐ ☐ ☐

III. Participants/Witness

Test conducted:

By (signature): _____ Date: _____

Title: _____ Company Name: _____

By (signature): _____ Date: _____

Title: _____ Company Name: _____

EBMUD Witness:

By (signature): _____ Date: _____

Title: _____

SECTION 33 12 16.32

ELECTRIC MOTOR VALVE ACTUATORS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Furnish and install Electric Motor Actuators on the valve for the valves listed in Table A.
 - 1. The District will hire a separate Contractor to install and test the valve(s) defined as “Others.”
- B. Related work specified elsewhere:
 - 1. Section 01 33 00 – Submittal Procedures
 - 2. Section 01 45 27 – Shop Inspection.
 - 3. Section 33 12 16.16 - High Performance Butterfly Valves.

1.2 SUBMITTALS

- A. All electric motor valve actuators furnished shall be by the same manufacturer, unless approved in writing by the Engineer prior to submittals or manufacture.
- B. Submittals in this section shall be submitted as a complete system with their respective valve submittals.
- C. It is the responsibility of the Contractor to coordinate the valve and actuator requirements with both valve and electric motor actuator vendors.
- D. Submit the following prior to assembly:
 - 1. See the submittal content requirements listed in “Electric Motor Valve Actuator Technical Submittal Checklist” attached at the end of this section.
 - 2. Each page of the submittal shall have a unique sequential page number (hand-written is acceptable, but must be completely legible).
 - 3. The first page of the submittal shall include the “Electric Motor Valve Actuator Technical Submittal Checklist” completed by the manufacturer’s representative. Each submittal requirement listed in the checklist shall include the corresponding submittal page number(s).
 - 4. If the “Electric Motor Valve Actuator Technical Submittal Checklist” is not included with the submittal or if all portions of the checklist are not completed accurately by the manufacturer’s representative, the submittal will be returned without review.

E. Submit the following prior to shipping:

1. Operations and Maintenance (O&M) Manual:

- a. Provide submittals for each type of actuator in accordance with Section 01 33 00.
- b. In addition to the requirements in Section 01 33 00, O&M manuals shall include:
 - 1) Copies of all final technical submittals.
 - 2) As-built actuator wiring diagrams
 - 3) A section for field installation certification and field test results. The Contractor shall furnish the required number of copies for insertion into the final O&M Manuals.
 - 4) Certified copies of all tests made under AWWA Standard C542, Performance Tests shall be furnished by the Contractor whether or not the tests are witnessed by the Engineer.
- c. O&M manual materials shall be included with the manual for the corresponding valve and submitted as a single valve and actuator system O&M manual.

F. Submit prior to field testing:

1. Manufacturer's Certificate of Proper Installation (copy to be inserted by the Contractor in the final O&M Manuals).

G. Submit after field testing:

1. Field Test Results (copy to be inserted by the Contractor in the final O&M Manuals).

1.3 REFERENCES:

- A. ANSI/AWWA C542-09 – "AWWA Standard for Electric Motor Actuators for Valves and Slide Gates.
- B. NEMA MG-1 – National Electric Manufacturers Association Standard for Motors and Generators

1.4 OPERATING CONDITIONS

- A. Valve actuators shall be installed indoors with unheated and unconditioned air conditions. Room temperature will vary from 35 Deg F to 104 Deg F. Because these are water facilities humidity levels can be high. Typical humidity ranges are 60 percent to 97 percent.

- B. Water temperature will be between 40 deg F and 78 deg F.

PART 2 - PRODUCTS

2.1 ELECTRIC MOTOR ACTUATORS FOR VALVES

A. General Requirements:

1. Electric motor actuators shall comply with AWWA Standard C542 except as modified in this specification. In cases where the requirements of this specification conflict with the AWWA requirements, the requirements of this specification shall govern.
2. All electric motor actuators provided under this specification shall be made by the same manufacturer.
3. All electric valve actuators shall include an intermediate reduction gear (worm gear, helical or spur gear type or combinations thereof) in a separate gear box located between the valve and the electric actuator.
4. The Contractor shall provide the District with an affidavit of compliance from the manufacturer or the manufacturer's authorized representative that the motor operators furnished comply with the applicable provisions of AWWA Standard C542 and this specification (see AWWA Standard C542, Affidavit of Compliance).
5. All motor starters shall be solid state reversing type.
6. Torque: The rated torque capability of each actuator assembly shall be at least 150 percent of the valve's required torque. For modulating service valves, the rated torque capacity of the actuator assembly at the number of starts per hour shown in Table A shall be at least 150 percent of the valve's required torque. The valve's required torque shall be provided by the valve's manufacturer and is defined as the torque required to seat, unseat and rigidly hold, in any intermediate position, the valve under the differential pressure and pipeline velocity shown in Table A. Unless the referenced valve section (See Table A) requires that the valve be designed to isolate flow in both directions, the valve's required torque shall be for installation in the preferred direction.
7. If adjustable mechanical stop-limiting devices are used, they shall be accurately set and locked by the valve manufacturer.
8. Motor actuators shall be able to operate the valve from fully open to fully closed position, or the reverse, within the range of allowable stroke times shown in Table A.
9. Use only copper wiring inside the actuator, the use of aluminum wiring is not acceptable.

10. All terminal connections for District use shall be located in a sealed terminal compartment that is separated from control components.
11. If a handheld remote control unit is required for actuator setup and calibration, one unit shall be furnished for each actuator.
12. The motor and controls enclosures shall have space heaters, 120 volt AC.

B. Motors:

1. The actuator motors shall meet the requirements of AWWA C542, Electric-Motor Actuators. General Design and shall be totally enclosed, ball-bearing, squirrel-cage, 3-phase, induction motors, Class "F" insulated or higher, for operation at the voltage specified in Table A. Motors shall be provided with solid state thermistors to prevent damage due to temperature overloads.
2. Starts per Hour: Motors and controls shall be suitable for 1,200 starts per hour when actuators are shown as modulating in Table A. Other motors and controls shall be suitable for 60 starts per hour minimum unless otherwise noted. Duty cycle time must be a minimum of twice stroke time as listed in Table A.

C. Position Sensing and Indication:

1. Position sensing circuits shall be solid state with no electro-mechanical contacts.
2. Actuators shall have a local position indicator digital readout in percent open units.
3. Remote position indication shall be provided via a 4-20 mA output signal.

D. Torque Sensing:

1. The actuator shall include adjustable torque sensing to limit actuator output torque in both the opening and closing directions.
2. The torque sensing feature shall be factory set to be 110 percent of the maximum torque required by the valve or as otherwise determined to be appropriate by the manufacturer and approved by the Engineer.

E. Contacts for District Use:

1. Four contacts for District use shall be wired to the terminal block that can be configured to perform any of the following functions:
 - a. Normally open contact to close when valve is 100 percent closed (valve closed status).
 - b. Normally open contact to close when valve is 100 percent open (valve open status).

- c. Normally open contact to close at a field adjustable point when valve is from 2 percent to 100 percent open. This switch to be factory set to close when valve is 3 percent open (this switch shall actuate controls to turn off main pumps).
- d. Normally open contact to close when the actuator's selector switch is in the "remote" position.

F. Electric Controls:

- 1. All control components shall be enclosed in a sealed compartment separated from the external connection terminal compartment.
- 2. Actuator calibration shall be "non-intrusive" such that no electrical compartments need to be opened to set position limits or torque limits.
- 3. Limit sensing, three-phase reversing starter, and other required controls shall be mounted in a NEMA 4X weatherproof enclosure which shall also contain a space heater powered from the actuator. Enclosure shall be supplied complete with 120 VAC control transformer unless the power supply is 120 VAC.
- 4. Reversing starter shall be electrically and mechanically interlocked, complete with overload relay and automatic reset. In addition each starter shall be provided with one normally open auxiliary run status contact wired to terminal strip for district use.
- 5. The reversing starters for modulating service valves shall be of a solid state design.
- 6. Unless stated otherwise, a 4-20 mA input signal shall be used for position control of modulating service valves, as noted in Table "A" of this Section.
- 7. Local controls shall include one selector switch marked "remote-stop-local", controls for OPEN and CLOSE operation and indicator lights for OPEN and CLOSE positions. Controls shall be heavy-duty oil-tight, and contacts shall meet NEMA A300 or A600 standards.
- 8. All devices and controls in the limit switch compartment shall be factory wired. All connections to external or field devices must be wired to the terminal block in the terminal compartment. Refer to Project Drawings for elementary diagram.
- 9. The actuator shall be equipped with an optional interrupt timer that allows the stroke time to be adjusted by pulsing/stepping the motor.
 - a. Actuator must also comply with stroke time in Table A without pulsing.
- 10. The actuator shall be equipped with a phase correction circuit that detects and corrects motor rotation faults.

G. Handwheels:

1. Surfaces shall be smooth with no rough edges to cut or abrade the person operating the valve.
2. The handwheel diameter shall be between 12" and 24".
3. The maximum rim pull shall not exceed 40 lbs under any operating condition including breakaway.
4. The handwheel shall not turn when power is applied to the motor.

H. Factory Finish:

1. Manufacturer's standard factory finish shall be used.

I. Acceptable Manufacturers:

1. Limitorque MX.
2. Rotork IQ range.
3. Or equal as approved by the Engineer.

(THIS SPACE LEFT INTENTIONALLY BLANK. SEE TABLE A NEXT PAGE)

TABLE A
ELECTRIC MOTOR ACTUATORS FOR NEW VALVES

Tag # and Location	Valve Spec Section	Valve Size (inch)	Modulating Service (Yes/No)	Power Supply Voltage (VAC)	Required Starts per Hour, minimum	Handwheel Rotation to Open ¹	Acceptable Stroke Time Range ² (sec)	Maximum Differential Pressure Forward/Reverse (psi)	Maximum Flow Velocity ³ (ft/s)
233-FWS-FCV-602	33 12 16.16	54	Yes	460/3	1200	CCW	240-300	15/0	16

Notes:

1. CW =Clockwise, CCW =Counterclockwise
2. Stoke time with continuous movement, without pulsing.
3. With the valve full open.

PART 3 - EXECUTION

3.1 SHIPPING AND HANDLING

- A. Electric motor actuators shall be stored per the manufacturer's instructions.
- B. Electric motor actuators shall be stored inside a heated building or structure and shall have dust tight plastic coverings.

3.2 INSTALLATION

- A. All powered actuators shall be sized and installed by an authorized representative of the actuator manufacturer.
- B. Install per manufacturer's instructions and as shown on drawings.
- C. All actuators shall be installed with good access to pushbutton controls and the declutch lever and the manual override handwheel. Installation shall include adequate clearances with walls or other obstacles to remove enclosure covers, and motor, and to maintain safe electrical device work clearances.
- D. All valve and actuator assemblies shall be shop or factory assembled. All mechanical end travel (stops), torque and limit settings shall be shop or factory adjusted and tested. Assembled units shall be fully stroked (open-closed-open or closed-open-closed) in the shop or factory at least three times.

3.3 INSPECTIONS

- A. All electric motor operators will be inspected upon delivery for compliance with these specifications. Any actuator found not to comply will not be accepted until deficiencies are corrected. At the discretion of the District, the District will have a representative at the shop to witness the testing of the actuators. See Section 01 45 27 for inspection advance notification requirements and travel expenses. Failure by the Engineer to inspect or witness tests at the shop or factory shall not be construed as waiving inspection upon delivery.
- B. Contractor shall repair all coating defects in accordance with the coating manufacturer's instructions. Stainless steel, brass or bronze items shall not be coated.

3.4 FIELD TESTING

- A. Contractor shall provide manufacture's assistance for required field testing to Others (installer)

3.5 SUPPLEMENTS

- A. The following supplements follow END OF SECTION and are a part of this section:
 - 1. Electric Motor Valve Actuator Technical Submittal Checklist (for High-Performance Butterfly Valve or AWWA Butterfly Valve).
 - 2. Field Functional Test Data Form (to be completed by installer – Others - with assistance from Contractor in the presence of the Engineer)

END OF SECTION

**ELECTRIC MOTOR VALVE ACTUATOR
TECHNICAL SUBMITTAL CHECKLIST**
(Manufacturer's Representative to complete one form per submittal)

SPEC. SECTION TITLE & NO:		
TAG NO(s):		
SUBMITTAL CONTENT REQUIREMENTS		Page Number(s)
1. Certified manufacturers' drawings shall include:		
a. Motor operator dimensions, construction details and materials.		
b. An outline drawing showing proposed orientation and mounting on the valve, with overall dimensions.		
c. A drawing showing the proposed valve/actuator orientation and relationship to nearby structures or obstacles. The drawing should also show floor/ platform location and any wall within 6 feet.		
d. Provide net weight of each actuator including required intermediate reduction gear.		
e. Coating materials to be used.		
2. For electric motor actuators, certified drawings shall also include:		
a. Electric wiring diagrams for position switches, power and control systems. These diagrams shall show the terminal designations for the control wiring.		
b. Number of handwheel turns to open the valve.		
c. Motor nameplate data.		
d. Weights of actuators and gearing assemblies.		
3. A data sheet summarizing all pertinent data for the actuator and the valve, including valve and actuator torques, motor and actuator nameplate data, starts per hour, motor duty time, total combined valve and actuator weights, valve pressure rating, speed range capability, factory set open and closing times, gear ratio for the electric actuator and the intermediate reduction gear, etc.		
4. Electric Motor Actuator Calculations for sizing the actuators meeting all the requirements at the maximum differential pressure and velocity conditions listed in Tables A. Include any referring calculations and/or literature in the reference pages.		
a. Required Actuator Torque (150% of Total Valve Torque) =	(e.g. 125 ft-lbs)	
b. Motor RPM =	(e.g. 43 RPM)	
c. Motor Torque =	(e.g. 25 ft-lbs)	
d. Gearbox Ratio=	(e.g. 350:1)	
e. Input Turns =	(e.g. 1050 turns)	

SPEC. SECTION TITLE & NO:		
TAG NO(s):		
SUBMITTAL CONTENT REQUIREMENTS		Page Number(s)
f. Operating Time =	(e.g. 124 sec)	
g. Duty Cycle Time =	(e.g. 15 minutes)	
h. Handwheel Diameter =	(e.g. 12")	
i. Rim Pull =	(e.g. 18 lbs)	
5. All electric actuator commissioning settings, including torque and limit switch settings.		
6. All electric actuator commissioning settings, including torque and limit switch settings.		
7. Affidavit of Compliance.		
Append Electric Motor Valve Actuator Technical Submittal Checklist to the valve technical submittal checklist.		

FIELD FUNCTIONAL TEST DATA FORM

EBMUD Project Title: _____

Test Date(s): _____

Equipment Name: **Electric Motor Valve Actuators**

Section No.: **33 12 16.32**

Tag No.: _____

P&ID No. _____

I. Pretest Documentation/Setup

Documents:

This test shall be conducted in conjunction with the valve functional test. Append these results to the valve test data sheet.

Field Test Setup (Identify any test instrument, special setups like tanks, hoses, etc.): amp meter, volt meter

II. Field Functional Test

1. Calibration/Loop/Electrical

Yes No NA

Comments:

1.1 Instrument commissioning complete

☐ ☐ ☐

1.2 Loop Checks complete

☐ ☐ ☐

1.3 Electrical commissioning complete

☐ ☐ ☐

2. Installation Check

Pass Fail NA

Comments:

2.1 Correct equipment tags have been installed (tags shall match P&IDs)

☐ ☐ ☐

2.2 All fields on Asset List Spreadsheet completed for device (Contractor shall show inspector at the time of the test that the asset list is complete and accurate for this system)

☐ ☐ ☐

2.3 Verify O&M manual installation instructions have been completed.

☐ ☐ ☐

2.4 Verify that the motor and actuator frame is electrically grounded.

☐ ☐ ☐

2.5 Verify all position switches are properly adjusted and functional (see P&IDs for switch settings).

☐ ☐ ☐

FIELD FUNCTIONAL TEST DATA FORM

EBMUD Project Title: _____

Test Date(s): _____

Equipment Name: **Electric Motor Valve Actuators**

Section No.: **33 12 16.32**

Tag No.: _____

P&ID No. _____

3. Operations Check	<u>Pass</u> <u>Fail</u> <u>NA</u>	Comments:
3.1 <u>Electrical Imbalance Test</u> : Measure and record input voltage motor amperes on each phase at the terminals of the motor. Verify that there is no significant phase imbalance, and that adequate voltage levels are applied to the motor.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
3.1 <u>Actuator Stroke Time</u> : Open and close each valve fully and measure and record stroke time in both directions. Stroke time shall be between ____ – ____ seconds.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
3.2 <u>Valve Closure Test</u> : Close the valve with the actuator and verify that the valve is leak tight (this test should be done with the valve "Leakage Test"). Adjust the actuator and repeat the test as necessary so that the valve closes fully meeting the leakage requirements.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
4. Controls Check	<u>Pass</u> <u>Fail</u> <u>NA</u>	Comments:
4.1 <u>Local Check</u> : Place the actuator in "LOCAL" control mode, manually opening and closing the valve at the actuator, and verifying that the local valve position indicator and remote position indication 4-20 mA output signal (if applicable) read the proper values.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
4.2 <u>Open/Close Service Valves</u> : Simulate an open or close remote contact input signal and verify that the valve opens and closes.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
4.3 <u>Modulating Service Valves</u> : Simulate a 4-20 mA remote position input signal and use the following values: 0, 25, 50, 75, and 100 percent open. Verify that the valve opens or closes to the correct position without overshooting the target position. Also, verify that the local valve position indicator and remote position indication 4-20 mA output signal read the proper values at each position.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
4.4 <u>Status Checks</u> : Verify motor run status operates properly.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
5. Alarms Check none	<u>Pass</u> <u>Fail</u> <u>NA</u> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	Comments:

04/01/15

RFQ No. 1603

33 12 16.32 - 12

Electric Motor Valve Actuators

FIELD FUNCTIONAL TEST DATA FORM

EBMUD Project Title: _____

Test Date(s): _____

Equipment Name: **Electric Motor Valve Actuators**

Section No.: **33 12 16.32**

Tag No.: _____

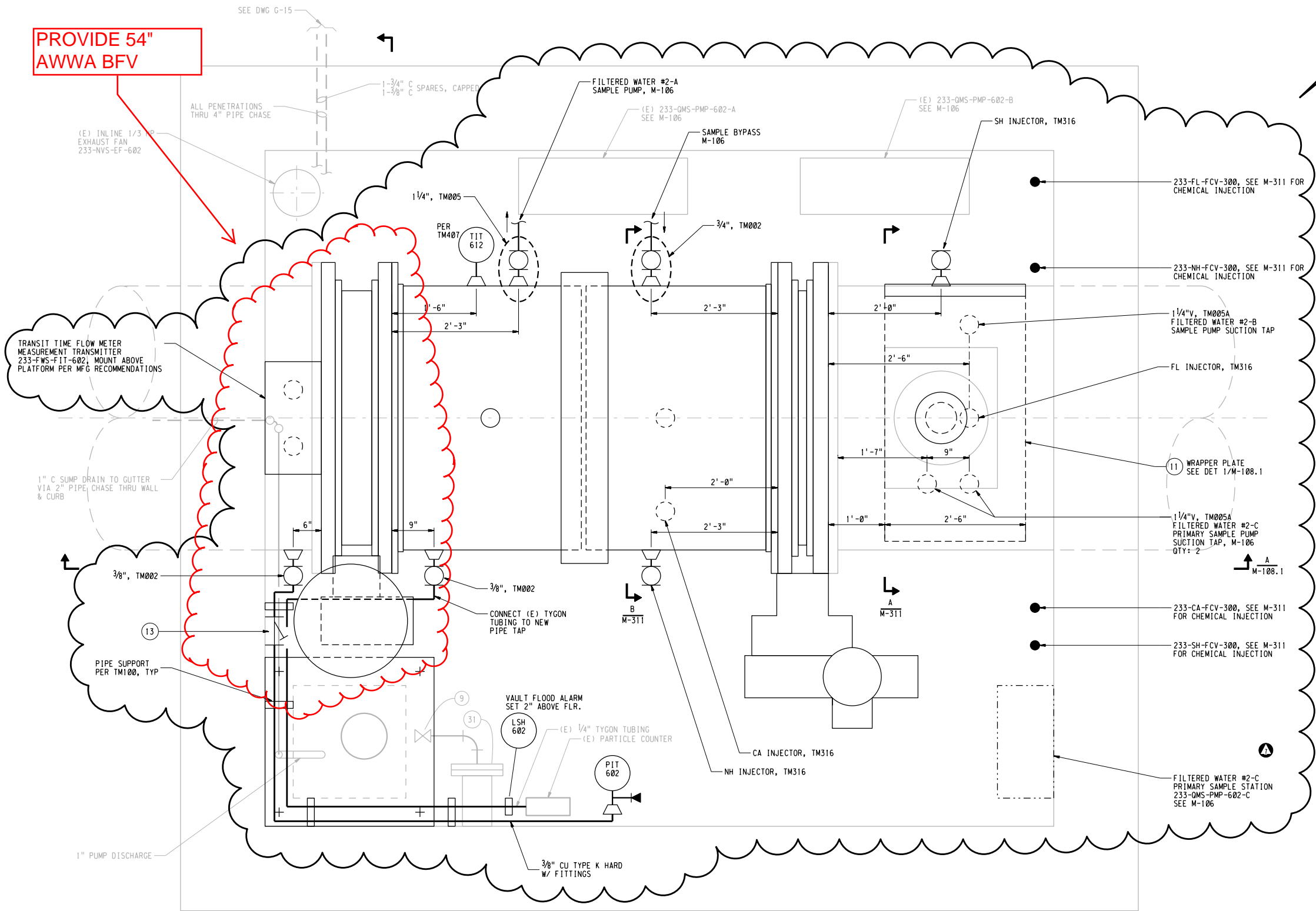
P&ID No. _____

6. Run Check none	<u>Pass</u> <u>Fail</u> <u>NA</u> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	Comments:
7. Other Tests and Checks	<u>Pass</u> <u>Fail</u> <u>NA</u>	Comments:
7.1 <u>Field Calibration Tag</u> : Attach to the valve actuator at the conclusion of the functional test. Tag shall include valve tag number, type of valve service (OPEN/CLOSE, or MODULATING), actuator stroke time (recorded above), and position switch settings (including switch tag numbers).	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
7.2 Cover and seal the actuator to protect it from dust and water prior to operation (covers shall be removed prior to startup test).	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

III. Participants/Witness	
Test conducted:	
By (signature): _____	Date: _____
Title: _____	Company Name: _____
By (signature): _____	Date: _____
Title: _____	Company Name: _____
EBMUD Witness:	
By (signature): _____	Date: _____
Title: _____	

SPEC NO. 2089

USER: pcoriaseo
DATE: 11-AUG-2015 13:44
FILE: H:\treatment\orinda\510_00\51000M108.R07



NOTES

1. SEE 510.00-M-108.1 FOR MATERIAL LIST AND NOTES.

PLAN

1"=1'-0"

3" ON ORIGINAL DOCUMENT

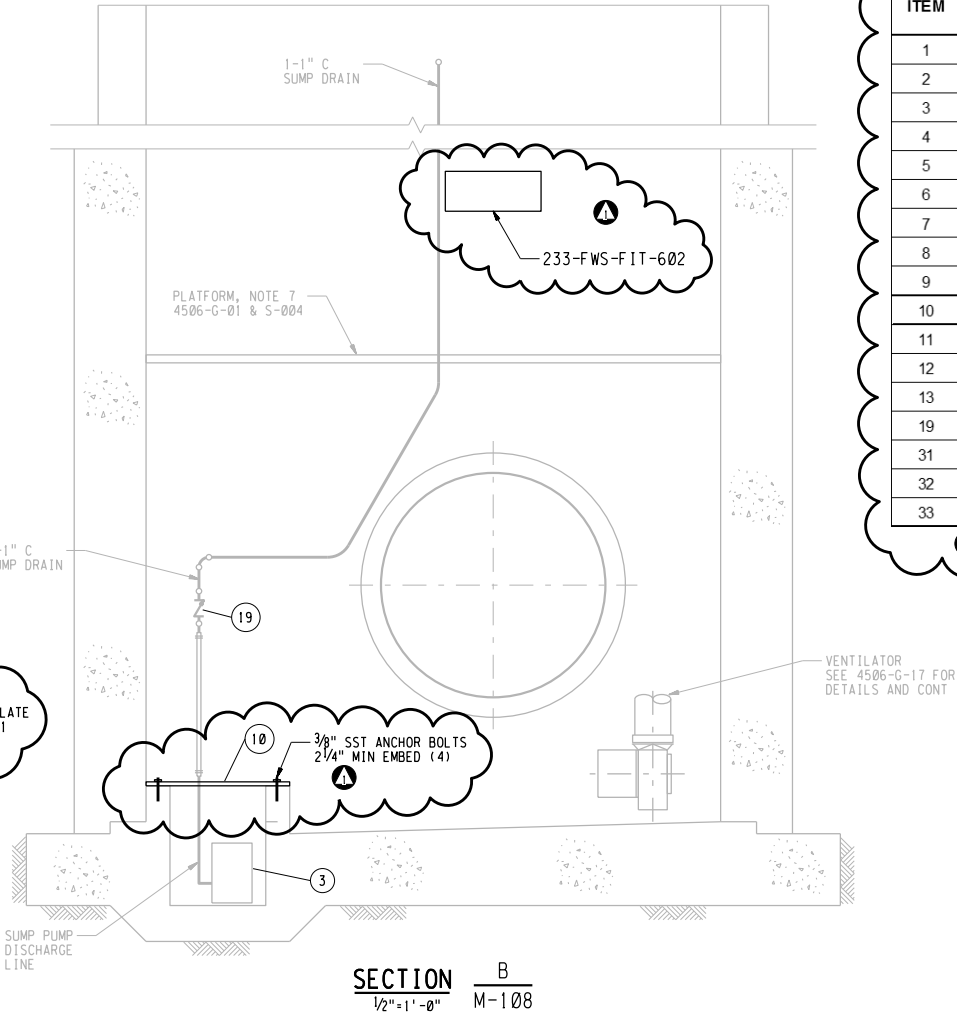
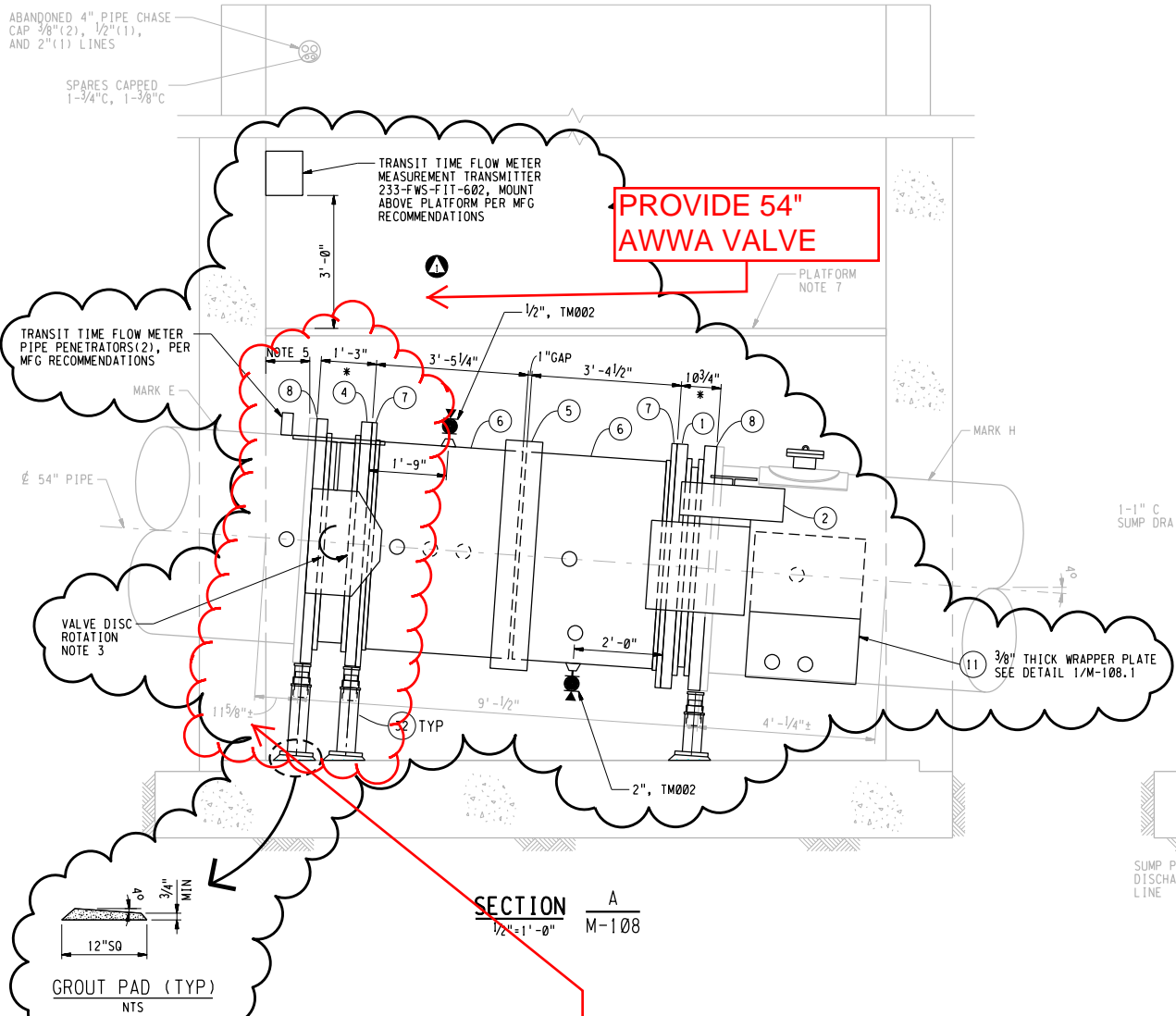
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NO.	DATE	REVISION	BY	REC.	APP.
1		DWG RENUMBERED AND REVISED PER SPEC 2089			

FORMERLY KNOWN AS DWG NO. 4506-G-16, REV 6					
DESIGN	DESIGNED BY	—	EAST BAY MUNICIPAL UTILITY DISTRICT OAKLAND, CALIFORNIA		
	DESIGN CHECKED BY	—	ORINDA WATER TREATMENT PLANT SITE		
	DRAWN BY	—	MECHANICAL		
RECOMMENDED BY			EFFLUENT LINE NO. 2 - FLOW CONTROL VAULT PLAN		
APPROVED BY			SHEET 1 OF 2		
PROJ. NO. Z-000		510.00-M-108		7	
SCALE AS SHOWN		STRUCT.		DISC.	
DATE 17JAN1961		NUMBER		REV.	

SPEC NO.

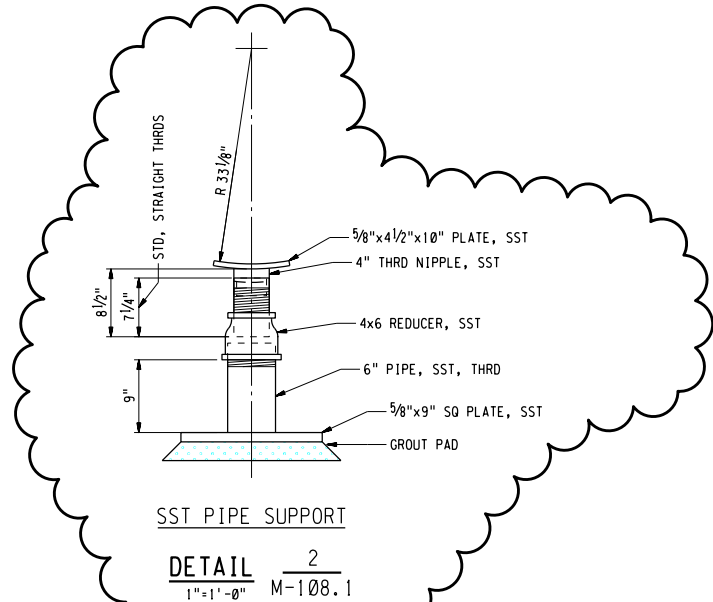
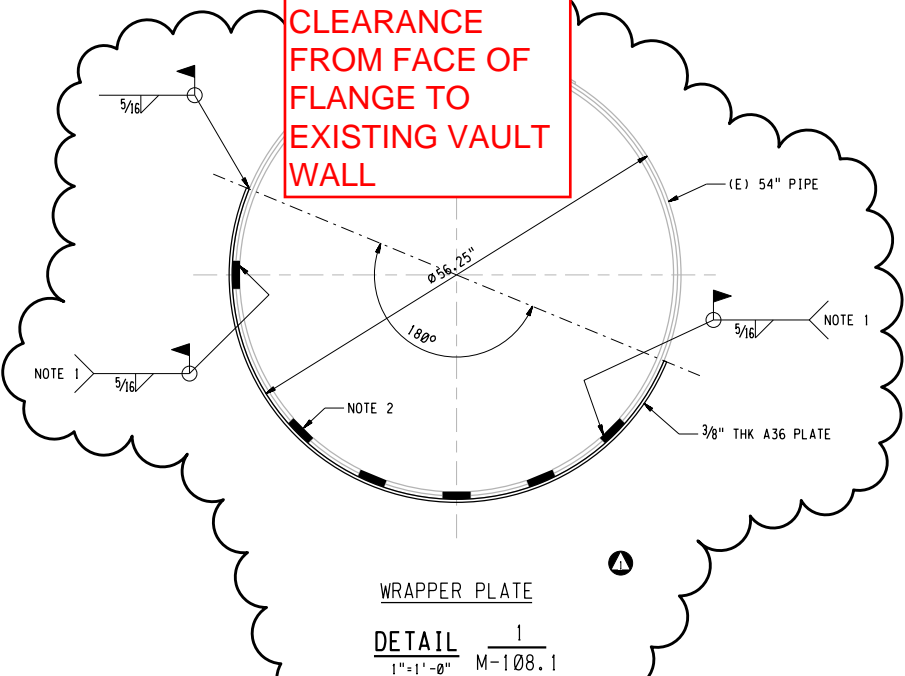
USER: pcor/gso
DATE: 11-AUG-2015 13:45
FILE: H:\str-tment-sor\indos\510_00s\51000M108.1.R01



MATERIAL LIST

ITEM	REQUIRED		DESCRIPTION	REMARKS
	EXISTING	SPEC 2089		
1		1	HIGH PERFORMANCE BUTTERFLY VALVE, 54", SST, LUGGED, 150LB	DIST. FURNISHED
2		1	ELECTRIC MOTOR ACTUATOR WITH GEARBOX	DIST. FURNISHED
3	1		SUBMERSIBLE SUMP PUMP, 30 GPM, 50' THD	EXISTING
4		1	AWWABFV, 54", FLGD, CL 150B	DIST. FURNISHED
5		1	COUPLING FOR PLAIN-END PIPE, 56-1/4" O.D STEEL PIPE	33 11 07
6		8FT +/-	PIPE, 56-1/4" O.D., 3/8" THK, EPOXY COATED, 3/4" MORTAR LINED	40 20 20
7		2	FLANGE, 54", AWWA CL D, FOR 56-1/4" O.D. PIPE	40 20 20
8		2	INSULATING GLANGE GASKET SET, 54", FOR AWWA CL D DRILLING	40 20 20
9	1		GATE VALVE, 2", LUNKENHEIMER, FIG 2150	EXISTING
10		1	FRP GRATING, 3' X 3'	06 82 00
11		1	WRAPPER PLATE, 3/8" THK, 2-6" WIDE, 180 DEG, A-36 PLATE,	
12				
13		1	Y-STRAINER, 3/8", BRONZE	33 12 28.11
19	1		1" SWING CHECK VALVE, 125# BRONZE, LUCKENHEIMER FIG 2145	EXISTING
31	1		REDUCING FLANGE, 2" X 11", C.I., 125#	EXISTING
32		3	FLANGE TYPE PIPE SUPPORT, SST, DETERMINE HEIGHT IN FIELD	SEE DETAIL 2
33				

MINIMUM
CLEARANCE
FROM FACE OF
FLANGE TO
EXISTING VAULT
WALL



NOTES

- WELD WRAPPER PLATE WITH 5/16" THICK FILLET WELD ALL AROUND IN THE INSIDE OF THE PIPE AT OLD INJECTION PENETRATION AND OLD SAMPLE PUMP PENETRATION LOCATIONS (7 LOCATIONS). FIELD VERIFY WRAPPER PLATE DIMENSIONS.
- FIELD REPAIR MORTAR AFTER WRAPPER PLATE WELDING.
- 54" AWWA VALVE DISC ROTATES TO CLOSE VALVE IN A CCW DIRECTION WHEN VIEWED IN SECTION A/M-108.
- NOT USED.
- CLEARANCE BETWEEN WALL AND 54" FLANGE IS APPROXIMATELY 11" (NOT INCLUDING FLANGE BOLTING DIMENSIONS). CONTRACTOR TO FIELD VERIFY WORKING ROOM FOR TRANSIT TIME FLOW PENETRATOR AND MAKE NECESSARY ADJUSTMENTS.
- ASTERISK (*) DENOTES DIMENSIONS VARY BY THE MANUFACTURER.
- SEE 4506-G-07 AND 510.00-S-004 FOR STRUCTURAL PLATFORM DRAWINGS.

NO.	DATE	REVISION	BY	REC.	APP.
1		DWG RENUMBERED AND REVISED PER SPEC 2089	JCL		

DESIGNED BY	
DESIGN CHECKED BY	
DRAWN	
REVIEWED	
RECOMMENDED BY	
SENIOR MECH ENGR.	
R.P.E. NO.	
APPROVED	
MGR OF DESIGN	
R.P.E. NO.	

EAST BAY MUNICIPAL UTILITY DISTRICT OAKLAND, CALIFORNIA			
ORINDA WATER TREATMENT PLANT SITE			
MECHANICAL			
EFFLUENT LINE NO. 2 - FLOW CONTROL VAULT SECTIONS AND DETAILS			
SHEET 2 OF 2			
PROJ. NO. Z-000	510.00-M-108.1	1	
SCALE AS SHOWN			
DATE	STRUCT.	DISC.	NUMBER
			REV.

MANUFACTURER'S CERTIFICATE OF PROPER INSTALLATION

OWNER: _____

EQPT SERIAL NO.: _____

EQPT TAG NO.: _____

EQPT/SYSTEM: _____

PROJECT NO.: _____

SPEC. & SECTION: _____

I hereby certify that the above-referenced equipment/system has been:

Complete

Not Applicable

☐☐

Installed in accordance with Manufacturer's recommendations.

☐☐

Inspected, checked, and adjusted.

☐☐

Serviced with proper initial lubricants.

☐☐

Electrical and mechanical connections meet quality and safety standards.

☐☐

All system instruments are calibrated.

☐☐

All applicable safety equipment has been properly installed.

Comments: _____

I, the undersigned Manufacturer's Representative, hereby certify that I am (i) a duly authorized representative of the manufacturer, (ii) empowered by the manufacturer to inspect, approve, and operate the equipment and (iii) authorized to make recommendations required to assure that the equipment furnished by the manufacturer is complete and ready for startup and operations. I further certify that all information contained herein is true and accurate.

Date: _____

Manufacturer: _____

By Manufacturer's Authorized Representative: _____
(Authorized Signature)

O&M MANUAL REVIEW CHECKLIST
(Manufacturer's Representative to complete one form per submittal)

SPEC. SECTION TITLE & NO:	
MFR Name, Address, Phone:	
Local Rep Name, Address, Phone:	

GENERAL FORMAT (See Section 01 33 00 for additional details)			
DESCRIPTION	PROVIDED?		COMMENTS
	YES	NO	
Specified copies provided			
Binder cover clearly labeled			
Spine Label			
System/Equipment type clearly identified			
District facility or facilities name(s) identified			
Specification number & title shown			
Title page provided			
Equipment tag numbers correctly shown			
Manufacturer's name, address, phone number provided			
Local Representative's name, address, phone number provided			
Table of contents provided			
Heavy section dividers w/ numbered or lettered plastic tabs provided			
Pages punched for 3-ring binder			
Info larger than 8-1/2 x 11 folded showing title block			
Original quality copies provided			

TECHNICAL CONTENT (See Section 01 33 00 for details)				
DESCRIPTION	LOCATION IN O&M			COMMENTS
	TAB#	PAGES	N/A	
Equipment Descriptions				
• Equipment names, model numbers & tag numbers				
• Equipment & major component functions				
• Drawings, diagrams & illustrations				
• Equipment Specification				
• Bill of materials				
• Legend, Abbreviation, and Acronym List				
Performance Information				
• Nameplate data				
• Performance test data/curves				

TECHNICAL CONTENT (See Section 01 33 00 for details)				
DESCRIPTION	LOCATION IN O&M			COMMENTS
	TAB#	PAGES	N/A	
Installation Instructions				
• Installation procedures & drawings				
• Equipment tolerances				
• Adjustment procedures				
Operating Instructions				
• Startup procedures				
• Normal & routine operations				
• Control functions				
• Alarms description and settings				
• Shutdown procedures				
• Emergency operations				
Electrical Information				
• Nameplate data				
• Relay, control, alarm contact settings				
• Motor test data				
Electrical Drawings				
• Single-line diagrams, three-line diagrams				
• Interconnection wiring diagram				
• Schematic and elementary diagrams				
• Panel layout drawings				
Instrumentation & Control				
• Control diagrams				
• Panel layout drawings				
• Instrument data sheets (specification forms)				
• Calibration Procedures				
• Final settings for adjustable control devices				
• Block diagrams and riser diagrams				
• Loop diagrams				
• Pneumatic/Hydraulic piping drawings				
• Hard copy printouts of control programs				
• Field calibration data sheets				
• Programming software (licensed to EBMUD) with user manuals				
Shipping and Storage Instructions				
Testing				
• Factory Test Report (procedures and results)				
• Field Test Procedures				
• Manufacturer's Certificate of Proper Installation (where specified)				
• Field Test Results				
Troubleshooting guide				

TECHNICAL CONTENT (See Section 01 33 00 for details)				
DESCRIPTION	LOCATION IN O&M			COMMENTS
	TAB#	PAGES	N/A	
Safety				
• Safety procedures/Lockout discussion				
• CAUTION, WARNING, DANGER text				
• Material Safety Data Sheets (MSDS)				
• Special safety equipment				
Preventive Maintenance				
Maintenance Summary Forms				
Lubrication Information				
• Location of lube points & frequency				
• Recommended type & grade, state specific MFR				
• Recommended viscosity & temperature range				
Overhaul Instructions				
• Detailed assembly drawings w/OEM part numbers				
• Tear down/rebuild instructions				
Spare Parts for Equipment & Components				
• Predicted life of parts subject to wear or aging				
• Recommended spare parts list w/ part numbers				
• Complete instructions for obtaining parts				
• Long-term storage requirements				
• Special tools				
Long-term Shutdown/Lay-up Instructions				
Warranty/Guarantee				

TYPICAL MAINTENANCE SUMMARY FORM

(Use as many pages as necessary. This form is available in MS Word format upon request)

1. Equipment Name: _____

2. Manufacturer: _____

3. Identification Numbers:

Tag: _____

Model: _____

Serial: _____

4. Nameplate Data (HP, voltage, speed, flow rate, head, etc.): _____

5. Manufacturer's Local Representative:

Name: _____

Telephone: _____

Address: _____

6. LUBRICANT LIST

<u>Reference Symbol</u> List symbols used in Item 8 below	<u>Lubricant Description</u> List equivalent lubricants: brand name(s), type, grade, viscosity, etc.

7. SPARE PARTS (Recommendation spare parts with part numbers; if any.)

<u>OEM Part#</u>	<u>Part Name-Description</u>

8. Equipment Replacement Cost [\$] _____

9. MAINTENANCE REQUIREMENTS

[illegible]

I, _____ certify that the information on this form is an accurate and complete summary of all typical, routine, and preventive maintenance tasks required to ensure satisfactory performance during warranty period and the overall longevity of the equipment or systems.

(Manufacturer's Representatives Signature)

(Date)