EAST BAY MUNICIPAL UTILITY DISTRICT

REQUEST FOR PROPOSAL (RFP) No. 790-20-01
for
Water Treatment Plant Effluent Meters, Large Customer Meters, Rate Control Stations, and Regulators Improvements Design Project

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For complete information regarding this project, see RFP posted at https://www.ebmud.com/business-center/requests-proposal-rfps/ or contact the EBMUD representative listed above. Please note that prospective proposers are responsible for reviewing this site during the RFP process, for any published addenda regarding this RFP.

RESPONSE DUE
by
4:00 p.m.
on
Friday, October 16, 2020
at
EBMUD, Purchasing Division
375 Eleventh St., First Floor
Oakland, CA 94607

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

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EAST BAY MUNICIPAL UTILITY DISTRICT

RFP

for

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I. STATEMENT OF WORK

A. SCOPE OVERVIEW

It is the intent of the specifications, terms, and conditions included in the Request for Proposals (RFP) to describe the design services required by the Consultant for the preparation of construction contract documents for the Water Treatment Plant (WTP) Effluent Meters, Large Customer Meters (LCM), Rate Control Stations (RCS), and Regulators Rehabilitation Improvements Project (Project).

The East Bay Municipal Utility District (District) intends to award a two-year contract to the Proposer(s) who best meets the District's requirements.

The project includes providing design services for WTP effluent meters, LCMs, RCS, and regulators. The design services shall include producing engineering drawings and specifications for the construction of two WTP effluent flow meters at the Lafayette and Sobrante WTPs, five facilities for temporary insertion meters, seven LCMs at three sites, rehabilitation of one RCS facility, one new regulator facility, and rehabilitation of six regulator facilities. The scope of the work for the Consultant is the following:

1. Design WTP effluent meter facility improvements at Lafayette and Sobrante WTPs, based on recommendations made by the District including meter flow and data reliability, safety, and maintenance improvements

2. Design meter facility improvements for seven LCMs at three sites (Richmond, Crockett, and Rodeo).

3. Design the rehabilitation of one RCS facility (82nd Ave).

4. Design one new RCS facility (Cull Creek).

5. Planning and design the rehabilitation of six Regulator facilities (Campus, Circle, Keller, Gramercy, Orion, and Villareal).

6. Prepare two sets of contract documents for the project's construction phases, according to the groupings given below, to allow separate timelines for the completion of detailed design, advertising, bidding, and award:

    a. Contract Documents Set No. 1: WTP Effluent Meters, and LCMs, and

    b. Contract Documents Set No. 2: RCS and Regulators

7. Support the District during the bid period for both contracts.

B. PROPOSER QUALIFICATIONS

1. Proposer Minimum Qualifications

a. Proposer, Proposer's principal, or Proposer's staff shall have been regularly engaged in the business of providing design engineer services in for multi-disciplinary potable water system distribution facilities for at least five (5) years.

b. Experience in developing drawings and specifications for construction of water system facilities in the State of California.

c. Proposer shall possess all permits, licenses, and professional credentials necessary to perform services as specified under this RFP.

C. PROJECT BACKGROUND

Overview of the District's Water System

The District is a California public utility that supplies high-quality drinking water. In addition, the District promotes sustainability, generates renewable energy, engages in pollution prevention, and provides wastewater treatment series that protect the San Francisco Bay. The District's water system supplies 1.4 million customers and spans 332 square mile area in Alameda and Contra Costa counties, extending from Crockett in the north, Southward to San Lorenzo, eastward from San Francisco Bay to Walnut Creek, and south through San Ramon Valley.

The District's water distribution system was constructed over a period of many decades. Construction of new facilities and rehabilitation of existing facilities is part of routine maintenance in order to continue to provide high-quality drinking water.

Project Overview

The Project consists of preparing construction contract documents, including detailed design drawings and specifications, for the construction of facilities to improve the accuracy and reliability of flow measurements at the District's Lafayette and Sobrante WTPs and seven large customer meters. The Project also includes preparing construction contract documents to improve distribution system operations and reliability by rehabilitating and/or constructing new rate control station and regulator facilities, as listed in Table 1.

The District recently completed a Metering Improvements Plan (Exhibit E), which identified a number of meter facility improvements and included a series of recommendations for meter flow and data validation, safety, and maintenance

improvements. The detailed design of WTP effluent meters and LCM facility improvements will be based on the District's Metering Improvements Plan, and is expected to take approximately 10 months to complete. The schedule is given in Table 2.

Additional planning and pre-design work will be needed prior to initiating detailed design for the rehabilitation of regulator facilities, to evaluate alternatives and determine a detailed scope of work for design (i.e., feasibility of rehabilitating regulators within confines of existing vaults versus need for replacement with a new vault, based on existing conditions and site constraints). It is anticipated that the planning and pre-design work will take approximately 3-6 months to complete, following by approximately 12 months to complete detailed design and construction documents (for a total planning and design duration of approximately 18 months). The schedule is given in Table 2.

Table 1- Summary of Facility Improvements included in Project

	Facility Name	**Facility Type**	**Location**
1	Lafayette WTP	Effluent Meter	Lafayette
2	Sobrante WTP	Effluent Meter	El Sobrante (Maloney Pumping Plant Site)
3	Chevron Refinery (CV1-5)	LCM	Richmond
4	Phillips 66 Refinery	LCM	Rodeo
5	C&H Sugar Refinery	LCM	Crockett
6	82nd Ave	Existing RCS	Oakland
7	Cull Creek	New RCS	Castro Valley
8	Campus	Existing Regulator	Oakland
9	Circle	Existing Regulator	El Sobrante
10	Keller	Existing Regulator	Oakland
11	Gramercy	Existing Regulator	San Leandro
12	Orion	Existing Regulator	El Sobrante
13	Villareal	Existing Regulator	Castro Valley

D. SPECIFIC REQUIREMENTS

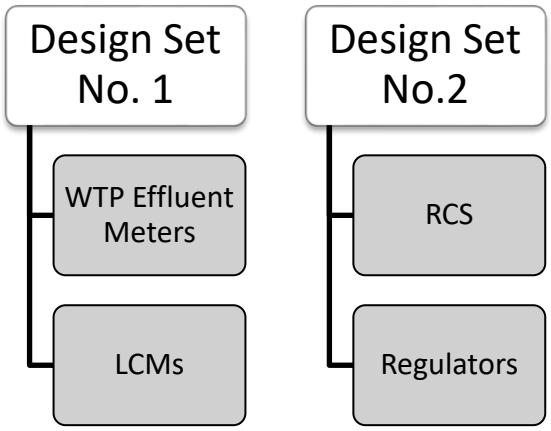
Proposers shall base their proposals on the tasks as described below. In general, the District is seeking a Consultant to provide engineering design services for a variety of facility improvements, consisting of the rehabilitation of current facilities and design of new facilities.

Tasks shall include field inspections and evaluation of alternatives, , detailed civil/structural, mechanical, and electrical and instrumentation and control systems design, drafting, permit assistance, cost estimating, developing construction sequencing and scheduling, and preparation of bid documents including detailed design drawings and specifications for construction.

Task 1 – Project Management

Task 1.1 Project Management

The project shall be managed in a way to establish separate, concurrent, design phases for the meter portion and the RCS and regulator portion of the Project. The design group breakdowns are illustrated with the chart below:



In order to allow for separate timelines for planning and completion of detailed design and contract documents, the Project shall be managed as two separate design groups under the same agreement. One design set shall include all meter design components and the second design set shall include all RCS and regulator design components. Each design set shall be managed separately, including scope of services, schedule, and budget. The separated design sets shall be independent of each other and the Consultant shall schedule separate progress meetings and provide separate project status reports for each design set..

The Consultant shall provide sufficient and well-organized project administration to manage each design set for the duration of the contract. The Consultant's Project Manager shall be responsible for coordinating all activities of the respective design set with District staff and oversee the execution and development of all project deliverables. The Consultant's Project Manager shall execute the project's approach, staffing, scope, schedule, budget, communications, document management, deliverables, and quality control. The Consultant's Project Manager shall track the percent of work completed and submit this information with the respective design set invoices. The Consultant shall also maintain all project files including plans, reports, correspondence, calculations and all other documents as it relates to the designed

improvements. All information provided to the Consultant from the District shall not be shared outside of the Consultant's team without written consent of the District.

The Consultant shall coordinate communications and meetings with the District as needed to review the technical concepts and proposed improvements, soliciting input from District stakeholders including Engineering, Facility Maintenance and Operations and Maintenance, and coordinate activities with the supporting teams. The Project Manager shall serve as a liaison between the Consultant's design teams and the District and shall keep the District informed on a regular basis of the status of the work completed, schedule elapsed, status of work at each site, and budget spent.

Task 1.2 Project Management Plan

The Consultant shall develop and implement an overall Project Management Plan (PMP) that will outline the project approach for each design set. The PMP shall detail the manner in which the design sets will be planned, managed, and executed including identifying the leads for each design discipline (e.g., civil/structural, mechanical, electrical/ICS). The objective of the PMP is to define the members of the Consultant's design team and approach to be used by the project team to address the different design tasks, deliver the intended scope of work, and how project information will be shared. The PMP shall be updated as necessary to address changes in the project; all revisions must be documented in the PMP and submitted to the District for review and comment. As a minimum, the PMP will be reviewed and updated as necessary at the initiation of each phase of project delivery (e.g., prior to project kick-off, completion of planning, 10% design submittal, 50% design submittal, 90% design submittal, etc.)

Task 1.3 Web-based Project Management and Drawings Standards

The Consultant shall establish and maintain a web-based project management approach. This platform shall include, but is not limited to: project updates and executive status reports, notices, meeting agendas and minutes, project information exchange, scheduling, and correspondence inventory and retrieval system. Moreover, all drawings produced for the District shall be compatible with MicroStation V8 – V8i Edition (version 8.11). All P&ID drawings shall be developed using AutoCAD Plant3D P&ID starting from District standard templates. All new drawing numbers and P&ID equipment tagging shall follow the District's Engineering Standard Practices, and all design drawings, standard details, and specifications shall follow the District standards, which will be provided to the Consultant prior to start of the Project. District Engineering Standard Practices for new drawing numbers and P&ID equipment tagging given in Exhibit F. District drafting conventions can be found here: District's drafting conventions.

Task 1.4 Project Kick-Off Meeting

Following the completion of the PMP, The Consultant's team shall lead an introduction workshop. The Kick-Off Workshop will be an opportunity for the Consultant to share the

outline of the PMPs, including a discussion of the design set project approach, planned roles and responsibilities, project scope, schedule, budget, project controls processes, deliverables, and workshops. The purpose of the workshop is to introduce the project to the stakeholders, and create alignment on project delivery plan, goals, objectives, and expectations. If permissible by social distancing guidelines, the introduction workshop shall be conducted at the District's Administration Building, 375 11th St, Oakland, CA 94607. In the event, that updated social distance guidelines do not allow for an in-person project kick-off meeting, the Consultant shall schedule a virtual kick-off meeting using Microsoft Teams. In addition, the Consultant shall send the meeting agenda a minimum of three working days prior to the workshop, write and submit minutes to the District within three working days of the workshop, and solicit feedback from District stakeholders.

Task 1.5 Meetings

The Consultant shall lead progress meetings on a biweekly basis, in addition to holding various meetings and/or workshops, as required, for each design set. If permissible by social distancing guidelines, the meetings shall be held at the District's Administration building in downtown Oakland (375 11th St, Oakland, CA 94607). The Consultant shall prepare the agenda for each meeting and submit the agenda to the respective District PM a minimum of three working days prior to the meeting. The Consultant shall be responsible for preparing the approved meeting minutes to the attendees within three working days of the meeting.

In addition to progress meetings (assume bi-weekly), the Consultant shall conduct a minimum of five key meetings during the course of the project, generally scheduled following submittal of key draft deliverables. The following key meetings are anticipated:

- Project Kick-Off
- 10% User Group Meeting
- Preliminary Design Workshop
- 50% Design Submittal Meeting
    - User Group Meeting (two calendar weeks after submittal)
    - Management Briefing (two calendar weeks after User Group Meeting)
- 100% Design Submittal and Management Briefing

Task 1.7 Progress Reports

For each design set, the Consultant shall prepare and submit monthly progress reports prior to or simultaneously with submittal of monthly invoices. The monthly reports shall be clear and concise. The monthly reports shall highlight the key project achievements, project status, and critical issues. The monthly progress reports shall include:

- An assessment of actual versus planned progress in completing the scope of services, broken down by facility, including a description of the tasks and deliverables completed to date.
- For each task, the percentage of services performed versus the percentage of services performed compared to percentage of fees incurred
- For each task, the percentage of the fees incurred for such tasks compared to dollar amount allocated to such task
- A look-ahead of schedule listing deliverables and activities planned for the next month
- Action items and decision log: this log will document action items and project concerns and issues through the agreement duration which require resolution by District and/or the Consultant.

Task 1.8 Monthly Invoices

The Consultant shall prepare a monthly invoice for each design set. The invoices shall include a full accounting of staff, actual number of hours, hourly rates, sub-consultants and other direct costs organized by design set individual scope.

Task 1.9 Deliverables

As part of Task 1 Project Management, the Consultant shall provide the following deliverables:

- An assessment of actual versus planned progress in completing the scope of services, broken down by facility, including a description of the tasks and deliverables completed to date.
- Project Management Plan
- Web-based Project Management System
- Meeting Agendas and Minutes - The Consultant shall provide the agenda for all meetings at least three (3) working days prior to the meeting and the meeting minutes within three (3) working days after the meeting. The meeting minutes shall summarize the discussion, highlight decisions made, and document action items
- Monthly Progress Reports
- Monthly Invoices

<u>Task 2 – Meter Facility Design (Design Set No. 1)</u>

The District has been performing water loss audits since 2003. The meter facility designs will improve the District's water loss auditing by improving accuracy of the District's larger input and output volumes, the WTP Effluent source meters and selected LCMs.

California Senate Bill 555 (SB 555), enacted in 2015, requires utilities to perform annual water loss audits and meet water loss performance standards in 2028. In the future, the

State Water Resources Control Board will use annual water loss audit information to determine utilities' compliance with SB 555 performance standards. The goal of the metering facility improvements included as part of the Project is to improve the quality and accuracy of the large meter data used in the District's annual water loss audits.

Task 2.1 Metering Improvements Plan

The District has performed initial planning investigations and has design recommendations related to the meter facility improvements. The design criteria for the meter improvements are referenced in Exhibit E, Metering Improvements Plan. The Consultant shall review and analyze the recommendations in the Metering Improvements Plan to determine the level of effort required to design the new metering facilities. The Consultant shall use the recommendations provided in the Metering Improvements Plan as the preliminary design guide. General design elements will include, but are not limited to:

a. Design new flow meter structure upstream of the Lafayette WTP clearwell. The new structure shall include a new permanent flow meter, facilities to test the permanent flow meter using a temporary test meter, and all necessary design components.

b. Design new flow meter structure downstream of the Sobrante WTP clear well. The new vault structure shall include new a permanent flow meter, facilities to test the permanent flow meter using a temporary test meter, and all necessary design components.

c. Design facilities to test the permanent flow meter using a temporary test meter on 96" effluent pipeline in the Walnut Creek WTP effluent flow meter and sampling structure.

d. Design facilities to test the permanent flow meter using a temporary test meter on 48" effluent pipeline in the Orinda WTP Effluent No. 1 flow meter vault.

e. Design facilities to test the permanent flow meter using a temporary test meter on 54" effluent pipeline in the Orinda WTP Effluent No. 2 flow meter vault.

f. Design facilities to test the permanent flow meters using a temporary test meter on 20" Chevron customer meters No. 3 and 4.

g. Design a new flow meter structure upstream of the large customer meter at the Phillips 66 refinery. The new vault structure shall include a new

permanent flow meter, facilities to test the permanent flow meter using a temporary test meter, and all necessary design components.

In addition to the metering improvements plan, the District shall provide District Planning and Design engineering documents that the Consultant shall review, including but not limited to:

1. Technical memorandum, where available (planning and pre-design studies, shutdown plans, hydraulic analyses)
2. Engineering drawings (construction and as-built drawings, where available)
3. Property acquisition and survey documents, where available
4. Geotechnical investigations, where available

The Consultant shall review the Metering Improvements Plan and all available information provided by the District. The Consultant shall also conduct site assessments as needed to further verify the preliminary design criteria outlined in the Metering Improvements Plan.

Task 2.2 Meter Facilities Basis of Design.
Based on the preliminary designs included in the Metering Improvements Plan, the Consultant shall prepare a Basis of Design Report (BODR) for the meter design facilities. The BODR will serve as the agreement of the project's scope of work between the District's Engineering and Construction, Operations and Maintenance departments, and the Consultant.

The Consultant shall verify the design criteria presented in the Metering Improvements Plan, the project areas, and the general arrangements.

Consultant shall provide a cost estimate, list of drawings, list of specifications, and other details to be included in the final design. The District shall provide background and supporting information relevant to the design project. The design report shall include, but is not limited to, the items listed below:

- Narrative scope of work for final design
- Project objectives
- Description of project areas, civil site plans, new and rehabilitated facilities
- Design criteria
    - Hydraulic design criteria
    - Civil/Structural design criteria
    - Mechanical design criteria
    - Electrical design criteria
    - Instrumentation and control design criteria
    - Construction sequencing and scheduling criteria
- Equipment sizing and functional calculations

- Electrical single line diagram and preliminary electrical site plans
- List of necessary permits
- Preliminary construction cost estimate
- List of drawings and specifications
- List of necessary permits
- Potential project constraints, including outage requirements and operational constraints
- Project Implementation Plan, including resource needs, project cost estimates, and schedules for construction and commissioning

Task 2.2 Deliverables:

The Consultant shall provide the following deliverables:

1. Draft BODR report.
2. Final BODR report, including response to the District's comments.

Task 2.3 Complete Detailed Design

The Consultant shall prepare specifications and drawings for two construction contracts: one for each design set. The work shall include at a minimum, civil, structural, mechanical, electrical, and instrumentation and controls (I&C) design. In addition, the detailed design services shall include preparation of any necessary calculations, engineering drawings and plans, and technical specifications required as bid documents for the construction of the designed meter improvement facilities. The Consultant shall be responsible for preparing high-quality bid documents for construction that meet the District's standards and all regulatory requirements. The goal of the detailed designs is to meet the District's operational requirements and minimize change orders during the construction phase. The Consultant shall prepare detailed engineering drawings and specifications and a construction cost estimate. The Consultant shall use District master specifications, when available, and customize these specifications to suit the specific design requirements. The Consultant shall produce a fully engineered project, with all necessary calculations, analyses, product configuration, drawings, etc. completed during the design tasks. The consultant shall follow the guidelines below for all design processes.

Drawing and Specification Requirements

1. The Consultant shall submit specifications in accordance with the Construction Specifications Institute MasterFormat 2004 standards. The District's Master Specifications shall be submitted to the Consultant in Microsoft Word format to use as the base specifications for the project. The Consultant shall use the "Track Changes" feature when making changes to the specification files. The Consultant shall augment the District's master specifications as necessary for a complete design.

2. The Consultant may generate drawings in AutoCAD, but the drawings will ultimately be converted by the District to Microstation format (version 8.11). All drawings submitted shall conform to District's drafting conventions. The Consultant shall be responsible for demonstrating that the submitted drawing files will be successfully converted to Microstation format, in accordance with the District's drafting conventions.
3. All Piping and Instrumentation Diagrams (P&IDs), valves, fittings, and electrical symbols shall conform to the District Standard Drawings: 9492-G-001 through -005 (see Exhibit G). All P&IDs shall be created using AutoCAD Plant3D P&ID, and shall start with District templates (see District's drafting conventions)
4. All Equipment Tag Numbers and Codes shall be formatted in accordance with District Engineering Standard Practices 130.0 and per District Drawings (see Exhibit H).
5. The Consultant shall provide a written response to every District comment submitted during 50% and 90% Design Review.

Task 2.4 10% Design Submittal

Upon completion of the 10% design for all WTP Effluent and LCMs listed in Table 1, the Consultant shall conduct a 10% Design meeting to present its 10% Design to District stakeholders including District's Design Division discipline leads (Civil/Structural, Mechanical, and Electrical Senior Engineers), Construction staff, and Operations and Maintenance staff. Prior to the 10% Design workshop, the Consultant shall submit the 10% Design Submittal at a minimum of three working days to the District's Project Managers. The 10% Design Meeting and Submittal shall include the following information:

A. Description of Each Facility Including:
   1. Project objectives and description
   2. Design and construction considerations
   3. Design criteria (e.g., unit sizing criteria)
   4. Regulatory requirements, as applicable
   5. Summary of geotechnical information, as applicable
   6. Major equipment selection, including alternatives identified and evaluated, etc.
   7. Electrical and instrumentation control strategies, alarms, etc.
   8. Preliminary cost estimate
   9. Preliminary construction schedule

B. Preliminary Drawings Including:
   1. Flow diagram
   2. Hydraulic profile
   3. Site plan layout
   4. Equipment layout

5. Consideration of construction constraints -- existing utilities, site access, shutdowns, etc.
6. Preliminary piping and valve layout (major process lines)
7. Floor plan of vaults and structures
8. Electrical one-line diagram
9. Draft Process and Instrumentation Diagrams (P&IDs)

Task 2.5 50% Design Submittal

The 50% Design submittal for the WTP Effluent and LCMs consists of the Consultant's draft civil, structural, mechanical, electrical and (where applicable) pipeline drawings, in addition to key specifications that represent all major project components. Prior to the 50% Design Review workshop, the Consultant shall submit the 50% Design Submittal at a minimum of three working days to the District's Project Managers. The Consultant shall identify equipment that merit District consideration for pre-purchase.

The Consultant shall prepare and submit the following deliverables:

1. Draft list of drawings and specifications
2. Trial conversion of four sheets converted from AutoCAD to Microstation, consistent with District Drawing Standards.
3. Design drawings in AutoCAD, consisting of nearly complete civil and mechanical drawings, advanced plan and profile (where applicable), structural, electrical, and pipeline (where applicable), and completed P&IDs.
4. Draft specifications for major items (i.e. equipment, valves, pipe)
5. Final calculations for all equipment and piping, and electrical calculations.
6. Conduct a 50% Design Review workshop with District stakeholders

Task 2.6 90 % Design Submittal

The 90% Design submittal for the WTP Effluent and LCMs consists of the Consultant's completed drawings and specifications, including resolution and incorporation of all comments submitted during the 50% Design review. Prior to the 90% Design Review workshop, the Consultant shall submit the 90% Design Submittal at a minimum of three working days to the District's Project Managers. The 90% Design set of drawings and specifications is a finished product ready for the District's final review, typically consisting of the following:

1. Design drawings (all sheets for all disciplines)
2. Design specifications (all divisions)
3. Engineering calculations for all project elements.
4. Design Cost Estimate, including Basis of Estimate report.
5. Asset tag list using outputs from Plant3D P&ID and the District's excel template with supplemental information from the Consultant.

Task 2.7 100% Design Submittal

The final 100%-Design submittal for the WTP Effluent and LCMs consists of all drawings and specification sections necessary for a complete construction bid packages. All the District comments shall be addressed in these sets and all disagreements and open issues shall be resolved prior to submittal. The Consultant shall prepare a final cost estimate for bidding purposes.

Task 2.8 Deliverables

The Consultant shall provide the following Task 2 deliverables:

- Draft and Final BODR for Design Set #1
- 10% Design submittal, 50% Design submittal, 90% Design submittal, and 100 % Design Submittal
- Lead all workshops and meetings
- All progress meetings' agendas and minutes
- Certified design calculations
- Construction cost estimates

<u>Task 3 – RCS and Regulator Design (Design Set No. 2)</u>

Task 3.1 Review Existing Information and Complete Facility Assessments

The District has completed detailed designs and contract documents for other new RCS and Regulator facilities, as well as detailed designs for the rehabilitation of other existing RCS and Regulator facilities. Sample District design drawings for these types of facilities are included in Exhibit F, Regulator and RCS Design Examples. The consultant shall review and analyze the example design drawings provided in Exhibit F, to assess the level of detail for each design discipline that is required by the District as part of the design for the new Regulator and for the rehabilitation of existing RCS and Regulator facilities included in the Project.

For each rate control station and regulator facility (see Table 1), the District will provide available District Planning and Design engineering documents that Consultant shall review, including but not limited to:

1. Technical memorandum (planning and pre-design studies, shutdown plans, hydraulic analyses)
2. Engineering drawings (construction and as-built drawings, where available)
3. Property acquisition and survey documents
4. Geotechnical investigations, where available.

The Consultant shall review all available information provided by the District and conduct site assessments to further develop preliminary design criteria for each facility. Consultant shall completed detailed assessments of the condition the seven (7) existing RCS and Regulator facilities included in Design Set #2, including inspection of the 82nd

Avenue RCS and the Campus, Keller, Gramercy, Villareal, Circle, and Orion Regulators to be rehabilitated as part of the Project.

Task 3.1 Deliverables:

The Consultant shall provide the following deliverables:

1. Draft report, with summaries of facility conditions, improvement needs, and results of field investigations.
2. Final report, including response to comments.

Task 3.2 Complete Alternatives Analysis and Develop Basis of Design for Preferred Alternative

Based on the results of Task 3.1, the Consultant shall prepare a Basis of Design Report (BODR) for the rate control station and regulator facilities which documents the existing conditions, project goals and design criteria, alternative analysis including cost comparisons of key project elements, recommendations, design assumptions, and a project implementation plan.

The alternatives analysis shall assess the feasibility of rehabilitating the District's existing RCS and Regulator facilities within existing vaults, given their condition and recommended scope of civil, mechanical and electrical improvements needed to address deficiencies (e.g., drainage, corrosion, access/safety, etc.). Based on the results of that evaluation, the Consultant shall assess the need, if any, to replace existing facilities if rehabilitation is not deemed feasible. Pros and cons of alternatives, as well as their estimated capital costs, any property or right-of-way issues, outage restrictions, and construction/implementation schedule need to be included in the alternatives evaluation. The consultant shall recommend a preferred alternative solution(s) to either rehabilitate the existing RCS and Regulator facilities or to replace it, given the required scope of improvements to meet the District's needs.

The Consultant shall conduct a Basis of Design workshop to present the results of the preliminary design work and corresponding draft design criteria, preliminary results of alternative analyses and evaluations, and preliminary recommendations. This workshop will be held with District stakeholders with the goal of soliciting their input and feedback prior to preparing a draft BODR for the District's review and prior to proceeding with detailed design.

The BODR shall provide comprehensive engineering support of all project recommendations with consideration for the District preference and budget constraints. It is expected that the Consultant shall deliver these services within the identified contract budgets and schedules. At a minimum the BODR will include, but not be limited to, the following:

- Project objectives

- Narrative scope of work for final design
- Description of project area, civil site plan, new and rehab facilities
- Design criteria
    - Mechanical/hydraulic design
    - Civil/structural design
    - Electrical design
    - Instrumentation and control design
    - Construction sequencing and scheduling criteria
- Equipment sizing and functional calculations
- Electrical single line diagram and preliminary electrical site plans
- List of drawings and specifications
- List of necessary permits
- Potential project constraints, including outage requirements and operational constraints
- Budgetary construction cost estimate
- Project Implementation Plan, including resource needs, project cost estimates, and schedules for construction and commissioning

Task 3.2 Deliverables:

The Consultant shall provide the following deliverables:

1. Draft BODR report.
2. Final BODR report, including response to comments.

Task 3.3 Complete Detailed Design

The Consultant shall prepare detailed engineering drawings and specifications for each rate control station and regulator facility listed in Table 1. The work shall include at a minimum, civil, structural, mechanical, electrical, pipeline, and instrumentation and controls design, based on the Final BODR completed under Task 3.2. The detailed design services shall include preparation of all necessary calculations, engineering drawings, technical details, and plans, in addition to all technical specifications needed for construction bid documents.

Drawing and Specification Requirements

1. The Consultant shall submit specifications in accordance with the Construction Specifications Institute MasterFormat 2004 standards. The District's Master Specifications will be submitted to the Consultant in Microsoft Word format to use as the base specifications for the project. The Consultant shall use the "Track Changes" feature when making changes to the specification files. The Consultant shall augment the District's master specifications as necessary for a complete design.

2. The Consultant may generate drawings in AutoCAD, but the drawings will ultimately be converted by the District to Microstation format (version 8.11). All drawings submitted shall conform to District standard format. The Consultant shall be responsible for demonstrating that the submitted drawing files will be successfully converted to Microstation format, in accordance with the District's Drawing Standards.
3. All Piping and Instrumentation Diagrams (P&IDs), valves, fittings, and electrical symbols shall conform to the District Standard Drawings: 9492-G-001 through -005. All P&IDs shall be created using AutoCAD Plant3D P&ID, and shall start with District templates.
4. All Equipment Tag Numbers and Codes shall be formatted in accordance with District Engineering Standard Practices 130.0 and per District Drawings.
5. The Consultant shall provide a written response to every District comment submitted during 50% and 90% Design Review.

Task 3.4 10% Design Submittal

Upon completion of the 10% design for all RCS and Regulator facilities listed in Table 1, the Consultant shall conduct a 10% Design meeting to present its 10% Design to District stakeholders including District's Design Division discipline leads (Civil/Structural, Mechanical, and Electrical Senior Engineers), Construction staff, and Operations and Maintenance staff. Prior to the 10% Design Review workshop, the Consultant shall submit the 10% Design Submittal at a minimum of three working days to the District's Project Managers. The 10% Design Meeting and Submittal shall include the following information:

A. Description of Each Facility Including:
   1. Project objectives and description
   2. Design and construction considerations
   3. Design criteria (e.g., unit sizing criteria)
   4. Regulatory requirements, as applicable
   5. Summary of geotechnical information, as applicable
   6. Major equipment selection, including alternatives identified and evaluated, etc.
   7. Electrical and instrumentation control strategies, alarms, etc.
   8. Preliminary cost estimate
   9. Preliminary construction schedule

B. Preliminary Drawings Including:
   1. Flow diagram
   2. Hydraulic profile
   3. Site plan layout
   4. Equipment layout
   5. Consideration of construction constraints -- existing utilities, site access, shutdowns, etc.

6. Preliminary piping and valve layout (major process lines)
7. Floor plan of vaults and structures
8. Electrical one-line diagram
9. Draft Process and Instrumentation Diagrams (P&IDs)

Task 3.5 50% Design Submittal

The 50% Design submittal consists of the Consultant's draft civil, structural, mechanical, electrical and (where applicable) pipeline drawings, in addition to key specifications that represent all major project components. Prior to the 50% Design Review workshop, the Consultant shall submit the 50% Design Submittal at a minimum of three working days to the District's Project Managers. The Consultant shall identify equipment that merit District consideration for pre-purchase.

The Consultant shall prepare and submit the following deliverables:

1. Draft list of drawings and specifications
2. Trial conversion of four sheets converted from AutoCAD to Microstation, consistent with District Drawing Standards.
3. Design drawings in AutoCAD, consisting of nearly complete civil and mechanical drawings, advanced plan and profile (where applicable), structural, electrical, and pipeline (where applicable), and completed P&IDs.
4. Draft specifications for major items (i.e. equipment, valves, pipe)
5. Final calculations for all equipment and piping, and electrical calculations.
6. Conduct a 50% Design Review workshop with District stakeholders

Task 3.6 90 % Design Submittal

The 90% Design submittal consists of the Consultant's completed drawings and specifications, including resolution and incorporation of all comments submitted during the 50% Design review. Prior to the 90% Design Review workshop, the Consultant shall submit the 90% Design Submittal at a minimum of three working days to the District's Project Managers. The 90% Design set of drawings and specifications is a finished product ready for the District's final review, typically consisting of the following:

1. Design drawings (all sheets for all disciplines)
2. Design specifications (all divisions)
3. Engineering calculations for all project elements.
4. Design Cost Estimate, including Basis of Estimate report.
5. Asset tag list using outputs from Plant3D P&ID and the District's excel template with supplemental information from the Consultant.

Task 3.7 100% Design Submittal

The 100% Design submittal consists of all drawings and specifications necessary for a complete construction bid package. All District comments submitted during 90% Design Review will have been addressed and incorporated into this final set. All open issues will

have been resolved prior to the submittal. The Consultant shall prepare final construction cost estimates for bidding purposes.

Task 4 – Develop Design Guides for District's RCS and Regulator Facilities

The Consultant shall prepare Design Guides for the District's RCS and Regulator Facilities, modeled after the District's existing Reservoir and Pumping Plant Design Guides.

This task will include reviewing sample design drawings and specifications for past District RCS and Regulator rehabilitation, replacements, and demolition projects, interviewing District Design staff and Operations and Maintenance staff (including FMC-West and –East Maintenance Supervisors) for design and construction input for RCS and Regulators.

As part of this task, the Consultant shall also review the results of prior District pilot projects and tests for RCS and Regulator facilities, including testing of Singer double rolling-diaphragm valves, use of inline turbines and solar power for electrical power for sump pumps at RCS and Regulator sites with no line power and poor drainage.

Work shall involve the following:

1. Compile available information from District documents (e.g. Design Guides for Reservoirs and Pumping Plants) and conduct staff interviews.
2. Prepare and distribute draft Design Guides for RCS and Regulators for review and comment by District, including recommended typical designs.
3. Respond to submitted comments and finalize the Design Guides.
4. Provide electronic copies of the final Design Guides (MS Word and PDF format).

Task 5 – Consulting Services During Bid

The Consultant shall provide support to the District during the bid period for both design sets.

Task 5.1 – Attend Pre-Bid Meeting and Walk-through

The Consultant shall attend the pre-bid conference and site visit and be available to answer questions as necessary for the all construction bids.

Task 5.2 – Bid Period Addendum Preparation

All technical questions from prospective bidders requiring clarification to the contract will first be responded to by the Consultant, prior to review by the District, and shall then be issued by the District to all prospective bidders through the District website and if needed by addendum(s). The District shall be responsible for printing and distribution of all addendum(s) to each contractor who has purchased bid documents.

Table 2 - Project Schedule

Event/Deliverables	*Date*
Contract Start (District Board Authorization)	***January 5, 2021***
Task 1 – Project Management	
• Design Set No. 1 (Meter Facilities)Design Kick-Off Meeting	January 25, 2021
• Design Set No. 2 (RCS and Regulator) Design Kick-Off Meeting	February 8, 2021
Task 2 – Meter Facilities Design (Design Set No. 1)	
Task 2.1 – Complete review of Metering Improvements Plan	February 19, 2021
Task 2.2 – Complete draft and final BODR	
• Draft BODR	March 12, 2021
• Final BODR	April 9, 2021
Task 2.4 – 10% Design Submittal	May 14, 2021
Task 2.5 – 50% Design Submittal	June 25, 2021
Task 2.6 – 90% Design Submittal	August 27, 2021
Task 2.7 – 100% Design Submittal	October 8, 2021
Award Construction Contract for Design Set No. 1	**February 8, 2022**
Task 3 – RCS and Regulator Design (Design Set No. 2)	
Task 3.1 – Review Exst. Info & Complete Facility Assessments	April 2, 2021
Task 3.2 – Complete Alt. Analyses (Pre-Design)	
• Draft BODR	May 28, 2021
• Final BODR	June 25, 2021
Task 3.4 – 10% Design Submittal	July 23, 2021
Task 3.5 – 50% Design Submittal	December 3, 2021
Task 3.6 – 90% Design Submittal	April 1, 2021
Task 3.7 – 100% Design Submittal	June 3, 2022
Award Construction Contract for Design Set No. 2	**September 13, 2022**
Task 4 – Develop Design Guides for RCS and Regulator Facilities	**September 6, 2022**

Task 5 – Consulting Services during Bid Period	
Design Set No. 1 – Consulting services during bidding	October 2021 – November 2021
Design Set No. 2 – Consulting services during bidding	May 2022 – June 2022

NOTE: All dates are subject to change **by the District.**

II. CALENDAR OF EVENTS

EVENT	DATE/LOCATION
RFP Issued	September 16, 2020
Project Briefing via MS Teams	September 30 , 2020
Proposer Deadline to Submit Questions	October 2, 2020
District Issues Addendum – Response to Questions	October 9, 2020
Response Due	October 16, 2020 by 4:00 p.m.
Proposal Evaluations	October 2020 - November 2020
Notice of Selection	November 13, 2020
Contract Preparation	November 16, 2020 – December 7, 2020
Board Award	January 12, 2021
Contract Duration	January 12, 2021 – September 13, 2022

Note: All dates are subject to change **by the District**.

Proposers are responsible for reviewing **https://www.ebmud.com/business-center/requests-proposal-rfps/** for any published addenda. Hard copies of addenda will not be mailed out.

III. DISTRICT PROCEDURES, TERMS, AND CONDITIONS

A. RFP ACCEPTANCE AND AWARD

1. RFP responses will be evaluated by the Selection Committee and will be scored and ranked in accordance with the RFP section entitled "Evaluation Criteria/Selection Committee."

2. The Selection Committee will recommend award to the Proposer who, in its opinion, has submitted the RFP response that best serves the overall interests of the District. Award may not necessarily be made to the Proposer with the lowest overall cost.

3. The District reserves the right to award to a single or to multiple General or Professional Service Providers, dependent upon what is in the best interest of the District.

4. The District has the right to decline to award this contract or any part of it for any reason.

5. Any specifications, terms, or conditions issued by the District, or those included in the Proposer's submission, in relation to this RFP, may be incorporated into any purchase order or contract that may be awarded as a result of this RFP.

6. Award of contract. The District reserves the right to reject any or all proposals, to accept one part of a proposal and reject the other, unless the proposer stipulates to the contrary, and to waive minor technical defects and administrative errors, as the interest of the District may require. Award will be made or proposals rejected by the District as soon as possible after proposals have been opened.

B. EVALUATION CRITERIA/SELECTION COMMITTEE

All proposals will be evaluated by a Selection Committee. The Selection Committee may be composed of District staff and other parties that have expertise or experience in this type of procurement. The Selection Committee will select a Proposer in accordance with the evaluation criteria set forth in this RFP. The evaluation of the RFP responses shall be within the sole judgment and discretion of the Selection Committee.

The Selection Committee will evaluate each RFP response meeting the qualification requirements set forth in this RFP. Proposer should bear in mind that any RFP response that is unrealistic in terms of the technical or schedule commitments, or unrealistically high or low in cost, will be deemed reflective of an inherent lack of technical competence or indicative of a failure to comprehend the complexity and risk of the District's requirements as set forth in this RFP.

RFP responses will be evaluated and scored according to the Evaluation Criteria below, and scored according to a zero to five-point scale. The scores for all Evaluation Criteria will then be added to arrive at a weighted score for each RFP response. An RFP response with a high weighted total will be ranked higher than one with a lesser-weighted total.

The Evaluation Criteria are as follows:

	Evaluation Criteria

A.	**Project Approach:** The proposed project approach will be evaluated considering the following factors: 1. Is the project approach well thought out to efficiently meet the Project needs? 2. Does the project approach allow for separate, concurrent design phases for Design Set No.1 and Design Set No. 2? 3. Is the proposed level of effort for each design set appropriate for scope of services? 4. Is the Proposer's plan to make staff available for field verifications and other pre design and design tasks requiring onsite staff reasonable? 5. Are the project risks adequately identified and addressed?
B.	**Understanding of the Project:** RFP responses will be evaluated against the RFP specifications and the questions below: 1. Has the Proposer demonstrated a thorough understanding of the purpose and scope of the project? 2. How well has the Proposer identified pertinent issues and potential problems related to the project? 3. Has the Proposer demonstrated that it understands the deliverables each design set? 4. Has the Proposer demonstrated that it understands the District's time schedule and can meet it?
C.	**Implementation Plan and Schedule:** An evaluation will be made of the likelihood that the Proposer's implementation plan and schedule will meet the District's schedule. Additional credit will be given for the identification and planning for mitigation of schedule risks which the Proposer believes may adversely affect any portion of the District's schedule.
D.	**Relevant Experience:** RFP responses will be evaluated against the RFP specifications and the questions below: 1. Do the individuals assigned to the project have experience on similar projects? 2. Are résumés complete and do they demonstrate backgrounds that would be desirable for individuals engaged in the work the project requires? 3. How extensive is the applicable education and experience of the personnel designated to work on the project?
E.	**References (See Exhibit A – RFP Response Packet):**

	If a short list process is used for a solicitation, references are only performed on the shortlisted Proposers and the score for reference checks is not included in the preliminary short list score.
F.	**Contract Equity Program:** Proposer shall be eligible for SBE or DVBE preference points if they are a certified small business entity, as described in the guidelines contained in Exhibit A-Contract Equity Program, and they check the appropriate box, requesting preference, in Exhibit A-Proposer Information and Acceptance. Qualified DVBEs and/or SBEs will receive an additional 5 points to their total score.

C. PRICING

1. Prices quoted shall be firm for the first 12 months of any contract that may be awarded pursuant to this RFP.

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. Proposers 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.

5. Prevailing Wages:

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

   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 of the State of California.

   Pursuant to the provisions of Division 2, Part 7, Chapter 1, Article 2, and any amendments thereof of the Labor Code of the State of California, the Contractor and any Subcontractor shall pay not less than the specified prevailing rate of wages to all workers employed in the execution of the contract.

   The Contractor shall, as a penalty to the State or the District, forfeit Twenty-Five ($25.00) Dollars for each calendar day, or portion thereof, for each worker paid less than the stipulated prevailing rates for any work or craft in which such worker is employed under the contract by the Contractor or by any

Subcontractor. The difference between such stipulated prevailing wage rates and the amount paid to such worker for each calendar day or portion thereof for which each worker was paid less than the stipulated prevailing wage rate shall be paid to each worker by the Contractor. The Contractor shall comply with the provisions of Section 1776 of the Labor Code of the State of California. For all classes of work not specified herein, the minimum wage shall be that specified for general laborer.

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 payment by Contractor 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 his own expense.

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 project.

D. NOTICE OF INTENT TO AWARD AND PROTESTS

At the conclusion of the RFP response evaluation process, all entities who submitted a proposal package will be notified in writing by e-mail or USPS mail with the name of the Proposer being recommended for contract award. The document providing this notification is the Notice of Intent to Award.

Negotiations for a Consulting Services Agreement with a “not to exceed” contract price (for time and expenses) will be scheduled shortly after the Notice of Intent to Award. If an Agreement cannot be achieved, the District will proceed to negotiate with the next highest ranked Proposer.

Protests must be in writing and must be received no later than seven (7) work days after the District issues the Notice of Intent to Award. The District will reject the protest as untimely if it is received after this specified time frame. Protests will be accepted from proposers or potential proposers 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 RFP protest period.

Proposal 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

proposal, the name of the firm protesting, and include a name, telephone number, email address and physical address of the protester. If a firm is representing the protester, they shall include their contact information in addition to that of the protesting firm.

Protests must be mailed, hand delivered, or emailed to the Manager of Purchasing, Mailstop 102, 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 work day time limit. Any proposal protest filed with any other District office shall be forwarded immediately to the Manager of Purchasing.

In the event that the protest is denied, the 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 work days from the date which the protest determination was transmitted by the District, to the protesting party. The appeal shall focus on the points raised in the original protest, and no new points shall be raised in the appeal.

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 proposal 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. WARRANTY

1. Proposer expressly warrants that all goods and services to be furnished pursuant to any contract awarded it arising from the Proposal 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. Proposer 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. Proposer warrants that all work and services furnished hereunder shall be guaranteed for a period of one (1) year from the date of acceptance by the District.

F. INVOICING

1. Following the Districts acceptance of product(s) meeting all specified requirements, and/or the complete and satisfactory performance of services, the District will render payment within thirty (30) days of receipt of a correct invoice.

2. The District will notify the Professional Service Provider of any invoice adjustments required.

3. Invoices shall contain, at a minimum, District purchase order number, invoice number, remit to address, and itemized services description.

4. The District will pay General or Professional Service Provider in an amount not to exceed the negotiated amount(s) which will be referenced in the agreement signed by both parties.

IV. RFP 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 RFP. The following persons are to be contacted only for the purposes specified below:

FOR INFORMATION REGARDING TECHNICAL SPECIFICATIONS:

(Water Treatment Plant Effluent and Large Customer Meters)
Attn: Andrew Richardson, Junior Engineer
EBMUD- Operations and Maintenance Support Department
E-Mail: Andrew.richardson@ebmud.com
PHONE: (510) 287-2016

(Rate Control Stations and Regulators)
Attn: Rick Kanazawa, Project Manager
EBMUD-Design Division
E-Mail: Richard.kanazawa@ebmud.com

PHONE: (510) 287-2016

FOR INFORMATION ON THE CONTRACT EQUITY PROGRAM:
Attn: Contract Equity Office
PHONE: (510) 287-0114

AFTER AWARD:
Attn: Andrew Richardson, Junior Engineer
EBMUD- Operations and Maintenance Support Department
E-Mail: Andrew.richardson@ebmud.com
PHONE: (510) 287-2016

B. SUBMITTAL OF RFP RESPONSE

1. Late and/or unsealed responses will not be accepted.

2. RFP responses submitted via electronic transmissions will not be accepted. Electronic transmissions include faxed RFP responses or those sent by electronic mail ("e-mail").

3. RFP responses will be received only at the address shown below, must be SEALED, and must be received at the District Purchasing Division by 4:00 p.m. on the due date specified in the Calendar of Events. Any RFP 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 Proposer unopened. All RFP 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 RFP responses.

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

Mailed:
Kelley Smith, Manager of Purchasing
East Bay Municipal Utility District
RFP No 790-20-01
WTP Effluent, LCM, RCS, and Regulator Improvements Design Project
EBMUD–Purchasing Division
P.O. Box 24055
Oakland, CA 94623

Hand Delivered or delivered by courier or package delivery service:
Kelley Smith, Manager of Purchasing-EBMUD
East Bay Municipal Utility District
RFP No 790-20-01

WTP Effluent, LCM, RCS, and Regulator Improvements Design Project
EBMUD–Purchasing Division
375 Eleventh Street, First Floor
Oakland, CA 94607

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

5. Proposers are to submit one (1) original hardcopy RFP response (Exhibit A – RFP 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.

   Proposers **must** also submit an electronic copy of their RFP response, with their hardcopy RFP response Package. The file must be on a disk or USB flash drive and enclosed with the sealed original hardcopy of the RFP response. The electronic copy should be in a single file (PDF) format, and shall be an **exact** copy of the original hard copy Exhibit A – RFP Response Packet, Contract Equity Program forms and all additional documentation stated in the "Required Documentation and Submittals" section of Exhibit A.

6. All costs required for the preparation and submission of an RFP response shall be borne by the Proposer.

7. California Government Code Section 4552: In submitting an RFP response to a public purchasing body, the Proposer offers and agrees that if the RFP 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 Proposer for sale to the purchasing body pursuant to the RFP response. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the Proposer.

8. Proposer 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 RFP response shall remain open to acceptance and is irrevocable for a period of 60 calendar days, unless otherwise specified in the RFP documents.

10. It is understood that the District reserves the right to reject any or all RFP responses.

C. RESPONSE FORMAT

1. **Proposers shall not modify any part of Exhibits A, B, C, D, or E, or qualify their RFP responses. Proposers shall not submit to the District a re-typed or otherwise re-created version of these documents or any other District-provided document.**

2. RFP responses, in whole or in part, are NOT to be marked confidential or proprietary. The District may refuse to consider any RFP response or part thereof so marked. RFP responses submitted in response to this RFP may be subject to public disclosure. The District shall not be liable in any way for disclosure of any such records.

EXHIBIT A
RFP RESPONSE PACKET

RFP For – WTP Effluent, LCM, RCS, and Regulator Improvements Design Project

To: The EAST BAY MUNICIPAL UTILITY District ("District")

From: _____
(Official Name of Proposer)

RFP RESPONSE PACKET GUIDELINES

- **AS DESCRIBED IN SECTION IV- RFP RESPONSE SUBMITTAL INSTRUCTIONS AND INFORMATION, PROPOSERS ARE TO SUBMIT ONE (1) ORIGINAL HARDCOPY RFP RESPONSE WITH ORIGINAL INK SIGNATURES, ONE COPY, AND ONE (1) ELECTRONIC COPY (preferably in PDF format and on a flash drive) CONTAINING THE FOLLOWING, IN THEIR ENTIRETY:**
  - **EXHIBIT A – RFP RESPONSE PACKET**
    - **INCLUDING ALL REQUIRED DOCUMENTATION AS DESCRIBED IN "EXHIBIT A- REQUIRED DOCUMENTATION AND SUBMITTALS"**

- **PROPOSERS THAT DO NOT COMPLY WITH THE REQUIREMENTS, AND/OR SUBMIT AN INCOMPLETE RFP RESPONSE MAY BE SUBJECT TO DISQUALIFICATION AND THEIR RFP RESPONSE REJECTED IN WHOLE.**

- **IF PROPOSERS ARE MAKING <u>ANY</u> CLARIFICATIONS AND/OR AMENDMENTS, OR TAKING EXCEPTION TO ANY PART OF THIS RFP, THESE <u>MUST</u> BE SUBMITTED IN THE EXCEPTIONS, CLARIFICATIONS, AND AMENDMENTS SECTION OF THIS EXHIBIT A – RFP RESPONSE PACKET. THE DISTRICT, AT ITS SOLE DISCRETION, MAY ACCEPT AMENDMENTS/EXCEPTIONS, OR MAY DEEM THEM TO BE UNACCEPTABLE, THEREBY RENDERING THE RFP RESPONSE DISQUALIFIED.**

- **PROPOSORS SHALL NOT MODIFY DISTRICT LANGUAGE IN ANY PART OF THIS RFP OR ITS EXHIBITS, NOR SHALL THEY QUALIFY THEIR RFP RESPONSE BY INSERTING THEIR OWN LANGUAGE OR FALSE CLAIMS IN THEIR RESPONSE. ANY EXCEPTIONS AND CLARIFICATIONS MUST BE PLACED IN THE "EXCEPTIONS/ CLARIFICATIONS" PAGE, NOT BURIED IN THE PROPOSAL ITSELF.".**

PROPOSER INFORMATION AND ACCEPTANCE

1. The undersigned declares that all RFP documents, including, without limitation, the RFP, 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 RFP documents.

3. The undersigned acknowledges acceptance of all addenda related to this RFP. List Addenda for this RFP on the line below:

Addendum #	Date

4. The undersigned hereby certifies to the District that all representations, certifications, and statements made by the Proposer, as set forth in this RFP 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 Proposer 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 RFP and associated RFP documents.

6. It is the responsibility of each Proposer to be familiar with all of the specifications, terms, and conditions and, if applicable, the site condition. By the submission of an RFP response, the Proposer 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: General or Professional Service Providers 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 – RFP Response Packet, the Proposer agrees to meet the minimum insurance requirements stated in the RFP.

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 RFP.

9. The undersigned acknowledges that RFP responses, in whole or in part, are NOT to be marked confidential or proprietary. The District may refuse to consider any RFP response or part thereof so marked. RFP responses submitted in response to this RFP may be subject to public disclosure. The District shall not be liable in any way for disclosure of any such records.

10. The undersigned Proposer hereby submits this RFP response and binds itself to the District. The RFP, subsequent Addenda, Proposers Response Packet, and any attachments, shall be used to form the basis of a Contract, which once executed shall take precedence.

11. The undersigned acknowledges ***ONE*** of the following (please check only one box)*:

☐ Proposer is not an SBE nor a DVBE and is ineligible for any Proposal preference; **OR**

☐ Proposer is an SBE or DVBE as described in the Contract Equity Program (CEP) and Equal Employment Opportunity (EEO) Guidelines, and has completed the CEP and EEO forms at the hyperlink contained in the CEP and EEO section of this Exhibit A.

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

Official Name of Proposer (exactly as it appears on Proposer'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):

☐ Corporation ☐ Joint Venture

☐ Limited Liability Partnership ☐ Partnership

☐ Limited Liability Corporation ☐ Non-Profit / Church

☐ Other: _____

Jurisdiction of Organization Structure: _____

Date of Organization Structure: _____

Federal Tax Identification Number: _____

Department of Industrial Relations (DIR) Registration 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_____

PROPOSAL FORM

Cost shall be submitted on this Proposal 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 General or Professional Service Provider, if licensed to collect, or otherwise directly to the State.

The additional of project team members and additional tasks are the only alterations or changes of any kind to the Proposal Form(s) are permitted. RFP 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 RFP process. The total cost of Design Set No. 1 entered by the Consultant in the proposal form shall be equal to the total cost of Design Set No. 1 entered by the Consultant in the Required Submittal, Item 5 – Level of Effort. The total cost of Design Set No. 2 entered by the Consultant in the proposal form shall be equal to the total cost of Design Set No. 2 entered by the Consultant in the Required Submittal, Item 5 – Level of Effort

DESIGN SET NO. 1 – WTP EFFLUENT METERS AND LCMS

Description	Unit of Measure	Estimated Quantity	Unit Cost	Extended Cost
Senior Consultant	hour		$	$
Junior Consultant	hour		$	$
			TOTAL COST FOR DESIGN SET NO. 1	$

DESIGN SET NO. 2 – RCS AND REGULATORS

Description	Unit of Measure	Estimated Quantity	Unit Cost	Extended Cost
Senior Consultant	hour		$	$
Junior Consultant	hour		$	$
			TOTAL COST FOR DESIGN SET NO. 2	$

REQUIRED DOCUMENTATION AND SUBMITTALS

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

1. **Letter of Transmittal**: RFP response shall include a description of the Proposer's capabilities and approach in providing its services to the District, and provide a brief synopsis of the highlights of the RFP response and overall benefits to the District. This synopsis should not exceed three (3) pages in length and should be easily understood.

2. **Table of Contents (1 page)**: The proposal shall include a table of contents listing the individual sections of the proposal and their corresponding page numbers

3. **Key Personnel**: RFP response shall include a complete list of all key personnel associated with the RFP. This list must include all key personnel who will provide services/training to District staff and all key personnel who will provide maintenance and support services. For each person on the list, the following information shall be included:

   (a) The person's relationship with the Proposer, including job title and years of employment with the Proposer;
   (b) The role that the person will play in connection with the RFP;
   (c) The person's telephone number, fax number, and e-mail address;
   (d) The person's educational background; and
   (e) The person's relevant experience, certifications, and/or merits

4. **Project Understanding and Approach**: The RFP response shall include a description of the proposer's understanding of the purpose and scope of the project as well as deliverables and timetable. The description shall also include the proposer's approach to achieving the stated goals and project objectives presented in the RFP. The description shall include any disadvantages or limitations that the District should be aware of in evaluating the RFP response.

5. **Level of Effort**: For Design Set No. 1 and Design Set No. 2, broken down by task and facility, the Consultant shall provide an estimated level of effort for all staff. In spreadsheet format, show estimated labor hours, direct rate, and loaded rate for proposer's staff, including sub-consultants. The total contract price should be the sum of both design set totals.

6. **Description of the Proposed Services**: RFP response shall include a description of the terms and conditions of services to be provided during the contract term including response times. The description shall contain a basis of estimate for services including its scheduled start and

completion dates, the number of Proposer's and District personnel involved, and the number of hours scheduled for each person. The description shall identify spare or replacement parts that will be required in performing maintenance services, the anticipated location(s) of the spare parts, and how quickly the parts shall be available for repairs. Finally, the description must: (1) specify how the services in the RFP response will meet or exceed the requirements of the District; (2) explain any special resources or approaches that make the services of the Proposer particularly advantageous to the District; and (3) identify any limitations or restrictions of the Proposer in providing the services that the District should be aware of in evaluating its RFP response to this RFP.

7. **Implementation Plan and Schedule**: The RFP response shall include an implementation plan and schedule. The schedule should allow for separate but parallel design paths.. In addition, the plan shall include a detailed schedule indicating how the Proposer will ensure adherence to the timetables for the final equipment/system and/or services.

8. **Sustainability Statement:** Contractors shall submit a statement regarding any sustainable, environmental or socially responsible initiatives or practices that they or their suppliers engage in. This information can be in relation to the specific services or work products solicited via this RFP, or in relation to the manufacture, delivery, or business practices of your firm.

9. **References:**

   (a) Proposers must use the templates in the "References" section of this Exhibit A – RFP Response Packet to provide references.

   (b) References should have similar scope, volume, and requirements to those outlined in these specifications, terms, and conditions.
      - Proposers must verify the contact information for all references provided is current and valid.
      - Proposers 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 Proposer's performance record on work similar to that described in this RFP. The District reserves the right to contact references other than those provided in the RFP response and to use the information gained from them in the evaluation process.

10. **Exceptions, Clarifications, Amendments:**

   (a) The RFP response shall include a separate section calling out all clarifications, exceptions, and amendments, if any, to the RFP and associated RFP documents, which shall be submitted with the proposer's RFP response using the template in the "Exceptions, Clarifications, Amendments" section of this Exhibit A – RFP Response Packet.

(b) **THE DISTRICT IS UNDER NO OBLIGATION TO ACCEPT ANY EXCEPTIONS, AND SUCH EXCEPTIONS MAY BE A BASIS FOR RFP RESPONSE DISQUALIFICATION.**

11. **Contract Equity Program:**

(a) Every proposer 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, "Employment Data and Certification". Any proposer needing assistance in completing these forms should contact the District's Contract Equity Office at (510) 287-0114 prior to submitting an RFP response.

REFERENCES

RFP For – Water Treatment Plant Effluent Meters, Large Customer Meters, Rate Control Stations, and Regulators Improvements Design Project

Proposer Name: _____

Proposer must provide a minimum of three 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:	

REFERENCES

EXCEPTIONS, CLARIFICATIONS, AMENDMENTS

RFP For – Water Treatment Plant Effluent Meters, Large Customer Meters, Rate Control Stations, and Regulators Improvements Design Project

Proposer Name:_____

List below requests for clarifications, exceptions, and amendments, if any, to the RFP and associated RFP documents, and submit with your RFP response.

The District is under no obligation to accept any exceptions and such exceptions may be a basis for RFP response disqualification.

Reference to:			**Description**
Page No.	Section	Item No.	
p. 23	**D**	**1.c.**	***Proposer takes exception to…***

EXAMPLE

*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 General or Professional Service Providers 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 proposal. Non-compliance with the Guidelines may deem a proposal 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 proposal the appropriate forms.

   The CEP guidelines and forms can be found at the following direct link:
   Contract Equity 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 – RFP Response Packet, the Proposer agrees to meet the minimum insurance requirements stated in the RFP. This documentation must be provided to the District, prior to award.

For any coverage that is provided on a claims-made coverage form (which type of form is permitted only where specified) the retroactive date must be shown and must be before the date of this Agreement, and before the beginning of any Services related to this Agreement.

The insurance requirements under this Agreement shall be the greater of (1) the minimum coverage and limits specified in this Agreement; or (2) the broader coverage and maximum limits of coverage of any insurance policies or proceeds available to the Named Insured. It is agreed that these insurance requirements shall not in any way act to reduce coverage that is broader or that includes higher limits than the minimums required herein. No representation is made that the minimum insurance requirements of this Agreement are sufficient to cover the obligations of the CONTRACTOR.

The following are the minimum insurance limits, required by the District, to be held by the GENERAL OR PROFESSIONAL SERVICE PROVIDER performing on this RFP:

INSURANCE

A. Insurance Requirements

GENERAL OR PROFESSIONAL SERVICE PROVIDER 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 GENERAL OR PROFESSIONAL SERVICE PROVIDER 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 GENERAL OR PROFESSIONAL SERVICE PROVIDER of any of the insurance requirements, nor decrease the liability of GENERAL OR PROFESSIONAL SERVICE PROVIDER. The District reserves the right to require GENERAL OR PROFESSIONAL SERVICE PROVIDER to provide insurance policies for review by the District.

B. Workers Compensation Insurance

GENERAL OR PROFESSIONAL SERVICE PROVIDER 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. GENERAL OR PROFESSIONAL SERVICE PROVIDER shall require any subcontractor to provide it with evidence of Workers Compensation Insurance.

Waiver of Subrogation. Workers' Compensation insurance must contain a waiver of subrogation endorsement providing that each insurer waives any rights of recovery by subrogation, or otherwise, against the DISTRICT, its directors, officers, officials, agents, volunteers, and employees. CONSULTANT shall defend and pay any damages as a result of failure to provide the waiver of subrogation from the insurance carrier.

C. Professional Liability Insurance (Errors and Omissions)

GENERAL OR PROFESSIONAL SERVICE PROVIDER shall maintain during the life of the agreement professional liability insurance with a minimum of $2,000,000/Occurrence. A three year tail is required if coverage on a claims-made basis. A deductible may be acceptable upon approval by the District. The policy will provide 30 days advance written notice to the District for cancellation or reduction in coverage. The Consultant shall require any subcontractor to provide evidence of the same professional liability insurance coverage.

If Coverage is written on a claims-made form, the following shall apply:

1. The retroactive date must be shown, and must be before the date of the Agreement or the beginning of the Services.
2. Insurance must be maintained and evidence of insurance must be provided for a minimum of three (3) years after completion of the Services.
3. If claims-made coverage is canceled or non-renewed, and not replaced with another claims-made policies form with a retroactive date prior to the effective date of the Agreement, CONTRACTOR must purchase an extended period of coverage for a minimum of three (3) years after completion of the Services.

D. Commercial General Liability Insurance

GENERAL OR PROFESSIONAL SERVICE PROVIDER 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 GENERAL OR PROFESSIONAL SERVICE PROVIDER elects to self-insure (self-fund) any liability exposure during the contract period above $50,000, GENERAL OR PROFESSIONAL SERVICE PROVIDER 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. GENERAL OR PROFESSIONAL SERVICE PROVIDER shall require any subcontractor or Professional Service Provider 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. Not Used.

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.

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.

CONSULTING AND PROFESSIONAL
SERVICES AGREEMENT FOR
EAST BAY MUNICIPAL UTILITY DISTRICT
Water Treatment Plant Effluent Meters, Large Customer Meters, Rate Control Stations, and Regulators Improvements Design Project

THIS Agreement is made and entered into this _____ day of ***(month)***, 202_, by and between **EAST BAY MUNICIPAL UTILITY DISTRICT**, a public entity, hereinafter called "DISTRICT," and ***(CONSULTANT'S FULL LEGAL NAME, BOLD, ALL CAPS followed by type of entity [corporation, etc.])***, hereinafter called "CONSULTANT."

WITNESSETH

WHEREAS, DISTRICT requires consulting services for design engineering for the Water Treatment Plant (WTP) Effluent Meters, Large Customer Meters (LCM), Rate Control Stations (RCS), and Regulators**.**
; and

WHEREAS, CONSULTANT has submitted a proposal to provide consulting services for preparation of design documents and construction management support services for the WTP Effluent Meters, LCM, RCSs, and Regulators for the WTP Effluent and Other Improvements and CONSULTANT represents that it has the experience, licenses, qualifications, staff expertise and where necessary the required Department of Industrial Relations (DIR) registration to perform said services in a professional and competent manner; and

WHEREAS, DISTRICT Board of Directors has authorized the contract by Motion Number _____;

NOW, THEREFORE, it is mutually agreed by DISTRICT and CONSULTANT that for the considerations hereinafter set forth, CONSULTANT shall provide said services to DISTRICT, as set forth in greater detail herein.

ARTICLE 1 - SCOPE OF WORK

1.1 CONSULTANT agrees to furnish services set forth in Exhibit A, Scope of Services, attached hereto and incorporated herein. The services authorized under this Agreement shall also include all reports, manuals, plans, and specifications as set forth in Exhibit A.

1.2 CONSULTANT's work products shall be completed and submitted in accordance with DISTRICT's standards specified, and according to the schedule listed, in Exhibit A. The

completion dates specified herein may be modified by mutual agreement between DISTRICT and CONSULTANT provided that DISTRICT's Project Manager notifies CONSULTANT of modified completion dates by letter. CONSULTANT agrees to diligently perform the services to be provided under this Agreement. In the performance of this Agreement, time is of the essence.

1.3 It is understood and agreed that CONSULTANT has the professional skills necessary to perform the work agreed to be performed under this Agreement, that DISTRICT relies upon the professional skills of CONSULTANT to do and perform CONSULTANT's work in a skillful and professional manner, and CONSULTANT thus agrees to so perform the work. CONSULTANT represents that it has all the necessary licenses to perform the work and shall maintain them during the term of this Agreement. CONSULTANT agrees that the work performed under this Agreement shall follow practices usual and customary to the ***engineering*** profession and that CONSULTANT is the engineer in responsible charge of the work for all activities performed under this Agreement. Acceptance by DISTRICT of the work performed under this Agreement does not operate as a release of CONSULTANT from such professional responsibility for the work performed.

1.4 CONSULTANT agrees to maintain in confidence and not disclose to any person or entity, without DISTRICT's prior written consent, any trade secret or confidential information, knowledge or data relating to the products, process, or operation of DISTRICT. CONSULTANT 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 CONSULTANT during the term of this Agreement. The covenants contained in this paragraph shall survive the termination of this Agreement for whatever cause.

1.5 The originals of all computations, drawings, designs, graphics, studies, reports, manuals, photographs, videotapes, data, computer files, and other documents prepared or caused to be prepared by CONSULTANT or its subconsultants in connection with these services shall be delivered to and shall become the exclusive property of DISTRICT. DISTRICT is licensed to utilize these documents for DISTRICT applications on other projects or extensions of this project, at its own risk. CONSULTANT and its subconsultants may retain and use copies of such documents, with written approval of DISTRICT.

1.6 CONSULTANT is an independent contractor and not an employee of DISTRICT. CONSULTANT expressly warrants that it will not represent that it is an employee or servant of DISTRICT.

1.7 CONSULTANT is retained to render professional services only and all payments made are compensation solely for such services as it may render and recommendations it may make in carrying out the work.

1.8 It is further understood and agreed by the parties hereto that CONSULTANT in the performance of its obligations hereunder is subject to the control or direction of

DISTRICT as to the designation of tasks to be performed, the results to be accomplished by the services hereunder agreed to be rendered and performed, and not the means, methods, or sequence used by the CONSULTANT for accomplishing the results.

1.9 If, in the performance of this agreement, any third persons are employed by CONSULTANT, such person shall be entirely and exclusively under the direction, supervision, and control of CONSULTANT. All terms of employment, including hours, wages, working conditions, discipline, hiring, and discharging, or any other terms of employment or requirements of law, shall be determined by CONSULTANT, and DISTRICT shall have no right or authority over such persons or the terms of such employment.

1.10 It is further understood and agreed that as an independent contractor and not an employee of DISTRICT, neither the CONSULTANT nor CONSULTANT's assigned personnel shall have any entitlement as a DISTRICT employee, right to act on behalf of DISTRICT in any capacity whatsoever as agent, nor to bind DISTRICT to any obligation whatsoever. CONSULTANT shall not be covered by DISTRICT's worker's compensation insurance; nor shall CONSULTANT be entitled to compensated sick leave, vacation leave, retirement entitlement, participation in group health, dental, life or other insurance programs, or entitled to other fringe benefits payable by DISTRICT to employees of DISTRICT.

ARTICLE 2 - COMPENSATION

2.1 For the Scope of Services described in Exhibit A, DISTRICT agrees to pay CONSULTANT actual costs incurred, subject to a Maximum Cost Ceiling of $***(dollars)***, plus a Professional Fee (prorata dollar profit). The Professional Fee shall be subject to a Professional Fee Ceiling of $***(dollars)***. Total compensation under the Agreement shall not exceed a Maximum Agreement Ceiling of $***(dollars)***. Compensation for services shall be in accordance with the method and amounts described in Exhibit B, attached hereto and incorporated herein. CONSULTANT acknowledges that construction work on public works projects requires DIR registration and is subject to prevailing wage rates and includes work performed during the design and preconstruction phases of construction including, but not limited to, inspection and land surveying work. CONSULTANT certifies that the proposed cost and pricing data used herein reflect the payment of prevailing wage rates where applicable and are complete, current, and accurate.

2.2 In case of changes affecting project scope resulting from new findings, unanticipated conditions, or other conflicts or discrepancies, CONSULTANT shall promptly notify DISTRICT of the identified changes and advise DISTRICT of the recommended solution. Work shall not be performed on such changes without prior written authorization of DISTRICT.

ARTICLE 3 - NOTICE TO PROCEED

3.1 This Agreement shall become effective upon execution of the second signature. CONSULTANT shall commence work upon receipt of DISTRICT's Notice to Proceed, which shall be in the form of a letter signed by DISTRICT's Project Manager. DISTRICT's Notice to Proceed will authorize the Contracted Services described in Exhibit A with ceiling prices described in ARTICLE 2 – COMPENSATION. No work shall commence until the Notice to Proceed is issued.

3.2 DISTRICT may at its option issue a Notice to Proceed for some or all of the Optional Services tasks described in Exhibit A. Compensation for Optional Services shall be in accordance with the method and amounts described in Exhibit B.

ARTICLE 4 - TERMINATION

4.1 This Agreement may be terminated by DISTRICT immediately for cause or upon 10 days written notice, without cause, during the performance of the work.

4.2 If this Agreement is terminated CONSULTANT shall be entitled to compensation for services satisfactorily performed to the effective date of termination; provided however, that DISTRICT may condition payment of such compensation upon CONSULTANT's delivery to DISTRICT of any and all documents, photographs, computer software, videotapes, and other materials provided to CONSULTANT or prepared by CONSULTANT for DISTRICT in connection with this Agreement. Payment by DISTRICT for the services satisfactorily performed to the effective date of termination, shall be the sole and exclusive remedy to which CONSULTANT is entitled in the event of termination of the Agreement and CONSULTANT shall be entitled to no other compensation or damages and expressly waives same. Termination under this Article 4 shall not relieve CONSULTANT of any warranty obligations or the obligations under Articles 1.4 and 7.1.

4.3 This Agreement may be terminated by CONSULTANT upon 10 days written notice to DISTRICT only in the event of substantial failure by DISTRICT to fulfill its obligations under this Agreement through no fault of the CONSULTANT.

4.4 If this Agreement is terminated, payment of the Professional Fee shall be in proportion to the percentage of work that DISTRICT judges satisfactorily performed up to the effective date of termination. The Professional Fee shall be prorated based upon a ratio of the actual Direct Labor and Indirect Costs expended to date divided by the Cost Ceiling.

ARTICLE 5 - PROJECT MANAGERS

5.1 DISTRICT designates Andrew Richardson and as its Project Manager, who shall be responsible for administering and interpreting the terms and conditions of this Agreement, for matters relating to CONSULTANT's performance under this Agreement, and for liaison and coordination between DISTRICT and CONSULTANT.

CONSULTANT may be requested to assist in such coordinating activities as necessary as part of the services. In the event DISTRICT wishes to make a change in the DISTRICT's representative, DISTRICT will notify CONSULTANT of the change in writing.

5.2 CONSULTANT designates ***(Consultant Project Manager's name)*** as its Project Manager, who shall have immediate responsibility for the performance of the work and for all matters relating to performance under this Agreement. Any change in CONSULTANT designated personnel or subconsultant shall be subject to approval by the DISTRICT Project Manager.

ARTICLE 6 - CONTRACT EQUITY PROGRAM COMPLIANCE

6.1 CONSULTANT expressly agrees that this Agreement is subject to DISTRICT's Contract Equity Program ("CEP"). CONSULTANT is familiar with the DISTRICT's CEP and Equal Opportunity Guidelines, and has read and understood all of the program requirements. CONSULTANT understands and agrees to comply with the CEP and all requirements therein, including each of the Good Faith Efforts. CONSULTANT further understands and agrees that non-compliance with the CEP requirements may result in termination of this Agreement.

6.2 Designated CEP compliance for the duration of this Agreement is listed in Exhibit C, which is attached hereto and incorporated herein. CONSULTANT shall maintain records of the total amount actually paid to each subconsultant. Any change of CONSULTANT'S listed subconsultants shall be subject to approval by the DISTRICT'S Project Manager.

ARTICLE 7 - INDEMNIFICATION AND INSURANCE

7.1 Indemnification

CONSULTANT expressly agrees to defend, indemnify and hold harmless DISTRICT and its Directors, officers, agents and employees from and against any and all loss, liability, expenses, claims, suits, and damages, including attorneys' fees, arising out of or pertaining to, or relating to CONSULTANT's, its associates', employees', subconsultants', or other agents' negligence, recklessness or willful misconduct in the operation and/or performance under this Agreement.

Where applicable by law, the duty to indemnify, including the cost to defend is limited in accordance with California Civil Code § 2782.8.

7.2 CONSULTANT shall perform part of the work at sites where the DISTRICT's facilities are to be constructed, and which may contain unknown working conditions and contaminated materials. CONSULTANT shall be solely responsible for the health and safety of CONSULTANT's employees. CONSULTANT shall designate in writing to DISTRICT the field employee who is responsible for the health and safety of its employees. The responsible employee shall have experience and knowledge of all Federal, State and local health and safety regulation requirements. All CONSULTANT personnel on construction sites shall have received all OSHA required health and safety training.

7.3 In the event that any hazardous materials are encountered during the services provided by CONSULTANT or the work undertaken by construction contractors, DISTRICT shall sign any and all manifests relating to the generation, treatment, disposal or storage of all wastes associated with the work. Additionally, nothing contained in this Agreement shall be construed or interpreted as requiring CONSULTANT to assume the status of a generator, storer, treater, transporter, or disposal facility as those terms appear within the Resource Conservation and Recovery Act, 42 USCA, Section 6901, et seq. (RCRA), or within any state statute of similar effect governing the generation, storage, treatment, transportation, or disposal of wastes.

7.4 Insurance Requirements

CONSULTANT shall take out and maintain during the life of the Agreement all the insurance required in this ARTICLE, and shall submit certificates for review and approval by DISTRICT. The Notice to Proceed shall not be issued, and CONSULTANT shall not commence work until such insurance has been approved by DISTRICT. The certificates shall be on forms provided by DISTRICT.

Certificate of General and Auto Liability Insurance_8-11.doc
Certification of Professional Liability Ins.doc
Certification of Workers Comp_Insurance_3-26-10.doc
Certificate of Pollution Liability Insurance_8-23-11.doc

Acceptance of the certificates shall not relieve CONSULTANT of any of the insurance requirements, nor decrease the liability of CONSULTANT. DISTRICT reserves the right to require CONSULTANT to provide insurance policies for review by DISTRICT.

For any coverage that is provided on a claims-made coverage form (which type of form is permitted only where specified), the retroactive date must be shown and must be before the date of this Agreement, and before the beginning of any Services related to this Agreement.

The insurance requirements under this Agreement shall be the greater of (1) the minimum coverage and limits specified in this Agreement; or (2) the broader coverage and maximum limits of coverage of any insurance policies or proceeds available to the

Named Insured. It is agreed that these insurance requirements shall not in any way act to reduce coverage that is broader or that includes higher limits than the minimums required herein. No representation is made that the minimum insurance requirements of this Agreement are sufficient to cover the obligations of the CONSULTANT.

7.5 Workers Compensation Insurance

CONSULTANT 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, DISTRICT will accept a Self-Insured Certificate from the State of California. CONSULTANT shall require any subconsultant to provide it with evidence of Workers Compensation Insurance.

Workers' Compensation insurance must contain a waiver of subrogation endorsement providing that each insurer waives any rights of recovery by subrogation, or otherwise, against the DISTRICT, its directors, officers, officials, agents, volunteers, and employees. CONSULTANT shall defend and pay any damages as a result of failure to provide the waiver of subrogation from the insurance carrier.

7.6 Commercial General Liability Insurance

CONSULTANT 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 CONSULTANT elects to self-insure (self-fund) any liability exposure during the contract period above $50,000, CONSULTANT 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. CONSULTANT shall require any subconsultant to provide evidence of liability insurance coverages.

The amounts of insurance coverages shall not be 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 this Agreement.

2. The coverage is Primary and non-contributory to any other insurance carried by DISTRICT.

3. The policy(ies) cover(s) contractual liability.

4. The policy(ies) is/are written on an occurrence basis.

5. The policy(ies) cover(s) District's Property in Consultant's care, custody and control.

6. The policy(ies) cover(s) personal injury (libel, slander, and wrongful entry and eviction) liability.

7. The policy(ies) cover(s) explosion, collapse and underground hazards.

8. The policy(ies) cover(s) products and completed operations.

9. The policy(ies) cover(s) use of owned, non-owned and hired automobiles.

10. Not Used.

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.

7.7 Professional Liability Insurance

CONSULTANT shall take out and maintain during the life of the Agreement, professional liability insurance (Errors and Omissions) with a minimum of $1,000,000 of liability coverage. A deductible may be acceptable upon approval of the DISTRICT. The policy shall provide 30 days advance written notice to DISTRICT for cancellation or reduction in coverage.

If Errors and Omissions or Pollution Coverage is written on a claims-made form, the following shall apply:

a. The retroactive date must be shown, and must be before the date of the Agreement or the beginning of the Services.

b. Insurance must be maintained and evidence of insurance must be provided for a minimum of three (3) years after completion of the Services.

c. If claims-made coverage is canceled or non-renewed, and not replaced with another claims-made policies form with a retroactive date prior to the effective date of the Agreement, CONTRACTOR must purchase an extended period of coverage for a minimum of three (3) years after completion of the Services.

ARTICLE 8 - NOTICES

Any notice which DISTRICT may desire or is required at any time to give or serve CONSULTANT may be delivered personally, or be sent by United States mail, postage prepaid, addressed to:

(consulting firm's name)
(address)
Attention: ***(contact, usually the consultant's project manager)***,

or at such other address as shall have been last furnished in writing by CONSULTANT to DISTRICT.

Any notice which CONSULTANT may desire or is required at any time to give or serve upon DISTRICT may be delivered personally at EBMUD, 375 - 11th Street, Oakland, CA 94607-4240, or be sent by United States mail, postage prepaid, addressed to:

Director of Operations and Maintenance
P.O. Box 24055
Oakland, CA 94623-1055

or at such other address as shall have been last furnished in writing by DISTRICT to CONSULTANT.

Such personal delivery or mailing in such manner shall constitute a good, sufficient and lawful notice and service thereof in all such cases.

ARTICLE 9 - MISCELLANEOUS

9.1 This Agreement represents the entire understanding of DISTRICT and CONSULTANT as to those matters contained herein. No prior oral or written understanding shall be of any force or effect with respect to those matters covered hereunder. This Agreement may only be modified by amendment in writing signed by each party.

9.2 This Agreement is to be binding on the successors and assigns of the parties hereto. The services called for herein are deemed unique and CONSULTANT shall not assign, transfer or otherwise substitute its interest in this Agreement or any of its obligations hereunder without the prior written consent of DISTRICT.

9.3 Should any part of this Agreement 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 this Agreement, which shall continue in full force and effect, provided that the remainder of this Agreement can be interpreted to give effect to the intentions of the parties.

9.4 Multiple copies of this Agreement may be executed by the parties and the parties agree that the Agreement on file at the DISTRICT is the version of the Agreement that shall take precedence should any differences exist among counterparts of the Agreement.

9.5 This Agreement and all matters relating to it shall be governed by the laws of the State of California.

9.6 The District's waiver of the performance of any covenant, condition, obligation, representation, warranty or promise in this agreement shall not invalidate this Agreement or be deemed a waiver of any other covenant, condition, obligation, representation, warranty or promise. The District's waiver of the time for performing any act or condition hereunder does not constitute a waiver of the act or condition itself.

9.7 There shall be no discrimination in the performance of this contract, 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), veteran or military status, family or medical leave status, genetic information, or sexual orientation. CONSULTANT shall not establish or permit any such practice(s) of discrimination with reference to the contract or any part. CONSULTANTS determined to be in violation of this section shall be deemed to be in material breach of this Agreement.

Consultant 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.

CONSULTANT shall include the nondiscrimination provisions above in all subcontracts.

9.8 CONSULTANT affirms that it does not have any financial interest or conflict of interest that would prevent CONSULTANT from providing unbiased, impartial service to the DISTRICT under this Agreement.

ARTICLE 10 - TERM

Unless terminated pursuant to Article 4 herein, this Agreement shall expire when all tasks have been completed and final payment has been made by DISTRICT.

IN WITNESS WHEREOF, the parties hereto each herewith subscribe the same in duplicate.

EAST BAY MUNICIPAL UTILITY DISTRICT

By: _____ Date _____

David A. Briggs
Interim Director of Operations and Maintenance

Approved As To Form

By:_____
for the Office of the General Counsel

(CONSULTING FIRM'S NAME, ALL CAPS & BOLD)

By:_____ Date _____

(Name),
(Title)

Rev. 8/1/19

EXHIBIT A

East Bay Municipal Utility District
WTP Effluent Meters, Large Customer Meters, Rate Control Stations, and Regulators Improvements Design Project

SCOPE OF SERVICES

I. CONSULTANT SERVICES

CONSULTANT shall provide the following:

Contracted Services

See RFP

II. PROJECT SCHEDULE

See RFP

EXHIBIT B

East Bay Municipal Utility District
Water Treatment Plant Effluents, Large Customer Meters, Rate Control Stations, and Regulators Improvements Design Project

COMPENSATION

Compensation for services provided in Exhibit A, SCOPE OF SERVICES, shall be in accordance with the methods and specific amounts described in this Exhibit.

1. DISTRICT shall pay CONSULTANT only the actual costs incurred, subject to the agreed cost ceiling. CONSULTANT certifies that the cost and pricing information used herein are complete, current and accurate. CONSULTANT acknowledges that it will expend public funds and hereby agrees to use every appropriate method to contain its fees and minimize costs under this Agreement.

2. Compensation for CONSULTANT services authorized shall be on a cost reimbursement basis and include Direct Labor, Indirect Costs, Subconsultant Services, Other Direct Costs, and a Professional Fee. Costs to be paid comprise the following:

2.1 Direct Labor

Direct labor costs shall be the total number of hours worked on the job by each employee times the actual hourly rate for such employee's labor. Hours worked shall be rounded-up to the nearest quarter-hour (0.25) increment. Labor costs for principals shall be based upon the actual hourly rate of pay for those individuals. Labor rates shall be based on a normal 8-hour day, 40-hour week. DISTRICT will pay all personnel at their regular rate including any work performed on overtime or on holidays or weekends.

2.2 Indirect Costs

DISTRICT shall pay CONSULTANT an overhead expense equal to ***(insert overhead rate)*** percent of labor costs incurred by CONSULTANT. CONSULTANT acknowledges and agrees that this overhead compensation is in lieu of itemized payments for indirect and overhead expenses which includes, but is not limited to:

- Clerical, word processing and/or accounting work.
- Vehicle usage and mileage between CONSULTANT's office and DISTRICT offices or work locations within DISTRICT service area. For work outside of the DISTRICT's services area, DISTRICT approval to

charge for vehicle usage and mileage and other travel expenses must be obtained prior to the expenses being incurred.

- Parking (DISTRICT does NOT provide parking to CONSULTANT in the DISTRICT Administration Building, located at 375 11th Street, Oakland, California. CONSULTANT shall be responsible for parking elsewhere).
- Postage, or for certified or registered mail. Extraordinary postage, overnight delivery, or messenger delivery charges must be approved in advance.
- Routine copying costs for in-house copying.
- Local telephone charges, including cellular phone, modem and telecopier/FAX charges.
- Office space lease.
- Office supplies.
- Computer equipment.
- Computer usage charges.
- Books, publications and periodicals.
- Insurance.
- Miscellaneous hand tools or equipment rental.
- Safety training, seminars or continuing education.
- Utilities.
- Local meals, transportation or other travel charges.
- Inadequately described or miscellaneous expenses.

The above items are illustrative, rather than exhaustive.

2.3 Subconsultant Services

Subconsultant services shall be billed at cost five (5) percent markup.

2.4. Other Direct Costs

Other Direct Costs shall be approved by DISTRICT in advance in writing, and shall be billed at cost, without markup. These costs include, but are not limited to the following:

2.4.1. Automobile expenses at 58 cents per mile when CONSULTANT is required to travel outside of the DISTRICT's service area. Mileage will NOT be reimbursed for rental car expenses, where the rental agreement specifies unlimited mileage.

2.4.2. DISTRICT will pay for necessary and reasonable travel expenses provided the travel is approved in advance by DISTRICT Project Manager, and providing that:

- Each expense is separately identified (air fare, hotel, rental car) with an amount and date incurred. Confirming documents may be requested.
- Charged mileage for vehicle mileage shall not exceed the current allowable Internal Revenue Service rate.
- Air travel is coach or economy rate for refundable tickets. Business and first class rates will not be reimbursed.
- Lodging accommodations are moderately priced.
- Meal charges are reasonable. (Reimbursement for meals will only be made in conjunction with out-of-town travel.)
- Taxis or shuttles are used rather than rental cars whenever cost effective.
- Rental cars are intermediate or compact class only.

2.5 Professional Fee

As a portion of the total compensation to be paid to CONSULTANT, DISTRICT shall pay the Professional Fee, subject to the agreed Professional Fee Ceiling of $***(dollars)*** as specified in Exhibit B-1, as profit for services rendered by CONSULTANT covered by this Agreement. CONSULTANT shall earn the Professional Fee based on a ***(insert rate)*** percent markup of CONSULTANT's Direct Labor and Indirect Costs billed and approved.

2.6 Budget Amounts

	• Contracted Services	• Optional • Services	• Maximum Services*
Cost Ceiling	$***(dollars)***	$***(dollars)***	$***(dollars)***
Professional Fee Ceiling	***(dollars)***	***(dollars)***	***(dollars)***
Agreement Ceiling	***(dollars)***	***(dollars)***	***(dollars)***

The Cost Ceiling shown above is based upon the cost estimate and labor hours attached hereto as Exhibit B-1 and Exhibit B-2. Costs described above, comprising Direct Labor, Indirect Costs, Subconsultant Services, Other Direct Costs, and Professional Fee, shall be payable up to the Agreement Ceiling as specified herein.

2.7 Billing and Payment

CONSULTANT shall invoice DISTRICT monthly for the actual costs incurred and a prorated Professional Fee for work performed during the previous month. Actual costs shall include Direct Labor, Indirect Costs, Subconsultant Services, and Other Direct Costs as specified herein. Actual costs shall be invoiced by task

as described in Exhibit A. Invoices shall set forth a description of the actual costs incurred and the services performed, the date the services were performed and the amount of time spent rounded to the nearest quarterly hour increment (.25) on each date services were performed and by whom. Supporting documentation for the invoice shall be organized to clearly identify the task charged and shall be supported by such copies of invoices, payroll records, and other documents as may be required by DISTRICT to authenticate invoiced costs. Copies of all invoices from any subconsultant(s) and outside service(s) shall be attached. ***"Where CONSULTANT is required by law to pay prevailing wage rates, supporting documentation for such work shall be in accordance with guidelines set forth below and shall include certified payroll reports.")*** DISTRICT shall pay CONSULTANT within thirty (30) days, upon receipt of a proper CONSULTANT invoice, provided that all invoices are accompanied by sufficient cost documentation, and DISTRICT Form P-47 (Subcontractor Payment Report - CEP Participation), to allow the determination of the reasonableness and accuracy of said invoice.

A ceiling price is in effect for the entire Scope of Services. If the authorized Agreement Ceiling, including the authorized Professional Fee Ceiling, is reached, CONSULTANT shall complete the agreed-upon work for the authorized Agreement Ceiling. Labor hours may be reallocated within the tasks without renegotiation of the Agreement with written approval from the DISTRICT Project Manager in such a manner so as not to exceed the Agreement ceiling price. In no event shall the Cost Ceiling of the Agreement or the Professional Fee Ceiling be increased unless there is a written amendment of this Agreement.

Budget that has been allocated for tasks as specified in Exhibit B-1 (Fee Table) shall not be transferred to other tasks without previous written approval from DISTRICT's project manager. Invoices submitted by CONSULTANT shall show the number of hours billed by individual staff per task.

CONSULTANT shall proceed with work towards deliverables for a subsequent design phase only after DISTRICT's project manager has provided written approval that the deliverables for the previous design phase meet the expected level of detail and completeness as described in Exhibit A. Approval of invoices shall be contingent on aforementioned written approval from DISTRICT's project manager with regards to the adequacy of the deliverables vis a vis the expected level of detail and completeness.

2.8 Budget Status Reports

For the duration of this Agreement, the CONSULTANT shall provide the DISTRICT with ***monthly*** budget status reports that include, in tabular or graphical format, for each report period: (1) the original cumulative projected cash flows

for the duration of the project, broken down by task and facility (prepared at the start of the project), (2) the actual cash flows for the work completed to date, (3) for each task, the percentage of services performed compared to percentage of fees incurred (the amount of work actually completed to date compared to the budget expended), (4) the current projected cash flows, broken down by task and facility, to complete the project, including a look-ahead schedule listing deliverables and activities planned for the next month (4) the earned value broken down by task and facility, and (5) action items and decision log. Current projected cash flows shall be based on all CONSULTANT and subconsultant time sheets up to a date within 3 weeks of the date of the budget status report.

2.9. Prevailing Wages and Other Requirements for Construction Inspection, and Construction Related Work During Design and Preconstruction Phases of Construction

2.9.1 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).

2.9.2 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).

2.9.3 Pursuant to Section 1773 of the Labor Code, the District has obtained from the Director of Industrial Relations of the State of California, the general prevailing rates of per diem wages and the general prevailing rates for holiday and overtime work in the locality in which the Work is to be performed, for each craft, classification, or type of worker needed to execute the contract. A copy of the prevailing wage rates is on file with the District and available for inspection by any interested party at www.dir.ca.gov.

2.9.4 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.

2.9.5 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.

2.9.6 The Contractor shall, as a penalty to the State or the District, forfeit not more than the maximum set forth in Section 1775 of the Labor Code for

each calendar day, or portion thereof, for each worker paid less than the prevailing rates for the work or craft in which the worker is employed under the contract by the Contractor or by any Subcontractor under him. The difference between the prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which such worker was paid less than the stipulated prevailing wage rate shall be paid to such worker by the Contractor.

2.9.7 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.

2.9.8 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

2.9.9 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.

2.9.10 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.

2.9.11 Pursuant to the provisions of Sections 1810, et seq. of the Labor Code 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, unless 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.

2.9.12 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 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 the provisions of Labor Code, Sections 1810, et seq.

2.9.13 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.

2.9.14 In the performance of a public works 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. In the event the Contractor or any Subcontractor willfully fails to comply with this requirement the Contractor or Subcontractor shall be subject to the penalties for noncompliance in Labor Code section 1777.7.

2.9.15 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.

(Note: this table is prepared by the consultant. The following is provided to show format.)

EXHIBIT B-1

East Bay Municipal Utility District
Water Treatment Plant Meter, Large Customer Meter, Rate Control Station, and Regulator Improvements Design Project
COST DISTRIBUTION

	Consultant						Subconsultants							
	Direct Labor						Sub. #1			Sub. #2				
Salary Rate ($/hr.)	Project Manager *(****)*	Project Engineer *(****)*	Drafting *(****)*	Total	Indirect Costs	ODCs*	Project Eng. *(****)*	Assist. Eng. *(****)*	Total Cost	Project Eng. *(****)*	Assist. Eng *(****)*	Total Cost	Profes-sional Fee**	Total Cost
Services														
I. Contracted Services														
Task 1.1:														
Task 1.2:														
Task 2.1:														
Task 2.2:														
Subtotal I.							***(***)***	***(***)***	***(***)***	***(***)***	***(***)***	***(***)***		
II. Optional Services														
Task 3:														
Task 4:														
Subtotal II.							***(***)***	***(***)***	***(***)***	***(***)***	***(***)***	***(***)***		
TOTAL Agreement (Total of Subtotals I. & II.)														

* ODCs = Other Direct Costs.
** Professional Fee on consultant Direct Labor& Indirect Costs only. Should not include prime consultant markup on subconsultants.
*** Amount includes prime consultant markup on subconsultant.
******* Insert salary rate.***

(Note: this table is prepared by the consultant. The following is provided to show format.)

EXHIBIT B-2

East Bay Municipal Utility District
Water Treatment Plant Effluent Metes, Large Customer Meters, Rate Control Stations, and Regulators Improvements Design Project
LABOR DISTRIBUTION

	Consultant				Subconsultants						
					Sub. #1			Sub. #2			
Services***(*)***	Project Manager	Project Engineer	Drafting	Subtotal	Project Eng.	Assist. Eng.	Subtotal	Project Eng.	Assist. Eng	Subtotal	Total
I. Contracted Services											
Task 1.1:											
Task 1.2:											
Task 2.1:											
Task 2.2:											
Subtotal											
II. Optional Services											
Task 3:											
Task 4:											
Subtotal											
TOTAL											

(* Include both consultant and subconsultant hours. Also, include the percent time commitment for key personnel if a critical issue for success of the project.)

EXHIBIT C

East Bay Municipal Utility District
Water Treatment Plant Effluent Meters, Large Customer Meters, Rate Control Stations, and Regulators Improvements Design Project
CEP COMPLIANCE

FIRMS UTILIZED	MINIMUM AMOUNT*	MINIMUM PERCENT**
(Name of Subconsultant's firm)	$***(dollars)***	***(1 to 99)***
(Name of Subconsultant's firm)	$***(dollars)***	***(1 to 99)***
TOTAL	$***(dollars)***	***(1 to 99)***

* Does not include consultant's markup. ***(Include this footnote only if your contract includes markup on subconsultants.)***

** Based on a Maximum Services Agreement Ceiling amount of $***(dollars)***.

EXHIBIT D
IRAN CONTRACTING ACT CERTIFICATION

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

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

☐ 1. We are not on the current list of persons engaged in investment activities in Iran created by the California Department of General Services ("DGS") pursuant to PCC § 2203(b), and we are not a financial institution extending twenty million dollars ($20,000,000) or more in credit to another person, for 45 days or more, if that other person will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS.

CERTIFICATION FOR PARAGRAPH 1:

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

Firm: _____

By: _____ Date: _____
(Signature of Bidder)

Title: _____

Signed at: _____ County, State of: _____

OR

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

EXHIBIT E

Metering Improvements Plan

EXHIBIT F

RCS and Regulators Design Examples

EXHIBIT G

District Standard Drawings

ELECTRICAL LEGEND

SPEC NO.

PHYSICAL LAYOUT SYMBOLS

- CT501-1(C501C1) — CONDUIT RUN CT501-1 IDENTIFIES CONDUIT NO. (C501C1) IDENTIFIES CABLE NO. INSIDE CONDUIT (SEE CABLE & CONDUIT SCHEDULE DRAWINGS)
- C1,20,25 — CIRCUIT HOMERUN, TO PANEL "C"; HOT WIRES; HATCH MARKS INDICATE NUMBER OF WIRES; "C" INDICATES PANEL "C"; 1, 20 & 25 ARE CIRCUIT NUMBERS; G — GND WIRE REQD; NEUTRAL OR GROUND
- TR1A — CABLE TRAY (TR1A) IDENTIFIES TRAY NO. "1A"
- EXPOSED CONDUIT
- CONDUIT OR CABLE CONCEALED
- CONDUIT UNDERGROUND
- CONDUIT TURNING AWAY FROM VIEWER
- CONDUIT TURNING TOWARD VIEWER
- CONDUIT TEEING TOWARD AND AWAY FROM VIEWER
- CONDUIT TEEING TOWARD VIEWER
- CONDUIT TEEING AWAY FROM VIEWER
- FLEXIBLE CONDUIT
- "L" FITTING
- CONDUIT TEEING
- CL1 — CLASS I SEAL (HAZARDOUS LOCATIONS)
- DRAIN SEAL
- UNION
- ANODE
- ANNUNCIATOR
- ELECTRIC EYE, RELAY
- FAN CONTROL
- UNIT HEATER
- METERING FACILITY
- 20 — BILL OF MATERIAL 20-INDICATES ITEM NO.
- A 2/40 — LIGHTING FIXTURE: LETTER INDICATES TYPE; NUMBERS INDICATE NUMBER OF LAMPS AND WATTAGE (SEE LIGHTING FIXTURE SCHEDULE)
- INCANDESCENT LIGHTING FIXTURE
- M — HIGH INTENSITY DISCHARGE LIGHTING FIXTURE (M-MERCURY; S-SODIUM; MH-METAL HALIDE)
- ANGLE FIXTURE
- E — EXIT LIGHT
- FLUORESCENT LIGHT FIXTURE
- FIXTURE INCLUDES BATTERY PACK
- LIGHTING FIXTURE
- LIGHTING PANEL
- LIGHTING PANEL CONNECTED TO EMERGENCY POWER SOURCE (GENERATOR)
- FLOODLIGHT
- BATTERY OPERATED EMERGENCY LIGHT
- SINGLE RECEPTACLE
- WP C20 — DUPLEX RECEPTACLE: SUBSCRIPT INDICATES WEATHERPROOF & C20 CIRCUIT NUMBER IN PANEL "C"
- WELDING OUTLET
- SPECIAL PURPOSE OUTLET
- QUAD RECEPTACLE, 120V
- TELEPHONE/DATA OUTLET
- SPEAKER OR INTERCOM OUTLET
- FLOOR SINGLE RECEPTACLE OUTLET
- FLOOR DUPLEX RECEPTACLE OUTLET
- FLOOR SPECIAL PURPOSE OUTLET
- BELL, OR CHIME
- BUZZER
- COMBINATION BUZZER & BELL
- H — HORN
- S — SIREN
- CLOCK
- P — PUSH BUTTON
- T — THERMOSTAT
- GROUND ROD
- CONTACT DEVICES, I.E.,LIMIT SWITCH, SOLENOID VALVES, ETC.
- PB — PULL BOX
- JB — JUNCTION BOX (WITHOUT TERMINALS)
- JT — TERMINAL BOX (WITH TERMINALS)
- J — OUTLET BOX
- $ — SINGLE POLE SWITCH SUBSCRIPTS ,D, =SWITCH DESIGNATION
- $2 — TWO POLE SWITCH
- $3 — THREE-WAY SWITCH
- $D — DIMMER SWITCH
- DISCONNECT SWITCH
- COMBINATION CONTROLLER DISCONNECT SWITCH
- FLOAT SWITCH - MECHANICAL
- OC — OCCUPANCY SENSOR
- P — RADIO ANTENNA
  - P = PARABOLIC
  - Y = YAGI
  - O = OMNI
  - C = CANOPY

SINGLE LINE AND SCHEMATIC SYMBOLS

- MTM — MASTER TEST MODULE
- DUPLEX — DUPLEX OUTLET
- BATTERY CHARGER 1 2 + GND - — BATTERY CHARGER
- TRANSFORMER, 2 WINDING
- AUTO TRANSFORMER
- POTENTIAL TRANSFORMER
- 600/5 3 — CURRENT TRANSFORMER: 3 INDICATES QUANTITY AND 600/5 INDICATES RATIO
- CURRENT TRANSFORMER
- ADJUSTABLE INDUCTANCE
- POTENTIAL TRANSFORMER
- INDUCTOR WINDING, COIL
- POTENTIAL TRANSFORMER
- BUSHING-TYPE CURRENT TRANSFORMER
- POTENTIAL TRANSFORMER WITH FUSE DRAWOUT TYPE
- DELTA
- 3-PHASE WYE
- 3-PHASE 4-WIRE WYE
- WYE GROUNDED NEUTRAL
- CABLE TERMINATOR
- R 100 — COIL, GENERAL R100-RELAY NO.
- RELAY COIL WITH DIODE SUPRESSOR
- BELL, BUZZER OR CHIME
- HORN
- RTU SYMBOL
- RTU SYMBOL
- RTU SYMBOL
- RTU SYMBOL
- TELEPHONE
- M — MOTOR
- FAN
- HEATER
- GROUND
- GEN — GENERATOR
- 500 — INDUCTION MOTOR 500=HP
- 500 — SYNCHRONOUS MOTOR 500=HP
- POWER CIRCUIT BREAKER
- POWER BREAKER WITH DRAWOUT FEATURE
- 50/3 — AIR CIRCUIT BREAKER WITH DRAWOUT FEATURE
- AIR CIRCUIT BREAKER: NUMBERS INDICATE AMPERE RATING AND NUMBER OF POLES
- 49 — RELAY 49 - DEVICE NO. IDENTIFICATION (ANSI C37.2) (INDICATES AC TERMINAL RELAY)
- LIGHTNING ARRESTER
- EQUIPMENT TERMINAL
- JUNCTION POINT
- FIELD DEVICE TERMINAL
- DEVICE LOCATED IN FIELD
- 01212 — PLC INPUT: 102000 INDICATES PLC INPUT OR OUTPUT ADDRESS
- CXXXXX — CABLE TAG NUMBER
- R — PILOT LIGHT R-RED; G-GREEN; Y-YELLOW A-AMBER; W-WHITE; B-BLUE
- LIGHT WITH TERMINAL POINTS
- FUSED INDICATING LIGHT
- PUSH TO TEST INDICATING LIGHT
- GROUND TO CABINET
- OPERATING COIL, RELAY COIL
- D.C. BATTERY
- N.O. — SOLENOID VALVE N.O. INDICATES NORMALLY OPEN, ENERGIZE TO CLOSE; N.C. INDICATES NORMALLY CLOSE, ENERGIZE TO OPEN
- THREE PRONG PLUG
- TWO PRONG PLUG
- ALTERNATING CURRENT
- THERMAL OVERLOAD
- RESISTOR OR ATTENUATOR
- VARIABLE RESISTOR
- THERMAL CUT-OUT
- DIODE
- REVERSE BLOCKING DIODE
- SURGE SUPPRESSOR
- BREAKDOWN DIODE
- SELECTOR SWITCH POSITION INDICATOR
- TERMINAL LUG FOR CABLE CONNECTION
- FUSE (E.G. CERAMIC, GLASS)
- FUSED DISCONNECT
- SWITCHED FUSE
- CLF — FUSE: "CLF" INDICATES CURRENT LIMITING FUSE
- CAPACITOR OR CAPTIVE DEVICE
- ADJUSTABLE OR VARIABLE CAPACITOR
- CAPACITOR WITH FACTORY INSTALLED TERMINALS
- SURGE CAPACITOR
- OPEN CONTACT
- CLOSED CONTACT
- OPEN CONTACT, DRAWOUT TYPE
- CLOSE CONTACT, DRAWOUT TYPE
- CIRCUIT BREAKER, DRAWOUT TYPE
- SINGLE PUSHBUTON STATION PENDANT
- OPEN CONTACT ON RELAY, CONTACTOR OR CONTROL DEVICE (N.O.)
- CLOSED CONTACT ON RELAY, CONTACTOR OR CONTROL DEVICE (N.C.)
- 3/M — MOTOR CIRCUIT PROTECTOR CONTINUOUS CURRENT RATING
- CT SHORTING TERMINAL BLOCKS
- S — SCADA CONTROLLED EQUIPMENT
- CONNECTION POINT
- CROSSOVER
- NORMALLY OPEN, MOMENTARY CLOSING PUSHBUTTON SWITCH, SPRING OPEN
- NORMALLY CLOSE, MOMENTARY OPENING PUSHBUTON SWITCH, SPRING CLOSE
- NORMALLY CLOSED, MOMENTARY OPENING PUSHBUTTON WITH LOCK OPENING ATTACHMENT
- EMERGENCY START BUTTON
- EMERGENCY STOP BUTTON
- SELECTOR SWITCH (NORMALLY OPEN)
- SELECTOR SWITCH (NORMALLY CLOSED)
- TORQUE SWITCH CLOSED
- TORQUE SWITCH OPEN
- LIMIT SWITCH-DIRECT ACTUATED, SINGLE POLE, DOUBLE THROW SWITCH
- TEMPERATURE ACTIVATED SWITCH SINGLE POLE, DOUBLE THROW SWITCH
- PRESSURE ACTIVATED SWITCH SINGLE POLE, DOUBLE THROW SWITCH
- 3-POSITION SELECTOR SWITCH
- TIME CLOCK SWITCH CLOSED
- TIME CLOCK SWITCH OPEN
- TOGGLE, KNIFE OR SAFETY DISCONNECT SWITCH
- TRANSFER OR 2-WAY SWITCH
- 1 2 — TWO POSITION SELECTOR SWITCH, CONTACTS SHOWN IN POSITION INDICATED BY SOLID ARROW (POSITION 1)
- 3 POSITION — MULTI-POSITION SELECTOR SWITCH -INDICATES CONTACT CLOSURE IN POSITION INDICATED BY DASHED LINE
- DISCONNECT SWITCH
- COMBINATION CONTROLLER DISCONNECT SWITCH
- LIMIT SWITCH, NORMALLY CLOSED
- LIMIT SWITCH, NORMALLY OPEN
- LIQUID LEVEL SWITCH, NORMALLY OPEN, CLOSES ON RISING LEVEL
- LIQUID LEVEL SWITCH, NORMALLY CLOSED, OPENS ON RISING LEVEL
- PRESSURE SWITCH, NORMALLY OPEN, CLOSES ON INCREASING PRESSURE
- PRESSURE SWITCH, NORMALLY CLOSED, OPENS ON INCREASING PRESSURE
- FLOW SWITCH, NORMALLY OPEN, CLOSES ON INCREASING FLOW RATE
- FLOW SWITCH, NORMALLY CLOSED, OPENS ON INCREASING FLOW RATE
- TEMPERATURE SWITCH, NORMALLY OPEN, CLOSES ON RISING TEMPERATURE
- TEMPERATURE SWITCH, NORMALLY CLOSED, OPENS ON RISING TEMPERATURE
- PUSHBUTTON,MOMENTARY,2-POLE (1-N.C., 1-N.O.)
- PUSHBUTTON,MAINTAINED
- NORMALLY OPEN ON DELAY RELAY CONTACT TIMED CLOSED WHEN ENERGIZED
- NORMALLY CLOSED ON DELAY RELAY CONTACT TIMED OPEN WHEN ENERGIZED
- NORMALLY OPEN, OFF DELAY RELAY CONTACT INSTANTANEOUS CLOSE WHEN ENERGIZED. TIME DELAY OPEN WHEN DE-ENERGIZED
- NORMALLY CLOSED, OFF DELAY RELAY CONTACT INSTANTANEOUS CLOSE WHEN ENERGIZED. TIME DELAY OPEN WHEN DE-ENERGIZED
- 3 — NON-FUSIBLE DISCONNECT SWITCH, NUMBER INDICATES NUMBER OF POLES
- $300 — FUSIBLE DISCONNECT SWITCH, NUMBER INDICATES FUSE RATING, LETTER INDICATES DUAL ELEMENT
- CENTRIFUGAL SWITCH (OPENING ON INCREASING SPEED)
- CENTRIFUGAL SWITCH (CLOSING ON INCREASING SPEED)

3" ON ORIGINAL DOCUMENT
0 1 2 3

CABLE NUMERIC EXPLANATION

EQUIPMENT DESIGNATION
- A - SWITCHGEAR
- C - CONTROL PANEL
- F - LOCAL CONTROL PANEL (LCP); FIRE ALARM PANEL; FACILITY CONTROL PANEL
- L - LIGHTING PANEL 120 VAC
- M - MOTOR CONTROL PANEL
- P - POWER PANEL
- T - TELEPHONE CABINET (MPOE); TELECOMMUNICATION EQUIPMENT
- S - SECURITY SYSTEM

EQUIPMENT NUMBER

CIJ2

CABLE FUNCTION
- C = CONTROL
- J = INSTRUMENT (LOW LEVEL DC)
- N = NETWORK
- P = POWER

CABLE NUMBER (SEQUENTIALLY ASSIGNED)

EXAMPLE

CONTROL PANEL — INSTRUMENT CABLE

CIJ2

CONTROL PANEL NO.1 — N0.2 { INDICATES THE 2ND INSTRUMENT CABLE FROM THE CONTROL PANEL

FORMERLY KNOWN AS DWG NO. 9492-G

DESIGN	DESIGNED BY	—
	DESIGN CHECKED BY	—
	DRAWN BY	—

A COPY OF THE ORIGINAL DRAWING WITH ORIGINAL SIGNATURES CAN BE FOUND IN ENGINEERING RECORDS.

RECOMMENDED: —

APPROVED: —

EAST BAY MUNICIPAL UTILITY DISTRICT
OAKLAND, CALIFORNIA

STANDARD DRAWING

ELECTRICAL

LEGEND AND SYMBOLS

NO.	DATE	REVISION	BY	REC.	APP.
A	19MAR2020	ADDED FAN	CGP	CGP	ST

PROJ NO.			
SCALE	NONE	9492-G-001	6
DATE	14JAN1992	STRUCT. DISC. NUMBER	REV.

USER: mbrown
DATE: 19-MAR-2020 06:24
FILE: H:stds$V8$stddwgs$9492G001.R06

SPEC NO.

INSTRUMENT IDENTIFICATION SYSTEM

INSTRUMENT IDENTIFICATION (TAG) NUMBER (SEE NOTE 2)

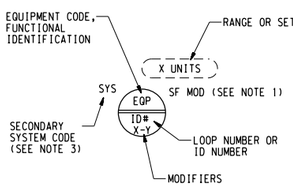
EXAMPLE: 233-CA-FIC-300-1-A
(LOC-SYS-EQP-ID#-MOD)

LOCATION (LOC)	SYSTEM CODE (SYS)	FUNCTIONAL IDENTIFICATION OR EQUIPMENT CODE (EQP)	LOOP IDENTIFICATION NUMBER (ID#)	MODIFIERS (MOD) (OPTIONAL)		SPECIAL FUNCTION (MOD)
				(X)	(Y)	
233	CA	HS	301	1	A	LR

UNIT NO. (MULTIPLE PROCESS TRAINS) OR MULTIPLE INSTRUMENTS IN SAME LOCATION

LETTER FOR MULTIPLE INSTRUMENTS IN DIFFERENT LOCATIONS (PANELS)

INSTRUMENT SYMBOL CONFIGURATION

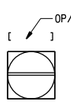


NOTES
1. "SF" IS USED TO REPRESENT ANY "SPECIAL" FUNCTION MODIFIER OR VARIABLE AND MAY BE DEFINED AS LISTED BELOW.
2. THE APPLICABLE FACILITY NUMBER IS IDENTIFIED ABOVE THE TITLE BLOCK ON THE P&ID.
3. THE PRIMARY SYSTEM CODE IS IDENTIFIED ABOVE THE TITLE BLOCK ON THE P&ID. A SECONDARY SYSTEM CODE IS SHOWN HERE.

SPECIAL FUNCTION MOD OR VARIABLE

AM	AUTO-MANUAL
CL2	CHLORINE
COND	CONDUCTIVITY
D	DISCHARGE, SERVICE, OUTLET
DO2	DISSOLVED OXYGEN
E/E	VOLTAGE-TO-VOLTAGE
E/I	VOLTAGE-TO-CURRENT
FL	FLUORIDE
HOA	HAND-OFF-AUTO
I/E	CURRENT-TO-VOLTAGE
I/I	CURRENT-TO-CURRENT
L	LEFT
LCP/OWS	LOCAL CONTROL PANEL-OPERATOR WORKSTATION
LOR	LOCAL-OFF-REMOTE
LR	LOCAL-REMOTE
MOD	MODULATING
NH	AMMONIA
O3	OZONE
OC	OPEN-CLOSE
OO	ON-OFF
ORP	OXIDATION-REDUCTION POTENTIAL
PB	PUSHBUTTON
pH	pH
R	RIGHT
S	SUCTION, SOURCE, INLET
SCD	STREAMING CURRENT DETECTOR
SO2	SULFUR DIOXIDE
SS	START-STOP
TURB	TURBIDITY
UV	ULTRAVIOLET

REMOTE SIGNAL DESIGNATION



INSTRUMENT SYMBOLS

- FIELD MOUNTED INSTRUMENT
- AUXILIARY PANEL MOUNTED INSTRUMENT (OPERATOR ACCESSIBLE)
- AUXILIARY PANEL MOUNTED INSTRUMENT (NORMALLY NOT OPERATOR ACCESSIBLE)
- PRIMARY PANEL MOUNTED INSTRUMENT (OPERATOR ACCESSIBLE)
- PRIMARY PANEL MOUNTED INSTRUMENT (NORMALLY NOT OPERATOR ACCESSIBLE)
- LOCAL ON-OFF INDICATING LAMP
- REMOTE ON-OFF INDICATING LAMP
- BACKUP CONTROL AND DISPLAY TO CONFIGURABLE CONTROL SYSTEM
- CONFIGURABLE CONTROL SYSTEM ACCESSIBLE TO OPERATOR
- CONFIGURABLE CONTROL SYSTEM NOT ACCESSIBLE TO OPERATOR
- NORMALLY ACCESSIBLE TO OPERATOR AS PACKAGED PROGRAMMABLE LOGIC CONTROLLER (PLC) OR DIGITAL LOGIC CONTROL INTEGRAL TO CONTROL SYSTEM
- NORMALLY NOT ACCESSIBLE TO OPERATOR AS PACKAGED PROGRAMMABLE LOGIC CONTROLLER (PLC) OR DIGITAL LOGIC CONTROL INTEGRAL TO CONTROL SYSTEM
- EXISTING FIELD INSTRUMENT

INSTRUMENT FUNCTIONAL IDENTIFICATION (EQUIPMENT CODE)

	FIRST LETTER MEASURED OR INITIATING VARIABLE	SUCCEEDING LETTER, MODIFIER READOUT OR INPUT FUNCTION	SUFFIX LETTER FOR DISCRETE FUNCTION (OUTSIDE BALLOON)
A	ANALYSIS, TURBIDITY	ALARM	AUTO
B	BURNER, COMBUSTION, FIRE	ISOLATOR	REMOTE
C	CONDUCTIVITY	CONTROL (LER)	CLOSED
D	DENSITY, DAMPER	DIFFERENTIAL, DEVIATION	DISCRETE
E	VOLTAGE	SENSOR, PRIMARY ELEMENT	ENERGIZED
F	FLOW	RATIO, BIAS	FAIL OVER RESET
G	GAGING (DIMENSIONAL)	GLASS	READY
H	HAND	HIGH	1ST ALARM OR HI
I	CURRENT (ELECTRICAL)	INDICATE (OR), (ING)	INCREASE
J	POWER	SCAN (NER)	MOTOR POWER
K	TIME	CONTROL STATION (SETPOINT)	
L	LEVEL	LIGHT, LOW	
M	MOISTURE, MASS		MANUAL
N	EQUIPMENT STATUS		2ND ALARM OR LOW
O	VIDEO, OCCUPANCY	OPERATOR, ORIFICE	OPENED
P	PRESSURE, VACUUM	POINT (TEST)	STOP
Q	QUANTITY, TORQUE	TOTALIZE (OR) (ING)	
R		RECORD (ER)	RUNNING
S	SPEED, FREQUENCY	SAFETY, SWITCH	START
T	TEMPERATURE	TRANSMITTER	TROUBLE 1 ALARM
U	MULTI-POINT, VARIABLE		TROUBLE 2 ALARM
V	VIBRATION	VALVE	VIRTUAL
W	WEIGHT	WELL	
X	SPECIAL, EQUIPMENT COMMAND		INTERMEDIATE
Y	EVENT, STATE, COMPUTER CONTROL OUTPUT	RELAY, CONVERTER, SOLENOID	
Z	POSITION	DRIVER, ACTUATOR, FINAL CONTROL DEVICE	

NOTES FOR TABLE

1. ANY UNASSIGNED LETTER IS DEFINED AS A USER'S CHOICE LETTER WHICH IS INTENDED TO BE USED TO COVER A MEANING FOR A PARTICULAR PROJECT.

SIGNAL LINES

- DIRECT PROCESS CONNECTION
- PNEUMATIC SYSTEM
- ANALOG SIGNAL
- DISCRETE SIGNAL (DIGITAL)
- HYDRAULIC SIGNAL
- CAPILLARY TUBING (FILLED SYSTEM)
- ELECTROMAGNETIC, RADIATION, OR SONIC SIGNAL WITH TUBING OR WIRING (GUIDED)
- ELECTROMAGNETIC, RADIATION, OR SONIC SIGNAL WITHOUT TUBING OR WIRING (UNGUIDED)
- ELECTRIC HEAT TRACED LINE
- ELECTRICAL HEAT TRACING ON VESSEL
- a. DIGITAL COMMUNICATION DATA LINK
  b. DIGITAL CONTROL SYSTEM SOFTWARE LINK BETWEEN FUNCTION MODULES
- MECHANICAL LINK
- MICROWAVE SYSTEM

PROCESS LINES

- PRIMARY PIPE
- SECONDARY PIPE
- INSTRUMENT PIPE
- CHANNEL
- DOUBLE-WALL PIPE
- HEAT TRACED PIPE
- PIPE INTERIOR DETAIL

SIGNAL IDENTIFICATION

AI	ANALOG INPUT	PD	PULSE DURATION INPUT
AO	ANALOG OUTPUT	PI	PULSE INPUT
CO	CONTROL OUTPUT FROM THE RTU WITH ASSOCIATED FEEDBACK AND HANDSHAKING SIGNAL	PV	PROCESS VARIABLE
		RSP	REMOTE SET POINT
		SA	SOFTWARE ALARM
		SP	SET POINT
DI	DIGITAL INPUT	VA	VIRTUAL OR CALCULATED ANALOG
DO	DIGITAL OUTPUT		
DL	DISCRETE LATCHED OUTPUT		

LOGIC & CONTROL SYMBOLS

- 1-2 — INTERLOCK SYMBOL WITH NUMBER TO DESCRIBE CONTROL STATEMENTS OR INTERLOCK FUNCTIONS ON THE P&ID
- R — RESET
- AND — CONTROL OUTPUT IS EFFECTIVE IF ALL INPUTS EXIST (TRUE)
- OR — CONTROL OUTPUT IS EFFECTIVE IF ONE OR MORE INPUT EXISTS
- NOT — CONTROL OUTPUT IS EFFECTIVE (TRUE) IF INPUT IS FALSE. OUTPUT IS FALSE IF INPUT IS TRUE.

RTU / PLC SYMBOLS

- XXXX / XXXX — NORMALLY ACCESSIBLE TO OPERATOR AS INDICATOR/CONTROLLER/RECORDER OR ALARM POINT
- XXXX / XXXX / XXXX — NORMALLY NOT ACCESSIBLE TO OPERATOR AS
  a. INPUT/OUTPUT INTERFACE
  b. COMPUTATION/SIGNAL CONDITIONING WITHIN THE COMPUTER
  c. BLIND CONTROLLER OR SOFTWARE CALCULATION MODULE

PROCESS CONNECTORS & INDENTIFIERS

- XXX-XXX — EQUIPMENT NUMBER/IDENTIFIER TAG
- XXX — SYSTEM CODE OR SAMPLE NUMBER IDENTIFIER
- XXX-J-XXX — OFF-PAGE CONNECTOR CONNECT TO OR FROM PROCESS DRAWING INDICATES DRAWING WHERE LINE IS CONTINUED
- OFF-PAGE CONNECTOR CONNECT TO OR FROM PROCESS WITH NO EXISTING P&ID
- A / A — ON-PAGE CONNECTOR, CONTINUATION OF SIGNAL OR LINE WITH MATCHING LETTERS
- SYS-X"-NUM — PROCESS PIPE ANNOTATION: SYSTEM, SIZE & NUMBER

NOTES

1. SEE ANSI/ISA S5.1, INSTRUMENTATION SYMBOLS AND IDENTIFICATION, FOR MORE DETAILS.
2. SEE DISTRICT ENGINEERING STANDARD PRACTICE 130.0 AND STANDARD DRAWING 9492-G-006 FOR DIRECTION ON ASSIGNING NEW TAG NUMBERS.
3. REFER TO ESP 130.0 FOR TAGGING INFORMATION.

3" ON ORIGINAL DOCUMENT
0 1 2 3

NO.	DATE	REVISION	BY	REC.	APP.
A	15FEB2018	GENERAL REVISION	MEB	DJB	ST

DESIGN
DESIGNED BY —
DESIGN CHECKED BY —
DRAWN BY —

A COPY OF THE ORIGINAL DRAWING WITH ORIGINAL SIGNATURES CAN BE FOUND IN ENGINEERING RECORDS.

RECOMMENDED: —
APPROVED: —

EAST BAY MUNICIPAL UTILITY DISTRICT
OAKLAND, CALIFORNIA

STANDARD DRAWING

GENERAL LEGEND, SYMBOLS, AND ABBREVIATIONS FOR P&ID DRAWINGS

PROJ NO.			
SCALE NONE	9492-G-002		5
DATE 13JUL1999	STRUCT.	DISC. NUMBER	REV.

USER: pcarigso
DATE: 16-FEB-2018 09:31
FILE: H:\stds\v8\stddwgs\9492G002.R05

SPEC NO.

VALVES

HAND VALVES OR VALVE BODY

- ANGLE VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CIRCUIT BALANCE VALVE (HVAC) (ZI)
- COCK
- CONE VALVE
- DIAPHRAGM VALVE
- ECCENTRIC PLUG VALVE NORMALLY CLOSED (NOTE 1) (S)
- ECCENTRIC PLUG VALVE NORMALLY OPEN (NOTE 1) (S)
- GATE VALVE (OR GENERIC VALVE)
- GLOBE VALVE
- KNIFE GATE VALVE (K)
- NEEDLE VALVE
- NEEDLE VALVE, SCALED
- PINCH VALVE
- PLUG VALVE
- SELF CLOSING VALVE (SPRING)
- SLEEVE VALVE
- TRAP PRIMER
- THREE-WAY VALVE
- FOUR-WAY VALVE
- V-BALL VALVE

CHECK VALVES

- BALL CHECK OR ANTI-SYPHON VALVE
- BACKFLOW PREVENTER, REDUCED PRESSURE ZONE W/RELIEF
- DIAPHRAGM CHECK VALVE/VACUUM BREAKER
- OR — FOOT VALVE (SUBMERGED)
- SPRING POPPET CHECK VALVE
- SWING CHECK VALVE (INCLUDES SWING, DOUBLE DOOR, FLAPPER, AND TILTING DISC)
- SWING CHECK VALVE W/HOLD OPEN DEVICE
- TRIPLE DUTY VALVE (ISO, CHECK, FLOW LIMIT) (HVAC)

END VALVES*

- AIR, COMBINATION, OR AIR/VACUUM RELIEF VALVE
- ENERGY DISSIPATION (FREE DISCHARGE) VALVE
- FLAP GATE
- FLEXIBLE SLEEVE CHECK VALVE
- HOSE BIB
- HYDRANT

* ONE SIDE IS OPEN TO ATMOSPHERE

CHANNEL VALVES

- BUTTERFLY GATE
- MUD VALVE
- SHEAR GATE
- SLIDE GATE
- SLUICE GATE
- STOP LOGS
- TELESCOPING VALVE
- WEIR GATE

ACTUATED VALVES (WIRED OR WITH SETPOINT)

- BACK PRESSURE VALVE
- LEVEL CONTROL VALVE, FLOAT OPEREATED
- PRESSURE REDUCING VALVE
- PRESSURE REDUCING & BACK PRESSURE SUSTAINING VALVE
- PRESSURE RELIEF OR SAFETY VALVE
- SOLENOID OPERATED VALVE WITH MANUAL ACTUATOR (S)

USE INSTRUMENT BUBBLE

SYSTEM CODE ---- --- ---- SETPOINT

ACTUATORS

- DIAPHRAGM OR UNSPECIFIED ACTUATOR
- CYLINDER ACTUATOR, DOUBLE-ACTING
- CYLINDER ACTUATOR, SPRING-OPPOSED SINGLE-ACTING
- MANUAL ACTUATOR OR HANDWHEEL
- S= SOLENOID ACTUATOR; M= MOTOR ACTUATOR; EH= ELECTRO HYDRAULIC ACTUATOR
- FLOAT ACTUATOR

DIAPHRAM ACTUATOR CONTROL (ASSUMED FLOW DIRECTION →)

- BACKPRESSURE, INTEGRAL TAP
- BACKPRESSURE, REMOTE TAP
- PRESSURE REDUCING, INTEGRAL TAP
- PRESSURE REDUCING, REMOTE TAP
- PRESSURE REDUCING AND BACKPRESSURE SUSTAINING

FITTINGS

- BLIND FLANGE
- FLEXIBLE CONNECTION
- UNION
- SCREWED CAP
- WELDED CAP
- PLUG
- FLUSH CONNECTOR M=MALE F=FEMALE
- QUICK DISCONNECT COUPLING W/CAP
- AIR COUPLER
- QUICK DISCONNECT COUPLING W/PLUG
- CONCENTRIC REDUCER/INCREASER
- ECCENTRIC REDUCER/INCREASER
- REDUCING FLANGE
- BALL JOINT
- EXPANSION JOINT
- CLEAR VIEW PIPE
- DOUBLE BALL FLEXIBLE EXPANSION JOINT

MISCELLANEOUS SYMBOLS

- PULSATION DAMPENER
- DIAPHRAGM SEAL
- PRESSURE SNUBBER
- ANNULAR DIAPHRAGM SEAL
- RUPTURE DISK
- LIQUID SURFACE
- CALIBRATION COLUMN
- AIR GAP
- OVERFLOW
- ATMOSPHERIC VENT
- ATMOSPHERIC VENT WITH BIRD SCREEN
- ULTRAVIOLET SENSOR

NOTES

1. "S" INDICATES SEATED PORT END OF ECCENTRIC PLUG VALVE.

FILLED VALVE — OR N.C. DENOTES NORMALLY CLOSED VALVE

UNFILLED VALVE — OR N.O. DENOTES NORMALLY OPEN VALVE

3" ON ORIGINAL DOCUMENT
0 1 2 3

NO.	DATE	REVISION	BY	REC.	APP.
2	26APR2017	ADDED DIAPHRAM ACTUATORS	MEB	DJB	ST
1	20DEC2016	REORGANIZED SYMBOLS, ADDED TRAP PRIMER	MEB	MEB	ST

DESIGN
DESIGNED BY —
DESIGN CHECKED BY —
DRAWN BY —

A COPY OF THE ORIGINAL DRAWING WITH ORIGINAL SIGNATURES CAN BE FOUND IN ENGINEERING RECORDS.

RECOMMENDED: —
APPROVED: —

EAST BAY MUNICIPAL UTILITY DISTRICT
OAKLAND, CALIFORNIA

STANDARD DRAWING

SYMBOLS FOR P&ID DRAWINGS
VALVES, FITTINGS, AND MISCELLANEOUS SYMBOLS

SHEET 1 OF 3

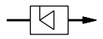
PROJ NO.
SCALE AS SHOWN
DATE 13JUL1999

STRUCT.	DISC.	NUMBER	REV.
		9492-G-003	8

USER: pcariaso
DATE: 26-APR-2017 15:27
FILE: H:\stds\v8\stddwgs\9492G003.R08

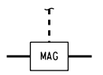
SPEC NO.

FLOW ELEMENTS

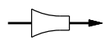

CONICAL (DP)

CORIOLIS EFFECT

DIFFERENTIAL PRESSURE FLOW ELEMENT W/ INTEGRAL INDICATOR



ELECTRO-MAGNETIC FLOW METER (MAGMETER)


NOZZLE (DP)

PARSHALL FLUME (LEVEL)

PITOT TUBE, AVERAGING (DP)

PITOT TUBE, SINGLE PORT (DP)

ORIFICE PLATE OR RESTRICTION ORIFICE (DP)

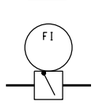
POSITIVE DISPLACEMENT FLOW METER OR BATCH METER

PROPELLER OR TURBINE METER

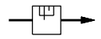
ROTAMETER (VARIABLE AREA FLOW INDICATOR)

SIGHT GLASS FOR FLOW

SONIC FLOW METER (DOPPLER OR TRANSIT TIME)



SWINGING VANE FLOW ELEMENT W/ INTEGRAL INDICATOR

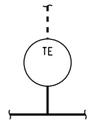

THERMAL MASSFLOW METER

WEIR (LEVEL)

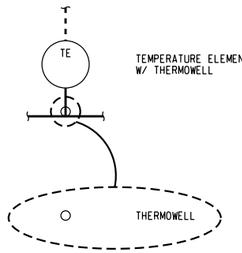
VENTURI (DP)

VORTEX SHEDDING

TEMPERATURE ELEMENTS

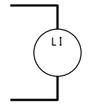


TEMPERATURE ELEMENT IN CONTACT W/ PROCESS FLUID

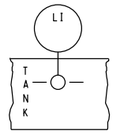


TEMPERATURE ELEMENT W/ THERMOWELL

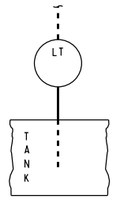
LEVEL ELEMENTS



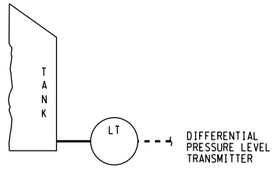
LEVEL INDICATOR, SIGHT GLASS OR GAGE GLASS



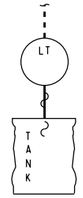
FLOAT TYPE LEVEL INDICATOR



CAPACITANCE OR DIELECTRIC TYPE LEVEL ELEMENT W/ LEVEL TRANSMITTER



DIFFERENTIAL PRESSURE LEVEL TRANSMITTER



SONIC OR RADAR LEVEL TRANSMITTER W/ INTEGRAL SENSOR

NOTES

1. SEE ANSI/ISA S5.1, INSTRUMENTATION SYMBOLS AND INDENTIFICATION, FOR MORE INFORMATION.

3" ON ORIGINAL DOCUMENT
0 1 2 3

NO.	DATE	REVISION	BY	REC.	APP.
4	26APR2017	REORGANIZED SYMBOL	MEB	DJB	ST

DESIGN	
DESIGNED BY	—
DESIGN CHECKED BY	—
DRAWN BY	—

A COPY OF THE ORIGINAL DRAWING WITH ORIGINAL SIGNATURES CAN BE FOUND IN ENGINEERING RECORDS.

RECOMMENDED: —

APPROVED: —

EAST BAY MUNICIPAL UTILITY DISTRICT
OAKLAND, CALIFORNIA

STANDARD DRAWING

SYMBOLS FOR P&ID DRAWINGS
SENSING ELEMENTS

SHEET 2 OF 3

PROJ NO.	NONE	9492-G-004	4
SCALE	NONE		
DATE	13JUL1999	STRUCT. DISC. NUMBER	REV.

USER: pcariaso
DATE: 26-APR-2017 15:28
FILE: H:\stds\v8\stddwgs\9492G004.R04

SPEC NO.

PUMPS

- CENTRIFUGAL PUMP
- EDUCTOR,EJECTOR, JET PUMP
- FOOT PUMP
- GEAR PUMP (PD)
- PERISTALTIC OR TUBING PUMP (PD)
- METERING PUMP (PD)
- PROGRESSIVE CAVITY PUMP (PD)
- REGENERATIVE TURBINE PUMP
- SUMP PUMP
- VERTICAL TURBINE PUMP IN BARREL
- VERTICAL TURBINE PUMP IN OPEN SUMP
- VERTICAL TURBINE PUMP WITH BARREL SUCTION

DRIVES

- OR — ELECTRIC MOTOR DRIVER OR GENERATOR, HORIZONTAL OR VERTICAL
- HYDRAULIC TURBINE
- GAS OR STEAM TURBINE
- FUEL — INTERNAL COMBUSTION ENGINE

FANS/ COMPRESSORS/ BLOWERS

- CENTRIFUGAL COMPRESSOR
- CENTRIFUGAL (RADIAL) FAN OR BLOWER
- LOBE BLOWER (ROOTS)
- PROPELLER OR AXIAL FAN
- RECIPROCATING COMPRESSOR
- ROTARY SCREW COMPRESSOR
- SLIDING VANE COMPRESSOR

DAMPERS

- OPPOSED BLADES
- PARALLEL BLADES

HEAT EXCHANGERS

- HEAT EXCHANGER, COIL FINNED, AIR-TO-LIQUID
- HEAT EXCHANGER, SHELL & TUBE OR GENERIC
- HEATER (STEAM OR ELECTRIC)

FILTRATION/ SEPARATION EQUIPMWENT

- BAR RACK
- BASKET STRAINER
- CONDENSATION TRAP
- CYCLONE SEPARATOR
- DESSICANT DRYER
- DRIP OR AUTOMATIC DRIP TRAP
- F — FILTER
- FILTER PRESS
- INLET FILTER OR SCREEN
- PLATE SETTLER
- SEDIMENT TRAP
- S — STRAINER
- THICKENER OR CLARIFIER
- TRAVELING SCREEN
- "Y" STRAINER

MISCELLANEOUS EQUIPMENT

- INJ — CHEMICAL INJECTOR
- FUEL — ENGINE-DRIVEN GENERATOR SET
- SAFETY SHOWER/ EYEWASH COMBINATION
- SILENCER (HVAC)
- WASHDOWN MONITOR
- SCRAPER, COLLECTOR

MIXERS/ STRAIGHTENERS

- FLOW STRAIGHTENING VANE
- MECHANICAL MIXER/ AGITATOR
- PUMP SUCTION DIFFUSER
- SPARGER
- SPRAY NOZZLES
- STATIC, IN-LINE MIXER

TANKS/ VESSELS

- ACCUMULATOR, GAS CHARGED
- ACCUMULATOR, SPRING LOADED
- PRESSURE VESSEL
- SUMP
- TANK (ATM PRESSURE)
- SETTLING BASIN

3" ON ORIGINAL DOCUMENT

0 1 2 3

NO.	DATE	REVISION	BY	REC.	APP.
2	20FEB2019	ADDED NEW SYMBOLS	MER	DJB	ST
1	26APR2017	REORGANIZED SYMBOLS	MER	DJB	ST

DESIGN
DESIGNED BY —
DESIGN CHECKED BY —
DRAWN BY —

A COPY OF THE ORIGINAL DRAWING WITH ORIGINAL SIGNATURES CAN BE FOUND IN ENGINEERING RECORDS.

RECOMMENDED: —
APPROVED: —

EAST BAY MUNICIPAL UTILITY DISTRICT
OAKLAND, CALIFORNIA

STANDARD DRAWING

SYMBOLS FOR P&ID DRAWINGS
EQUIPMENT

SHEET 3 OF 3

PROJ NO.	NONE	9492-G-005	9
SCALE	NONE		
DATE	13JUL1999	STRUCT. DISC. NUMBER	REV.

USER: wchow
DATE: 21-FEB-2019 16:13
FILE: H:\stds\V8\stdgwgs\9492G005.R09

EXHIBIT H

Engineering Standard Practice: Equipment Tag Numbering System

PURPOSE

To provide a uniform means of identifying individual pieces of equipment and systems at District facilities. Equipment tag numbers are utilized on design documents for procurement and installation, for field identification and maintaining records of equipment history, in operating procedures, and for management of instrumentation and control data. The assistance provided by a documented numbering system shall begin when the equipment numbers are assigned before equipment is installed, and continue with tracking the equipment throughout its useful life.

REFERENCE STANDARDS

- ANSI/ISA S5.1, the American National Standard for "Instrumentation Symbols and Identification."
- ANSI/IEEE C37.2, "Electrical Power System Device Function Numbers."
- ANSI/IEEE 803.1, "IEEE Recommended Practice for Unique Identification in Power Plants and Related Facilities - Component Function Identifiers."
- ANSI Z535.1, "Safety Color Code."

BACKGROUND

This standard is based on ANSI/ISA S5.1, which was mainly intended for instruments and instrumentation systems used for measurement and control. This standard also follows the basic tagging format and identifiers listed in ANSI/IEEE 803.1 for equipment codes with few exceptions. The ideas presented by ANSI/ISA S5.1 and ANSI/IEEE 803.1 have been expanded to encompass the equipment and systems that are standard to District facilities. These standards should be referenced for additional information and examples.

District equipment shall have an assigned tag number that will be shared by:

- The affixed equipment tag in the field.
- Design drawings (e.g., piping and instrumentation drawings, loop diagrams, logic diagrams, and installation drawings).
- System functional descriptions.
- Specifications, proposals, purchase requests, purchase orders, and vendor submittals.
- Automation controller programs.
- Maintenance records, including the District's Asset And Infrastructure Management System.
- Installation, Operation, and Maintenance manuals.
- Standard operating procedures and troubleshooting guidelines.
- Lockout/Tagout procedures.

The equipment tag number provides a common reference for any work related to a specific facility or structure.

SCOPE

This standard applies to the physical identification of fixed equipment used for storage, transmission, treatment, and distribution of raw, non-potable, and treated water. This standard also applies to power generation facilities.

This standard DOES NOT apply to valves and appurtenances (e.g., manual distribution valves, air valves, blow-offs, hydrants, electrical conduits, cables) attached to water distribution pipelines. These items are assigned unique numbers outside this standard.

This standard DOES NOT apply to OP/NET, the District's SCADA system. The Operations and Maintenance Department assigns tag numbers in the OP/NET system for specific points used to monitor and control distinct facility parameters. However, the physical equipment tag numbers assigned under this ESP will be coordinated with the OP/NET system where possible. Engineering documents will identify the OP/NET tag number with the associated equipment tag number as applicable.

Equipment is defined as installed fixtures, including the following subsets: major equipment, instrumentation, and valves. Unless otherwise noted on drawings or project specifications, the following equipment will be tagged per discipline as follows:

Mechanical

- *Instruments*: all instruments;
- *Major Equipment*: all major equipment (e.g., pumps, fans, compressors, strainers, air handling units, etc.); and
- *Valves*: all valves in the main flow of the process stream, critical for the system to function, or any valve that could be referenced in a procedure to be used for a test, vent, drain, isolation, etc.

Electrical

- *Major Equipment*: all major equipment (e.g., motor control center (MCC), power panel, lighting panel, local control panels, switchboard, switchgear, transformer, unit substation, variable frequency drives, generator, etc.);
- *Circuit Breakers*: Refer to Table 1 – Component Devices in Major Equipment;
- *Relays*: protective relays; and
- *Component Devices*: Devices installed inside major equipment (refer to Table 1 on page 3).

In general, any valve, instrument, or piece of equipment that will have a tracked maintenance record or may be identified in a procedure should have a unique equipment tag number.

Table 1 - Component Devices in Major Equipment

		Component Devices								
Major Equipment	Voltage Class *See Legend*		Feeder Breaker	Main Breaker	Motor Starter	Multifunction Protective Relay	Protective Relay	Transformer	Current Transformer	Potential Transformer
Motor Control Center	LV		✓	✓	✓	✓	✓	✓		
Power Distribution Panel	LV			✓						
Reduced Voltage Starters	LV					✓				
Switchboard	LV		✓	✓		✓	✓	✓		
Switchgear	LV		✓	✓		✓	✓	✓		
Unit Substation	LV		✓	✓	✓	✓	✓	✓		
Variable Frequency Drive	LV					✓				
Reduced Voltage Starters	MV					✓	✓			
Switchgear	MV		✓	✓	✓	✓	✓	✓		
Unit Substation	MV		✓	✓	✓	✓	✓	✓		
Variable Frequency Drive	MV					✓				
Unit Substation	HV		✓	✓	✓	✓	✓	✓	✓	✓

✓ = Requires a Tag

LEGEND

LV	0 – 600V
MV	2.4kV – 69kV
HV	115kV – 230kV

The major equipment and component device equipment codes i.e., MCC and BKR are found on DWG. 9492-G-006.

Equipment that is generally not tagged includes:

- Mechanical:
  - Instrument isolation valves and diaphragm seals;
  - Small valves in a packaged piece of equipment; or
  - A valve that is associated with one specific piece of equipment (e.g., a blow-off valve on a y-strainer).

- Electrical:
  - Bus;
  - Circuit breakers for low voltage lighting panels, control panels, remote terminal units, and programmable controllers;
  - Disconnects for low voltage (less than 600V), fused or non-fused; must be located and arranged so the purpose is evident;
  - Instrument power supplies;
  - Hand switches and lighting control switches; and
  - Component devices in Table 1, which do not require a tag.

IDENTIFICATION SYSTEM

The equipment tag number contains a series of coded information, such as location, facility, and equipment type, which is unique to that particular item. The tag number will be constructed of some, but not all, of the following information related to the equipment:

- Facility Number,
- Aqueduct Station,
- Raw Water Aqueduct,
- System,
- Equipment Type,
- Identification Number, and
- Specific Modifiers.

Therefore, the equipment tag number provides descriptive information to field personnel who encounter unfamiliar equipment.

A unique tag number will be assigned to each item supplied as a unit. For example, a compressor package, valve and valve operator, pump and motor combination, will each have one tag for the entire unit. The complete equipment tag used to identify a particular item will have the following structure:

Location –	***System*** –	***Equipment Code*** –	***ID Number*** –	***Modifier (Optional)***
(LOC)	**(SYS)**	**(EQP)**	**(ID#)**	**(MOD)**

This basic system is used to identify all equipment. The information used in each place in the tag number will vary based on the equipment's application as described below. See "Table A – General Tag Numbering System – Examples."

DEFINITIONS

Location (LOC)

This is a two-to-four digit number used to identify the location of the equipment. This is analogous to the "Project Identifier" in Table 1, named "Unique Identification Code," field 1 of IEEE 803.1. The location may be either the Facility Number or the Aqueduct Station Number as applicable.

Facility Number:

This is a two-to-four digit number assigned to each facility that uniquely identifies the facility in which the equipment is installed. The Asset Management Section within the Maintenance Operations Division of the Maintenance and Construction Department assigns facility numbers. Existing numbers can be accessed on the District's Intranet in the "Facilities Guide." New numbers shall be requested by the Project Engineer during the design of a new facility or for any existing facility without an assigned number. The facility number will be indicated in the lower right-hand corner above the title block of the related Process and Instrumentation Diagram (P&ID) and related electrical drawings. Where equipment can be associated with more than one facility, the major facility number is used. An example of this situation is the single switchgear used for a water treatment plant and a pumping plant. The medium voltage switchgear located at Maloney Pumping Station, Facility No. 314, feeds Sobrante Water Treatment Plant, Facility No. 236. The facility number for the medium voltage switchgear will be Facility No. 236 because Sobrante Water Treatment Plant is the major facility.

Water treatment plant equipment will share the same facility number for all systems regardless of the location.

Another example is a MCC feeding two pumping plants, Maloney (Facility No. 314) and Greenridge (Facility No. 298). In this case, Maloney's facility number shall be selected because it has a larger pumping capacity.

Aqueduct Station Number:

This is a unique two-to-four digit number taken from the original aqueduct stationing. It is used to reference the location of an appurtenance in relation to the aqueduct maps. Station number will only be used to identify remote aqueduct equipment that is not associated with a facility number. An example of a station number is 1258, which is near the Calaveras Wasteway facility for Aqueduct No. 3.

Equipment In A Facility:

Equipment located in a facility shall use the facility number for LOC. For example, the altitude valve (level control valve) at San Catanio Reservoir (facility no. 1520) in the treated water system is tag number 1520-TWS-LCV-704. Another example is a flow control valve located inside Campo Seco Center (facility number 891) on the Mokelumne No. 3 Aqueduct would have a tag number 891-AQ3-FCV-001.

Equipment At The Raw Water Aqueducts:

There are certain appurtenances (blowoffs, air valves, etc.) on the aqueducts that are not located at a specific District facility. These appurtenances shall use the Aqueduct Station Number for LOC. An example is a surge control (i.e., pressure control) valve located on Mokelumne No. 1 Aqueduct near the Mokelumne No. 3 Aqueduct Calaveras Wasteway at Station 1258 is equipment tag number 1258-AQ1-PSV-001.

System Code (SYS)

This is a two- or three-letter code used to identify the primary system to which the equipment is associated. This is analogous to the "System Identifier" in Table 1, named "Unique Identification Code," field 2 of IEEE 803.1. Treatment chemical systems shall be distinguished with a two-letter code, while all other systems shall have a three-letter code. The primary system code applicable to the drawing shall be indicated in the lower right-hand corner above the P&ID title block and in a tagging note on electrical drawings. Tag numbers for components in secondary systems shall indicate the system code on each bubble tag.

For water, gas and treatment chemicals, the general rule in selecting a system code is to choose a code that correctly identifies what is in the pipe that connects the component. For example, if a pressure transmitter is connected to a pipe with treated water inside the pipe, then the system code for that transmitter is TWS (Treated Water System).

A system code would typically be chosen to define the type of fluid in the pipe in the distribution system. Refer to the "System Codes and Tag Colors" table on drawing 9492-G-007 for a listing of system codes.

Equipment At The Raw Water Aqueducts:

An exception to the general rule is for raw water equipment and appurtenances on the raw water aqueducts. These shall not use RWS for the system code, but shall use the raw water aqueduct system codes given on 9492-G-007. For example, the system code for Mokelumne No. 2 Aqueduct is AQ2.

System Code Boundaries:

Multiple systems are frequently connected at some point and the boundary between the primary and secondary systems must be defined. The primary system shall be the main system defined above the P&ID sheet title block or by the electrical drawing tagging note and secondary systems shall be additional systems that connect with the primary system on the same sheet. The following provides more information for system code selection:

- The system code boundary between a primary and secondary mechanical system is generally at the downstream end of the first isolation valve if there is no backflow prevention device and at the downstream end of the backflow prevention device if one exists. The first isolation valve on an outflow from the primary system is part of the primary system, while the first isolation valve on an inflow to the primary system is part of the secondary system. An example of this is a boundary between a (TWS) and a service water system (SVW). This boundary requires a backflow prevention

device, so the backflow device and components upstream of the backflow device are assigned the TWS code while components downstream of the backflow device are assigned the SVW code.

- The system code boundary between the electrical power system and the mechanical system is at the electro-mechanical conversion device, e.g., the motor, solenoid, etc. For example, a treated water pump motor will be assigned the process system code of TWS, while the first breaker and other electrical equipment upstream of the electro-mechanical conversion device is typically assigned the Electric Power Supply (EPS), Standby Power Supply (SPS) or Electric Power Generation (EPG) system code.

- For instrumentation and control system code boundaries, the instruments in the signal path will retain the same system code as the field device from the field device through the Programmable Logic Control (PLC) and on to the Remote Terminal Unit (RTU). However, devices like the PLC and the RTU have a system code of FCS for "Facility Control System" since they are typically used to control devices with multiple system codes.

Equipment Code (EQP)

This is a two- or three-letter code used to identify the equipment type or function. This is analogous to the "Component Function Identifier" in Table 1, "Unique Identification Code," field 3 of IEEE 803.1. An example of an equipment code is "PMP" for a pump. Refer to the "Equipment Codes" table on drawing 9492-G-006 for a listing of common equipment codes. For new equipment codes not appearing on 9492-G-006, refer to ANSI/IEEE 803.1. The instrument portion of this table is based upon ANSI/ISA S5.1. For instruments not appearing on 9492-G-006, refer to "Instrument Letter Identification Table" on standard drawing 9492-G-002, ANSI/IEEE 803.1, or ANSI/ISA S5.1.

Identification Number (ID#)

This identification (ID) number indicates:

a. The train number for train-related equipment.

b. The loop number for wired instruments.

c. The sequence number for equipment that is neither train- nor loop-related.

d. The electrical enclosure number that a breaker or switch is mounted.

This is analogous to the "Sequence Code" in Table 1, named "Unique Identification Code," field 4 of IEEE 803.1.

A train is defined as a group of equipment that is operationally related to perform a specific function. Generally, a train consists of a major piece of equipment, like a pump or a tank, and other equipment associated with that piece of equipment, like a discharge valve. A train can be either singular or multiple parallel groupings.

A singular train is an equipment group that does not have redundant equipment groups that serve a similar operational purpose. An example of a singular train would be a day tank and the equipment associated with that day tank at a filter plant. Associated equipment would include the site gauge, inlet and outlet valves, etc. For an example, refer to drawing 1999-J-002, "Feed System P&ID."
Multiple trains are parallel equipment groups that serve a similar operational purpose, e.g., to provide redundancy or increase total capacity. An example of a multiple train would be a pump and the equipment associated with that pump in a distribution pumping plant with multiple units. Associated equipment would include suction and discharge isolation valves, pump control valves, etc. For an example, refer to drawing 1999-J-003, "Pumping Plant P&ID." For equipment in multiple trains, the first group has an ID number of 001, the second is 002, etc.

A loop is defined in ISA S5.1 as a combination of two or more instruments or control functions arranged so that the signals pass from one to another for the purpose of measurement and/or control of a process variable.

A wired instrument is defined as any instrument that has a digital or analog signal input or output that is wired to pass the signal between itself and an external device. A wired instrument shall utilize the loop number as its ID number. Wired instruments that are part of a loop containing multiple field instruments shall use the same loop number for their ID numbers. This is to facilitate control programming. In an instrument loop containing multiple wired instruments that have the same equipment code within the same system but in different locations (e.g., LCP, OWS, RTU, ACC), a sequential letter modifier will be added (i.e., -A, -B, -C) after the ID number to provide discrete ID. Lettering on the P&ID proceeds from bottom to top. In an instrument loop containing multiple wired instruments that have the same equipment code within the same system and in the same location (e.g., the same LCP), a sequential integer modifier will be added (i.e., -1, -2, -3) after the ID number to provide discrete ID. Numbering on the P&ID proceeds from left to right. Wired instruments in multiple trains shall have the train number indicated by adding an integer sequence modifier corresponding to the equipment train after the ID (loop) number (i.e., -1, -2, -3). An example of this is two caustic storage tanks with level transmitters where the tanks are labeled CA-TNK-101 and CA-TNK-102 and the transmitters are labeled LT-103-1 and LT-103-2, respectively. For chemical and quality monitoring systems, the first number of a loop number is related to the subsystem that is associated with the instrument. The "Instrument Equipment ID (Loop Number) Designation" table on drawing 9492-G-006 provides details for selecting loop numbers. At pumping plants, reservoirs, regulators, and rate control stations, the loop number for individual instruments shall be the same as the associated OP/NET RTU loop number where feasible. Contact OP/Net for a RTU loop number for new facilities or existing facilities without a loop number.

Equipment not related to a train or loop shall be numbered sequentially within a system. Most of the hand valves along a pipe shall be numbered sequentially following the process flow path. Single equipment items with specialized applications (e.g., reservoir altitude valve) may use the structure number. The advantage to this is a unique ID number for each altitude valve.

All ID numbers shall have a minimum of three digits, therefore, numbers smaller than 100 should contain preceding zeros, i.e., 001. The ID number shall be indicated in the bubble that points to the equipment symbol on the related P&ID. ID numbers from 001 to 020 are generally reserved for multiple

train-related equipment. ID numbers from 021 to 999 are generally non-train-related items. The number 020 reflects the expected ultimate build-out quantity of any train at the District. Refer to drawing 9492-G-007 for additional ID number details.

For any particular type of equipment, the lowest ID number shall start at the left of a P&ID sheet and the numbers shall sequentially increase in the direction of flow. ID numbers used in a primary system may be repeated in a secondary system.

For chemical and quality monitoring systems, the first digit of the three-digit ID shall represent the related subsystem as defined in the "Instrument Equipment ID (Loop Number) Designation" table on 9492-G-007. An example of this is a caustic feed pump ID number of CA-PMP-301, where the 3 in the first digit position represents that the pump is part of a feed system. Coordination of this first digit with the proper subsystem shall also be included in train-related systems.

For electrical supply, the first digit of the three-digit ID shall represent a particular device mounted in the enclosure. An example of this is a breaker with an ID number of BKR-301-MCC, where the 3 in the first digit represents that the breaker is enclosed in MCC-003. MCC is used as the modifier to describe that the breaker is specifically a component in a MCC. Relays (RLY) and Multifunction Protective Relays (MPR) will be tagged with the same ID number as the related breaker. See 0000-E-000 Example Single-Line drawing attached at the end of this document.

Modifier (MOD)

This is a letter or number up to three characters that identifies the sequence number for train- and loop-related equipment, or other descriptor. A modifier is not required for all equipment tag numbers. Multiple modifiers may be added.

A *sequence* modifier shall be located inside the bubble that points to the equipment symbol on the related P&ID. A sequence modifier distinguishes one piece of equipment from another related piece with the same equipment code and ID (or instrument loop) number by adding integers 1, 2, 3, ... or letters A, B, C, ... (see discussion in previous ID number section). Integer modifiers shall be used to distinguish between instruments where there are more than one instrument within a loop that have the same system and equipment code. Letter modifiers shall be used to distinguish two instruments with the same equipment code and ID number, but with different functions. A distribution example is a pressure transmitter for a regulator on the suction or source (PT-458-S) versus the pressure transmitter on the discharge (PT-458-D). A treatment plant example is a level transmitter on the left half of the number 3 filter (LT-003-L) versus the level transmitter on the right filter half of the number 3 filter (LT-003-R).

A *special function* modifier shall be located in the upper right of the instrument bubble that points to the equipment symbol on the related P&ID. This modifier can further describe the instrument functionality. Examples include using "SS" for Start-Stop and "OO" for ON-OFF. This modifier is also used on the P&ID to define a process-connected instrument range or setpoint, but a modifier used in this manner is located directly above the bubble and this additional information is not considered as a part of the tag number. See drawing 9492-G-002 for a list of the special function modifiers. For other examples, refer to drawing 1999-J-001, "Storage & Transfer System P&ID."

For electrical equipment:

The modifier shall be added to the equipment ID number when a component device is enclosed in major equipment. The list of major equipment used as modifiers can be found on Table 1 - Component Devices in Major Equipment (page 3).

Breakers and Switches:

A modifier shall be added to define the type of related electrical enclosure in which a breaker, non-fused switch, or fused switch is mounted. An example of this is a breaker ID number of BKR-301-MCC, where the MCC is used as the modifier to describe that the breaker is a specific component in MCC-003. See 000.0-E-000 Example Single-Line drawing attached at the end of this document.

Protective Relays:

Relays may serve single or multiple device functions. A single function relay shall be tagged with the equipment code "RLY." A relay that serves multiple device functions shall be tagged with the equipment code "MPR" for Multifunction Protective Relay. Single function protection relays shall be further defined by the device function number that is given in ANSI/IEEE C37.2. These same relay function numbers are also found in ANSI/IEEE 803.1 as function identifiers, which conform to C37.2. An example of a dual function relay is the common 50/51 relay, a combined instantaneous and timed overcurrent relay, with an electronic metering and protection package. The 86 in equipment tag number RLY-107-SWR-86 represents the device function number of RLY No. 7 located in SWR-001. All relay device function number(s) shall be listed in the text description or "device name" on the cabinet tag nameplate. RLY and MPR shall be tagged with the same modifier as the related breakers enclosure. See 0000-E-000 Example Single-Line drawing attached at the end of this document.

Exception: Where MPR and RLY devices are located other than in the same breaker enclosure, the modifier shall match the location of the device. The location of the MPR or RLY could be in a SWB or control panel (CP).

CONFORMING EXISTING TAGS

When updating tags at an existing facility for conformance to this ESP, attempt to use as much of the existing equipment tag number as possible. Most updated tags shall require the addition of a LOC and a correction of the tag structure order. Many updated tags shall require a correction of the system and equipment codes. For ID numbers smaller than 100, the preceding zeros shall be added to the ID number to attain a three-digit number if none exist. The reason for strictly retaining the ID number is that many other design documents reference the same number (electrical drawings, wire numbers, old shop orders, etc.). Retaining the existing ID number will have preference over the general rule of sequentially numbering from left to right with direction of flow.

The Asset Management Section shall be contacted when an existing ID number is reassigned to a new ID number. The existing ID number shall remain in the tags "equipment description" in parenthesis. See example below, DP2 is renamed LP-004.

Ozone Bldg, Swgr Rm No. 111. Lighting Panel No.4 (DP2)
238-EPS-LP-004

TAG FORMAT

Field Tags

The equipment tag number shall be engraved on the appropriate two-color laminated tag and affixed to the equipment. Cabinet tags shall be attached with stainless steel screws or waterproof adhesive and hanging tags attached with stainless steel cable. Tag colors shall follow ANSI Z535.1. Refer to the "System Codes and Tag Colors" table on drawing 9492-G-007 for a list of tag colors for materials commonly used at the District. If a hanging tag cannot be safely affixed to the specific equipment, then a cabinet tag shall be placed on the cabinet access door for that equipment. Hand switches that are located on the main control panel will generally not be field tagged.

Drawings

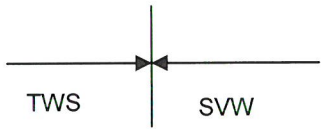
Tag Bubbles:

The equipment tag number will be referenced on the P&ID and other drawings. For P&IDs, the equipment code, ID number, and sequence modifier will appear inside the equipment identifier bubble, while the facility or station number, and the primary system code will appear in the lower right-hand corner of the drawing, just above the title block. Instruments will use the circular bubble and other equipment will use a round-edged rectangular bubble. Facility numbers are typically not shown in the tag bubble on the P&ID. It is assumed that the facility number shown above the title block precedes all tag numbers on that sheet unless otherwise shown. The primary system code is assumed to apply to equipment on the P&ID that are not specifically tagged with a secondary system code. Any secondary system codes will appear at the upper left outside of an instrument bubble or at the left of the equipment code inside an equipment bubble. Special modifiers will appear at the upper right outside of an instrument bubble and at the right of the ID number inside an equipment bubble.

System Boundary Symbols:

Primary to secondary system boundaries will be defined on a P&ID with a symbol consisting of dual arrows pointing at a divider line with the appropriate system code adjacent to each arrowhead on either side of the divider. The boundary symbol will be located to the far upstream or downstream end of a component in order to avoid confusion about the applicable system for that component. The boundary symbol will be illustrated as follows:

System Boundary Symbol

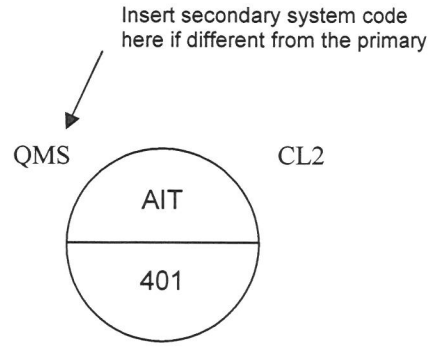


FORMAT EXAMPLES:

	PHYSICAL TAG	DRAWING BUBBLE
Cabinet Tag (0.75"x 2.5")	Local Control Panel 233-SH-LCP-001	Insert secondary facility and system code here if different from the primary LCP-001 (P&ID - Facility number and primary system code are shown above the title block)

Instrument Hanging Tag (1"x 2.5")

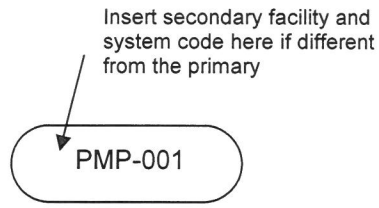
○	LOC:	510
	SYS:	QMS
	EQP:	AIT
	ID-MOD:	401-CL2



(P&ID - Facility number and primary system code are shown above the title block)

Equipment Hanging Tag (1"x 2.5")

○	LOC:	1520
	SYS:	TWS
	EQP:	PMP
	ID-MOD:	001



(P&ID - Facility number and primary system code are shown above the title block)

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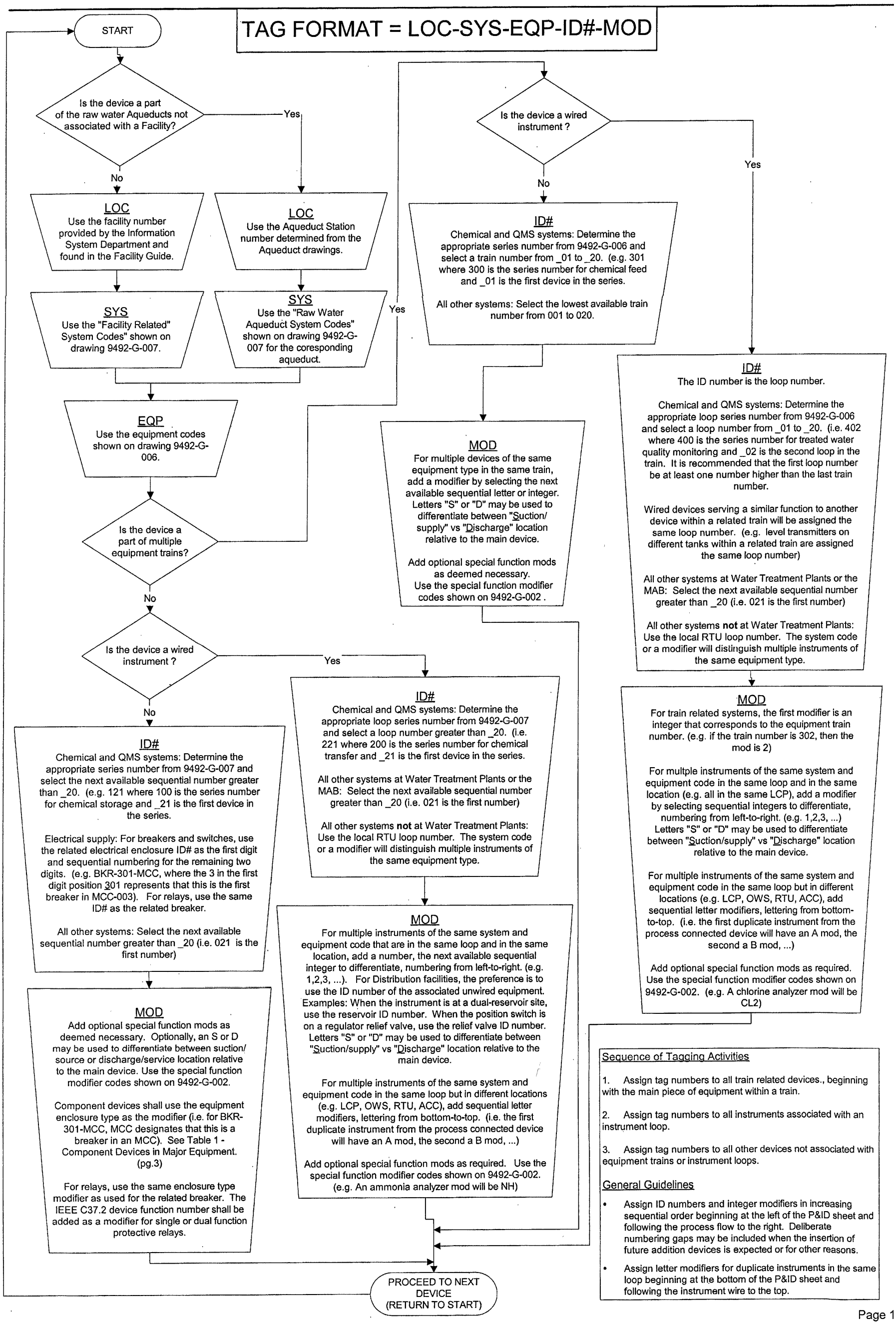
Project Tag Documentation:

An asset list including tag numbers shall be generated for each project. This list provides the minimum maintenance database information. For projects constructed by District forces, the design engineer will typically generate the list. For contract projects, the contractor shall develop the tag table as part of the submittal process (ref. Section 01 91 13.10, Asset Identification Tags). For large contract projects, it is recommended that the engineer generate the ID tag portion of the list directly from a database in the P&ID drafting software. This partial asset tag list should be made available to the project contractor upon request. The final tag list shall be added to the DOX system.

The Asset Management Section enters the information from the final asset tag list into the District's "Asset and Infrastructure Management System" to facilitate maintenance.

The asset tag list spreadsheet template is available in Appendix A of the District Master Specifications.

XAVIER J. IRIAS
Director of Engineering and Construction

ESP 130.0 Equipment Tag Numbering System
- Tag Numbering Flowchart -

TAG FORMAT = LOC-SYS-EQP-ID#-MOD