

SAUSALITO-MARIN CITY SANITARY DISTRICT

**ADDENDUM NO. 2**

TO

**Treatment and Wet Weather Flow Upgrade  
(Project No. 0055-006)**

**January 25, 2017**

This addendum consists of twenty-eight (28) pages, including this cover, plus five (5) attachments amending the Contract Documents. All prospective bidders for the above-referenced project are to be aware that the following changes, additions and/or clarifications shall be included as an integral part of the Contract Documents for the above-referenced project, and that they are bound by all conditions set forth therein.

THIS ADDENDUM MUST BE ACKNOWLEDGED WHEN YOUR BID IS SUBMITTED.  
FAILURE TO ACKNOWLEDGE THE ADDENDUM MAY CONSTITUTE GROUNDS FOR  
REJECTION OF THE BID.

THE BIDDER SHALL ACKNOWLEDGE RECEIPT OF THIS  
ADDENDUM IN SECTION "BID"

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## SAUSALITO-MARIN CITY SANITARY DISTRICT

### TREATMENT AND WET WEATHER FLOW UPGRADE PROJECT

#### Addendum No. 2

The following shall modify the Contract Documents. The work shall be accomplished in accordance with such modifications. It is required that this addendum be attached to the Specifications. This addendum contains twenty-eight (28) pages including the cover page, with five (5) attachments.

**IMPORTANT: Receipt of this Addendum must be acknowledged in the space provided on the Bid Form when your bid is submitted. Failure to acknowledge receipt of this addendum may constitute grounds for rejection of the bid.**

**Notice to Bidders:** The “Hazardous Material Pre-Demolition Inspection and Bulk Sampling Various Structures at the Sausalito-Marín City Treatment Plant” prepared by NorBay Consulting, December 17, 2014, is available on the District’s website for download. See [www.SMCSd.net](http://www.SMCSd.net) and click the link in the center of the page titled, “Treatment and Wet Weather Flow Upgrade Project Bid Documents.”

#### SPECIFICATIONS:

- 2.01 Add:** In Table of Contents, on page TOC – page 1 of 4, in Division 01 – General Requirements, add “01612 Seismic Design Criteria” and add Specification 01612 to the Contract Documents, See Attachment No. 1 for Section 01612.
- 2.02 Add:** In Table of Contents, on page TOC – page 1 of 4, in Division 01 – General Requirements, add “01614 Wind Design Criteria” and add Specification 01614 to the Contract Documents, See Attachment No. 2 for Section 01614.
- 2.03 Add:** In Table of Contents, on page TOC – page 4 of 4, in Division 15 – Mechanical, add “15955 Exhaust Fans” and add Specification 15955 to the Contract Documents, See Attachment No. 3 for Section 15955.
- 2.04 Change:** In the Specification “Notice Inviting Bids,” on page 1, Paragraph 2., delete the paragraph in its entirety and replace with the following:

**“2. All bids must be delivered to the Sausalito-Marín City Sanitary District, #1 East Road, Sausalito, California 94965 on or before 2:00 p.m., Pacific Standard Time, on Friday, February 3, 2017. Bids will be opened and read publicly at that time. Bids**

**must be made on the bid forms included in the bid package. Bids that are submitted late according to the official time kept by the District Clerk or a designee will be returned unopened. Bids submitted by facsimile or other electronic means will not be accepted. Bids that are incomplete or that otherwise do not conform to the requirements specified in the bid package may be deemed non-responsive."**

**2.05 Change:** In the Specification "Notice Inviting Bids," on page 3, Paragraph 8., delete "California Civil Code Section 3248" and replace with "California Civil Code Sections 9550-9554."

**2.06 Add:** In the Specification "Notice Inviting Bids," on page 3, Paragraph 10., add the following to the beginning of the paragraph:

"Pursuant to Public Contract Code 1725.5, no contractor or subcontractor may be listed in a bid or awarded a contract for a public works project unless it is registered with California's Department of Industrial Relations."

**2.07 Change:** In the Specification "Bidder's Check List," on page 1, delete "Arrange to have the sealed bid delivered to Kevin Rahman in the Sausalito Marin City Sanitary District offices at #1 East Road, Sausalito, California 94965 before 2:00 PM, on January 27, 2017." and replace with "Arrange to have the sealed bid delivered to Kevin Rahman in the Sausalito Marin City Sanitary District offices at #1 East Road, Sausalito, California 94965 before **2:00 PM, on February 3, 2017.**"

**2.08 Change:** In the Specification "Bid," as provided in Addendum No. 1, on page 2, under Bid Item 8, delete "\$126,000" and replace with "\$162,000."

**2.09 Add:** In the Specification "Agreement," on page 2, Paragraph 4.1., add the following to the end of the paragraph:

"Liquidated damages shall not cover the cost of completion of the Work, damages resulting from defective work, or damages suffered by others who then seek to recover their damages from District (for example, delay claims of other contractors, subcontractors, tenants, or other third-parties), and defense costs thereof."

**2.10 Change:** In the Specification "General Conditions," on page 19, Paragraph 6.1., in the second sentence of the paragraph, delete "paid from the."

**2.11 Change:** In the Specification "General Conditions," on page 24, Paragraph 7.7.1.3., delete "Section 3" and replace with "Section 4."

**2.12 Change:** In the Specification "General Conditions," on page 26, Paragraph 8.6., delete the paragraph in its entirety and replace with the following:

“8.6. Daily Job Reports. The Contractor shall provide the District daily with electronic copies of its daily job reports detailing and recording all significant activity on the job, including but not limited to, the number of the Contractor’s and all of its subcontractors’ workers on the site, major equipment, critical material deliveries, problems encountered and delays or cost impacts if not mitigated timely.”

- 2.13 Change:** In Specification “General Conditions,” on page 30, Paragraph 8.8.6., delete the first sentence of the paragraph and replace with the following:

“For each insurance policy required under the Agreement except for the required workers compensation insurance policy, the Contractor must provide endorsements that add the Sausalito-Marín City Sanitary District (SMCSD), its Board of Directors, officers, employees, Architect/Engineer, and Construction Manager and the National Park Service (NPS) as additional insured.”

- 2.14 Change:** In Specification “General Conditions,” on page 32, Paragraph 8.11.5., in the first sentence of the paragraph, delete “up to \$50 per day” and replace with “not more than Two Hundred Dollars (\$200.00) for each day for each worker.”

- 2.15 Change:** In Specification 01014, on page 01014-2, Paragraph 2.05.B., delete the paragraph in its entirety.

- 2.16 Change:** In Specification 01025 as issued in Addendum No. 1, on page 01025-4, Paragraph 3.01.A.5., delete the paragraph in its entirety and replace with the following:

“5. BID ITEM 4: Off-Haul of Unsuitable Material – Unit Price: Includes payment for work associated with the off-haul of unsuitable material based upon all labor, equipment and materials necessary to complete all the work in accordance with the requirements included in the Contract Documents. The Construction Manager will establish in the field the unsuitable material, and such material may include but is not necessarily limited to bay mud, stripped top soil, stripped soil, over-excavated soils and rock, or stumps and roots from tree removal. The unsuitable material for this bid item does not include demolition debris such as concrete, paving, pipe, wood, trees not already removed prior to construction, bushes, and other materials identified in the Contract Documents for demolition. The unsuitable material for this bid item shall be off hauled to an appropriate disposal site. Payment for off-haul shall be by unit of measure cubic yard (CY) from the log at the disposal site, to the nearest cubic yard, which price named on the Bid Schedule under Item No. 4 shall constitute full compensation for completion of all such Work as required per the Contract Documents.”

- 2.17 Add:** In Specification 01025 as issued in Addendum No. 1, on page 01025-6, Paragraph 3.01.A.14., add the following to the end of the paragraph:

“This Bid Item does not include utilities or structures encountered within the boundaries of demolition as stated in Note 2 on Drawing D-2.”

**2.18 Change:** In Specification 01040, on page 01040-3, Paragraph 1.04.C.1., delete the paragraph in its entirety.

**2.19 Change:** In Specification 09960, on page 09960-11, Paragraph 2.2.P.2., delete the paragraph in its entirety and replace with the following:

“2. New Concrete Finish Coat: 60 mils DFT.”

**2.20 Add:** In Specification 09960, on page 09960-11, Paragraph 2.2.P., add Paragraph 2.2.P.3. as follows:

“3. Existing Concrete Finish Coat: 125 mils DFT.”

**2.21 Change:** In Specification 09960, on page 09960-13, Paragraph 2.2.V.1., delete the paragraph in its entirety and replace with the following:

“1. New Concrete Finish Coat: 60 mils DFT.”

**2.22 Add:** In Specification 09960, on page 09960-13, Paragraph 2.2.V., add Paragraph 2.2.V.2. as follows:

“2. Existing Concrete Finish Coat: 125 mils DFT.”

**2.23 Change:** In Specification 09960, on page 09960-27, Paragraph 3.13, delete the row for “Steel (process waste) – above ground – below ground” and replace with the following:

Facility	Structure type – material	Lining System	Coating System	Surface Preparation
Steel (process waste) –above ground -below ground	Diameter 24 inches or less	See Section 02571 CML. FBE or E1 as called out in Drawings, only.	See Section 02571 CML. EAP (sun exp), E2 (no sun exp), FBE, or P100 as called out in the Drawings, only.	Interior – SP10 with the 2 mil profile Exterior – SP6 with the 2 mil profile

**2.24 Add:** In Specification 09960, on page 09960-28, Paragraph 3.13, add the following rows to the Coating Schedule:

Facility	Structure type	Lining	Coating	Surface
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	<b>– material</b>	<b>System</b>	<b>System</b>	<b>Preparation</b>
Foul Air Ducting	FRP	None	EAP (sun exp) E2 (no sun exp)	Exterior – SP 2 and SP3
Existing Manhole on Drawing C100-1	Concrete	RMTR and P100 or E100 at 125 mils DFT	-	SP13 abrasive blast and ICRI 310.2 Concrete Surface Profile 4 to 5
Optional Bid Item - Existing Fixed Film Reactors	Concrete	RMTR and P100 or E100 at 125 mils DFT	-	SP13 abrasive blast and ICRI 310.2 Concrete Surface Profile 4 to 5

**2.25 Add:** In Specification 11136, on page 11136-5, Paragraph 2.8.C., add Paragraph 2.8.C.4. as follows:

“4. Yeomans (Grundfos).”

**2.26 Change:** In Specification 11231, on page 11231-6, Paragraph 2.2, delete "Max continuous running torque (ft/lb) 19,000" and replace with "Continuous running torque (ft-lbs) 16,500)."

**2.27 Change:** In Specification 11231, on page 11231-6, Paragraph 2.2, delete "Momentary peak (stalled) torque (ft/lb)" and replace with "Momentary peak (stalled) torque (ft-lbs)."

**2.28 Change:** In Specification 11231, on page 11231-7, Paragraph 2.3.F.2., delete the paragraph in its entirety and replace with the following:

“F. Center drive platform shall consist of aluminum plank grating with necessary supports per Section 05500 Miscellaneous Metals.”

**2.29 Change:** In Specification 11231, on page 11231-14, Paragraph 2.12.C, add Paragraph 2.12.C.5. and 2.12.C.6. as follows:

“5. Walker Process Equipment  
6. Envirodyne Systems”

**2.30 Add:** In Specification 11325, on page 11325-8, Paragraph 2.8.C., add Paragraph 2.8.C.3. as follows:

"3. Lakeside Equipment Corporation."

**2.31 Change:** In Specification 11305, on page 11305-8, delete the “Performance Requirements” table and replace with the following:

<b>Performance Requirements</b>
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	Design Point 1 – Design Flow at Full Speed	Design Point 2 – Shutoff at Full Speed	Design Point 4 – Design Flow at Approx. 90% of Full Speed	Design Point 5 – Design Flow at Approx. 85% of Full Speed	Design Point 5 – Runout at Full Speed
Design Flow Capacity (gpm), Normal	1389	0	1389	1389	2375
Design Pump Head, TDH (ft)	58	95	48	43	32
Minimum Efficiency (%)	62	-	63	65	50
Minimum NPSH Available (ft)	6	-	16	6	-
Maximum Pump Speed (rpm)	1170	1170	1170	1170	1170
Repriming Lift (ft)	21	-	20	17	-

- 2.32 Change:** In Specification 11305, on page 11305-9, at the top of the page, delete “EQ Return Pumps” and replace with “Utility Water Pumps.”
- 2.33 Change:** In Specification 11305, on page 11305-9, under “Motor Data,” “Min. Motor Horsepower,” delete “40” and replace with “30.”
- 2.34 Change:** Delete Specification 11403 Fixed Film Reactor (FFR) Media in its entirety and replace with Attachment No. 4.
- 2.35 Add:** In Specification 11800, on page 11800-5, Paragraph 1.6.C.3, add to the end of the paragraph: "Butterfly valves shall be provided by the Contractor."
- 2.36 Change:** In Specification 11800, on page 11800-9, Paragraph 2.3.E.2., delete "AGMA class 1" and replace with "AGMA III."
- 2.37 Add:** In Specification 11800, on page 11800-9, Paragraph 2.3.E.2., add to the end of the paragraph: "Alternatively, for chain systems, the chain shall be acetal with 316 stainless steel link pins."
- 2.38 Change:** In Specification 11800, on page 11800-14, Paragraph 3.3.E.6.a.1., delete "Daily average TSS shal" and replace with "Based on a minimum of two, 24-hour composite samples per week during the monthly period, TSS shall not exceed 30 mg/L."
- 2.39 Add:** In Specification 11800, on page 11800-14, Paragraph 3.3.E.6.a., add Paragraph 3.3.E.6.a.2. as follows:

"Based on a minimum of two, 24-hour composite samples per week, weekly average TSS shall not exceed 45 mg/L."

- 2.40 Change:** In Specification 13130, on page 13130-1, Paragraph 1.3.B.1., delete "Preliminary drawings shall be stamped by cover MANUFACTURER's PE. Final Drawings and calculations shall bear the stamp of California PE if required." and replace with "Preliminary drawings shall be provided. Final Drawings and calculations shall bear the stamp of a California PE."
- 2.41 Change:** In Specification 13130, on page 13130-2, Paragraph 1.4.A.3., delete "Factory performance test reports" and replace with "Factory or field testing performance test reports."
- 2.42 Add:** In Specification 13130, on page 13130-3, Paragraph 2.1., add Paragraph 2.1.D. as follows: "D. All support beams shall be above the cover system as indicated in the Contract Drawings."
- 2.43 Change:** In Specification 13130, on page 13130-3, Paragraph 2.2.A.3., delete "supported by a series of adjoining beams."
- 2.44 Change:** In Specification 13130, on page 13130-6, Paragraph 2.3.A., delete "Baskets" and replace with "Gaskets."
- 2.45 Change:** In Specification 13400, on page 13400-8, Paragraph 2.4.C.1, delete "For NEMA 4X, 309 stainless steel shall be used" and replace with "For NEMA 4x and 3RX, 316 stainless steel shall be used."
- 2.46 Change:** In Specification 13400, on page 13400-16, Paragraph 2.6.2.A.3.a., delete the paragraph in its entirety and replace with the following:

"a. Foxboro, ABB Magmaster, Krohne Aquaflux, Toshiba, Siemens, or equal."

- 2.47 Add:** In Specification 13400, on page 13400-17, Paragraph 2.6., add Paragraph 2.6.4. as follows:

"2.6.4. Low Range Turbidity Analyzer

A. Type:

1. Micro processor based, continuously flowing, 90 degree light scatter type turbidimeter capable of transmitting turbidity data on a network.

B. Function/Performance

1. Accuracy: Plus/minus 2% of reading from 0 to 10 NTU, plus/minus 5 % of reading from 10 to 40 to NTU, and plus/minus 10% of reading from 10 to 100 NTU.



2. Repeatability: Plus/minus 1% of reading or plus/minus 0.002 NTU, whichever is greater.
3. Resolution: 0.0001 NTU up to 9.9999 NTU, and 0.001 NTU from 10.000 to 99.999 NTU.
4. Range: 0.001 to 100 NTU.
5. Environmental Conditions: 0 to 40 °C and 5 to 95 percent relative humidity, non-condensing.
6. Output: Two 4-20 mA outputs adjustable over the full instrument range, and at least 2 SPDT alarm contacts rated 5A at 230 VAC, which can be adjusted to trip at any point in the instrument range.
7. Display: Digital indicator displaying turbidity in NTUs.

C. Physical

1. Suitable for wall or floor stand mounting.
2. Where required, a DC power supply shall be provided with each turbidimeter. A/C power will be as specified in Section 13400.
3. NEMA 4X (IP66) enclosures.

D. Accessories Required

1. A factory calibrated optical device for verification of calibration without the use of consumables.
2. One year supply of consumables for calibration and a calibration kit that includes adapters and components necessary to perform instrument calibration.
3. All cables, connectors, and tubing required for a fully operational turbidimeter.

E. Manufacturer(s)

1. Hach Model 1720E.
2. SWAN Analytical Instruments Model Monitor AMI Turbiwell W/LED.
3. Approved equal.”

**2.48 Add:** In Specification 13482, on page 13482-1, add to the beginning of the Section:

“The Contractor shall coordinate with the Engineer during shop drawing submittal stage regarding proper and required instruments’ ranges and set points.”

- 2.49 Change:** In Specification 14700, on page 14700-5, Paragraph 2.8.B., delete “The following spare parts shall be provided the shaftless screw conveyor” and replace with “The following spare parts shall be provided with the turntable.”
- 2.50 Add:** In Specification 16000, on page 16000-4, Paragraph 2.2.B.1. add to the end of the paragraph:
- “Conduits for indoors, non-process areas shall be rigid galvanized steel. Accessories such as junction boxes shall be compatible to the type of conduit used.”
- 2.51 Change:** In Specification 16262, on page 16262-1, Paragraph 1.01.A., delete the sentence “Manufacturers of the VDF shall be ABB to match existing brand currently installed at the plant for the VDFs which are located as shown on the Drawings” and replace with “VFDs shall be ABB ACS550 Series to match existing. VFDs shall be provided as indicated in the Contract Documents.”
- 2.52 Change:** In Specification 16262, on page 16262-4, Paragraph 2.01.A., delete the paragraph in its entirety and replace with the following:
- “A. Manufacturers, No Equal:
1. ABB ACS550 Series”
- 2.53 Add:** In Specification 16920, on page 16920-7, Paragraph 2.10.A., between sentences 2 and 3 of the paragraph, add the following:
- “For stand-alone VFD systems, see Section 16262.”

## **DRAWINGS:**

- 2.01 Sheet 7, Dwg. No. G-6 PIPE SCHEDULE AND LEGENDS**  
**Change:** In the "Process Fluid Pipe Schedule" on Sheet 7, Dwg. No. G-6 as provided in Addendum No. 1, delete rows "EBI - Equalization Basin influent" and "EBR - Equalization Basin Return."
- 2.02 Sheet 11, Dwg. No. D-2 OVERALL SITE DEMOLITION PLAN**  
**Add:** To the note calling out to “Demolish concrete platform and road,” add the following: “Demolish existing (2) 30” caissons, 3'-6” by 3'-2” beam, and portions of (2) B1 beams as required for construction of new facilities.”
- 2.03 Sheet 29, Dwg. No. C-1 CIVIL LEGEND AND NOTES**  
**Add:** Add “CalTrans ST-40 Barrier Coordinate” Table as follows:

CALTRANS ST-40 BARRIER COORDINATE		
POINT ID	NORTHING	EASTING

CX1	N2135735.484	E5990699.991
CX2	N2135758.775	E5990705.809
CX3	N2135766.344	E5990708.939
CX4	N2135798.940	E5990732.123
CX5	N2135812.241	E5990759.552

**2.04 Sheet 40, Dwg. No. C100-1 CIVIL SITE GRADING AND PAVING OVERALL PLAN**

**Change:** Delete Note 4 in its entirety and replace with the following:

“Existing concrete vault shall be rehabilitated. The existing vault is approximately 8 feet by 8 feet and 14 feet deep with a manhole cover. The existing vault is a confined space. Contractor shall repair the entire concrete interior surface of the vault in accordance with Section 03740 and Section 09960. The interior of the vault shall be lined with an epoxy coating system in accordance with Section 09960. The Contractor shall install a new concrete top with a precast H20 traffic-rated manhole lid on the existing structure.”

**2.05 Sheet 41, Dwg. No. C100-2 SITE GRADING AND PAVING PLAN – 1**

**Change:** Delete Sheet 41, Dwg. No. C100-2 in its entirety and replace with version as provided in Attachment No. 5.

**2.06 Sheet 54, Dwg. No. CP-3 CONCRETE REPAIR AND LINING DETAILS**

**Add:** Add the following notes to the sheet:

“Notes:

1. These details are to be implemented in areas that are not immersed and subject to a foul air environment or above the wastewater surface.
2. The saw cut indicated shall be installed after the concrete has cured for 28 days. The PVC liner flap to be embedded shall have its T-shaped extensions removed prior to the placement of the concrete and secured to the concrete form. After the form has been removed, the PVC liner flap shall peeled away from the concrete surface without damaging the liner. The PVC liner flap shall be inserted into the saw cut and a sealant shall be applied per the detail.”

**2.07 Sheet 54, Dwg. No. CP-3 CONCRETE REPAIR AND LINING DETAILS**

**Change:** On Details 1, 2, 3, 4, 5, 6, and 7, delete all instances of “(E) Concrete” and replace with “(N) Concrete.”

**2.08 Sheet 54, Dwg. No. CP-3 CONCRETE REPAIR AND LINING DETAILS**

**Add:** On Details 3, 4, and 5, to callout “Min. 1” Saw Cut,” add to the callout as follows:

“(See Notes 1 and 2)”

**2.09 Sheet 54, Dwg. No. CP-3 CONCRETE REPAIR AND LINING DETAILS**

**Change:** On Detail 6, delete “(E) Deck” and replace with “(N) Deck.”

**2.10 Sheet 54, Dwg. No. CP-3 CONCRETE REPAIR AND LINING DETAILS**

**Change:** On Detail 7, delete “(E) Liner” and replace with “(N) Liner.”

**2.11 Sheet 55, Dwg. No. CP-4 CONCRETE REPAIR AND LINING DETAILS**

**Add:** Add the following Notes 3 and 4 to the sheet:

“Notes:

3. These details are to be implemented in areas that are not immersed and subject to a foul air environment or above the wastewater surface.
4. The saw cut indicated shall be installed after the concrete has cured for 28 days. The PVC liner flap to be embedded shall have its T-shaped extensions removed prior to the placement of the concrete and secured to the concrete form. After the form has been removed, the PVC liner flap shall be peeled away from the concrete surface without damaging the liner. The PVC liner flap shall be inserted into the saw cut and a sealant shall be applied per the detail.”

**2.12 Sheet 55, Dwg. No. CP-4 CONCRETE REPAIR AND LINING DETAILS**

**Change:** On Details 1, 2, 3, 4, and 5, delete all instances of “(E) Concrete” and replace with “(N) Concrete.”

**2.13 Sheet 55, Dwg. No. CP-4 CONCRETE REPAIR AND LINING DETAILS**

**Change:** On Detail 1, delete “(E) Liner” and replace with “(N) Liner.”

**2.14 Sheet 55, Dwg. No. CP-4 CONCRETE REPAIR AND LINING DETAILS**

**Change:** On Detail 1, delete “2” wide PVC tie rod patching strip (See Note 5)” and replace with “2” wide PVC tie rod patching strip (See Note 2).”

**2.15 Sheet 55, Dwg. No. CP-4 CONCRETE REPAIR AND LINING DETAILS**

**Change:** On Details 2, 3, and 5, delete “T-Lock Liner” and replace with “(N) T-Lock Liner.”

**2.16 Sheet 55, Dwg. No. CP-4 CONCRETE REPAIR AND LINING DETAILS**

**Add:** On Details 3, and 5, to callout “Min. 1” Saw Cut,” add to the callout as follows:

“(See Notes 3 and 4)”

**2.17 Sheet 93, Dwg. No. S-15 STANDARD DETAILS**

**Change:** Delete the sheet in its entirety and replace with version as provided in Attachment 5.

**2.18 Sheet 96, Dwg. No. S030-1 VIEWING AREA**

**Change:** Delete the sheet in its entirety and replace with version as provided in Attachment 5.

- 2.19 Sheet 74 Dwg. No. L20-3 WALL ELEVATION**  
**Change:** Delete all references to “Plant Pocket Locations.” Retaining wall finishes shall be as specified on Sheet 47, Dwg No. C110-4 as issued in Attachment No. 7 in Addendum No. 1.
- 2.20 Sheet 145, Dwg. No. M200-1 PRIMARY CLARIFIER NO. 2 TOP PLAN**  
**Change:** At center drive platform, delete “diamond plate” hatching and replace with “plank grating” hatching per Sheet 81, Dwg No. S-3.
- 2.21 Sheet 145, Dwg. No. M200-1 PRIMARY CLARIFIER NO. 2 TOP PLAN**  
**Change:** Delete note pointing to the center drive platform and replace with “Warning this equipment starts automatically' (OSHA safety sign - mount safety sign to center drive platform next to torque switch).”
- 2.22 Sheet 145, Dwg. No. M200-1 PRIMARY CLARIFIER NO. 2 TOP PLAN**  
**Change:** Delete diagonal lines shown between primary support beams. Per call out pointing to access hatch “36”x36” Hinged Hatch (Typ of 9),” the cover shall be provided with nine access hatches.
- 2.23 Sheet 163, Dwg. No. M600-1 UTILITY WATER PUMP STATION PLAN AND SECTION**  
**Change:** In Section A, on the utility water pumps discharge piping, in the notes pointing to the two air release valves, delete references to mechanical standard detail “218” and replace with “172.”
- 2.24 Sheet 167, Dwg. No. E-3 MCC-HW SINGLE-LINE DIAGRAM**  
**Add:** To “Filter 1 Backwash Control Panel” (FIL1-EQP1-LCP-01) add new conduit “P-431E” with 30A, 3P disconnect for 0.75-hp, Filter 1 Motor “FIL1-EQP1-MOT1.”
- 2.25 Sheet 167, Dwg. No. E-3 MCC-HW SINGLE-LINE DIAGRAM**  
**Add:** To “Filter 2 Backwash Control Panel” (FIL2-EQP1-LCP-01) add new conduit “P-431F” with 30A, 3P disconnect for 0.75-hp, Filter 2 Motor “FIL2-EQP1-MOT1.”
- 2.26 Sheet 170, Dwg. No. E-6 CONTROL SCHEMATIC DIAGRAMS SHEET 1 OF 4**  
**Change:** To “Filter 1 Control Panel,” delete “Filter 1 Motorized Inlet Gate” and replace with “Filter 1 Disk Filter Motor.”
- 2.27 Sheet 170, Dwg. No. E-6 CONTROL SCHEMATIC DIAGRAMS SHEET 1 OF 4**  
**Change:** To “Filter 2 Control Panel,” delete equipment number “FIL2-EQP2-LCP-02” and replace with “FIL2-EQP1-LCP-01.”
- 2.28 Sheet 170, Dwg. No. E-6 CONTROL SCHEMATIC DIAGRAMS SHEET 1 OF 4**  
**Change:** To “Filter 2 Control Panel,” delete “Filter 2 Motorized Inlet Gate” and replace with “Filter 2 Disk Filter Motor.”

**2.29 Sheet 183, Dwg. No. E-17 CABLE AND CONDUIT SCHEDULE SHEET 1 OF 3**

**Add:** Add the following rows to the “Conduit Schedule”:

Conduit No.	Conduit Size	Type	From	To	Cables	Notes
P431-E	3/4"	PVC-Coated RGS	Filter Backwash Pump Control Panel 1	Filter 1 Motor	3-#12, #12 GND	
P431-F	3/4"	PVC-Coated RGS	Filter Backwash Pump Control Panel 2	Filter 2 Motor	3-#12, #12 GND	

**2.30 Sheet 190, Dwg. No. E-24 CONSTRUCTION DETAILS SHEET 3 OF 3**

**Change:** In Note 4, delete “See Structural drawings for concrete slab detail and removable guardrail detail” and replace with “See Drawing S-15 for concrete slab detail. See Drawing E-24 for removable guardrail detail.”

**2.31 Sheet 191, Dwg. No. E-25 PARTIAL SITE PLAN, THICKENER, SEC. DIGESTER & GEN. BLDG.**

**Change:** Delete the sheet in its entirety and replace with version as provided in Attachment 5.

**2.32 Sheet 196, Dwg. No. E-30 UTILITY WATER PUMP CONTROL DIAGRAM AND CONTROL PANEL**

**Change:** Delete the sheet in its entirety and replace with version as provided in Attachment 5.

**2.33 Sheet 198, Dwg. No. E-32 UTILITY WATER PUMP DETAIL, RECYCLE PUMP DETAIL AND PLC-6 MODIFICATIONS**

**Change:** Delete the sheet in its entirety and replace with version as provided in Attachment 5.

**2.34 Sheet 224, Dwg. No. I400-2 P&ID TERTIARY FILTER PACKAGES**

**Add:** Add equipment tag number to Disk Filter 1 motor as follows: “FIL1-EQP1-MOT1.”

**2.35 Sheet 224, Dwg. No. I400-2 P&ID TERTIARY FILTER PACKAGES**

**Add:** Add equipment tag number to Disk Filter 2 motor as follows: “FIL2-EQP1-MOT1.”

## **QUESTIONS**

### **2.01 Reference: Specification “Bidder’s Check List”**

**Question:** The Bidder’s Check List mentions “Acknowledgement of each addendum issued by the District, if any, with complete, signed and dated copies of each addendum attached?” Please clarify if we must include a hardcopy as mentioned above in our bid package and/or if acknowledging the addenda on the bid form is sufficient?

**Response:** Contractors must sign and date the cover page (page 1), only, for each addendum issued. It is not necessary to include all pages of each addendum as long as the cover page is acknowledged.

### **2.02 Reference: Specification “Bid”**

**Question:** Please verify the correct value to be used for the cost of the Eutek HeadCell Grit Removal Unit. The Bid form shows \$126,000, but the Hydro International quote shows a value of \$162,000. Please confirm that the pricing includes all sales taxes.

**Response:** See Specification change 2.07 above for correction to equipment price. Per Addendum No. 1, Attachment No. 5 – Eutek HeadCell Grit Removal Unit scope of Supply, Standard Terms & Conditions of Sale, Paragraph 16. “Taxes”, the price of the Eutek HeadCell Grit Removal Unit listed is for the equipment only and does not include sales tax.

### **2.03 Reference: Specification 01014**

**Question:** Specifications 01014, Paragraph 2.07.A. states that Contractor shall salvage, sort, and deliver (at no cost) “Chert” or other valuable earth materials to NPS. Please provide a delivery location to the NPS for any Chert or other valuable materials deliveries requested be salvaged by the Contractor.

**Response:** The NPS accepts reusable materials on an as-needed basis. Consequently, the quantity and delivery locations are unknown. However, deliveries would be within 3 miles of the project site.

### **2.04 Reference: Specification 01014, Specification 01025**

**Question:** Specification 01014, Paragraph 2.07.A. states that Contractor shall salvage, sort, and deliver (at no cost) “Chert” or other valuable earth materials to NPS. Specification 01025, Bid Item 6, appears to quantify such materials and provides for a payment mechanism for this work. Are we correct in that assumption?

**Response:** Yes. The referenced Bid Item 6 (Off-Haul of Material for Reuse within the GGNRA), is now Bid Item 5 per Addendum No. 1. Quantities are to be adjusted as necessary based on the bid volume of 804 CY.

**2.05 Reference:** Specification 01025, Specification 09960

**Question:** As provided in Addendum No. 1, in Specification 01025, Paragraph 3.01.A.21., under Optional Bid Item 20, "Concrete coating shall be performed in accordance with Section 009960, Paragraph 2.2.V." Per section 09960, Paragraph 2.2.V. the finish coat shall be "1 coat at 60 mils DFT." If the FFRs interior concrete is in poor condition, this may not be sufficient.

**Response:** See Specification changes 2.19, 2.20, 2.21, and 2.22. above.

**2.06 Reference:** Specification 01025, Specification 09960

**Question:** As provided in Addendum No. 1, in Specification 01025, Paragraph 3.01.A.19., Optional Bid Item 18, calls for the two FFRs to be coated. There is no coating system indicated on the finish schedule for the FFR, on any drawings, or in Specification 09960. Please advise to what coating system is to be used.

**Response:** See Specification change 2.24 above.

**2.07 Reference:** Specification 01040

**Question:** Specifications 01040, Paragraph 1.08.B. states that the existing 12kV Service Line is to be de-energized during soil nail installation work and that the Contractor is to provide temporary power (at Contractor's expense) while the PG&E line is out-of-service. Can the Contractor use the District's existing stand-by generator for plant power during this work? If so, who pays for the District's generator fuel, oil and maintenance during this period?

**Response:** No, the District's emergency backup generator is not permitted for use during construction. It is permitted for very limited testing and emergency use only. In addition, power redundancy must be maintained at all times.

**2.08 Reference:** Specification 01040

**Question:** Specification 01040, Paragraph 1.04.C.1 indicates tree removal. It was discussed and observed at the Mandatory Pre-Bid Meeting that the District has contracted with an outside firm and has removed the existing trees that were interfering with the new construction, however, the stumps and roots currently remain. Under which bid item is the removal and disposal of the remaining roots and stumps to be included in as part of the Contractor's bid?



**Response:** Tree removal has been removed from the Contract Documents and has been completed in advance of the Project bid. See Specification Changes 2.15, 2.16, and 2.18 above.

Disposal of remaining stumps and roots from tree removal shall be paid for under Bid Item 4 - Off-Haul of Unsuitable Material.

**2.09 Reference:** Specification 01040

**Question:** Specification 01040, Paragraph 1.04.C.3 states that the Contractor is to pot-hole existing utilities/structures at the location of the new soil nail walls and to relocate utilities if necessary. Is this work to be paid for as part of Bid Item 12 – Allowance for demolition of unknown pipelines, 6-inch nominal diameter and smaller?

**Response:** No, these are two separate tasks. Bid Item 12 (now Bid Item 13 per Addendum No. 1) is intended for unknown pipes which have been abandoned in place. This could be within or outside of work zones but shall not include abandoned pipe in soils marked for off-haul. Potholing is intended to identify existing utilities which have not been abandoned so that they can be protected and relocated as necessary. Potholing shall be paid for as part of Bid Item 16 - All Other Work.

**2.10 Reference:** Specification 01040

**Question:** Specification 01040, Paragraph 1.04.C.4. states that the Contractor shall provide temporary sewer bypass of flows with the work associated with the Fort Baker and Main Street Sewers. Can the District please provide the flow rate information for these respective sewer pipelines?

**Response:** See Sheet 38, Dwg. No. C20, Notes 6 and 7.

**2.11 Reference:** Specification 01040

**Question:** Specification 01040, Paragraph 3.01 states that the Contractor shall obtain all required permits necessary for the completion of the work. Can the District please provide a listing of known permits that may be required of the Contractor for the construction of this project?

**Response:** The District has secured a variety of permits, including a BCDC permit. All permit fees have been paid by the District. The only outstanding permit requirement is to finalize a conditional permit from the National Park Service (NPS). For this permit, all fees have been paid and the project is approved pending Traffic Control and SWPPP for which the Contractor is responsible. For traffic control we only need to address any truck and/or equipment staging, and ensure that public access is maintained along East Road. This will primarily be done during construction on an as needed basis. A SWPPP plan will be required prior to mobilization.

**2.12 Reference:** Specification 01353

**Question:** Specification 01353, Paragraph 1.4.A.1.a. requires the Contractor to submit to the National Park Service (NPS) for their approval a Hazardous Materials and Waste Work Plan a minimum of fifteen working days before the expected beginning of site activities. What is the anticipated NPS submittal approval turn-around time for this approval?

**Response:** Approval time will depend on the number of required submittal iterations. However, NPS review time is anticipated to coincide with the 15 working day review time requirement.

**2.13 Reference:** Specification 01353

**Question:** Specification 01353, Paragraph 1.4.A.1.a. requires the Contractor to submit to the National Park Service (NPS) for their approval a Hazardous Materials and Waste Work Plan a minimum of fifteen working days before the expected beginning of site activities. How is the Contractor reimbursed by the District for any (currently unknown) “additional” requirements to the Contractor’s initial work plan?

**Response:** See Specification "General Conditions," Paragraph 4. Where quantities cannot be adjusted based on the bid schedule, cost and schedule impacts shall be negotiated with the Owner. Alternatively, work may proceed on a time and materials basis if agreed upon by the Contractor and Owner. Daily work reports shall be provided for all work performed on a time and materials basis.

**2.14 Reference:** Specification 01353

**Question:** Specification 01353, Paragraph 3.1.B alerts the Contractor to the possibility of potentially contaminated soil areas on the project site and requires PID Screenings of the excavated soils at a minimum of 10’ intervals in these areas. Can the District please identify or otherwise quantify areas of known or suspected contamination so that the Contractors can estimate the number of screenings and lab tests required?

**Response:** The District has no knowledge of existing soil contamination. However, there is a potential for contamination in the area around the existing diesel storage tank. The District maintains double containment for the storage tank with leak detectors and performs regular inspections.

**2.15 Reference:** Specification 01353

**Question:** Specification 01353, Paragraph 3.1.B alerts the Contractor to the possibility of potentially contaminated soil areas on the project site and requires PID Screenings of the excavated soils at a minimum of 10’ intervals in these areas. How will the Contractor be

compensated due to delays encountered in handling unknown contaminated soils? Specification 01353, Part 4, is conflicting and confusing as to how/what the Contractor will be reimbursed for this currently undefined scope-of-potential extra work?

**Response:** In the event contaminated soils are discovered, the Contractor shall appropriately contain all potentially contaminated soil on site. The Contractor will be granted up to 25 calendar days of work stoppage within the area of contamination to support further testing and to coordinate disposal. In the event the Contractor is required to remove additional material to capture contaminated soil, backfill over-excavated soil and/or off-haul and dispose of contaminated soil, the Contractor shall provide a Change Order request to the District for reimbursement.

**2.16 Reference:** Specification 01500, Drawing G-8

**Question:** The District has identified four (4) off-site Staging Area Locations for the Contractor's use. Is there any "third-party" coordination or rental/lease/use cost(s) associated with any of these depicted locations? Additionally, are there any time limit constraints associated with any of the listed sites use?

**Response:** The staging locations shown must be approved in advance and on an as-needed basis. There are additional staging areas within Fort Baker (near the project site) which may be approved through coordination with the National Park Service (NPS). There will be no fees for these staging locations but the NPS will require traffic control and SWPPP plans prior to granting approval. There are no specific time constraints in the park for staging, however, staging within Fort Baker is anticipated to be short term (less than one month) and must be maintained and kept clean/safe. In addition, public access along East Road for foot, bike and vehicle traffic must be maintained at all times. For staging in the City of Sausalito, there is a large dirt lot with a chain link fence approximately 2 miles from the project site. This location will require approval from the City of Sausalito but is generally available and free of charge. Staging at the Army Corps is for temporary laydown only. This location may or may not be available but is generally free of charge.

**2.17 Reference:** Specification 02200

**Question:** Specification 02200, Paragraphs 3.6.A, 3.6.B., and 3.6.C. contain conflicting information as to the acceptability of Blasting for the excavation of Rock. Is Controlled Blasting allowed on this project for the removal of rock materials that cannot otherwise be excavated using conventional hydraulic excavation equipment? If not, is the use of a hydraulic breaker (or similar) attachment to a hydraulic excavator to remove Rock materials considered as Rock Excavation?

**Response:** It is intended that no blasting take place unless there are no other means of removal. All other available means shall be attempted prior to the District allowing blasting. All excavation should initially be performed with a large excavator with rock

teeth. Any material that cannot be excavated with equipment per definition of “hard bedrock”, would be considered “hard rock excavation” per bid rates and would require a hydraulic breaker or other means of hard rock excavation.

**2.18 Reference:** Specification 02571, Specification 09960

**Question:** Please clarify the lining requirement for exposed steel pipe. Specification 02571, Paragraph 2.5 calls for cement mortar lining while Specification 09960, Paragraph 3.13 calls for FBE or E1.

**Response:** See Specification change 2.23 above.

**2.19 Reference:** Specification 03200

**Question:** Specification Section 03200 – Concrete Reinforcement appears to be missing from the Contract Documents. There is, however, a Specification Section 05520 – Metal Stairs in with Division 03. Specifications Section 05520 – Metal Stairs appears in both Division 03 – Concrete as well as Division 05 – Metals. Please provide Specifications Section 03200 – Concrete Reinforcement.

**Response:** See Addendum No. 1, Attachment No. 4.

**2.20 Reference:** Specification 09960

**Question:** Is there a coating requirement for PVC pipe? If so, what system?

**Response:** See Section 09960, Paragraph 3.13 – Coating Schedule, “Influent Sewer and other PVC or HDPE pipe.”

**2.21 Reference:** Specification 09960

**Question:** Is there a coating requirement for FRP pipe? If so, what system?

**Response:** See Specification change 2.24 above.

**2.22 Reference:** Specification 14700

**Question:** Specification 14700, Paragraph 2.8.B. states: “The following spare parts shall be provided the shaftless screw conveyor.” This appears to be a typographical error as this specifications section is for the Turntable.

**Response:** See Specification change 2.49 above.

**2.23 Reference:** Specification 15005

**Question:** Is there a requirement for piping to be coated for identification purposes?

**Response:** See Section 15005, Paragraph 3.2.A.

**2.24 Reference:** Specification 16000, Specification 16262, and Specification 16920

**Question:** Please provide the complete part number and description of existing VFDs to match existing. Please advise on the type of conduit to use within the electrical room.

**Response:** See Specification changes 2.49, 2.50, 2.51, 2.52, and 2.53 above.

**2.25 Reference:** Drawing G-1

**Question:** Can the District please provide these drawings as soon as possible?

**Response:** Plans are available on the District's website for free download. See [www.SMCSD.net](http://www.SMCSD.net) and click the link in the center of the page titled, "Treatment and Wet Weather Flow Upgrade Project Bid Documents."

**2.26 Reference:** Drawing G-6

**Question:** For the purpose of determining the outlet reinforcement, please advise on the working and design pressures for the 16" FLE, 16" SE and 10" EQS lines.

**Response:** On Sheet 7, Dwg. No. G-6 as provided in Addendum No. 1, see "Process Fluid Pipe Schedule."

**2.27 Reference:** Drawing G-6

**Question:** Please confirm that the EBI/EBR service shown in the Pipe Schedule on Dwg. No. G-6 is the same as the EQI/EQR service pipe called out on Dwg No. M100-4 and other drawings.

**Response:** See Sheet 7, Dwg. No. G-6 as provided in Addendum No. 1. See also Drawing change 2.01 above. EQI is an incorrect acronym.

**2.28 Reference:** Drawing G-6

**Question:** Will FRP pipe and fittings be acceptable as the containment pipe for the FOS and FOR lines? The Process Fluid Pipe Schedule on Drawing G-6 indicates that the FOS and FOR lines are to be steel, but does not address the containment pipe material. Detail 1 on Reference Drawing M-35 shows a 6" FRP containment pipe for the existing system.

**Response:** See Sheet 125, Dwg. No. M100-2. Per callout, 3/4" FOS and 1" FOR shall be contained in 6" PVC containment pipe.

**2.29 Reference:** Drawings G-6 and M100-3

**Question:** Drawing M100-6 depicts 10-inch diameter “EQR” and 14-inch “EQS” piping systems. These piping systems are not listed as part of the "Process Fluid Pipe Schedule" shown on Drawing G-6. Please advise and provide additional information on these piping systems.

**Response:** See response to Question 2.27 above.

**2.30 Reference:** Drawings G-6, M100-11, M100-13, and M100-14

**Question:** The "Process Fluid Pipe Schedule" on G-6 lists “DG” for digester gas piping, however, the piping materials are list as “N/A.” Digester gas piping is also shown on M100-11, Detail F, M100-13, Detail H, and M100-14, Detail I. Will this project require Digester Gas Piping Systems? If so, please provide pipe sizes, points-of-connection, valves, equipment and materials of construction.

**Response:** See Sheet 7, Dwg. No. G-6 as provided in Addendum No. 1.

**2.31 Reference:** Drawings D-2 and S030-1

**Question:** The original as-builts show a 3’-6” x 3’-2” beam in the North/South direction on 30” caissons. The new plan says to match existing. The demo plans do not refer to any beams or caissons in the viewing area, just to demolish concrete platform and road per boundaries on C100-2, but the caissons and beam appear to be under the viewing area and conflicting with the new CIDH piers and beams. Are the caissons and beams shown on sheet S030-1 south of the demo boundary new construction? If so, please consider moving the demo boundary to the south of the items to allow for construction. Are the caissons and beams existing as shown on S030-1? If so, does a portion of Beams 1 need to be demolished? What does (E) B4 represent? Is (E) B4 new construction or just an example of the size of the existing beams? What does the phantom line in Section C on S030-1 represent? Is this a new thickened slab edge or existing? Please provide more detailed information for the work in this area.

**Response:** See Drawing changes 2.02 and 2.18 above.

The new viewing area encroaches into the existing causeway necessitating the need to demolish the existing 3’-6” x 3’-2” beam and associated (2) 30” caissons. Existing beam, Mark B1, will be shortened (partial demolition) and its steel incorporated into the new construction.

Items identified as “Match (E) B4,” “Beam 3’-6”x3’-2”,” and “30”Ø Caisson (Typ of 2)” are new and are to be constructed similar to their original 1981 design. Items identified as

“(E)B1” are existing (screened back) and will require partial demolition (shortened) to accommodate the new viewing area/causeway.

The “Match (E) B4” beam section is represented in Section D on S030-1. Additional information on the beams called out to match existing can be found in the Beam Schedule on Sheet S-24 from the 1981 Record Drawings.

Assuming “phantom lines” are referring to the screened lines, they represent items identified as “Match (E) B4” within the plan and will be new construction. Note, they are incorrectly identified as existing (screened back) and by callout, e.g., “(E) Slab.” See Drawing change 2.18 above.

**2.32 Reference:** Drawing C100-2 and Geotechnical Report (Miller Pacific Engineering Group, July 15, 2013)

**Question:** There is little information provided as to the location of concrete construction joints on either Drawing C100-2 or the Geotechnical Report prepared by the Miller Pacific Engineer group, for the new Plant Access Road. Is there a specific requirement for the location (max spacing) of concrete construction joints (not otherwise depicted) for this project?

**Response:** On Sheet 41. Dwg. No. C100-2, "AC Paving" is called out for the new Plant Access Road adjacent to the new Headworks/EQ structure. Concrete construction joints not applicable to this portion of the Plant Access Road.

For spacing of concrete construction joints pertaining to concrete paving, see revised Note 5 per Drawing change 2.05 above.

**2.33 Reference:** Drawing C-9

**Question:** Drawing C-9, Note 4 states that there is an existing wye with a Ductile Iron plug located on the beach. Please provide the distance between this wye and the connection between the existing Force Main and the new 18-inch INF and 20-inch PI lines.

**Response:** There is a tapping sleeve with a 12” blinded gate valve mounted on the beach force main and adjacent to the wyes. The distance from this 12-inch valve to the existing 20-inch GM line is approximately 80 feet. The final locations of the 20-inch PI and 18-inch INF will be slightly closer than the existing 20-inch GM line as shown in Drawing C-9.

**2.34 Reference:** Drawings C-9 and C200-2

**Question:** Section A on Drawing C-9 is not to scale but appears to show that a 3-foot wide and 3-foot deep section of grouted rip rap that must be removed in addition to the

existing CLSM. Section A on Drawing C-9 suggests that there is approximately 42.5 inches of cover over the 20" Force Main at the location of the connection. Drawing C200-2 indicates that the invert of the existing 20-inch diameter Beach Force Main is at EL -1.93. This location is underneath the Causeway. Please confirm that the depth of cover over the 20-inch Force Main is about 42.5 inches.

**Response:** The depth of cover is between 40 - 50 inches.

**2.35 Reference:** Drawings C-9 and C200-2

**Question:** On C-9 and C200-2, the existing Beach Force Main is shown under the existing causeway. Please provide information as to whether and to what degree this location is affected by tidal action.

**Response:** This location is directly affected by tidal action. The location is under water during high tide and exposed during low tide. It will be necessary to perform excavation and tie-in during low tide. Further, a zero (0) to minus tide may be required to minimize ground water and to help prevent large waves from entering the excavation. The Sausalito ferry periodically produce significant waves.

**2.36 Reference:** Drawings C-9 and C200-2

**Question:** On C-9 and C200-2, the existing Beach Force Main is shown under the existing causeway. Will it be necessary to install a cofferdam in order to perform work in this area?

**Response:** If work can be coordinated with low tides, a cofferdam may not be required. However, the use of a coffer dam is acceptable but at no additional cost to the Owner. Note that the beach in this location is primarily rock.

**2.37 Reference:** Drawings C-9 and C200-2

**Question:** On C-9 and C200-2, the existing Beach Force Main is shown under the existing causeway. Will the Contractor be allowed to remove a portion of the causeway for access in order to connect the new 18-inch INF and 20-inch PI lines to the existing 20-inch Beach Force Main?

**Response:** The Causeway may be temporarily modified to facilitate work. However, a submittal of all demo and reconstruction plans would be required prior to initiating any work on the Causeway. Structural design requirements would need to be maintained.

**2.38 Reference:** Drawings C-9 and C200-2

**Question:** On C-9 and C200-2, the existing Beach Force Main is shown under the existing causeway. If the work area is affected by tidal action, will the Contractor be



allowed to discharge water pumped from the excavation into the existing Primary Clarifier?

**Response:** Where no sewer contamination is present, ground water may be pumped directly into the bay using a filter sock. If any sewer has been exposed to the excavation, ground water may be pumped from the excavation back into the treatment plant's recycle pump station (located on the South side of the existing clarifier) under the following conditions: 1) a baffled tank shall be used to separate sand and rock, 2) a filter sock will be required on the baffled tank discharge hose to limit silt, and 3) the flowrate shall be limited to 50 GPM max.

**2.39 Reference:** Drawings C-9 and C200-2

**Question:** On C-9 and C200-2, the existing Beach Force Main is shown under the existing causeway. If the Contractor is not allowed to discharge water from the excavation into the existing Primary Clarifier, will a special permit be required in order to return the water to the Bay?

**Response:** No, as long as existing permit requirements are maintained, including the required SWPPP for the National Park Service. In general, storm water silt is not to be delivered to the Bay.

**2.40 Reference:** Drawings C-9 and C200-2

**Question:** Drawing C-9, Note 4 states that a filter sock will be required when returning sewage to the Primary Clarifier in order to dewater the Force Main. The Contract Drawings do not show a hot-tap, line stop and bypass for the 20-inch Beach Force Main similar to the one required for the 28-inch Influent Sewer and shown on Drawing C200-4. If it is necessary to bypass the flow of the 20-inch Beach Force Main around the connection point, will this bypass require a filter sock or some other type of filtration?

**Response:** A bypass is not required on the Beach Force Main. This line has been abandoned as a primary plant influent line and now serves to deliver flow from 19 homes to the District's Main Street pump station. To clarify, this line flows from a point approximately 1,000 feet to the North to Main Street, Sausalito, located about 2,000 feet to the North. There is no flow at the plant location, only standing sewer. After dewatering this end of the line (which is possible due to sags in the line just upstream) it may be isolated using a line stop mounted on the 12-inch gate valve or by using a plug in the upstream wye to facilitate tie-in of the new lines.

**2.41 Reference:** Drawings C-9 and C200-2

**Question:** If a temporary bypass is required for the 20-inch Beach Force Main, will the Contractor be allowed to connect the bypass directly to the existing 20-inch PI line that runs from the existing Energy Dissipation Structure to the 20-inch Beach Force Main?

**Response:** See response to Question 2.40 above.

**2.42 Reference:** Drawings C-9 and C200-2

**Question:** Although a hot tap, line stop and bypass is shown on Sheet C-200-4 for the 28-inch Main Street Gravity Main, no such hot tap, line stop and bypass is shown for the 20" Beach Force Main. Will the Contractor be allowed to take the Beach Force Main out of service for the length of time required to complete the connection between the 20-inch Beach Force Main and the new 18-inch INF and 20-inch PI without having to install a temporary bypass?

**Response:** See response to Question 2.40 above.

**2.43 Reference:** Drawing C100-1

**Question:** Note 4 on Drawing C-100-1 indicates that the existing manhole be rehabilitated, yet no coating system is shown or mentioned in Section 09960. Please provide coating system.

**Response:** See Specification change 2.24 and Drawing change 2.04 above.

**2.44 Reference:** Drawings C100-2, C200-1, A100-1 through 5, and S100-1 through 10

**Question:** Please provide termination points for the Caltrans ST-40 Bridge Rail above the Lower Soil Nail Wall shown on C200-1. Will end blocks be required for any of the bridge rail (per Caltrans details)? Elevations on sheets A100-3 and A100-4 suggest so, although all other drawings show none are required. Please provide location and dimensions if end blocks are required.

**Response:** See Drawing changes 2.03 and 2.05 above.

**2.45 Reference:** Drawings CP-3 and CP-4

**Question:** Details 1 - 6 on CP-3 and Details 3 and 5 on CP-4 appear to depict the installation of new T-Lock liner, including the PVC T-Lock Ribs, to be applied to existing concrete structures. T-Lock Liner with T-Lock Ribs is typically only applied on new concrete surfaces as the ribs anchor the PVC Liner to the new concrete. Please clarify your intent with these drawings and details.

**Response:** See Drawing changes 2.06, 2.07, 2.08, 2.09, 2.10, 2.11, 2.12, 2.13, 2.14, 2.15, and 2.16 above.

**2.46 Reference:** Drawings A100-1 A100-3, and E100-7

**Question:** Drawings A100-1, A100-3 and E100-7 show an Exhaust Fan, but neither a fan schedule or specification was provided for this equipment. Please provide the requirements for the Exhaust Fan.

**Response:** See Specification change 2.01 above.

**2.47 Reference:** Drawing L20-3

**Question:** Please provide a detail and locations for the “Plant Pocket Locations on Shotcrete” referred to on Sheet L20-3.

**Response:** See Drawing change 2.19 above.

**2.48 Reference:** Drawing S200-1

**Question:** There is a callout that the geofoam backfill is to be installed for the full height of the new soil nail wall yet the finished grades of the new compacted earthen fill materials do not extend to the full height of the new soil nail walls. Is it the intent of the District for the Contractor to install the Geofoam backfill materials to only the elevation of finished grade(s) around the new Clarifier and EQ Basin?

**Response:** The purpose of the geofoam is to prevent any long-term movement of the soil nail wall from inducing a load on the adjacent structures. The theory being that the geofoam compresses, “absorbing” this load. The expectation is that wherever the soil nail wall comes into contact with an adjacent structure, either directly or indirectly via backfill, that geofoam be installed. Geofoam is not required at locations where a natural gap occurs between the soil nail wall and adjacent structure, such as locations where top of backfill is below adjacent structures.

**2.49 Reference:** Geotechnical Report (Miller Pacific Engineering Group, July 15, 2013)

**Question:** In the Geotechnical Report (Miller Pacific Engineering Group, July 15, 2013), in Section V. Conclusions and Recommendations, Item B.2 recommends that the bid schedule contain a line item for Rock Excavation. We are assuming that Bid Item 4 – Haul-off Unsuitable Materials handles the off-haul and disposal of “rock” material, however, how is the excavation of rock material to be paid for? Please clarify where the payment for rock excavation and haul-off are to be paid for.

**Response:** Off haul and disposal of rock material is included in Bid Item 4 (as renumbered per Addendum No. 1) and will be compensated for as such. Bid Item 4 also includes all remaining stumps from tree removal which was already performed (see also Specification change 2.16 above).

Excavation of hard rock is included in Bid Item 14 (as renumbered per Addendum No. 1) and will be compensated for as such.

## **ATTACHMENTS:**

- 1. Attachment No. 1: Section 01612 Seismic Design Criteria**
- 2. Attachment No. 2: Section 01614 Wind Design Criteria**
- 3. Attachment No. 3: Section 15955 Exhaust Fans**
- 4. Attachment No. 4: Revised Specification 11403 Fixed Film Reactor (FFR) Media**
- 5. Attachment No. 5**
  - Revised Sheet 41, Dwg. No. C100-2 SITE GRADING AND PAVING PLAN – 1**
  - Revised Sheet 93, Dwg. No. S-15 STANDARD DETAILS**
  - Revised Sheet 96, Dwg. No. S030-1 VIEWING AREA**
  - Revised Sheet 191, Dwg. No. E-25 PARTIAL SITE PLAN, THICKENER, SEC. DIGESTER & GEN. BLDG.**
  - Revised Sheet 196, Dwg. No. E-30 UTILITY WATER PUMP CONTROL DIAGRAM AND CONTROL PANEL**
  - Revised Sheet 198, Dwg. No. E-32 UTILITY WATER PUMP DETAIL, RECYCLE PUMP DETAIL AND PLC-6 MODIFICATIONS**

**This Addendum No. 2 shall become part of the Contract and all provisions of the Contract shall apply thereto.**

## **ATTACHMENT NO. 1**

### **SECTION 01612 – SEISMIC DESIGN CRITERIA**

#### **PART 1 GENERAL**

##### **1.1 THE REQUIREMENT**

- A. All products to be furnished under this contract shall be designed, constructed, and installed in conformance with the seismic requirements contained within the 2016 California Building Code (CBC), Seismic Soil Profile Type "B", and the following seismic design parameters:
  - 1. Design Spectral Response Acceleration for Short Period ( $S_{DS}$ ) = 1.500g
  - 2. Design Spectral Response Acceleration for 1-second Period ( $S_{D1}$ ) = 0.639g
  - 3. Risk Category III
  - 4. Seismic Design Category D
  - 5.  $I_E = 1.25$  for entire structure
  - 6.  $I_P = 1.5$  for elements of structures and equipment

##### **1.2 REFERENCE SPECIFICATIONS, CODES AND STANDARDS**

- A. California Building Standards Commission (CBSC)
  - 1. California Building Code
- B. American Society of Civil Engineers (ASCE)
  - 1. ASCE/SEI 7 – Minimum Design Loads for Buildings and Other Structures
- C. American Concrete Institute (ACI)
  - 1. ACI 318 – Building Code Requirements for Structural Concrete
- D. International Code Council Evaluation Services (ICC-ES)
  - 1. Manufacturer Evaluation Reports, as appropriate.
- E. International Association of Plumbing and Mechanical Officials Uniform Evaluation Services (IAPMO-UES)
  - 1. Manufacturer Evaluation Reports, as appropriate.
- F. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
  - 1. Seismic Restraint Manual – Guidelines for Mechanical Systems

- G. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

### 1.3 SUBMITTALS

- A. General – CONTRACTOR shall submit administrative, shop drawings, calculations, samples, quality control and contract closeout submittals of items covered under this Section and referenced Sections.
- B. Design Data:
  - 1. Equipment Qualification – CONTRACTOR shall submit for review and approval (if required). Structural seismic qualification of the equipment to demonstrate that it is capable of withstanding forces as specified.
  - 2. Anchorage System – CONTRACTOR shall submit for review and approval. Structural calculations, of the proposed anchorage system, certified by a Professional Civil or Structural Engineer licensed within the State of California.

### 1.4 FIXTURE AND EQUIPMENT ANCHORAGE

- A. Anchorage and other supports for all important equipment shall be designed to resist seismic forces occurring at each of the three principal directions separately as well as simultaneously. When combining seismic forces in the orthogonal directions simultaneously, the combination of 100-percent  $F_{h1}$ , plus 30-percent  $F_{h2}$  shall be used. Where inclusion of vertical loads results in a less conservative design, vertical effects shall be neglected. Alternatively, the orthogonal effects may be combined on a square-root-of-the-sum-of-the-squares (SRSS) basis, using 100-percent of the forces.
- B. Structural design of equipment anchorage will be submitted for pre-qualified structurally rugged equipment. Calculations shall be sealed by a Civil or Structural Engineer licensed within the State of California.
- C. Architectural elements (racks, shelving, cladding, windows, doors, non-engineered partition walls, parapets, ornamentation, gutters and downspouts, etc.) mechanical and electrical components, equipment housings and their attachments, supporting structures, and anchorage:
  - 1. Shall be designed and constructed to resist the seismic forces in accordance with Chapter 16 of the CBC. This force shall be considered acting at the center of gravity of the piece under consideration. No equipment shall be anchored to vertical structural elements without written approval of the ENGINEER.
  - 2. Component Amplification Factor ( $a_p$ ) equal to 2.5 for nonbuilding structures with flexible dynamic characteristics or  $a_p = 1.0$  for nonbuilding structures with rigid dynamic characteristics.

3. Vibration isolated equipment shall be provided with snubbers capable of retaining the equipment in its designated location without any material failure or deformation of the snubbers when exposed to a vertical or horizontal force at the contact surface equal to 100 percent of the operating weight of the equipment. Air gaps between retainer and equipment shall not exceed ¼-inch.
  4. Piping with flexible connection and/or expansion joints shall be anchored such that the intended uses of these joints are maintained in the piping system.
  5. Calculations and shop drawings shall be submitted for all anchorage details. All calculations shall be made and signed by a Professional Civil or Structural Engineer licensed in the State of California. Inasmuch as all anchorage of equipment is to be made of poured-in-place concrete elements, it is imperative that types of anchorage be coordinated with the concrete contractor so that anchorage may be installed at time of concrete placement. If calculations and anchorage details are not submitted prior to placing concrete, the CONTRACTOR will become responsible for any strengthening of concrete elements because of superimposed seismic loading.
- D. Cast-in anchor bolts are preferred for support of critical equipment and framing. Post-installed concrete anchors will not be used, without approval from the ENGINEER, for critical fastening such as extreme vibratory conditions, impact loads, seismic connections, and overhead installations.
- E. Expansion and adhesive post-installed concrete anchors will have an associated research report issued by The International Code Council Evaluation Service, Inc. (ICC-ES) and/or International Association of Plumbing and Mechanical Officials Uniform Evaluation Services (IAPMO-UES). Design values and installation requirements for anchors will be as presented in the appropriate ICC-ES and/or IAPMO-UES reports. Edge distance, bolt spacing, inspection requirements and operating temperatures will be considered when determining the appropriate allowable design values.
- 1.5 VIBRATION ISOLATION
- A. In general, equipment should be rigidly mounted to supporting foundations and structures, without the aid of vibration isolation devices. Exceptions are mechanical equipment in which vibrations transmitted from the equipment would be troubling to building occupants and/or other equipment within the building.
- B. If vibration isolation mountings are required for equipment. The mountings, and their attachments to the supporting structure, shall be designed as flexible mountings in accordance with governing Code. The supplier of the vibration isolation mounting hardware shall be required to submit certified calculations, sealed by a Civil or Structural Engineer licensed within the State of California. Indicating the adequacy of the hardware and attachment anchorage to meet these criteria.

## 1.6 ABOVE GROUND PIPING

- A. Steel piping shall as a minimum, be provided with braces that satisfy the latest edition of SMACNA requirements for Seismic Hazard Level A unless demonstrated to the satisfaction of the OWNER that it is capable of resisting the required seismic forces under other support conditions. Connection Level I shall be used for all piping.
- B. Plastic piping shall be braced laterally at intervals not exceeding twice that recommended by the manufacturer for vertical support.
- C. Piping crossing expansion joints between adjacent structures shall be provided with expansion fittings, multiple bends, or other suitable provisions to ensure capacity to sustain expected differential movement between structures.

## PART 2 PRODUCTS

NOT USED

## PART 3 EXECUTION

### 3.1 GENERAL

- A. All equipment designed to be fixed in position shall be securely fastened in place in conformance with the CBC, ASCE 7, or as specified herein the Technical Specifications for a specific piece of equipment under Division 2 through 16. For other equipment, the equipment manufacturer shall provide recommended anchorage information to the CONTRACTOR for use in the installation of the equipment.
- B. See also Section 01614 for Wind Design Requirements.

### 3.2 STRUCTURAL INTEGRITY AND ANCHORAGE

- A. It shall be the responsibility of the equipment manufacturer/supplier to provide the engineering anchorage calculations and figures to the CONTRACTOR for submission to the ENGINEER. As a minimum, the equipment manufacturer/supplier shall determine the number, dimensions, material, location, embedment and installation conditions of all anchor bolts to be set in concrete in accordance with Contract Specifications and Drawings. At the option of the CONTRACTOR, the CONTRACTOR or equipment manufacturer/supplier shall furnish the anchor bolts and associated hardware as specified herein and as determined by the manufacturer/supplier's engineering anchorage calculations for installation by the CONTRACTOR.
- B. Engineering anchorage calculations and figures shall be prepared, stamped and signed by a Professional Civil or Structural Engineer licensed in the State of California. Calculations shall include the following steps as a minimum:
  - 1. Determination of the operating equipment weight and centroid of the equipment.
  - 2. Determination of the shear and overturning forces at each anchorage due to the force determined, as specified below, being applied at the equipment's centroid.



3. Determination of the shear and tension forces that must be developed by the anchorage at each support to resist the forces calculated.
  4. Selection of the anchorage details based upon the maximum shear and tension forces calculated above. As a minimum, details shall include number of bolts, materials, diameter, total length, embedded length, required edge distance and bolt dimensions. The embedded length of bolts shall be suitable to develop the ultimate tensile capacity of the anchorage for ductile failure.
- C. For all equipment weighing 400 pounds or more, the minimum anchor bolt size shall be 5/8-inch diameter, with 5-inch minimum embedment. The minimum anchor bolt size for all other equipment shall be 3/8-inch diameter, with 4-inch minimum embedment. All anchor bolts securing equipment to be grouted shall be furnished with leveling nuts, the faces of which shall be tightened against the flat surfaces to not less than 10 percent of the bolts safe tensile stress.
  - D. Cast-in-place anchor bolts shall be set before concrete has been placed and shall be carefully held in position with suitable templates of an acceptable design.
  - E. No equipment shall be anchored to vertical structural elements without the written approval of the ENGINEER, with the exception of pipe hangers/supports or anchorage as specified.

### 3.3 SEISMIC REQUIREMENTS

- A. The seismic qualification for the above equipment shall be demonstrated by structural calculation(s) or engineering shake table test(s).

### 3.4 PROOF OF COMPLIANCE

- A. Equipment with complex component structural systems, (i.e. systems involving components with multiple degrees of freedom and higher order modes of vibration), contains low weight components (e.g. circuit boards, relays, or solenoids), an additional empirical evaluation for such low weight components shall be certified in writing by a Professional Civil or Structural Engineer, licensed in the State of California, to satisfy the requirements set forth above. At a minimum, such certification shall be based on an empirical evaluation of direct observation of such equipment as part of the factory or shop witness testing including physical "hand" shake and pull tests, and general calculations (if required to verify capacity overload) necessary to satisfy the ENGINEER of compliance with the above requirements. Certification shall be in the form of a letter from the licensed engineer incorporating the nature of the observations and/or calculations performed including the licensed engineer's seal and signature

END OF SECTION

**ATTACHMENT NO. 2**  
**SECTION 01614 – WIND DESIGN CRITERIA**

**PART 1        GENERAL**

**1.1        THE REQUIREMENT**

- A. All products to be furnished under this contract shall be designed, constructed, and installed in conformance with the wind design requirements contained within the 2016 California Building Code (CBC), and the following design parameters:
  - 1. Risk Category, III
  - 2. Fastest Mile Wind Speed (3 Second Gust) 100 miles per hour
  - 3. Wind Exposure Category "D"
  - 4. Importance Factor,  $I_w = 1.15$

**1.2        REFERENCE SPECIFICATIONS, CODES AND STANDARDS**

- A. California Building Standards Commission (CBSC)
  - 1. California Building Code
- B. American Society of Civil Engineers (ASCE)
  - 1. ASCE/SEI 7 – Minimum Design Loads for Buildings and Other Structures
- C. American Concrete Institute (ACI)
  - 1. ACI 318 – Building Code Requirements for Structural Concrete
- D. International Code Council Evaluation Services (ICC-ES)
  - 1. Manufacturer Evaluation Reports, as appropriate.
- E. International Association of Plumbing and Mechanical Officials Uniform Evaluation Services (IAPMO-UES)
  - 1. Manufacturer Evaluation Reports, as appropriate.
- F. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

**1.3        SUBMITTALS**

- A. General – CONTRACTOR shall submit administrative, shop drawings, calculations, samples, quality control and contract closeout submittals of items covered under this Section and referenced Sections:

B. Design Data:

1. Anchorage System – CONTRACTOR shall submit for review and approval. Structural calculations, of the proposed anchorage system, certified by a Professional Civil or Structural Engineer licensed within the State of California.

1.4 FIXTURE AND EQUIPMENT ANCHORAGE

- A. Anchorage and other supports for all important equipment shall be designed to resist wind forces occurring along each of the three principal directions.
- B. Architectural elements (racks, shelving, cladding, windows, doors, non-engineered partition walls, parapets, ornamentation, gutters and downspouts, etc.) mechanical and electrical components, equipment housings and their attachments, supporting structures, and anchorage:
  1. Calculations and shop drawings shall be submitted for all anchorage details. All calculations shall be made and signed by a Professional Civil/Structural Engineer licensed in the State of California. Inasmuch as all anchorage of equipment is to be made of poured-in-place concrete elements, it is imperative that types of anchorage be coordinated with the concrete contractor so that anchorage may be installed at time of concrete placement. If calculations and anchorage details are not submitted prior to placing concrete, the CONTRACTOR will become responsible for any strengthening of concrete elements because of superimposed wind loading.
- C. Cast-in anchor bolts are preferred for support of critical equipment and framing. Post-installed concrete anchors will not be used, without approval from the ENGINEER
- D. Expansion and adhesive post-installed concrete anchors will have an associated research report issued by The International Code Council Evaluation Service, Inc. (ICC-ES) and/or International Association of Plumbing and Mechanical Officials Uniform Evaluation Services (IAPMO-UES). Design values and installation requirements for anchors will be as presented in the appropriate ICC-ES and/or IAPMO-UES reports. Edge distance, bolt spacing, inspection requirements and operating temperatures will be considered when determining the appropriate allowable design values.

**PART 2 PRODUCTS**

NOT USED

**PART 3 EXECUTION**

3.1 GENERAL

- A. All equipment designed to be fixed in position shall be securely fastened in place in conformance with the CBC, ASCE 7, or as specified herein the Technical Specifications for a specific piece of equipment under Division 2 through 16. For other equipment, the equipment manufacturer shall provide recommended anchorage information to the CONTRACTOR for use in the installation of the equipment.

- B. See also Section 01612 for Seismic Design Requirements.

### 3.2 STRUCTURAL INTEGRITY AND ANCHORAGE

- A. It shall be the responsibility of the equipment manufacturer/supplier to provide the engineering anchorage calculations and figures to the CONTRACTOR for submission to the ENGINEER. As a minimum, the equipment manufacturer/supplier shall determine the number, dimensions, material, location, embedment and installation conditions of all anchor bolts to be set in concrete in accordance with Contract Specifications and Drawings. At the option of the CONTRACTOR, the CONTRACTOR or equipment manufacturer/supplier shall furnish the anchor bolts and associated hardware as specified herein and as determined by the manufacturer/supplier's engineering anchorage calculations for installation by the CONTRACTOR.
- B. Engineering anchorage calculations and figures shall be prepared, stamped and signed by a Professional Civil or Structural Engineer licensed in the State of California. Calculations shall include the following steps as a minimum:
  - 1. Determination of the shear and overturning forces at each anchorage due to the force determined, as specified below, being applied.
  - 2. Determination of the shear and tension forces that must be developed by the anchorage at each support to resist the forces calculated.
  - 3. Selection of the anchorage details based upon the maximum shear and tension forces calculated above. As a minimum, details shall include number of bolts, materials, diameter, total length, embedded length, required edge distance and bolt dimensions. The embedded length of bolts shall be suitable to develop the ultimate tensile capacity of the anchorage for ductile failure.
- C. Cast-in-place anchor bolts shall be set before concrete has been placed and shall be carefully held in position with suitable templates of an acceptable design.
- D. No equipment shall be anchored to vertical structural elements without the written approval of the ENGINEER, with the exception of pipe hangers/supports or anchorage as specified.

END OF SECTION

## **ATTACHMENT NO. 3**

### **SECTION 15955-EXHAUST FANS**

#### **PART1 GENERAL**

##### **1.1 DESCRIPTION OF WORK**

- A. Work under this section includes labor, equipment, and material required for installation of exhaust fans as indicated on the Drawings and specified herein, including:

- 1. Building Exhaust Fans
- 2. Controls

##### **1.2 SUBMITTALS**

- A. Submittals shall conform to the requirements of Section 01330..
- B. Submit a complete list of materials, specialties and equipment for the installation. Literature shall be standard manufacturer's catalog cuts and items to be installed shall be clearly indicated.
- C. Each item shall be identified by manufacturer, brand and trade name, number, size, rating and whatever other data is necessary to properly identify and check the materials and equipment.
- D. Submit product data and dimensional drawings for each fan.
- E. Submit fan curves for each fan at the specified operation point, with the flow, static pressure and horsepower clearly plotted.
- F. Submit outlet velocity and the fan's inlet sound power readings for the eight octave bands, decibels and sones.
- G. Submit manufacturer's certification that exhaust fans are licensed to bear Air Movement and Control Association (AMCA), Certified Rating Seal for sound and air performance.

##### **1.3 OPERATION AND MAINTENANCE MANUAL**

- A. The Contractor shall provide two Operations and Maintenance manuals for the fans and controls in accordance with the Special Provisions. Provide manufacturer's installation, operations, and maintenance manual, including instructions on installation, operations, maintenance, receiving, handling, storage, safety information and cleaning. A troubleshooting guide, parts list, warranty and electrical wiring diagrams.

#### 1.4 QUALITY ASSURANCE

- A. Performance ratings: Conform to AMCA standard 211 and 311. Fans shall be tested in accordance with ANSI/AMCA Standard 210-99 and AMCA Standard 300-96 in an AMCA accredited laboratory. Fans shall be certified to bear the AMCA label for air performance seal
- B. Classification for Spark Resistant Construction, levels A, B and C, conform to AMCA 99.
- C. Each fan shall be given a balancing analysis which is applied to wheels at the outside radius. The maximum allowable static and dynamic imbalance is 0.05 ounces (Balance grade of G6.3)
- D. Comply with the National Electrical Manufacturers Association (NEMA), standards for motors and electrical accessories.

#### 1.5 WARRANTY

- A. Manufacturer's Warranty: Submit, manufacturer's standard warranty document executed by authorized company official.
  - 1. The warranty of this equipment is to be free from defects in material and workmanship for a period of one year from the purchase date. Any units or parts which prove defective during the warranty period shall be replaced by the manufacturer, including the fan, motor and all accessories provided by the fan manufacturer.

### **PART 2 PRODUCTS**

#### 2.1 GENERAL

- A. Equipment shall be identified by manufacturer's name or nameplate data.
- B. Equipment specified by manufacturer's number shall include required accessories and controls, listed in the catalog as standard with the equipment. Additional accessories shall be furnished as specified.
- C. Where no specific make of material or equipment is mentioned, a first class product of a reputable manufacturer may be used, provided it conforms to the requirements of the system and meets with the approval of the City.
- D. Equipment and materials damaged during transportation, installation and operation shall be replaced with new.

## 2.2 PERFORMANCE REQUIREMENTS

- A. Each fan shall meet the performance requirements in the table below.

Nominal Fan RPM	1725 rpm	
Max. Brake Horsepower	0.25	
Cubic Feet per Minute (CFM)*		
Static Pressure (inches WG)	CFM	SONES
0.00	1260	14.2
0.125	1209	13.8
0.25	1156	13.4
0.375	1100	12.9
0.50	1041	12.3

\* Fan performance in the table above is based on Greenheck Model CW-99-D. Other manufacturers/models meeting these specifications with CFM performance values within plus or minus 5% of the values shown at the stated static pressure are acceptable. Noise requirements (Sones) shall not exceed those listed above at the stated static pressure.

## 2.3 DIRECT DRIVE SIDEWALL MOUNTED CENTRIFUGAL EXHAUST FANS

- A. General: Building exhaust fans shall be direct drive, sidewall-mounted centrifugal fans. The exhaust fan shall bear the AMCA Certified Ratings Seals.
- B. Wheel: Wheel shall be aluminum, non-overloading, backward inclined centrifugal. Wheel shall be dynamically balanced in accordance with AMCA Standard 204-205. Wheel cone and fan inlet shall be matched and have precise running tolerances for optimum performance and operating efficiency.
- C. Motors: Motors shall be in accordance with Section 16222 - Motors. Motor shall be totally enclosed fan cooled. Motors shall be permanently lubricated, heavy duty ball bearing type to match with the fan load and furnished at the specific voltage and phase. Motors shall be mounted on vibration isolators, out of the airstream. For motor cooling there shall be fresh air drawn into the motor compartment through an area free of discharge contaminants. Motors shall be accessible for maintenance. Motor shall be 480V 3-phase TEFC.
- D. Housing: Housing shall be constructed of heavy gauge aluminum; including the exterior housing, windband, and motor compartment housing. Galvanized steel is not acceptable. Housing shall have a rigid internal support structure. Windband shall be one piece uniquely spun

aluminum construction and maintain original material thickness throughout the housing. Windband shall include an integral rolled bead for strength. Breather tube shall be 10 square inches in size for fresh air motor cooling, and designed to allow wiring to be run through it. Housing shall be leak resistant and continuously welded seam. Steel mounting plate and integral venturi shall be attached to windband.

- E. Motor Cover: Motor cover shall be constructed of aluminum.
- F. Vibration isolation shall be sized to match the weight of the fan.
- G. Drain Trough: Drain trough shall allow for one point drainage of water, grease and other residues.
- H. Accessories: Provide the following accessories:
  - 1. Birdscreen - Aluminum
  - 2. Wall grill - Aluminum louvered grill that mounts to the interior wall over the wall opening.
- I. Coating: Coating shall be baked enamel. Submit standard colors available for City selection.
- J. Acceptable Manufacturer:
  - 1. Greenheck Fans
  - 2. Approved equal

## 2.4 ELECTRICAL AND CONTROLS

- A. The Contractor shall be responsible for the proper coordination of control work and electrical work in connection therewith. Contractor shall also be responsible for the proper operation of the entire system. Electrical and controls work shall be performed in accordance with the applicable Division 13 and 16 Sections.
- B. The Contractor shall furnish and install line voltage control wiring, conduit, electric relays, switches, line voltage thermostats and other appurtenances as specified in applicable Division 13 and 16 Sections. A ground (green) conductor shall be provided in the power circuit and the motor circuit and shall be properly terminated.
- C. Calibration of Controls: The Contractor shall calibrate and adjust controls as required. Thermal overload shall be sized per full load current of the fan motor plus 15%
- D. Contractor shall be responsible for 120-volt controls conduit, wiring, and thermostat for stand-alone controls.



- E. Fan Motor Controller: Controller shall be located in the MCC as shown on the drawings.
- F. Control Description: When in auto mode, the fan(s) will be turned on and off based on the setpoints and signal from the thermostat controller. When in hand mode, the fan(s) shall be controlled using the start and stop push buttons. When in off mode, the fans shall not operate. The controls shall allow one or both fans to operate in auto mode at any given time.
- G. Refer to Electrical Drawings for control diagrams and additional requirements.

### **PART 3 EXECUTIONS**

#### **3.1 GENERAL**

- A. Install fan equipment in locations indicated on the Drawings or indicated on the approved shop drawings. Follow the manufacturer's installation requirements. Contractor shall notify the District before installation into apparent improper locations of interference with other work such as electrical outlets, windows, cabinetwork or other features.

#### **3.2 DELIVERY, STORAGE AND HANDLING**

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly indicating manufacturer, material, products included, and location of installation
- B. Storage: Store materials in a dry area indoor, protected from damage, and in accordance with manufacturer's instructions. For long term storage follow manufacturer's Installation, Operations, and Maintenance Manual
- C. Handling: Handle and lift fans in accordance with the manufacturer's instructions. Protect materials and finishes during handling and installation to prevent damage. Follow all safety warnings posted by the manufacturer.

#### **3.3 INSPECTION AND PREPARATION**

- A. Verify that the fan system may be installed in complete accordance with pertinent codes and regulations and the approved shop drawings.

#### **3.4 INSTALLATION OF EQUIPMENT AND STARTUP**

- A. Equipment shall be installed in conformance with manufacturer's recommendations. Equipment shall be installed level and plumb. Fan and motors shall be anchored-bolted to the wall as required.

Fans shall be grounded as recommended by the manufacturer and required by NEC.

- B. Avoid interference with structure and with work of other trades, preserving adequate headroom and clearing all doors and passageways.
- C. Check each piece of equipment in the system for defects, verifying that all parts are properly furnished and installed, that items function properly and that adjustments have been made.
- D. Mechanical equipment shall be isolated from the building structure by means of noise and vibration isolators.
- E. Gaps between penetrating elements, ductwork, piping and the walls of the holes shall be filled on all sides with resilient material and sealed air tight on each wall with non-hardening sealant.
- F. Install equipment so that nameplates are easily visible.
- G. Where not otherwise indicated, equipment and material installation is published manufactures' recommendations. This requirement includes details, clearances and accessories.
- H. Startup shall be performed in accordance with the fan operations and maintenance manual.

END OF SECTION

## SECTION 11403 – FFR MEDIA

### ATTACHMENT NO. 4

#### PART 1 GENERAL

##### 1.1 THE REQUIREMENT

- A. The CONTRACTOR shall furnish and install PVC structured sheet media modules, protective surface grating, and filter media support system in accordance with the Contract Documents.
- B. System Definition
  - 1. Structured PVC Media Modules: Media modules are fabricated from PVC sheets and completely corrugated at an angle of 60 degrees from horizontal to form a cross-corrugated pattern between adjacent sheets. Sheets shall be alternated to create a cross-corrugated pattern from sheet to sheet. Modules will be 2 feet high, and 1- 2 feet wide and 4 - 8 feet long.
  - 2. Protective Surface Grating: Interlocking polypropylene panels, a minimum of height of 1-1/4 inches, shall be supplied to absorb hydraulic impact, provide operator access, provide a protective layer from foot traffic.
  - 3. Media Support System: Structural system designed and supplied by MANUFACTURER to support structure PVC media modules while maximizing ventilation and drainage. Support system shall be pre-engineered PVC/glass-reinforced ABS piers supporting pultruded fiberglass grating, or alternatively reinforced concrete piers and pre-cast, pre-stressed concrete lintels.

##### 1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. ASTM
- B. ASIC
- C. PCI

##### 1.3 CONTRACTOR SUBMITTALS

- A. General: CONTRACTOR shall submit administrative, shop drawings, samples, quality control, and contract closeout submittals of all equipment furnished this Section and in referenced Sections.
- B. Shop Drawings and Samples: Shop drawings and samples shall be submitted in accordance with the requirements of Section 01300 Submittals.
- C. O & M Manuals: The CONTRACTOR shall provide operators and maintenance data for all equipment furnished for the project in accordance with Section 01730, Operation and Maintenance Data. O&M instructions shall include storage and installation procedures, operating instructions, and maintenance instructions.
- D. Tools: Special tools necessary for maintenance and repair of the equipment shall be furnished as a part of the WORK hereunder; such tools shall be suitably stored in metal

tool boxes, and identified with the equipment number by means of stainless steel or solid plastic name tags attached to the box.

- E. Samples: Samples of the structured PVC media module, media support system, and protective surface grating shall be submitted. Samples shall be retained by OWNER and/or ENGINEER. Acceptable MANUFACTURERS named herein are not required to submit samples.
- F. Inspection, Startup, and Field Adjustment Certification: Provide certifications of compliance with the requirements herein.

#### 1.4 QUALITY ASSURANCE

A. CONTRACTOR shall submit the following:

1. MANUFACTURER's Certificate of Proper Installation
2. Functional Test Certification
3. Factory performance test reports
4. Special shipping, storage and protection, and handling instructions
5. MANUFACTURER's printed installation instructions
6. List of suggested spare parts to maintain the equipment in service for a period of 5 years. Include a list of special tools required for checking, testing, parts replacement, and maintenance.
7. List of special tools, materials, and supplies furnished with equipment for use prior to and during startup.

B. Warranty

1. A written suppliers warranty shall be provided for the equipment specified in this section as required in Section, 01740 Warranty.

#### 1.5 MANUFACTURERS SERVICE REPRESENTATIVE

A. MANUFACTURER's Representative. In accordance with the requirements of Section 01730, Operation and Maintenance Data, a MANUFACTURER's Representative shall be present at the site or classroom designated by the OWNER to provide the services and minimum person-days listed below, travel time excluded.

1. 1 person-days for installation assistance and inspection,
2. 0.5 person-days for functional and performance testing
3. 0.5 person-days for pre-startup training of OWNER's personnel.

## PART 2 PRODUCTS

### 2.1 GENERAL

- A. The requirements of Section 11000 – Equipment General Provisions apply to this section.

### 2.2 PERFORMANCE REQUIREMENTS

- A. Quantity and Dimensions: CONTRACTOR is responsible for verifying final dimensions of the required FFR equipment in the field. The dimensions of the FFRs, as shown in the Contract Drawings, are shown in Table 1.

Table 1 - FFR Dimensions

Number of Fixed Film Reactors	2
Fixed Film Reactors Diameter (feet)	40
Fixed Film Reactors Depth (feet)	34
Approximate Volume of Media Required (ft <sup>3</sup> )	85,500

- B. Tolerances:

1. Media support system shall be installed true level,  $\pm 1/2$  inches in height.
2. Structured PVC media modules shall be constructed to ensure that solvent bond points are within 1/2 inch from the top and bottom of the modules on all sheets.
3. Structured PVC media modules tolerances for height, width and length shall be  $\pm 1/2$  inches for each dimensions (tolerances may vary by sheet thickness).
4. A maximum of 2 inches is allowed during installation between the field-cut edges of the structure PVC media modules and the tank perimeter wall and the center column.
5. The top of the media support system and the top of the support ledge should be at the same elevation and within a maximum tolerance of  $\pm 1/8$  inches in elevation.

- C. Media Support System

1. Existing W8 x 3/8" fiberglass cross beams that support the media shall be replaced. Replacement beams and anchorage to existing concrete knee walls or anchorage to existing structure shall be designed in accordance with Section 01612 – Seismic Design Criteria. The design shall be approved and stamped by a California Registered Engineer.
2. Media Support System shall be designed and pre-engineered to support the design load (40 lbs/ft<sup>2</sup> per feet of media) of structured PVC media modules. The media support system must allow for field adjustments to meet height tolerances, and be readily adjustable to allow for variations in floor slope to ensure vertical alignment of piers. New concrete piers, if used, must provide adequate re-bar reinforcement and pre-cast, pre-stressed concrete lintels must be engineered to

meet the load requirements and shall be installed with lintels at a maximum of 2 feet center-to-center spacing. Concrete masonry units such as cinder blocks, underdrain tiles or other such inadequate structural members will not be acceptable. Similarly, grouting to achieve leveling requirements will not be acceptable as structural load bearing material, except as necessary to secure lintels to piers.

3. Media support system shall be designed and engineered to maximize ventilation and drainage requirements, while ensuring sufficient contact with structured PVC media modules such as to prevent media from wrapping around supports. Pre-engineered systems shall incorporate nominal 12-in. (350 mm) wide pultruded fiberglass grating of adequate strength to meet the design load, while not allowing excessive deflections.
4. Media support system shall be installed within an existing structure and shall be designed to work with the existing concrete support beams. The media supports shall be designed to support the existing air header and duct system.

#### D. Structured PVC Media Modules

1. Each structured PVC media module shall be 100% cross-flow and completely corrugated at an angle of 60 degrees from the horizontal to form a cross-corrugated pattern between adjacent sheets, providing a continuous and horizontal redistribution of air and wastewater. The module shall ensure adequate contact and diffusion between liquid, air and. Random, vertical or horizontal media are not acceptable.
2. The flute height for each corrugation in the Structured PVC Media Module shall be 1.0 - 1.20 inches. There shall be a minimum of 20 sheets per 24-inch wide module.
3. Each Structured PVC Media Module must provide a minimum surface area of 31 ft<sup>2</sup>/ft<sup>3</sup> with a minimum of 95% void-to-volume ratio.
4. Each module shall have a minimum bearing capacity of 400 lbs/ft<sup>2</sup>. Modules in the top layer shall have a minimum bearing capacity of 1000 lbs/ft<sup>2</sup>. In addition, media modules shall be capable of withstanding a minimum loading of 40 lbs/ft<sup>2</sup> per foot of media height above the module as placed in the filter. Media modules in the bottom layer shall have the designed load bearing capacity as estimated by the loading of lbs/ft<sup>2</sup> per foot of media height or 1000 lbs/ft<sup>2</sup>, whichever is greater, when placed on media supports.
5. The maximum allowable deflection shall be 1% at a test temperature of 75° F.
6. The finished modules shall be suitable for normal wastewater temperatures between 50° F and 75° F.
7. The media shall be designed to accommodate the existing air header and duct system while maintaining the structural integrity and stability of the installed media modules.

#### E. Protective Surface Grating

1. Protective Surface Grating shall be a minimum 1-1/4 inch in height for additional top layer UV protection. Additionally, no greater than a 2 inch in diameter opening will be allowed for protection from hydraulic impact. Protective grating must have a non-skid surface. Protective Surface Grating must not adversely impact or damage media modules.

## 2.3 MATERIALS OF CONSTRUCTION

### A. Media Support System

1. The media support system stanchion, if used, shall be constructed of rigid PVC or rigid FRP.
2. MANUFACTURER is responsible for ensuring adequate structural integrity consistent with the requirements specified.
3. Alternatively, concrete piers and concrete lintels of adequate structural integrity may be substituted for MANUFACTURER's pre-engineered system. If concrete piers and lintels are substituted, Fixed Film Reactor Media System MANUFACTURER is responsible for ensuring adequate structural integrity of all new support elements and their connection with existing consistent with the requirements specified.

### B. Structured PVC Media Modules

1. The media shall be fabricated from rigid PVC sheets completely corrugated at an angle of 60 degrees from horizontal, and arranged to form a cross-corrugated pattern with adjacent sheets to permit adequate contact between air, wastewater and biomass. The PVC roll stock sheets shall be of uniform thickness with no section less than  $\pm 0.002$  inch manufacturing tolerance. The media modules shall be specifically designed to use in the biological oxidation of municipal wastewater.
2. The material of construction shall be flame resistant, self-extinguishing, rigid corrugated PVC sheets that are conducive to biomass and UV protected. The media modules shall be resistant to rot, fungi, bacteria and inorganic/organic acids and alkalies as commonly found in municipal wastewater.
3. PVC sheets shall be of uniform thickness, enforced edges are allowed, and free from holes, air bubbles, foreign matter, undispersed raw material or other manufacturing defects that may adversely affect their performance.
4. PVC sheets shall be prime, rigid PVD conforming to commercial standards ASTM D1784: 12344B to 12454B with the physical properties shown below:

Property	Test Method	Unit	Typical Value - PVC
Specific Gravity, maximum	D792	g/cm <sup>3</sup>	1.50
Tensile Strength, minimum	D638/D882	psi	6,000
Flexural Modulus, minimum	D790	psi	425,000

Flexural Strength, minimum	D790	psi	11,000
Impact Strength, minimum	D5420	in. lbs. / mil	0.8
Impact resistance, notched Izod	D256	in. lbs. / mil	N/A
Stiffness Flexure, minimum	D747	psi	525,000
Heat Deflection, minimum	D648	°F (264 psi)	160
Flammability	D635	self-extinguishing less than 5 seconds	

#### C. Protective Surface Grating

1. The protective surface grating when installed as per MANUFACTURER's recommendations shall provide a continuous protective surface for the Structured PVC Media Modules, minimizing hydraulic impact on the media, providing additional UV protection, and allowing operator access to all areas of the tower. Such grating shall comprise of openings no greater than 2 inches in diameter, molded together to provide a strong, lightweight panel.
2. Material of protective surface grating shall be rigid polypropylene specifically UV stabilized for inhibiting UV degradation under extended exposure to the sun. The material shall be inert and resistant to naturally occurring wastewater constituents.
3. Protecting surface grating shall be installed side-by-side and placed on top of the media modules as shown on the MANUFACTURER'S installation drawings. Each panel shall be snapped together with the adjacent panel with locks provided at the edges of each panel. The grating panels shall be placed on top of the media such that the grating is in contact with the media.
4. The grating shall be designed to prevent damage to the media, and allow for ease of placement and removal. The material design shall be such that hold down ties, clips or fasteners are not required.

### 2.4 FABRICATION

#### A. Media Support System

1. The media support system shall be comprised of pultruded fiberglass grating.
2. Pultruded fiberglass grating shall be placed across the tops of existing concrete beams, or across tops of replacement FRP cross beams.

#### B. Structured PVC Media Modules:

1. All PVD sheets shall be thermoformed into corrugated sheets. When fabricated into modules, the sheets shall be alternated to create a cross-corrugated pattern.
2. The self-supporting structured PVC media modules assembled from the thermoformed sheets shall be bonded together to create a cross-corrugated pattern between the adjacent sheets. Adhesive glues are not acceptable.



C. Protective Surface Grating

1. The protective surface grating shall be molded as individual units complete with self-interlocking connections.

2.5 PROTECTIVE COATING

- A. There shall be no coatings applied on the structure PVC media modules. The media support system and protective surface grating shall not be coated. The protective surface grating shall have a clean surface free from imperfections, providing a walkable surface for operators.

2.6 SPARE PARTS

- A. None required.

2.7 MANUFACTURERS

A. MANUFACTURER's Experience:

1. The structured PVC media MANUFACTURER shall have a minimum of 10 similarly-sized installations in wastewater treatment applications in the U.S., and at least 5 years of continuous experience in manufacture and supply of structure PVC media modules.
2. The structured PVC media modules shall be a standard product of the MANUFACTURER. MANUFACTURER shall certify that they have existing installations of structure PVC media modules.

- B. Unit Responsibility: The CONTRACTOR shall assign to a single Supplier full responsibility for the furnishing and functional operation of the complete FFR media system. The designated single Supplier, however, need not manufacture more than one part of the unit, but shall coordinate the design, assembly, testing, and erection of the unit as specified herein.

C. MANUFACTURERS, or equal:

1. Brentwood Industries
2. Raschig USA, Inc.
3. ENEXIO, formerly GEA

**PART 3 EXECUTION**

3.1 DELIVERY AND STORAGE

A. Delivery

1. A complete set of MANUFACTURER's instructions covering storage, installation, operation, lubrication, and maintenance shall be furnished to the OWNER no later than the date the equipment is shipped. Care during storage and procedures for installation, lubrication, and startup of the equipment and motors shall be in strict conformance with the MANUFACTURER's instructions.

2. Structure PVC media modules shall be shipped and delivered to project site on pallets for ease of handling and to prevent damage.

B. Storage

1. All material and equipment shall be shipped, stored, handled, and installed in such a manner as to not degrade quality or serviceability.
2. Structured PVC Media Modules shall not be stacked more than 8 feet high (one over the other). All modules shall be stored on the shipping pallets.
3. All modules shall be stacked such that the PVC sheet planes are in a vertical position (similar to the manner of their placement inside the tower).
4. A light colored tarp shall cover all modules required to be stored in the open beyond 60 days. Clear or black tarps are not acceptable.
5. Deformations due to Memory effects of thermofolded PVC Modules shall be avoided: Covers cannot be wrapped tightly around the media. There should be at least a 6 inch air gap between the cover and top of media. The ends of the cover should be securely anchored on all sides with at least a 12 inch air gap at the bottom. These covers should provide shading while allowing air to pass through to prevent heat from building up.
6. Modules should be checked at least once a week. Covers can become loose over time due to wind or rain and must be re-secured. A check of the stored area should be done to make any minor repairs to the cover or to restack any modules that may have fallen.
7. Structured PVC Media Modules exposed to extended non-operational periods in the tower shall be adequately protected to prevent damage by temperature and weather conditions.

3.2 INSTALLATION

- A. Install in accordance with the MANUFACTURER's printed instructions.

3.3 TESTING

- A. General: Furnish labor, piping, equipment and material for conducting the tests.
- B. Factory Testing shall conform to the following criteria:
  1. The test sample shall consist of four full-size media modules stacked two modules high with two modules in each layer. The arrangement of the stack shall simulate the geometry as placed in the filter towers. The top modules shall be perpendicular to the bottom modules, and the PVC sheet planes shall be in a vertical position.
  2. Modules intended for the base layer shall be tested on a simulation of the Media Support System. Modules intended for all other layers shall be tested on a flat base.

3. Test loads shall be the design load of the media as specified. The test load shall be at a temperature of 75°F ±2°F.
4. A preload equal to 10% of the design load shall be applied to act as a seating load. This seating load shall be retained for a 1-hour period.
5. After 1 hour, the deflection shall be noted and considered zero and the load increased in 10 percent increments of the design load. Each loading shall be held for 5 minutes and the deflection recorded at the end of the 5-minute period. Incremental loading shall continue until failure.
6. Maximum allowable deflection at the test load shall be 1%. Deflection is defined as the vertical deflection expressed as percent of the vertical distance between the top and bottom faces of the media stack under the pre-load conditions.
7. The Engineer shall have the opportunity to witness the media testing or the test results meeting the specified load criteria and maximum allowable deflection shall be certified by a P.E. and submitted to the Engineer for approval prior to the installation of the media.
8. All tested media modules shall come from the media production run that is specifically manufactured for the current project. Media packs from other projects shall not be accepted. Test data from previous projects are required before bidding and are not acceptable after bidding.
9. If any of the modules tested in any strength gradation exhibit a compressive deflection greater than 1%, additional testing will be required of eight additional modules to determine the structural suitability of the media. If the additional testing indicates the media does not meet the specified strength, then the media manufacturer shall replace all media of that strength gradation with new media meeting the specifications and passing the structural testing.
10. The Engineer shall have the right to send packs shipped to the jobsite to a designated lab for further testing if in his opinion the packs do not appear to have the strength specified. All expenses shall be at the cost of the media manufacturer.

C. Performance Testing

1. Performance testing of the full-scale equipment shall be required in accordance with Section 01650 Facility Start Up.

END OF SECTION

ATTACHMENT NO. 5

SAN FRANCISCO BAY

NOTES:

1. ONLY HEADWORKS/EQ STRUCTURE FOOTPRINT SHOWN FOR CLARITY. SEE DRAWING M100-1 FOR ADDITIONAL DETAILS.
2. REDUCE HEIGHT OF EXISTING PG&E HIGH VOLTAGE PULL BOX. CONTRACTOR SHALL SAW CUT THE TOP OFF THE EXISTING PULL BOX TO A DEPTH AS NEEDED TO INSTALL A NEW ACCESS COVER AT EL. 44.75. THE ACCESS COVER SHALL BE H20 RATED AND COMPLY WITH PG&E STANDARDS. WORK SHALL ONLY BE PERFORMED WHEN THE PG&E 12KV SERVICE LINE IS DE-ENERGIZED. SEE SECTION 01040.
3. ALL PROPOSED CATCH BASIN SHALL BE PER (C182).
4. AREAS POTENTIALLY CONTAINING HARD GREENSTONE ARE INDICATED IN THE GEOTECH REPORT TITLED "GEOTECHNICAL INVESTIGATION, TREATMENT PLANT UPGRADE PROJECT, SAUSALITO-MARIN CITY SANITARY DISTRICT", MILLER PACIFIC ENGINEERING GROUP, MARCH 2014
5. CONCRETE PAVEMENT SHALL BE PER CALTRANS JOINT PLAN CONCRETE PAVEMENT REVISED STANDARD PLAN RSP P1. CONCRETE PAVEMENT SHALL HAVE A MINIMUM THICKNESS OF 7-INCHES OVER A 12-INCH LAYER OF AGGREGATE BASE. FOR GRADES GREATER THAN 3%, CONCRETE PAVING SHALL BE INTENTIONALLY SCARIFIED. MAXIMUM SPACING BETWEEN CONCRETE JOINTS SHALL BE LESS THAN 15 FEET.
6. CALTRANS ST-40 BRIDGE RAIL BARRIERS SHALL TERMINATE WITH A POST, UNLESS SHOWN OTHERWISE. RAILS SHALL TERMINATE AT THE OUTSIDE EDGE OF POSTS.

EFFLUENT  
FILTERS

MATCHLINE FOR CONTINUATION SEE C100-3

PLAN  
1" = 10'



0" 1"  
VERIFY SCALES —  
BAR IS ONE INCH  
LONG ON FULL  
SIZE DRAWING.  
IF NOT ONE INCH  
LONG ON THIS  
DRAWING, ADJUST  
SCALES ACCORDINGLY



REV	DATE	BY	APVD	DESCRIPTION
1	1/13/17	SM	SC	ADDENDUM NO. 2

DESIGNED M. TAKEMOTO  
DRAWN C. TO  
CHECKED M. NAKAMOTO

SUBMITTED: MARK TAKEMOTO  
RMC PROJECT ENGINEER CE-64369  
APPROVED: STEVE CLARY  
RMC ENGINEER CE-30318

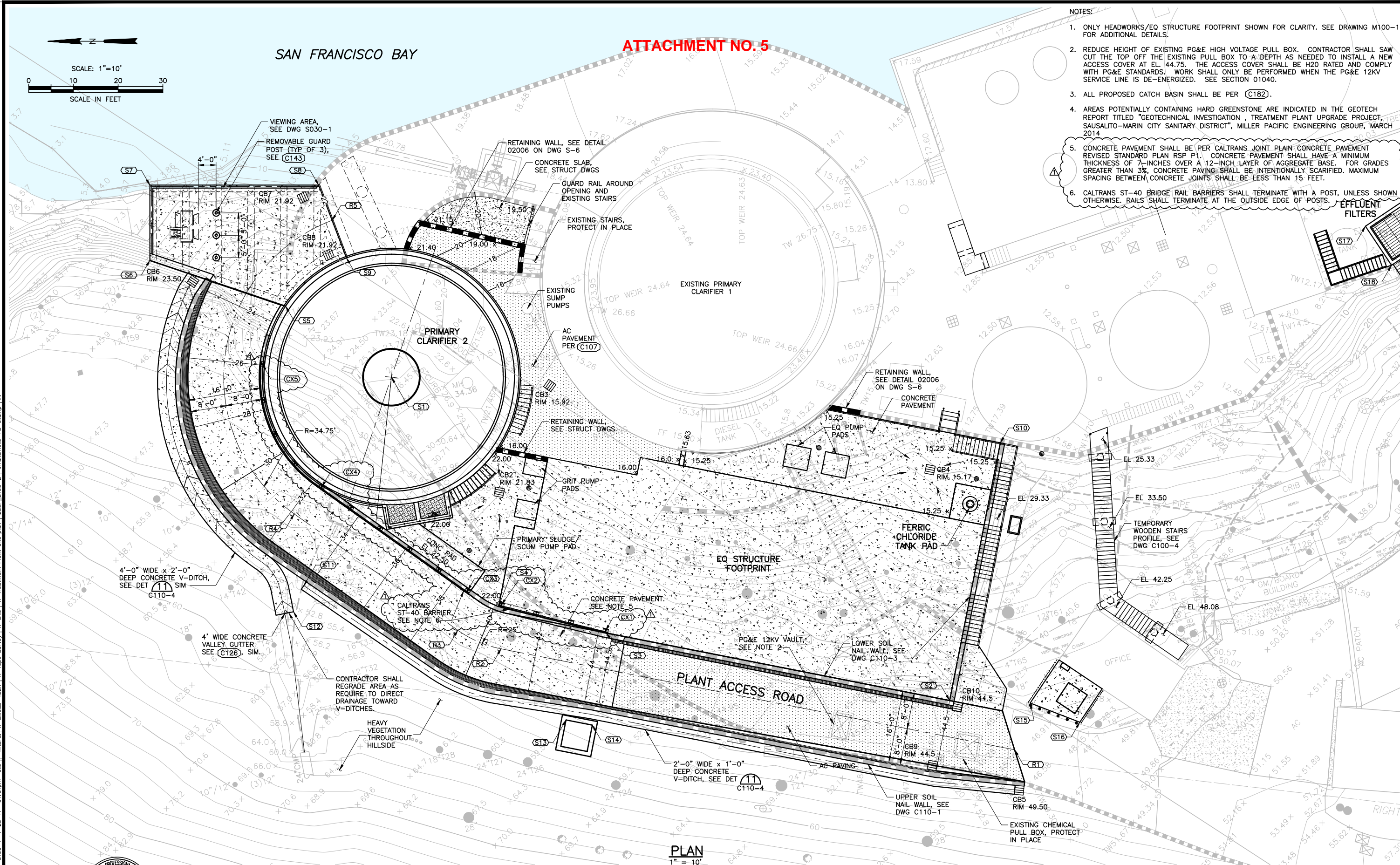


TREATMENT AND WET WEATHER FLOW UPGRADE

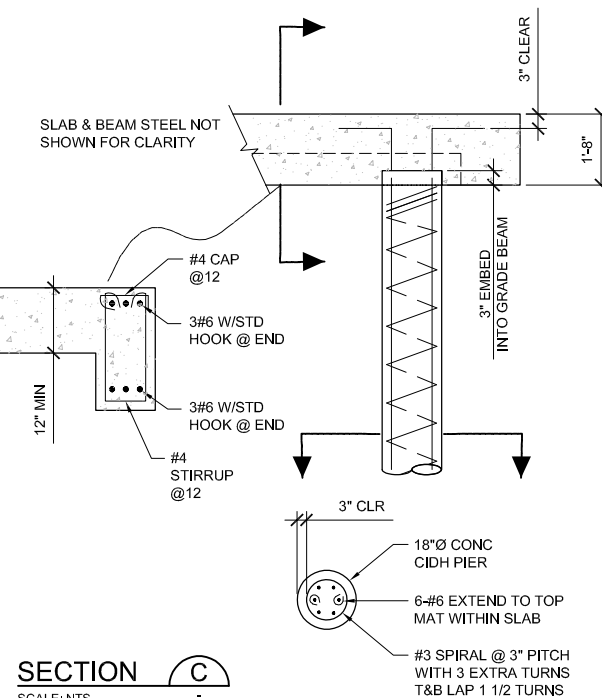
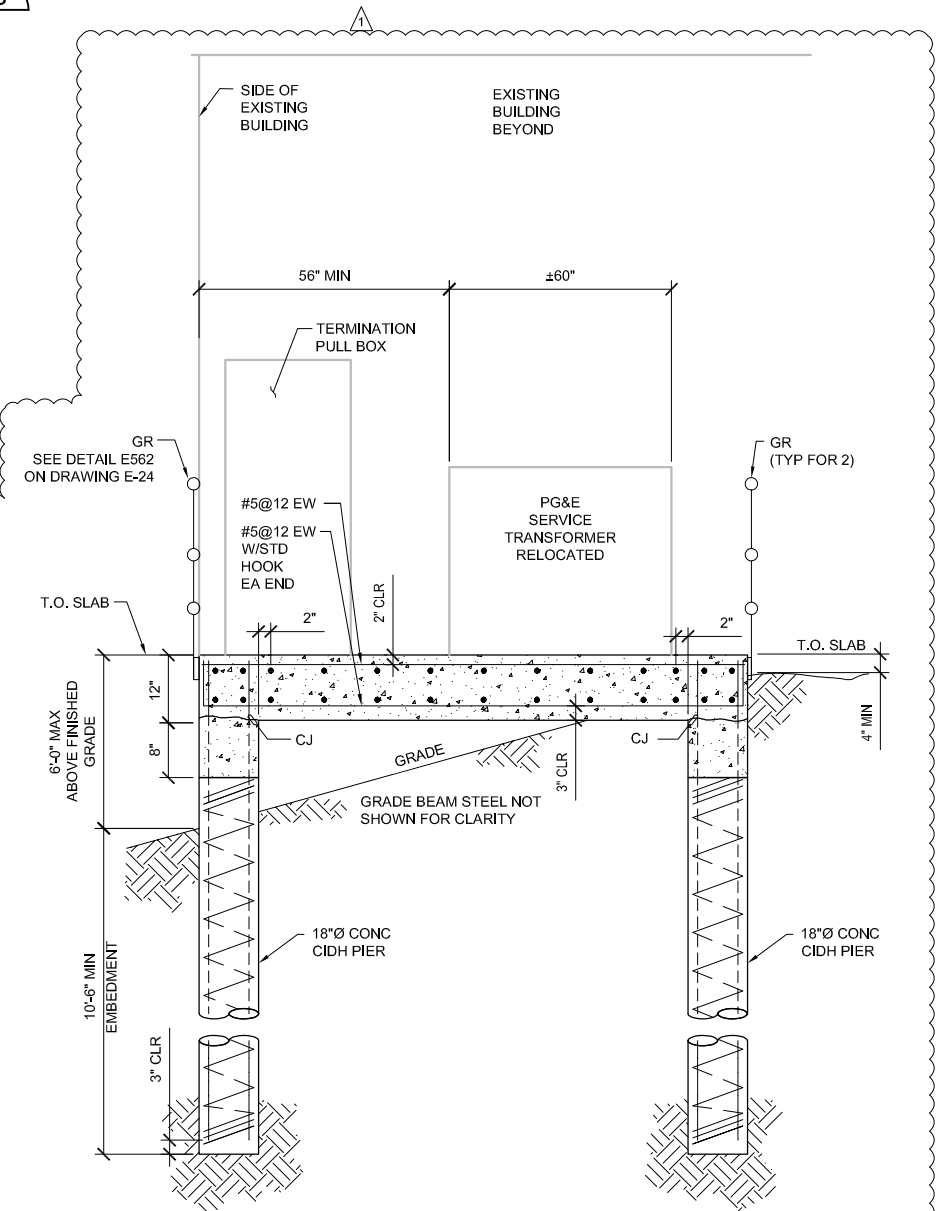
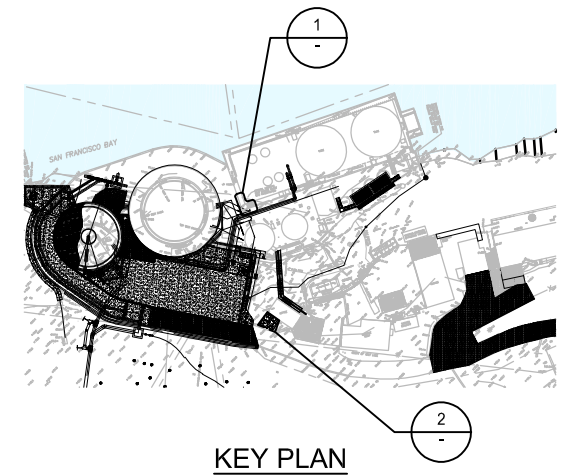
CIVIL  
SITE GRADING AND PAVING PLAN - 1

DWG NO C100-2  
SHEET NO 41 OF 226  
PROJ NO 055-006  
DATE NOVEMBER 2016

FILENAME: 0055-006-C100-1 1-23-17 04:01pm cto XREFS: X-SMCSO-TBLK X-Topo Survey X-Site X-Treatment Plant site plan 1286F-E100-2 M Takemoto-PE-stamp kct--







SECTION     D      
SCALE: NTS     -    



**TJC**  
and ASSOCIATES, INC.

**RMC**  
Water and Environment

DESIGNED	RKT
DRAWN	ADM
CHECKED	TJC

SUBMITTED: MARK TAKEMOTO  
RMC PROJ ENGR CE-64369

APPROVED: STEVE CLARY  
RMC ENGR CE-30318

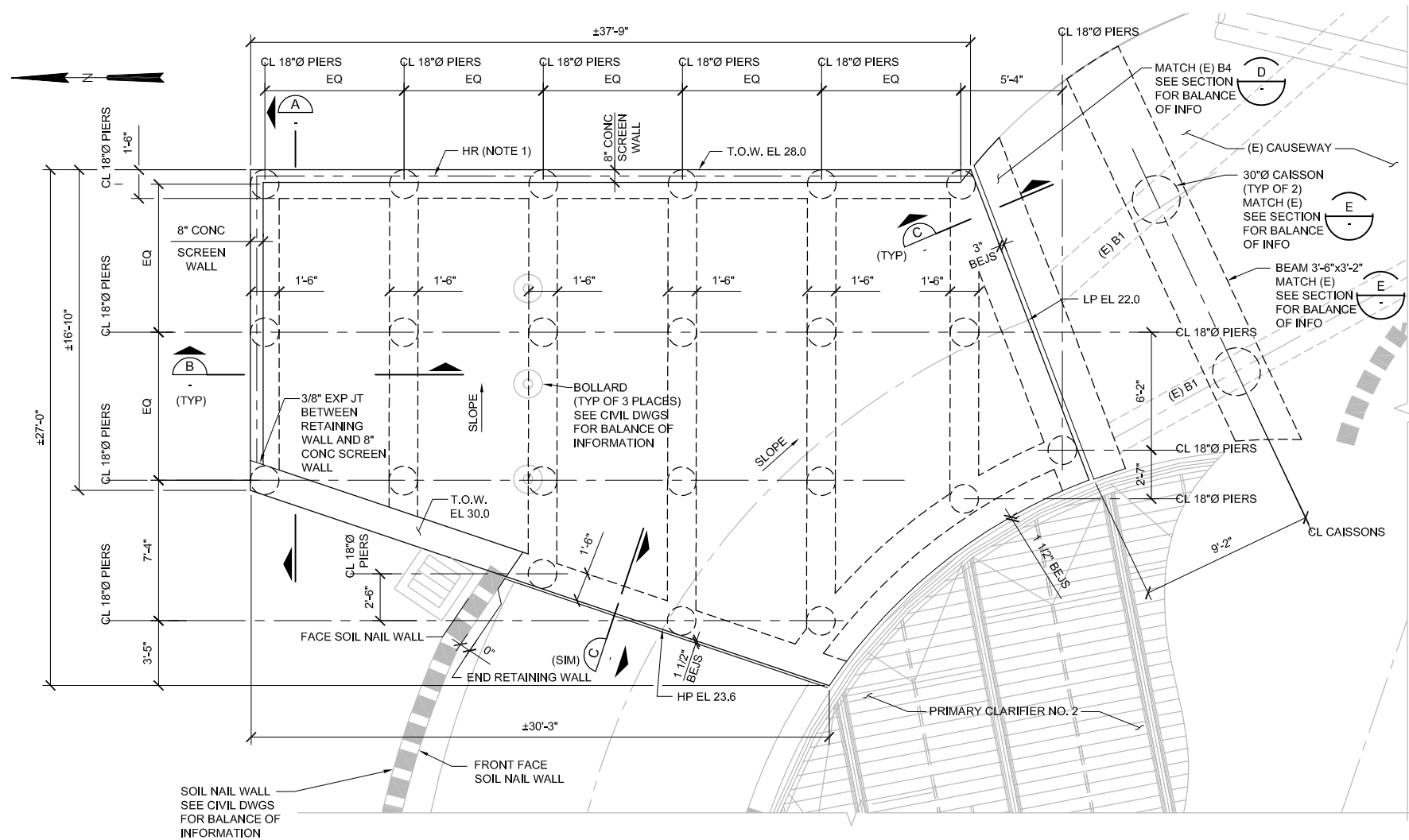


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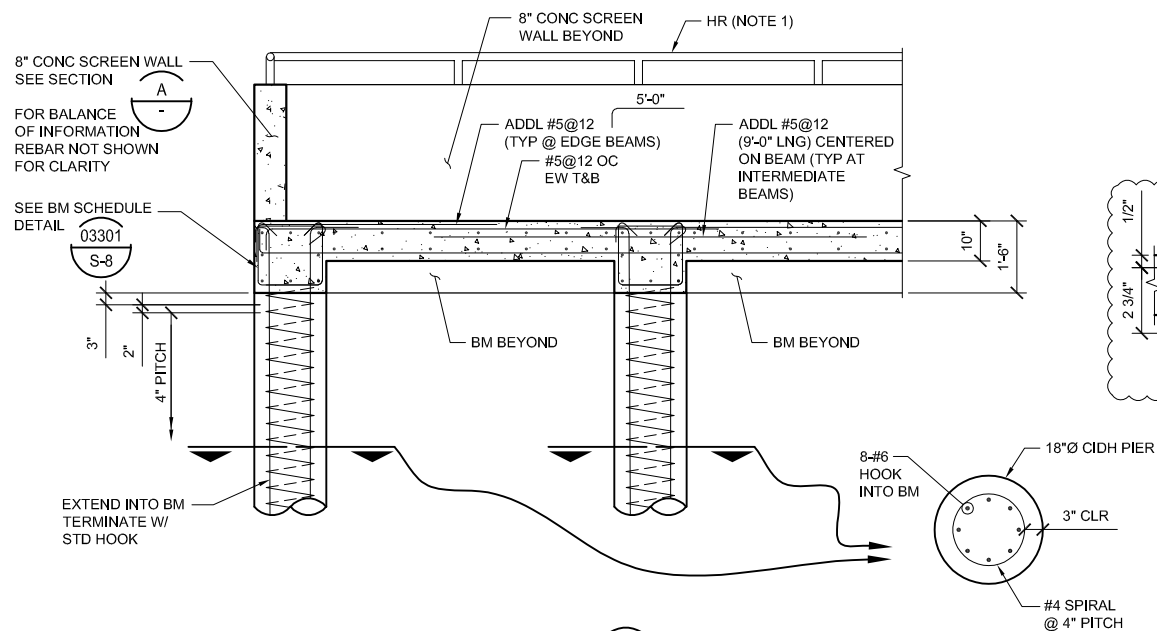
## STANDARD DETAILS

DWG NO	S-15
SHEET NO	93 OF 226
PROJ NO	055-006
DATE	NOVEMBER 2016

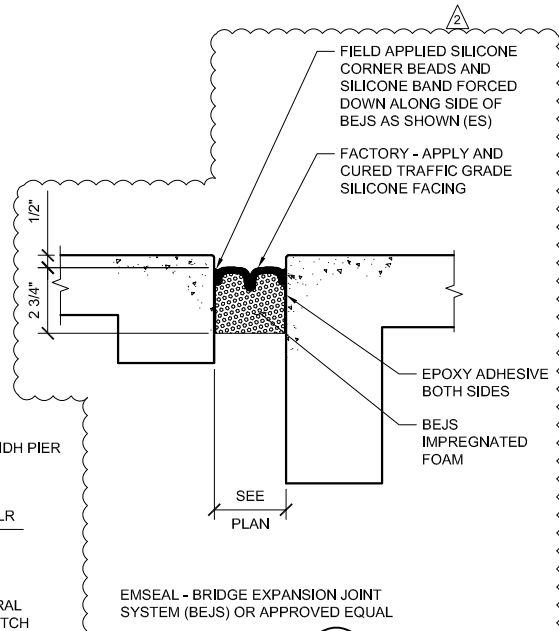
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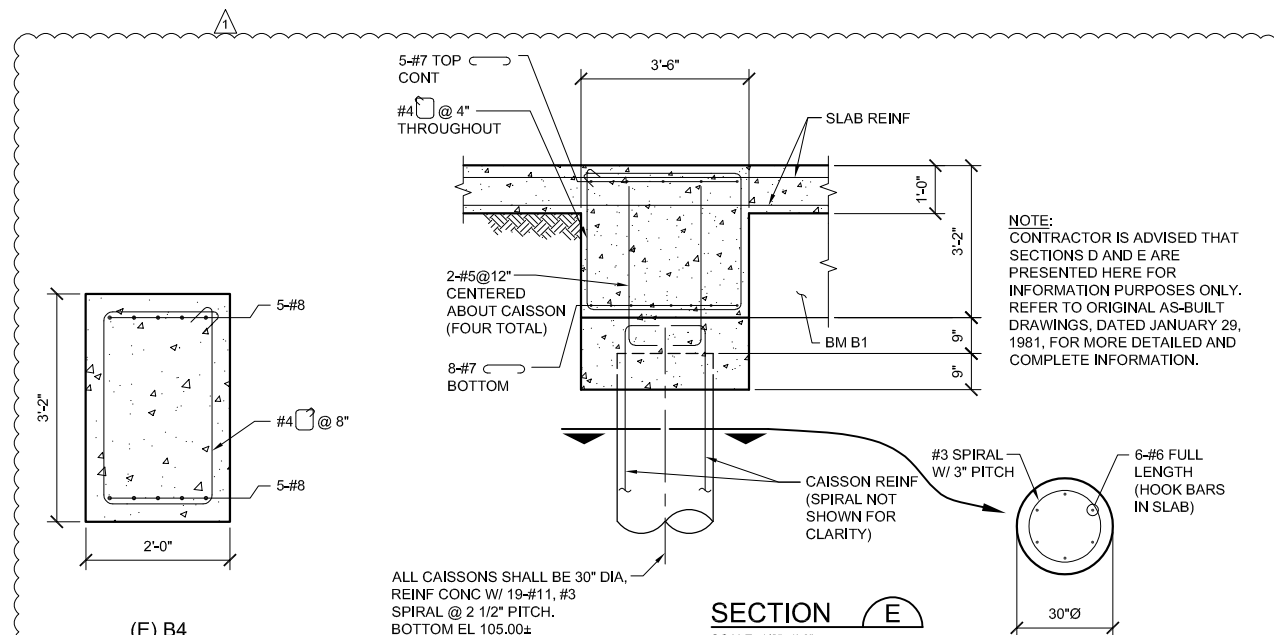
VIEWING AREA PLAN  
SCALE: 1/4"=1'-0"



SECTION B  
SCALE: 1/2"=1'-0"



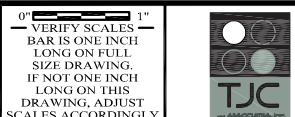
SECTION C  
SCALE: NTS



SECTION D  
SCALE: 3/4"=1'-0"

SECTION E  
SCALE: 1/2"=1'-0"

NOTES:  
1. HANDRAIL IS A DEFERRED SUBMITTAL ITEM AND IS THE RESPONSIBILITY OF THE CONTRACTOR. DEFERRED SUBMITTAL ITEMS HAVE NOT BEEN DESIGNED BY THE ENGINEER OF RECORD, REFER TO CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION.



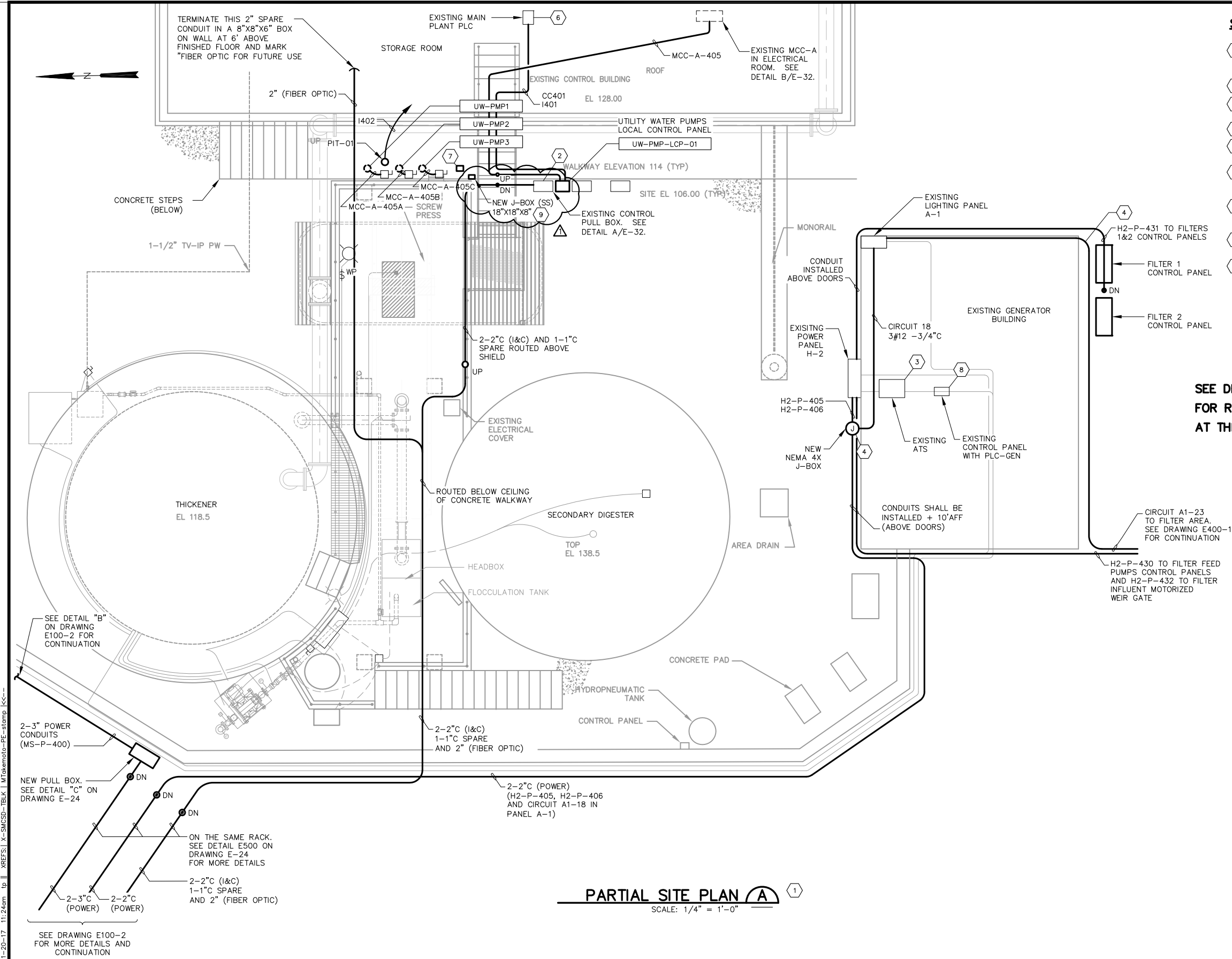
REV	DATE	BY	APVD	DESCRIPTION
01/17	ADP	RKT		ADDENDUM NO. 2
12/16	ADP	RKT		ADDENDUM NO. 1

DESIGNED	RKT
DRAWN	ADM
CHECKED	DMY
APPROVED:	STEVE CLARY RMC ENGR



TREATMENT AND WET WEATHER FLOW UPGRADE
VIEWING AREA

DWG NO	S030-1
SHEET NO	96 OF 226
PROJ NO	055-006
DATE	NOVEMBER 2016



- SHEET NOTES:**
- 1 THE CONDUIT ROUTES SHOWN ARE ONLY DIAGRAMMATIC TO ILLUSTRATE GENERAL DIRECTION OF CONDUITS. PROVIDE JUNCTION BOXES, ELBOWS, CONDULETS AS REQUIRED. SUPPORT CONDUITS AS REQUIRED. ALL EXPOSED CONDUITS SHOWN SHALL BE PVC COATED RGS.
  - 2 NEW CONDUITS SHALL BE TERMINATED AT TOP OF EXISTING CONTROL PULL BOX.
  - 3 SEE DETAIL B ON DRAWING E-26 FOR TEMPORARY CONNECTION DURING SWITCHOVER OPERATION.
  - 4 CORE DRILL EXISTING WALL AS REQUIRED (TYPICAL).
  - 5 ROUTE THIS CONDUIT ON FALSE CEILING OF EXISTING CONTROL BUILDING TO REACH EXISTING MCC-A LOCATED IN EXISTING ELECTRICAL ROOM.
  - 6 FURNISH AND INSTALL IN THIS EXISTING MAIN PLANT PLC WITH NEW I/O CARDS TO ACCOMMODATE SIGNALS FOR UTILITY WATER PUMPS AND THEIR AUXILIARIES. SEE DRAWING E-33 WIRING DETAILS.
  - 7 THIS IS NEW LOCATION OF EXISTING SAMPLE PUMP RELOCATED FROM ORIGINAL LOCATION SHOWN ON DRAWING D600-2. FROM EXISTING LOCATION, EXISTING POWER & CONTROL CIRCUIT SHALL BE EXTENDED AS REQUIRED TO NEW LOCATION.
  - 8 THIS EXISTING PLC SHALL BE REMOVED AND REPLACED WITH NEW PLC. SEE DRAWINGS E-15A AND E-15B FOR ADDITIONAL DETAILS.
  - 9 SEE DETAIL A/E-30 FOR COMPLETE WIRINGS FROM EACH MOTOR TO PULL BOX TO CONTROL PANEL.

**SEE DRAWING E400-1  
FOR REQUIRED WORK  
AT THIS AREA**

**PARTIAL SITE PLAN A**  
SCALE: 1/4" = 1'-0"

FILENAME: 286F-E25 Addm 2 1-20-17 11:24am tp || XREFS: X-SMSD-TBLK | M-Takemoto-PE-stamp Kcc--

REGISTERED PROFESSIONAL ENGINEER  
DIPLOMA IN ELECTRICAL ENGINEERING  
STATE OF CALIFORNIA  
11/18/16

0" 1"  
VERIFY SCALES  
BAR IS ONE INCH  
LONG ON FULL  
SIZE DRAWING.  
IF NOT ONE INCH  
LONG ON THIS  
DRAWING, ADJUST  
SCALES ACCORDINGLY

**ENGINEERS, INC.**  
Oakland, San Francisco, Orange County, CA

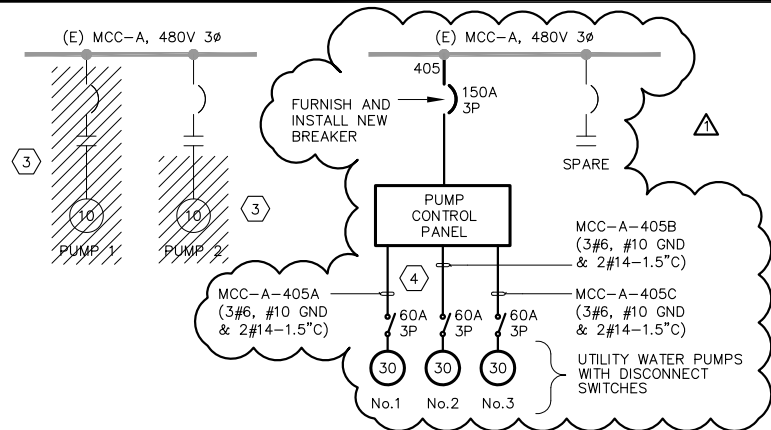
**RMC**  
water and environment

REV	DATE	BY	APVD	DESCRIPTION
01/20/17	DN	DTN		ADDENDUM 2

DESIGNED	TP	SUBMITTED: MARK TAKEMOTO RMC PROJECT ENGINEER CE-64369
DRAWN	LD	
CHECKED	DN	
APPROVED: STEVE CLARY RMC ENGINEER CE-30318		

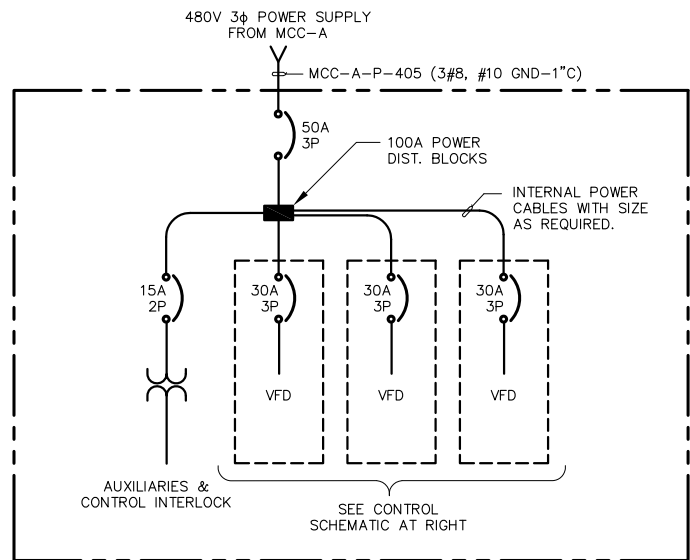
**SAN JUANITO • MARIN CITY  
SANITARY DISTRICT**

TREATMENT AND WET WEATHER FLOW UPGRADE		DWG NO <b>E-25</b>
<b>PARTIAL SITE PLAN THICKENER, SEC. DIGESTER &amp; GEN. BLDG.</b>		SHEET NO 191 OF 226
		PROJ NO 055-006
		DATE NOVEMBER 2016



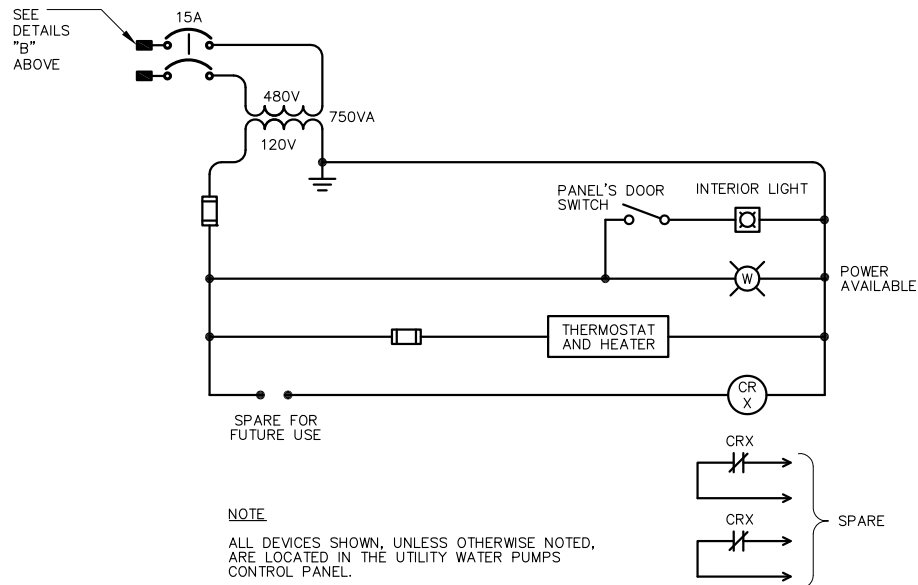
### MCC-A SINGLE LINE MODIFICATIONS (A)

SCALE: NTS



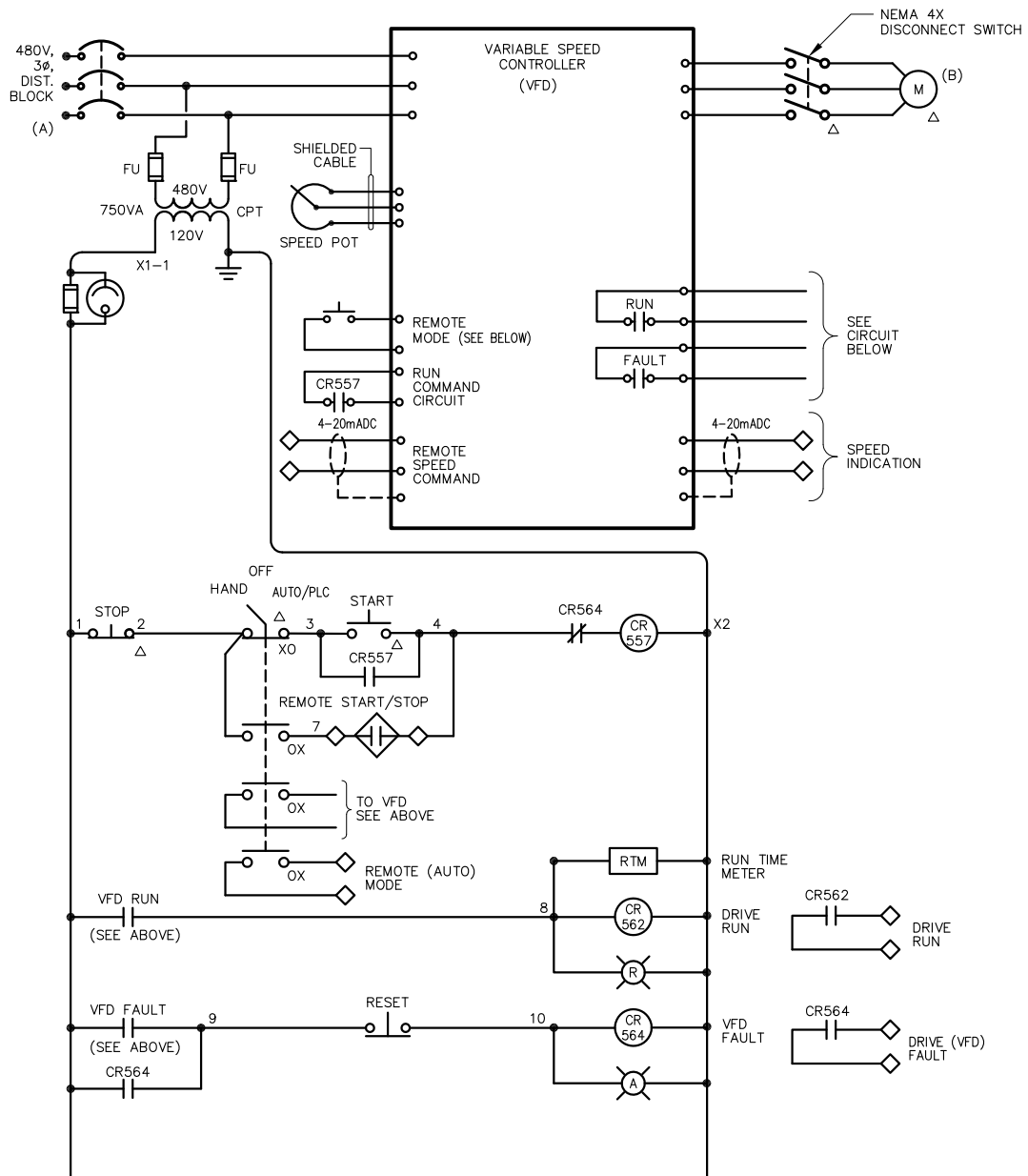
### UTILITY WATER PUMPS POWER FEED (B)

SCALE: NTS



### UTILITY WATER PUMPS CONTROL INTERLOCK (C)

SCALE: NTS



#### NOTES:

- U.O.N., ALL DEVICES SHOWN ARE LOCATED IN UTILITY WATER PUMPS CONTROL PANEL.
- THIS CONTROL SCHEMATIC IS TYPICAL FOR 3 PUMPS.

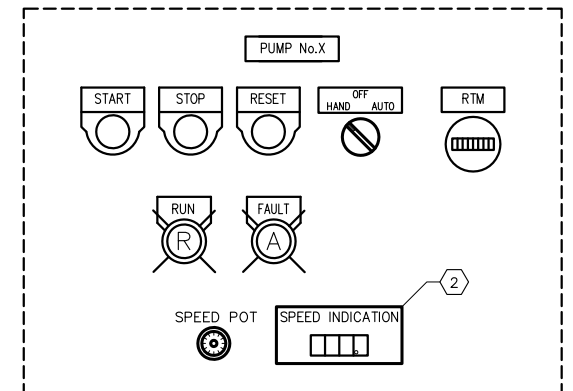
EQUIPMENT	(A)	(B)	NOTES
UTILITY WATER PUMP NO. 1	MAIN DIST. POWER BLOCK	MOTOR	
UTILITY WATER PUMP NO. 2	MAIN DIST. POWER BLOCK	MOTOR	
UTILITY WATER PUMP NO. 3	MAIN DIST. POWER BLOCK	MOTOR	

### UTILITY WATER PUMPS CONTROL DIAGRAM (D)

SCALE: NTS

#### SHEET NOTES:

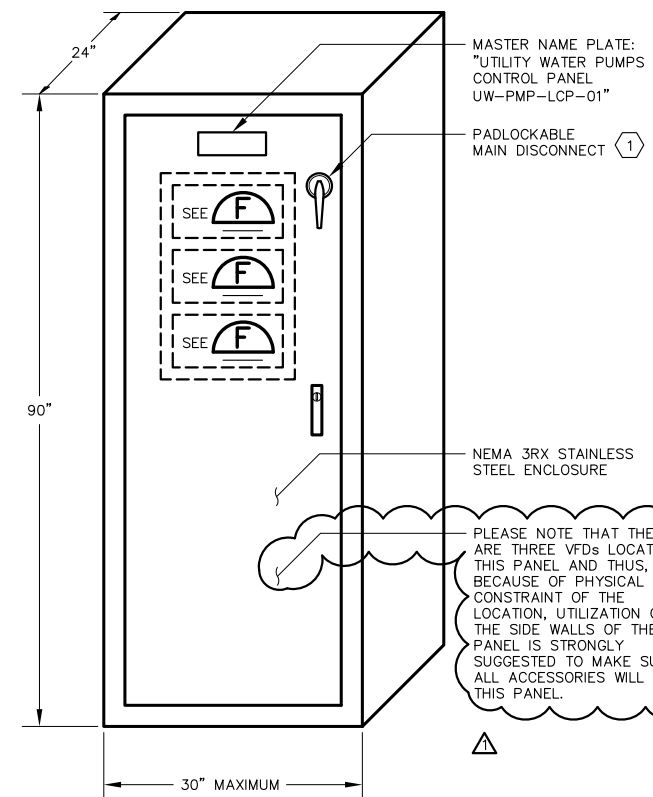
- THIS PANEL SHALL BE NEMA 3RX (STAINLESS STEEL) WITH ALL DEVICES MOUNTED ON THE PANEL'S DOOR SUITABLE FOR CORROSIVE ENVIRONMENT. SEE DIV 16 SPECS FOR DETAILED REQUIREMENTS.
- THIS INDICATOR MAY BE DELETED IF THE KEYPAD ALREADY HAS THIS FUNCTION.
- REMOVE EXISTING CONDUCTOR IN EXISTING CONDUITS AS SHOWN.
- MOTOR FEEDERS TO PUMP CONTROL PANEL SHALL BE VIA A NEW PULL BOX. SEE DETAIL A/E-32.



### TYPICAL CONTROL DEVICES (F)

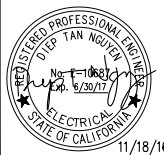
TYPICAL FOR THREE PUMPS

SCALE: NTS



### UTILITY WATER PUMPS CONTROL PANEL (E)

SCALE: NTS



0" = 1" — VERIFY SCALES — BAR IS ONE INCH LONG ON FULL SIZE DRAWING. IF NOT ONE INCH LONG ON THIS DRAWING, ADJUST SCALES ACCORDINGLY

ENGINEERS, INC.  
Oakland, San Francisco, Orange County, CA



REV	DATE	BY	APVD	DESCRIPTION
1	01/20/17	DN	DTN	ADDENDUM 2

DESIGNED	TP
DRAWN	LD
CHECKED	DN

SUBMITTED:	MARK TAKEMOTO	RMC PROJECT ENGINEER	CE-64369
APPROVED:	STEVE CLARY	RMC ENGINEER	CE-30318



TREATMENT AND WET WEATHER FLOW UPGRADE

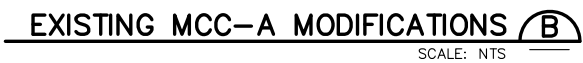
UTILITY WATER PUMP CONTROL  
DIAGRAM AND CONTROL PANEL

DWG NO	E-30
SHEET NO	196 OF 226
PROJ NO	055-006
DATE	NOVEMBER 2016

FILENAME: 286F-E30 Addm 2 1-20-17 11:25am tp 11 XREFS: X-SMSD-TBLK KCC--

Last Saved By: tp 1-20-17 11:23am





- 1 REMOVE ALL INTERNAL AND EXTERNAL DEVICES IN THIS PANEL. PLUG EACH HOLE WITH PROPER HEAVY DUTY PLUG. THIS BOX WILL BECOME A PULL BOX WITHOUT ANY INTERNAL ARCING DEVICES.
- 2 REMOVE EXISTING ANALYZER CONTROLLERS AND ASSOCIATED WIRINGS. INSTALL NEW BLANK TO COVER THE EXISTING CUTOUTS TO MAKE ROOM FOR NEW DIN RAIL MOUNTED I/O FOR THE EXISTING PLC-6 LOCATED INSIDE THIS PANEL.
- 3 THIS AREA IS CLASS I DIV1 HAZARDOUS LOCATION INSTALLATION AND MATERIALS AS WELL AS EQUIPMENT SHALL BE CLASSIFIED AS SUCH.
- 4 FURNISH AND INSTALL A NEMA 4X STAINLESS STEEL PULL BOX 18"x18"x8" DEEP FOR CONDUITS/CABLE TO FEED UTILITY WATER PUMPS.
- 5 THIS EXISTING MOTOR STARTER AND ACCESSORIES SHALL REMAIN AS SPARE REMOVE EXISTING NAMEPLATE "RECLAIM PUMP No.2"
- 6 REMOVE EXISTING MOTOR STARTER & ACCESSORIES OF EXISTING RECLAIM PUMP No.1. FURNISH AND INSTALL A NEW 150A 3P CIRCUIT BREAKER TO FEED UTILITY WATER PUMPS LOCAL CONTROL PANEL. PROVIDE AND INSTALL NEW NAMEPLATE "UTILITY WATER PUMPS CONTROL PANEL UW-PMP-LCP01."
- 7 9#6, 3#10 GND & 6#14-2.5" C

