ORANGE COUNTY WATER DISTRICT
18700 Ward Street
Fountain Valley, California 92708

ADDENDUM NO. 4
TO
CONTRACT DOCUMENTS
FOR
CITY OF SANTA ANA
PFAS TREATEMENT AT JOHN GARTHE RESERVOIR
CONTRACT NO. SA-2025-1
11/5/2025

This addendum serves as written notice of the following corrections, clarifications, additions and/or deletions to any and all copies of the Request for Bids for CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR for OCWD.

THE BIDDER SHALL EXECUTE THE CERTIFICATION AT THE END OF THIS ADDENDUM AND SHALL ATTACH IT TO THE BID SUBMITTED.

The attached revisions are made to the Contract Documents, Technical Specifications, Appendix, and Plan Sheets:

BID SCHEDULE

None

GENERAL PROVISIONS

None

SPECIAL PROVISIONS

TECHNICAL SPECIFICATIONS

1. Section 01025 – Measurement and Payment, 1.02 – I (Item No. 9), **Delete** the following:

   “Work under this item shall include furnishing all labor, materials and equipment to furnish, coordinate and install the IX Treatment System, including but not limited to the pressure vessels, manifolds, piping, valves and appurtenances that are a part of the IX Treatment System; providing the engineering, and bolts and appurtenances for IX Filter System vessel anchorage; structural concrete, over excavation, structural backfill, compaction, and waterproofing; site lighting, and any other appurtenant work as shown on the plans and as described in these specifications, complete in place.”

   Replace with:

   “Work under this item shall include furnishing all labor, materials and equipment to furnish, coordinate and install the IX Treatment System, including but not limited to the pressure vessels, manifolds, piping, valves and appurtenances that are a part of the IX Treatment System; providing the engineering, and bolts and appurtenances for IX Filter System vessel anchorage; structural concrete, over excavation, structural backfill, compaction, and waterproofing, and any other appurtenant work as shown on the plans and as described in these specifications, complete in place."

2. Section 01741 – Construction Waste Management and Disposal, 1.01 – H.2 (Item No. 48), **Delete** the following:

   "2. The only companies approved by the City Council to haul temporary construction and demolition material in the City of Santa Ana are:
   a. Ware Disposal Company, Inc.
   1018 N. Lincoln Avenue
   Santa Ana, CA 92701
   Phone Number: (714) 834-0234
   b. Waste Management
   1800 South Grand
   Santa Ana, Ca 92705
   Phone Number: (714) 558-7761."

   Replace with:

   "The only company approved by the City Council to haul temporary construction and demolition material in the City of Santa Ana is:
   a. Republic Services
   1800 S Grand Ave.
   Santa Ana, CA 92705
   Phone Number: (657) 467- 6220"

3. Section 15066 – Double Wall Chemical Pipe System **DELETE** AND **REPLACE** entirely with revised Section 15066 included in Attachment A-1 of this Document.

4. **ADD** Specification Section 15072- CPVC Pipe and Fittings included in Attachment A-1 of this Document.

APPENDIX

None

PLAN SHEETS

1. DELETE AND REPLACE the following Plan Sheets with revised sheets included in Attachment A-2 of this Document:

    a. DWG G0101

    b. DWG CD0102

    c. DWG CD3101

    d. DWG C0102

    e. DWG C0104

    f. DWG C0106

    g. DWG S5201

    h. DWG D1102

    i. DWG D1103

    j. DWG D1104

    k. DWG D1106

    l. DWG D1301

    m. DWG D1302

    n. DWG D3101

    o. DWG D3302

    p. DWG E0101

    q. DWG E0603

2. DELETE all references to "PVC" and REPLACE with "CPVC" on Drawings D-2102, D-2303 and D-2304.

3. DWG CD0102 has been revised to include removal and disposal of existing concrete wellhead.

QUESTION & ANSWER TABLE

1. Please refer to Attachment B-1 of this Addendum No.4 for the Question & Answer Table.

2. Please refer to Attachment B-2 of this Addendum No. 4 for a conceptual delineation of the SA-1 scope. This exhibit highlights the intent of the scope of work as described in Bid Schedule B. Conduit and wiring from the Hydrogenerator SWBD to the Well 36 switchboard shall also be included within Bid Schedule B.

ATTACHMENT A-1

NEW TECHNICAL SPECIFICATIONS

SECTION 15066 – DOUBLE WALL CHEMICAL PIPE SYSTEM

PART 1 – GENERAL

1.01 DESCRIPTION

A. This section covers the double wall chemical containment pipe system to be installed on the chemical feed piping as shown on the Drawings and as specified herein. The system shall include but is not limited to the double wall containment pipe and the plexiglass shields as specified herein.

B. The Contractor shall furnish all labor, materials, equipment and incidentals necessary and install the double wall chemical pipe system.

1.02 RELATED WORK SPECIFIED ELSEWHERE AND REFERENCE CODES AND STANDARDS

A. Section 11520 – On-Site Hypochlorite Generation System

B. Section 11246 – Chemical Metering System

C. Section 15068 – Schedule 80 PVC Pipe and Fittings

D. Section 15072 – CPVC Pipe and Fittings

E. Reference Standards:

1. American Society for Testing and Materials (ASTM)

2. ASTM D 1784 – Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds

3. Other references that apply to the installation and fabrication of the double wall piping systems specified herein and referenced shall apply.

1.03 SUBMITTALS

A. Shop drawings submittals shall be made in accordance with the requirements of Section 01300, except as modified herein.

B. Provide detailed pipe fabrication drawings for the double wall containment pipe and fittings. Identify all components in a list of materials. Detail each unique spool, identifying all dimensions, welds, and methods of construction.

C. Provide double-line scaled drawings showing all fittings, valves, in-line devices, chemical injectors, and supports. Identify each support and cross-reference to applicable mechanical details or manufacturer's catalog number. Identify all in-line equipment and valves by project equipment number.

D. Provide detailed drawings of the plexiglass shields showing sizing for each location, weight, materials, support details, and installation instructions.

E. Submit complete operation and maintenance instruction, lubrication schedules and troubleshooting guides for review.

1.04 QUALITY ASSURANCE

All Schedule 80 CPVC, CPVC tubing, and PFA tubing double containment piping including fittings and appurtenances shall be furnished by a manufacturer who is fully experienced, reputable, and qualified in the fabrication, and installation of the secondary containment as specified herein. The equipment shall be designed, constructed, and installed in accordance with the best practices and methods and shall comply with these Specifications.

PART 2 – MATERIALS

2.01 GENERAL

Double wall containment piping shall be installed in the locations as shown on the Drawings. All plastic pipe and fittings shall conform to this specification section whether provided as a part of an equipment “package” or purchased separately by the Contractor.

2.02 CONTAINMENT PIPE

A. All double wall containment pipe shall be made of Schedule 80 CPVC with CPVC tubing unless specifically noted otherwise on the Drawings or in other sections of the specifications.

B. Schedule 80 CPVC Containment Piping: Pipe shall be made of polyvinyl chloride, Schedule 80, conforming to ASTM D1784-92.

C. Fittings for Schedule 80 pipe shall be socket type, solvent weld in conformance with ASTM D2467. Solvent welded joints shall be watertight.

D. Solvent Cement: CPVC solvent cement shall be in compliance with ASTM.

2.03 PRESSURIZED CARRIER TUBING

A. Tubing and Fittings: small bore PFA carrier pipe shall be of flexible PFA tubing, suitable for flaring and available in continuous lengths of 25, 50, 100, 250 and 1,000 feet.

B. PFA tubing wall thickness shall be as follows:

1. For NS ½-inch, 0.062-inches.

2. For NS ¾-inch, 0.062-inches.

3. For NS 1-inch, 0.062-inches.

4. For NS 1.5-inch, 0.062-inches.

5. For NS 2-inch, 0.062-inches.

6. For NS 2.5-inch, 0.062-inches.

7. For NS 3-inch, 0.062-inches.

C. Pressure ratings for PFA tubing shall be a minimum of 100 psig at 25 degrees C.

D. Fittings: flare type (no threads exposed to fluid).

E. Manufacturers: Tubing shall be manufactured by Chemline Plastics Unlimited or approved equal. Fittings shall be manufactured by FlareLINK by Fit-LINE, Inc., or approved equal.

F. All chemical carrier tubing and fittings shall comply with NSF-61 as approved for use with drinking water.

2.04 LARGE DIAMETER GRAVITY CARRIER TUBING

A. Tubing and Fittings: large diameter (>2-inch) carrier tubing shall only be approved for use in low pressure applications and not on the discharge side of metering pumps. Carrier tubing shall be of flexible CPVC tubing.

B. CPVC tubing specifications shall be as follows:

ID (in)	OD (in)	Min Bend Radius (in)	Max Working Pressure at 73F (psi)
2	2.50	9-3/8	34
2.5	3	13-3/8	16
3	3-1/2	18	14
4	5.00	17.00	19
6	6-1/2	55-3/8	8

C. Fittings: barbed (no threads exposed to fluid).

D. Manufacturers: Tubing shall be manufactured by Typgon S3 B-44-4X or approved equal.

E. All chemical carrier tubing and fittings shall comply with NSF-61 as approved for use with drinking water.

PART 3 – EXECUTION

3.01 SHIPMENT, HANDLING AND STORAGE

A. CPVC containment pipe, CPVC tubing, and small bore PFA carrier tubing shall be delivered to the site in unbroken bundles packaged in such manner as to provide protection against damage. When possible, pipe should be stored at the job site in the unit packages until ready for use. Packaged units shall be handled using a forklift or a spreader bar with fabric straps. Packaged units shall not be stacked at the job site higher than two units high.

B. When it is necessary to store CPVC containment pipe and PFA tubing for more than 30 days, exposure to direct sunlight shall be prevented by covering the pipe with an opaque material. Adequate air circulation above and around the pipe shall be provided as required to prevent excessive heat accumulation. Double wall containment pipe shall not be stored close to heat sources or hot objects such as heaters, fires, boilers or engine exhaust. Pipe gaskets shall be protected from excessive exposure to heat, direct sunlight, ozone, oil and grease. The interior and all sealing surfaces of pipe, fittings and other appurtenances shall be kept clean and free of dirt and foreign matter.

C. Care shall be taken in handling and laying pipe and fittings to avoid severe impact blows, crushing, abrasion damage, gouging or cutting. Pipe shall be lowered, not dropped, from trucks or into trenches. All cracked, damaged or defective pipe and fittings, or any length of pipe having a gouge, scratch or other permanent indentation of more than 10 percent of the wall thickness in depth, shall be rejected and removed at once from the work and replaced with new acceptable pipe at no additional cost to the City.

3.02 INSTALLATION

A. General: The Contractor shall be responsible for the proper installation of all double wall chemical pipe system components. Installation of system components and interconnections between system components and other plant systems shall be in accordance with the Specifications, manufacturer's printed instructions, and approved shop drawings.

B. Preparation for Installation

1. Keep pipe clean and free of foreign material during storage and installation.

2. Move pipe spools by hand or with slings. Do not store or drop pipe directly on concrete or ground.

3.03 PIPE INSTALLATION

A. Alignment

1. Containment pipe shall utilize long radius elbows to facilitate pulling tubing.

2. Adjust containment pipe around fittings to prevent misalignment and stresses in pipe and connections.

B. Connections

1. Containment pipe shall be sealed at the ends to capture any leakage. Field locate fittings as required for component installation and removal.

3.04 PIPE PRESSURE TEST

A. The carrier pipe system shall be tested for leaks prior to performing the pressure test on the containment piping as specified in the applicable piping specifications.

B. The containment piping shall be tested to a maximum of 5 psi with air. A pressure regulator should be used to ensure that over pressurizing and brittle fracture of the containment piping does not occur.

C. The joints shall be soaped and visually inspected for leaks. Leaks shall be corrected, and the piping retested.

END OF SECTION

SECTION 15072 – CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE AND FITTINGS

PART 1 – GENERAL

1.01 DESCRIPTION

A. Scope of Work

1. Furnish all labor, materials, equipment and incidentals required, and install and test in the locations and of the size as shown on the Drawings and specified herein Schedule 80 Chlorinated Polyvinyl Chloride (CPVC) piping, fittings and appurtenances.

2. All plastic pipe and fittings shall conform to this specification section whether provided as a part of an equipment "package" or purchased separately by the CONTRACTOR.

3. CPVC piping maximum size is 8 inch nominal diameter.

B. Related Work Described Elsewhere

1. Section 01300 – Shop Drawing Submittals

2. Section 01600 – Materials and Equipment

3. Section 09800 – Painting and Coating

4. Section 15100 – Valves, General

1.02 QUALITY ASSURANCE

A. CPVC pipe, fittings and appurtenances shall meet the following standards:

1.	Pipe	ASTM D1784/ASTM F441, Type IV, Grade I, CPVC 4120, Schedule 80, Cell Classification 23447-A, bearing NSF seal.
2.	Fittings	ASTM D2464 or D2467, Cell Classification 23447-A, bearing NSF seal.
3.	Flanges	Diameter and drilling shall conform to ANSI B16.5, Class 150.
4.	Flange Bolts and Nuts	Flange bolts and nuts shall conform to ASTM F593 and F594 respectively.
5.	Flat Washers	Shall be of the same material as the bolts.
6.	Flange Gaskets	Full face, 1/8 inch thick, chemical-resistant elastometric material suitable for the specified service.
7.	Solvent Cement	ASTM D2564
8.	Primer	ASTM F656

9.	Expansion Joints	Flexonics “Style 101” or “Style 102”, Flex-weld Keflex EPDM/Teflon expansion joints, Edlon "Thermo-molded TFE", Resistoflex "Style R6905", or equal molded expansion joint.

1.03 SUBMITTALS

A. Materials and Shop Drawings

1. Shop drawings shall be submitted to the Engineer for approval. All products within this specification shall be combined into a single submittal which shall include at least the following:

    a. Dimensioning and the technical specification for all piping, fittings, and appurtenances to be furnished.

    b. Letter of Certification from the National Sanitation Foundation International (NSF) stating compliance with Standard 14 and Standard 61.

    c. Letter from the Manufacturer verifying chemical compatibility of all products to be used in chemical feed systems.

    d. Operating Instructions (Not Applicable)

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

Pipe and fittings shall be handled and stored in a manner which will ensure installation in sound, undamaged condition. Handling methods and equipment used shall prevent damage to pipe. Bare cables, chains, or metal bars shall not be used. Pipe shall be stored off the ground on wide padded skids.

PART 2 – PRODUCTS

2.01 GENERAL

All materials that come into contact with the water being treated or the finished water shall be on either the EPA or NSF 61 lists of products approved for use in contact with potable water. Manufacturers shall submit an affidavit with the shop drawings indicating approval by the EPA or NSF 61 for the materials used in products that come into contact with the water.

2.02 MATERIALS AND EQUIPMENT

A. Piping for Buried Service

1. Pipe and fittings:

a. Pipe and fittings shall be gasketed style utilizing twin gasket coupling or single gasket bell and spigot unless otherwise shown on the Drawings or specified in other Sections in this Division.

b. All chemical piping using Schedule 80 CPVC shall be solvent welded.

c. Pipe lengths: Laying length of 20 feet or as shown on the Drawings.

2. Joints:

a. Provide rubber gaskets in sufficient quantity to allow for loss.

b. Provide couplings of the same quality as the pipe that will maintain tight joints when subjected to the same hydrostatic tests designated for the pipe.

3. Adapters: When applicable, provide adapters for connecting chlorinated polyvinyl chloride pipe to pipes constructed from other material.

B. Piping for Exposed Service

1. Pipe and fittings:

a. Solvent weld type unless otherwise shown on the Drawings or specified in other Sections in the Division.

b. Chemical piping, fittings and components: Schedule 80 CPVC, normal impact unless otherwise shown on the Drawings or specified in other Sections in this Division.

2. Joints:

a. Solvent weld using solvent supplied or approved by pipe manufacturer.

b. Threaded and screwed joints: Permitted only on Schedule 80 and heavier pipe.

c. Couplings and fittings: Minimum schedule and pressure rating as the pipe.

3. Provide suitable adapters for connections to equipment and other piping systems.

C. Solvent Cement

1. CPVC solvent cement shall be in compliance with ASTM D 2564.

2. Solvent cement shall be specified by compatibility based on pipe service and size.

3. For CPVC pipe in chemical service, provide IPS Corp Type 724 cement or another cement certified by the manufacturer for the proposed chemical service. Manufacturer to provide certification with submittal.

D. Flanges

1. The CONTRACTOR shall provide flanges on CPVC piping to connect to flanged valves, fittings, or equipment and as shown in the Drawings. Flanges shall match the connecting flanges on the adjacent fitting, valve or piece of equipment and must meet the test pressure of the piping system as specified in Section 15040 Testing and Flushing.

2. Except for higher pressure flange connections that may be required as noted above, flanges shall meet ANSI B16.5 and be rated for an internal pressure of 150 psi at 73-degrees F.

3. Flange hardware (bolts, nuts, and washers) for CPVC flanges shall be Type 316 stainless steel in accordance with ASTM F593 and F594, respectively. Flange hardware for CPVC flanges on Sulfuric Acid chemical piping and at injection nozzles on process piping shall be Hastelloy C-276. Bolt length shall be provided such that bolts will project 1/8 to 3/8 inch beyond the outer face of the nut.

4. For chemical feed piping systems, the gasket material shall be selected by the gasket manufacturer based on the chemical concentrations.

2.03 QUALITY CONTROL

CONTRACTOR shall follow Manufacturer's and Supplier's recommended product quality control specifics as required for this project.

PART 3 – EXECUTION

3.01 PREPARATION

A. Prior to Shipment

1. Each piece of pipe shall be plainly marked at the manufacturer with schedule number and pressure class. All piping shall be readily identifiable.

2. All piping shall be thoroughly cleaned of sand, scale, rust or other foreign substances. Open ends of piping shall be suitably closed to prevent the entrance of foreign matter after cleaning and during shipment and storage.

B. Delivery, Storage and Handling of Materials: All materials shall be delivered to the site, stored, and handled in accordance with the manufacturer's instructions. CONTRACTOR shall inspect shipments for damage and content well in advance of the date scheduled for incorporation in the Work.

3.02 INSTALLATION

A. Install CPVC pipe where shown on the Drawings and in strict accordance with the manufacturer's technical data and printed instructions.

B. Joints for Schedule 80 CPVC pipe and fittings shall be solvent welded or threaded. All joints shall be made watertight. All pipe cutting, threading and jointing procedures for solvent welded and threaded CPVC pipe joints shall be in strict accordance with the pipe and fitting manufacturer's printed installation instructions. Thread lubricant for threaded joints shall be Teflon tape only. In making solvent welded connections, clean dirt and moisture from pipe and fittings, bevel pipe ends slightly with emery cloth, if necessary and apply solvent cement of proper grade.

C. Installation of valves and fittings shall be strictly in accordance with the manufacturer's instructions. Particular care shall be taken not to over-stress threaded connections at sleeves. In making solvent weld connections the solvent shall not be spilled on valves or allowed to run from joints.

D. All piping shall have sufficient number of unions to allow convenient removal and shall be as approved by the CITY.

E. Where plastic passes through wall sleeves, joints shall be sealed with a mechanical seal equal to Link-seal.

F. Concrete inserts for hangers and supports shall be furnished and installed in the concrete as it is placed. The inserts shall be set in accordance with the requirements of the piping layout and the CONTRACTOR shall verify their locations from approved piping layout Drawings and the structural Drawings. Pipe Hangers and Supports for Process Piping are specified in Section 15144.

G. Jointing

1. Clean each pipe length, coupling and fitting of all debris and dirt before installation.

2. Do not use pipe length if there are any cuts, abrasions, or defects on the surface of the pipe.

3. Provide and use coupling pullers for joining the pipe when required.

4. Shove home each length of pipe against the pipe previously laid and hold securely in position.

5. Do not pull or cramp joints.

H. Fabrication

1. Cutting:

    a. Use a hand saw or pipe cutter with blades (not rollers).

    b. Examine all cut ends for possible cracks caused by cutting.

2. Connecting:

    a. Solvent weld connections are recommended by the manufacturer.

    b. Connect pipe and fittings only when temperature is above the minimum recommended by the manufacturer.

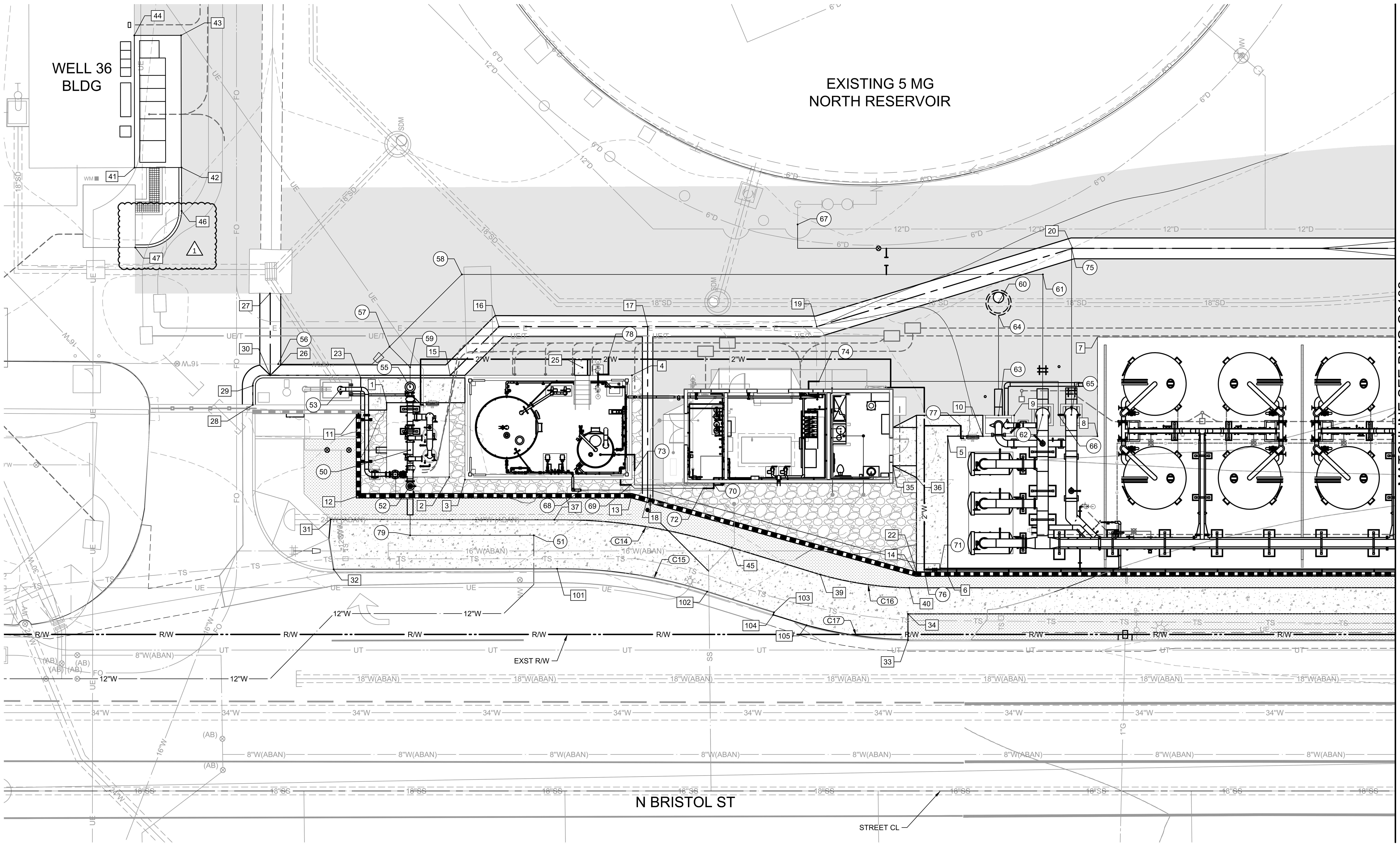
    c. Threaded adapters shall be connected only with plastic male into metal female.

3.03 INSPECTION AND TESTING

All CPVC pipe shall be pressure tested in accordance with Section 15040 Testing and Flushing.

END OF SECTION

ATTACHMENT A-2
REVISED PLAN SHEETS



HORIZONTAL CONTROL SITE FEATURES			
PT#	NORTHING	EASTING	DESCRIPTION
1	2227355.07	6064919.88	NE CORNER OF SAND SEPARATOR PAD
2	2227343.50	6064905.28	SW CORNER OF SAND SEPARATOR PAD
3	2227340.51	6064904.69	NW CORNER OF CHEMICAL CONTAINMENT STRUCTURE
4	2227307.93	6064923.73	SE CORNER OF CHEMICAL CONTAINMENT STRUCTURE
5	2227247.80	6064910.26	NE CORNER OF PRETREATMENT PAD
6	2227248.60	6064883.61	NW CORNER OF PRETREATMENT PAD
7	2227218.58	6064928.40	NE CORNER OF IX VESSELS PAD
8	2227219.15	6064909.40	CORNER OF PRETREATMENT/IX VESSELS PAD
9	2227234.97	6064913.88	SE CORNER OF AIR GAP
10	2227241.09	6064910.06	NW CORNER OF AIR GAP
11	2227360.51	6064917.96	BEGIN BLOCK WALL
12	2227360.98	6064902.22	N CORNER OF BLOCK WALL
13	2227308.68	6064900.66	BLOCK WALL ANGLE PT
14	2227254.71	6064884.04	BLOCK WALL ANGLE PT
15	2227342.74	6064924.77	N END RIBBON GUTTER
16	2227333.14	6064933.82	RIBBON GUTTER ANGLE PT
17	2227304.65	6064932.97	RIBBON GUTTER INTERSECTION
18	2227305.62	6064900.15	W END RIBBON GUTTER
19	2227272.25	6064932.00	RIBBON GUTTER ANGLE PT
20	2227222.82	6064945.53	RIBBON GUTTER ANGLE PT
22	2227254.58	6064884.45	CORNER OF SIDEWALK
23	2227359.89	6064924.78	CORNER OF SIDEWALK
25	2227317.40	6064925.51	CONCRETE LANDING
26	2227375.14	6064927.73	BEGIN CONCRETE RIBBON GUTTER
27	2227376.77	6064941.49	END RIBBON GUTTER/CONNECT TO SD LOCAL DEPRESSION
28	2227380.71	6064920.23	BEGIN PROPOSED CURB AND GUTTER
29	2227380.60	6064923.89	CURB AND GUTTER BC
30	2227377.19	6064925.79	CURB AND GUTTER LOCAL DEPRESSION
31	2227366.46	6064897.84	NE CORNER OF SIDEWALK
32	2227366.16	6064888.26	NW CORNER OF SIDEWALK
33	2227256.59	6064871.42	SIDEWALK EC
34	2227256.45	6064876.44	CORNER OF SIDEWALK
35	2227258.47	6064904.91	TOP CORNER OF RAMP
36	2227254.04	6064902.53	BOTTOM CORNER OF RAMP
37	2227323.62	6064896.50	SIDEWALK BC
39	2227273.01	6064884.47	SIDEWALK BC
40	2227256.06	6064881.43	SIDEWALK EC
41	2227402.00	6064966.37	NW CORNER OF CONCRETE PAD
42	2227393.01	6064966.11	SW CORNER OF CONCRETE PAD
43	2227392.33	6064991.44	SE CORNER OF CONCRETE PAD
44	2227401.28	6064991.69	NE CORNER OF CONCRETE PAD
45	2227289.85	6064890.16	SIDEWALK EC
46	2227393.24	6064957.80	CURB BC
47	2227402.32	6064951.05	CURB EC
101	2227323.37	6064887.09	SIDEWALK BC
102	2227294.76	6064881.86	SIDEWALK BC
103	2227282.09	6064877.50	SIDEWALK EC
104	2227282.25	6064877.03	SIDEWALK BC
105	2227275.93	6064874.85	SIDEWALK BC

HORIZONTAL CONTROL PIPING			
PT#	NORTHING	EASTING	DESCRIPTION
50	2227350.84	6064910.67	12" WELL 24 RAW WATER INFLUENT
51	2227327.64	6064893.63	CONNECTION PT TO EXST 12" WELL 32 DISCHARGE
52	2227351.04	6064903.75	12" WELL 32 RAW WATER INFLUENT
53	2227363.82	6064922.73	12" WELL 32 RAW WATER FLUSH
55	2227350.48	6064922.74	16" RAW WATER SAND SEPARATOR EFFLUENT
56	2227375.62	6064927.90	CONNECTION PT TO EXST 16" WELL 36 DISCHARGE
57	2227354.19	6064930.59	COMBINED RAW WATER TEE CONNECTION PT
58	2227339.94	6064944.02	24" RW BEND
59	2227350.36	6064926.53	16" RW BEND

HORIZONTAL CONTROL PIPING			
PT#	NORTHING	EASTING	DESCRIPTION
60	2227237.33	6064935.55	SD MANHOLE
61	2227228.67	6064940.70	24" RW BEND
62	2227229.52	6064913.80	BEGIN 24" TREATMENT INFLUENT WATER
63	2227237.97	6064913.97	BEGIN 18" DRAIN
64	2227237.40	6064933.13	END 18" DRAIN
65	2227224.03	6064913.64	24" PFAS TREATMENT EFFLUENT
66	2227226.53	6064913.71	BEGIN 1" EFFLUENT SAMPLE
67	2227275.35	6064951.68	CONNECTION PT TO EXST N RESERVOIR INLET
68	2227318.37	6064902.03	BEGIN 4" SODIUM HYPOCHLORITE
69	2227308.74	6064902.74	BEGIN 1" BRINE

HORIZONTAL CONTROL PIPING			
PT#	NORTHING	EASTING	DESCRIPTION
70	2227292.72	6064902.24	BEGIN 1" SOFT WATER
71	2227250.06	6064884.88	END 4" SODIUM HYPOCHLORITE
72	2227294.92	6064901.66	END 1" BRINE
73	2227307.97	6064905.51	END 1" SOFT WATER
74	2227272.18	6064921.49	1" PFAS EFFLUENT SAMPLE CONNECTION
75	2227223.02	6064945.54	24" TEE TREATMENT EFFLUENT SPLIT PT
76	2227253.07	6064884.80	CONTINUE 2" POTABLE WATER
77	2227245.27	6064912.19	2" SERVICE CONNECTION
78	2227312.33	6064927.02	2" SERVICE CONNECTION
79	2227351.33	6064894.34	12" RW BEND

CURVE TABLE				
CURVE #	LENGTH	TANGENT	RADIUS	DELTA
C14	34.51'	17.41	104.37	018°56'46"
C15	29.21'	14.72	93.25	017°56'38"
C16	17.27'	8.68	67.57	014°38'46"
C17	19.68'	9.89	81.83	013°46'45"

SCALE: 1" = 10'

0 5' 10' 20'

TETRA TECH
www.tetratech.com
17885 Von Karman Ave, Suite 500
Irvine, CA 92614
Tel: (949) 809-5000

BID SET

REGISTERED PROFESSIONAL ENGINEER STEVEN D. TEDESCO No. C039261 Exp. 12-31-25 CIVIL STATE OF CALIFORNIA

11/3/25

ORANGE COUNTY WATER DISTRICT

18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY
1	10/30/25	ADDENDUM 4	MTV

ORANGE COUNTY WATER DISTRICT

CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR

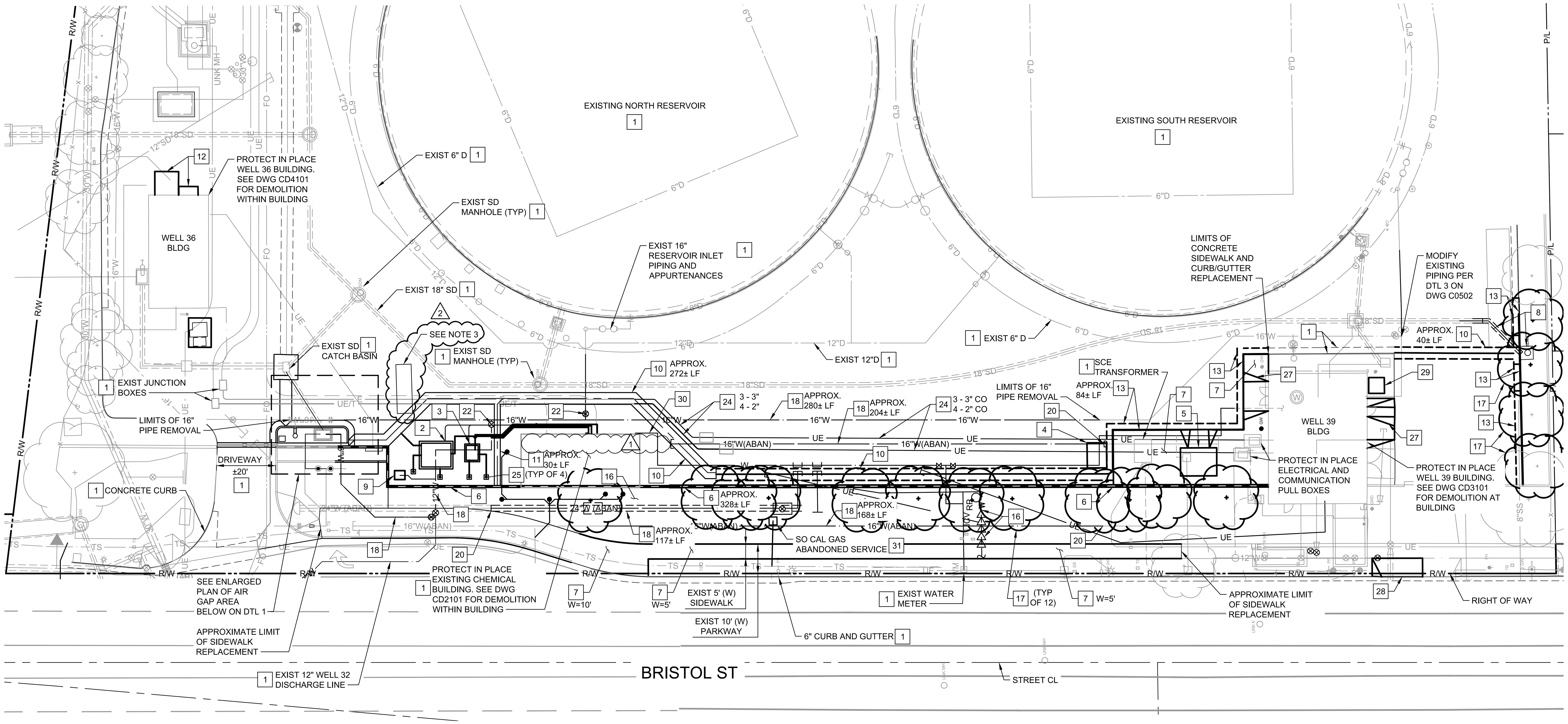
HORIZONTAL CONTROL

PROJ:	200-09382-23010
DESN:	KFM
DRWN:	WVPJ
CHKD:	KAB

G0101

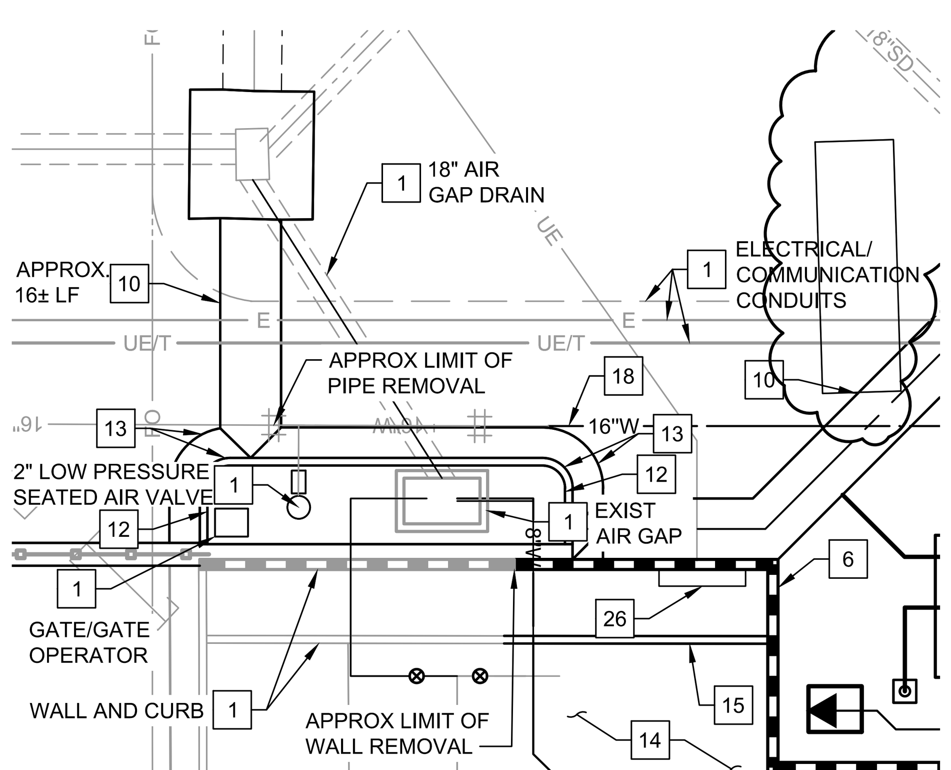
Bar Measures 1 inch, otherwise drawing not to scale

11/3/2025 11:08:07 AM - C:_AD\ACCDOCS\TETRA TECH INC\200-09382-23010 JOHN GARTHE RES PFAS\PROJECT FILES\CAD\SHEETFILES\G0101_HORIZCONTROL01.DWG - TRAN, BRIAN1



DEMOLITON PLAN

SCALE: 1" = 20'



1 AIR GAP AREA DEMOLITION

SCALE: 1" = 10'

DEMOLITION NOTES

X	DEMOLITION NOTES
1	PROTECT IN PLACE
2	REMOVE AND DISPOSE PRESSURE CONTROL VAULT PER DWG CD0103
3	REMOVE AND DISPOSE CHEMICAL INJECTION VAULT PER DWG CD0103
4	REMOVE AND DISPOSE CHEMICAL STORAGE SHED
5	REMOVE AND DISPOSE STORAGE BUILDING INCLUDING ALL LIGHTING AND ELECTRICAL CONDUITS
6	REMOVE AND DISPOSE 8' +/- HIGH (TO FOOTING) BLOCK WALL, PILASTER, AND FOOTING. LENGTH AS NOTED.
7	REMOVE AND DISPOSE OF CONCRETE SIDEWALK TO THE NEAREST JOINT (WIDTH AS SHOWN)
8	REMOVE AND DISPOSE OF CATCH BASIN (3'-6" x 5' x 4'-6" DEEP). REMOVE AND DISPOSE OF INTERFERING PORTION OF 18" PVC STORM DRAIN
9	REMOVE AND DISPOSE OF AIR VALVE, ENCLOSURE, AND CONCRETE PAD
10	REMOVE AND DISPOSE OF 4' WIDE CONCRETE RIBBON GUTTER
11	REMOVE AND DISPOSE OF 2' WIDE CONCRETE RIBBON GUTTER
12	REMOVE AND DISPOSE CONCRETE PAD
13	REMOVE AND DISPOSE CONCRETE CURB AND GUTTER
14	REMOVE AND DISPOSE OF AC PAVEMENT
15	REMOVE AND DISPOSE OF CONCRETE MOW STRIP
16	REMOVE AND DISPOSE OF LANDSCAPING, IRRIGATION, AND MOW STRIP.
17	REMOVE AND DISPOSE OF TREE (APPROX 10" DIAMETER)
18	REMOVE AND DISPOSE OF PIPING AND FITTINGS (LIMITS AS SHOWN)
20	ABANDON EXISTING PIPING IN PLACE TO LIMITS SHOWN. CUT AND CAP PER CITY STD PLAN NO. 1409 AND FILL WITH SLURRY
22	SALVAGE EXISTING VALVE PER CITY STD PLAN NO. 1430
24	REMOVE AND DISPOSE OF ELECTRICAL/COMMUNICATION CONDUITS
25	REMOVE AND DISPOSE OF AIR VENT ASSEMBLY
26	REINSTALL EXISTING JOHN GARTHE RESERVOIR WALL PLAQUE AT A LOCATION SELECTED BY THE CITY. REINSTATE ELECTRICAL SERVICE TO PLAQUE LIGHTING. FURNISH AND INSTALL ADDITIONAL CONDUITS, FITTINGS AND CONDUCTORS AS REQUIRED FOR REINSTALLATION OF PLAQUE
27	REMOVE AND DISPOSE OF CONCRETE RAMP
28	REMOVE AND DISPOSE OF EXISTING CONCRETE SIDEWALK AND DRIVEWAY
29	REMOVE AND DISPOSE OF EXISTING 150 GAL BRINE TANKS, SHED, SOFTENERS AND PANELS PER DWG CD3101
30	REMOVE AND DEMOLISH 2" WATER LINE
31	REMOVE INTERFERRING PORTIONS OF ABANDONED GAS LINE

NOTES TO CONTRACTOR:

1. FOR LIMITS OF AC PAVEMENT DEMOLITION AND REPLACEMENT SEE C0102 AND C0103.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH SOCAL GAS FOR THE ABANDONMENT OF THE EXISTING NATURAL GAS SERVICE LATERAL. FOR BIDDING PURPOSES, CONTRACTOR SHALL ASSUME THE SERVICE LINE WILL BE REMOVED AND DISPOSED OF WITHIN THE JOHN GARTHE SITE. CONTRACTOR SHALL CONNECT TO THE EXISTING SERVICE LINE PER SOCAL GAS'S REQUIREMENTS AND INSTALL NEW RISER, THREADED CAP, AND METER BOX WITHIN THE PARKWAY.
3. CONTRACTOR SHALL REMOVE INTERFERING PORTIONS OF EXISTING ABANDONED WELL PUMP BASE AS NEEDED TO INSTALLED PROPOSED IMPROVEMENTS. FOR BIDDING PURPOSES, CONTRACTOR TO ASSUME FULL REMOVAL OF 13' Lx 6'W x 7' DEEP REINFORCED CONCRETE PUMP BASE. 2

0 10' 20' 40'
SCALE: 1" = 20'

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11/3/25

ORANGE COUNTY WATER DISTRICT
18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY
1	10/25	ADDENDUM NO. 3	TLE
2	11/3	ADDENDUM NO. 4	TLE

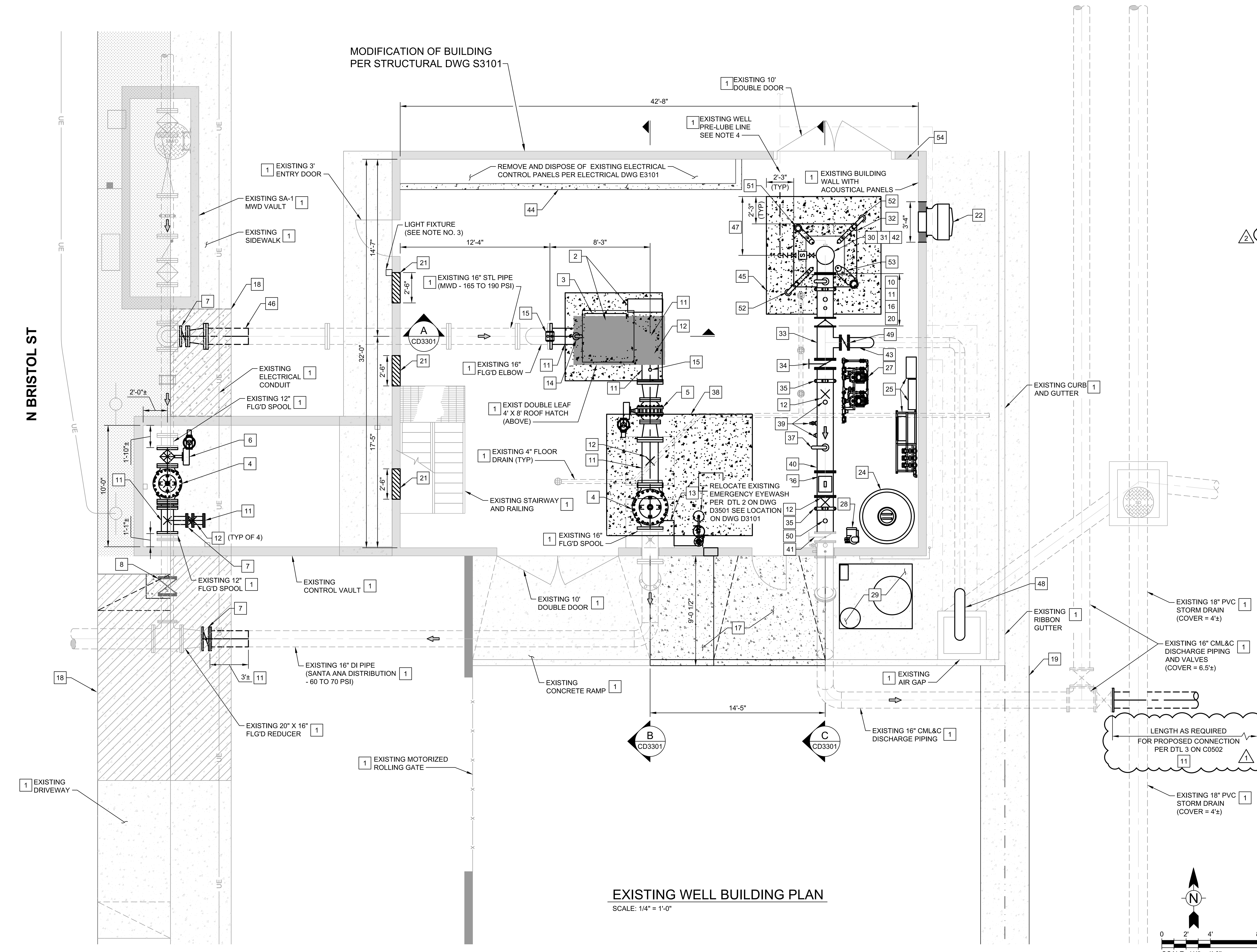
ORANGE COUNTY WATER DISTRICT

CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR

SITE DEMOLITION PLAN

PROJ:	200-09382-23010
DESN:	MV
DRWN:	RJW
CHKD:	TLE

CD0102



X	DEMOLITION NOTES
1	PROTECT IN PLACE
2	REMOVE AND DISPOSE OF EXISTING 16" HYDRO-GENERATOR AND CONTROL PANELS
3	REMOVE AND DISPOSE OF THE TOP 3 FEET OF THE EXISTING HYDRO-GENERATOR CONCRETE FOUNDATION. SEE NOTE 7
4	REMOVE AND SALVAGE EXISTING 12"/16" PRESSURE REDUCING VALVE
5	REMOVE AND SALVAGE EXISTING 12" BALL VALVE WITH MOTORIZED FLOW CONTROLLER AND ACTUATOR
6	REMOVE AND SALVAGE EXISTING 12" PLUG VALVE
7	REMOVE AND SALVAGE EXISTING 8"/12"/16" BUTTERFLY VALVE
8	ABANDON EXISTING 12" GATE VALVE PER DTL 3 ON DWG C0501
10	REMOVE AND DISPOSE OF EXISTING 16" CHECK VALVE
11	REMOVE AND DISPOSE OF EXISTING 8"/12"/16" PIPING, FITTINGS, AND APPURTENANCES
12	REMOVE AND DISPOSE OF EXISTING PIPE SUPPORT AND ANCHOR BOLTS
13	REMOVE AND DISPOSE OF EXISTING 1" PIPING, FITTINGS, VALVES, AND APPURTENANCES
14	REMOVE AND DISPOSE OF EXISTING AIR VALVE
15	REMOVE AND DISPOSE OF EXISTING PRESSURE TRANSMITTERS/GAUGE (TYP OF 2)
16	REMOVE AND DISPOSE OF EXISTING PRESSURE SWITCHES
17	REMOVE AND DISPOSE OF EXISTING CONCRETE WALK AND RAMP
18	REMOVE AND DISPOSE OF EXISTING CONCRETE SIDEWALK AND DRIVEWAY
19	REMOVE AND REPLACE EXISTING 4' WIDE RIBBON GUTTER
20	REMOVE AND DISPOSE OF EXISTING AIR & VACUUM RELEASE VALVE
21	REMOVE AND DISPOSE OF EXISTING LOUVERS AND PATCH EXISTING OPENING PER DTL 5 ON DWG S3501
22	REMOVE AND DISPOSE OF EXISTING EXHAUST FAN EF-1. SEE EXISTING PENETRATION PER DTL 5 ON DWG S3501.
24	REMOVE AND DISPOSE OF EXISTING 475 GAL SODIUM HYPOCHLORITE TANK (4' DIA x 6'-3" HIGH HDLPE TANK) SEE NOTE 6
25	REMOVE AND DISPOSE OF EXISTING SODIUM HYPOCHLORITE GENERATION UNIT SEE NOTE 5
27	REMOVE AND DISPOSE OF EXISTING DUPLEX METERING PUMP ASSEMBLY AND CONTROLLERS SEE NOTE 5
28	REMOVE AND DISPOSE OF EXISTING DILUTION BLOWER AND PIPING SEE NOTE 5
29	REMOVE AND DISPOSE OF EXISTING 150 GAL BRINE TANKS (25" DIA x 69" H), SHED, SOFTNERS AND PANELS SEE NOTE 5
30	REMOVE AND DISPOSE OF EXISTING PUMP (APPROX 328' PUMP SETTING WITH 14" COLUMN PIPE AND 1.94" LINESHAFT)
31	REMOVE AND DISPOSE OF EXISTING MOTOR (250 HP)
32	REMOVE AND DISPOSE OF EXISTING PUMP PEDESTAL IN ITS ENTIRETY (61" X 61" X 32")
33	REMOVE AND DISPOSE OF EXISTING 10" WELL FLUSH PIPING AND APPURTENANCES
34	REMOVE AND DISPOSE OF EXISTING 16" BUTTERFLY VALVE
35	REMOVE AND DISPOSE OF EXISTING 16" VICTAULIC COUPLING
36	REMOVE AND DISPOSE OF EXISTING 16" MAGNETIC FLOWMETER AND APPURTENANCES
37	REMOVE AND DISPOSE OF EXISTING AIR RELEASE VALVE
38	REMOVE AND DISPOSE OF EXISTING 6" THICK CONCRETE FLOOR SLAB (#5 @ 12" EA - SLAB IS 12" THICK AT ALL PIPE SUPPORTS)
39	REMOVE AND DISPOSE OF EXISTING WELL DISCHARGE SAMPLE TAPS
40	REMOVE AND DISPOSE OF EXISTING 16" WELL DISCHARGE PIPING
41	PROTECT IN PLACE EXISTING 16" BUTTERFLY VALVE
42	MODIFY EXISTING CAMERA PORT, GRAVEL FEED TUBE, VENT, SOUNDING TUBE AND WELL PRE-LUBE AS SHOWN ON D3101 AND D3501
43	REMOVE AND DISPOSE OF EXISTING 10" 90 DEGREE ELBOW
44	REMOVE AND DISPOSE OF EXISTING 4" THICK CONCRETE HOUSEKEEPING SLAB. SEE NOTE 4 FOR CONCRETE REPAIR
45	REMOVE AND DISPOSE OF EXISTING 6" THICK CONCRETE FLOOR SLAB (#5 @ 12" EA W/ #4 (X4'-0") DIAGONALS AT EACH CORNER OF PUMP PEDESTAL) SEE NOTE 4
46	REMOVE AND REPLACE OF EXISTING 12" PIPING, FITTINGS, AND APPURTENANCES
47	REMOVE AND REPLACE INTERFERRING PORTION OF EXISTING WELL PRE-LUBE LINE
48	REMOVE AND DISPOSE OF WELL FLUSH 10" PIPING AND APPURTENANCES
49	REMOVE AND DISPOSE OF EXISTING 10" BUTTERFLY VALVE
50	REMOVE AND DISPOSE OF EXISTING INJECTION QUILL AND ACCESSORIES
51	REMOVE AND REPLACE 4" DIA GRAVEL FILL PIPE
52	REMOVE AND REPLACE EXISTING 3" VENT PIPE WITH INSECT SCREEN
53	REMOVE AND REPLACE 5" DIA SOUNDING TUBE
54	REMOVE AND DISPOSE OF EXISTING T-STAT AND WIRING

NOTES TO CONTRACTOR:

1. CONTRACTOR SHALL CONTACT THE CITY A MINIMUM OF 48 HOURS IN ADVANCE TO SALVAGE ANY EQUIPMENT PRIOR TO ANY DEMOLITION WORK.
2. CONTRACTOR SHALL PROTECT IN PLACE ALL FACILITIES UNLESS NOTED OTHERWISE ON THE PLANS.
3. IF THE EXISTING LIGHT FIXTURE RESTRICTS CONSTRUCTION ACTIVITIES FOR THE WIDENING OF THE LOUVERS, THE CONTRACTOR SHALL REMOVE AND REPLACE THE EXISTING LIGHT FIXTURE PER DWG E3103.
4. REMOVE EXISTING CONCRETE PAD: SAWCUT A NEAT LINE 3-INCHES OUTSIDE LIMITS OF EXISTING PAD. REMOVE EXISTING CONCRETE PAD AND SURROUNDING CONCRETE TO SAWCUT LINE A MAXIMUM DEPTH OF 1-INCH (AND A MINIMUM DEPTH OF 1/2") BELOW THE SURROUNDING FLOOR SURFACE. TRIM TOP 2" OF EXISTING CONCRETE VERTICAL REINFORCING.

   REPAIR FLOOR SURFACE: PATCH THE EXISTING CONCRETE FLOOR AT THE PAD REMOVAL AREA FLUSH WITH THE SURROUNDING FLOOR WITH REPAIR MORTAR SIKA 123 PLUS OR APPROVED EQUAL. PREPARE THE SURFACES PER MANUFACTURER'S INSTRUCTIONS.
5. DEMOLITION OF SODIUM HYPOCHLORITE UNIT SHALL NOT OCCUR UNTIL AFTER THE PROPOSED PFAS TREATMENT VESSELS ARE INSTALLED AND READY TO BE PLACED INTO SERVICE.
6. CONTRACTOR SHALL ASSUME 200 GALLONS OF SODIUM HYPOCHLORITE (0.8% ± CONC) DISPOSAL SHALL BE REQUIRED. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ANY RESIDUAL CHLORINE WITHIN THE EXISTING CHLORINE TANKS. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER DISPOSAL PER STATE AND FEDERAL GUIDELINES.
7. EXISTING GENERATOR FOUNDATION IS A 1' THICK CONCRETE SLAB REINFORCED WITH #4 @ 12" EW. THE CAN WALL INCLUDES A 8" THICK CONCRETE WALL WITH 12- EVENLY SPACED #4 REBAR AND #4 HOOPS AT 12 @ OC AND STEEL LINER.

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TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY
1	10/25	ADDENDUM NO. 3	TLE
2	11/3	ADDENDUM NO. 4	TLE

ORANGE COUNTY WATER DISTRICT

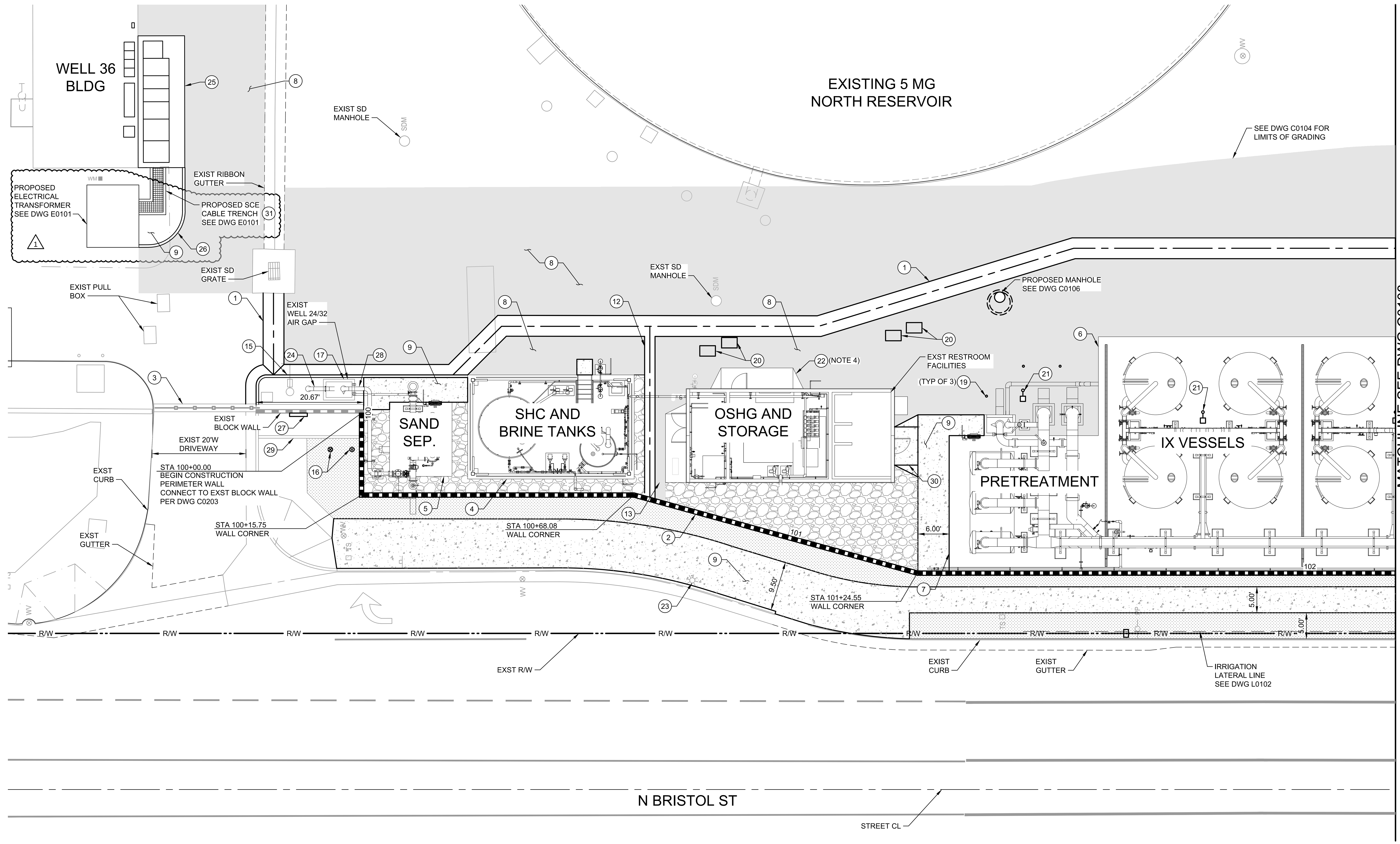
CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR

WELL 39 AND HYDRO-GENERATOR DEMOLITION PLAN

PROJ:	200-09382-23010
DESN:	KFM
DRWN:	EB
CHKD:	KAB

CD3101

Bar Measures 1 inch, otherwise drawing not to scale



XX	CONSTRUCTION NOTES
1	CONSTRUCT 4' WIDE CONCRETE RIBBON GUTTER PER DTL 2 ON DWG C0501
2	CONSTRUCT PERIMETER BLOCK WALL PER DTL 1 ON DWG S1503 AND DWG C0203
3	PROTECT IN PLACE EXISTING GATE
4	CONSTRUCT CHEMICAL CONTAINMENT BUILDING PER STRUCTURAL DWGS S2101, S2301 AND PROCESS DWG D2102
5	CONSTRUCT SAND SEPARATOR CONCRETE FOUNDATION PAD PER STRUCTURAL DWG S1103
6	CONSTRUCT IX VESSELS CONCRETE FOUNDATION PAD PER STRUCTURAL DWG S1101
7	CONSTRUCT PRETREATMENT CONCRETE FOUNDATION PAD PER STRUCTURAL DWG S1102
8	CONSTRUCT AC PAVING, SEE NOTE 1
9	CONSTRUCT CONCRETE SIDEWALK PER CITY STD PLAN NO. 1104
12	CONSTRUCT 2' WIDE CONCRETE RIBBON GUTTER PER DTL 2 ON DWG C0501
13	INSTALL REDWOOD HEADER PER DTL 4 IN DWG C0503
15	CONSTRUCT 6" CURB AND GUTTER PER CITY STD PLAN NO. 1101, TYPE A-2-6
16	PROTECT IN PLACE EXISTING WELL 24 FLUSH LINE VALVE CANS
17	PROTECT IN PLACE EXISTING AIR GAP
19	INSTALL NON-REMOVABLE GUARD POST PER DTL 3 ON C0503
20	INSTALL ELECTRICAL PULL BOXES PER DWG E2102 AND DTL 5 ON DWG E0501
21	INSTALL LIGHT POLE PER DTL 7 ON DWG E0501
22	REMOVE EXISTING RAMP AND CONSTRUCT CONCRETE RAMP, 4' x 13'-10", 6" THK, WITH #4 BARS 12" OC EACH WAY
23	PROTECT IN PLACE EXISTING LIGHT POLE
24	PROTECT IN PLACE EXISTING WELL 24 FLUSH LINE
25	CONSTRUCT ELECTRICAL EQUIPMENT PAD PER DTL 6 ON DWG S0502 (SEE D4101)
26	CONSTRUCT CONCRETE CURB PER CITY STD PLAN NO. 1101, TYPE B-1 (CURB FACE TRANSITIONS FROM 8" (H) TO 2" (H) PER C0104)
27	INSTALL JOHN GARTHE RESERVOIR PLAQUE (SALVAGED PER DWG CD0102)
28	CONSTRUCT PROPOSED WELL 32 PIPELINE FLUSH PER DWG D1102
29	REPLACE DAMAGED MOW STRIP IN KIND
30	CONSTRUCT CONCRETE RAMP, 7'-4" x 4'-6" x 6" THK, WITH #4 BARS 12" OC EACH WAY
31	CABLE TRENCH SHALL BE PER SCE'S FINAL DESIGN. FOR BIDDING PURPOSES CONTRACTOR SHALL ASSUME 3.5' (D) X 24" (W) REINFORCED CONCRETE CABLE TRENCH (6" (W) WALLS) WITH DIAMOND PLATE COVERING.

LEGEND

- AC
- GRAVEL
- CONCRETE
- LANDSCAPING

NOTES:

1. CONTRACTOR SHALL CONSTRUCT AC PAVING AS FOLLOWS:
   JOHN GARTHE: 4" AC/ 6" AB
   RESERVOIR SITE
2. SEE DTL 5 DWG C0503 FOR SUBGRADE SOIL PREPARATION FOR ALL NEW AC PAVEMENT, CONCRETE DRIVEWAY, AND CONCRETE WALKWAYS.
3. SEE DWG C0104 FOR PROPOSED GRADING PLAN.
4. SEE DWG L0101 FOR LANDSCAPING.

0 5' 10' 20'
SCALE: 1" = 10'

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MARK	DATE	DESCRIPTION	BY
1	10/30/25	ADDENDUM 4	MTV

ORANGE COUNTY WATER DISTRICT
CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR
PROPOSED SITE PLAN 1

PROJ:	200-09382-23010
DESN:	MV
DRWN:	MV
CHKD:	TLE

C0102

Bar Measures 1 inch, otherwise drawing not to scale

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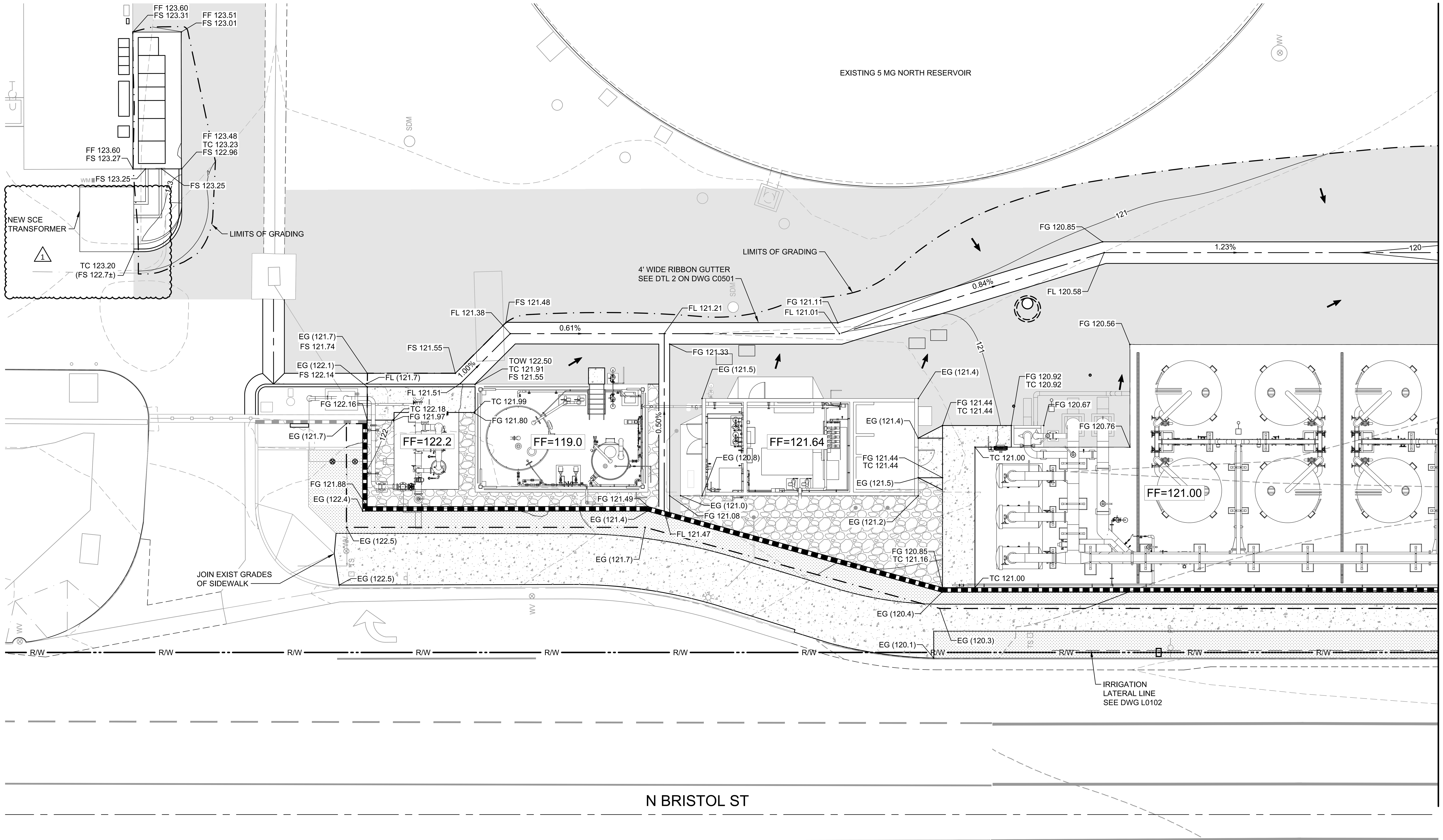

LEGEND

- AC
- GRAVEL
- CONCRETE
- LANDSCAPING

NOTES:

1. SEE DWG G0004 FOR SITE GRADING AND DRAINAGE NOTES.
2. OVERLAY SITE WHERE INDICATED WITH 6-INCHES OF 3/4" CRUSHED ROCK (SSPWC 200-1.2 OR SIMILAR) TO ACHIEVE DESIGNATED FINISHED SURFACE (FS) ELEVATIONS. FLOW LINE DEPICT INTENDED PATH OF SITE SURFACE DRAINAGE.
3. SEE DWG C0102 FOR PROPOSED SITE PLAN.
4. SEE DWG L0101 FOR LANDSCAPING.

0 5' 10' 20'
SCALE: 1" = 10'

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STEVEN D. ...
No. C039261
Exp. 12-31-25
CIVIL
STATE OF CALIFORNIA
11/3/25

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18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200
SINCE 1933

MARK	DATE	DESCRIPTION	BY
1	10/30/25	ADDENDUM 4	MTV

ORANGE COUNTY WATER DISTRICT
CITY OF SANTA ANA PFAS TREATMENT
AT JOHN GARTHE RESERVOIR
PROPOSED GRADING PLAN 1

PROJ:	200-09382-23010
DESN:	MV
DRWN:	MV
CHKD:	TLE

C0104

Bar Measures 1 inch, otherwise drawing not to scale

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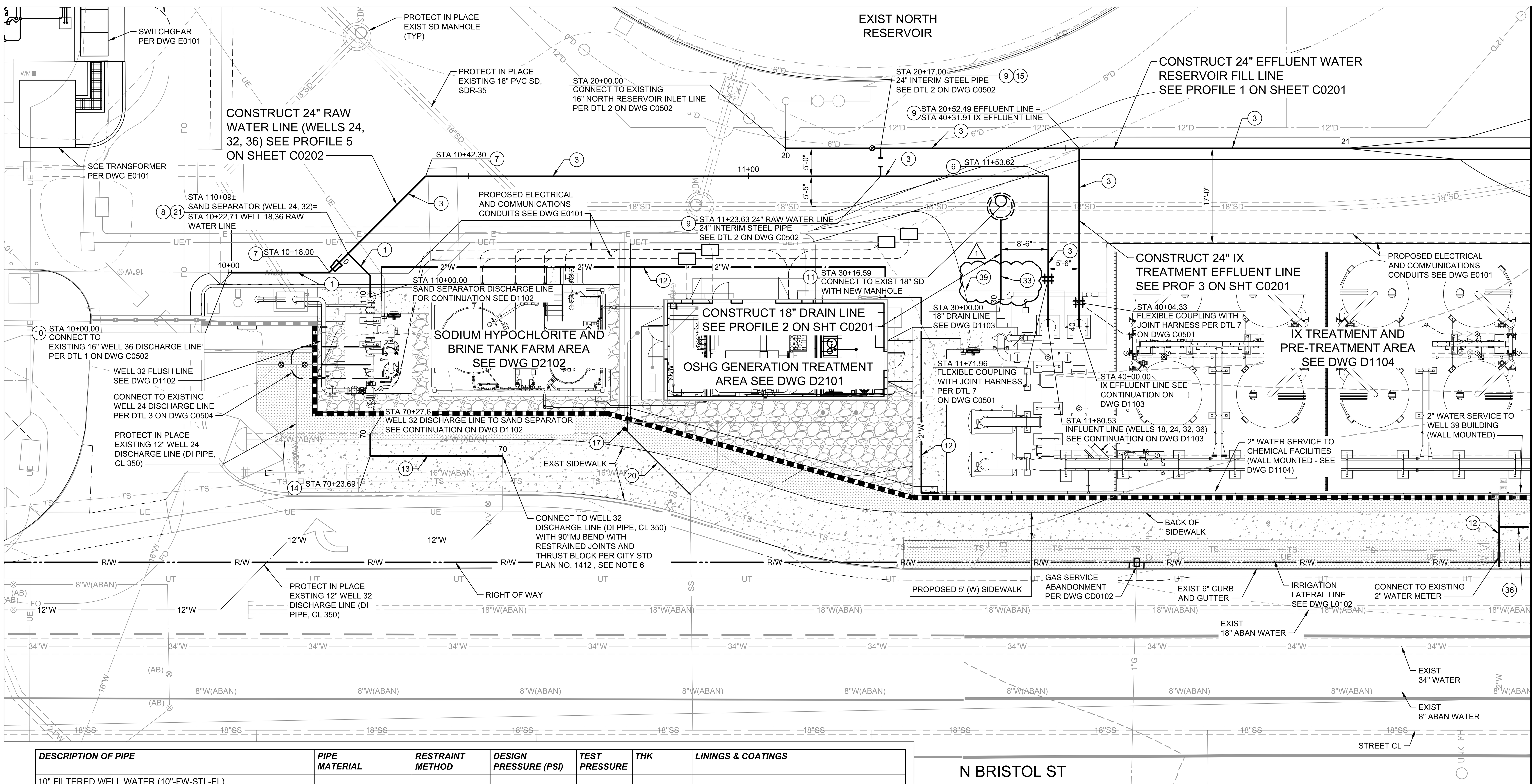

CONSTRUCTION NOTES

1	CONSTRUCT 16" STEEL PIPE
3	CONSTRUCT 24" STEEL PIPE
6	CONSTRUCT 24" STEEL 90° BEND
7	CONSTRUCT 24" STEEL 45° BEND
8	CONSTRUCT 24" X 16" STEEL REDUCER
9	CONSTRUCT 24" STEEL TEE
10	CONSTRUCT 16" BUTT STRAP PER DTL 4 ON DWG C0501
11	CONSTRUCT STORM DRAIN MANHOLE PER CITY OF SANTA ANA STD DWG NO. 306
12	CONSTRUCT 2" COPPER (TYPE "K" SOFT) PIPE AND FITTINGS
13	CONSTRUCT 12" DI PIPE, CLASS 350
14	INSTALL 12" DI 90° MJ WITH RESTRAINED JOINTS
15	CONSTRUCT 24" BUTTERFLY VALVE (FLG X FLG), VALVE CAN, FRAME AND COVER PER CITY OF SANTA ANA STD PLAN NO. 1411
17	CONSTRUCT 4" DRAIN CLEANOUT PER DTL 2 ON DWG C0504
20	CONSTRUCT 4" PVC (SDR 26) DRAIN PIPE AND FITTINGS
21	INSTALL 24" X 16" STEEL TEE
33	CONSTRUCT 18" PVC (SDR 35) DRAIN PIPE
36	CONSTRUCT 1" COPPER (TYPE "K" SOFT) PIPE AND FITTINGS
39	CONSTRUCT 1" CPVC (SCH 40) PIPE AND FITTINGS

1

NOTES:

1. ALL BEDDING AND TRENCH BACKFILL SHALL BE PER DETAIL 1 ON DWG C0503.
2. CONTRACTOR SHALL FIELD LOCATE ALL CONNECTION POINTS AND CROSSINGS TO VERIFY HORIZONTAL AND VERTICAL LOCATION.
3. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AT POINTS OF CONNECTION PRIOR TO ORDERING MATERIAL.
4. TO MAKE CONNECTIONS TO THE EXISTING SITE PIPING, THE CITY WILL NEED TO ISOLATE THE CORRESPONDING WELLS AND RESERVOIRS. CONTRACTOR SHALL BE RESPONSIBLE FOR DRAINING WATER FROM EXISTING PIPING TO REMAIN. THE MAXIMUM DURATION OF SHUTDOWN OF FOR ANY CONNECTION SHALL BE EIGHT HOURS. THE SHUTDOWN SHALL BE COORDINATED WITH AND SCHEDULED WITH WATER RESOURCES A MINIMUM OF THREE (3) WEEKS IN ADVANCE OF THE ACTUAL SHUTDOWN. CONTRACTOR SHALL SUBMIT AN ISOLATION AND SHUTDOWN PLAN FOR EACH CONNECTION FOR REVIEW AND APPROVAL BY THE DISTRICT AND THE CITY.
5. ALL PIPING SHALL BE HYDROSTATICALLY TESTED TO THE PRESSURE NOTED IN THE PIPING SCHEDULE ON THIS SHEET.
6. REMOVE AND DISPOSE OF EXISTING WELL 32 FLUSH LINE AS SHOWN ON DWG CD0102. REMOVE EXISTING 12" DUCTILE IRON FLANGED TEE, 8" RWGV WITH RESTRAINED JOINT, 12" RWGV WITH RESTRAINED JOINT, AND THRUST BLOCK. SALVAGE VALVES AND TEE, RETURN THE CITY YARD.

DESCRIPTION OF PIPE	PIPE MATERIAL	RESTRAINT METHOD	DESIGN PRESSURE (PSI)	TEST PRESSURE	THK	LININGS & COATINGS
10" FILTERED WELL WATER (10"-FW-STL-EL) 12" WELL 18 RAW WATER (12"-RW-STL-EL) 12" WELL 24 RAW WATER (12"-RW-STL-EL) 12" WELL 32 RAW WATER (12"-RW-STL-EL) 8" SAND SEPARATOR INFLUENT RAW WATER (8"-RW-STL-EL) 8" WELL 32 RAW WATER WASTE (12"-RWW-STL-EL) 10" FORWARD RINSE WATER (10"-FRW-STL-EL) 10" EFFLUENT WATER (10"-EW-STL-EL)	STEEL	WELDED	150	225	STD WT	EPOXY LINED AND CEMENT MORTAR COATED FOR BURIED APPLICATIONS AND EPOXY LINED & PAINTED FOR ABOVE GROUND APPLICATIONS
24" FILTERED WELL WATER (24"-FW-STL-EL) 14" FILTERED WELL WATER (14"-FW-STL-EL) 16" WELL 36 RAW WATER (16"-RW-STL-EL) 16" WELL 39 RAW WATER (16"-RW-STL-EL) 16" INFLUENT WATER (16"-IW-STL-EL) 18" INFLUENT WATER (18"-IW-STL-EL) 24" INFLUENT WATER (24"-IW-STL-EL) 14" OFFSPEC WATER (14"-OSW-STL-EL) 24" EFFLUENT WATER (24"-EW-STL-EL) 14" EFFLUENT WATER (14"-EW-STL-EL) 24" RESERVOIR FILL LINE (24"-EW-STL-EL)	STEEL	WELDED	150	225	SCH 10 (0.25")	EPOXY LINED AND CEMENT MORTAR COATED FOR BURIED APPLICATIONS AND EPOXY LINED & PAINTED FOR ABOVE GROUND APPLICATIONS
1" SAMPLE LINE (1"-EW-CPVC-EL)	CPVC	SOLVENT WELD	100	100	SCH 80	
18" DRAIN WATER (18"-D-PVC) 8" DRAIN LINE (8"-D-PVC) 4" DRAIN LINE (4"-D-PVC)	PVC	ELASTOMERIC PUSH ON	GRAVITY	-	SDR 35	TEST PER SPECIFICATION 02623
2" POTABLE WATER (2"-PW-CU)	COPPER	SOLDERED	150	225	TYPE K	COPPER: 6 MIL POLYWRAP SLEEVE
1" SODIUM HYPOCHLORITE LINE (1"-SHC-PVC) 1" SOFT WATER LINE (1"-SW-PVC) 4" CHEMICAL CONTAINMENT (4"-SHC-PVC) 8" CHEMICAL CONTAINMENT (8"-SHC-PVC)	PVC	SOLVENT WELD	100	100	SCH 80	
3" SODIUM HYPOCHLORITE IN 8" CONTAINMENT LINE (8"X3"-SHC-PVC)	PVC	HOSE BARB	10	14	0.25 INCH	

1

0 5' 10' 20'
SCALE: 1" = 10'

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MARK	DATE	DESCRIPTION	BY
1	10/25	ADDENDUM NO. 3	MV

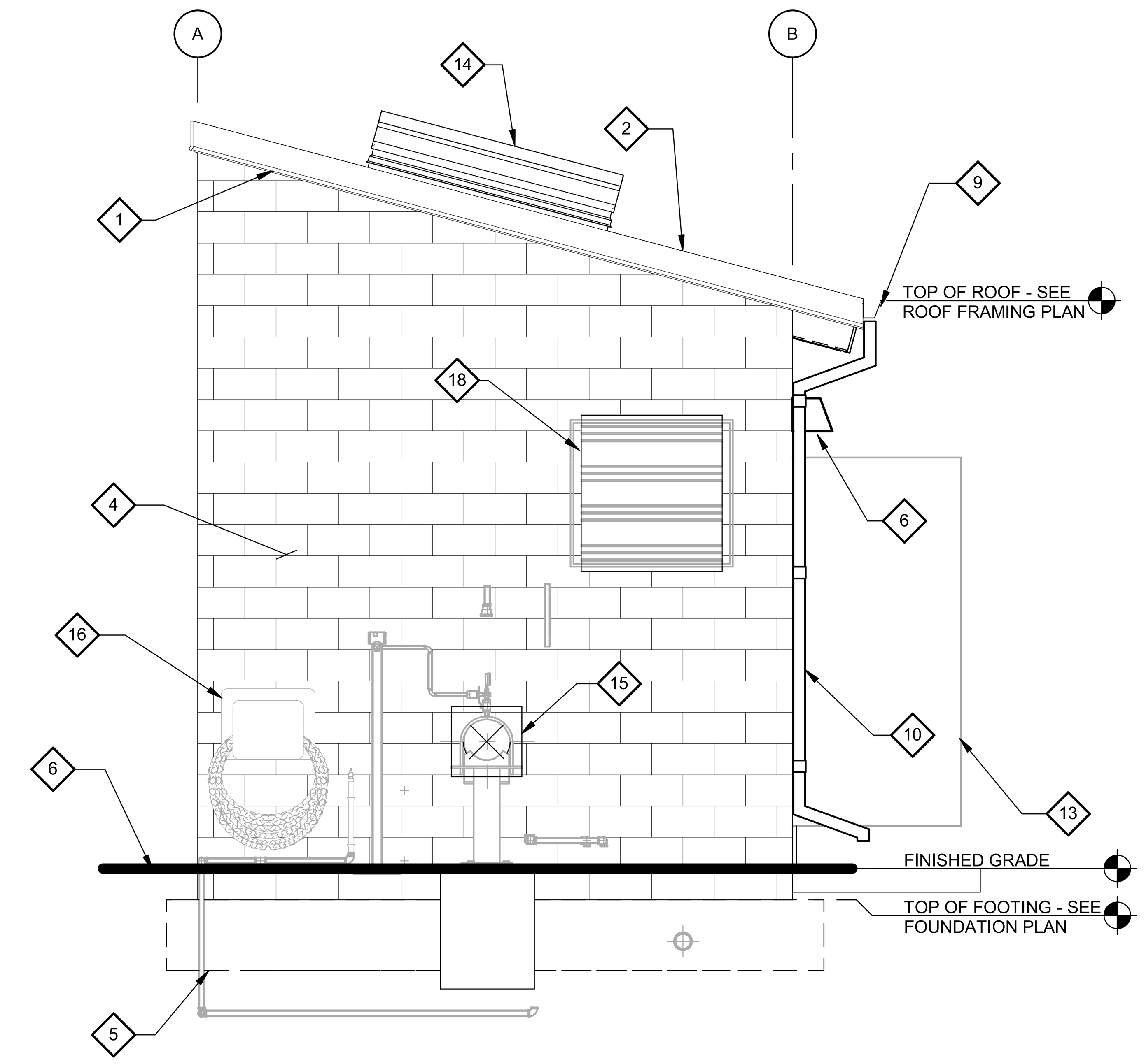
ORANGE COUNTY WATER DISTRICT
CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR
YARD PIPING PLAN NORTH

PROJ:	200-09382-23010
DESN:	MV
DRWN:	MV
CHKD:	TLE

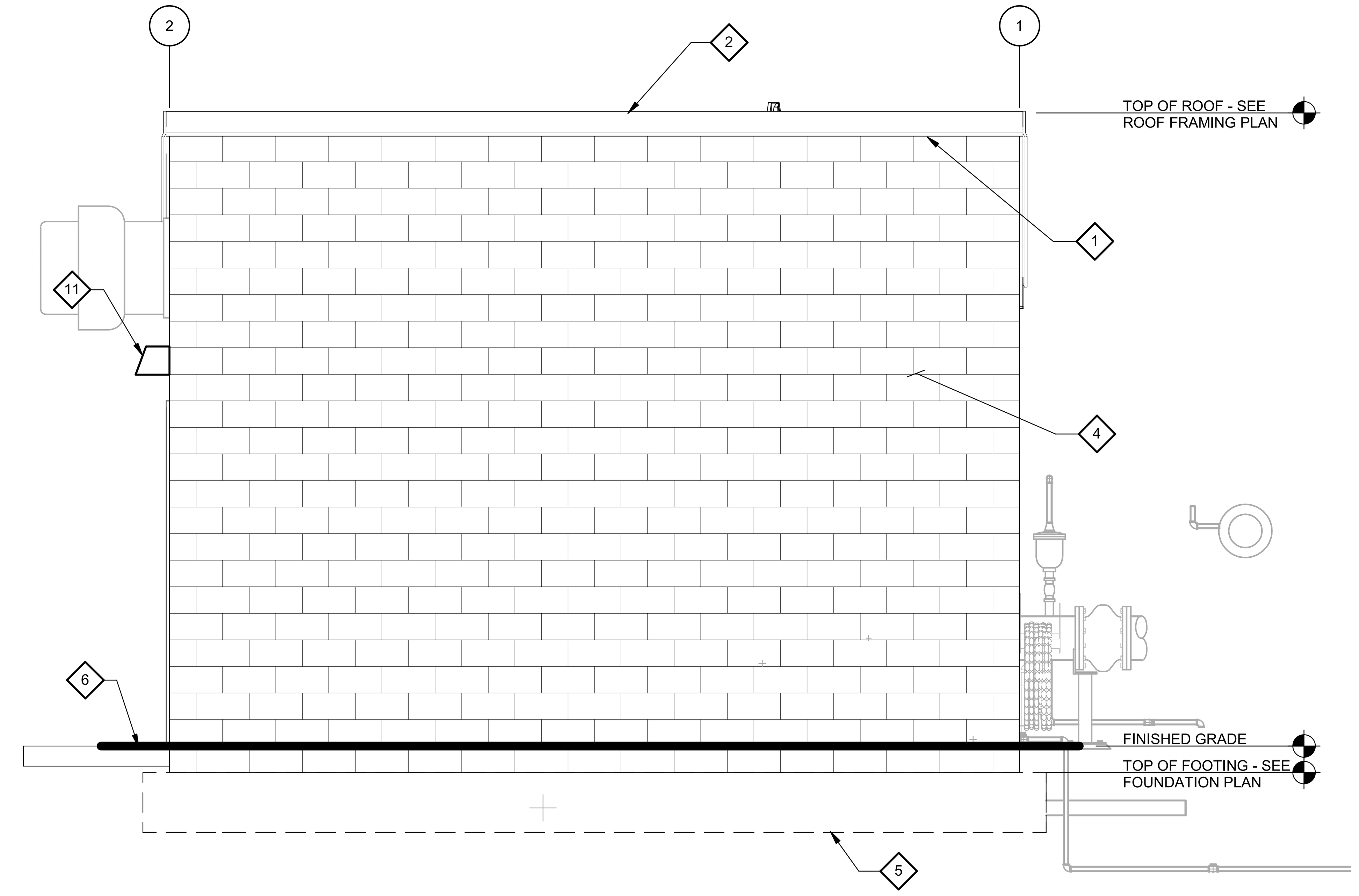
C0106

Bar Measures 1 inch, otherwise drawing not to scale

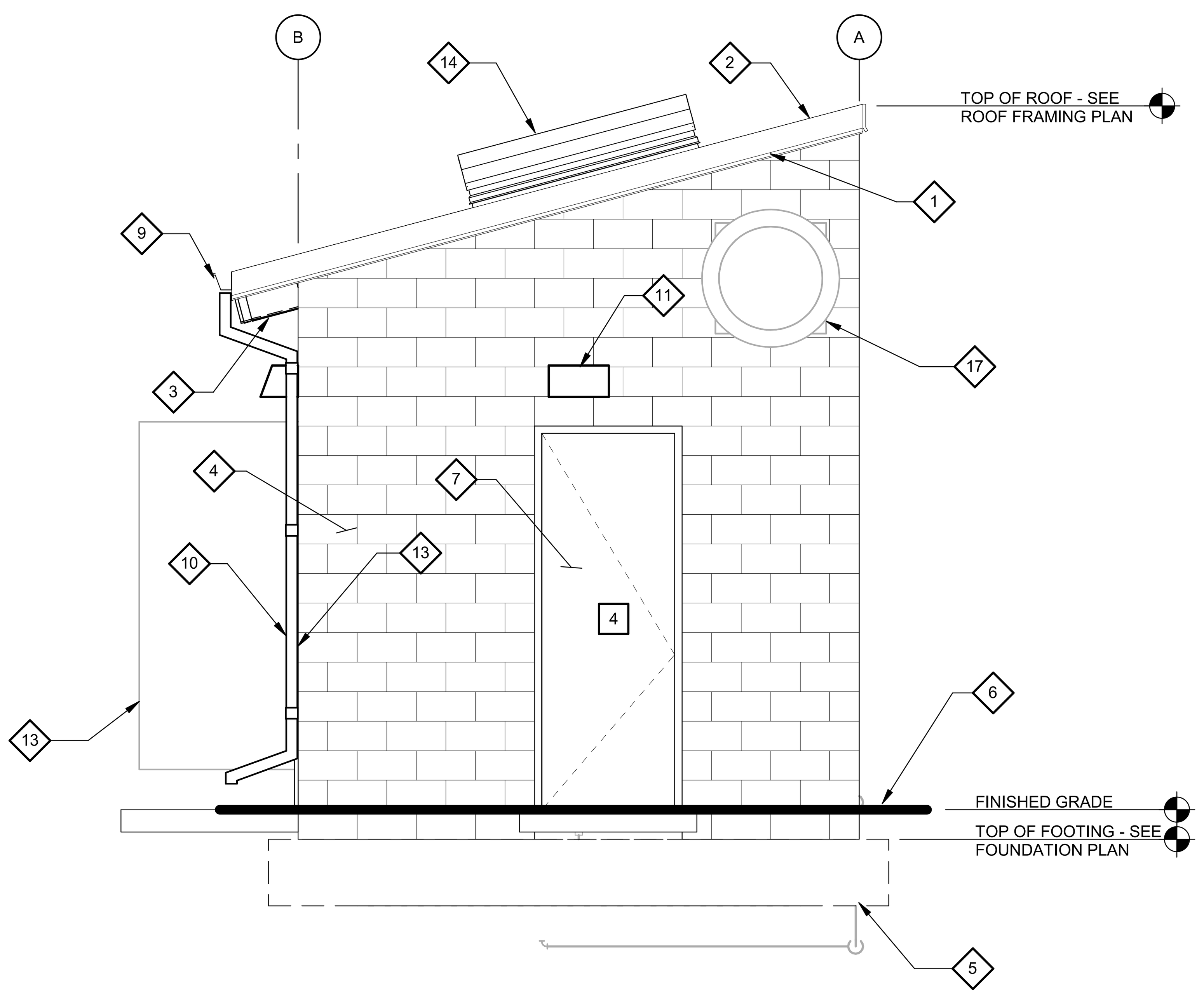
11/3/2025 11:09:21 AM - C:_ADACCDOCS\TETRA TECH INC\200-09382-23010 JOHN GARTHE RES PFAS\PROJECT FILES\CAD\SHEETFILES\C0106_YARDPIPING.DWG - TRAN, BRIAN1



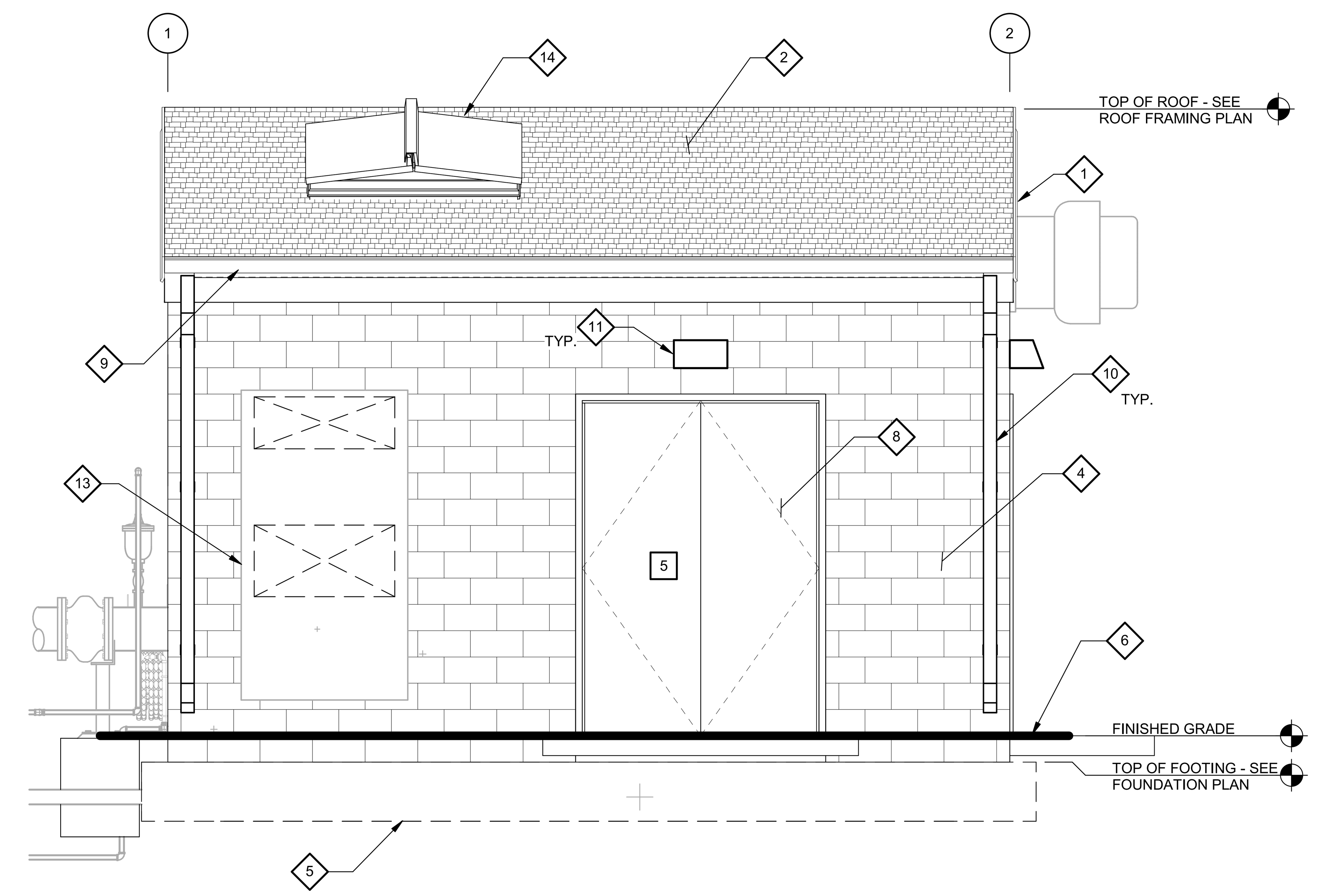
NORTH ELEVATION
SCALE: 3/8" = 1'-0"



EAST ELEVATION
SCALE: 3/8" = 1'-0"



SOUTH ELEVATION
SCALE: 3/8" = 1'-0"



WEST ELEVATION
SCALE: 3/8" = 1'-0"

KEYNOTES

1. WALL TOP FLASHING.
2. CONCRETE TILE ROOFING, MONIER LIFETILE #704. MATCH COLOR, SIZE AND TEXTURE OF ROOFING ON EXISTING WELL 39 BUILDING.
3. FASCIA.
4. SPLIT FACE CMU BLOCK WALL w/ WATER REPELLENT COATING. SEE SPECIFICATION 07190 FOR COATING REQUIREMENTS. COLOR TO BE SELECTED BY THE CITY.
5. CONCRETE FOUNDATION.
6. FINISHED SURFACE.
7. HOLLOW STEEL DOOR AND FRAME - SEE DOOR SCHEDULE PER DETAIL 4 ON SHEET S-506. COLOR TO BE SELECTED BY THE CITY.
8. HOLLOW STEEL DOUBLE DOOR AND FRAME - SEE DOOR SCHEDULE PER DETAIL 4 ON SHEET S-506. COLOR TO BE SELECTED BY THE CITY.
9. 3" SQ. SEAMLESS ALUMINUM RAIN GUTTER. SLOPE TO DRAIN. COLOR TO BE SELECTED BY THE CITY.
10. 3" SQ. SEAMLESS ALUMINUM DOWNSPOUT ATTACHED TO WALL w/ 1 1/2" WIDE (MIN.) BRACKETS @ 6'-0" O.C. MAXIMUM. COLOR TO BE SELECTED BY THE CITY.
11. EXTERIOR LIGHTING. SEE ELECTRICAL DRAWINGS FOR LOCATION
12. CONTROL JOINT IN CMU WALL PER DETAIL 10 ON SHEET S0501.
13. HVAC UNIT PER MECHANICAL SHEET M5201
14. ROOF HATCH
15. PIPE PENETRATION IN CMU WALL
16. HOSE RACK
17. EXHAUST FAN OPENING IN MASONRY WALL
18. LOUVERED OPENING IN MASONRY WALL

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18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY
1	10/2025	ADDENDUM 4	EY

ORANGE COUNTY WATER DISTRICT
PFAS TREATMENT AT JOHN GARTHE RESERVOIR
WELL 18 BUILDING ELEVATIONS

PROJ:	200-09382-23010
DESN:	J. QUIROZ
DRWN:	E. HUTCHINS
CHKD:	E. YUEN

S5201

Bar measures 1 inch, otherwise drawing is not to scale

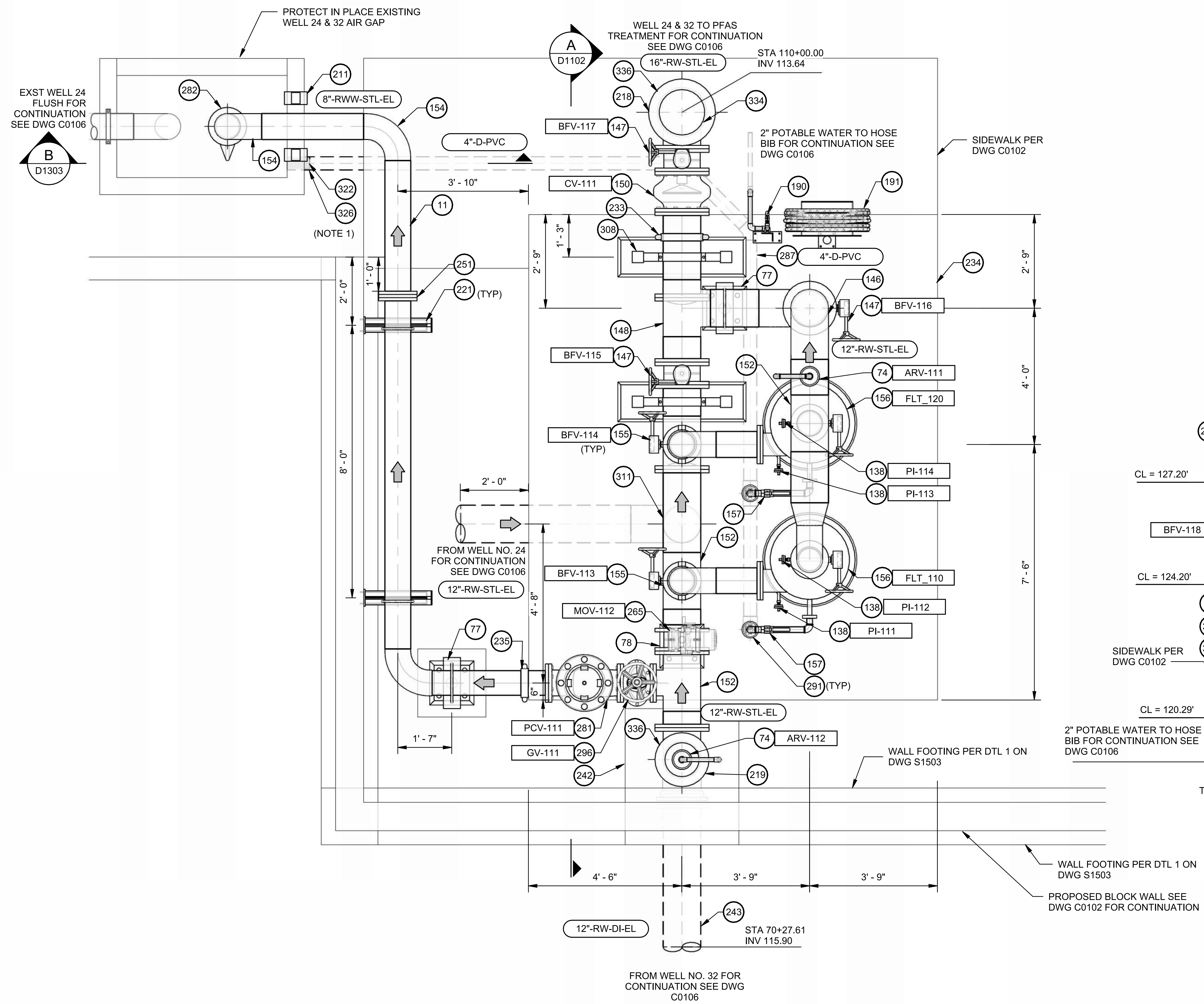
10/30/2025 7:15:38 AM Autodesk Docs://200-09382-23010 John Garthe Res PFAS/S-Well18-09382-23010-v2023.rvt

	CONSTRUCTION NOTES
11	8" STL PIPE
13	12" STL PIPE
15	16" STL PIPE
31	12" x 8" STL REDUCER
~~74~~	~~1" AIR RELEASE VALVE PER DTL 3 ON D0503~~
77	STANCHION SUPPORT PER DTL 7 ON DWG D0502
~~78~~	~~FLANGE PIPE SUPPORT PER DTL 3 ON DWG D0502~~
138	PRESSURE GAUGE PER DTL 6 ON DWG D0503
146	12" STL 90 DEGREE ELBOW
147	12" BUTTERFLY VALVE (FLG)
148	12" STL TEE
150	12" SILENT CHECK VALVE, GLOBE STYLE
152	12" X 8" STL REDUCING TEE
153	8" STL PIPE
154	8" STL 90 DEGREE ELBOW
155	8" BUTTERFLY VALVE (FLG)
156	SAND SEPARATOR
157	1 1/2" STL BALL VALVE
160	8" STL 90 DEGREES ELBOW

1

	CONSTRUCTION NOTES
190	HOSE VALVE PER DTL 3 ON DWG D0504
191	HOSE RACK PER DTL 4 ON DWG D0504
211	AIR GAP PIPE SUPPORT PER DTL 2 ON DWG S1503
216	16" X 12" STL REDUCING TEE
218	16" BLIND FLANGE
219	12" BLIND FLANGE
221	BLOCK WALL MOUNTED SUPPORTS PER DTL 9 ON DWG S1501
233	12" VICTAULIC COUPLING
234	SAND SEPARATOR FOUNDATION PER S1103
235	8" VICTAULIC COUPLING
240	INSULATING FLANGE KIT PER DTL 6 ON DWG C0501
241	12" DI 90 DEGREE MJ BEND WITH RESTRAINED JOINTS
242	CONCRETE ENCASEMENT & WALL FOOTING PER DTL 4 ON DWG S1503
243	12" DUCTILE IRON PIPE
251	WELL NO. 32 FLUSH - 8" STEEL ORFICE PLATE (CRITERIA: Q=1,800 GPM, DELTA = 74', BORE = 4.2" +/-)
265	12" MOTOR OPERATED BUTTERFLY VALVE

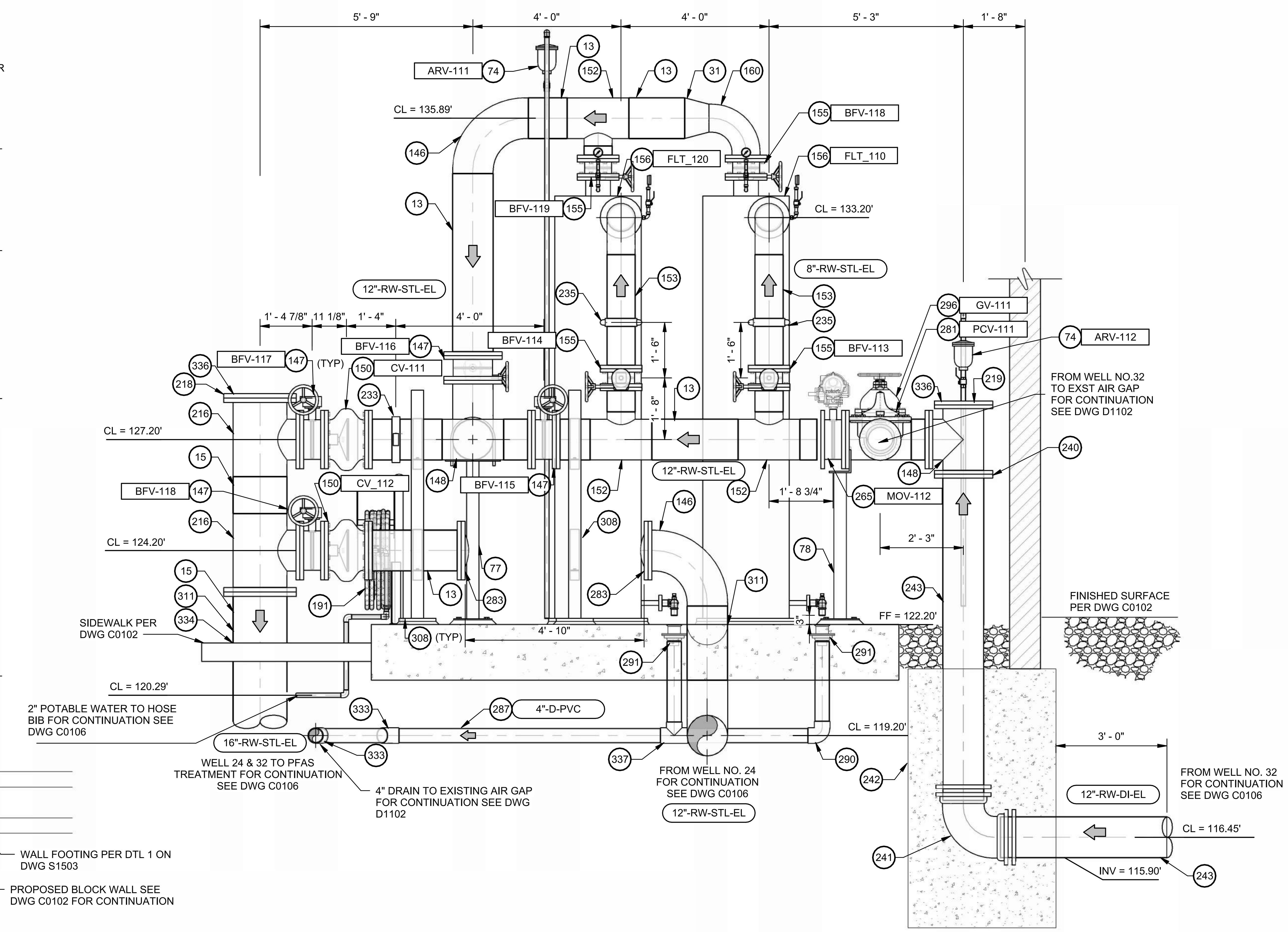
	CONSTRUCTION NOTES
281	8" PRESSURE CONTROL VALVE
282	8" DUCKBILL CHECK VALVE
283	12" STL BLIND FLANGE
287	4" PVC DRAIN
290	4" PVC 90 DEGREE ELBOW
291	FLOOR DRAIN
296	8" GATE VALVE
308	PIPE RACK (TYPE B) PER DTL 2 ON DWG S1502
311	PIPE FLOOR PENETRATION PER DTL 6 ON DWG S0501. FLOOR SLEEVE PER DTL 7 ON DWG D0501
322	CONSTRUCT 4" TIDEFLEX "CHECKMATE" INLINE CHECK VALVE WITH 316 SS BAND WITH NEOPRENE ELASTOMER PER SPECIFICATION 15109
326	PIPE PENETRATION PER DTL 6 ON D0502
333	4" PVC 45 DEGREE ELBOW
334	PIPE FLOOR SLEEVE PER DTL 7 ON DWG D0501
336	CONNECT TO INTERIM CONNECTION FOR WELL 32 PER DTL 6 ON DWG C0504
337	4" PVC TEE



NOTE:

1. CONTRACTOR SHALL CORE DRILL THROUGH EXISTING REINFORCED CONCRETE CATCH BASIN (#5 REBAR EACH WAY).

B SAND SEPARATOR TREATMENT PLAN
SCALE: 1/2" = 1'-0"



A SAND SEPARATOR SECTION (NORTH)
D1102 SCALE: 1/2" = 1'-0"

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

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FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY
1	10/25	ADDENDUM NO. 4	KFM

ORANGE COUNTY WATER DISTRICT

PFAS TREATMENT AT JOHN GARTHE RESERVOIR

SAND SEPARATORS
PROCESS PLAN AND SECTION

PROJ:	200-09382-23010
DESN:	KFM
DRWN:	EB
CHKD:	KAB

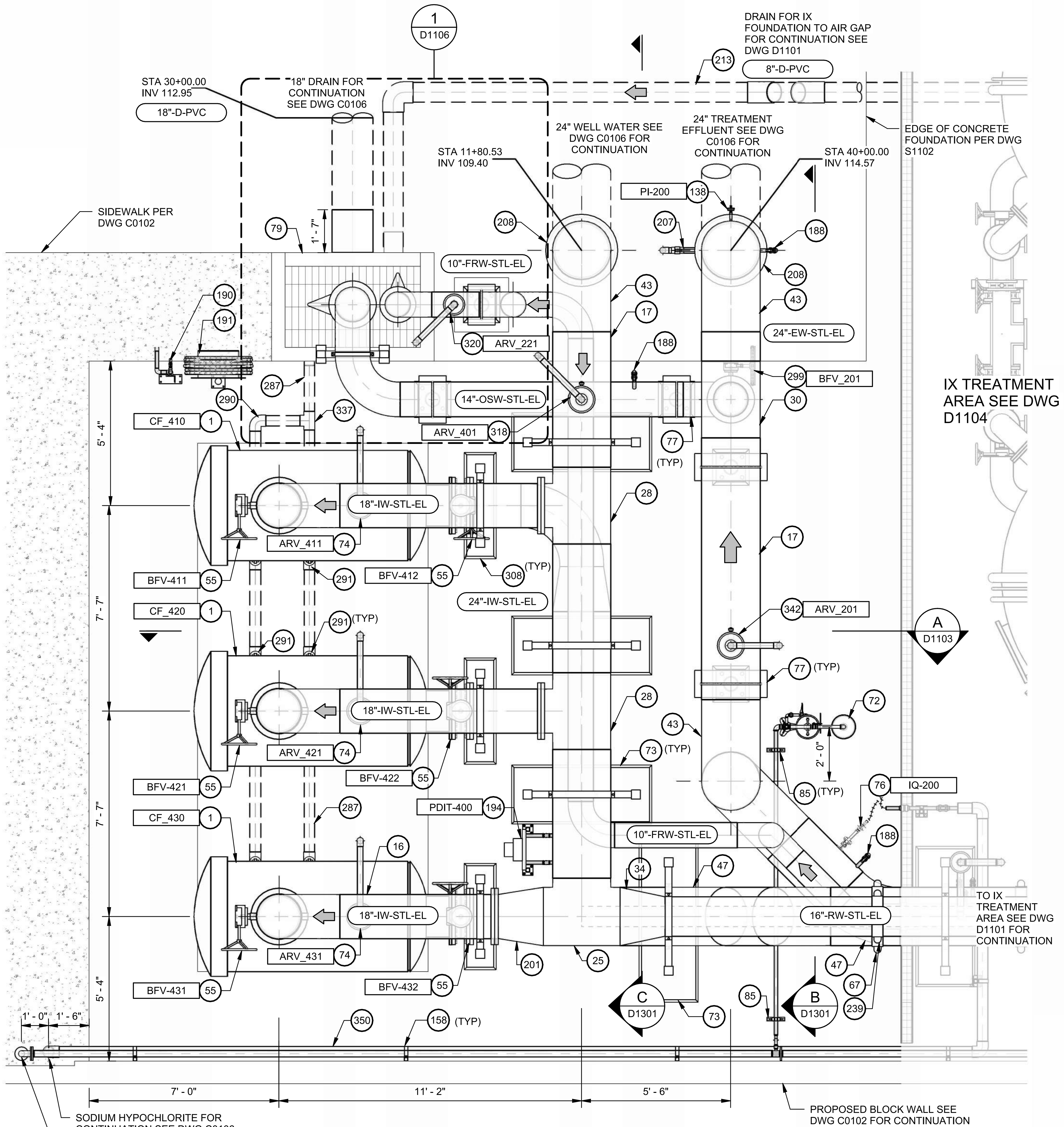
D1102

Bar measures 1 inch, otherwise drawing is not to scale

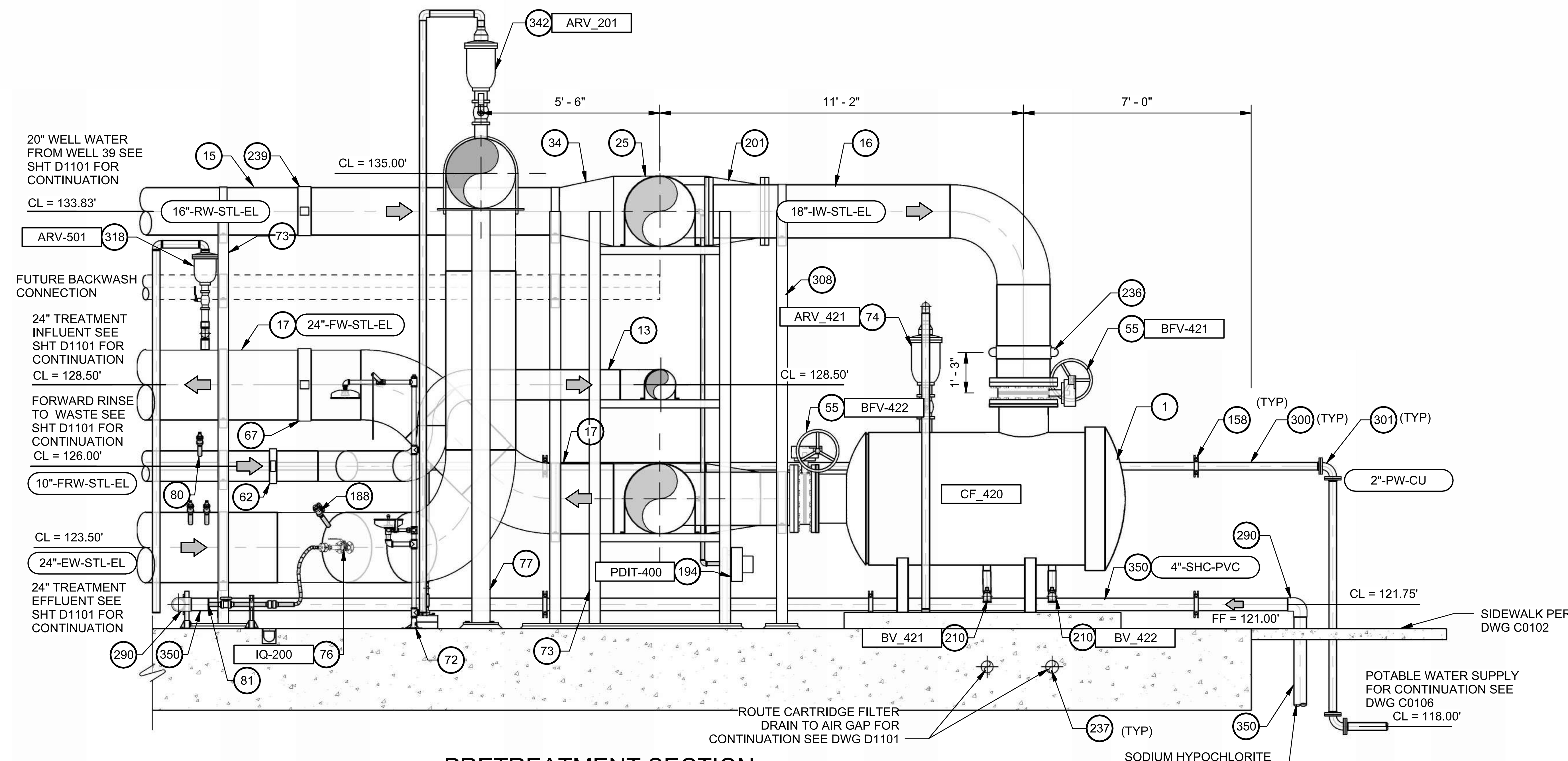
1	PRETREATMENT CARTRIDGE FILTER PER SPEC 11250
13	12" STL PIPE
15	16" STL PIPE
16	18" STL PIPE
17	24" STL PIPE
25	24" STL TEE
28	24" x 18" STL REDUCING TEE
30	24" x 14" STL REDUCING TEE
34	24" x 16" STL REDUCER
43	24" STL 90 DEGREE BEND
47	24" STL 45 BEND
55	18" BUTTERFLY VALVE
62	10" VICTAULIC COUPLING
67	24" VICTAULIC COUPLING
72	EMERGENCY EYE WASH PER DTL 2 ON DWG D0503
73	PIPE RACK PER DTL 1 ON DWG S1502
74	1" AIR RELEASE VALVE PER DTL 3 ON D0503
76	CHEMICAL INJECTION QUILL PER DTL 3 ON DWG D2501
77	STANCHION SUPPORT PER DTL 7 ON DWG D0502
79	PRECAST CONCRETE CATCH BASIN PER SPEC 03462 (4-FT X 6-FT X 13-FT)
80	FLOWMETER TEST TAP PER DTL 8 ON DWG D0503
81	TRANSITION TO CHEMICAL CONTAINMENT PIPING PER DTL 5 ON DWG D2501
85	UNISTRUT PIPE SUPPORT PER DTL 1 ON DWG D0501
138	PRESSURE GAUGE PER DTL 6 ON DWG D0503
158	UNISTRUT WALL MOUNTED SUPPORT PER DTL 6 ON DWG D2501
188	SAMPLE TAP PER DTL 7 ON DWG D0503

Ⓧ CONSTRUCTION NOTES

190	HOSE VALVE PER DTL 3 ON DWG D0504
191	HOSE RACK PER DTL 4 ON DWG D0504
194	PRESSURE TRANSMITTER PANEL PER DTL 5 ON DWG E0502
201	24" X 18" REDUCER
207	SAMPLE CONNECTION TO INSTRUMENT PANEL PER DTL 1 ON DWG D0504
208	24" EXPANSION JOINT
210	2" FILTER DRAINS
213	8" CPVC DRAIN
236	18" VICTAULIC COUPLING
237	PIPE FOUNDATION PENETRATION PER DTL 6 ON DWG S0501
239	16" VICTAULIC COUPLING
287	4" PVC DRAIN
290	4" PVC 90 DEGREE ELBOW
291	FLOOR DRAIN
299	14" BUTTERFLY VALVE (FLG) WITH CHAIN
300	2" CU PIPE
301	2" CU 90 DEGREE ELBOW
308	PIPE RACK (TYPE B) PER DTL 2 ON DWG S1502
318	2" AIR RELEASE VALVE PER DTL 3 ON D0503
320	1" COMBINATION AIR RELEASE/VACUUM VALVE PER DTL 4 ON SHT D0503
337	4" PVC TEE
342	2" COMBINATION AIR VACUUM RELEASE VALVE PER DTL 4 ON DWG D0503
350	4" PVC PIPE



C PRETREATMENT TREATMENT PLAN
SCALE: 3/8" = 1'-0"



A PRETREATMENT SECTION WEST
D1103 SCALE: 3/8" = 1'-0"

SCALE: 3/8" = 1'-0"

MARK	DATE	DESCRIPTION	BY
1	10/25	ADDENDUM NO. 3	KFM
2	10/25	ADDENDUM NO. 4	KFM

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ORANGE COUNTY WATER DISTRICT
PFAS TREATMENT AT JOHN GARTHE RESERVOIR
PRETREATMENT PROCESS PLAN & SECTIONS

PROJ:	200-09382-23010
DESN:	KFM
DRWN:	EB
CHKD:	KAB

D1103

Bar measures 1 inch, otherwise drawing is not to scale

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X	CONSTRUCTION NOTES
2	INSTALL ION EXCHANGE VESSEL 12-FT DIAMETER
11	8" STL PIPE
12	10" STL PIPE
14	14" STL PIPE
15	16" STL PIPE
20	20" STL PIPE
22	10" STL TEE
40	24" x 14" STL ECCENTRIC REDUCER
42	16" STL 90 DEGREE BEND
51	10" BUTTERFLY VALVE (FLG)
57	8" GLOBE STYLE SILENT CHECK VALVE (FLG)
59	4" PRESSURE RELIEF VALVE (SUPPLIED BY VENDOR)
66	10" MAGNETIC FLOW METER
68	20" MAGNETIC FLOWMETER
69	8" MAGNETIC FLOW METER
72	EMERGENCY EYE WASH PER DTL 2 ON DWG D0503
~~76~~	~~CHEMICAL INJECTION QUILL PER DTL 3 ON DWG D2501~~
77	STANCHION SUPPORT PER DTL 7 ON DWG D0502

X	CONSTRUCTION NOTES
78	FLANGE PIPE SUPPORT PER DTL 3 ON DWG D0502
80	FLOWMETER TEST TAP PER DTL 8 ON DWG D0503
81	TRANSITION TO CHEMICAL CONTAINMENT PIPING PER DTL 5 ON DWG D2501
88	1" CPVC BALL VALVE (SOC)
141	1" CPVC BALL CHECK VALVE (SOC)
158	UNISTRUT WALL MOUNTED SUPPORT PER DTL 6 ON DWG D2501
188	SAMPLE TAP PER DTL 7 ON DWG D0503
190	HOSE VALVE PER DTL 3 ON DWG D0504
191	HOSE RACK PER DTL 4 ON DWG D0504
213	8" CPVC DRAIN
220	8" MOTOR OPERATED BUTTERFLY VALVE
221	BLOCK WALL MOUNTED SUPPORTS PER DTL 9 ON DWG S1501
238	8" PVC 45 DEGREE ELBOW
~~252~~	~~DIFFERENTIAL PRESSURE TRANSMITTER~~
290	4" PVC 90 DEGREE ELBOW
~~300~~	~~2" CU PIPE~~

X	CONSTRUCTION NOTES
308	PIPE RACK (TYPE B) PER DTL 2 ON DWG S1502
309	PIPE RACK (TYPE C) PER DTL 3 ON DWG S1502
311	PIPE FLOOR PENETRATION PER DTL 6 ON DWG S0501. FLOOR SLEEVE PER DTL 7 ON DWG D0501
318	2" AIR RELEASE VALVE PER DTL 3 ON D0503
319	1 1/2" AIR RELEASE VALVE PER DTL 3 ON D0503
328	CONCRETE ENCASEMENT PER DTL 1 ON DWG C0501
338	2" SST PIPE
339	TRANSITION FROM 2" SST PIPE TO 2" COPPER PIPE
340	2" SST TEE
~~341~~	~~2" SST ELBOW~~
350	4" PVC PIPE

1 ION EXCHANGE TREATMENT PLAN
SCALE: 1/4" = 1'-0"

SCALE: 1/4" = 1'-0"

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MARK	DATE	DESCRIPTION	BY
1	10/25	ADDENDUM NO. 3	KFM
2	10/25	ADDENDUM NO. 4	KFM

ORANGE COUNTY WATER DISTRICT
PFAS TREATMENT AT JOHN GARTHE RESERVOIR
ION EXCHANGE PROCESS PLAN

PROJ:	200-09382-23010
DESN:	KFM
DRWN:	EB
CHKD:	KAB

D1104

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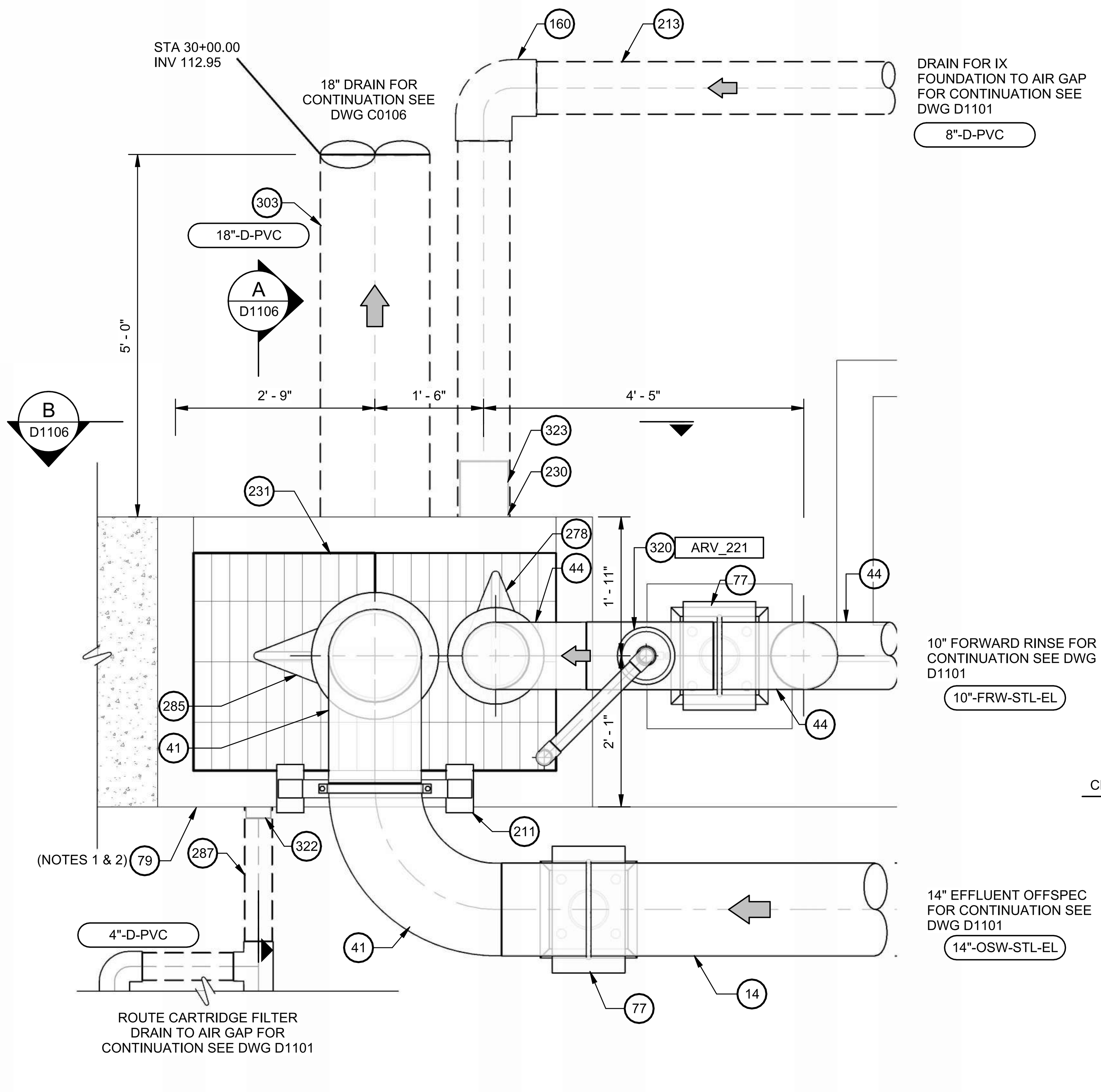
X	CONSTRUCTION NOTES
12	10" STL PIPE
14	14" STL PIPE
41	14" STL 90 DEGREE BEND
44	10" STL 90 DEGREE BEND
77	STANCHION SUPPORT PER DTL 7 ON DWG D0502
79	PRECAST CONCRETE CATCH BASIN PER SPEC 03462 (4-FT X 6-FT X 13-FT)
160	8" STL 90 DEGREES ELBOW
161	8" PVC PIPE
211	AIR GAP PIPE SUPPORT PER DTL 2 ON DWG S1503
213	8" CPVC DRAIN
222	AIR GAP GRATING SHALL BE SUPPORTED PER DTL 8 ON DWG S0501
223	SST LEGER ANGLES PER DTL 8 ON DWG S0501
224	SODIUM BISULFATE TABLETS (QTY 10 LBS)
225	ATTACH MESH BAG TO GRATING WITH SST CLIP
226	INSTALL FRP GRATING
227	INSTALL GROUT AND SLOPE TO DRAIN
228	12" THICK COMPACTED GRAVEL

1

X	CONSTRUCTION NOTES
229	COMPACTED SOIL PER SUBGRADE PREPARATION NOTES ON DWG S0001
230	WALL PIPE PENETRATION PER DTL 6 ON DWG D0502
231	TWO SEPERATE REMOVABLE GRATES
278	10" DUCKBILL CHECK VALVE
285	14" DUCKBILL CHECK VALVE
287	4" PVC DRAIN
303	18" PVC DRAIN
320	1" COMBINATION AIR RELEASE/VACUUM VALVE PER DTL 4 ON SHT D0503
322	CONSTRUCT 4" TIDEFLEX "CHECKMATE" INLINE CHECK VALVE WITH 316 SS BAND WITH NEOPRENE ELASTOMER PER SPECIFICATION 15109
323	CONSTRUCT 8" TIDEFLEX "CHECKMATE" INLINE CHECK VALVE WITH 316 SS BAND WITH NEOPRENE ELASTOMER PER SPECIFICATION 15109

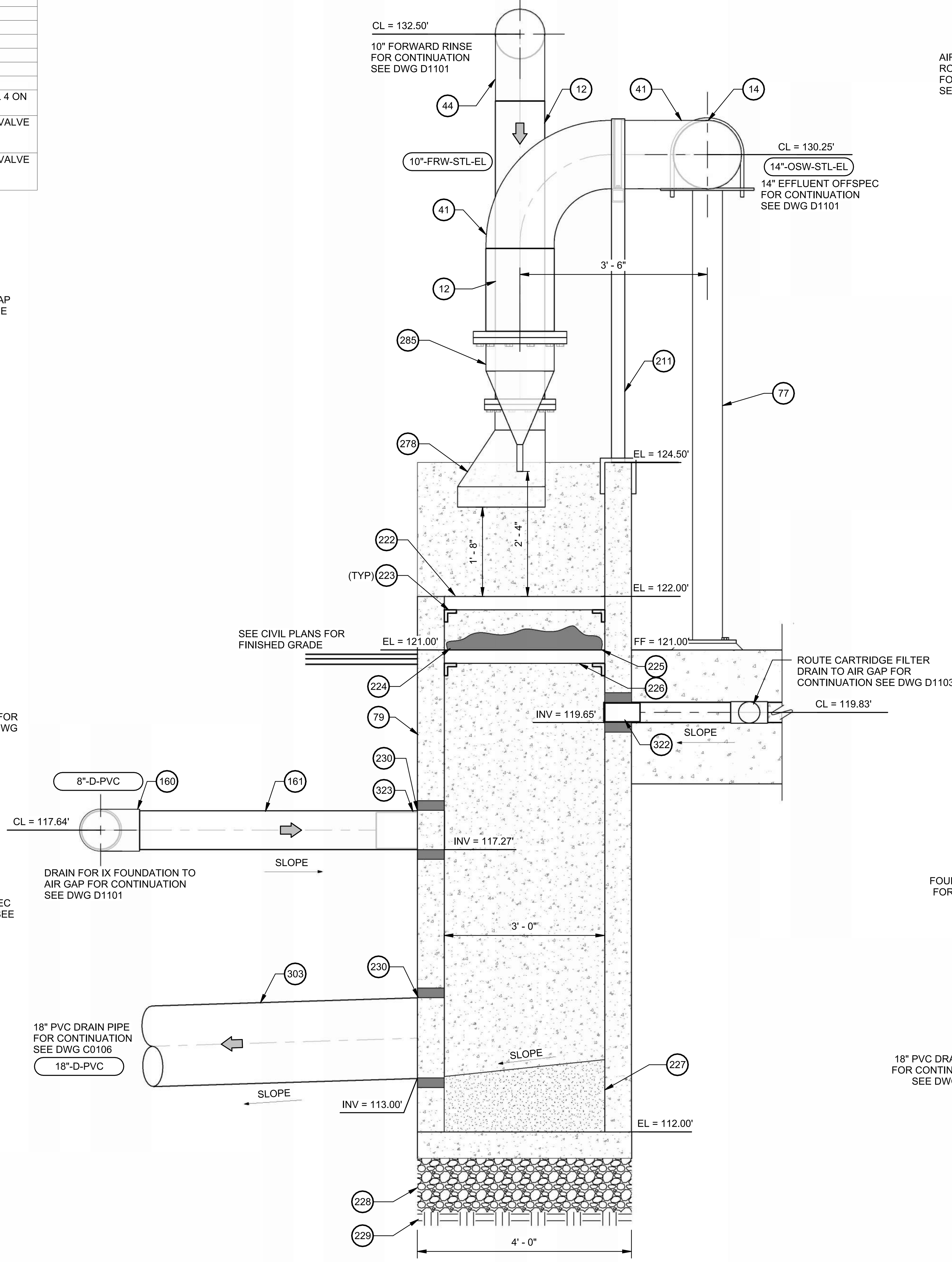


NOTES:

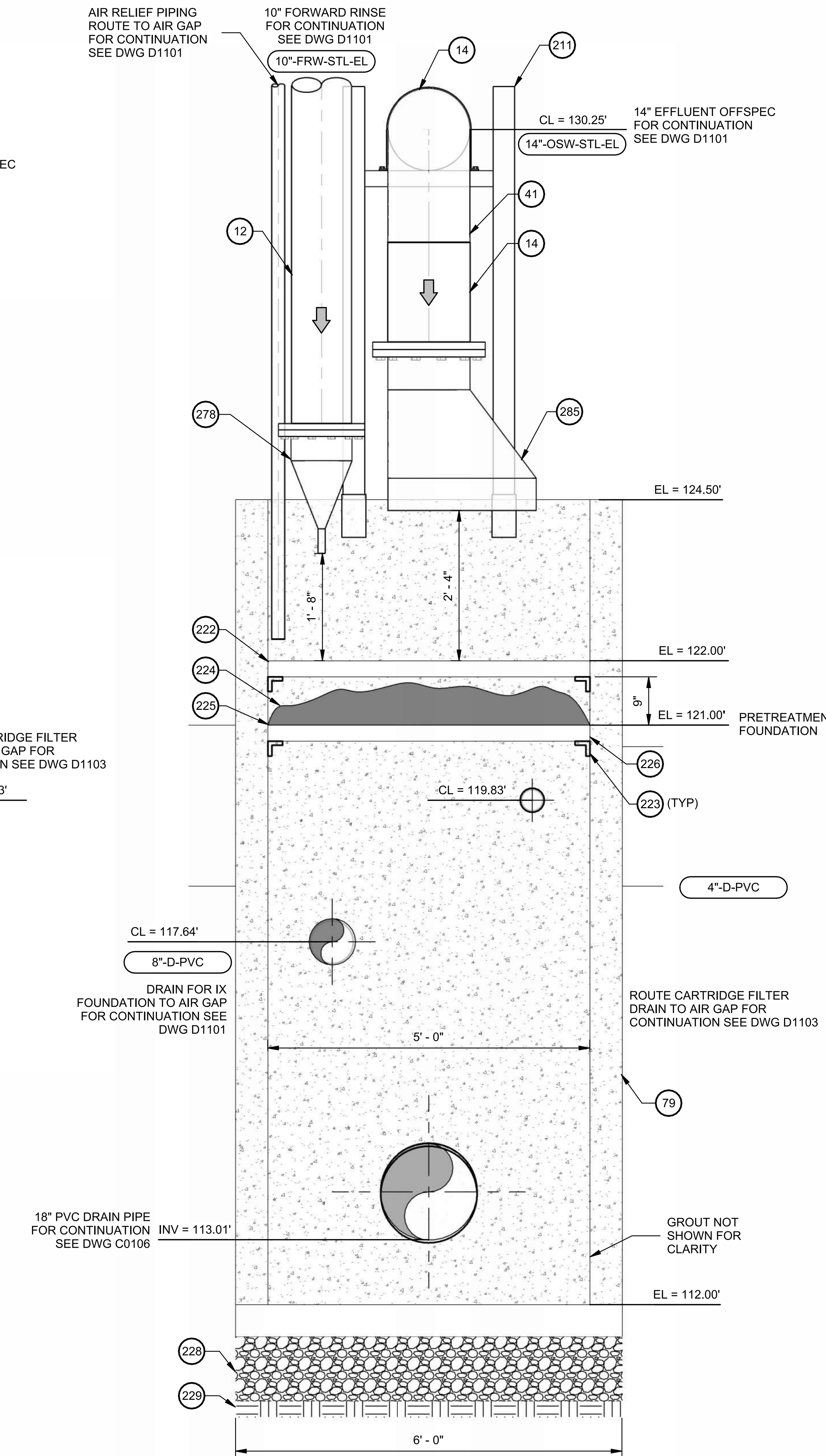
1. PRECAST CONCRETE STRUCTURES SHALL BE DESIGNED TO ACCOMODATE DEAD LOAD, LIVE LOAD, IMPACT AND ANY ADDITIONAL LOADS DUE TO WATER TABLE OR ADJACENT LOADS IMPOSED BY STRUCTURES. LIVE LOADS SHALL BE BASED ON H-20 LOADING PER AASHTO STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES. CONCRETE FOR PRECAST VAULTS SHALL BE A MINIMUM OF 4000 PSI. JOINT SEALING COMPOUND SHALL COMPLY WITH FEDERAL SPECIFICATION SS-S-00210 (GSA-FSS). SHOP DRAWINGS SUBMITTAL FOR PRECAST CONCRETE VAULTS SHALL INCLUDE DIMENSIONS, MATERIALS AND CONSTRUCTION, SAND SIGNED AND SEALED DESIGN CALCULATIONS BY A LICENSED CALIFORNIA REGISTERED ENGINEER.

2. PRECAST CATCH BASIN SHALL BE 12'-6" ON THREE SIDES AND 10'-0" ON THE SHORT SIDE.

1 PFAS TREATMENT AIR GAP DETAIL
D1103 SCALE: 3/4" = 1'-0"



A PFAS AIR GAP PROCESS SOUTH
D1106 SCALE: 3/4" = 1'-0"



B PFAS AIR GAP PROCESS WEST
D1106 SCALE: 3/4" = 1'-0"

1' 0' 1' 2' 3'
SCALE: 3/4" = 1'-0"

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TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY
1	10/25	ADDENDUM NO. 4	KFM

ORANGE COUNTY WATER DISTRICT
PFAS TREATMENT AT JOHN GARTHE RESERVOIR
PFAS AIR GAP DETAIL

PROJ:	200-09382-23010
DESN:	KFM
DRWN:	EB
CHKD:	KAB

D1106

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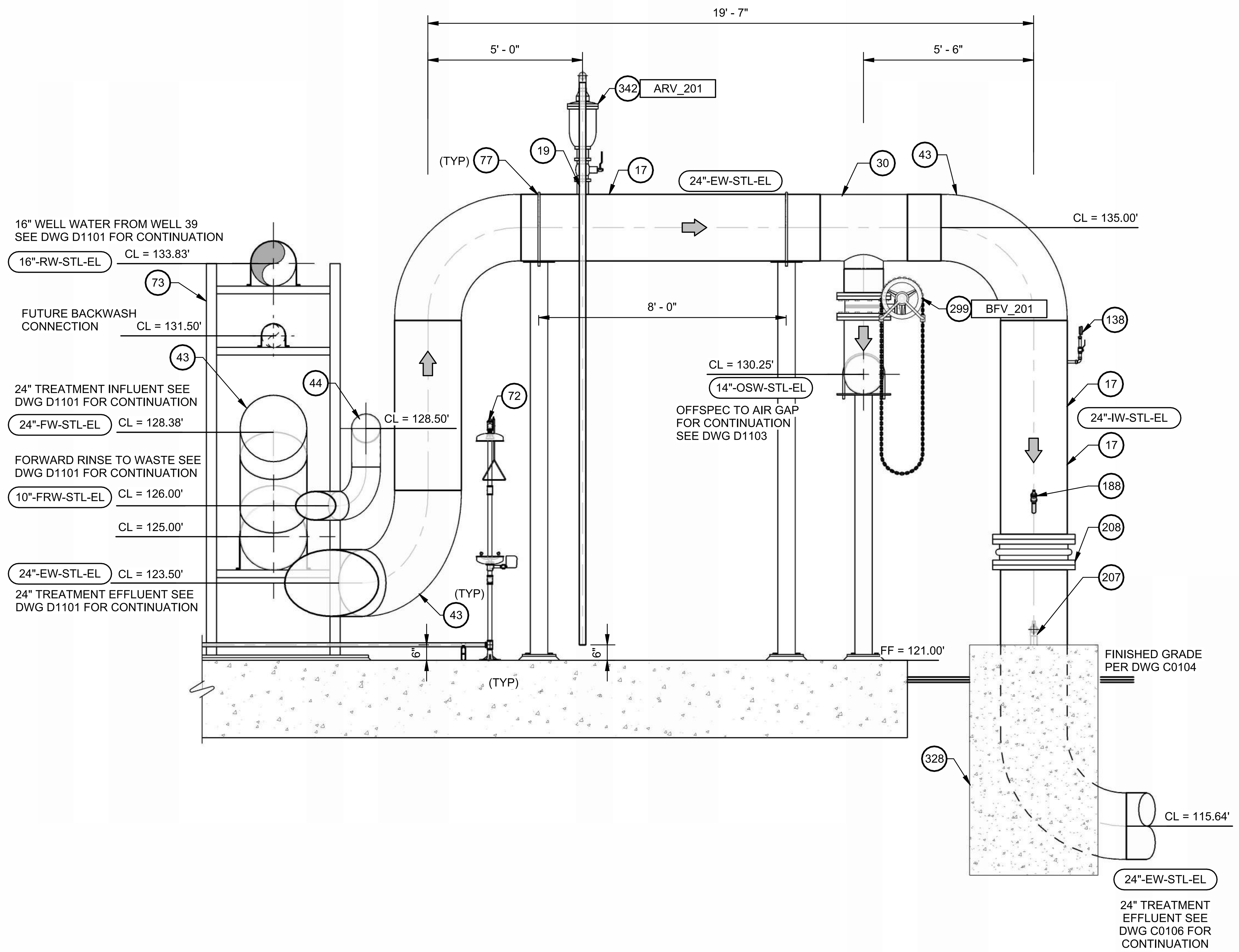
Ⓧ CONSTRUCTION NOTES

1	PRETREATMENT CARTRIDGE FILTER PER SPEC 11250
17	24" STL PIPE
19	4" STL PIPE
25	24" STL TEE
28	24" x 18" STL REDUCING TEE
30	24" x 14" STL REDUCING TEE
39	20" x 18" STL REDUCER
43	24" STL 90 DEGREE BEND
44	10" STL 90 DEGREE BEND
55	18" BUTTERFLY VALVE
72	EMERGENCY EYE WASH PER DTL 2 ON DWG D0503
73	PIPE RACK PER DTL 1 ON DWG S1502
~~74~~	~~1" AIR RELEASE VALVE PER DTL 3 ON D0503~~
77	STANCHION SUPPORT PER DTL 7 ON DWG D0502

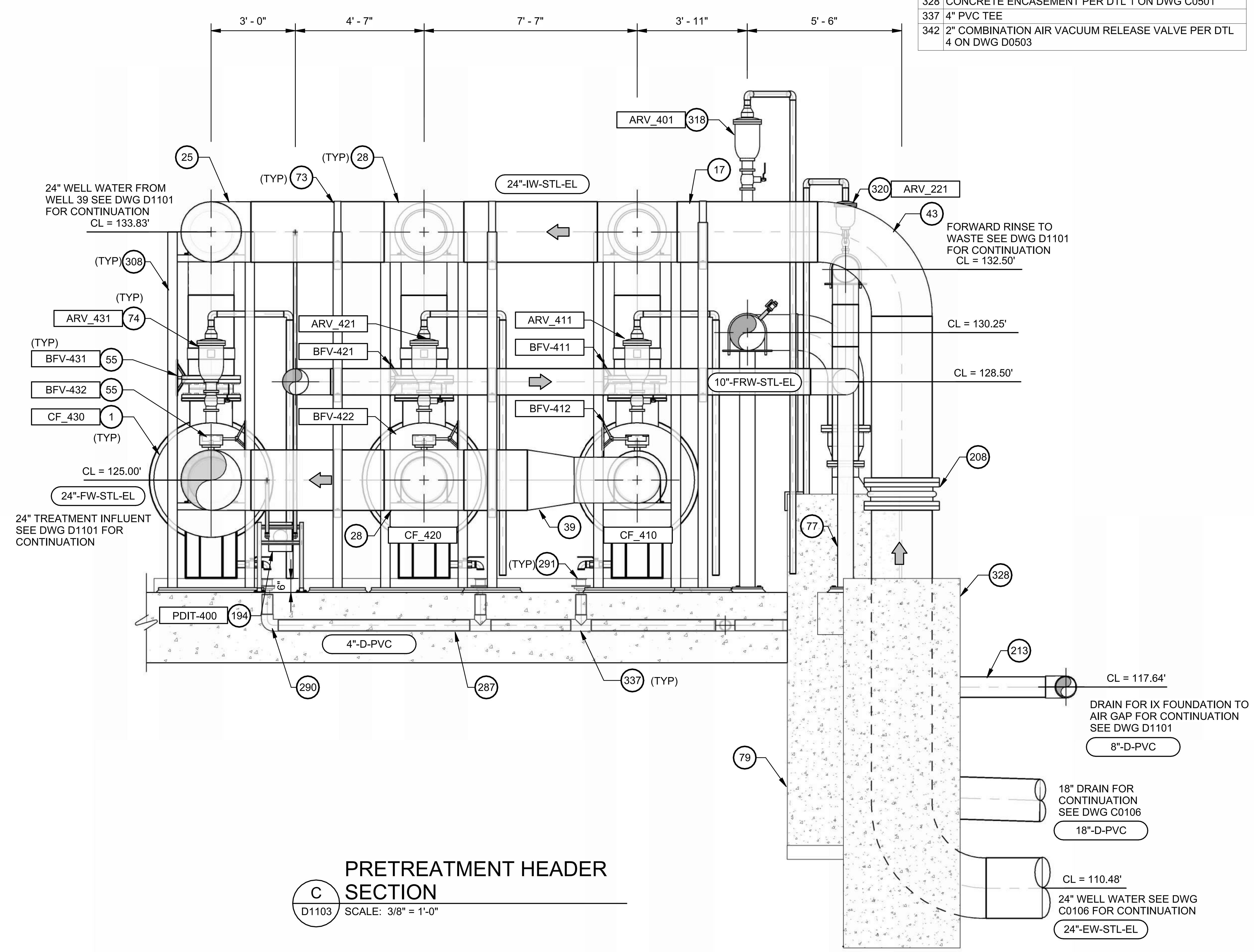
1

Ⓧ CONSTRUCTION NOTES

79	PRECAST CONCRETE CATCH BASIN PER SPEC 03462 (4-FT X 6-FT X 13-FT)
138	PRESSURE GAUGE PER DTL 6 ON DWG D0503
188	SAMPLE TAP PER DTL 7 ON DWG D0503
194	PRESSURE TRANSMITTER PANEL PER DTL 5 ON DWG E0502
207	SAMPLE CONNECTION TO INSTRUMENT PANEL PER DTL 1 ON DWG D0504
208	24" EXPANSION JOINT
213	8" CPVC DRAIN
287	4" PVC DRAIN
290	4" PVC 90 DEGREE ELBOW
291	FLOOR DRAIN
299	14" BUTTERFLY VALVE (FLG) WITH CHAIN
308	PIPE RACK (TYPE B) PER DTL 2 ON DWG S1502
318	2" AIR RELEASE VALVE PER DTL 3 ON D0503
320	1" COMBINATION AIR RELEASE/VACUUM VALVE PER DTL 4 ON SHT D0503
328	CONCRETE ENCASEMENT PER DTL 1 ON DWG C0501
337	4" PVC TEE
342	2" COMBINATION AIR VACUUM RELEASE VALVE PER DTL 4 ON DWG D0503



B D1103 EFFLUENT HEADER SECTION
SCALE: 3/8" = 1'-0"



C D1103 PRETREATMENT HEADER SECTION
SCALE: 3/8" = 1'-0"

4' 0' 4' 8'
SCALE: 1/4" = 1'-0"

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18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY
1	10/25	ADDENDUM NO. 4	KFM

ORANGE COUNTY WATER DISTRICT

PFAS TREATMENT AT JOHN GARTHE RESERVOIR

PRETREATMENT PROCESS SECTIONS

PROJ:	200-09382-23010
DESN:	KFM
DRWN:	EB
CHKD:	KAB

D1301

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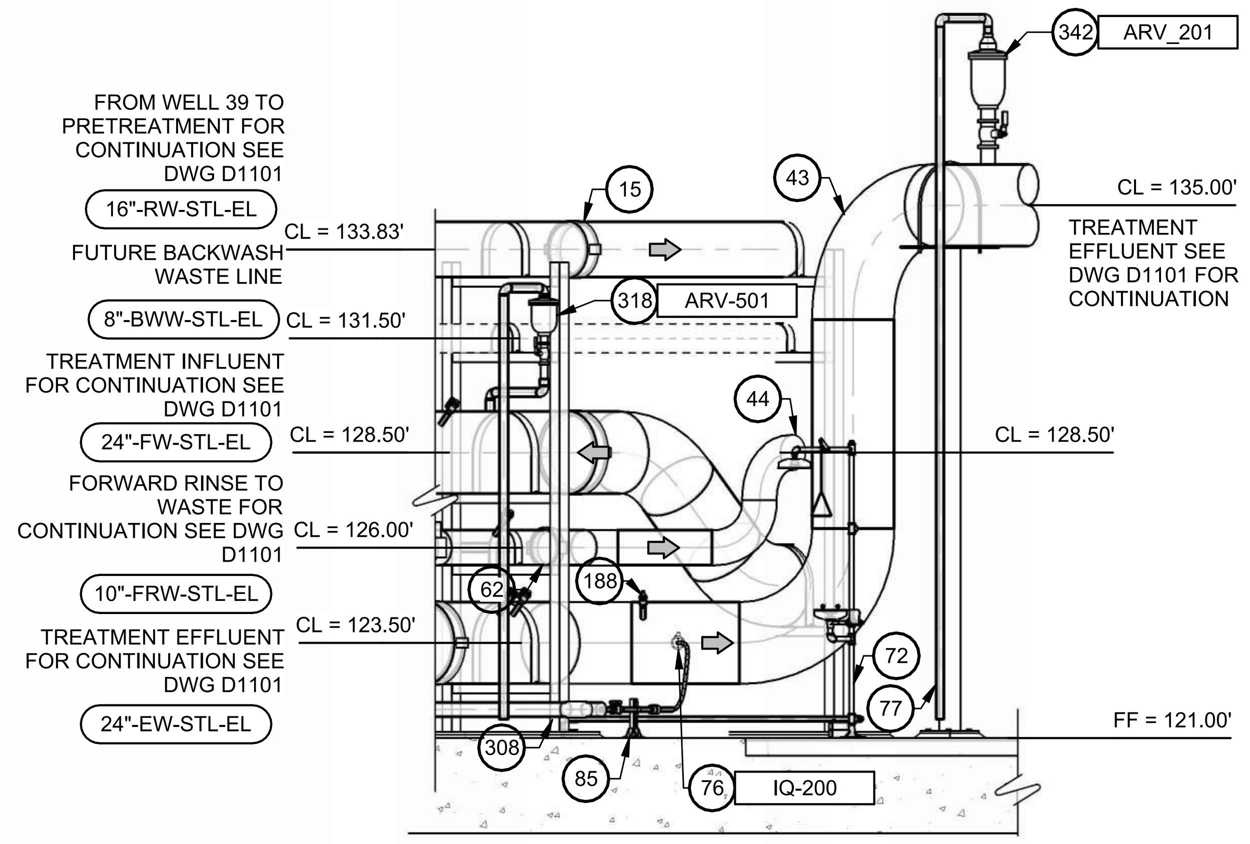
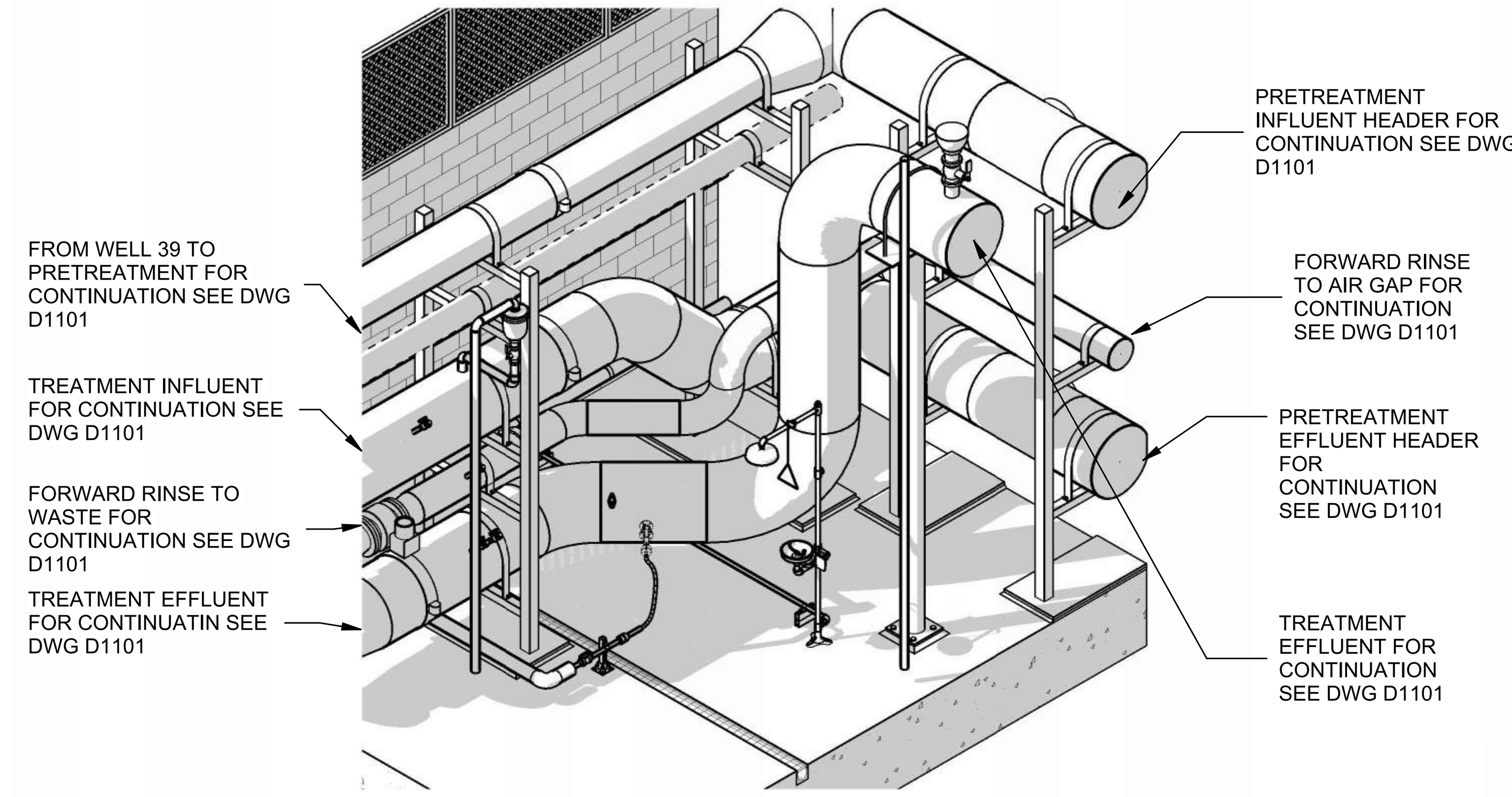
11/3/2025 12:50:20 PM Autodesk Docs://200-09382-23010 John Garthe Res PFAS/D-IXTreatment-09382-23010-v2023.rvt



G D1104 IX BEND SECTION
SCALE: 1/4" = 1'-0"

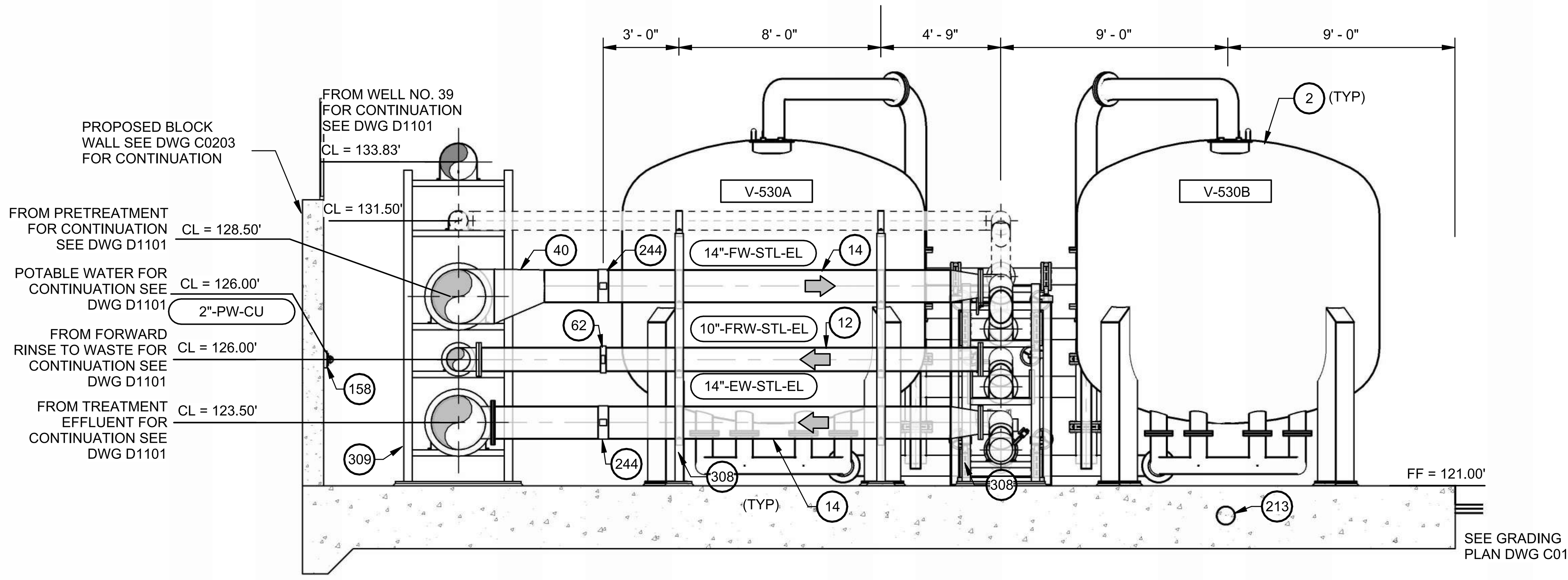


1 3D PERSPECTIVE HEADER PIPING
SCALE:

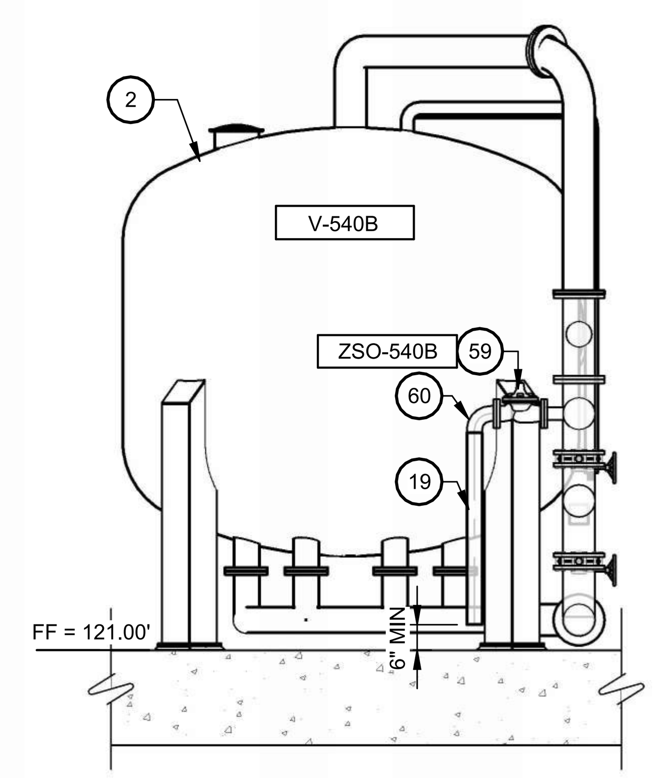
X	CONSTRUCTION NOTES
2	INSTALL ION EXCHANGE VESSEL 12-FT DIAMETER
10	10" x 8" STL REDUCER
11	8" STL PIPE
12	10" STL PIPE
14	14" STL PIPE
15	16" STL PIPE
17	24" STL PIPE
19	4" STL PIPE
22	10" STL TEE
34	24" x 16" STL REDUCER
40	24" x 14" STL ECCENTRIC REDUCER
42	16" STL 90 DEGREE BEND
43	24" STL 90 DEGREE BEND
44	10" STL 90 DEGREE BEND
46	10" STL 45 DEGREE BEND
47	24" STL 45 BEND
49	10" STL 45 BEND
51	10" BUTTERFLY VALVE (FLG)
57	8" GLOBE STYLE SILENT CHECK VALVE (FLG)
59	4" PRESSURE RELIEF VALVE (SUPPLIED BY VENDOR)
60	4" STL 90 DEGREE BEND
62	10" VICTAULIC COUPLING
67	24" VICTAULIC COUPLING
68	20" MAGNETIC FLOWMETER
69	8" MAGNETIC FLOW METER

X	CONSTRUCTION NOTES
70	24" BLIND FLANGE
72	EMERGENCY EYE WASH PER DTL 2 ON DWG D0503
~~76~~	~~CHEMICAL INJECTION QUILL PER DTL 3 ON DWG D2501~~
77	STANCHION SUPPORT PER DTL 7 ON DWG D0502
~~78~~	~~FLANGE PIPE SUPPORT PER DTL 3 ON DWG D0502~~
80	FLOWMETER TEST TAP PER DTL 8 ON DWG D0503
85	UNISTRUT PIPE SUPPORT PER DTL 1 ON DWG D0501
158	UNISTRUT WALL MOUNTED SUPPORT PER DTL 6 ON DWG D2501
188	SAMPLE TAP PER DTL 7 ON DWG D0503
195	10" DISMANTLING JOINT
213	8" CPVC DRAIN
220	8" MOTOR OPERATED BUTTERFLY VALVE
239	16" VICTAULIC COUPLING
244	14" VICTAULIC COUPLING
245	10" STL TEE (FLG X PE X FLG)
246	10" STL 90 DEGREE ELBOW (FLG X FLG)
247	24" STL TEE (FLG X PE X FLG)
248	24" STL TEE (FLG X FLG X FLG)
249	24" X 14" STL REDUCING TEE (FLG X FLG X FLG)
250	24" X 14" STL REDUCING TEE (FLG X PE X FLG)
308	PIPE RACK (TYPE B) PER DTL 2 ON DWG S1502
309	PIPE RACK (TYPE C) PER DTL 3 ON DWG S1502
318	2" AIR RELEASE VALVE PER DTL 3 ON D0503
319	1 1/2" AIR RELEASE VALVE PER DTL 3 ON D0503
342	2" COMBINATION AIR VACUUM RELEASE VALVE PER DTL 4 ON DWG D0503

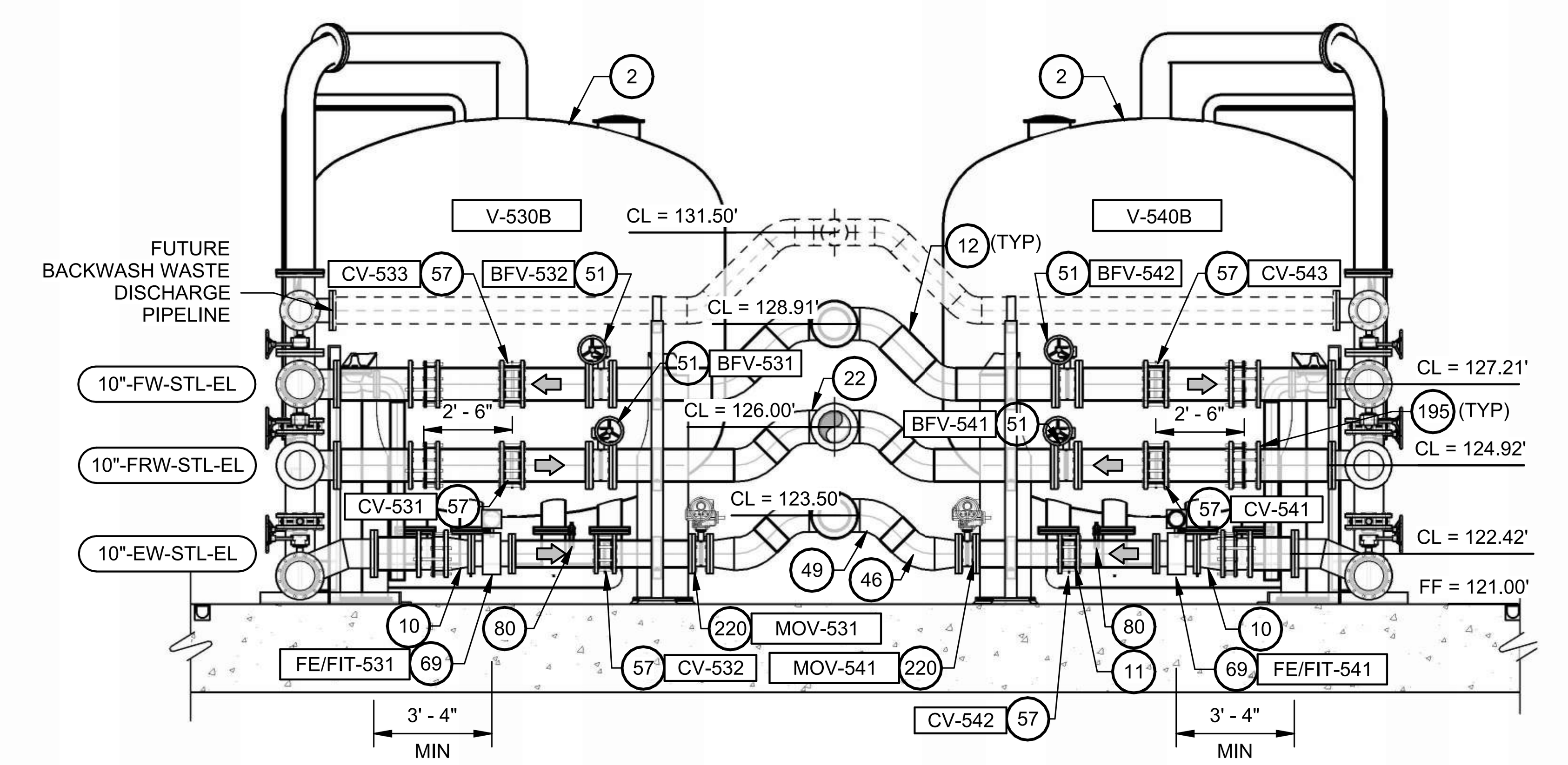
C D1104 IX HEADER SECTION
SCALE: 1/4" = 1'-0"



D D1105 IX VESSEL SECTION
SCALE: 1/4" = 1'-0"



E D1105 IX VESSEL PRV SECTION
SCALE: 1/4" = 1'-0"



F D1105 IX MANIFOLD SECTION
SCALE: 1/4" = 1'-0"

SCALE: 1/4" = 1'-0"

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BID SET

ORANGE COUNTY WATER DISTRICT
18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

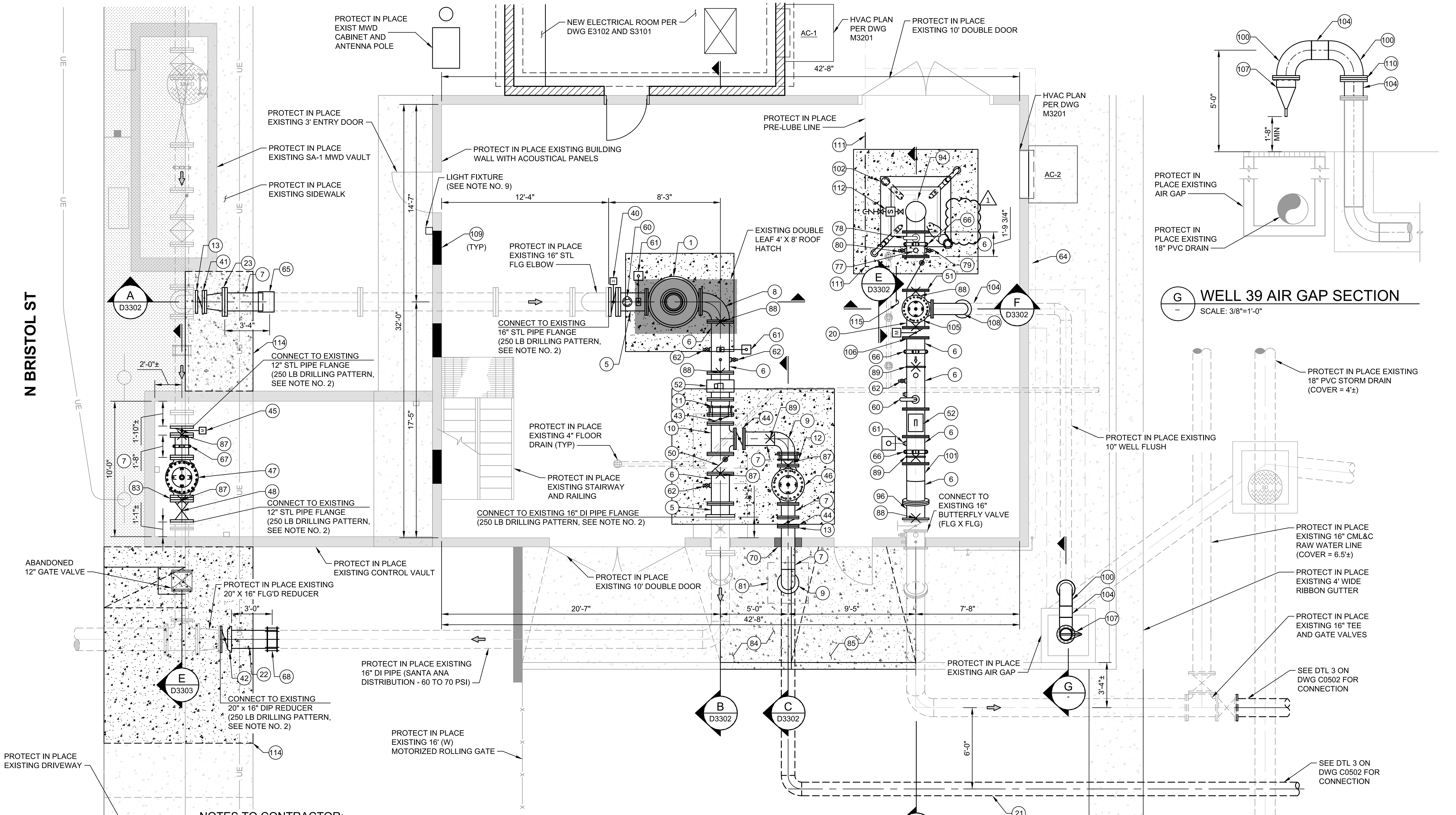
MARK	DATE	DESCRIPTION	BY
1	10/25	ADDENDUM NO. 4	KFM

ORANGE COUNTY WATER DISTRICT
PFAS TREATMENT AT JOHN GARTHE RESERVOIR
IX PIPING SECTIONS

PROJ:	200-09382-23010
DESN:	KFM
DRWN:	EB
CHKD:	KAB

D1302

Bar measures 1 inch, otherwise drawing is not to scale



G WELL 39 AIR GAP SECTION
SCALE: 3/8"=1'-0"

WELL 39 BUILDING PLAN
SCALE: 1/4" = 1'-0"

N
0 2' 4' 8'
SCALE: 1/4" = 1'-0"

NOTES TO CONTRACTOR:

1. CONTRACTOR SHALL PROTECT IN PLACE ALL EXISTING PIPING, APPURTENANCES, ELECTRICAL EQUIPMENT, AND VENTILATION EQUIPMENT, RAILING, AND ALL OTHER EQUIPMENT NOT TO BE REPLACED DURING CONSTRUCTION ACTIVITIES UNLESS OTHERWISE NOTED ON PLANS.
2. CONTRACTOR SHALL FIELD VERIFY FLANGE BOLT PATTERN AT EXISTING FLANGE CONNECTION POINT PRIOR TO ANY CONSTRUCTION ACTIVITY.
3. PIPING AND VALVES UPSTREAM OF THE HYDRO-GENERATOR AND WITHIN THE CONTROL VAULT SHALL BE RATED FOR 300 PSI (STEEL FLANGES SHALL BE CLASS F). PIPING AND VALVES DOWNSTREAM OF THE HYDRO-GENERATOR AND ON THE WELL DISCHARGE LINE SHALL BE RATED FOR 150 PSI (STEEL FLANGES SHALL BE CLASS D).
4. CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL CONNECTION POINTS PRIOR TO SUBMITTING SHOP DRAWINGS.
5. CONTRACTOR SHALL DISINFECT PIPING PER ANSI/AWWA C651-92.
6. ALL FLANGES SHALL BE JOINED WITH 316 SS NUTS, BOLTS, AND WASHERS.
7. ALL PIPING SHALL BE LINED AND COATED PER THE PIPE SCHEDULE ON C0106.
8. LOUVERS AND EXHAUST FAN SHALL BE INSTALLED WITHIN EXISTING WALL PENETRATIONS. CONTRACTOR SHALL LOCATE EXISTING CMU REINFORCEMENT USING NON-DESTRUCTIVE METHODS. CONTRACTOR SHALL MODIFY THESE EXISTING OPENINGS PER DTL 5 AND 7 ON DWG S3501.
9. IF THE EXISTING LIGHT FIXTURE RESTRICTS CONSTRUCTION ACTIVITIES FOR THE WIDENING OF THE LOUVERS, THE CONTRACTOR SHALL REMOVE AND REPLACE THE EXISTING LIGHT FIXTURE PER DWG E3102.

CONSTRUCTION NOTES

X	CONSTRUCTION NOTES
1	PROPOSED 16" HYDRO GENERATOR (CANYON HYDRO ILT-16 OR APPROVED EQUAL) (150LB DRILLING PATTERN)
5	16" STEEL PIPE (CL300 FLG X CL150 FLG)
6	16" STEEL PIPE
7	12" STEEL PIPE
8	16" STEEL 90° BEND
9	12" STEEL 90° BEND
10	16" X 12" STEEL TEE
11	16" DISMANTLING JOINT
12	12" DISMANTLING JOINT
13	12" STEEL FLANGE (FIELD WELD)
20	16" X 10" STEEL PIPE TEE
21	12" SA-1 PRESSURE RELIEF PIPING
22	16" DI PIPE, CL350
23	16" X 12" STEEL REDUCER
40	16" (FLG X FLG) BUTTERFLY VALVE WITH HYDRAULICALLY DRIVEN ACTUATOR (FAIL-SAFE) (250 LB DRILLING PATTERN)
41	12" (FLG X FLG) BUTTERFLY VALVE AND VALVE BOX PER CITY STD PLAN NO. 1411 (250 LB DRILLING PATTERN)
42	16" (FLG X MJ) BUTTERFLY VALVE AND VALVE BOX PER CITY STD PLAN NO. 1411
43	16" (FLG X FLG) BUTTERFLY VALVE WITH HANDWHEEL OPERATOR
44	12" (FLG X FLG) BUTTERFLY VALVE WITH HANDWHEEL OPERATOR
45	12" (FLG X FLG) BUTTERFLY VALVE WITH ELECTRIC ACTUATOR (250 LB DRILLING PATTEN)
46	12" (FLG X FLG) PRESSURE RELIEF VALVE WITH CHECK FEATURE
47	12" (FLG X FLG) PRESSURE REDUCING VALVE (250 LB DRILLING PATTERN)
48	12" (FLG X FLG) GATE VALVE (250 LB DRILLING PATTERN)
50	16" (FLG X FLG) SILENT GLOBE CHECK VALVE
51	16" (FLG X FLG) CHECK VALVE WITH POSITION INDICATOR
52	16" (FLG X FLG) MAGNETIC FLOW METER
60	2" COMBINATION AIR RELEASE/VACUUM VALVE PER DTL 1 ON DWG D0503
61	PRESSURE TRANSMITTER AND GAUGE PER DTL 3 ON DWG D0501
62	2" SPARE PIPE TAP PER DTL 2 ON DWG D0501
64	1-1/2" COPPER SHOWER SERVICE. MOUNT TO BUILDING WALL PER DTL 4 ON DWG D3501
65	BUTT STRAP PER DTL 4 ON DWG C0501
66	16" GROOVED END VICTAULIC COUPLING
67	12" GROOVED END VICTAULIC COUPLING
68	16" FLEXIBLE COUPLING
70	ACOUSTICAL PANEL WALL PENETRATION PER DTL 3 ON DWG D3501
77	HIGH LOW PRESSURE SWITCH AND GAUGE PER DTL 5 ON DWG D0501
78	3" DEEP WELL AIR VALVE PER DTL 6 ON DWG D0501
79	2" SAMPLE TAP PER DTL 7 ON DWG D0503
80	2" SAND SAMPLE TAP PER DTL 1 ON DWG D3501
81	CONCRETE ENCASEMENT PER DTL 1 ON DWG C0501
83	12" STEEL ORIFICE PLATE (CRITERIA: Q=3,500 GPM, ΔP=58', BORE=6.2"±)
84	CONSTRUCT 4" THICK CONCRETE WALK IN KIND
85	CONSTRUCT 6" THICK CONCRETE RAMP IN KIND (REINFORCED WITH #4 REBAR @ 12" EACH WAY WITH 2" CLR FROM TOP OF SURFACE)
86	CONSTRUCT 4" WIDE RIBBON GUTTER PER DTL 2 ON DWG C0501
87	CONCRETE FLANGE PIPE SUPPORT PER DTL 5 ON DWG D3501
88	FLANGE PIPE SUPPORT PER DTL 5 ON DWG D0502
89	STANCHION PIPE SUPPORT PER DTL 4 ON DWG D0502
94	INSTALL NEW VERTICAL TURBINE WELL PUMP PER SPEC 11290
96	16" STL 11.25 DEGREE BEND (FLG X FLG)
100	10" STL 90 DEGREE BEND
101	16" STL 11.25 DEGREE BEND (FLG X PE)
102	MODIFY EXISTING WELL ACCESSORY TUBING PER DTL 1 ON DWG D3502. CONSTRUCT CONCRETE WELL BASE PER DTL 6 ON DWG S0504
104	10" STL PIPE
105	10" DEEP WELL PUMP CONTROL VALVE (ANGLE PATTERN)
106	16" MOTOR OPERATED BUTTERFLY VALVE
107	10" DUCKBILL CHECK VALVE TIDEFLEX OR APPROVED EQUAL
108	10" STL ELBOW
109	PATCH EXISTING LOUVER OPENING PER DTL 5 ON DWG S3501
110	WELL 39 FLUSH - 10" STEEL ORFICE PLATE (CRITERIA: Q=3,100 GPM, Δ = 46', BORE = 6.1" ±)
111	2" COPPER PIPING (TYPE "K" SOFT)
112	PRE-LUBE ASSEMBLY PER DTL 8 ON D0501
114	CONSTRUCT CONCRETE SIDEWALK PER DWG C0103
115	PUMP CONTROL VALVE CONNECTION - 1/2" SS NIPPLES, 1/2" SS BALL VALVE, 1/2" SS UNION, 1/2"RPPD AND 1/2" SWEAT X NPT ADAPTER

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BID SET
REGISTERED PROFESSIONAL ENGINEER STEVEN D. ... No. C039261 Exp. 12-31-25 CIVIL STATE OF CALIFORNIA
11/3/25

ORANGE COUNTY WATER DISTRICT
18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200
SINCE 1933

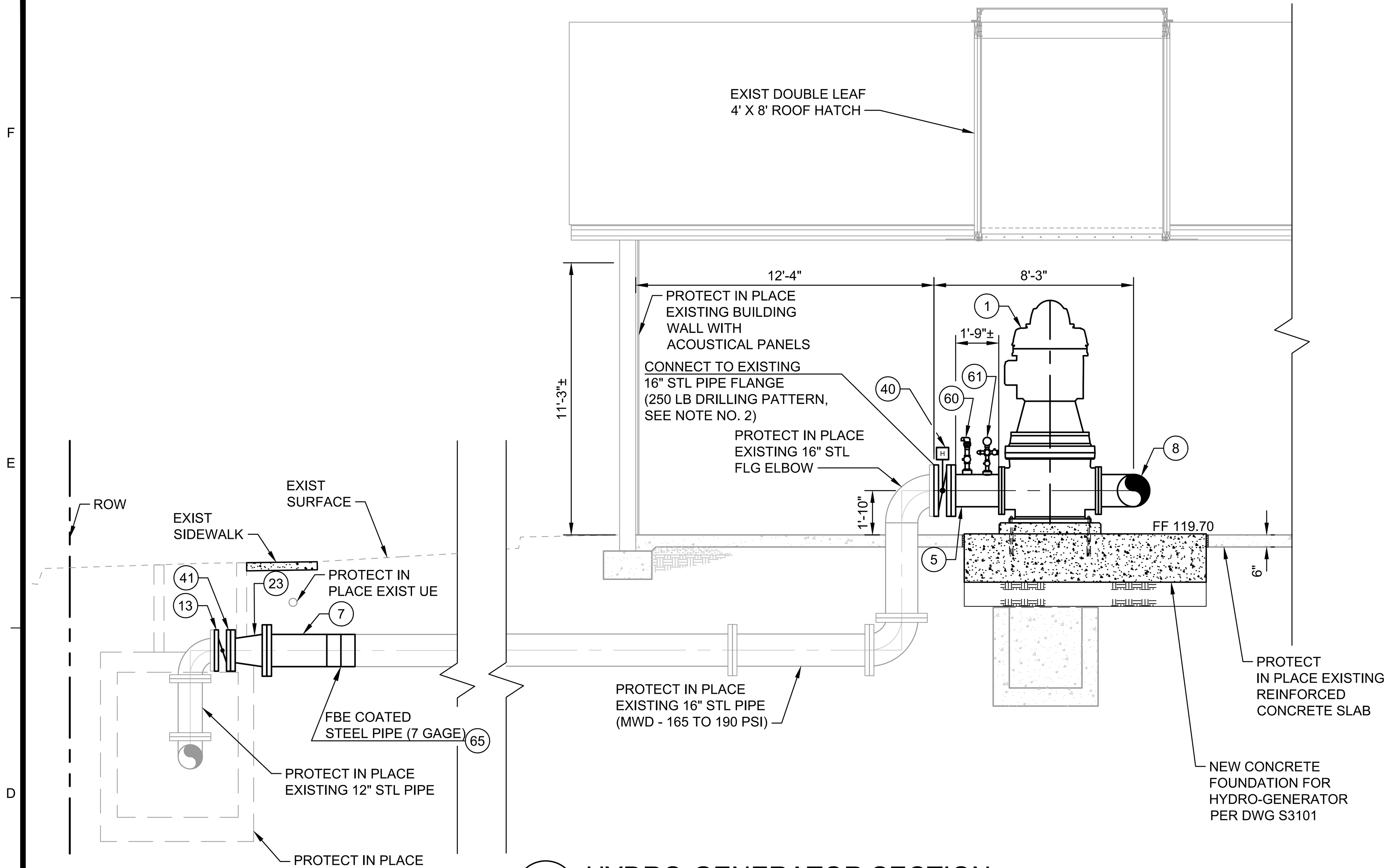
MARK	DATE	DESCRIPTION	BY
1	11/3	ADDENDUM NO. 4	TLE

ORANGE COUNTY WATER DISTRICT
CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR
HYDRO-GENERATOR AND WELL 39 PLAN

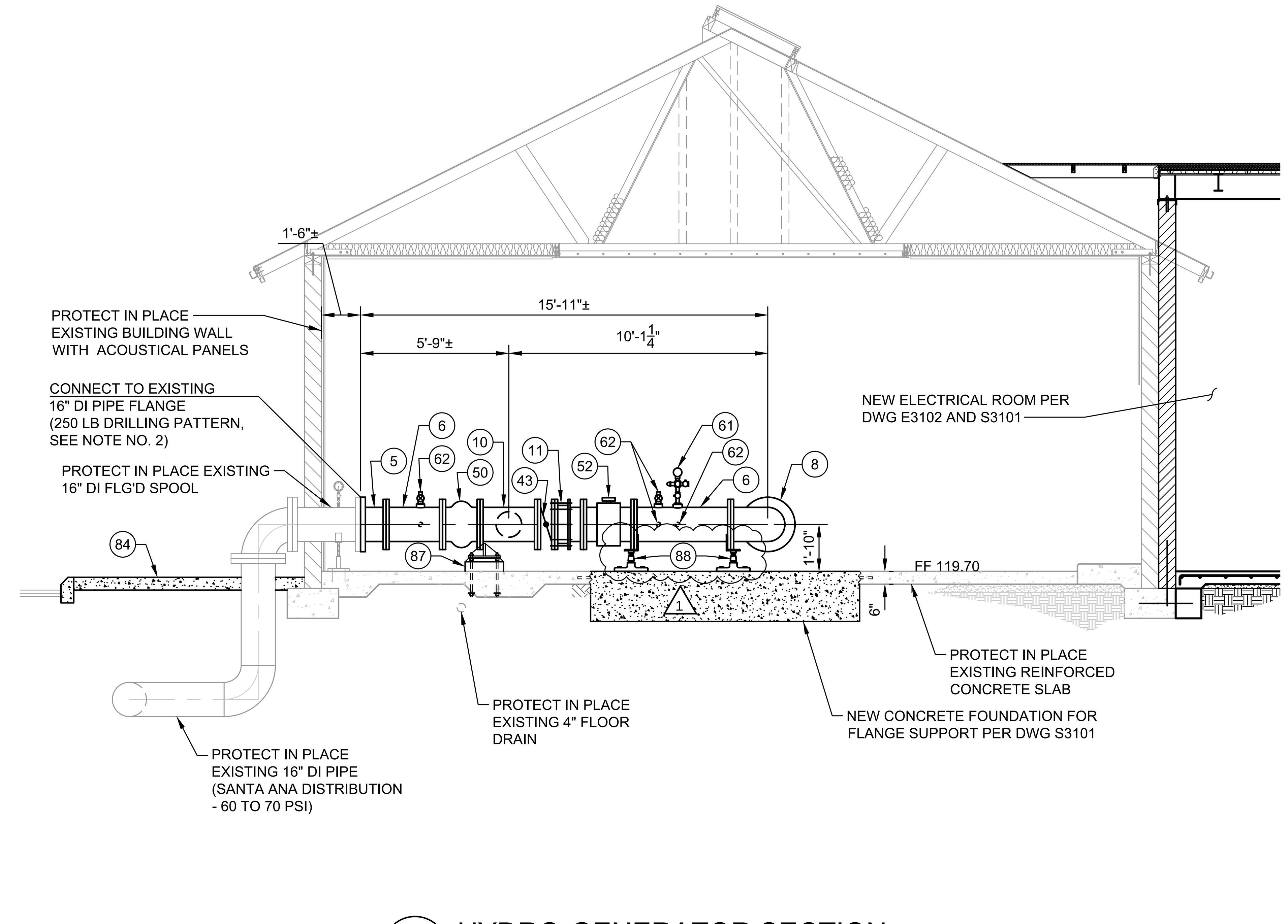
PROJ:	200-09382-23010
DESN:	KFM
DRWN:	RWJ
CHKD:	KAB

D3101

Bar Measures 1 inch, otherwise drawing not to scale



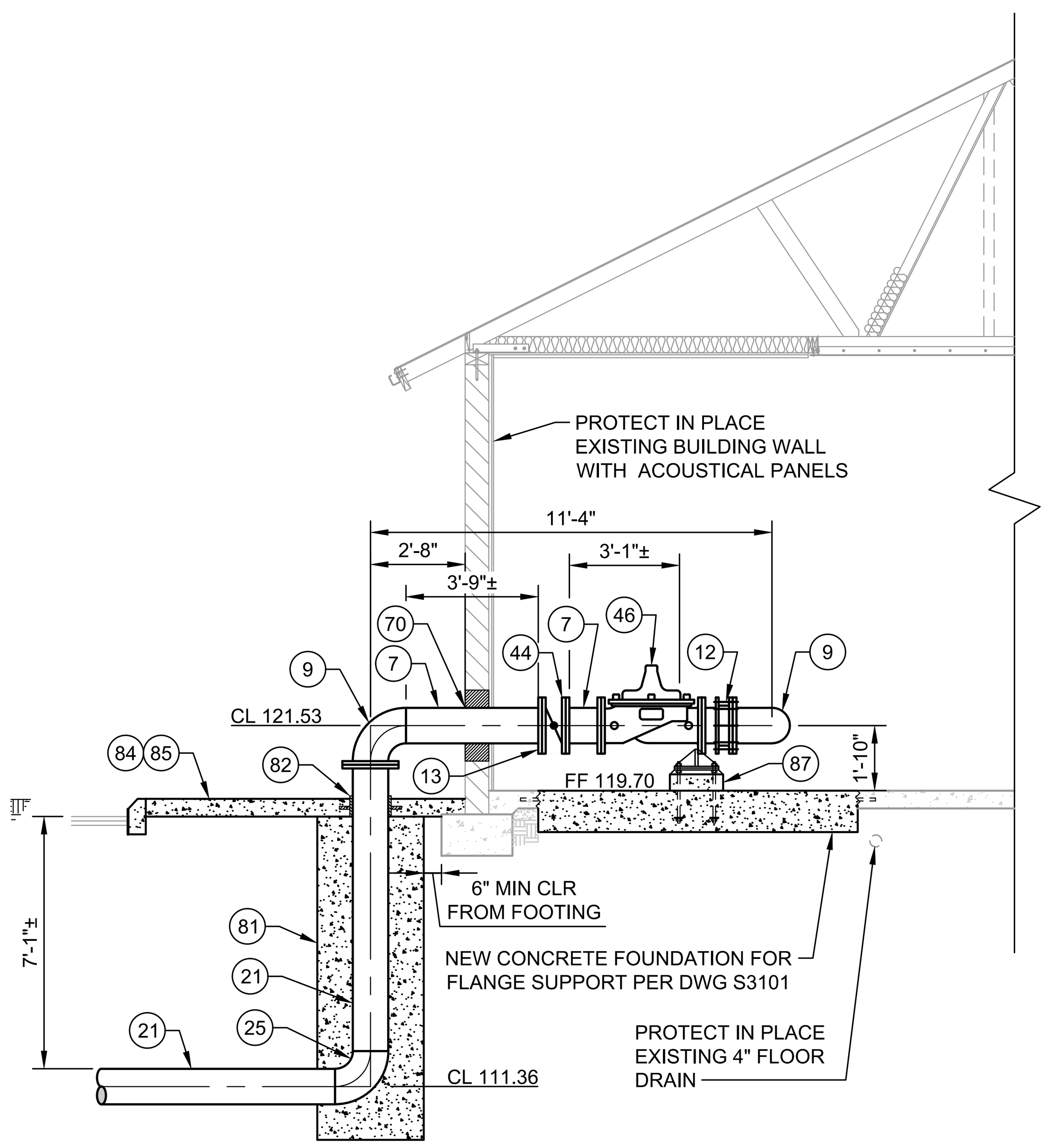
A D3101 HYDRO-GENERATOR SECTION
SCALE: 1/4"=1'-0"



B D3101 HYDRO-GENERATOR SECTION
SCALE: 1/4"=1'-0"

CONSTRUCTION NOTES

1	PROPOSED 16" HYDRO GENERATOR (CANYON HYDRO ILT-16 OR APPROVED EQUAL) (150LB DRILLING PATTERN)
5	16" STEEL PIPE (CL300 FLG X CL150 FLG)
6	16" STEEL PIPE
7	12" STEEL PIPE
8	16" STEEL 90° BEND
9	12" STEEL 90° BEND
10	16" X 12" STEEL TEE
11	16" DISMANTLING JOINT
12	12" DISMANTLING JOINT
13	12" STEEL FLANGE (FIELD WELD)
20	16" X 10" STEEL PIPE TEE
21	12" SA-1 PRESSURE RELIEF PIPING
23	16" X 12" STEEL REDUCER
25	12" STEEL 90° BEND
40	16" (FLG X FLG) BUTTERFLY VALVE WITH HYDRAULICALLY DRIVEN ACTUATOR (FAIL-SAFE) (250 LB DRILLING PATTERN)
41	12" (FLG X FLG) BUTTERFLY VALVE AND VALVE BOX PER CITY STD PLAN NO. 1411 (250 LB DRILLING PATTERN)
43	16" (FLG X FLG) BUTTERFLY VALVE WITH HANDWHEEL OPERATOR
44	12" (FLG X FLG) BUTTERFLY VALVE WITH HANDWHEEL OPERATOR
46	12" (FLG X FLG) PRESSURE RELIEF VALVE WITH CHECK FEATURE
50	16" (FLG X FLG) SILENT GLOBE CHECK VALVE
51	16" (FLG X FLG) CHECK VALVE WITH POSITION INDICATOR
52	16" (FLG X FLG) MAGNETIC FLOW METER
60	2" COMBINATION AIR RELEASE/VACUUM VALVE PER DTL 1 ON DWG D0503
61	PRESSURE TRANSMITTER AND GAUGE PER DTL 3 ON DWG D0501
62	2" SPARE PIPE TAP PER DTL 2 ON DWG D0501
65	BUTT STRAP PER DTL 4 ON DWG C0501
66	16" GROOVED END VICTAULIC COUPLING
70	ACOUSTICAL PANEL WALL PENETRATION PER DTL 3 ON DWG D3501
77	HIGH LOW PRESSURE SWITCH AND GAUGE PER DTL 5 ON DWG D0501
78	3" DEEP WELL AIR VALVE PER DTL 6 ON DWG D0501
79	2" SAMPLE TAP PER DTL 7 ON DWG D0503
80	2" SAND SAMPLE TAP PER DTL 1 ON DWG D3501
81	CONCRETE ENCASEMENT PER DTL 1 ON DWG C0501
82	FLOOR PIPE SLEEVE PER DTL 7 ON DWG D0501
84	CONSTRUCT 4" THICK CONCRETE WALK IN KIND
85	CONSTRUCT 6" THICK CONCRETE RAMP IN KIND (REINFORCED WITH #4 REBAR @ 12" EACH WAY WITH 2" CLR FROM TOP OF SURFACE)
87	CONCRETE FLANGE PIPE SUPPORT PER DTL 5 ON DWG D3501
88	FLANGE PIPE SUPPORT PER DTL 5 ON DWG D0502
89	STANCHION PIPE SUPPORT PER DTL 4 ON DWG D0502
94	INSTALL NEW VERTICAL TURBINE WELL PUMP PER SPEC 11290
96	16" STL 11.25 DEGREE BEND (FLG X FLG)
101	16" STL 11.25 DEGREE BEND (FLG X PE)
102	MODIFY EXISTING WELL ACCESSORY TUBING PER DTL 1 ON DWG D3502. CONSTRUCT CONCRETE WELL BASE PER DTL 6 ON DWG S0504
104	10" STL PIPE
105	10" DEEP WELL PUMP CONTROL VALVE (ANGLE PATTERN)
106	16" MOTOR OPERATED BUTTERFLY VALVE
108	10" STL ELBOW
111	2" COPPER PIPING (TYPE "K" SOFT)
113	10" GATE VALVE
115	PUMP CONTROL VALVE CONNECTION - 1/2" SS NIPPLES, 1/2" SS BALL VALVE, 1/2" SS UNION, 1/2"RPPD AND 1/2" SWEAT X NPT ADAPTER



C D3101 PRESSURE RELIEF SECTION
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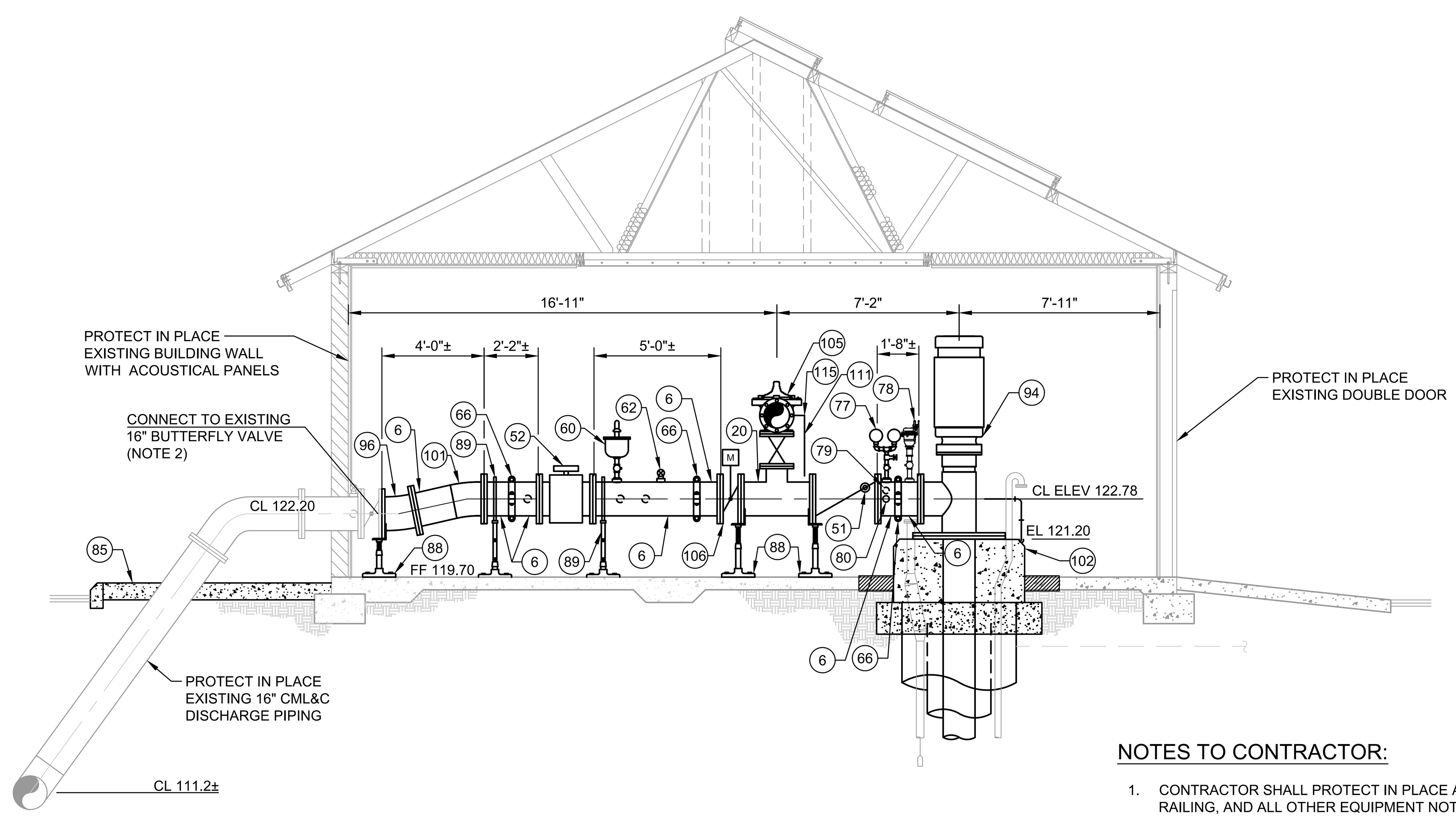

D D3101 WELL 39 DISCHARGE PIPING SECTION
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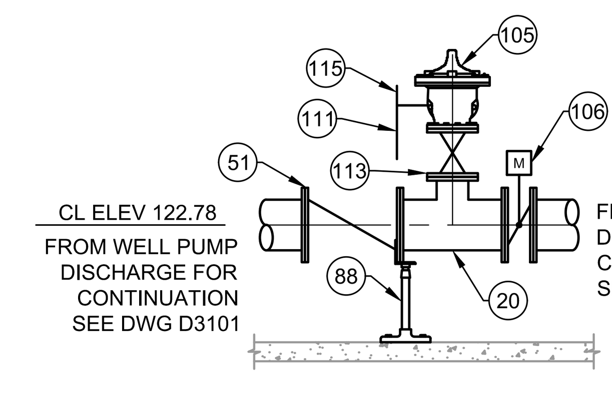
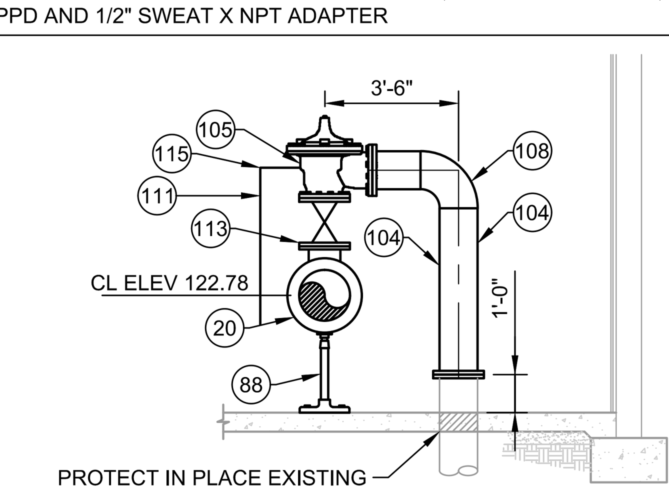


E D3101 PRESSURE RELIEF VALVE SECTION
SCALE: 1/4"=1'-0"



F D3101 PRESSURE RELIEF VALVE SECTION
SCALE: 1/4"=1'-0"

NOTES TO CONTRACTOR:

1. CONTRACTOR SHALL PROTECT IN PLACE ALL EXISTING PIPING, APPURTENANCES, ELECTRICAL EQUIPMENT, AND VENTILATION EQUIPMENT, RAILING, AND ALL OTHER EQUIPMENT NOT TO BE REPLACED DURING CONSTRUCTION ACTIVITIES UNLESS OTHERWISE NOTED ON PLANS.
2. CONTRACTOR SHALL FIELD VERIFY FLANGE BOLT PATTERN AT EXISTING FLANGE CONNECTION POINT PRIOR TO ANY CONSTRUCTION ACTIVITY.
3. CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL CONNECTION POINTS PRIOR TO SUBMITTING SHOP DRAWINGS.
4. CONTRACTOR SHALL DISINFECT PIPING PER ANSI/AWWA C651-92.
5. ALL FLANGES SHALL BE JOINED WITH 316 SS NUTS, BOLTS, AND WASHERS.
6. ALL PIPING SHALL BE LINED AND COATED PER THE PIPE SCHEDULE ON C0106.
7. ALL HYDRO-GENERATOR STEEL PIPE THICKNESS SHALL BE 0.25 INCHES.

0 2' 4' 8'
SCALE: 1/4" = 1'-0"

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Tel: (949) 809-5000

BID SET

REGISTERED PROFESSIONAL ENGINEER
No. C039261
Exp. 12-31-25
CIVIL
STATE OF CALIFORNIA
11/3/25

ORANGE COUNTY WATER DISTRICT
18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY
1	11/3	ADDENDUM NO. 4	TLE

ORANGE COUNTY WATER DISTRICT
CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR
HYDRO-GENERATOR UPGRADE SECTIONS

PROJ:	200-09382-23010
DESN:	KFM
DRWN:	RWJ
CHKD:	KAB

D3302

Bar Measures 1 inch, otherwise drawing not to scale

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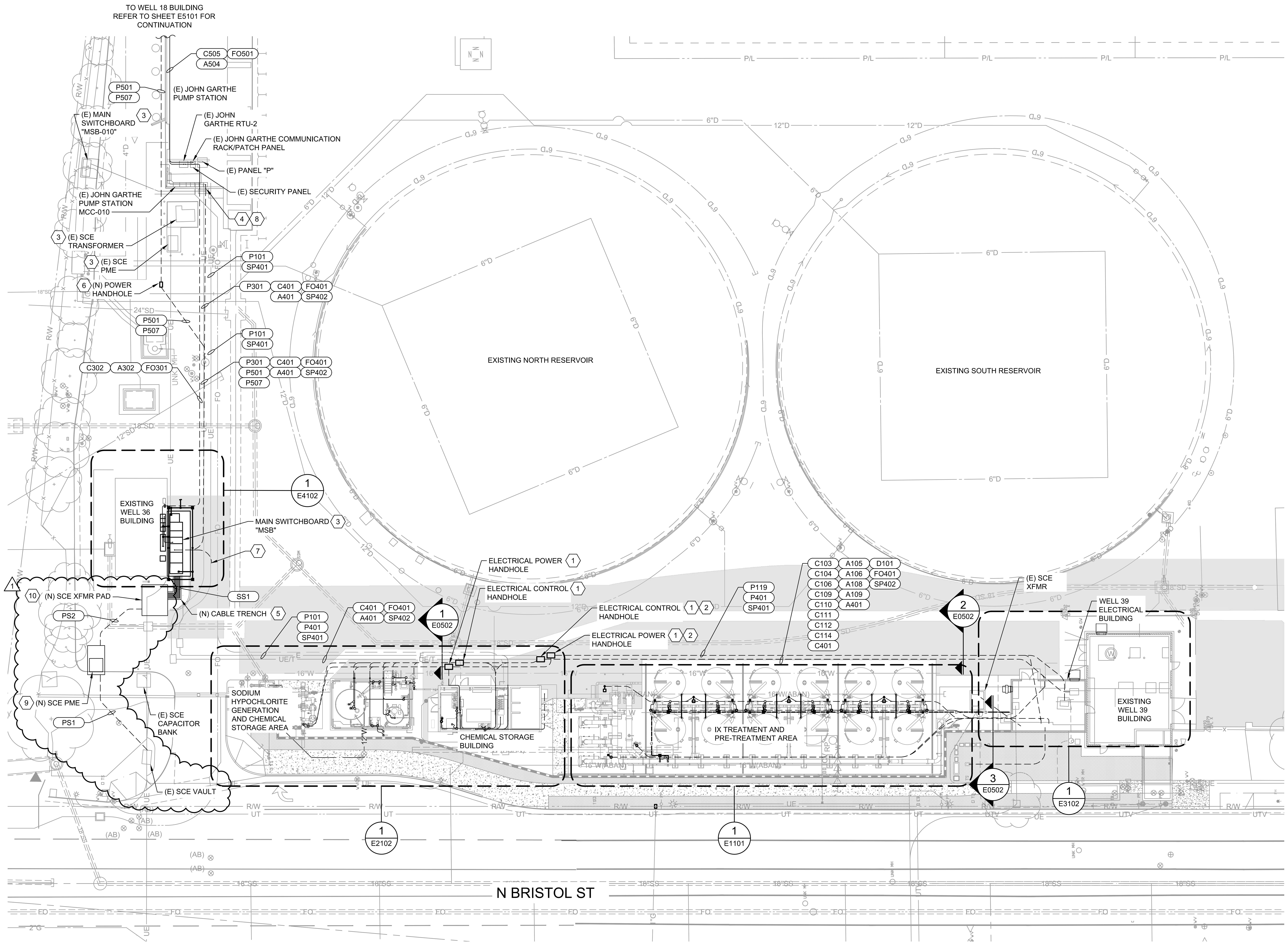

GENERAL NOTES

1. ALL BELOW GRADE CONDUITS SHALL BE SCHEDULE 40 PVC AND CONCRETE ENCASED. RISERS SHALL BE PVC COATED RIGID STEEL.
2. EXPOSED CONDUITS SHALL BE PVC COATED RIGID STEEL CONDUIT.
3. ALL CONDUIT LOCATIONS ARE SCHEMATIC/ DIAGRAMATIC.
4. CONTRACTOR TO FIELD VERIFY ACTUAL LOCATIONS IN THE FIELD.

CONSTRUCTION NOTES

1. PROVIDE NEW 2' X 3' CONCRETE ELECTRICAL HANDHOLES. HANDHOLES SHALL BE GRADE MOUNTED AND COMPLETE WITH A H-20 RATED COVER.SEE DETAIL 6 ON SHEET E0501 FOR HANDHOLE DETAIL.
2. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING HANDHOLES AND INSTALL HANDHOLES AT THE NEW LOCATION. REFER TO CIVIL DEMO SHEETS FOR MORE INFORMATION.
3. AFTER MAIN SWITCHBOARD "MSB" IS INSTALLED, CONTRACTOR SHALL COORDINATE WITH SCE TO DISCONNECT AND REMOVE THE EXISTING MAIN SWITCHBOARD "MSB-010", SCE TRANSFORMER, AND SCE PME.
4. INSTALL NEW CONDUITS AND WIRES FROM MAIN SWITCHBOARD "MSB" TO JOHN GARTHE PUMP STATION "MCC-010". AFTER THE EXISTING MAIN SWITCHBOARD "MSB-010" HAS BEEN DISCONNECTED AND REMOVED, INTERCEPT THE EXISTING CONDUITS AND WIRES FEEDING MCC-010 AND EXTEND TO MSB LOCATED AT WELL 36.
5. CABLE TRENCH SHALL BE PER SCE'S FINAL DESIGN. FOR BIDDING PURPOSES CONTRACTOR SHALL ASSUME 3.5'D X 2'W REINFORCED CONCRETE CABLE TRENCH (6"W WALLS) WITH DIAMOND PLATE COVERING.
6. CONTRACTOR SHALL INSTALL 13" X 24" HANDHOLE. HANDHOLE SHALL BE GRADE MOUNTED AND COMPLETE WITH A H-20 RATED COVER.
7. INTERCEPT EXISTING CONDUITS FROM THE HYDRO-GENERATOR SWITCHBOARD AND EXTEND TO THE MSB. INSTALL NEW WIRES PER PLANS. REFER TO SHEET E4102 FOR MORE DETAILS.
8. TRANSITION FROM UNDERGROUND TO EXPOSED PVC COATED RIGID STEEL CONDUIT. CONTRACTOR SHALL CORE DRILL THROUGH THE BUILDING WALL AND SEAL THE OPENING AROUND THE CONDUITS.
9. BASED ON SCE PRELIMINARY DESIGN, THE CONTRACTOR SHALL INSTALL 5' X 10'-6" X 7' PME TUB-STYLE PRECAST CONCRETE ENCLOSURE PER SCE REQUIREMENTS.
10. BASED ON SCE PRELIMINARY DESIGN, THE CONTRACTOR SHALL INSTALL 10' X 12' PRECAST TRANSFORMER SLAB BOX PER SCE REQUIREMENTS.

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FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY
1	10/31	ADDENDUM NO. 4	MK

ORANGE COUNTY WATER DISTRICT
CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR
ELECTRICAL OVERALL SITE PLAN

PROJ:	200-09382-23010
DESN:	J.LE
DRWN:	J.LE
CHKD:	M.KASSAR

E0101

Bar Measures 1 inch, otherwise drawing not to scale

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CONDUIT AND WIRE SCHEDULE

REF NO.	CONDUIT QTY	CONDUIT SIZE	CONDUCTORS QTY & SIZE	CONDUCTORS GND	FROM	TO	COMMENTS
POWER							
PS1	1	5"	BY SCE		SCE VAULT	SCE PME	CONDUCTORS BY SCE
PS2	1	5"	BY SCE		SCE PME	SCE XFMR AT WELL 36	CONDUCTORS BY SCE
SS1	CABLE TRENCH		BY SCE		SCE XFMR AT WELL 36	MAIN SWITCHBOARD "MSB"	LOCATED BY WELL 36 BUILDING
SS2	4	4"	BY SCE		SCE XFMR AT WELL 39	WELL 39 MAIN SWITCHBOARD "MSB-39"	
P101	1	2-1/2"	3#4/0	1#6	(E) MCC-010 (JOHN GARTHE PS)	(E) PDP-100	EXISTING PANEL RELOCATED; NEW AND EXISTING WIRES AND CONDUIT
P102	1	2"	3#2	1#8	(E) PDP-100	(E) 75KVA TRANSFORMER XFMR-100	(E) PANEL PDP-100, CKT-7,9,11
P103	1	2"	3#2	1#8	(E) PDP-100	MICROCLOR MC-400 RECTIFIER	
P104	1	1"	2#12	1#12	(E) PDP-200	FIT-210	
P105	1	1"	2#12	1#12	(E) PDP-200	LIT-330	
P106	1	1"	2#12	1#12	(E) PDP-200	LIT-220	
P107	1	1"	4#12	2#12	MICROCLOR MC-400 CONTROL PANEL	BLOWER BLR-261, BLOWER BLR-262	
P108	1	1"	4#12	2#12	(E) PDP-200	BLOWER BLR-331, BLOWER BLR-332	
P109	1	1"	2#12	1#12	(E) PDP-200	BRINE METERING PUMP PMP-201	
P110	1	1"	4#12	2#12	(E) PDP-200	CHEMICAL PUMPS MP-310, MP-320	CHEMICAL METERING PUMPS
P111	1	1"	2#10	1#10	(E) PDP-200	MICROCLOR MC-400 CONTROL PANEL	
P112	1	1-1/2"	18#10	6#12	PANEL HA	MOV-511, MOV-521, MOV-531, MOV-541, MOV-551, MOV-561	
P113	1	1-1/4"	12#12	6#12	PANEL LA	FIT-511, FIT-521, FIT-531, FIT-541, FIT-551, FIT-561	
P114	1	1"	2#10	1#10	PANEL LA	IX VESSEL SITE LIGHTING	
P115	1	1"	4#12	2#12	PANEL LA	FIT-200, FIT-220	
P116	1	1"	4#12	2#12	PANEL LA	PFAS CONTROL PANEL "CP-1"	
P117	1	1"	2#8	1#10	PANEL HA	AC-1	
P118	1	1"	2#8	1#10	PANEL HA	AC-2	
P119	1	1"	3#10	1#12	PANEL HA	MOV-112	LOCATED BY SAND SEPARATOR
P201	1	3"	MATCH EXISTING		HYDRO-GENERATOR CONTROL PANEL	HYDRO-GENERATOR	
P202	1	1"	3#4	1#8	HYDRO-GENERATOR CONTROL PANEL	40KVAR CAPACITOR BANK	
P203	1	1"	2#12	1#12	HYDRO-GENERATOR CONTROL PANEL	GENERATOR HEATER	INSTALL NEW WIRES IN EXISTING 1" CONDUIT.
P204	1	3/4"	2#10	1#12	PANEL LA	BYPASS MOV	VIA DISCONNECT SWITCH. INSTALL NEW WIRES IN EXISTING 3/4" CONDUIT.
P205	1	1"	2#12	1#12	PANEL LA	FIT-201	
P206	1	1"	2#12	1#12	PANEL LA	FIT-030	
P207	1	1"	3#10	1#12	PANEL HA	WELL 39 MOV-030	
P208	2	4"	3#500KCMIL	1#1/0	WELL 39 MAIN SWITCHBOARD "MSB-39"	WELL 39 PMP-010 VFD	
P209	2	4"	3#500KCMIL	1#1/0	WELL 39 PMP-010 VFD	WELL 39 PMP-010	VFD SHIELDED CABLE
P210	1	1"	2#10	1#12	WELL 39 PMP-010 VFD	WELL 39 PMP-010 SPACE HEATER	
P211	1	1"	2#12	1#12	PANEL LA	IRRIGATION CONTROLLER	
P212	1	1"	2#10	1#12	PANEL LA	EF-1	
P213	3	4"	4#350KCMIL	1#1/0	WELL 39 MAIN SWITCHBOARD "MSB-39"	GENERATOR CONNECTION BOX	
P214	2	3"	3#250KCMIL	1#2	HYDRO-GENERATOR CONTROL PANEL	HYDRO-GENERATOR SWBD	
P301	6	4"	3#500KCMIL	1#250KCMIL	MAIN SWITCHBOARD "MSB"	(E) MCC-010 (JOHN GARTHE PS)	INTERCEPT EXISTING CONDUITS. INSTALL NEW WIRES IN NEW CONDUIT AS SHOWN.
P302	3	4"	3#500KCMIL	1#250KCMIL	MAIN SWITCHBOARD "MSB"	WELL 36 MOTOR CONTROL CENTER "MCC-36"	
P303	2	4"	3#500KCMIL	1#1/0	WELL 36 MOTOR CONTROL CENTER "MCC-36"	WELL 36 PMP-010 VFD	
P304	2	4"	3#500KCMIL	1#1/0	WELL 36 PMP-010 VFD	WELL 36 PMP-010	VFD SHIELDED CABLE
P305	1	1"	2#10	1#12	WELL 36 PMP-010 VFD	WELL 36 PMP-010 SPACE HEATER	
P306	1	3/4"	3#10	1#12	WELL 36 MOTOR CONTROL CENTER "MCC-36"	WELL 36 MOV-030	
P307	1	1"	3#8	1#10	WELL 36 MOTOR CONTROL CENTER "MCC-36"	AC-1	
P308	1	1"	3#8	1#10	WELL 36 MOTOR CONTROL CENTER "MCC-36"	AC-2	
P309	1	3/4"	2#10	1#12	PANEL A	EF-1	EXHAUST FAN LOCATED BELOW GRAVITY VENT
P310	1	3/4"	2#10	1#12	PANEL A	EF-2	EXHAUST FAN LOCATED BELOW GRAVITY VENT
P401	2	3"	4#350 KCMIL	1#4/0	HYDRO-GENERATOR SWBD	MAIN SWITCHBOARD "MSB"	INTERCEPT EXISTING CONDUITS. INSTALL NEW WIRES IN NEW CONDUIT AS SHOWN.
P501	1	4"	3#500KCMIL	1#1/0	MAIN SWITCHBOARD "MSB"	WELL 18 PMP-010 VFD	
P502	1	4"	3#500KCMIL	1#1/0	WELL 18 PMP-010 VFD	WELL 18 PMP-010	VFD SHIELDED CABLE
P503	1	1"	2#10	1#12	WELL 18 PMP-010 VFD	WELL 18 PMP-010 SPACE HEATER	
P504	1	1"	3#10	1#12	PANEL HB	WELL 18 MOV-030	
P505	1	1-1/2"	2#8	1#8	PANEL HB	WELL 18 MINI POWER CENTER "MPC-18"	
P506	1	1"	2#12	1#12	WELL 18 MINI POWER CENTER "MPC-18"	FIT-030	
P507	1	3"	3#1/0	1#8	MAIN SWITCHBOARD "MSB"	PANEL HB	
P508	1	1"	3#8	1#10	PANEL HB	AC-1	
P509	1	3/4"	3#10	1#12	PANEL HB	EF-1	
P510	1	3/4"	3#10	1#12	WELL 18 MINI POWER CENTER "MPC-18"	L-1	POWER FOR LOUVER WITH MOTORIZED DAMPER

CONDUIT AND WIRE SCHEDULE

REF NO.	CONDUIT QTY	CONDUIT SIZE	CONDUCTORS QTY & SIZE	CONDUCTORS GND	FROM	TO	COMMENTS
CONTROL							
C101	1	2"	36#14	1#14	PFAS CONTROL PANEL "CP-1"	MOV-511, MOV-521, MOV-531, MOV-541, MOV-551, MOV-561	
C102	1	1"	24#14	1#14	PFAS CONTROL PANEL "CP-1"	PRV-510A, PRV-510B, PRV-520A, PRV-520B, PRV-530A, PRV-530B, PRV-540A, PRV-540B, PRV-550A, PRV-550B, PRV-560A, PRV-560B	PRV OPEN INDICATION
C103	1	1"	6#14	1#14	PFAS CONTROL PANEL "CP-1"	EYEWASH YA-331, EYEWASH YA-332, LSH-331	
C104	1	1"	16#14	1#14	PFAS CONTROL PANEL "CP-1"	CHEMICAL METERING PUMPS MP-310, MP-320	
C105	1	1"	18#14	1#14	MICROCLOR MC-400 CONTROL PANEL	BLOWER BLR-261, BLOWER BLR-262, FSL-201	
C106	1	1"	16#14	1#14	PFAS CONTROL PANEL "CP-1"	YL-331, HSY-331, YL-332, HSY-332	BLOWER BLR-331, BLOWER BLR-332
C107	1	1"	8#14	1#14	MICROCLOR MC-400 CONTROL PANEL	HSY-203, YR-201, UA-201, XA-201	BRINE METERING PUMP PMP-201
C108	1	1"	8#14	1#14	MICROCLOR MC-400 CONTROL PANEL	LSLL-220, LSL-220, LSH-220, LSHH-220	
C109	1	1"	4#14	1#14	PFAS CONTROL PANEL "CP-1"	LS-201	LEAK DETECTION SENSOR
C110	1	1"	2#14	1#14	PFAS CONTROL PANEL "CP-1"	SV-220	BRINE TANK INLET SOLENOID
C111	1	1"	2#14	1#14	PFAS CONTROL PANEL "CP-1"	FSL-330	SODIUM HYPOCHLORITE TANK AIR FLOW
C112	1	1"	4#14	1#14	PFAS CONTROL PANEL "CP-1"	FSL-310, LS-301	
C113	1	1"	2#14	1#14	PFAS CONTROL PANEL "CP-1"	EYEWASH YA-333	LOCATED AT PRE-TREATMENT FILTERS
C114	1	1"	10#14	1#14	PFAS CONTROL PANEL "CP-1"	MOV-112	LOCATED BY SAND SEPARATOR
C115	1	3/4"	THERMOSTAT WIRES		THERMOSTAT TS-1	AC-1	
C116	1	3/4"	THERMOSTAT WIRES		THERMOSTAT TS-2	AC-2	
C201	1	1"	6#14	1#14	HYDRO-GENERATOR CONTROL PANEL	BFV HYDRAULIC ACTUATOR	FULL CLOSED AND FULL OPEN LIMIT SWITCH, BATTERY ALARM. INSTALL NEW WIRES IN EXISTING 1" CONDUIT.
C202	1	1"	10#14	1#14	HYDRO-GENERATOR CONTROL PANEL	BYPASS MOV	ZSC-200, ZSO-200, HSC-200, HSO-200, HS-200. INSTALL NEW WIRES IN EXISTING 1" CONDUIT.
			4#14	1#14	HYDRO-GENERATOR CONTROL PANEL	PRESSURE REDUCING VALVE	OPEN/CLOSED INDICATION WITH 2#14 SPARES. INSTALL NEW WIRES IN EXISTING AND NEW 1" CONDUIT AS SHOWN.
C203	1	3/4"	14#14	1#14	WELL 39 PMP-010 VFD	FSL-011, SV-011, HSE-010, PSHL-101, SOV-030, ZS-030	INSTALL NEW WIRES IN EXISTING 3/4" CONDUIT.
C204	1	1"	10#14	1#14	PFAS CONTROL PANEL "CP-1"	WELL 39 MOV-030	
C205	1	3/4"	4#14	1#14	HOA SWITCH	EF-1	
C206	1	3/4"	THERMOSTAT WIRES		THERMOSTAT TS-3	EF-1	
C207	1	1-1/2"	30#14	1#14	PFAS CONTROL PANEL "CP-1"	WELL 39 PMP-010 VFD	
C301	1	1"	12#14	1#14	WELL 36 PMP-010 VFD	(E) SV-011, FSL-011, PSHL-101, SOV-030, ZS-030	
C302	1	1-1/2"	30#14	1#14	WELL 36 PULLBOX	(E) JOHN GARTHE RTU-2	WELL 36 PMP-010 VFD
			10#14	1#14	WELL 36 PULLBOX	(E) JOHN GARTHE RTU-2	WELL 36 MOV-030
C303A	1	1-1/4"	30#14	1#14	WELL 36 PMP-010 VFD	WELL 36 PULLBOX	
C303B	1	3/4"	10#14	1#14	WELL 36 MOV-030	WELL 36 PULLBOX	
C304	1	3/4"	THERMOSTAT WIRES		THERMOSTAT TS-1	AC-1, AC-2	
C305	1	3/4"	8#14	1#14	HOA SWITCH	EF-1, EF-2	
C306	1	3/4"	THERMOSTAT WIRES		THERMOSTAT TS-2	EF-1, EF-2	
C401	1	2"	38#14	1#14	(E) JOHN GARTHE RTU-2	(N) SA-1 ITC	INTERCEPT EXISTING CONDUIT. INSTALL NEW WIRES IN EXISTING AND NEW CONDUIT AS SHOWN.
C501	1	1"	12#14	1#14	WELL 18 PMP-010 VFD	PSHL-012, (E) SV-011, FSL-011, SOV-030, ZS-030	
C502	1	1-1/2"	38#14	1#14	WELL 18 PMP-010 VFD	(N) WELL 18 ITC	
C503	1	1"	10#14	1#14	WELL 18 MOV-030	(N) WELL 18 ITC	
C504	1	3/4"	THERMOSTAT WIRES		THERMOSTAT	AC-1	
C505	1	1-1/2"	50#14	1#14	(N) WELL 18 ITC	(E) JOHN GARTHE RTU-2	2#14 SPARES
C506	1	3/4"	4#14	1#14	HOA SWITCH	EF-1	
C507	1	3/4"	THERMOSTAT WIRES		THERMOSTAT TS-2	EF-1	
C508	1	3/4"	4#14	1#14	LOUVER L-1	EF-1	MOTORIZED DAMPER INTERLOCKED WITH EXHAUST FAN

TETRA TECH
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17885 Von Karman Ave, Suite 500
Irvine, CA 92614
Tel: (949) 809-5000

BID SET

ORANGE COUNTY WATER DISTRICT
18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY
1	10/31	ADDENDUM NO. 4	MK

ORANGE COUNTY WATER DISTRICT
CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR
CONDUIT SCHEDULE

PROJ:	200-09382-23010
DESN:	J.LE
DRWN:	J.LE
CHKD:	M.KASSAR

E0603

Bar Measures 1 inch, otherwise drawing not to scale

ATTACHMENT B-1

Q & A Table

QUESTION AND AND ANSWER TABLE FOR
CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR. CONTRACT NO. SA-2025-1

No.	QUESTIONS	ANSWERS
1	Sht. E0101 shows a new SCE PME and a new SCE XFMR Pad. Please provide conduit routing and quantities. Please provide precast requirements for the PME Slab Box and XFMR Slab Box. Do you have drawings from the SCE planner? If so, please provide.	Please see revised Dwg E0101 and E0603.Final Drawings from SCE planner are not available. Preliminary discussions with SCE have occurred and are the basis of the design plans, but SCE's final design has been but on hold until later. SCE Design will be provided when available.
2	Bid Schedule A, Item No. 12, (Site Improvements) does not reference underground site utilities, (specifically electrical duct banks). I do not see any bid items referencing the electrical duct banks and I am not sure where to put them in the Bid. What Bid Item do we put Electrical Duct Banks and Pre-Cast Boxes in? Note: This project has blended duct banks containing conduits serving different areas with different Bid Items.	Electrical boxes, pull boxes, trenching/backfills for conduits are split up into the corresponding Electrical Equipment and Appurtenances bid items (i.e. Well 18 electrical conduit work is covered by Bid Item 15 while Well 36 electrical conduit work is covered by Bid Item 36).
3	Sht. E3101, E3102, and E3103 depict the Well 39 Electrical Building and existing Well 39 Building. (See Bid Items 30 and 31). We assume that Bid Item 54, 55, 56, and 57, (Schedule B) represent the Hydro-Generator Electrical and Instrumentation equipment supplied by the others, (equipment vendor). We intend to exclude these Bid Items in our scope. Please clarify if this assumption is correct.	Hydrogenerator vendor will be responsible for the construction/fabrication of the hydrogenerator, generator switchboard, generator control panel, etc. as noted in the specifications. Contractor will be responsible for coordination and purchase of these and the related items from the Hydrogenerator vendor.
4	As defined in Section 01025, (Measurement and Payment) Bid Item 9, (Furnish and install IX Treatment System) calls for supply/ install Site Lights. Bid Item 35, 36, (PFAS Facilities Electric and Instrumentation respectively). It doesn't make sense to have site lights only in Bid Item 9 and the rest of the electric and Instrumentation in Bid Item 35 and 36……….. (See Sht. E1101) Unless instructed otherwise, we intend to include the site lights in bid item 35	See Technical Specifications Item 1 of Addendum No. 4 for revised Bid Schedule. Refer to Technical Specifications Section 01025 - Measurement and Payment for Bid Item Descriptions.

QUESTION AND AND ANSWER TABLE FOR
CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR. CONTRACT NO. SA-2025-1

No.	QUESTIONS	ANSWERS
5	Section 11520-OSHGS 1.SA-2025-1, Contract docs, Page 189: Please confirm if BABA compliance is required on this project or is it waived for Microclor® OSGHS system?	BABA is not required for any bid items defined in Bid Schedule A: PFAS Treatment. OSHGS is included in Schedule A and does not have BABA requirements.
6	2.Section 11520-1.02.F & Drawing sheets D2301/I2601/E2102: The specification references a “brine transfer pump”; however, based on the drawings it appears to be off skid, it seems that the referenced transfer pump (PMP-221) should be actually for sodium hypochlorite transfer, not brine. Typically, in the Microclor® OSGHS system, the brine pump (PMP-201) is mounted on the OSG skid which is an SST brine gear pump mfg. by Tuthill. Please clarify if this was meant to be for hypo transfer pump If so, do we have spec reference which model and type hypo transfer pump is required?	Refer to the Answer to Question 7 in Addendum 3
7	3.Drawing Sheet D2301 / Detail C D2101: Construction Note-293 references the transfer pump per Specification Section 11218; however, Section 11218 pertains to the sodium chloride gear pump, not the hypochlorite transfer pump. Please clarify.	Refer to the Answer to Question 8 in Addendum 3
8	4.Drawing Sheet D2301 / Detail C D2101: Please clarify what is the vertical ‘tube-like’ component shown on the hypochlorite standpipe, as Note 262 on the construction drawing only labels it as ‘standpipe.’	Refer to the Answer to Question 9 in Addendum 3
9	5.Section 11520-2.05. B: The specification calls for one (1) master control panel with a NEMA 4X stainless steel enclosure, PLC, touchscreen, and all necessary I/O and safety interlocks. However, this project includes only a single OSG unit. Hence, no master control panel is required. Please clarify?	Refer to the Answer to Question 10 in Addendum 3

QUESTION AND AND ANSWER TABLE FOR CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR. CONTRACT NO. SA-2025-1		
No.	**QUESTIONS**	**ANSWERS**
10	6.Section 11520-2.05.G / Drawing I2602: The specification states that all controls and operation logic for the chemical dosing system shall be supported by a separate control panel or by the Plant's SCADA and Variable Frequency Drives (VFDs) as described in section 2.15 but section 2.15 is missing on OSG specs. Please confirm if a dedicated VFD control panel is required for the chemical dosing pumps, or if control will be integrated through the Plant's SCADA system? Based on the previous Santa Ana sites equipment requirements and end-user preference, PSI have provided individual NEMA 4X Yaskawa V-1000-4X VFDs in lieu of the integrated VFD control panel for the Sodium Hypochlorite dosing pumps. Please confirm if that is acceptable?	Refer to the Answer to Question 11 in Addendum 3
11	7.Section 11246-2.01.H: The specified Encore 700 hypochlorite metering pumps are diaphragm-type pumps and do not have integral VFD control. The VFD's would need to be external. Please confirm if that is acceptable? PSI have provided separate VFD's on previous Santa Ana sites.	Refer to the Answer to Question 12 in Addendum 3
12	8.Section 11520-2.07: Please clarify whether a water softener system or an ion exchange system is required for this project.	Refer to the Answer to Question 13 in Addendum 3
13	9.Section 11520-2.11.A.2: This specification section calls for a thermal flow switch, differential pressure switch, and pitot tube on the hydrogen dilution blower. PSI will provide thermal flow switch. Pitot and Pressure switch appear to be redundant, is that the intention of the design?	Refer to the Answer to Question 14 in Addendum 3
14	10.Section 11520-2.12.E.5: Is Class 1 Div 1 required if there is an intrinsically safe barrier that the H2 detect runs through?	Refer to the Answer to Question 15 in Addendum 3

QUESTION AND AND ANSWER TABLE FOR CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR. CONTRACT NO. SA-2025-1		
No.	**QUESTIONS**	**ANSWERS**
15	1. Section 15100-2.06. D: Please confirm if Griffco pressure relief valves are acceptable as an equal to the specified Plast-O-Matic Series RVDT valves.	Refer to the Answer to Question 16 in Addendum 3
16	12. Section 17310: Requirements in this spec section are not explicitly referenced for the local generator panels on the OSHGS specification section. Please confirm if section 17310 is intended to apply only to the master panel.	Refer to the Answer to Question 17 in Addendum 3
17	SECTION 17241- FLOW TRANSMITTERS 13. 2.01: The specification section calls for an Endress & Hauser Proline Promag W 400 magnetic flow meter. This would nullify the NSF rating of the skid. Based on current Santa Ana OSHGS installations utilizing IMF Effector flow meters with integral temperature sensors, will the IMF Effector flow meter be considered an Approved Equal?	Refer to the Answer to Question 18 in Addendum 3
18	SECTION 17100- FIELD INSTRUMENTATION 14.Section 17100-2.11 / Drawing I2602: The OSG specification (11520-2.09. B.1) calls for radar level sensors on each tank, while the field instrumentation specification (Section 2.11) calls for ultrasonic level transmitter. Please confirm which level sensor for hypo tank is required for this project radar or ultrasonic? PSI recommends radar level transmitter for hypo tank as it is not as susceptible to interference due to condensation on the transmitter head.	Refer to the Answer to Question 19 in Addendum 3
19	15.Section 17100-2.11 / Drawings I2601 (LIT-220): The Field Instrumentation table on page - 957 calls for an ultrasonic level for the brine tank. However, OSG Specification (Section 11520-2.08. n.1 & o.1) specifies a pressure transducer/transmitter for liquid level control and a Yo-Yo type solids level sensor for salt level monitoring. These requirements appear to conflict. Please confirm which level measurement devices are required for the brine tank - ultrasonic, pressure transducer, or Yo-Yo type sensor?	Refer to the Answer to Question 20 in Addendum 3

QUESTION AND AND ANSWER TABLE FOR
CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR. CONTRACT NO. SA-2025-1

No.	QUESTIONS	ANSWERS
20	We would like to add Val-Matic butterfly valves to the spec as a listed manufacturer. Val-Matic AWWA Butterfly Valves use mechanically retained resilient seats to the disc via the use of the Val-Matic Tri-Lok® system. Val-Matic AWWA Butterfly Valves utilize a stainless steel, 360-Degree uninterrupted body seat with no shaft penetration to ensure leak free performance. All Val-Matic AWWA Butterfly Valves employ the same consistent design which meet or exceed AWWAC504 and are NSF / ANSI 61 certified. Additionally, Val-Matic AWWA butterfly valves have been approved and used on past OCWD projects, including: •City of Garden Grove Well 19 PFAS Water Treatment Plant (Contract GG-2024-01; Spec Section 400564; Submittal No. 003-01) •OCWD City of Santa Ana PFAS Water Treatment Plant Wells No. 27 & 28 - Crooke Station (Submittal No. 016)	Butterfly valves are not sole sourced. Valves submitted as part of the shop drawing process will be reviewed to confirm they will be considered as an equal.
21	Spec Section 15121- Electric Motor Actuators provides specs for the 8-inch high performance butterfly valves. It lists Limitorque MX, Rotork Model IQ, or Auma Model SG. These are multi-turn actuators. Quarter turn actuators may be more applicable particularly for quarter turn butterfly valves of this size. Consider listing the Quarter turn models of actuator. This is what is being recommended by the high performance valve manufacturer and also the actuator manufacturers.	Bid per Plans and Specs
22	1. Please confirm there is no hatch and the only access to the pipe in the control vault in the Well 39 basement is from the stairs?	This is correct; there is no hatch to access the Well 39 basement (referring to area shown in Control Vault Upgrade Section in section E on DWG D3303)
23	2. Please confirm it is your intent for contractors to repave the entire area with the grey hatch on C0108 regardless if less is removed for construction.	Correct - there are significant portions being damaged due to trenching; intent is to provide a consistent paving for the area.
24	3. The existing chemical building has coating on the floors. When the concrete demo is completed in that building and the concrete is patched, what is the requirement for the floor coating?	The patched portion of the concrete slab after the concrete demo should be coated with the same coating as the existing slab. The existing concrete coating was TNEMEC SERIES 282 EPOXY COATING (20 MILS) WITH 30-50 MESH SILICA FOR SKID RESISTANCE per the as-built drawing.

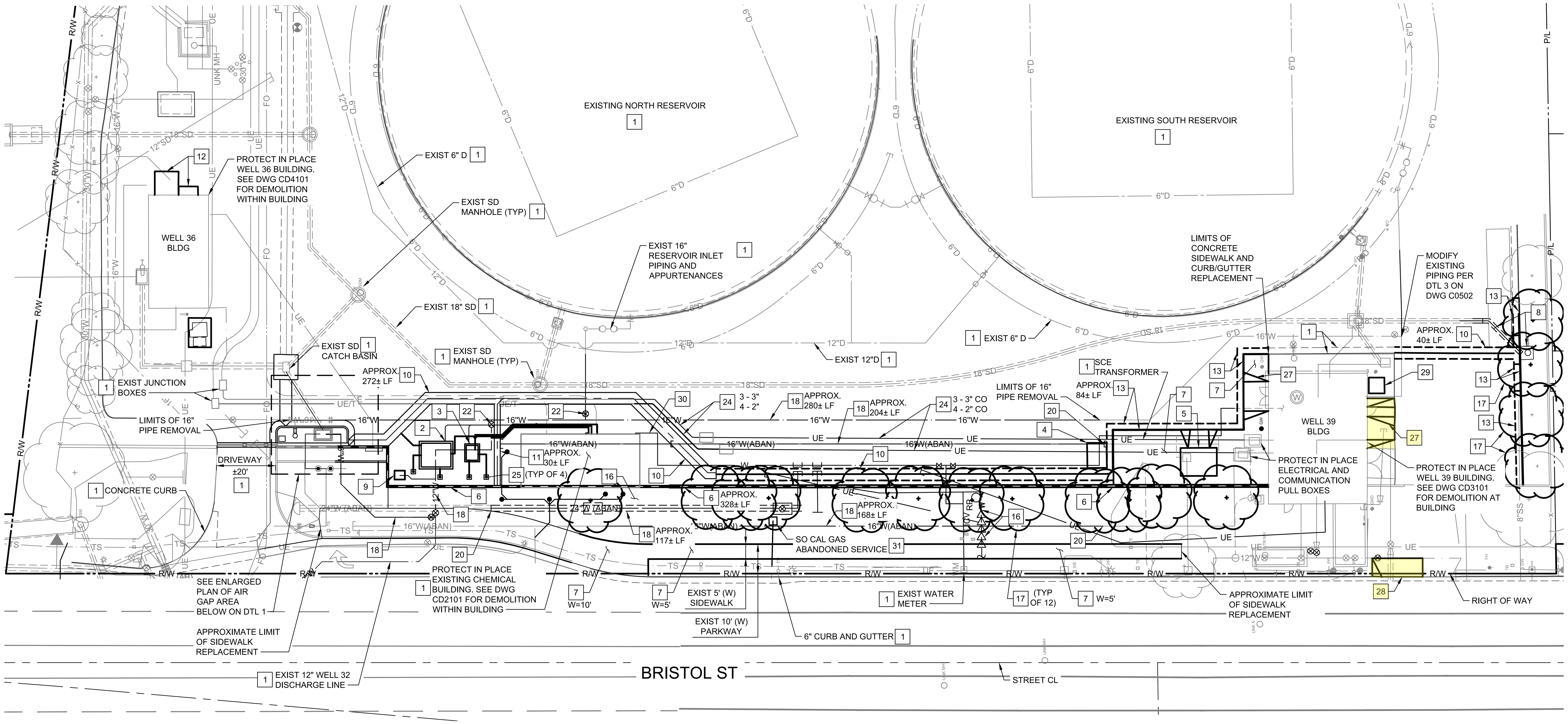
QUESTION AND AND ANSWER TABLE FOR CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR. CONTRACT NO. SA-2025-1		
No.	**QUESTIONS**	**ANSWERS**
25	4. CD4101 and M4201 do not match in regard to what louvers are being modified and which are being protected in place. Please clarify which drawing is correct. Furthermore, for the louvers that are being modified from 16” x 8” to 16” x 48”, does detail 7 on S3501 apply, or are we simply saw cutting the opening and leaving as is?	The new 16"x48" louver wall opening locations should be per sheet M4201. These louvers do not require additional wall strengthening per detail 7/S3501.
26	5. Please clarify the dimensions of the existing site CMU wall footing that is being removed.	The existing wall footings dimensions are 1'-4" thick by 3'-6" wide per the as-built drawings, contractor to field verify.
27	6. Where does the 1” SS Sample line in the table on C0106 get installed on this sheet?	Plans revised to reflect sample line to be CPVC - this line is the sample line between the PFAS effluent and the chlorine analyzer in the chemical building
28	7. Please clarify if the electrical duct banks require slurry per the specifications or 2,000 psi concrete per the drawings?	The duct banks should be constructed with 2000 psi concrete
29	8. Please clarify whether note #20 on CD3101 or on CD3301 is correct?	CD3301 is correct - Existing air valve is to be removed and disposed of.
30	9. Please clarify the trash requirements on the project. Specification 01741 states only Ware Disposal or Waste Management can be used for trash on the site, whereas specification 01410 states only Republic Services can be used. Is the contractor restricted regarding who can be used for waste disposal? If so, which requirement dictates?	Specification Section 01410 stating only Republic Services is correct. Specification Section 01741 will be revised. See Technical Specifications Item 2 of Addendum No. 4

QUESTION AND AND ANSWER TABLE FOR
CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR. CONTRACT NO. SA-2025-1

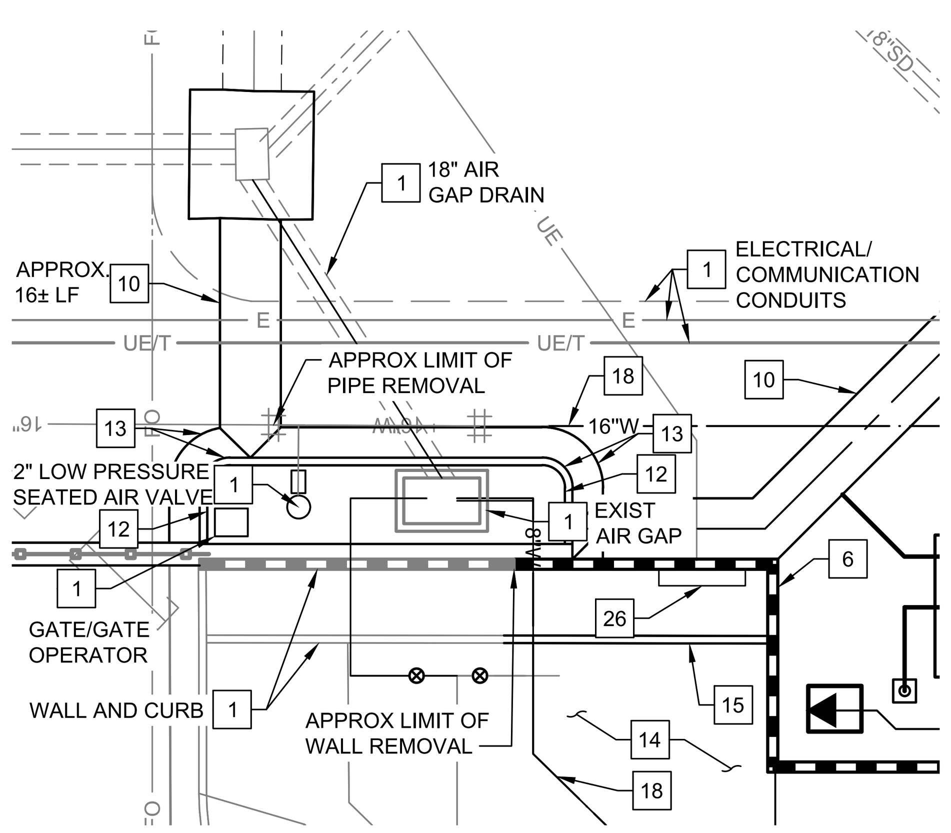
No.	QUESTIONS	ANSWERS
31	10. Regarding the information on SP-4: a. Although there are conflicting requirements in the documents, procuring the list of priority submittals, whether it be 10 or 14 days from Notice to Proceed is not possible. Please confirm the goal of this listed requirement is for the contractor to submit these as soon as possible, while realizing 10 to 14 days is not possible b. Please clarify what pipe/structures relate to the 21-calendar day max shut down requirement for the John Garthe Pump Station. c. Please clarify what pipe/structures relate to the 82-calendar day max shut down requirement for Well 32.	a. Intent is to submit priority submittals as quickly as possible to avoid project delays. b. Shutdown of the John Garthe Pump Station will be defined as any shutdown of piping/facilities resulting in the Garthe Station being unable to supply water to the distribution system . c. Shutdown of Well 32 is defined as any shutdown of piping/facilities resulting in the inability to send treated water from the Well 32 site into the John Garthe Reservoirs or PFAS Treatment plant.
32	11. Please clarify what is intended to be entered into Bid Item #10 – Above Grade Pipe, as the other bid items in the IX area, OSHG building, Well building, Sand Filter, etc also state that they are to include the pipe.	Bid Item #10 is for all above grade piping that is not included in another specific bid item.
33	Drawing D0501 – Pre-Lube Assembly Backflow Preventer: Detail 8 on Drawing D0501 shows a backflow preventer in the pre-lube assembly. Since a backflow preventer already exists on the copper supply line, please confirm whether the additional backflow preventer is required.	Backflow preventer shown in detail is required - bid per plan.
34	• Drawing D0301 / D3302 – Coupling Type Clarification: Construction Note 68 on Drawing D0301 specifies a flexible coupling, while Construction Note 66 on Drawing D3302, Section D, indicates a grooved coupling at the same location. Please confirm which coupling type is correct.	Plan sheet D3101 has been revised to reflect Construction Note 66.
35	• Drawing D3101 – Port at 2" Air/Vac Assembly: On the Well 39 discharge piping shown in Drawing D3101, there is a port near the 2-inch air/vac assembly that is not labeled. Please confirm if this is intended to be a 1-inch flow meter test port.	This tap is a 2" spare pipe tap. Plans have been revised to show construction note 62.
36	Drawing D3101 / D3302 – Hydro Generator Pipeline Supports: Drawing D3101 shows three pipe supports on the 16-inch hydro generator pipeline, while Drawing D3302, Section B, shows only two supports. Please confirm the correct number and spacing of supports.	D3101 is correct - D3302 has been revised to reflect the three pipe supports.
37	Pipe Schedule: The bid documents (Construction Drawing, Specifications and Pipe Schedule) call for Schedule 80 PVC for the double containment carrier pipe, however, the construction notes calls for CPVC. Please clarify.	Construction notes will be updated for the sodium hypochlorite to call out PVC.
38	Pipe Supports: A number of the pipe supports for the welded steel pipe at the sand separator, cartridge filter, and IX area are called out as detail 4 on drawing D0502. Is this correct? Should they be detail 7 instead? Please clarify.	Construction note will be updated to call out detail 7 on sheet D0502.
39	Double Containment Encasement: Drawing D2502 detail 2 calls for the PVC double containment pipe to be concrete encased. Is this only for the riser pipe section at the chemical storage tank area or is it at every riser area? Also confirming the entire double containment line is not encased.	When it transitions above grade use concrete encasement. The entire buried containment line should not be concrete encased. The limits are per the dimension on detail 2 on drawing D2502.

ATTACHMENT B-2

SA-1 Exhibit



DEMOLITON PLAN
SCALE: 1" = 20'



1 AIR GAP AREA DEMOLITION
SCALE: 1" = 10'

X	DEMOLITION NOTES
1	PROTECT IN PLACE
2	REMOVE AND DISPOSE PRESSURE CONTROL VAULT PER DWG CD0103
3	REMOVE AND DISPOSE CHEMICAL INJECTION VAULT PER DWG CD0103
4	REMOVE AND DISPOSE CHEMICAL STORAGE SHED
5	REMOVE AND DISPOSE STORAGE BUILDING INCLUDING ALL LIGHTING AND ELECTRICAL CONDUITS
6	REMOVE AND DISPOSE 8' +/- HIGH (TO FOOTING) BLOCK WALL, PILASTER, AND FOOTING. LENGTH AS NOTED.
7	REMOVE AND DISPOSE OF CONCRETE SIDEWALK TO THE NEAREST JOINT (WIDTH AS SHOWN)
8	REMOVE AND DISPOSE OF CATCH BASIN (3'-6" x 5' x 4'-6" DEEP). REMOVE AND DISPOSE OF INTERFERING PORTION OF 18" PVC STORM DRAIN
9	REMOVE AND DISPOSE OF AIR VALVE, ENCLOSURE, AND CONCRETE PAD
10	REMOVE AND DISPOSE OF 4' WIDE CONCRETE RIBBON GUTTER
11	REMOVE AND DISPOSE OF 2' WIDE CONCRETE RIBBON GUTTER
12	REMOVE AND DISPOSE CONCRETE PAD
13	REMOVE AND DISPOSE CONCRETE CURB AND GUTTER
14	REMOVE AND DISPOSE OF AC PAVEMENT
15	REMOVE AND DISPOSE OF CONCRETE MOW STRIP
16	REMOVE AND DISPOSE OF LANDSCAPING, IRRIGATION, AND MOW STRIP.
17	REMOVE AND DISPOSE OF TREE (APPROX 10" DIAMETER)
18	REMOVE AND DISPOSE OF PIPING AND FITTINGS (LIMITS AS SHOWN)
20	ABANDON EXISTING PIPING IN PLACE TO LIMITS SHOWN. CUT AND CAP PER CITY STD PLAN NO. 1409 AND FILL WITH SLURRY
22	SALVAGE EXISTING VALVE PER CITY STD PLAN NO. 1430
24	REMOVE AND DISPOSE OF ELECTRICAL/COMMUNICATION CONDUITS
25	REMOVE AND DISPOSE OF AIR VENT ASSEMBLY
26	REINSTALL EXISTING JOHN GARTHE RESERVOIR WALL PLAQUE AT A LOCATION SELECTED BY THE CITY. REINSTATE ELECTRICAL SERVICE TO PLAQUE LIGHTING. FURNISH AND INSTALL ADDITIONAL CONDUITS, FITTINGS AND CONDUCTORS AS REQUIRED FOR REINSTALLATION OF PLAQUE
27	REMOVE AND DISPOSE OF CONCRETE RAMP
28	REMOVE AND DISPOSE OF EXISTING CONCRETE SIDEWALK AND DRIVEWAY
29	REMOVE AND DISPOSE OF EXISTING 150 GAL BRINE TANKS, SHED, SOFTENERS AND PANELS PER DWG CD3101
30	REMOVE AND DEMOLISH 2" WATER LINE
31	REMOVE INTERFERRING PORTIONS OF ABANDONED GAS LINE

NOTES TO CONTRACTOR:

1. FOR LIMITS OF AC PAVEMENT DEMOLITION AND REPLACEMENT SEE C0102 AND C0103.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH SOCAL GAS FOR THE ABANDONMENT OF THE EXISTING NATURAL GAS SERVICE LATERAL. FOR BIDDING PURPOSES, CONTRACTOR SHALL ASSUME THE SERVICE LINE WILL BE REMOVED AND DISPOSED OF WITHIN THE JOHN GARTHE SITE. CONTRACTOR SHALL CONNECT TO THE EXISTING SERVICE LINE PER SOCAL GAS'S REQUIREMENTS AND INSTALL NEW RISER, THREADED CAP, AND METER BOX WITHIN THE PARKWAY.

SA-1 Hydrogenerator

Scope of Work Exhibit

0 10' 20' 40'
SCALE: 1" = 20'

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BID SET
REGISTERED PROFESSIONAL ENGINEER No. C039261 Exp. 12-31-25 CIVIL STATE OF CALIFORNIA
9/24/25

ORANGE COUNTY WATER DISTRICT
18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY

ORANGE COUNTY WATER DISTRICT
CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR
SITE DEMOLITION PLAN

PROJ:	200-09382-23010
DESN:	MV
DRWN:	RJW
CHKD:	TLE

CD0102

Bar Measures 1 inch, otherwise drawing not to scale

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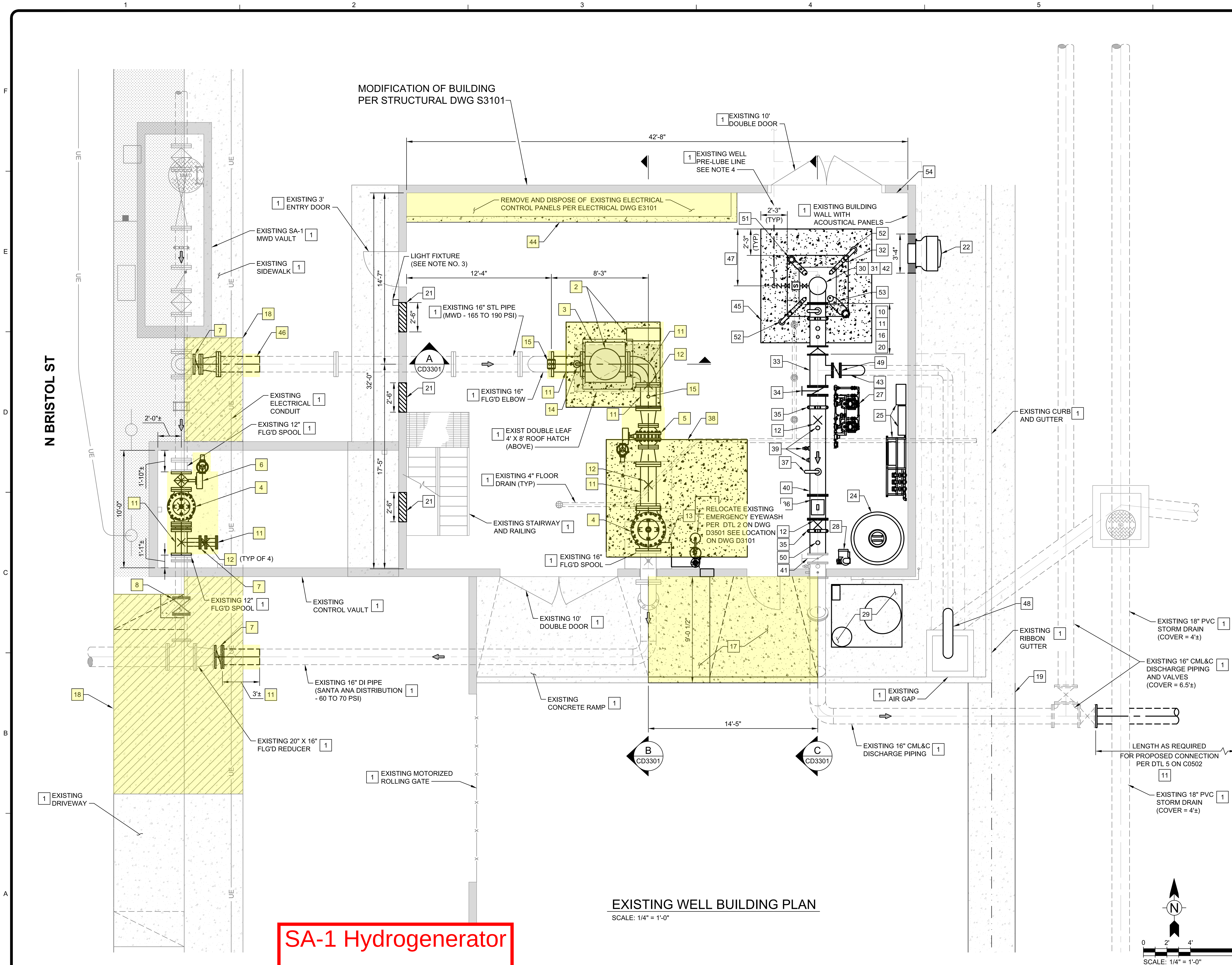

SA-1 Hydrogenerator

Scope of Work Exhibit

X	DEMOLITION NOTES
1	PROTECT IN PLACE
2	REMOVE AND DISPOSE OF EXISTING 16" HYDRO-GENERATOR AND CONTROL PANELS
3	REMOVE AND DISPOSE OF THE TOP 3 FEET OF THE EXISTING HYDRO-GENERATOR CONCRETE FOUNDATION. SEE NOTE 7
4	REMOVE AND SALVAGE EXISTING 12"/16" PRESSURE REDUCING VALVE
5	REMOVE AND SALVAGE EXISTING 12" BALL VALVE WITH MOTORIZED FLOW CONTROLLER AND ACTUATOR
6	REMOVE AND SALVAGE EXISTING 12" PLUG VALVE
7	REMOVE AND SALVAGE EXISTING 8"/12"/16" BUTTERFLY VALVE
8	ABANDON EXISTING 12" GATE VALVE PER DTL 3 ON DWG C0501
10	REMOVE AND DISPOSE OF EXISTING 16" CHECK VALVE
11	REMOVE AND DISPOSE OF EXISTING 8"/12"/16" PIPING, FITTINGS, AND APPURTENANCES
12	REMOVE AND DISPOSE OF EXISTING PIPE SUPPORT AND ANCHOR BOLTS
13	REMOVE AND DISPOSE OF EXISTING 1" PIPING, FITTINGS, VALVES, AND APPURTENANCES
14	REMOVE AND DISPOSE OF EXISTING AIR VALVE
15	REMOVE AND DISPOSE OF EXISTING PRESSURE TRANSMITTERS/GAUGE (TYP OF 2)
16	REMOVE AND DISPOSE OF EXISTING PRESSURE SWITCHES
17	REMOVE AND DISPOSE OF EXISTING CONCRETE WALK AND RAMP
18	REMOVE AND DISPOSE OF EXISTING CONCRETE SIDEWALK AND DRIVEWAY
19	REMOVE AND REPLACE EXISTING 4' WIDE RIBBON GUTTER
20	TEMPORARILY REMOVE AIR & VACUUM RELEASE VALVE
21	REMOVE AND DISPOSE OF EXISTING LOUVERS AND PATCH EXISTING OPENING PER DTL 5 ON DWG S3501
22	REMOVE AND DISPOSE OF EXISTING EXHAUST FAN EF-1. SEE EXISTING PENETRATION PER DTL 5 ON DWG S3501.
24	REMOVE AND DISPOSE OF EXISTING 475 GAL SODIUM HYPOCHLORITE TANK (4' DIA x 6'-3" HIGH HDLPE TANK) SEE NOTE 6
25	REMOVE AND DISPOSE OF EXISTING SODIUM HYPOCHLORITE GENERATION UNIT SEE NOTE 5
27	REMOVE AND DISPOSE OF EXISTING DUPLEX METERING PUMP ASSEMBLY AND CONTROLLERS SEE NOTE 5
28	REMOVE AND DISPOSE OF EXISTING DILUTION BLOWER AND PIPING SEE NOTE 5
29	REMOVE AND DISPOSE OF EXISTING 150 GAL BRINE TANKS (25" DIA x 69" H), SHED, SOFTNERS AND PANELS SEE NOTE 5
30	REMOVE AND DISPOSE OF EXISTING PUMP (APPROX 328' PUMP SETTING WITH 14" COLUMN PIPE AND 1.94" LINESHAFT)
31	REMOVE AND DISPOSE OF EXISTING MOTOR (250 HP)
32	REMOVE AND DISPOSE OF EXISTING PUMP PEDESTAL IN ITS ENTIRETY (61" X 61" X 32")
33	REMOVE AND RELOCATE EXISTING 10" WELL FLUSH PIPING AND APPURTENANCES
34	REMOVE AND DISPOSE OF EXISTING 16" BUTTERFLY VALVE
35	REMOVE AND DISPOSE OF EXISTING 16" VICTAULIC COUPLING
36	REMOVE AND DISPOSE OF EXISTING 16" MAGNETIC FLOWMETER AND APPURTENANCES
37	REMOVE AND DISPOSE OF EXISTING AIR RELEASE VALVE
38	REMOVE AND DISPOSE OF EXISTING 6" THICK CONCRETE FLOOR SLAB (#5 @ 12" EA - SLAB IS 12" THICK AT ALL PIPE SUPPORTS)
39	REMOVE AND DISPOSE OF EXISTING WELL DISCHARGE SAMPLE TAPS
40	REMOVE AND DISPOSE OF EXISTING 16" WELL DISCHARGE PIPING
41	PROTECT IN PLACE EXISTING 16" BUTTERFLY VALVE
42	MODIFY EXISTING CAMERA PORT, GRAVEL FEED TUBE, VENT, SOUNDING TUBE AND WELL PRE-LUBE AS SHOWN ON D3101 AND D3501
43	REMOVE AND DISPOSE OF EXISTING 10" 90 DEGREE ELBOW
44	REMOVE AND DISPOSE OF EXISTING 4" THICK CONCRETE HOUSEKEEPING SLAB. SEE NOTE 4 FOR CONCRETE REPAIR
45	REMOVE AND DISPOSE OF EXISTING 6" THICK CONCRETE FLOOR SLAB (#5 @ 12" EA W/ #4 (X4'-0") DIAGONALS AT EACH CORNER OF PUMP PEDESTAL) SEE NOTE 4
46	REMOVE AND REPLACE OF EXISTING 12" PIPING, FITTINGS, AND APPURTENANCES
47	REMOVE AND REPLACE INTERFERRING PORTION OF EXISTING WELL PRE-LUBE LINE
48	REMOVE AND DISPOSE OF WELL FLUSH 10" PIPING AND APPURTENANCES
49	REMOVE AND DISPOSE OF EXISTING 10" BUTTERFLY VALVE
50	REMOVE AND DISPOSE OF EXISTING INJECTION QUILL AND ACCESSORIES
51	REMOVE AND REPLACE 4" DIA GRAVEL FILL PIPE
52	REMOVE AND REPLACE EXISTING 3" VENT PIPE WITH INSECT SCREEN
53	REMOVE AND REPLACE 5" DIA SOUNDING TUBE
54	REMOVE AND DISPOSE OF EXISTING T-STAT AND WIRING

NOTES TO CONTRACTOR:

1. CONTRACTOR SHALL CONTACT THE CITY A MINIMUM OF 48 HOURS IN ADVANCE TO SALVAGE ANY EQUIPMENT PRIOR TO ANY DEMOLITION WORK.
2. CONTRACTOR SHALL PROTECT IN PLACE ALL FACILITIES UNLESS NOTED OTHERWISE ON THE PLANS.
3. IF THE EXISTING LIGHT FIXTURE RESTRICTS CONSTRUCTION ACTIVITIES FOR THE WIDENING OF THE LOUVERS, THE CONTRACTOR SHALL REMOVE AND REPLACE THE EXISTING LIGHT FIXTURE PER DWG E3103.
4. REMOVE EXISTING CONCRETE PAD: SAWCUT A NEAT LINE 3-INCHES OUTSIDE LIMITS OF EXISTING PAD. REMOVE EXISTING CONCRETE PAD AND SURROUNDING CONCRETE TO SAWCUT LINE A MAXIMUM DEPTH OF 1-INCH (AND A MINIMUM DEPTH OF 1/2") BELOW THE SURROUNDING FLOOR SURFACE. TRIM TOP 2" OF EXISTING CONCRETE VERTICAL REINFORCING.

   REPAIR FLOOR SURFACE: PATCH THE EXISTING CONCRETE FLOOR AT THE PAD REMOVAL AREA FLUSH WITH THE SURROUNDING FLOOR WITH REPAIR MORTAR SIKA 123 PLUS OR APPROVED EQUAL. PREPARE THE SURFACES PER MANUFACTURER'S INSTRUCTIONS.
5. DEMOLITION OF SODIUM HYPOCHLORITE UNIT SHALL NOT OCCUR UNTIL AFTER THE PROPOSED PFAS TREATMENT VESSELS ARE INSTALLED AND READY TO BE PLACED INTO SERVICE.
6. CONTRACTOR SHALL ASSUME 200 GALLONS OF SODIUM HYPOCHLORITE (0.8% ± CONC) DISPOSAL SHALL BE REQUIRED. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ANY RESIDUAL CHLORINE WITHIN THE EXISTING CHLORINE TANKS. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER DISPOSAL PER STATE AND FEDERAL GUIDELINES.
7. EXISTING GENERATOR FOUNDATION IS A 1' THICK CONCRETE SLAB REINFORCED WITH #4 @ 12" EW. THE CAN WALL INCLUDES A 8" THICK CONCRETE WALL WITH 12- EVENLY SPACED #4 REBAR AND #4 HOOPS AT 12 @ OC AND STEEL LINER.

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BID SET

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9/24/25

ORANGE COUNTY WATER DISTRICT
18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY

ORANGE COUNTY WATER DISTRICT

CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR

WELL 39 AND HYDRO-GENERATOR DEMOLITION PLAN

PROJ:	200-09382-23010
DESN:	KFM
DRWN:	EB
CHKD:	KAB

CD3101

Bar Measures 1 inch, otherwise drawing not to scale

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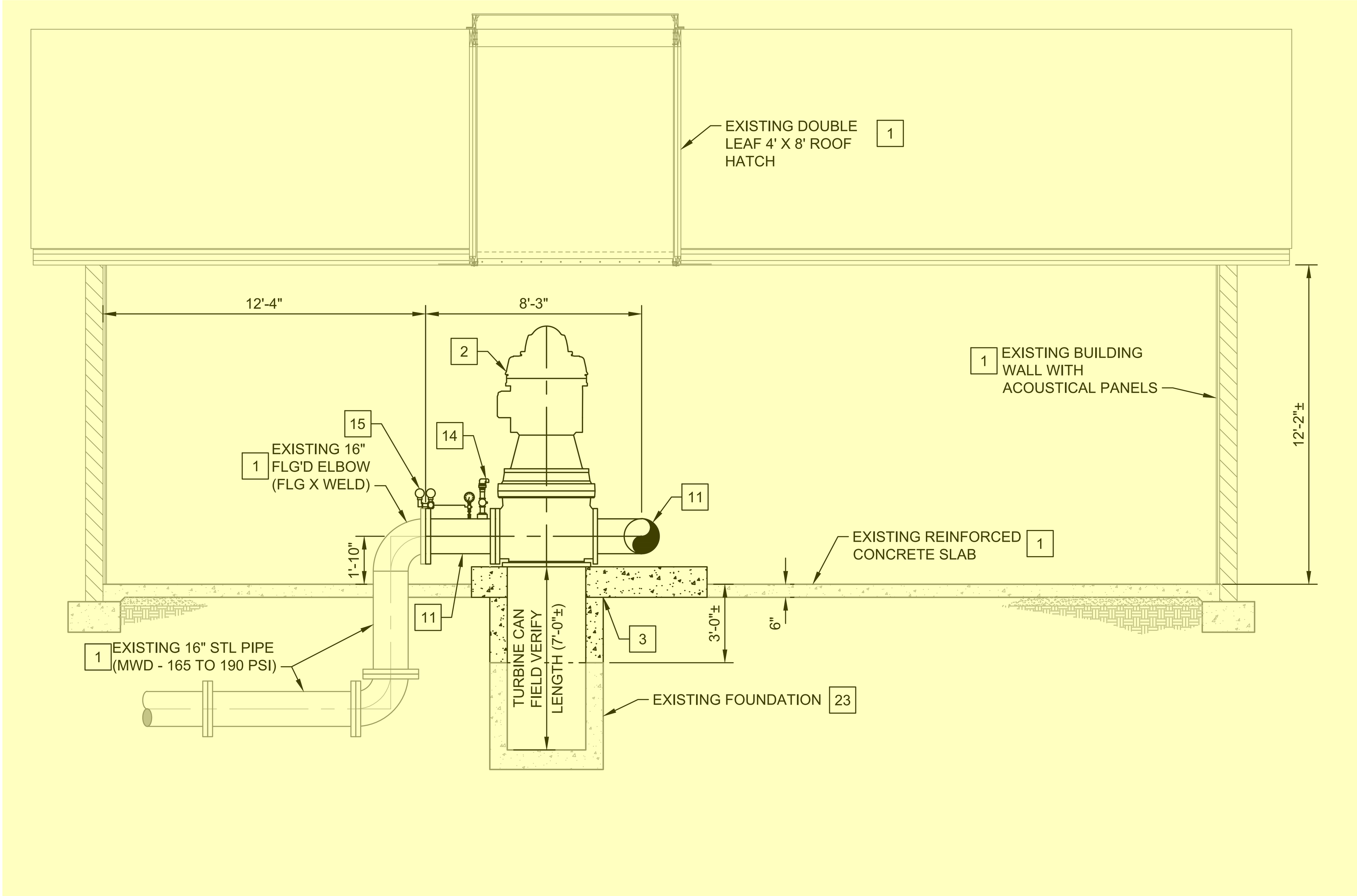
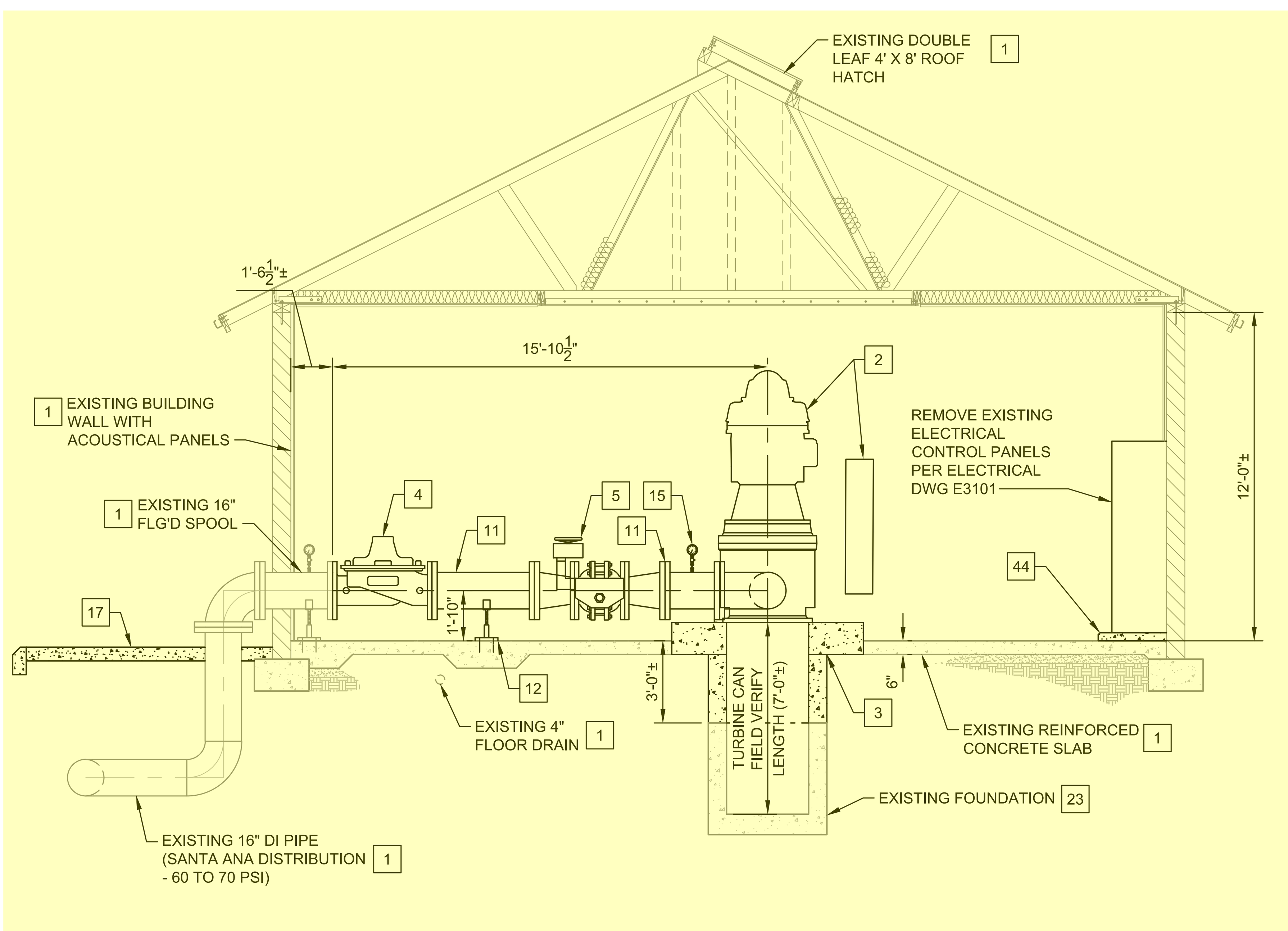
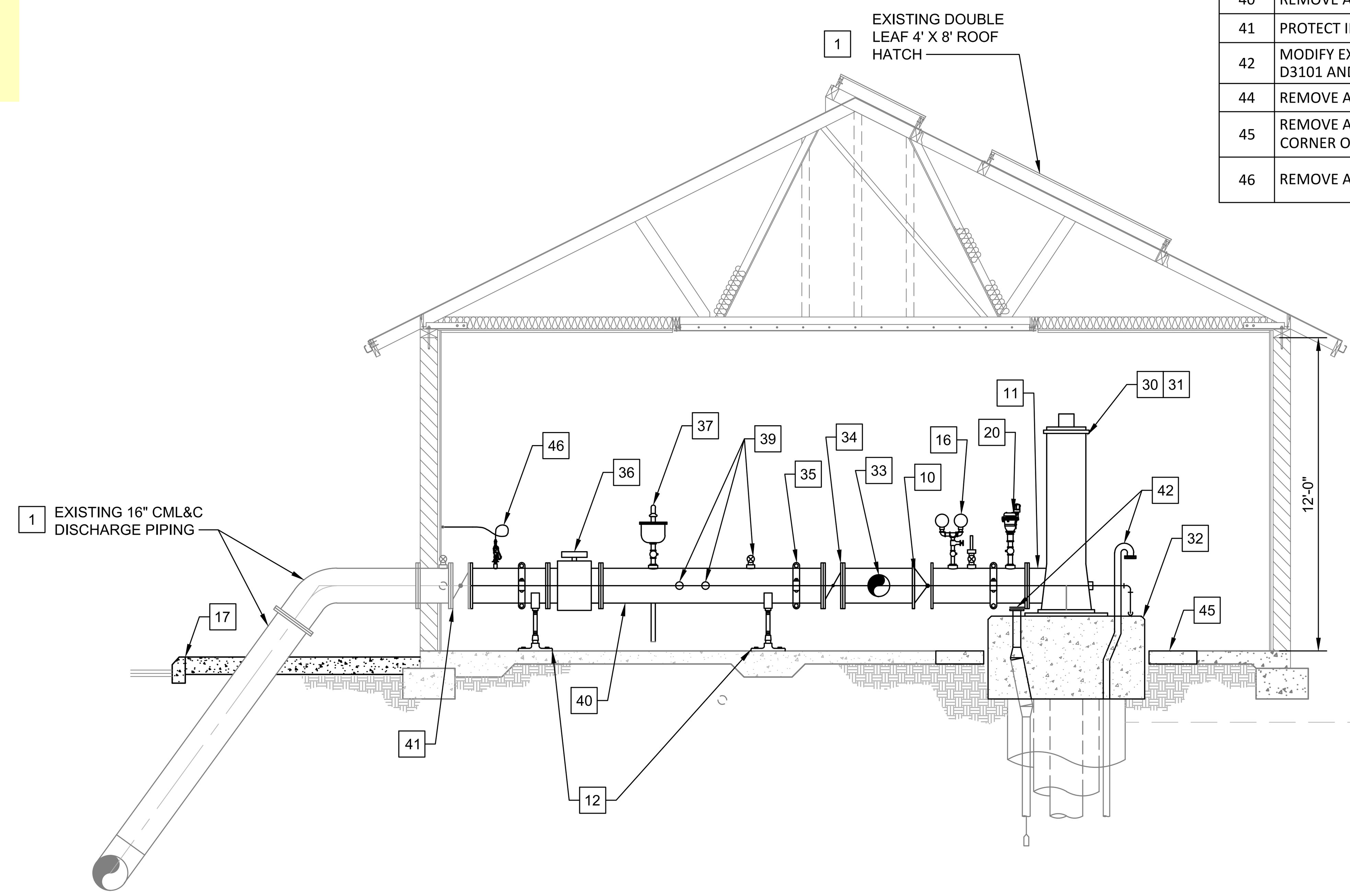


A D3101 HYDRO-GENERATOR DEMOLITION SECTION
SCALE: 1/4"=1'-0"



B D3101 HYDRO-GENERATOR DEMOLITION SECTION
SCALE: 1/4"=1'-0"

X	DEMOLITION NOTES
1	PROTECT IN PLACE
2	REMOVE AND DISPOSE OF EXISTING 16" HYDRO-GENERATOR AND CONTROL PANELS
3	REMOVE AND DISPOSE OF THE TOP 3 FEET OF THE EXISTING HYDRO-GENERATOR CONCRETE FOUNDATION. SEE NOTE 7
4	REMOVE AND SALVAGE EXISTING 12"/16" PRESSURE REDUCING VALVE
5	REMOVE AND SALVAGE EXISTING 12" BALL VALVE WITH MOTORIZED FLOW CONTROLLER AND ACTUATOR
10	REMOVE AND DISPOSE OF EXISTING 16" CHECK VALVE
11	REMOVE AND DISPOSE OF EXISTING 8"/12"/16" PIPING, FITTINGS, AND APPURTENANCES
12	REMOVE AND DISPOSE OF EXISTING PIPE SUPPORT AND ANCHOR BOLTS
14	REMOVE AND DISPOSE OF EXISTING AIR VALVE
15	REMOVE AND DISPOSE OF EXISTING PRESSURE TRANSMITTERS/GAUGE (TYP OF 2)
16	REMOVE AND DISPOSE OF EXISTING PRESSURE SWITCHES
17	REMOVE AND DISPOSE OF EXISTING CONCRETE WALK AND RAMP
20	REMOVE AND DISPOSE OF EXISTING AIR & VACUUM RELEASE VALVE
23	FILL THE EXISTING VOID WITH 2-SACK CONCRETE SLURRY. ABANDON REMAINING FOUNDATION IN PLACE
30	REMOVE AND DISPOSE OF EXISTING PUMP (APPROX 328' PUMP SETTING WITH 14" COLUMN PIPE AND 1.94" LINESHAFT)
31	REMOVE AND DISPOSE OF EXISTING MOTOR (250 HP)
32	REMOVE AND DISPOSE OF EXISTING PUMP PEDESTAL IN ITS ENTIRETY (61" X 61" X 32")
33	REMOVE AND DISPOSE OF EXISTING 10" WELL FLUSH PIPING AND APPURTENANCES
34	REMOVE AND DISPOSE OF EXISTING 16" BUTTERFLY VALVE
35	REMOVE AND DISPOSE OF EXISTING 16" VICTAULIC COUPLING
36	REMOVE AND DISPOSE OF EXISTING 16" MAGNETIC FLOWMETER AND APPURTENANCES
37	REMOVE AND DISPOSE OF EXISTING AIR RELEASE VALVE
39	REMOVE AND DISPOSE OF EXISTING WELL DISCHARGE SAMPLE TAPS
40	REMOVE AND DISPOSE OF EXISTING 16" WELL DISCHARGE PIPING
41	PROTECT IN PLACE EXISTING 16" BUTTERFLY VALVE
42	MODIFY EXISTING CAMERA PORT, GRAVEL FEED TUBE, VENT, SOUNDING TUBE AND WELL PRE-LUBE AS SHOWN ON D3101 AND D3501
44	REMOVE AND DISPOSE OF EXISTING 4" THICK CONCRETE HOUSEKEEPING SLAB. SEE NOTE 4 FOR CONCRETE REPAIR
45	REMOVE AND DISPOSE OF EXISTING 6" THICK CONCRETE FLOOR SLAB (#5 @ 12" EA W/ #4 (X4'-0") DIAGONALS AT EACH CORNER OF PUMP PEDESTAL) SEE NOTE 4
46	REMOVE AND DISPOSE OF EXISTING INJECTION QUILL AND ACCESSORIES



C D3101 WELL 39 DISCHARGE PIPING DEMOLITION SECTION
SCALE: 1/4"=1'-0"

SA-1 Hydrogenerator

Scope of Work Exhibit

NOTES TO CONTRACTOR:

1. CONTRACTOR SHALL CONTACT THE CITY A MINIMUM OF 48 HOURS IN ADVANCE TO SALVAGE ANY EQUIPMENT PRIOR TO ANY DEMOLITION WORK.
2. CONTRACTOR SHALL PROTECT IN PLACE ALL EXISTING FACILITIES UNLESS NOTED OTHERWISE ON THE PLANS.
3. REMOVE EXISTING CONCRETE PAD: SAWCUT A NEAT LINE 3-INCHES OUTSIDE LIMITS OF EXISTING PAD. REMOVE EXISTING CONCRETE PAD AND SURROUNDING CONCRETE TO SAWCUT LINE A MAXIMUM DEPTH OF 1-INCH (AND A MINIMUM DEPTH OF 1/2") BELOW THE SURROUNDING FLOOR SURFACE. TRIM TOP 2" OF EXISTING CONCRETE VERTICAL REINFORCING.

   REPAIR FLOOR SURFACE: PATCH THE EXISTING CONCRETE FLOOR AT THE PAD REMOVAL AREA FLUSH WITH THE SURROUNDING FLOOR WITH REPAIR MORTAR SIKA 123 PLUS OR APPROVED EQUAL. PREPARE THE SURFACES PER MANUFACTURER'S INSTRUCTIONS.

0 2' 4' 8'
SCALE: 1/4" = 1'-0"

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BID SET
REGISTERED PROFESSIONAL ENGINEER STEVEN D. ... No. C039261 Exp. 12-31-25 CIVIL STATE OF CALIFORNIA
9/24/25

ORANGE COUNTY WATER DISTRICT
18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY

ORANGE COUNTY WATER DISTRICT
CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR
HYDRO-GENERATOR DEMOLITION SECTIONS

PROJ:	200-09382-23010
DESN:	KFM
DRWN:	EB
CHKD:	KAB

CD3301

Bar Measures 1 inch, otherwise drawing not to scale

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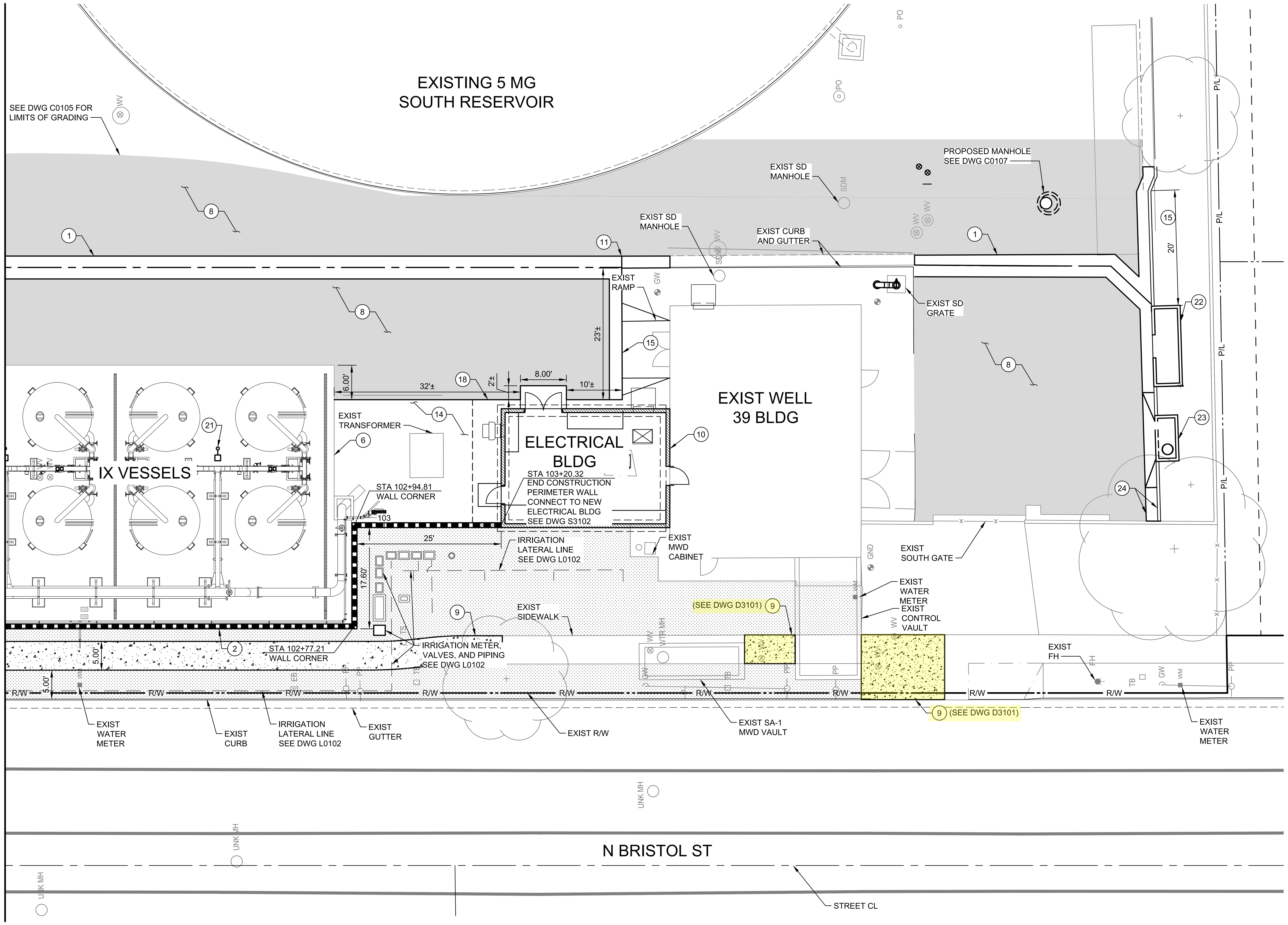

(XX)	CONSTRUCTION NOTES
1	CONSTRUCT 4' WIDE CONCRETE RIBBON GUTTER PER DTL 2 ON DWG C0501
2	CONSTRUCT PERIMETER BLOCK WALL PER DTL 1 ON DWG S1503 AND DWG C0203
6	CONSTRUCT IX VESSELS CONCRETE FOUNDATION PAD PER STRUCTURAL DWG S1101
8	CONSTRUCT AC PAVING, SEE NOTE 1
9	CONSTRUCT CONCRETE SIDEWALK PER CITY STD PLAN NO. 1104
10	CONSTRUCT ELECTRICAL BUILDING PER STRUCTURAL PLAN S3102 AND ELECTRICAL PLAN E3102
11	CONSTRUCT CURB PER CITY STD PLAN NO. 1101, TYPE A–2–6
14	CONSTRUCT SLAB ON GRADE PER DTL 1 ON C0504
15	CONSTRUCT TRANSITION CURB AND GUTTER (6" CF TO 8" CF)
18	CONSTRUCT CURB PER SPPWC STD PLAN NO. 120–2, TYPE A1–6
21	INSTALL LIGHT POLE PER DTL 7 ON DWG E0501
22	INSTALL STORMWATER BIOFILTRATION SYSTEM PER DTL 3 ON DWG C0505
23	INSTALL CATCH BASIN PER DTL 3 ON DWG C0505
24	CONSTRUCT 8" CURB AND GUTTER PER CITY STD PLAN NO. 1101, TYPE A-2-8

LEGEND

- AC
- GRAVEL
- CONCRETE
- LANDSCAPING

NOTES:

1. CONTRACTOR SHALL CONSTRUCT AC PAVING AS FOLLOWS:
   JOHN GARTHE RESERVOIR SITE: 4" AC/ 6" AB
2. SEE DTL 5 DWG C0503 FOR SUBGRADE SOIL PREPARATION FOR ALL NEW AC PAVEMENT, CONCRETE DRIVEWAY, AND CONCRETE WALKWAYS.
3. SEE DWG C0105 FOR PROPOSED GRADING PLAN.
4. SEE DWG L0101 FOR LANDSCAPING.

SA-1 Hydrogenerator

Scope of Work Exhibit

0 5' 10' 20'
SCALE: 1" = 10'

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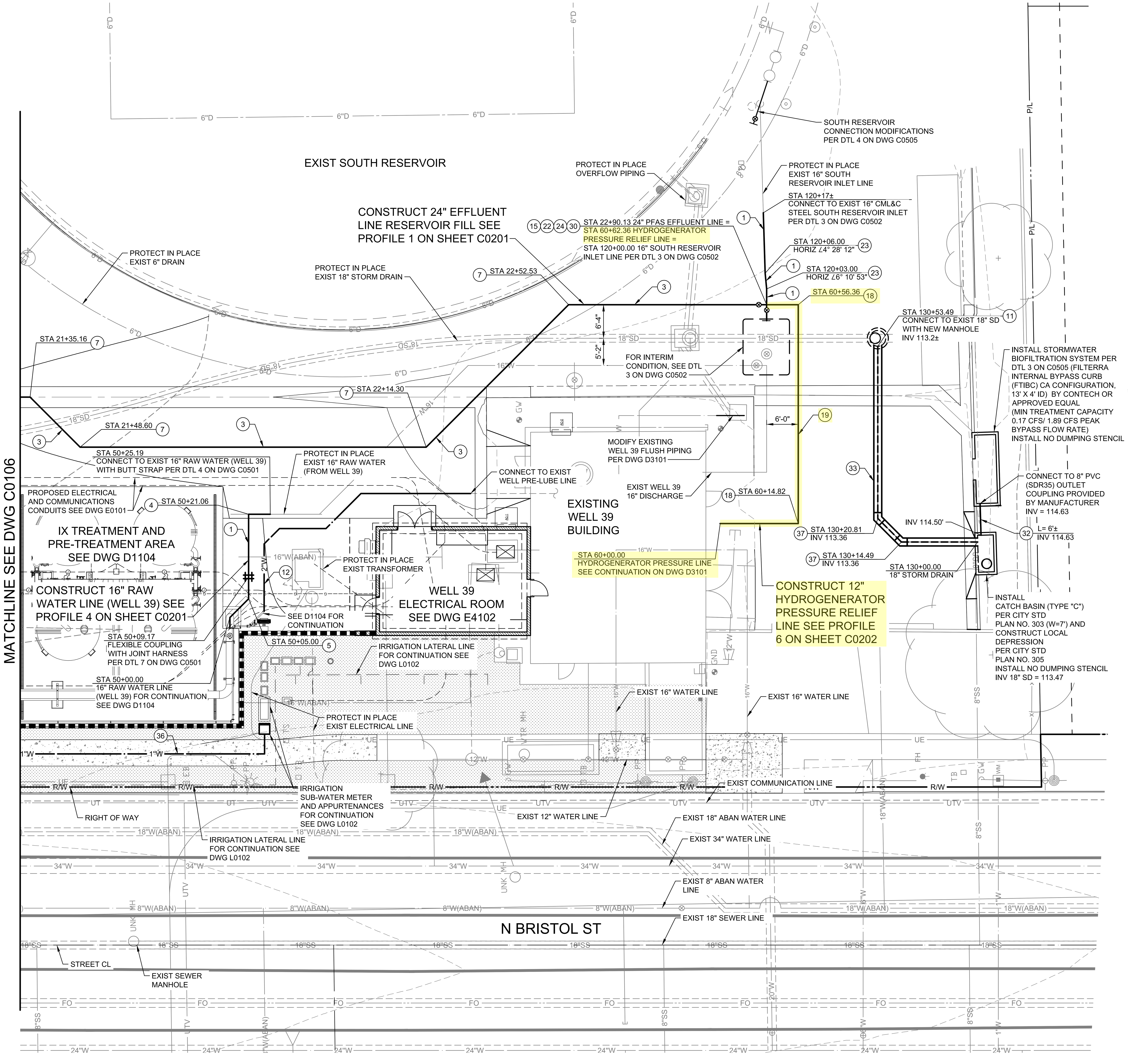
MARK	DATE	DESCRIPTION	BY

ORANGE COUNTY WATER DISTRICT
CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR
PROPOSED SITE PLAN 2

PROJ:	200-09382-23010
DESN:	MV
DRWN:	MV
CHKD:	TLE

C0103



(XX)	CONSTRUCTION NOTES
1	CONSTRUCT 16" STEEL PIPE
3	CONSTRUCT 24" STEEL PIPE
4	CONSTRUCT 16" STEEL 90° BEND
5	CONSTRUCT 16" STEEL 45° BEND
7	CONSTRUCT 24" STEEL 45° BEND
11	CONSTRUCT STORM DRAIN MANHOLE PER CITY OF SANTA ANA STD DWG NO. 306
12	CONSTRUCT 2" COPPER (TYPE "K" SOFT) PIPE AND FITTINGS
15	CONSTRUCT 24" BUTTERFLY VALVE (FLG X FLG), VALVE CAN, FRAME AND COVER PER CITY OF SANTA ANA STD PLAN NO. 1411
18	INSTALL 12" STEEL 90° BEND
19	CONSTRUCT 12" STEEL PIPE
22	CONSTRUCT 24" X 16" STEEL REDUCING CROSS
23	CONSTRUCT 16" STEEL BEND
24	CONSTRUCT 16" BUTTERFLY VALVE (FLG X FLG), VALVE CAN, FRAME AND COVER PER CITY STD PLAN NO. 1411
30	CONSTRUCT 24" X 12" STEEL REDUCER
32	CONSTRUCT 8" PVC (SDR 35) DRAIN PIPE AND FITTINGS
33	CONSTRUCT 18" PVC (SDR 35) DRAIN PIPE
36	CONSTRUCT 1" COPPER (TYPE "K" SOFT) PIPE AND FITTINGS
37	CONSTRUCT 18" PVC (SDR 35) 45° BEND

NOTES:

1. SEE DWG C0106 FOR PIPE SCHEDULE.
2. ALL BEDDING AND TRENCH BACKFILL SHALL BE PER DETAIL 1 ON DWG C0503.
3. CONTRACTOR SHALL FIELD LOCATE ALL CONNECTION POINTS AND CROSSINGS TO VERIFY HORIZONTAL AND VERTICAL LOCATION.
4. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AT POINTS OF CONNECTION PRIOR TO ORDERING MATERIAL.
5. TO MAKE CONNECTIONS TO THE EXISTING SITE PIPING, THE CITY WILL NEED TO ISOLATE THE CORRESPONDING WELLS AND RESERVOIRS. CONTRACTOR SHALL BE RESPONSIBLE FOR DRAINING WATER FROM EXISTING PIPING TO REMAIN. THE MAXIMUM DURATION OF SHUTDOWN OF FOR ANY CONNECTION SHALL BE EIGHT HOURS. THE SHUTDOWN SHALL BE COORDINATED WITH AND SCHEDULED WITH WATER RESOURCES A MINIMUM OF THREE (3) WEEKS IN ADVANCE OF THE ACTUAL SHUTDOWN. CONTRACTOR SHALL SUBMIT AN ISOLATION AND SHUTDOWN PLAN FOR EACH CONNECTION FOR REVIEW AND APPROVAL BY THE DISTRICT AND THE CITY.
6. ALL PIPING SHALL BE HYDROSTATICALLY TESTED TO THE PRESSURE NOTED IN THE PIPING SCHEDULE ON THIS SHEET.

SA-1 Hydrogenerator

Scope of Work Exhibit

0 5' 10' 20'
SCALE: 1" = 10'

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BID SET
REGISTERED PROFESSIONAL ENGINEER
No. C039261
Exp. 12-31-25
CIVIL
STATE OF CALIFORNIA
9/24/25

ORANGE COUNTY WATER DISTRICT
18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY

ORANGE COUNTY WATER DISTRICT
CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR
YARD PIPING PLAN SOUTH

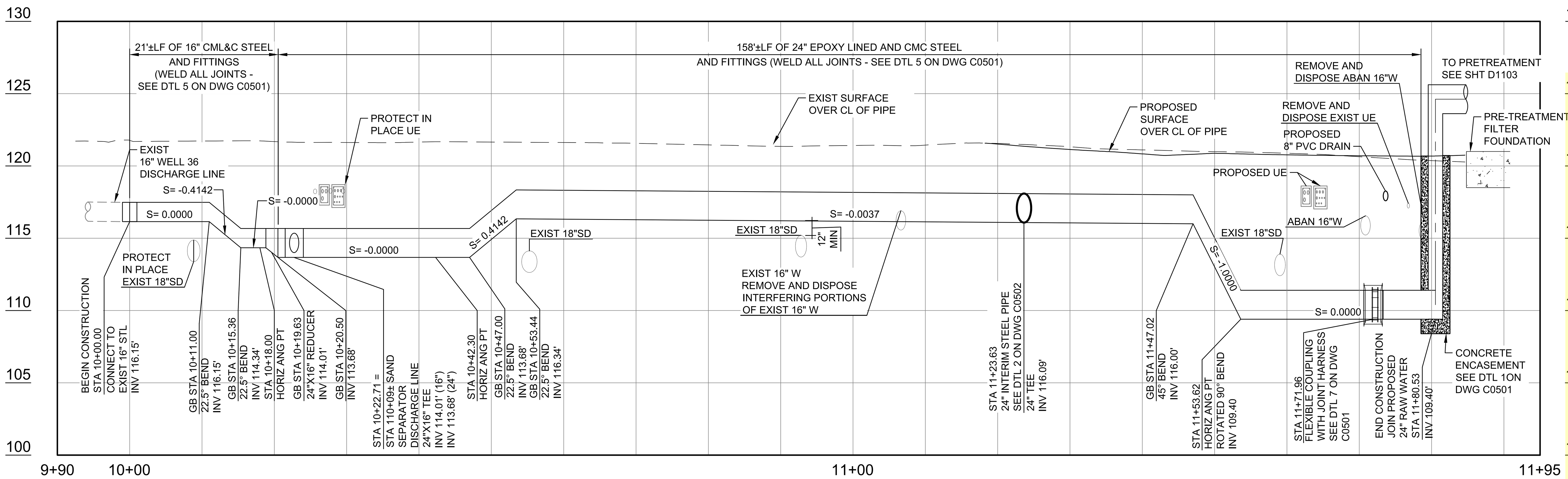
PROJ:	200-09382-23010
DESN:	MV
DRWN:	MV
CHKD:	TLE

C0107

Copyright: Tetra Tech

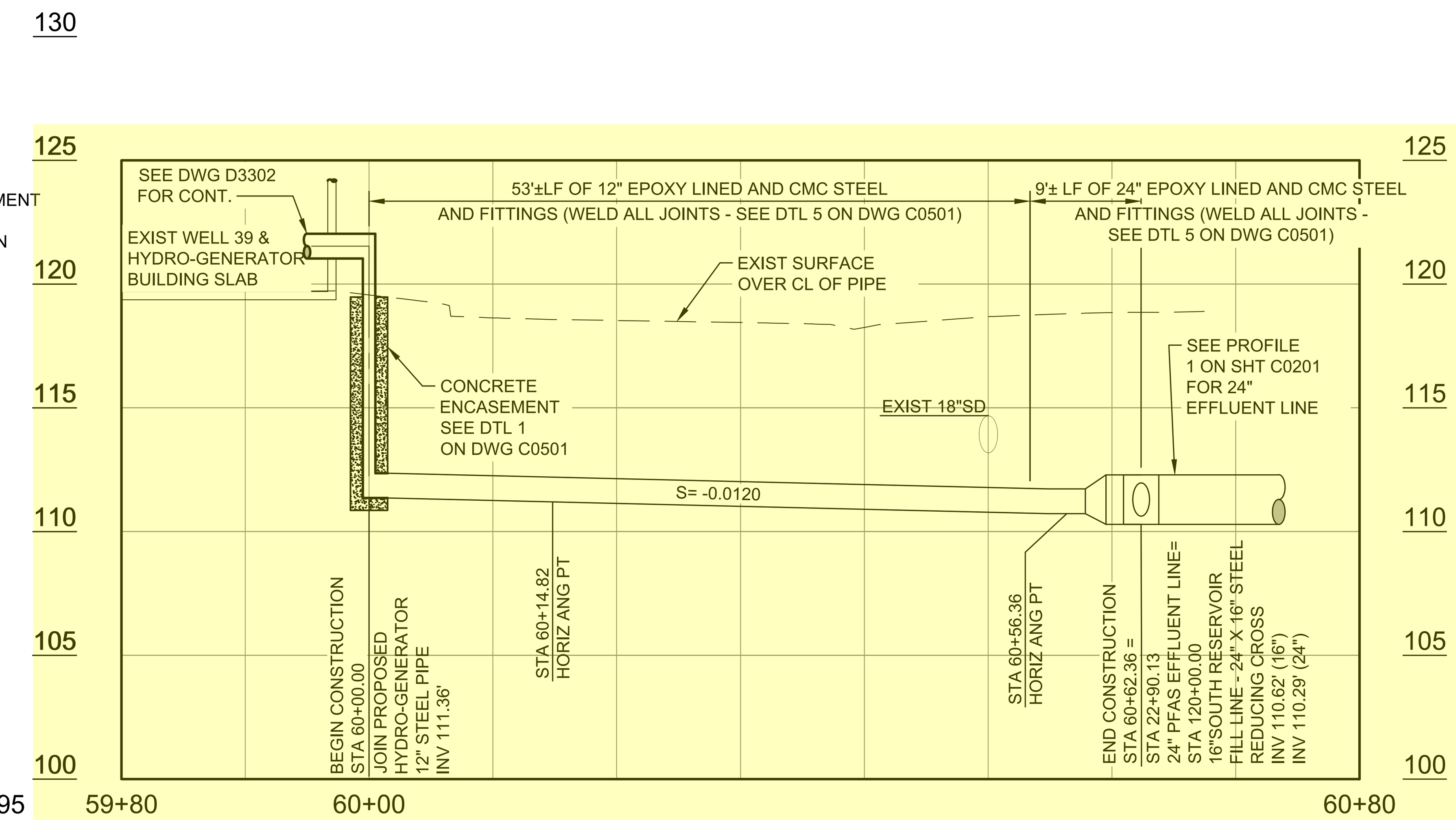
Bar Measures 1 inch, otherwise drawing not to scale

9/24/2025 1:31:07 PM - C:_ADIACCDOCS\TETRA TECH INC\200-09382-23010 JOHN GARTHE RES PFAS\PROJECT FILES\CAD\SHEETFILES\C0107_YARDPIPING.DWG - JOHNSON, WILLIE



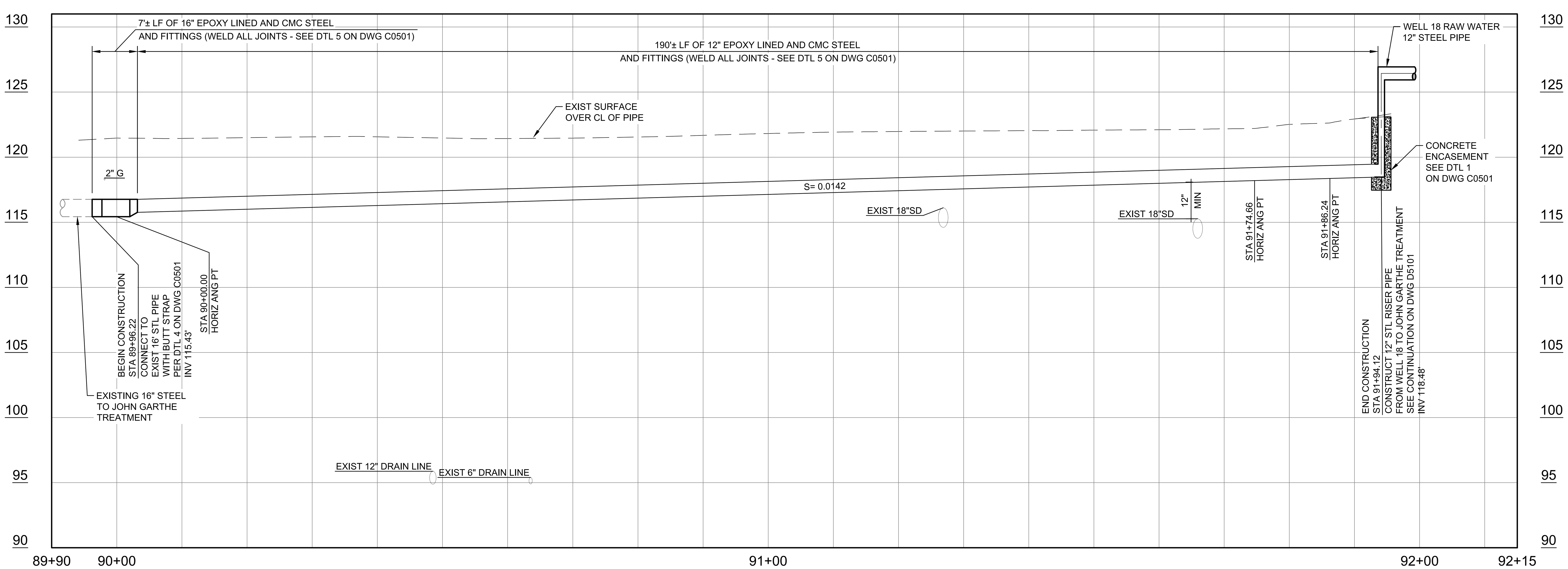
5 C0106 24 INCH INFLUENT LINE (WELLS 18 24 32 & 36) PROFILE

SCALE: HORIZ: 1"= 10' VERT: 1"= 5'



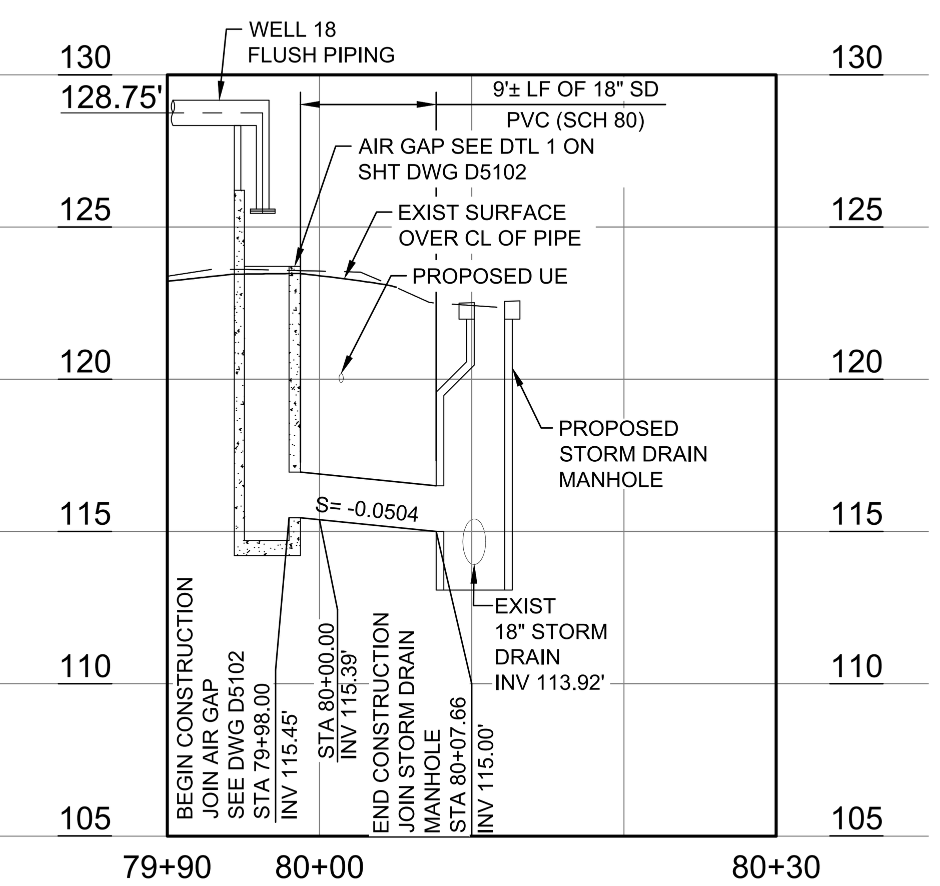
6 C0107 12 INCH HYDROGENERATOR PRESSURE RELIEF LINE PROFILE

SCALE: HORIZ: 1"= 10' VERT: 1"= 5'



7 C0108 12 INCH WELL 18 RAW WATER LINE PROFILE

SCALE: HORIZ: 1"= 10' VERT: 1"= 5'



8 C0108 18-INCH DRAIN LINE PROFILE (WELL 18) PROFILE

SCALE: HORIZ: 1"= 10' VERT: 1"= 5'

SA-1 Hydrogenerator

Scope of Work Exhibit

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9/24/25

ORANGE COUNTY WATER DISTRICT

18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
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MARK	DATE	DESCRIPTION	BY

ORANGE COUNTY WATER DISTRICT

CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR

YARD PIPING PROFILES 2

PROJ:	200-09382-23010
DESN:	MV
DRWN:	MV
CHKD:	TLE

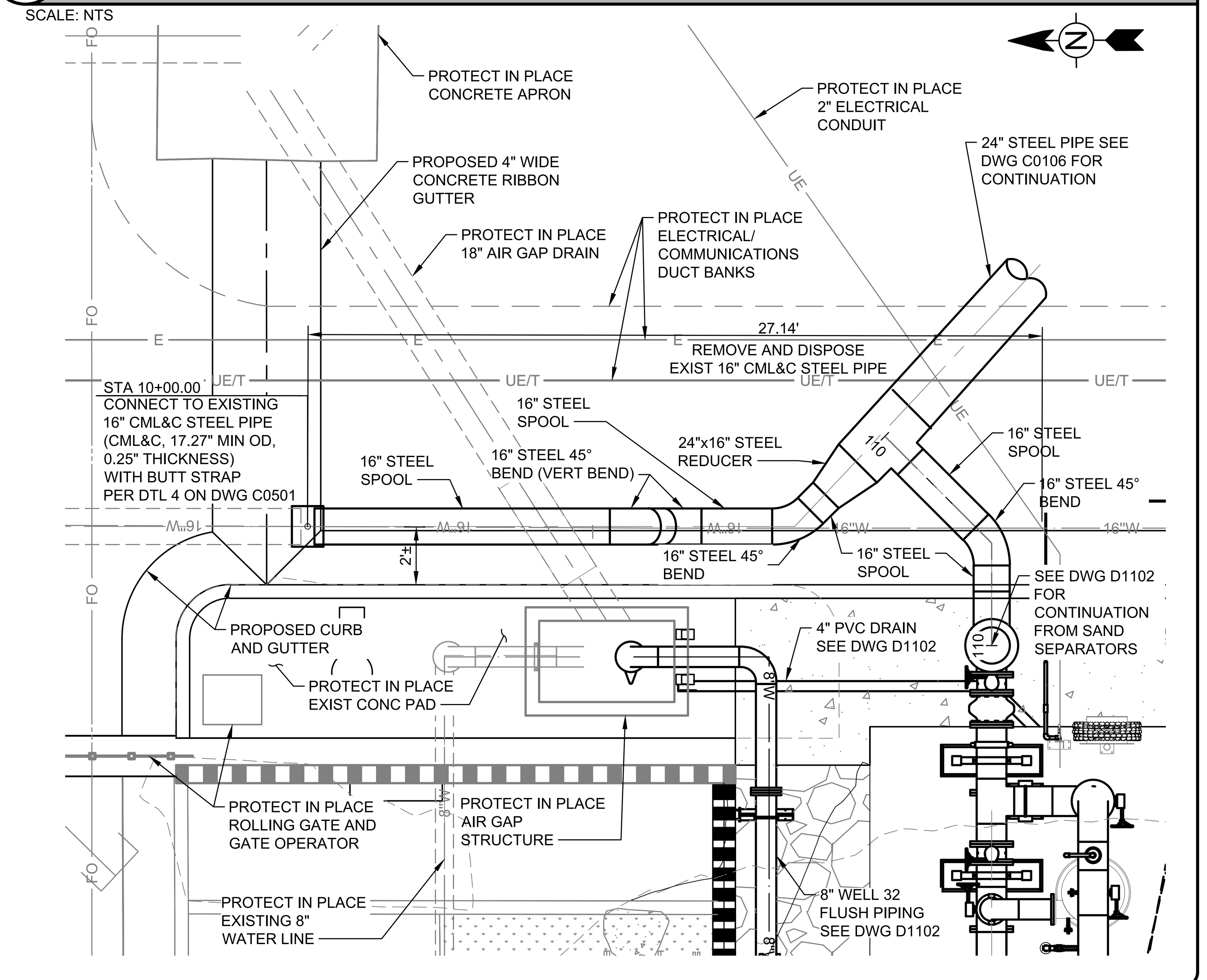
C0202

Bar Measures 1 inch, otherwise drawing not to scale

9/24/2025 1:32:59 PM - C:_ADIACCDOCS\TETRA TECH INC\200-09382-23010 JOHN GARTHE RES PFAS\PROJECT FILES\CAD\SHEETFILES\C0202-YARDPIPINGPROFILES.DWG - JOHNSON, WILLIE

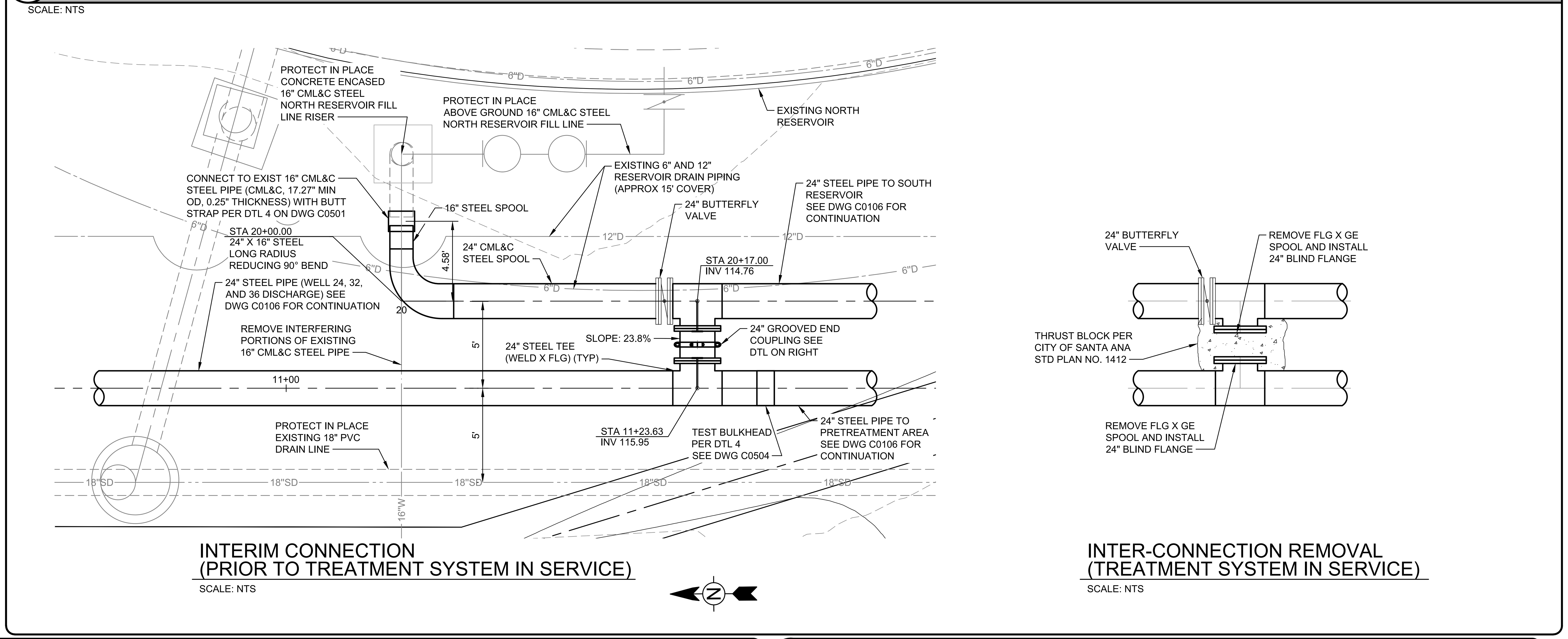
1 RAW WATER LINE CONNECTION TO EXISTING 16" STEEL PIPE (RESERVOIR FILL LINE)

SCALE: NTS



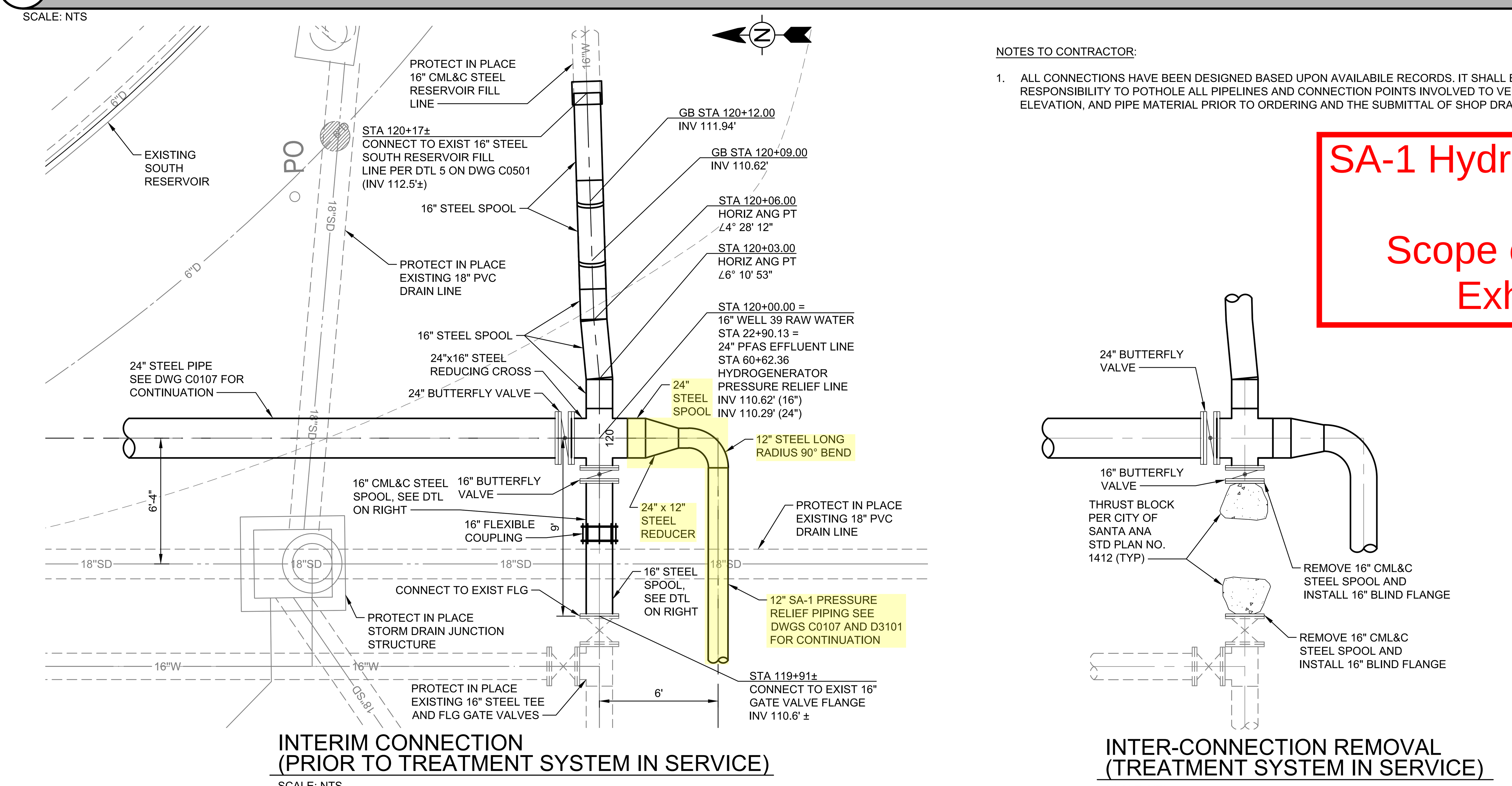
2 CONNECTION TO NORTH RESERVOIR FILL LINE (16" STEEL PIPE)

SCALE: NTS



3 CONNECTION TO EXISTING 16" STEEL PIPE

SCALE: NTS



NOTES TO CONTRACTOR:

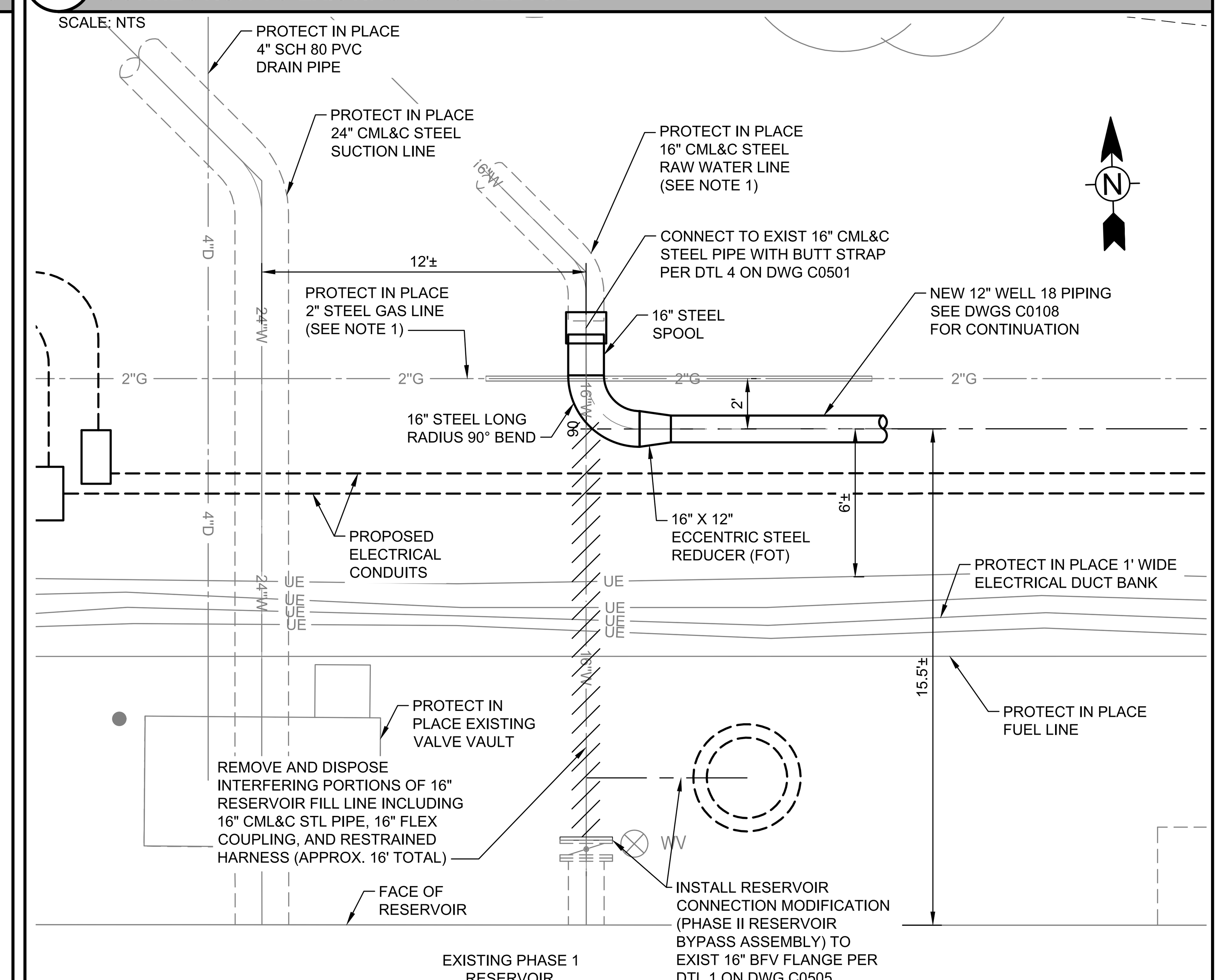
1. ALL CONNECTIONS HAVE BEEN DESIGNED BASED UPON AVAILABLE RECORDS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO POTHOLE ALL PIPELINES AND CONNECTION POINTS INVOLVED TO VERIFY THE LOCATION, ELEVATION, AND PIPE MATERIAL PRIOR TO ORDERING AND THE SUBMITTAL OF SHOP DRAWINGS.

SA-1 Hydrogenerator

Scope of Work Exhibit

4 WELL 18 DISCHARGE CONNECTION TO EXISTING 16" STEEL PIPE

SCALE: NTS



NOTES TO CONTRACTOR:

1. CONTRACTOR SHALL POTHOLE EXISTING 16" WELL 18 DISCHARGE LINE AND EXISTING 2" STEEL GAS LINE TO VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF UTILITY, PRIOR TO CONSTRUCTION.

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18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
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MARK	DATE	DESCRIPTION	BY

ORANGE COUNTY WATER DISTRICT

CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR

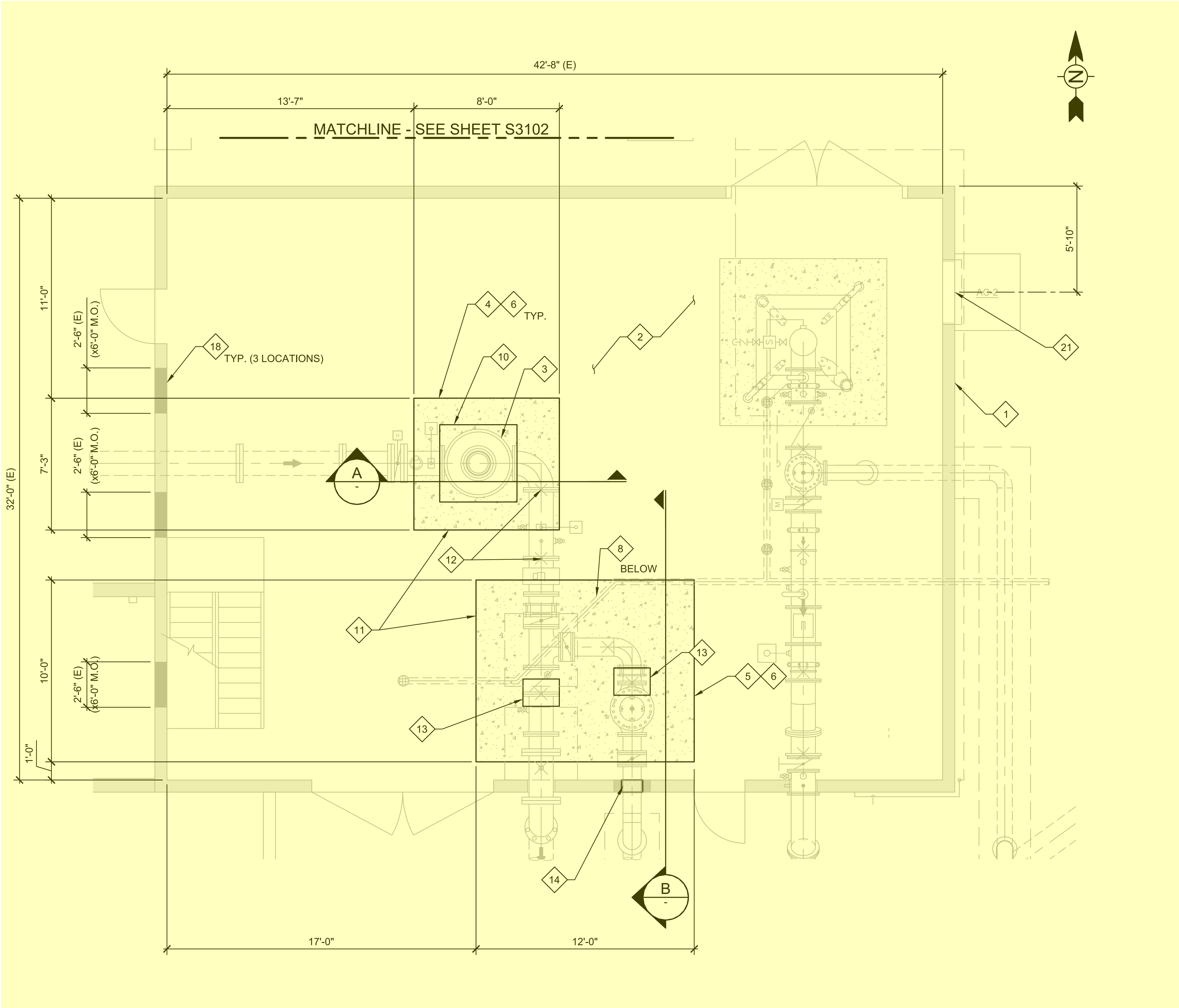
PIPING CONNECTION DETAILS

PROJ:	200-09382-23010
DESN:	MV
DRWN:	MV
CHKD:	TLE

C0502

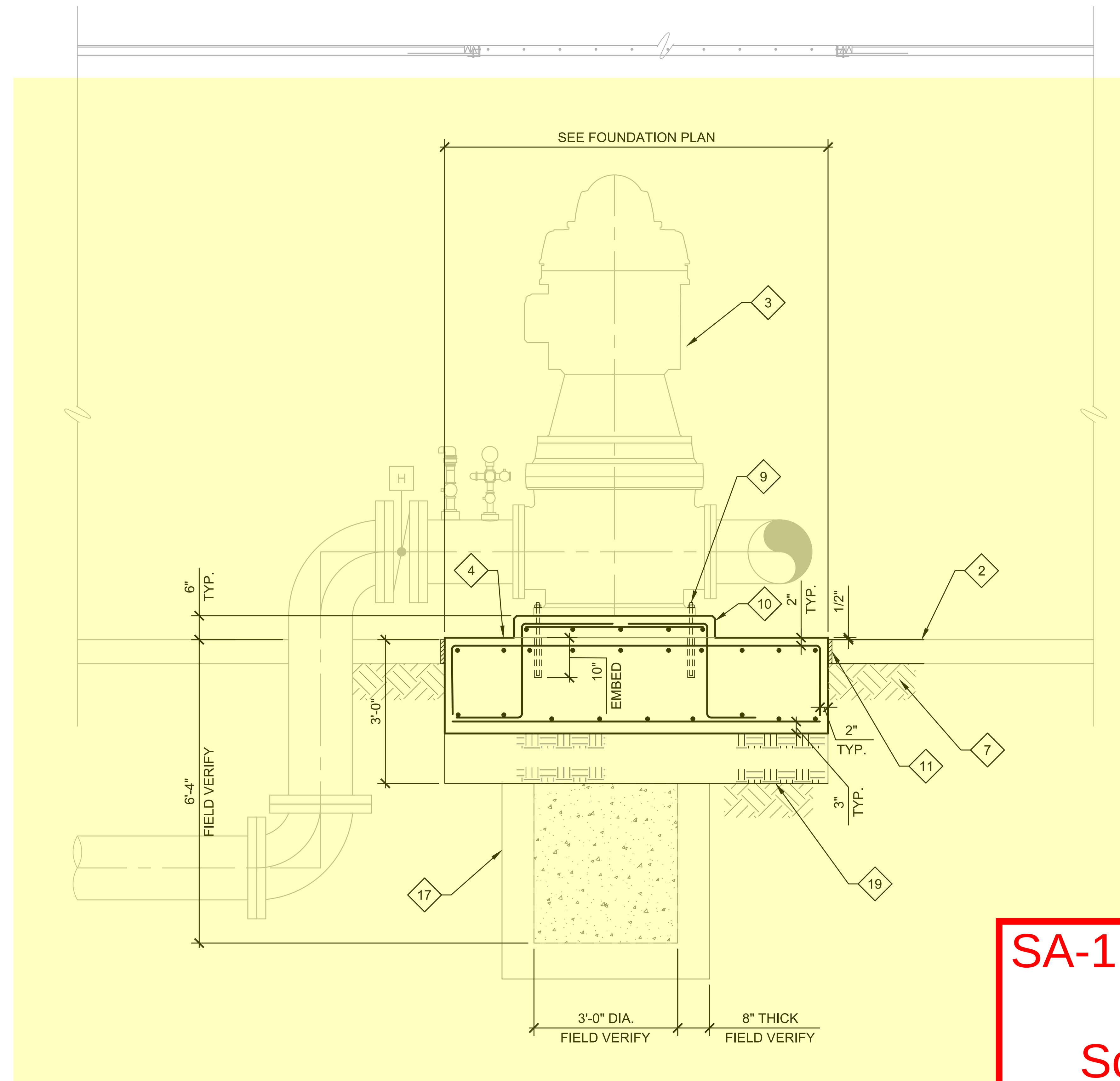
Bar Measures 1 inch, otherwise drawing not to scale

9/25/2025 12:33:57 PM - C:_ADACCDOCS\TETRA TECH INC\200-09382-23010 JOHN GARTHE RES PFAS\PROJECT FILES\CAD\SHEETFILES\C0502_DETAILS.DWG - JOHNSON, WILLIE



FOUNDATION PLAN

SCALE: 1/4"=1'-0"

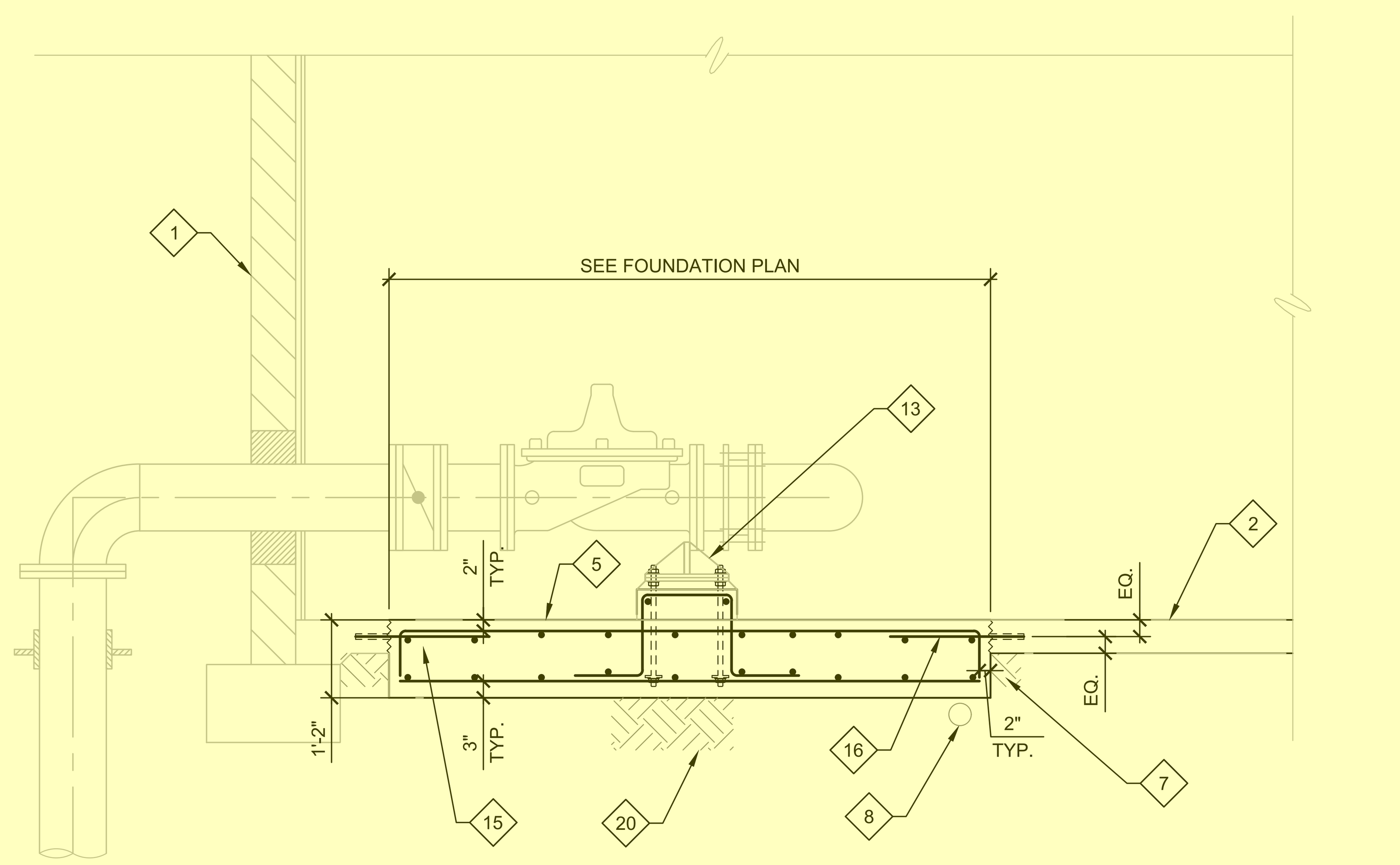


A SECTION

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

SA-1 Hydrogenerator

Scope of Work Exhibit



B SECTION

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

KEYNOTES:

1. EXISTING WELL BUILDING CMU WALL
2. EXISTING 6" THICK CONCRETE SLAB ON GRADE
3. 16" DIA. HYDRO GENERATOR - SEE CIVIL DRAWINGS
4. 2'-0" THICK CONCRETE FOUNDATION FOR HYDROGENERATOR w/ #5 @ 12" TOP AND BOTTOM, EACH WAY. SET TOP OF FOUNDATION 1/2" ABOVE THE EXISTING FLOOR SLAB
5. 1'-2" THICK CONCRETE FOUNDATION w/ #5 @ 12" EACH WAY. SET TOP OF FOUNDATION FLUSH WITH EXISTING SLAB
6. EDGE OF SAWCUT. DO NOT OVER CUT AT CORNERS. PATCH EXPOSED REINFORCEMENT PER DETAIL 8 ON SHEET S3501.
7. DO NOT DISTURB EXISTING SOIL BELOW EXISTING SLAB NEXT TO SAWCUT. EXCAVATE DOWN TO THE INTENDED ELEVATION. CONTRACTOR TO PROVIDE SHORING FOR SOIL
8. EXISTING DRAIN PIPE. PROTECT IN PLACE. (DO NOT DAMAGE THE EXISTING PIPE. EXCAVATE WITH CAUTION IN THIS AREA)
9. HYDRO GENERATOR ANCHORAGE - 8 - 3/4" DIA. ADHESIVE ANCHORS, EMBEDED 10" INTO CONCRETE FOUNDATION
10. 4'-3" SQ. HOUSEKEEPING PAD PER DETAIL 7 ON SHEET S0503. SET TOP OF PAD 6" ABOVE THE EXISTING FLOOR SLAB.
11. EXPANSION JOINT - SEE DETAIL 10 ON SHEET S0501
12. PIPE SUPPORT PER DETAIL 5 ON SHEET D0502
13. FLANGE SUPPORT PER DETAIL 5 ON SHEET D3501
14. PIPE PENETRATION IN CMU WALL FOR 12" DIA. PIPE PER DETAIL 4 ON SHEET S3501 - SEE CIVIL DRAWINGS FOR PIPE LOCATION AND INVERT ELEVATION.
15. ROUGHENED JOINT
16. #4 (x 2'-0") ADHESIVE DOWELS @ 12" AROUND THE PERIMETER OF THE FOUNDATION. PLACE DOWEL ON THE CENTER OF THE EXISTING 6" SLAB, EMBED 5"
17. EXISTING HYDROGENERATOR CONCRETE CAN. DEMO THE TOP 3 FEET PER SECTION A ON SHEET D3302, AND FILL THE EXISTING VOID INSIDE THE CONCRETE CAN WITH 2-SACK CONCRETE SLURRY.
18. PATCH EXISTING LOUVER OPENINGS PER DETAIL 5 ON SHEET S3501
19. SUBGRADE PERPARATION - REMOVE 12" OF SOIL BELOW THE NEW CONCRETE FOUNDATION AND MOISTURE CONDITION TO WITHIN 2 PERCENT OF THE OPTIMUM MOISTURE CONTENT. BACKFILL SOIL AND COMPACT IT TO AT LEAST 90% OF THE LABORATORY MAXIMUM DRY DENSITY AS DETERMINED BY THE ASTM D1557 TEST METHOD.
20. UNDISTURBED SOIL
21. HVAC OPENING IN CMU WALL PER DETAIL 7 ON SHEET S3501 AND M3201. ANCHORAGE OF WALL MOUNTED HVAC UNITS SHALL BE PROVIDED BY THE HVAC MANUFACTURER/SUPPLIER. ANCHORAGE CALCULATIONS SHALL BE SIGNED AND STAMPED BY A CIVIL OR STRUCTURAL ENGINEER REGISTERED IN THE STATE OF CALIFORNIA. ANCHORAGE CALCULATIONS SHALL USE THE DESIGN CRITERIA SHOWN ON SHEET S0001, INCLUDING SEISMIC LOADS.

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REGISTERED PROFESSIONAL ENGINEER — MAN HONG ERIC YUEN — No. 6177 — STRUCTURAL — STATE OF CALIFORNIA — 9/24/25

ORANGE COUNTY WATER DISTRICT
18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY

ORANGE COUNTY WATER DISTRICT

CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR

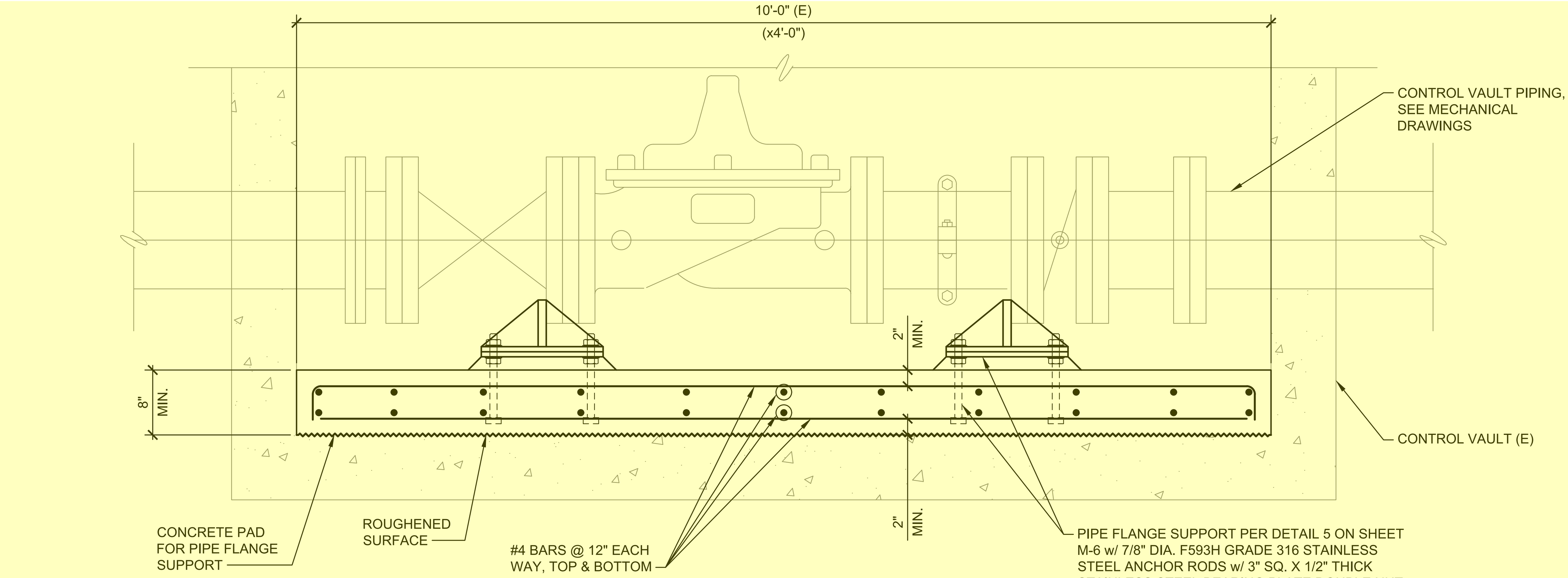
WELL 39 BUILDING FOUNDATION PLAN AND SECTION

PROJ:	200-09382-23010
DESN:	J. QUIROZ
DRWN:	E. HUTCHINS
CHKD:	E. YUEN

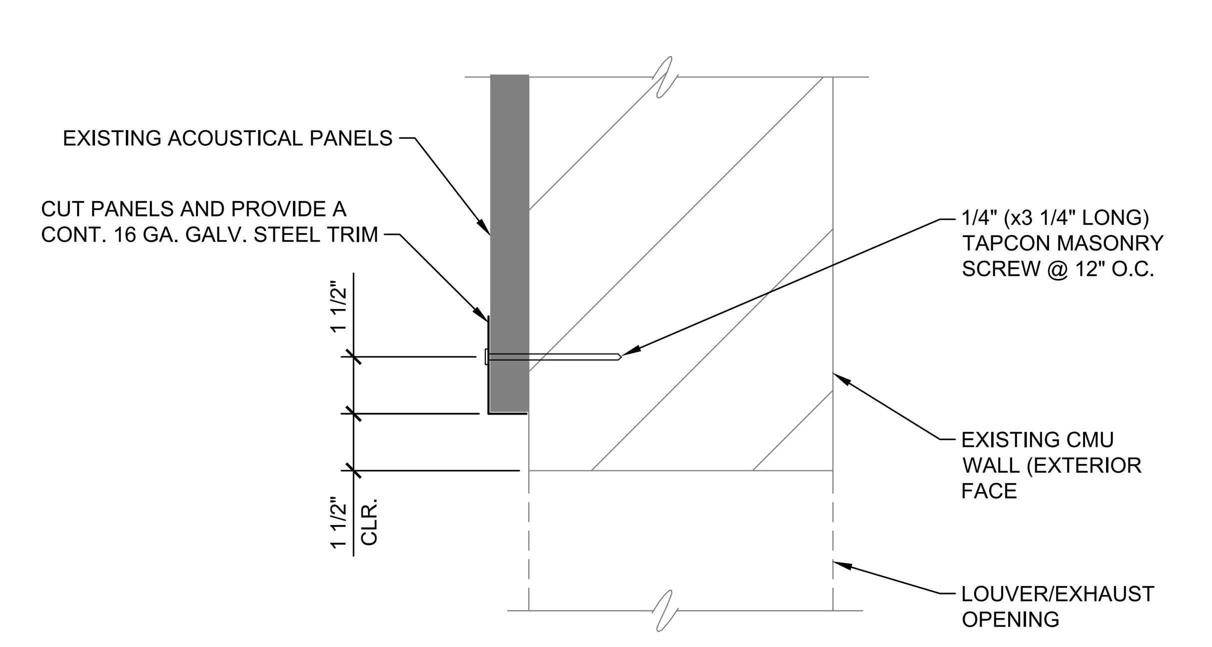
S3101

Bar Measures 1 inch, otherwise drawing not to scale

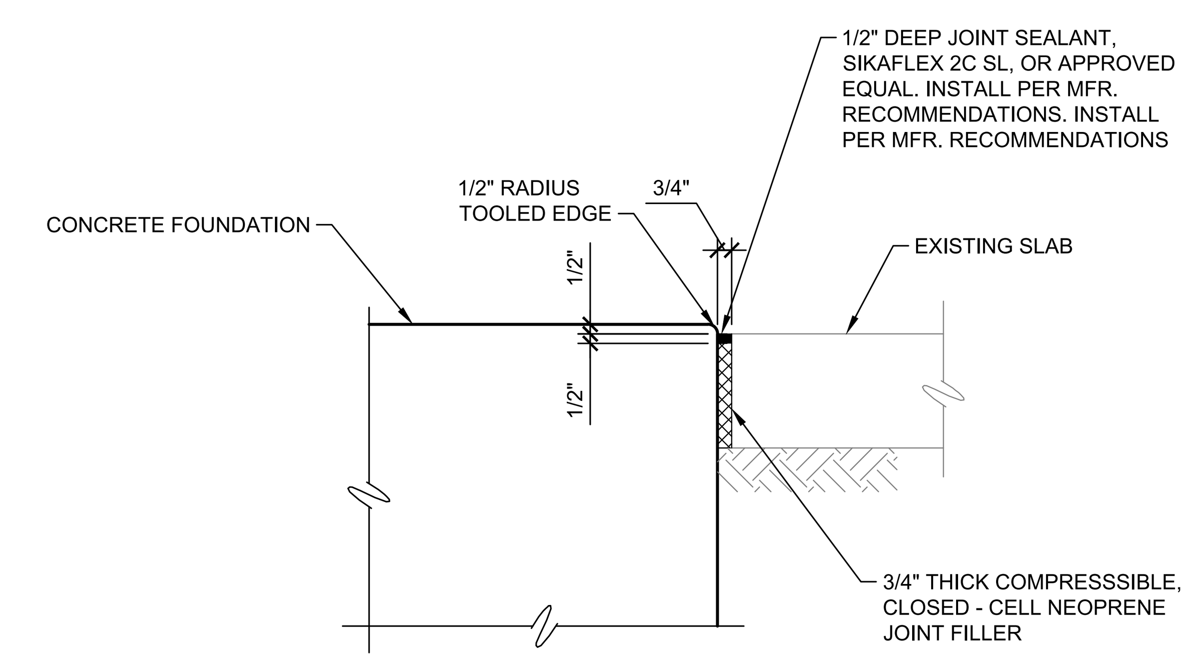
8/28/2025 9:08:15 AM - C:_ADACCDOCS\TETRA TECH INC\200-09382-23010 JOHN GARTHE RES PFAS\PROJECT FILES\CAD\SHEETFILES\S3101_FOUNDATIONPLAN.DWG - HUTCHINS, ERIC



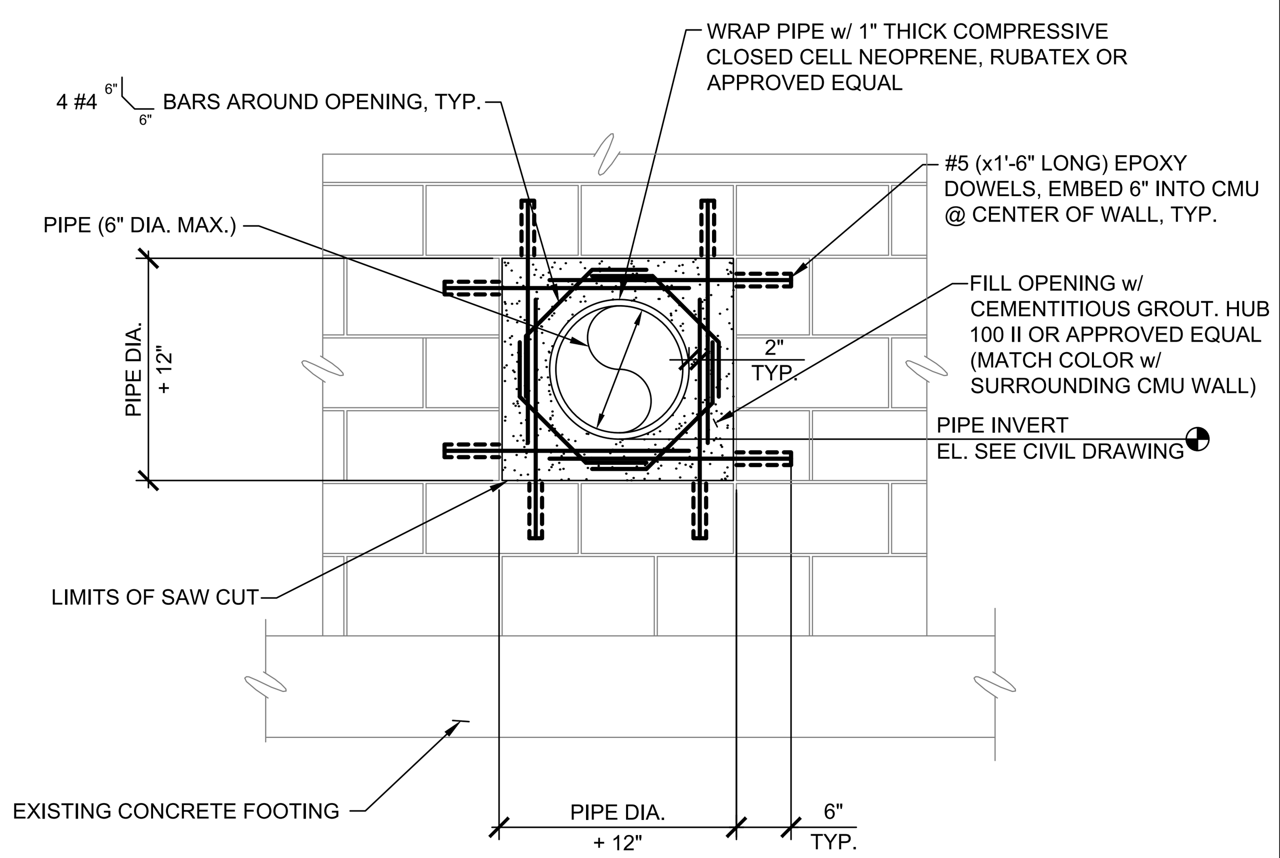
1 CONTROL VAULT FLANGE SUPPORT
SCALE: 1"=1'-0"



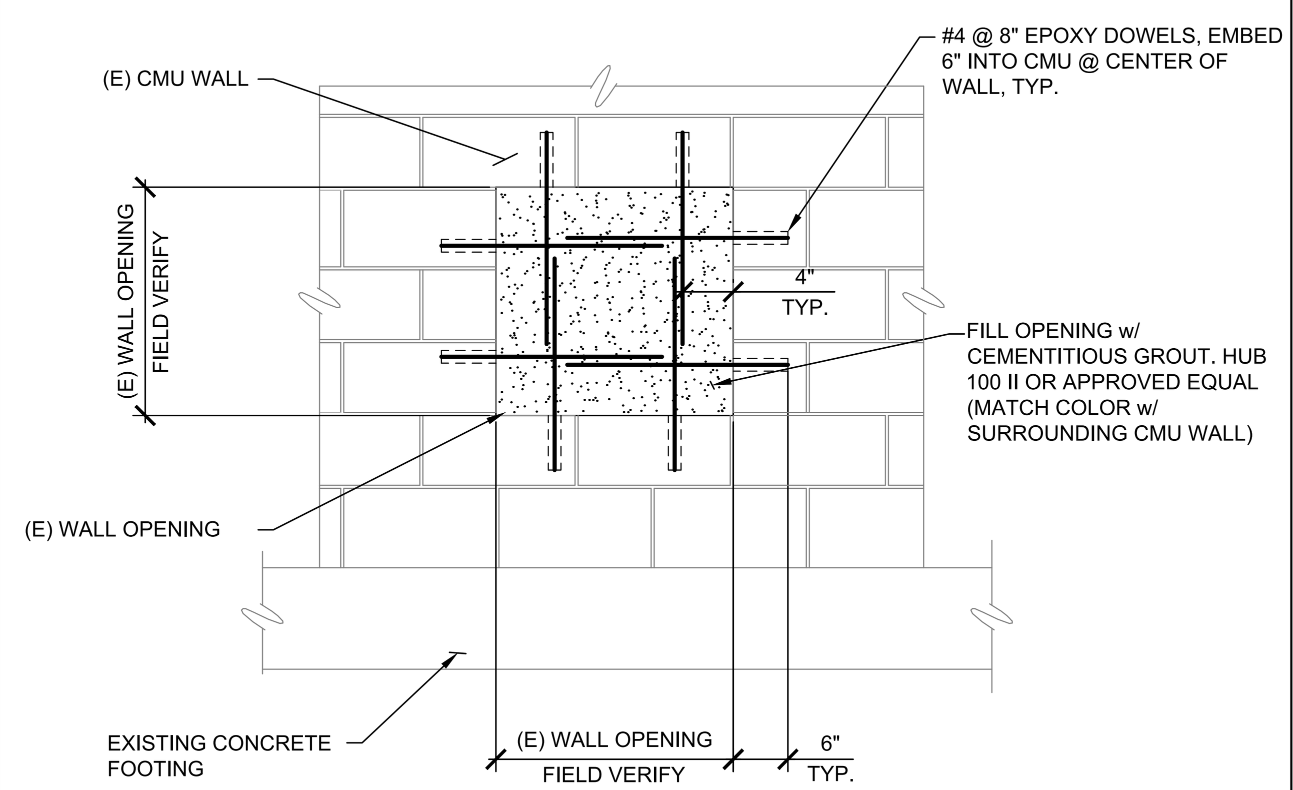
2 ACCOUSTICAL PANEL REPAIR
SCALE: 3"=1'-0"



3 CONCRETE JOINT
SCALE: 1 1/2"=1'-0"

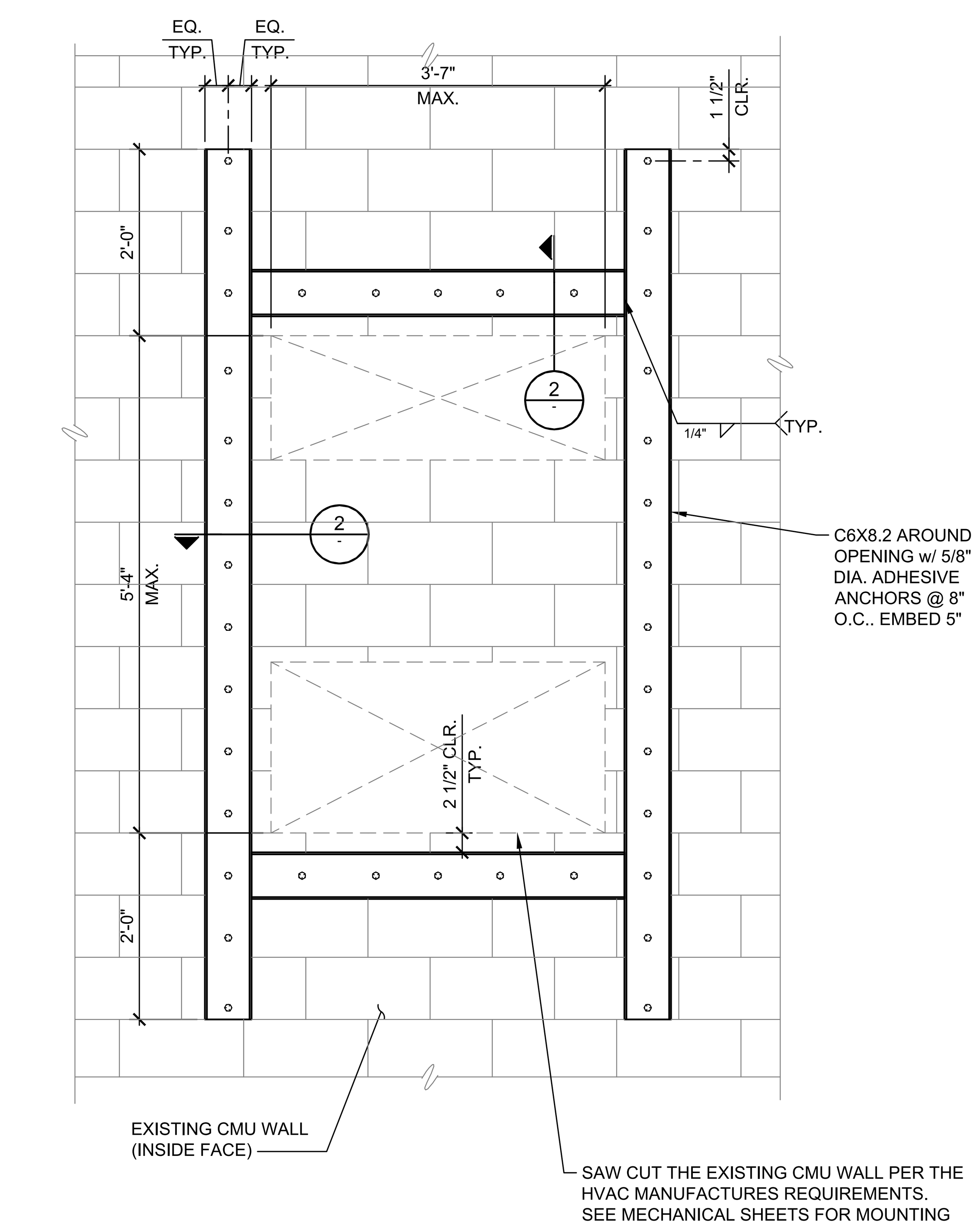


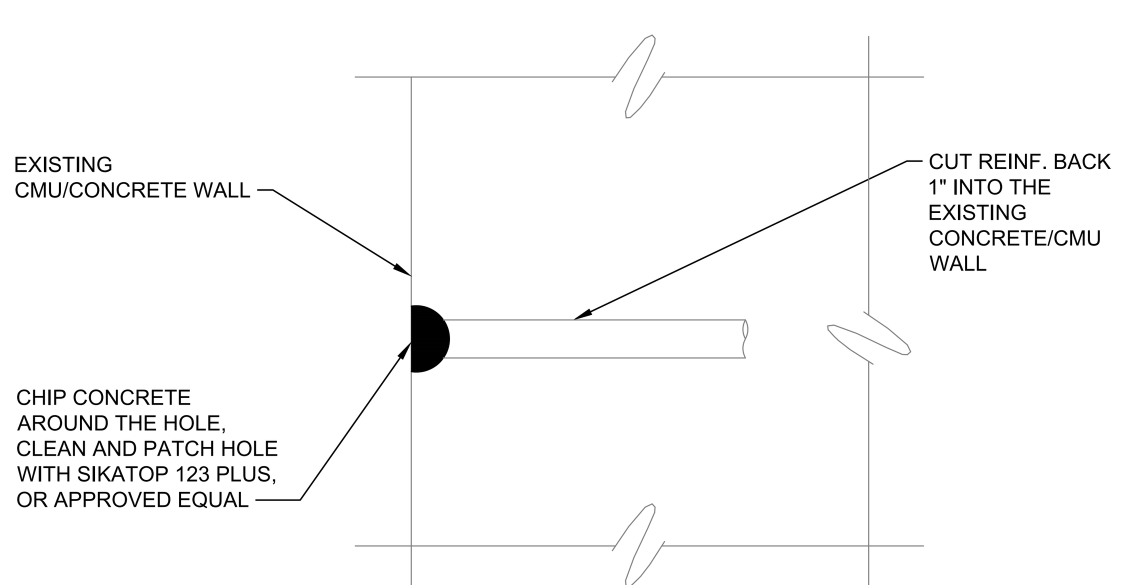
4 PIPE PENETRATION IN CMU WALL
SCALE: N.T.S.



5 ABANDON CMU WALL OPENING
SCALE: 1"=1'-0"

6
SCALE:





9 NOT USED
SCALE:

10 NOT USED
SCALE:

SA-1 Hydrogenerator

Scope of Work Exhibit

7 CMU WALL OPENING FOR HVAC UNIT
SCALE: 3/4"=1'-0"

8 PATCH REINF. AT SAW CUT LOCATIONS
SCALE: 3"=1'-0"

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MARK	DATE	DESCRIPTION	BY

ORANGE COUNTY WATER DISTRICT
CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR
STRUCTURAL DETAILS 1

PROJ:	200-09382-23010
DESN:	J. QUIROZ
DRWN:	E. HUTCHINS
CHKD:	E. YUEN

S3501

Bar Measures 1 inch, otherwise drawing not to scale

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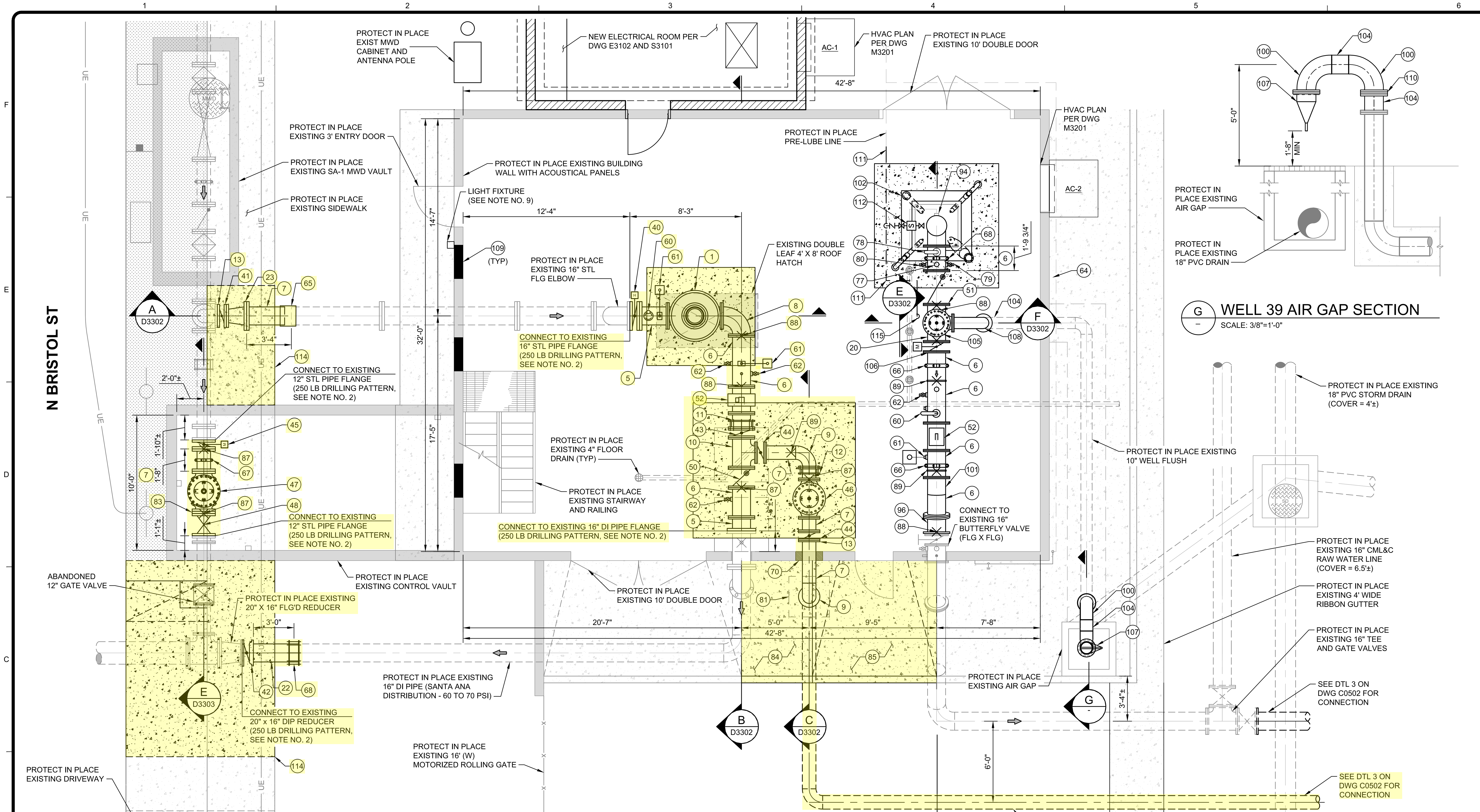

PROTECT IN PLACE EXISTING 18" PVC STORM DRAIN (COVER = 4'±)

NOTES TO CONTRACTOR:

1. CONTRACTOR SHALL PROTECT IN PLACE ALL EXISTING PIPING, APPURTENANCES, ELECTRICAL EQUIPMENT, AND VENTILATION EQUIPMENT, RAILING, AND ALL OTHER EQUIPMENT NOT TO BE REPLACED DURING CONSTRUCTION ACTIVITIES UNLESS OTHERWISE NOTED ON PLANS.
2. CONTRACTOR SHALL FIELD VERIFY FLANGE BOLT PATTERN AT EXISTING FLANGE CONNECTION POINT PRIOR TO ANY CONSTRUCTION ACTIVITY.
3. PIPING AND VALVES UPSTREAM OF THE HYDRO-GENERATOR AND WITHIN THE CONTROL VAULT SHALL BE RATED FOR 300 PSI (STEEL FLANGES SHALL BE CLASS F). PIPING AND VALVES DOWNSTREAM OF THE HYDRO-GENERATOR AND ON THE WELL DISCHARGE LINE SHALL BE RATED FOR 150 PSI (STEEL FLANGES SHALL BE CLASS D).
4. CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL CONNECTION POINTS PRIOR TO SUBMITTING SHOP DRAWINGS.
5. CONTRACTOR SHALL DISINFECT PIPING PER ANSI/AWWA C651-92.
6. ALL FLANGES SHALL BE JOINED WITH 316 SS NUTS, BOLTS, AND WASHERS.
7. ALL PIPING SHALL BE LINED AND COATED PER THE PIPE SCHEDULE ON C0106.
8. LOUVERS AND EXHAUST FAN SHALL BE INSTALLED WITHIN EXISTING WALL PENETRATIONS. CONTRACTOR SHALL LOCATE EXISTING CMU REINFORCEMENT USING NON-DESTRUCTIVE METHODS. CONTRACTOR SHALL MODIFY THESE EXISTING OPENINGS PER DTL 5 AND 7 ON DWG S3501.
9. IF THE EXISTING LIGHT FIXTURE RESTRICTS CONSTRUCTION ACTIVITIES FOR THE WIDENING OF THE LOUVERS, THE CONTRACTOR SHALL REMOVE AND REPLACE THE EXISTING LIGHT FIXTURE PER DWG E3102.

SA-1 Hydrogenerator

Scope of Work Exhibit

WELL 39 BUILDING PLAN

SCALE: 1/4" = 1'-0"

0 2' 4' 8'

SCALE: 1/4" = 1'-0"

N

CONSTRUCTION NOTES

X	CONSTRUCTION NOTES
1	PROPOSED 16" HYDRO GENERATOR (CANYON HYDRO ILT-16 OR APPROVED EQUAL) (150LB DRILLING PATTERN)
5	16" STEEL PIPE (CL300 FLG X CL150 FLG)
6	16" STEEL PIPE
7	12" STEEL PIPE
8	16" STEEL 90° BEND
9	12" STEEL 90° BEND
10	16" X 12" STEEL TEE
11	16" DISMANTLING JOINT
12	12" DISMANTLING JOINT
13	12" STEEL FLANGE (FIELD WELD)
20	16" X 10" STEEL PIPE TEE
21	12" SA-1 PRESSURE RELIEF PIPING
22	16" DI PIPE, CL350
23	16" X 12" STEEL REDUCER
40	16" (FLG X FLG) BUTTERFLY VALVE WITH HYDRAULICALLY DRIVEN ACTUATOR (FAIL-SAFE) (250 LB DRILLING PATTERN)
41	12" (FLG X FLG) BUTTERFLY VALVE AND VALVE BOX PER CITY STD PLAN NO. 1411 (250 LB DRILLING PATTERN)
42	16" (FLG X MJ) BUTTERFLY VALVE AND VALVE BOX PER CITY STD PLAN NO. 1411
43	16" (FLG X FLG) BUTTERFLY VALVE WITH HANDWHEEL OPERATOR
44	12" (FLG X FLG) BUTTERFLY VALVE WITH HANDWHEEL OPERATOR
45	12" (FLG X FLG) BUTTERFLY VALVE WITH ELECTRIC ACTUATOR (250 LB DRILLING PATTERN)
46	12" (FLG X FLG) PRESSURE RELIEF VALVE WITH CHECK FEATURE
47	12" (FLG X FLG) PRESSURE REDUCING VALVE (250 LB DRILLING PATTERN)
48	12" (FLG X FLG) GATE VALVE (250 LB DRILLING PATTERN)
50	16" (FLG X FLG) SILENT GLOBE CHECK VALVE
51	16" (FLG X FLG) CHECK VALVE WITH POSITION INDICATOR
52	16" (FLG X FLG) MAGNETIC FLOW METER
60	2" COMBINATION AIR RELEASE/VACUUM VALVE PER DTL 1 ON DWG D0503
61	PRESSURE TRANSMITTER AND GAUGE PER DTL 3 ON DWG D0501
62	2" SPARE PIPE TAP PER DTL 2 ON DWG D0501
64	1-1/2" COPPER SHOWER SERVICE. MOUNT TO BUILDING WALL PER DTL 4 ON DWG D3501
65	BUTT STRAP PER DTL 4 ON DWG C0501
66	16" GROOVED END VICTAULIC COUPLING
67	12" GROOVED END VICTAULIC COUPLING
68	16" FLEXIBLE COUPLING
70	ACOUSTICAL PANEL WALL PENETRATION PER DTL 3 ON DWG D3501
77	HIGH LOW PRESSURE SWITCH AND GAUGE PER DTL 5 ON DWG D0501
78	3" DEEP WELL AIR VALVE PER DTL 6 ON DWG D0501
79	2" SAMPLE TAP PER DTL 7 ON DWG D0503
80	2" SAND SAMPLE TAP PER DTL 5 ON DWG D3501
81	CONCRETE ENCASEMENT PER DTL 1 ON DWG C0501
83	12" STEEL ORIFICE PLATE (CRITERIA: Q=3,500 GPM, ΔP=58', BORE=6.2"±)
84	CONSTRUCT 4" THICK CONCRETE WALK IN KIND
85	CONSTRUCT 6" THICK CONCRETE RAMP IN KIND (REINFORCED WITH #4 REBAR @ 12" EACH WAY WITH 2" CLR FROM TOP OF SURFACE)
86	CONSTRUCT 4" WIDE RIBBON GUTTER PER DTL 2 ON DWG C0501
87	CONCRETE FLANGE PIPE SUPPORT PER DTL 5 ON DWG D3501
88	FLANGE PIPE SUPPORT PER DTL 5 ON DWG D0502
89	STANCHION PIPE SUPPORT PER DTL 4 ON DWG D0502
94	INSTALL NEW VERTICAL TURBINE WELL PUMP PER SPEC 11290
96	16" STL 11.25 DEGREE BEND (FLG X FLG)
100	10" STL 90 DEGREE BEND
101	16" STL 11.25 DEGREE BEND (FLG X PE)
102	MODIFY EXISTING WELL ACCESSORY TUBING PER DTL 1 ON DWG D3502. CONSTRUCT CONCRETE WELL BASE PER DTL 6 ON DWG S0504
104	10" STL PIPE
105	10" DEEP WELL PUMP CONTROL VALVE (ANGLE PATTERN)
106	16" MOTOR OPERATED BUTTERFLY VALVE
107	10" DUCKBILL CHECK VALVE TIDEFLEX OR APPROVED EQUAL
108	10" STL ELBOW
109	PATCH EXISTING LOUVER OPENING PER DTL 5 ON DWG S3501
110	WELL 39 FLUSH - 10" STEEL ORFICE PLATE (CRITERIA: Q=3,100 GPM, Δ = 46', BORE = 6.1" ±)
111	2" COPPER PIPING (TYPE "K" SOFT)
112	PRE-LUBE ASSEMBLY PER DTL 8 ON D0501
114	CONSTRUCT CONCRETE SIDEWALK PER DWG C0103
115	PUMP CONTROL VALVE CONNECTION - 1/2" SS NIPPLES, 1/2" SS BALL VALVE, 1/2" SS UNION, 1/2"RPPD AND 1/2" SWEAT X NPT ADAPTER

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BID SET

REGISTERED PROFESSIONAL ENGINEER STEVEN ... No. C039261 Exp. 12-31-25 CIVIL STATE OF CALIFORNIA

9/24/25

ORANGE COUNTY WATER DISTRICT

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TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY

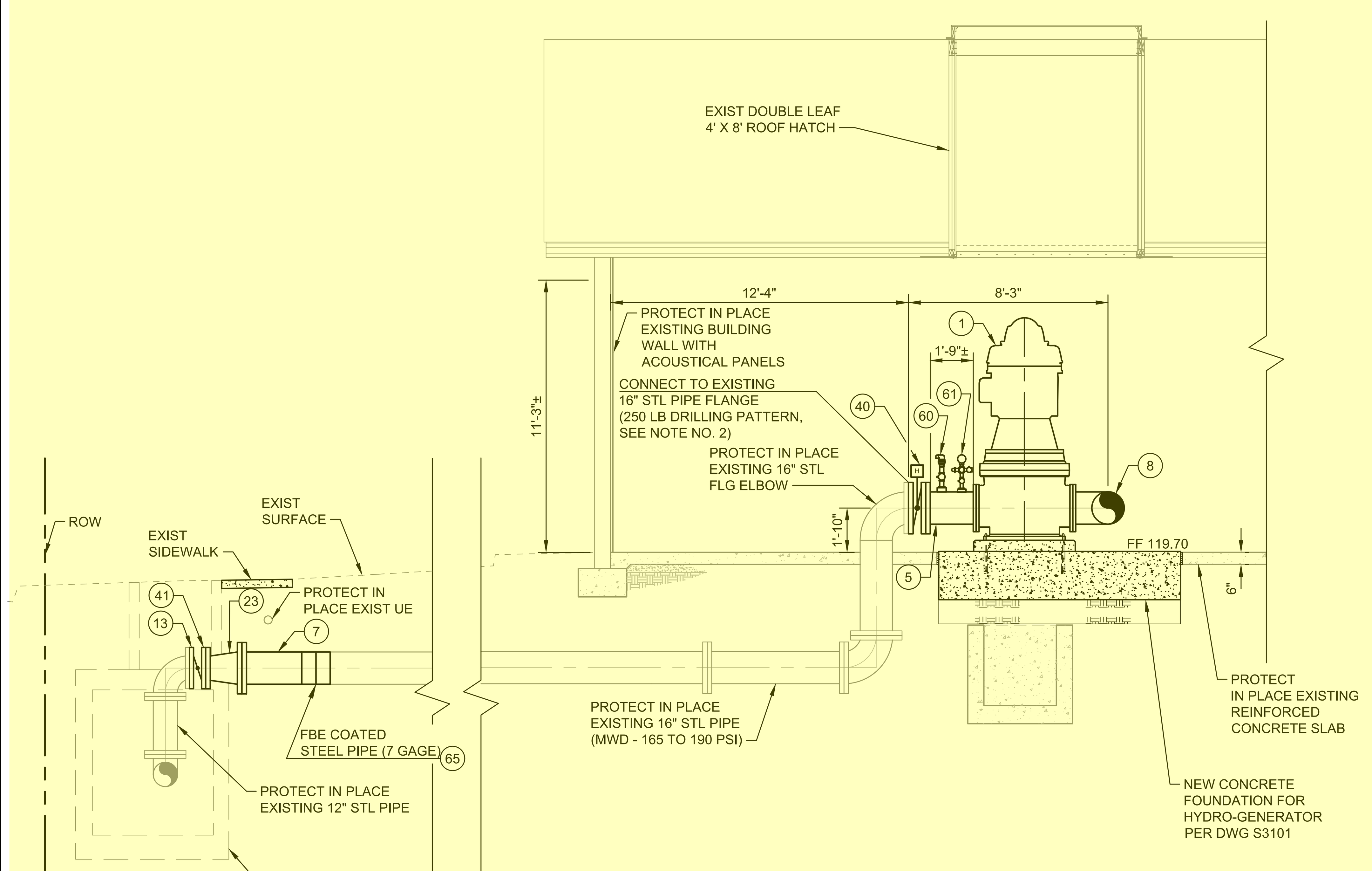
ORANGE COUNTY WATER DISTRICT

CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR

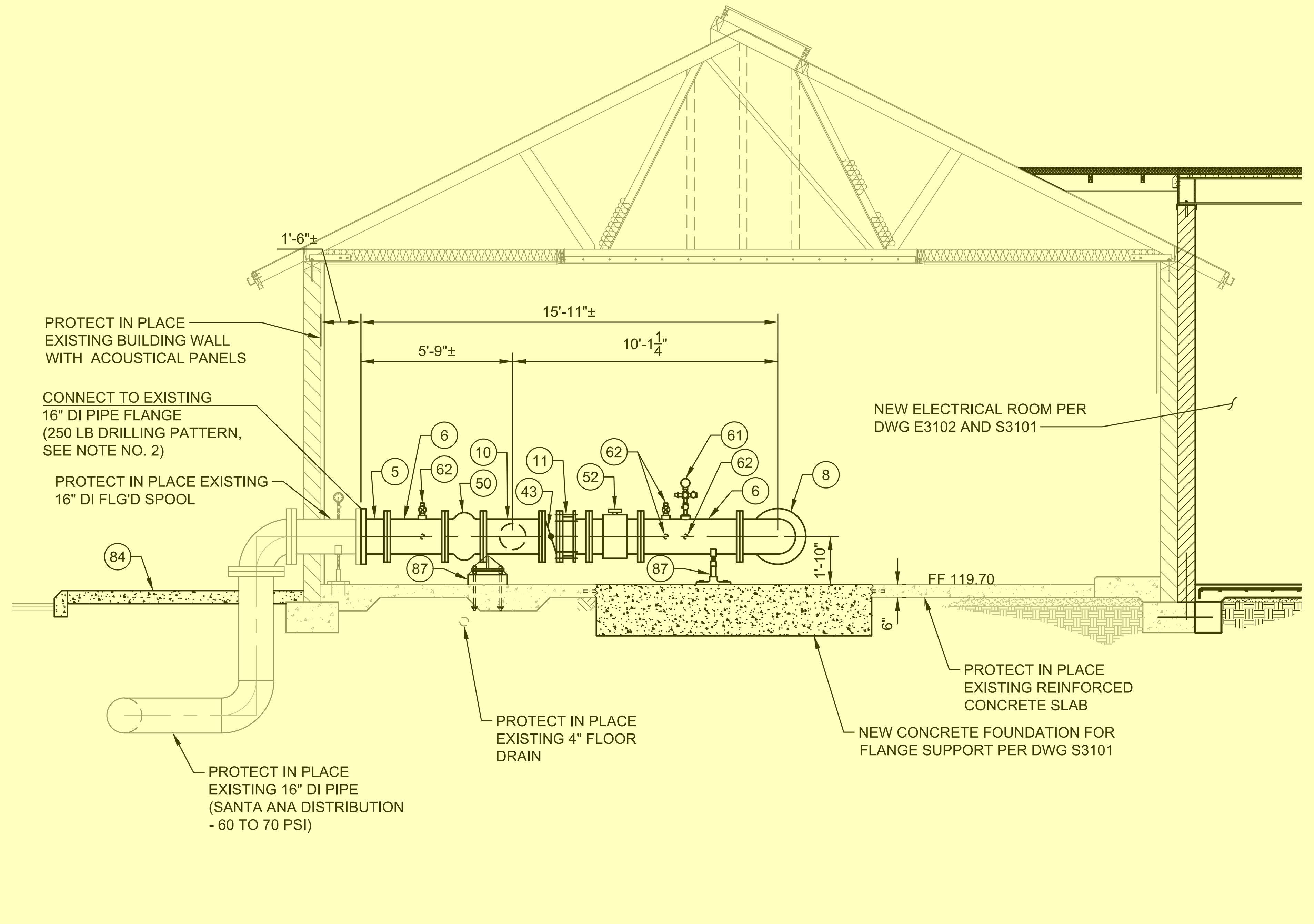
HYDRO-GENERATOR AND WELL 39 PLAN

PROJ:	200-09382-23010
DESN:	KFM
DRWN:	RWJ
CHKD:	KAB

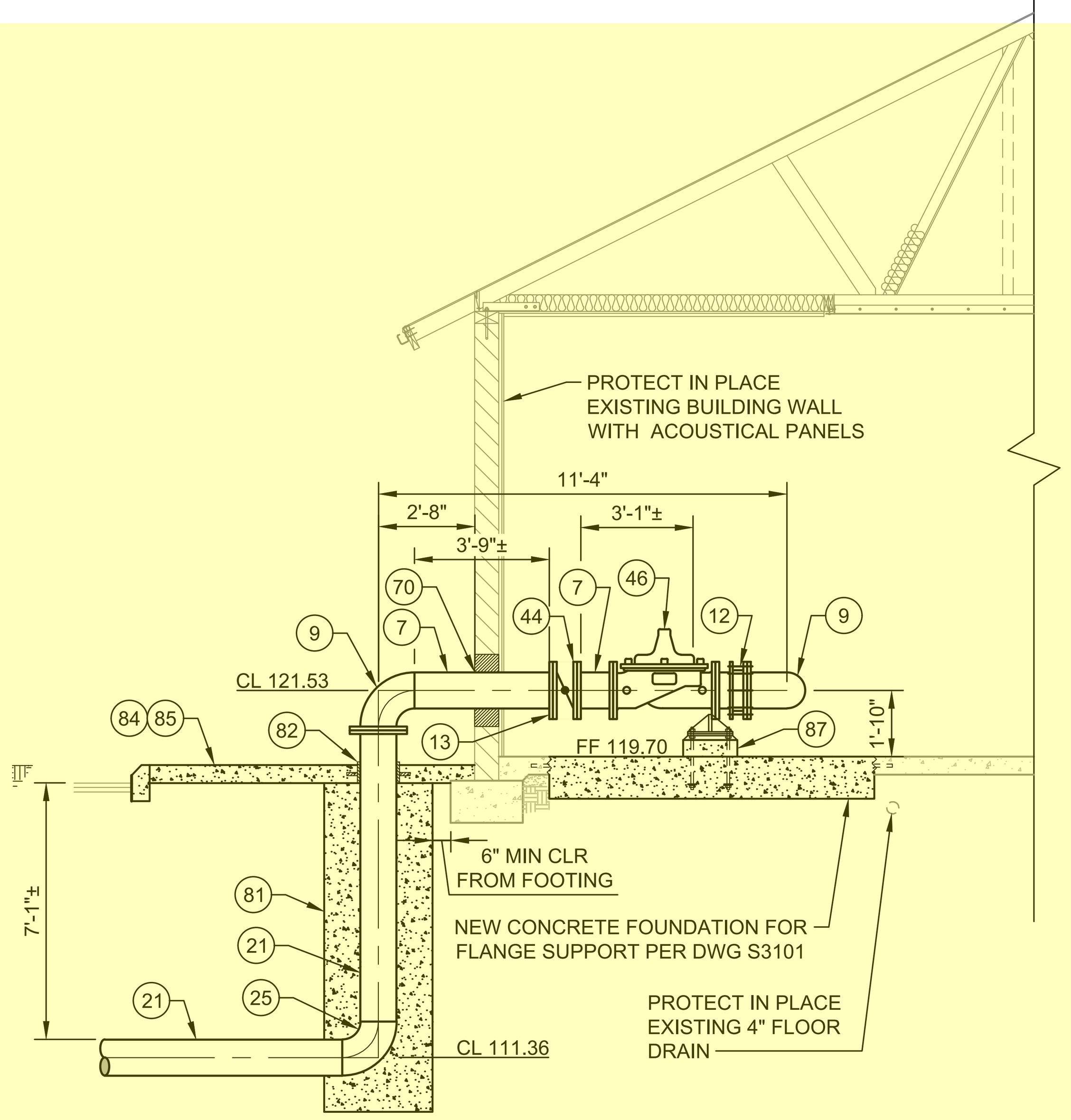
D3101



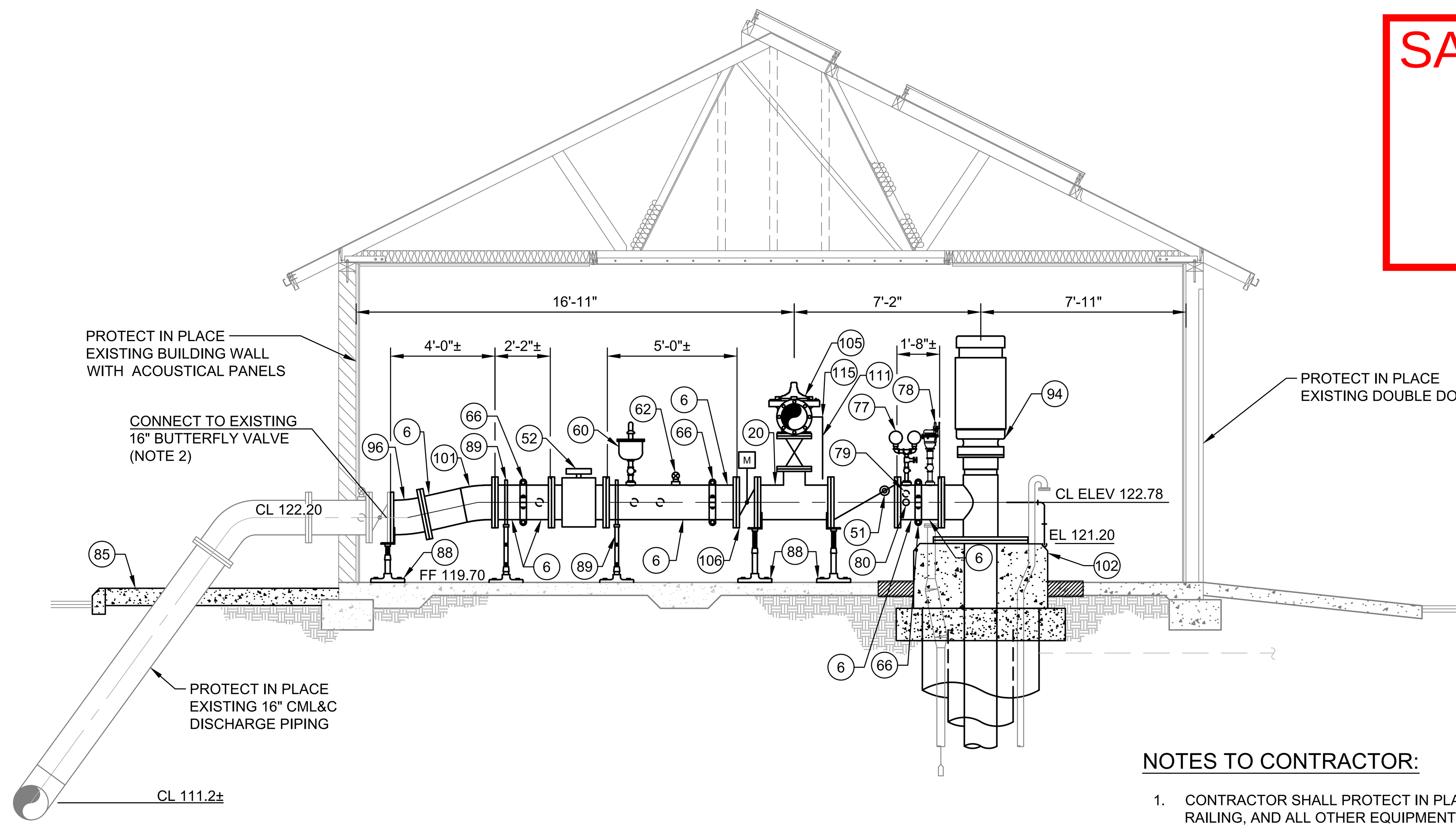
A HYDRO-GENERATOR SECTION
D3101 SCALE: 1/4"=1'-0"



B HYDRO-GENERATOR SECTION
D3101 SCALE: 1/4"=1'-0"



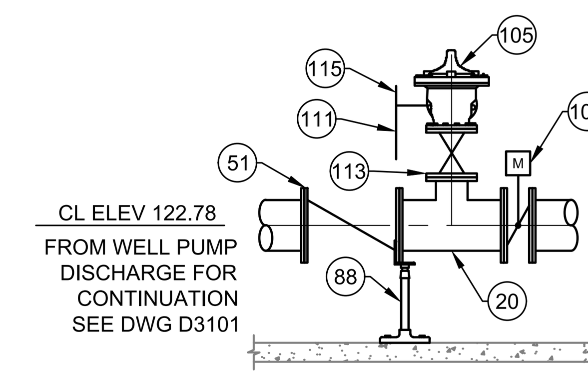
C PRESSURE RELIEF SECTION
D3101 SCALE: 1/4"=1'-0"



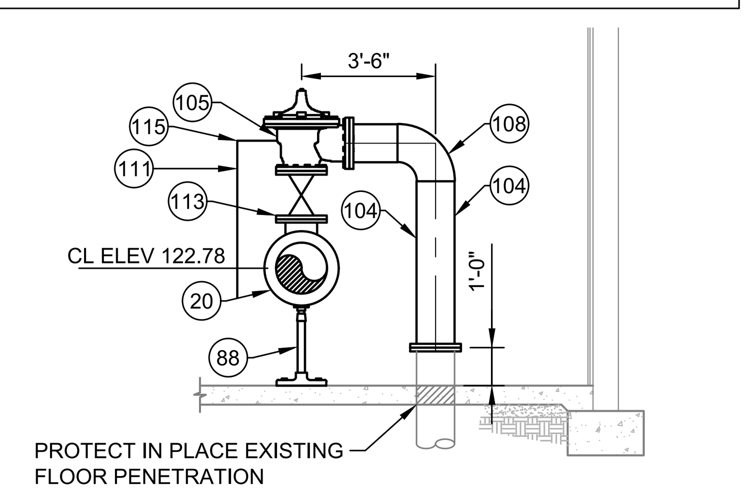
D WELL 39 DISCHARGE PIPING SECTION
D3101 SCALE: 1/4"=1'-0"

SA-1 Hydrogenerator

Scope of Work Exhibit



E PRESSURE RELIEF VALVE SECTION
D3101 SCALE: 1/4"=1'-0"



F PRESSURE RELIEF VALVE SECTION
D3101 SCALE: 1/4"=1'-0"

CONSTRUCTION NOTES

1	PROPOSED 16" HYDRO GENERATOR (CANYON HYDRO ILT-16 OR APPROVED EQUAL) (150LB DRILLING PATTERN)
5	16" STEEL PIPE (CL300 FLG X CL150 FLG)
6	16" STEEL PIPE
7	12" STEEL PIPE
8	16" STEEL 90° BEND
9	12" STEEL 90° BEND
10	16" X 12" STEEL TEE
11	16" DISMANTLING JOINT
12	12" DISMANTLING JOINT
13	12" STEEL FLANGE (FIELD WELD)
20	16" X 10" STEEL PIPE TEE
21	12" SA-1 PRESSURE RELIEF PIPING
23	16" X 12" STEEL REDUCER
25	12" STEEL 90° BEND
40	16" (FLG X FLG) BUTTERFLY VALVE WITH HYDRAULICALLY DRIVEN ACTUATOR (FAIL-SAFE) (250 LB DRILLING PATTERN)
41	12" (FLG X FLG) BUTTERFLY VALVE AND VALVE BOX PER CITY STD PLAN NO. 1411 (250 LB DRILLING PATTERN)
43	16" (FLG X FLG) BUTTERFLY VALVE WITH HANDWHEEL OPERATOR
44	12" (FLG X FLG) BUTTERFLY VALVE WITH HANDWHEEL OPERATOR
46	12" (FLG X FLG) PRESSURE RELIEF VALVE WITH CHECK FEATURE
50	16" (FLG X FLG) SILENT GLOBE CHECK VALVE
51	16" (FLG X FLG) CHECK VALVE WITH POSITION INDICATOR
52	16" (FLG X FLG) MAGNETIC FLOW METER
60	2" COMBINATION AIR RELEASE/VACUUM VALVE PER DTL 1 ON DWG D0503
61	PRESSURE TRANSMITTER AND GAUGE PER DTL 3 ON DWG D0501
62	2" SPARE PIPE TAP PER DTL 2 ON DWG D0501
65	BUTT STRAP PER DTL 4 ON DWG C0501
66	16" GROOVED END VICTAULIC COUPLING
70	ACOUSTICAL PANEL WALL PENETRATION PER DTL 3 ON DWG D3501
77	HIGH LOW PRESSURE SWITCH AND GAUGE PER DTL 5 ON DWG D0501
78	3" DEEP WELL AIR VALVE PER DTL 6 ON DWG D0501
79	2" SAMPLE TAP PER DTL 7 ON DWG D0503
80	2" SAND SAMPLE TAP PER DTL 1 ON DWG D3501
81	CONCRETE ENCASEMENT PER DTL 1 ON DWG C0501
82	FLOOR PIPE SLEEVE PER DTL 7 ON DWG D0501
84	CONSTRUCT 4" THICK CONCRETE WALK IN KIND
85	CONSTRUCT 6" THICK CONCRETE RAMP IN KIND (REINFORCED WITH #4 REBAR @ 12" EACH WAY WITH 2" CLR FROM TOP OF SURFACE)
87	CONCRETE FLANGE PIPE SUPPORT PER DTL 5 ON DWG D3501
88	FLANGE PIPE SUPPORT PER DTL 5 ON DWG D0502
89	STANCHION PIPE SUPPORT PER DTL 4 ON DWG D0502
94	INSTALL NEW VERTICAL TURBINE WELL PUMP PER SPEC 11290
96	16" STL 11.25 DEGREE BEND (FLG X FLG)
101	16" STL 11.25 DEGREE BEND (FLG X PE)
102	MODIFY EXISTING WELL ACCESSORY TUBING PER DTL 1 ON DWG D3502. CONSTRUCT CONCRETE WELL BASE PER DTL 6 ON DWG S0504
104	10" STL PIPE
105	10" DEEP WELL PUMP CONTROL VALVE (ANGLE PATTERN)
106	16" MOTOR OPERATED BUTTERFLY VALVE
108	10" STL ELBOW
111	2" COPPER PIPING (TYPE "K" SOFT)
113	10" GATE VALVE
115	PUMP CONTROL VALVE CONNECTION - 1/2" SS NIPPLES, 1/2" SS BALL VALVE, 1/2" SS UNION, 1/2"RPPD AND 1/2" SWEAT X NPT ADAPTER

NOTES TO CONTRACTOR:

1. CONTRACTOR SHALL PROTECT IN PLACE ALL EXISTING PIPING, APPURTENANCES, ELECTRICAL EQUIPMENT, AND VENTILATION EQUIPMENT, RAILING, AND ALL OTHER EQUIPMENT NOT TO BE REPLACED DURING CONSTRUCTION ACTIVITIES UNLESS OTHERWISE NOTED ON PLANS.
2. CONTRACTOR SHALL FIELD VERIFY FLANGE BOLT PATTERN AT EXISTING FLANGE CONNECTION POINT PRIOR TO ANY CONSTRUCTION ACTIVITY.
3. CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL CONNECTION POINTS PRIOR TO SUBMITTING SHOP DRAWINGS.
4. CONTRACTOR SHALL DISINFECT PIPING PER ANSI/AWWA C651-92.
5. ALL FLANGES SHALL BE JOINED WITH 316 SS NUTS, BOLTS, AND WASHERS.
6. ALL PIPING SHALL BE LINED AND COATED PER THE PIPE SCHEDULE ON C0106.
7. ALL HYDRO-GENERATOR STEEL PIPE THICKNESS SHALL BE 0.25 INCHES.

0 2' 4' 8'
SCALE: 1/4" = 1'-0"

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Irvine, CA 92614
Tel: (949) 809-5000

BID SET
REGISTERED PROFESSIONAL ENGINEER STEVEN W. ... No. C039261 Exp. 12-31-25 CIVIL STATE OF CALIFORNIA
9/24/25

ORANGE COUNTY WATER DISTRICT
18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200
SINCE 1933

MARK	DATE	DESCRIPTION	BY

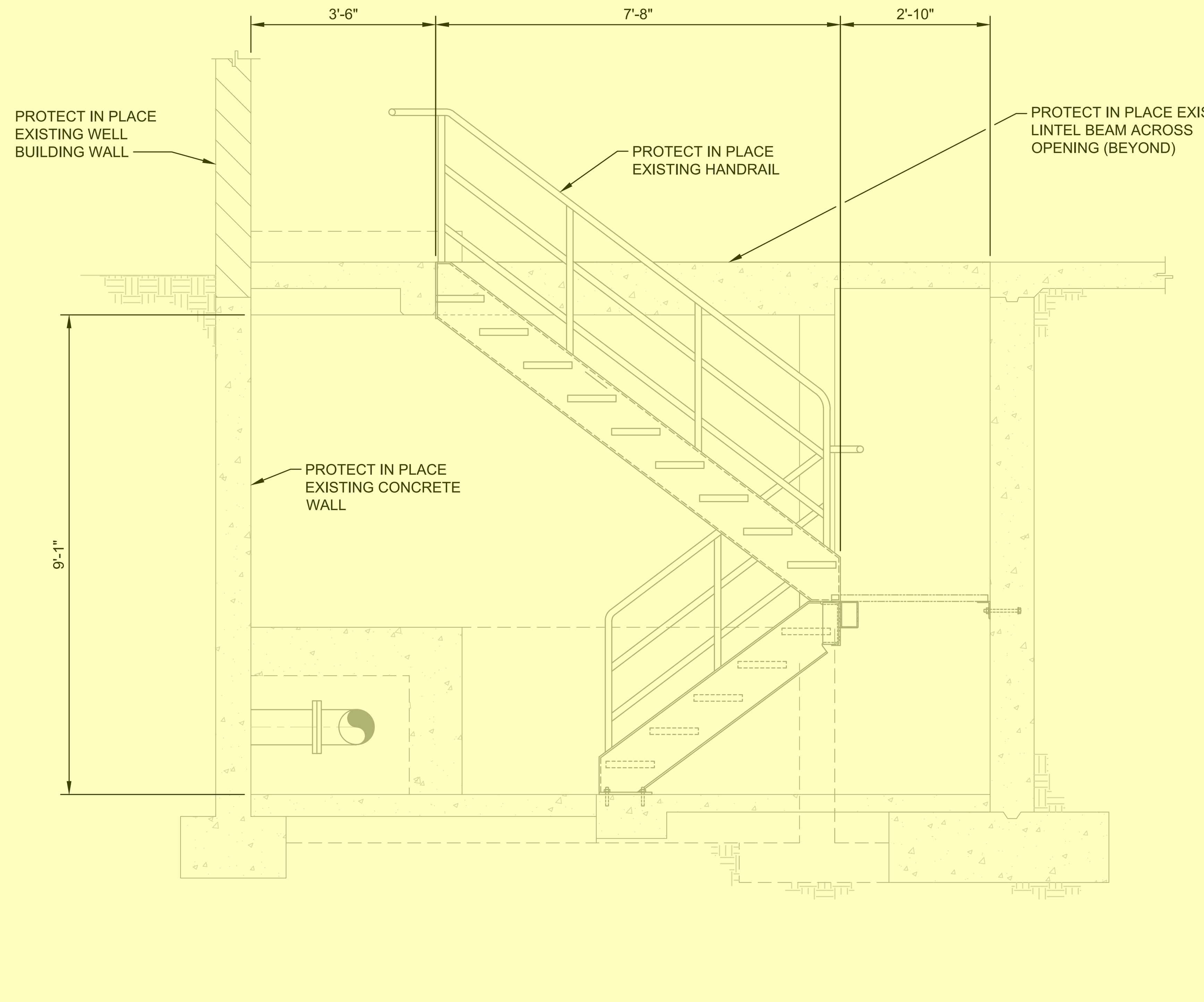
ORANGE COUNTY WATER DISTRICT
CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR
HYDRO-GENERATOR UPGRADE SECTIONS

PROJ:	200-09382-23010
DESN:	KFM
DRWN:	RWJ
CHKD:	KAB

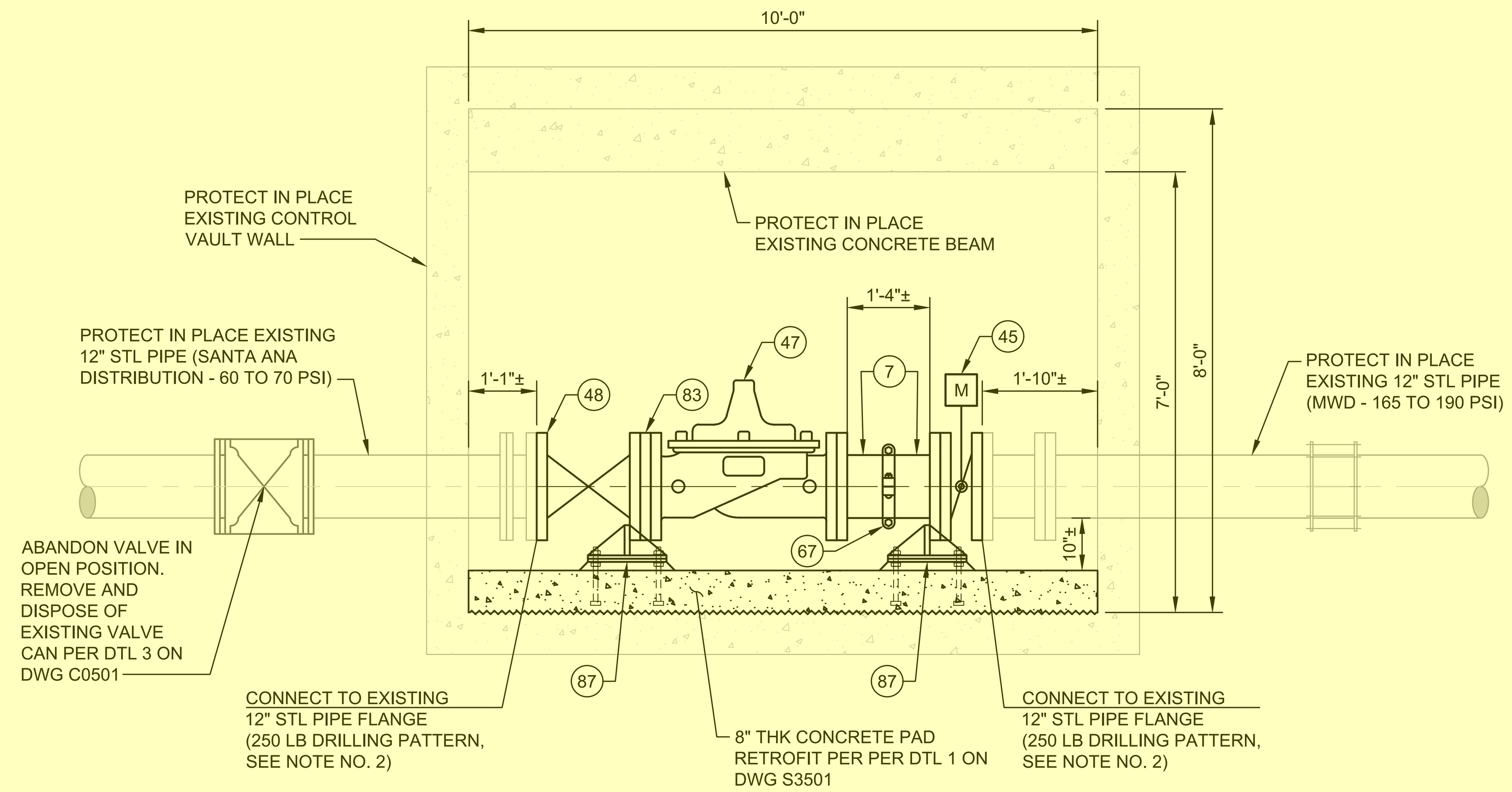
D3302

Bar Measures 1 inch, otherwise drawing not to scale

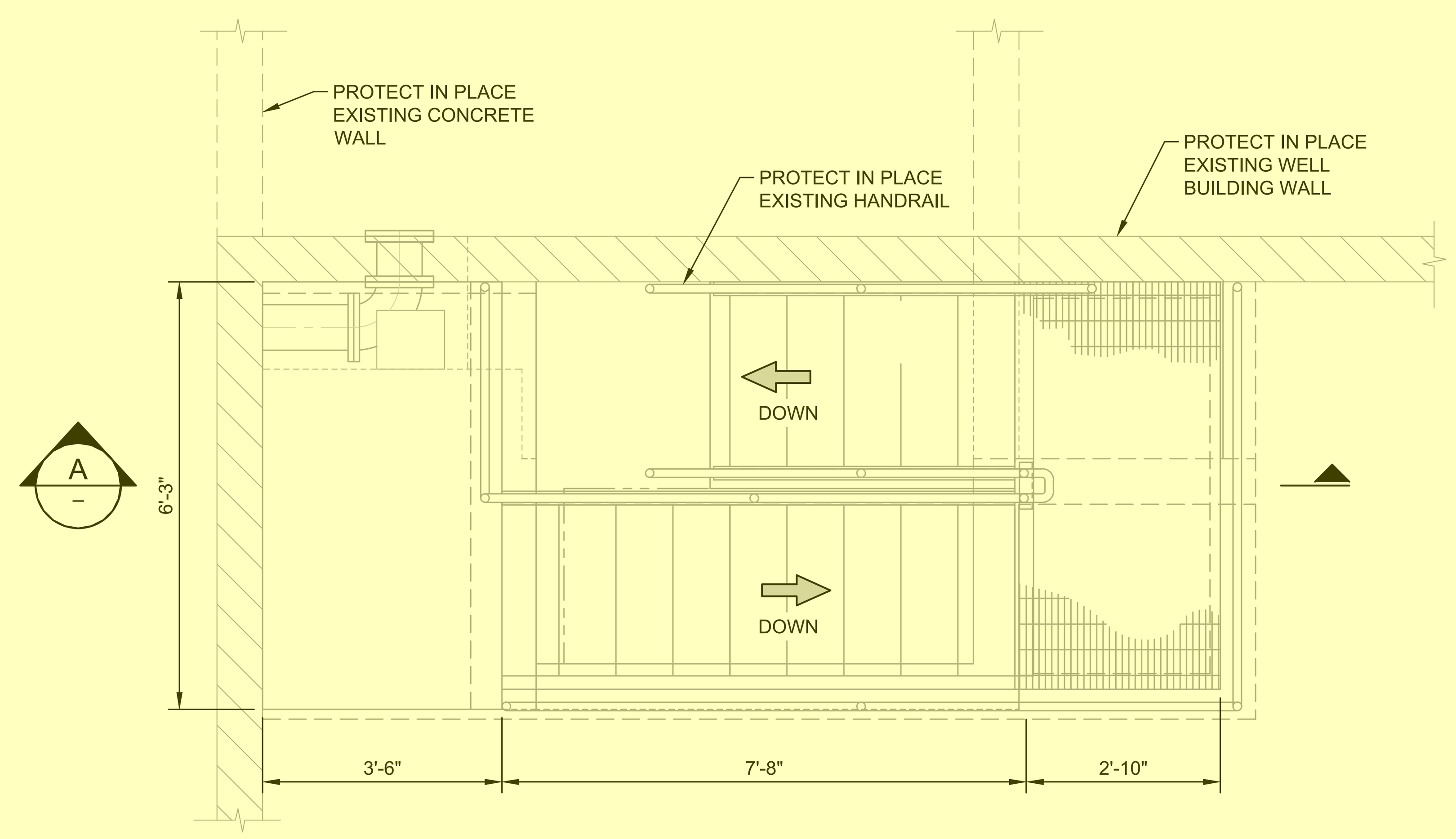
9/24/2025 8:16:50 AM - C:_ADIACCDOCS\TETRA TECH INC\200-09382-23010 JOHN GARTHE RES PFAS\PROJECT FILES\CAD\SHEETFILES\D3302_UPGRADE SECTIONS.DWG - JOHNSON, WILLIE



A
–
EXISTING STAIRS TO CONTROL VAULT SECTION
SCALE: 1/2"=1'-0"



E
D3101
CONTROL VAULT UPGRADE SECTION
SCALE: 1/2"=1'-0"



1
–
EXISTING STAIRS TO CONTROL VAULT PLAN
SCALE: 1/2"=1'-0"

CONSTRUCTION NOTES

(XX)	CONSTRUCTION NOTES
7	12" STEEL PIPE
45	12" (FLG X FLG) BUTTERFLY VALVE WITH ELECTRIC ACTUATOR (250 LB DRILLING PATTEN)
47	12" (FLG X FLG) PRESSURE REDUCING VALVE (250 LB DRILLING PATTERN)
48	12" (FLG X FLG) GATE VALVE (250 LB DRILLING PATTERN)
67	12" GROOVED END VICTAULIC COUPLING
83	12" STEEL ORIFICE PLATE (CRITERIA: Q=3,500 GPM, ∆P=58', BORE=6.2"±)
87	CONCRETE FLANGE PIPE SUPPORT PER DTL 5 ON DWG D3501

SA-1 Hydrogenerator

Scope of Work Exhibit

NOTES TO CONTRACTOR:

1. CONTRACTOR SHALL PROTECT IN PLACE ALL EXISTING PIPING, APPURTENANCES, ELECTRICAL EQUIPMENT, AND VENTILATION EQUIPMENT, RAILING, AND ALL OTHER EQUIPMENT NOT TO BE REPLACED DURING CONSTRUCTION ACTIVITIES UNLESS OTHERWISE NOTED ON PLANS.
2. CONTRACTOR SHALL FIELD VERIFY FLANGE BOLT PATTERN AT EXISTING FLANGE CONNECTION POINT PRIOR TO ANY CONSTRUCTION ACTIVITY.
3. CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL CONNECTION POINTS PRIOR TO SUBMITTING SHOP DRAWINGS.
4. CONTRACTOR SHALL DISINFECT PIPING PER ANSI/AWWA C651-92.
5. ALL FLANGES SHALL BE JOINED WITH 316 SS NUTS, BOLTS, AND WASHERS.
6. ALL PIPING SHALL BE LINED AND COATED PER SCHEDULE ON DWG C0106.

0 1' 2' 4'
SCALE: 1/2" = 1'-0"

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9/24/25

ORANGE COUNTY WATER DISTRICT
18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY

ORANGE COUNTY WATER DISTRICT
CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR
CONTROL VAULT SECTIONS

PROJ:	200-09382-23010
DESN:	KFM
DRWN:	RWJ
CHKD:	KAB

D3303

Bar Measures 1 inch, otherwise drawing not to scale

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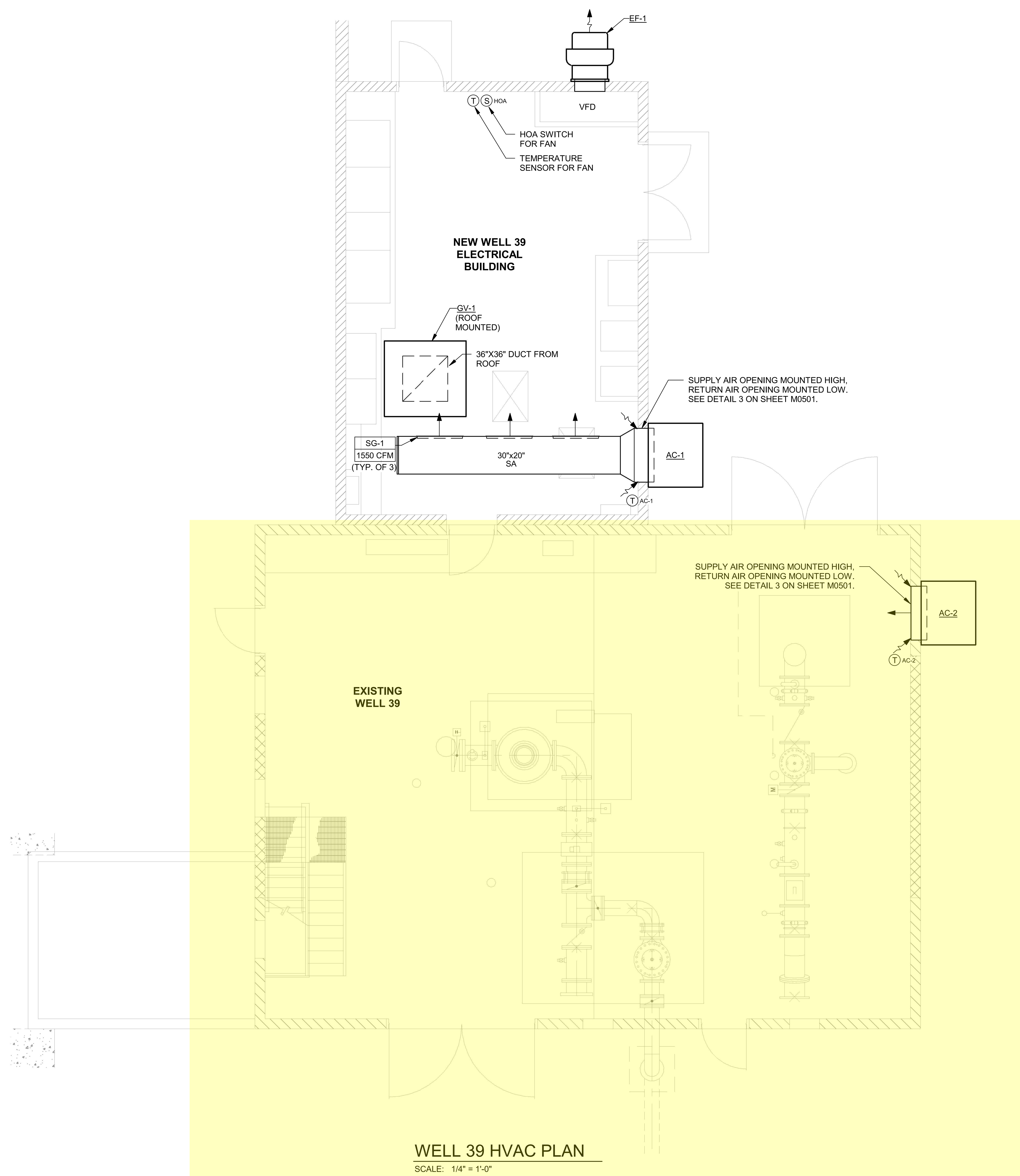

WELL 39 HVAC PLAN

SCALE: 1/4" = 1'-0"

SA-1 Hydrogenerator

Scope of Work Exhibit

NOTE:

1. SEE DWG CD3101 FOR DEMOLITION OF EXISTING WELL NO.39 HVAC EQUIPMENT.

SCALE: 1/4" = 1'-0"

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ORANGE COUNTY WATER DISTRICT

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FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY

ORANGE COUNTY WATER DISTRICT

PFAS TREATMENT AT JOHN GARTHE RESERVOIR

WELL 39 HVAC PLAN

PROJ:	200-09382-23010
DESN:	TRB
DRWN:	TRB
CHKD:	LER

M3201

Bar measures 1 inch, otherwise drawing is not to scale

WALL-MOUNTED AIR CONDITIONING UNIT

MARK	AREA SERVICED	SUPPLY FAN: AIR FLOW (CFM)	SUPPLY FAN: E.S.P. (IN WG)	COOLING: TYPE	COOLING: REFRIGERANT	COOLING: COOLING STAGES	COOLING: MINIMUM CAPACITY (BTUH)	COOLING: SENSIBLE COOLING CAPACITY (BTUH)	COOLING: OUTSIDE AIR DB TEMP (DEG F)	COOLING: RETURN AIR DB TEMP (DEG F)	COOLING: EER	ELECTRICAL: V/PH/HZ	ELECTRICAL: MCA	ELECTRICAL: MOCP	UNIT DIMENSIONS	WEIGHT (LBS)	MANUFACTURER	MODEL	NOTES
AC-1	NEW WELL 39 ELECTRICAL BUILDING	4650	0.35	DX	R410A	3	159,700	142,100	85	80	10.0	460/3/60	32	40	50.64" X 43.19" X 94.22"	1290	BARD	MEGA-TEC W-150	1-2
AC-2	WELL 39 EXISTING BUILDING	4650	0.35	DX	R410A	3	159,700	142,100	85	80	10.0	460/3/60	32	40	50.64" X 43.19" X 94.22"	1290	BARD	MEGA-TEC W-150	1-2

NOTES:
1. PROVIDE UNIT WITH A HIGH SENSIBLE COOLING.

FAN SCHEDULE

MARK	AREA SERVED	LOCATION	FAN: AIRFLOW (CFM)	FAN: ESP (IN-WC)	FAN: FAN RPM	FAN: DRIVE TYPE	ELECTRICAL: HP	ELECTRICAL: BHP	ELECTRICAL: MOTOR RPM	ELECTRICAL: V / PH / HZ	WEIGHT (LBS)	MANUFACTURER	MODEL	NOTES
EF-1	WELL 39 ELECTRICAL ROOM	NORTH WALL	4600	0.3	935	DIRECT	2	0.79	1140	208/1/60	132	GREENHECK	CUE-200-VG	ALL

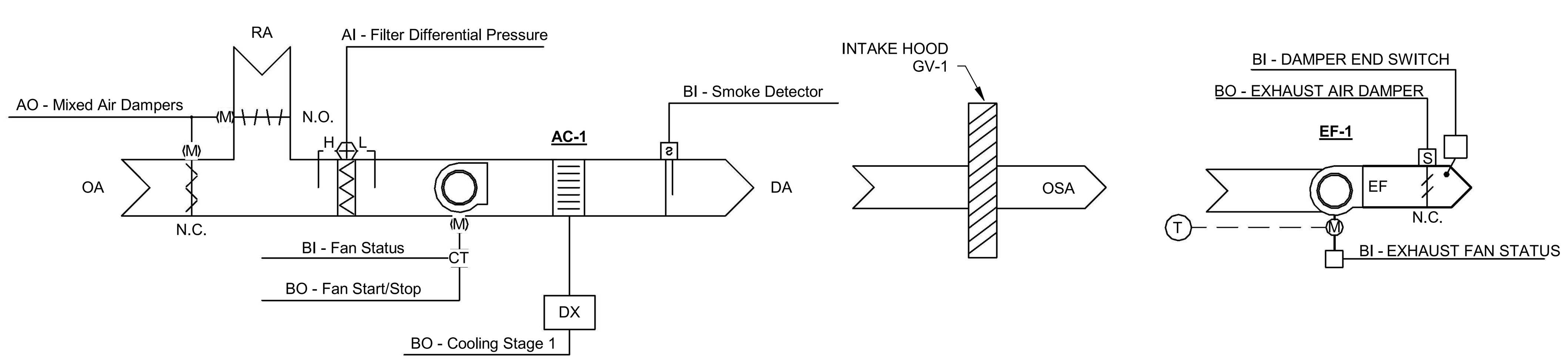
NOTES:
1. INCLUDE EC MOTOR WITH SPEED CONTROL ADJUSTMENT.
2. PROVIDE SINGLE POINT POWER CONNECTION, MOTOR WITH OVERLOAD PROTECTION, GROUND FAULT PROTECTION, EXTERNAL WIRING PIGTAIL, AND NEMA-1 DISCONNECT SWITCH.
3. BASIS OF DESIGN IS GREENHECK OR APPROVED EQUAL
4. PROVIDE FAN WITH ALLUMINUM HOUSING, GALVANIZED WALL BRACKET, STAINLESS STEEL FASTENERS.

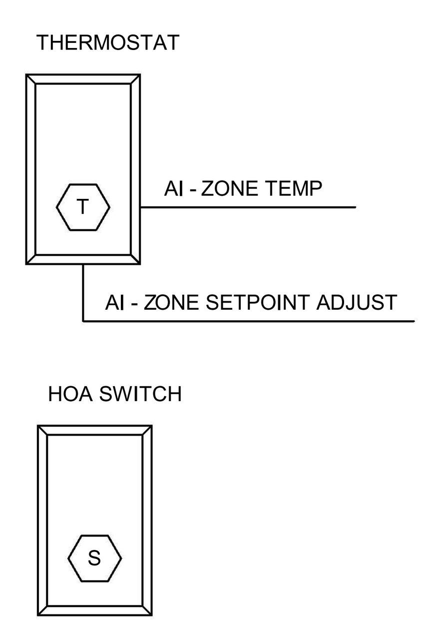
GRAVITY VENTILATOR SCHEDULE

TAG	SERVICE	AIRFLOW (CFM)	PD (IN WG)	THROAT VELOCITY (FPM)	THROAT AREA (FT^2)	ROOF OPENING: WIDTH (IN)	ROOF OPENING: LENGTH (IN)	MANUFACTURER	MODEL	NOTES
GV-1	INTAKE	4600	0.034	511	9	38.5	38.5	GREENHECK	FGI-36X36	

DIFFUSERS, GRILLES, & REGISTER SCHEDULE

MARK	MOUNTING	PANEL SIZE (IN)	NECK SIZE (IN)	MAX S.P.D. (IN WG)	MAX NC	FINISH	MANUFACTURER	MODEL	NOTES
SG-1	DUCT-MOUNTED	-	36 X 12	0.1	NC-30	STEEL	TITUS	301RL	





NEW WELL 39 ELECTRICAL BUILDING HVAC CONTROLS

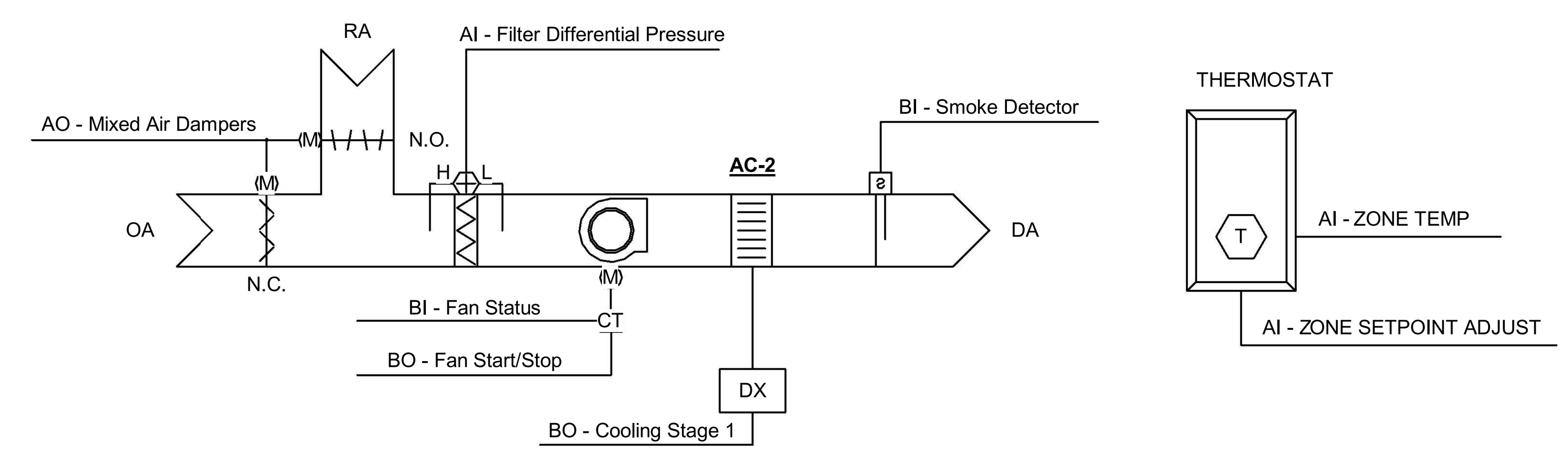
SEQUENCE SUMMARY:

THE WELL 39 ELECTRICAL BUILDING WILL BE SERVED BY EXHAUST FAN EF-1 AND INTAKE GRAVITY HOOD GV-1, WHICH WILL PROVIDE VENTILATION TO THE SPACE AND WILL BE CONTROLLED BY A WALL-MOUNTED TEMPERATURE SENSOR AND A "HAND-OFF-AUTOMATIC" SWITCH. WHEN THE TEMPERATURE SENSOR SENSES A TEMPERATURE ABOVE 70 DEG F (ADJ), EF-1 SHALL RUN. WHEN THE TEMPERATURE SENSOR SENSES A SPACE TEMPERATURE ABOVE 75 DEG F (ADJ.), EF-1 SHALL SHUT DOWN.

HAND-OFF-AUTO SWITCH:
1. WITH "HOA" IN "AUTOMATIC" POSITION: FAN SHALL FOLLOW SEQUENCE DESCRIBED ABOVE.
2. WITH "HOA" IN "HAND" POSITION: FAN SHALL ACTIVATE.
3. WITH "HOA" IN "OFF" POSITION: FAN SHALL SHUT DOWN.

THE WELL 39 ELECTRICAL BUILDING WILL ALSO BE SERVED BY WALL-PACK AIR CONDITIONER AC-1, WHICH WILL PROVIDE COOLING TO THE ELECTRICAL ROOM AND WILL BE CONTROLLED BY A WALL-MOUNTED TEMPERATURE SENSOR. WHEN THE TEMPERATURE SENSOR SENSES A SPACE TEMPERATURE ABOVE 80 DEG F (ADJ.), AC-1 WILL ACTIVATE TO MEET THE SPACE SETPOINT OF 80 DEG F (ADJ).

PROVIDE ALL NECESSARY WIRING AND CONDUIT, DEVICES, CONTROLLERS, INTERLOCKS, AND SWITCHES AS NECESSARY TO MEET THE INTENT OF THESE SEQUENCES AND THE CONTROL DIAGRAMS SHOWN. COORDINATE FOR A FULL FUNCTIONAL SYSTEM.



EXISTING WELL 39 BUILDING HVAC CONTROLS

SEQUENCE SUMMARY:

THE EXISTING WELL 39 BUILDING WILL BE SERVED BY WALL-PACK AIR CONDITIONER AC-2, WHICH WILL PROVIDE COOLING TO THE ELECTRICAL ROOM. AC-2 WILL BE CONTROLLED BY A THERMOSTAT AND WILL ACTIVATE IF THE THERMOSTAT READS A SPACE TEMPERATURE ABOVE 80°F.

ECONOMIZER: ON SIGNAL FROM THE WALL MOUNTED INDOOR THERMOSTAT, THE ECONOMIZER WILL PROVIDE COOLING WITH OUTSIDE AIR IF THE FACTORY INSTALLED ENTHALPY CONTROLLER DETERMINES WETHER THE OUTSIDE AIR IS SUFFICIENTLY COOL AND DRY TO BE USED FOR COOLING. IF SUITABLE, THE ECONOMIZER DAMPER OPENS UP TO BRING IN OUTSIDE AIR. INTEGRAL PRESSURE RELIEF ALLOWS THE INTERIOR AIR TO EXIT THE BUILDING, PERMITTING OUTSIDE AIR TO ENTER THE BUILDING.

PROVIDE ALL NECESSARY WIRING AND CONDUIT, DEVICES, CONTROLLERS, INTERLOCKS, AND SWITCHES AS NECESSARY TO MEET THE INTENT OF THESE SEQUENCES AND THE CONTROL DIAGRAMS SHOWN. COORDINATE FOR A FULL FUNCTIONAL SYSTEM.

SA-1 Hydrogenerator

Scope of Work Exhibit

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BID SET

No. C039261
Exp. 12-31-25
CIVIL
STATE OF CALIFORNIA
9/24/25

ORANGE COUNTY WATER DISTRICT
18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY

ORANGE COUNTY WATER DISTRICT

PFAS TREATMENT AT JOHN GARTHE RESERVOIR

WELL 39 HVAC SCHEDULES & CONTROLS

PROJ:	200-09382-23010
DESN:	TRB
DRWN:	TRB
CHKD:	LER

M3701

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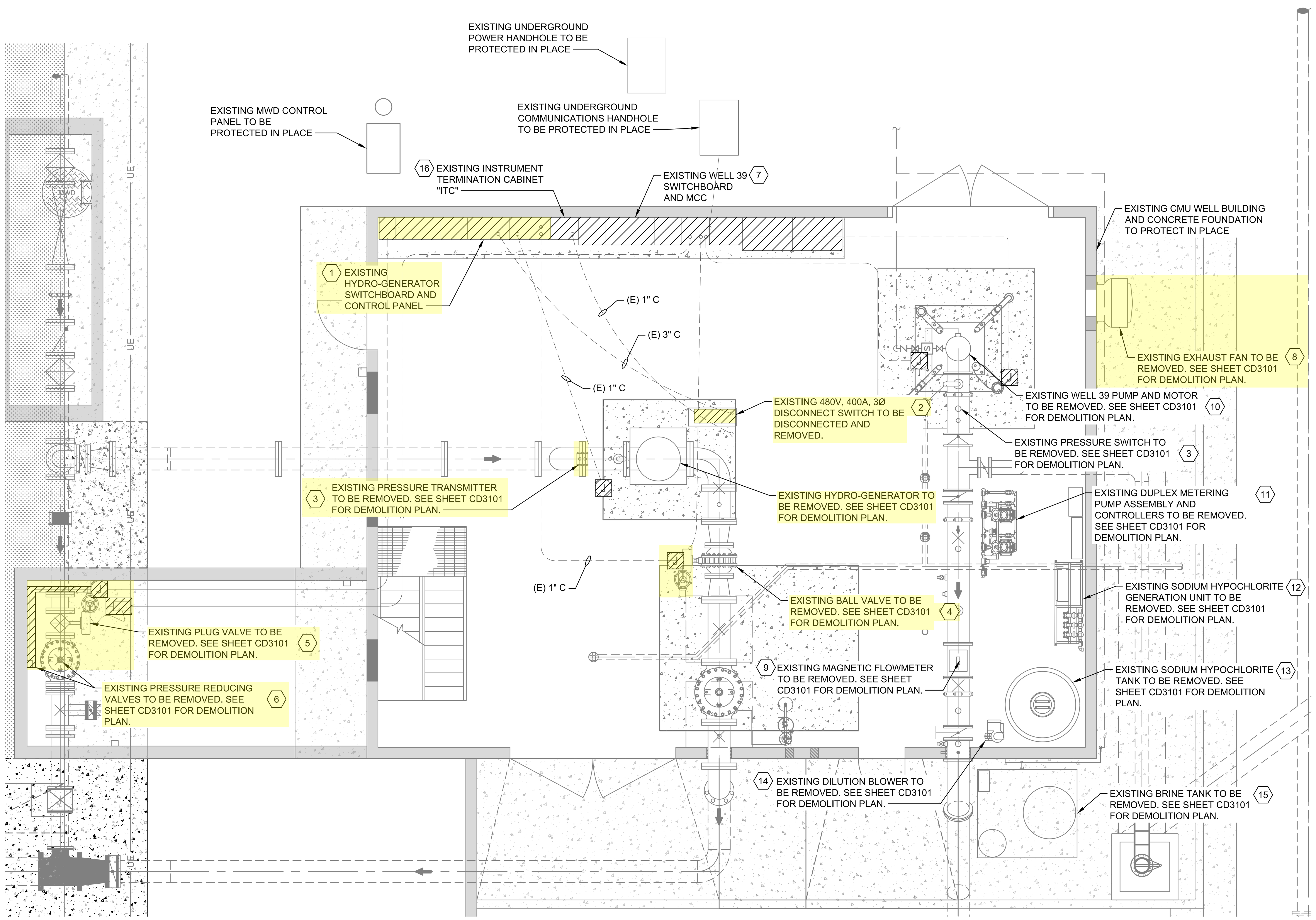

GENERAL NOTES

1. EXISTING ELECTRICAL EQUIPMENT AND CONDUITS ARE SHOWN IN APPROXIMATE LOCATIONS.

DEMOLITION NOTES

1. EXISTING HYDRO-GENERATOR SWITCHBOARD AND CONTROL PANEL TO BE DISCONNECTED AND REMOVED AFTER THE NEW WELL 39 ELECTRICAL BUILDING IS BUILT AND PFAS SYSTEM IS OPERATIONAL. USE EXISTING UNDERGROUND CONDUITS WHERE POSSIBLE TO FEED NEW HYDRO-GENERATOR SWITCHBOARD "SWBD".
2. EXISTING 480V, 400A, 3Ø DISCONNECT SWITCH TO BE DISCONNECTED AND REMOVED. CONTRACTOR TO PULL WIRES AND CAP CONDUITS.
3. EXISTING PRESSURE TRANSMITTER OR PRESSURE SWITCH TO BE REMOVED PER SHEET CD3101. CONTRACTOR TO REMOVE JUNCTION BOX, PULL WIRES, AND CAP CONDUITS.
4. EXISTING BALL VALVE WITH MOTOR CONTROLLER AND ACTUATOR TO BE REMOVED PER SHEET CD3101. CONTRACTOR TO REMOVE JUNCTION BOX, PULL WIRES, AND CAP CONDUITS.
5. EXISTING PLUG VALVE WITH MOTOR CONTROLLER TO BE REMOVED PER SHEET CD3101. CONTRACTOR TO REMOVE JUNCTION BOX, PULL WIRES, AND CAP CONDUITS.
6. EXISTING PRESSURE REDUCING VALVES WITH CONTROL BOX TO BE REMOVED PER SHEET CD3101. CONTRACTOR TO REMOVE CONTROL BOX, PULL WIRES AND REMOVE CONDUITS.
7. EXISTING WELL 39 SWITCHBOARD AND MCC TO BE DISCONNECTED AND REMOVED AFTER THE NEW WELL 39 ELECTRICAL BUILDING IS BUILT.
8. EXISTING EXHAUST FAN TO BE REMOVED PER SHEET CD3101. CONTRACTOR TO DISCONNECT, PULL WIRES, AND CAP CONDUITS.
9. EXISTING MAGNETIC FLOW METER TO BE REMOVED PER SHEET CD3101. CONTRACTOR TO PULL WIRES AND PROTECT IN PLACE EXISTING CONDUITS.
10. EXISTING WELL 39 PUMP AND MOTOR TO BE REMOVED. SEE SHEET CD3101 FOR DEMOLITION PLAN. CONTRACTOR TO PULL WIRES, AND CAP CONDUITS.
11. EXISTING ELECTRICAL SYSTEM FOR DUPLEX METERING PUMP ASSEMBLY AND CONTROLLERS TO BE DISCONNECTED AND REMOVED. SEE SHEET CD3101 FOR DEMOLITION PLAN.
12. EXISTING ELECTRICAL SYSTEM FOR SODIUM HYPOCHLORITE GENERATION UNIT TO BE DISCONNECTED AND REMOVED. SEE SHEET CD3101 FOR DEMOLITION PLAN.
13. EXISTING ELECTRICAL SYSTEM FOR SODIUM HYPOCHLORITE TANK TO BE DISCONNECTED AND REMOVED. SEE SHEET CD3101 FOR DEMOLITION PLAN.
14. EXISTING ELECTRICAL SYSTEM FOR DILUTION BLOWER TO BE DISCONNECTED AND REMOVED. SEE SHEET CD3101 FOR DEMOLITION PLAN.
15. EXISTING ELECTRICAL SYSTEM FOR BRINE TANK TO BE DISCONNECTED AND REMOVED. SEE SHEET CD3101 FOR DEMOLITION PLAN.
16. EXISTING INSTRUMENT TERMINATION CABINET "ITC" TO BE DISCONNECTED AND REMOVED AFTER THE NEW WELL 39 ELECTRICAL BUILDING IS BUILT AND PFAS SYSTEM IS OPERATIONAL. INSTALL NEW ITC IN THE ELECTRICAL BUILDING. EXISTING CONDUITS AND WIRES TO BE EXTENDED TO THE NEW ITC. REFER TO SHEET E3102 FOR MORE INFORMATION.

SA-1 Hydrogenerator

Scope of Work Exhibit

N

0 2' 4' 8'
SCALE: 1/4" = 1'-0"

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BID SET

REGISTERED PROFESSIONAL ENGINEER No. E 15809 Exp. 12-31-26 ELECTRICAL STATE OF CALIFORNIA 9/24/25

ORANGE COUNTY WATER DISTRICT
18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY

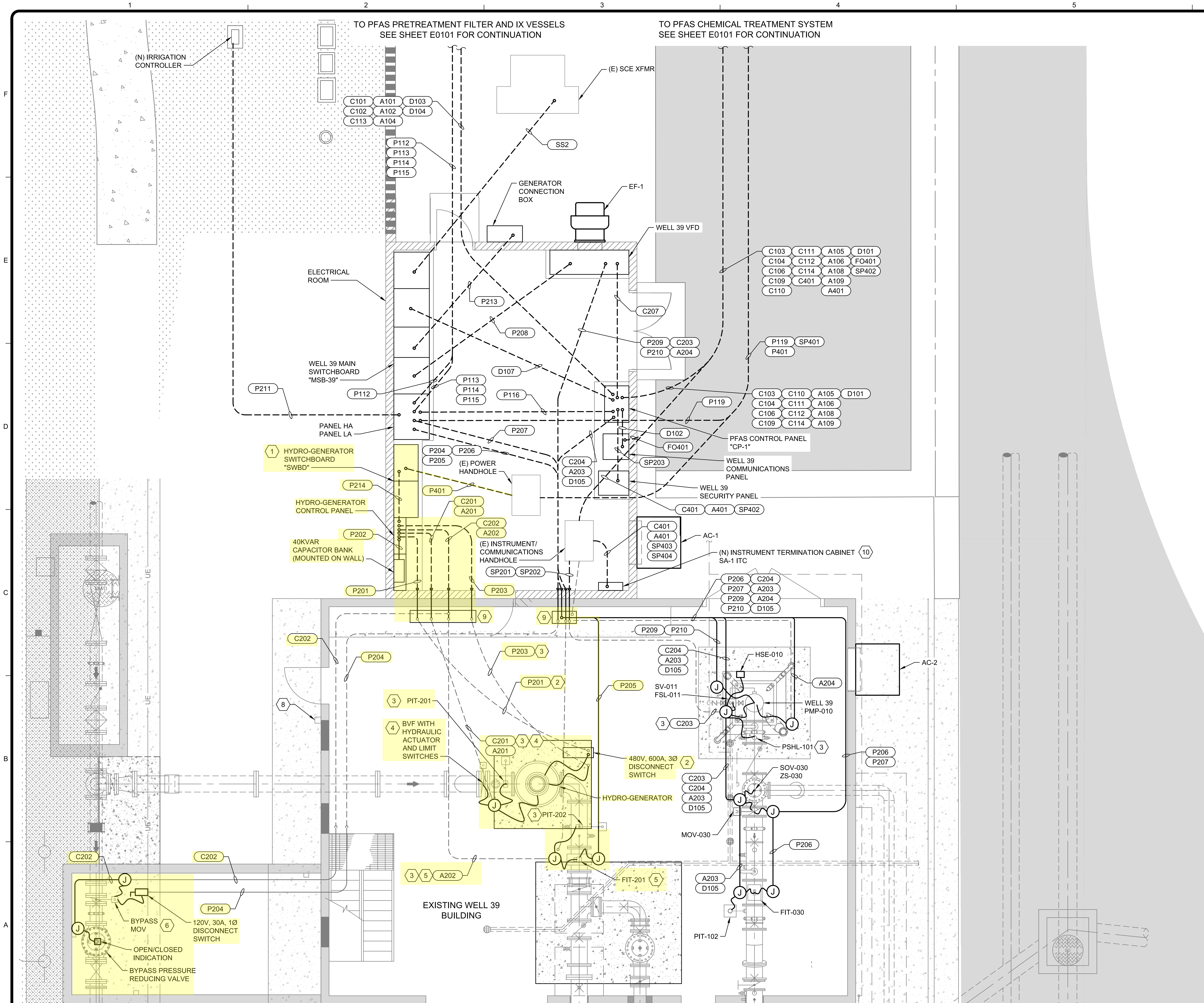
ORANGE COUNTY WATER DISTRICT

CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR

HYDRO-GENERATOR ELECTRICAL DEMO PLAN

PROJ:	200-09382-23010
DESN:	J.LE
DRWN:	J.LE
CHKD:	M.KASSAAR

E3101



GENERAL NOTES

1. ALL BELOW GRADE CONDUITS SHALL BE SCHEDULE 40 PVC AND CONCRETE ENCASED. RISERS SHALL BE PVC COATED RIGID STEEL.
2. EXPOSED CONDUITS SHALL BE PVC COATED RIGID STEEL CONDUIT.
3. ALL CONDUIT LOCATIONS ARE SCHEMATIC/ DIAGRAMATIC.
4. CONTRACTOR TO FIELD VERIFY ACTUAL LOCATIONS IN THE FIELD.

CONSTRUCTION NOTES

1. 480V, 600A, 3Ø, 3W, NEMA 1, 42KAIC HYDRO-GENERATOR SWITCHBOARD TO BE INSTALLED. CONTRACTOR TO USE EXISTING UNDERGROUND CONDUITS AND PROVIDE NEW WIRES. EXTEND CONDUITS AS NEEDED TO FEED HYDRO-GENERATOR SWITCHBOARD.
2. CONTRACTOR TO INSTALL 480V, 600A, 3Ø DISCONNECT SWITCH. CONTRACTOR TO USE EXISTING CONDUITS AND PROVIDE NEW WIRES.
3. CONTRACTOR TO USE EXISTING CONDUITS AND INSTALL NEW WIRES PER CONDUIT SCHEDULE ON E-0605.
4. BUTTERFLY VALVE WITH HYDRAULICALLY DRIVEN ACTUATOR. ACTUATOR TO INCLUDE FULL OPEN AND FULL CLOSE LIMIT SWITCHES. CONTRACTOR TO USE EXISTING CONDUITS AND INSTALL NEW WIRES PER CONDUIT SCHEDULE ON E-0605.
5. CONTRACTOR TO USE EXISTING CONDUIT AND EXTEND CONDUIT TO FLOW METER. INSTALL NEW WIRES PER CONDUIT SCHEDULE ON E-0605.
6. BUTTERFLY VALVE WITH ELECTRIC ACTUATOR. CONTRACTOR TO USE EXISTING CONDUITS AND PROVIDE NEW WIRES PER CONDUIT SCHEDULE ON E-0605.
7. NOT USED.
8. CONTRACTOR TO REPLACE WALL PACK LIGHT FIXTURE WITH LED EQUIVALENT IF LIGHT FIXTURE IS DAMAGED.
9. CONTRACTOR TO PROVIDE AND INSTALL A NEW JUNCTION BOX ABOVE THE EXISTING CONDUIT STUB UPS. THE EXISTING CONDUITS SHALL BE EXTENDED FROM THE JUNCTION BOX INTO THE ELECTRICAL ROOM AND TRANSITION FROM EXPOSED PCS CONDUIT TO UNDERGROUND PVC CONDUIT. THE CONTRACTOR SHALL CORE DRILL THROUGH THE BUILDING WALL AND SEAL THE OPENINGS.
10. CONTRACTOR TO INSTALL 30" X 24" X 8" NEMA 12 STEEL INSTRUMENT TERMINATION CABINET.

SA-1 Hydrogenerator

Scope of Work Exhibit

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TETRA TECH
www.tetratech.com
17885 Von Karman Ave, Suite 500
Irvine, CA 92614
Tel: (949) 809-5000

BID SET
REGISTERED PROFESSIONAL ENGINEER
MAZEN KASSAR
No. E 15809
Exp. 12-31-26
ELECTRICAL
STATE OF CALIFORNIA
9/24/25

ORANGE COUNTY WATER DISTRICT
18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

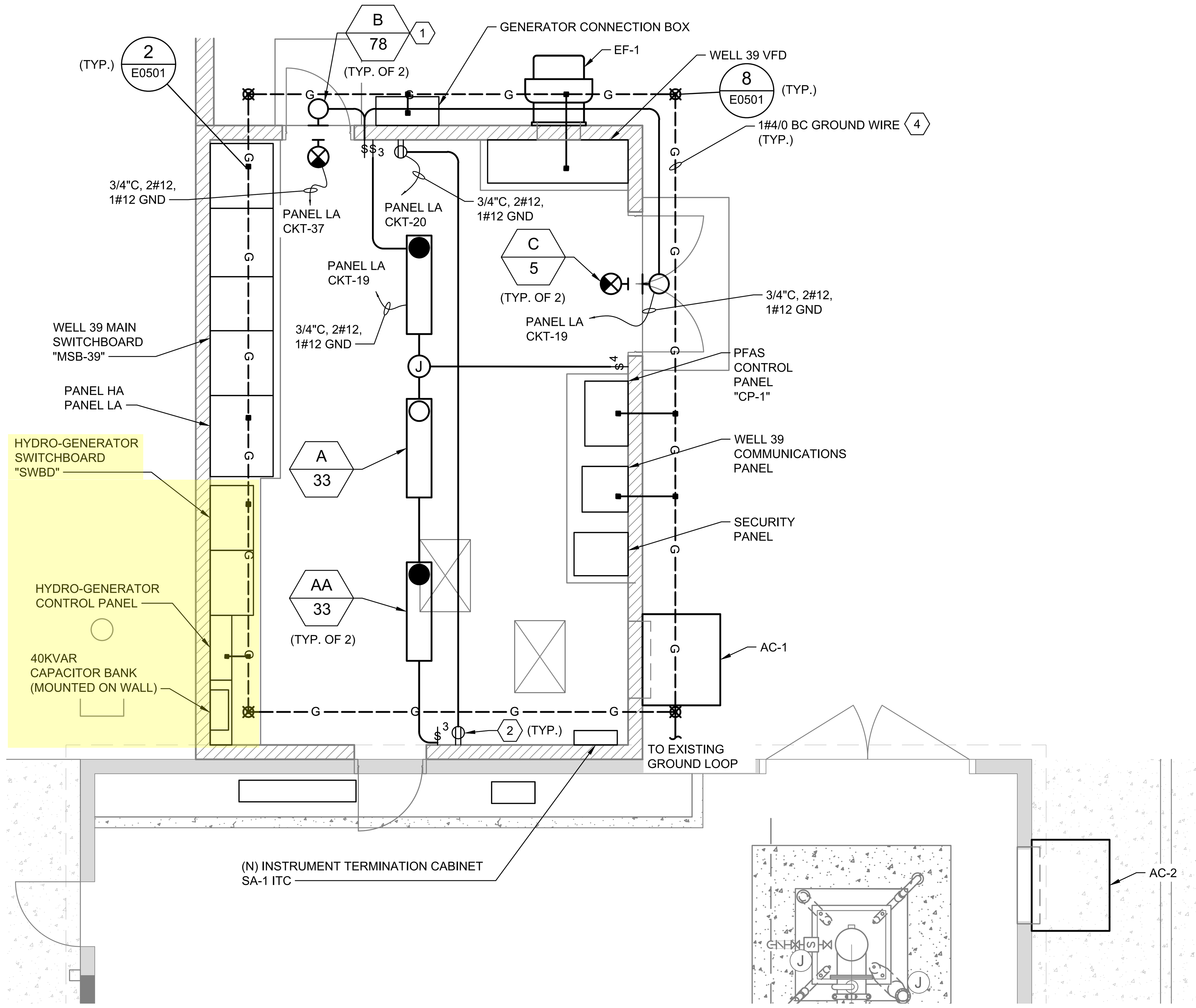
MARK	DATE	DESCRIPTION	BY

ORANGE COUNTY WATER DISTRICT
CITY OF SANTA ANA PFAS TREATMENT AT JOHN GARTHE RESERVOIR
HYDRO-GENERATOR AND WELL 39 ELECTRICAL PLAN

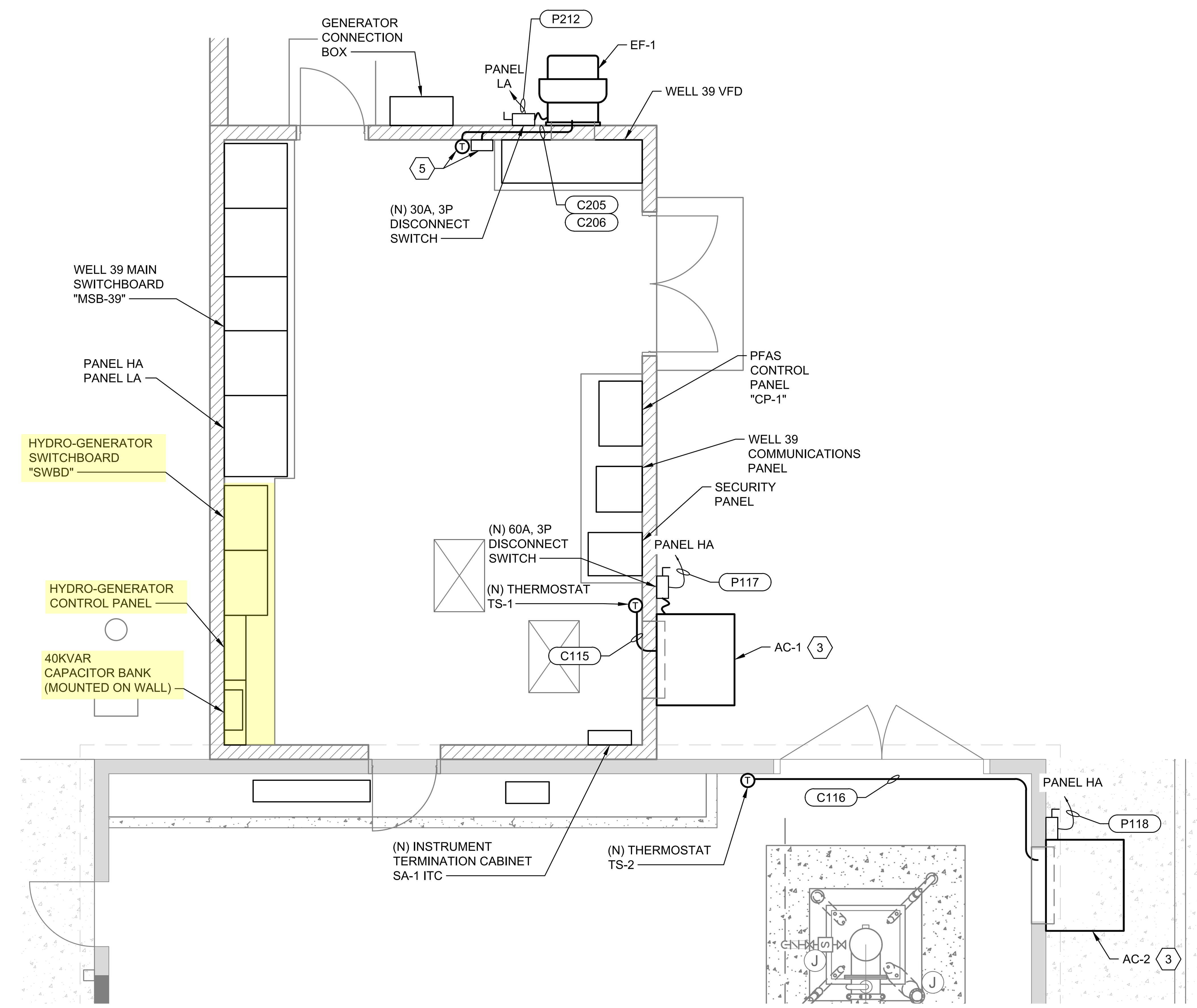
PROJ:	200-09382-23010
DESN:	J.LE
DRWN:	J.LE
CHKD:	M.KASSAR

E3102

Bar Measures 1 inch, otherwise drawing not to scale



1 WELL 39 LIGHTING AND GROUNDING FLOOR PLAN
SCALE: 1/4" = 1'-0"



2 WELL 39 ELECTRICAL HVAC PLAN
SCALE: 1/4" = 1'-0"

SA-1 Hydrogenerator

Scope of Work
Exhibit

GENERAL NOTES

1. ALL BELOW GRADE CONDUITS SHALL BE SCHEDULE 40 PVC AND CONCRETE ENCASED. RISERS SHALL BE PVC COATED RIGID STEEL.
2. EXPOSED CONDUITS SHALL BE PVC COATED RIGID STEEL CONDUIT.
3. ALL CONDUIT LOCATIONS ARE SCHEMATIC/ DIAGRAMATIC.
4. CONTRACTOR TO FIELD VERIFY ACTUAL LOCATIONS IN THE FIELD.

CONSTRUCTION NOTES

1. CENTER OF FIXTURE SHALL BE IN ALIGNMENT WITH THE DOOR BENEATH. ALL WELL FIXTURES SHALL BE MOUNTED AT THE SAME ELEVATION
2. RECEPTACLES TO BE MOUNTED AT +18" AFF.
3. INSTALL NEW AC UNIT. REFER TO MECHANICAL SHEETS FOR MORE INFORMATION.
4. INSTALL 1#4/0 AWG BC GND FROM GND RING AND BOND TO EQUIPMENT.
5. INSTALL THERMOSTAT TS-3 AND HOA SWITCH FOR EXHAUST FAN EF-1.

0 2' 4' 8'
SCALE: 1/4" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER MAZEN KASSAR No. E 15809 Exp. 12-31-26 ELECTRICAL STATE OF CALIFORNIA
9/24/25

ORANGE COUNTY
WATER DISTRICT
18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY

ORANGE COUNTY WATER DISTRICT
CITY OF SANTA ANA PFAS TREATMENT
AT JOHN GARTHE RESERVOIR
WELL 39 ELECTRICAL BUILDING
LIGHTING, GROUNDING, AND
HVAC PLAN

PROJ:	200-09382-23010
DESN:	J.LE
DRWN:	J.LE
CHKD:	M.KASSAR

E3103

Bar Measures 1 inch, otherwise drawing not to scale

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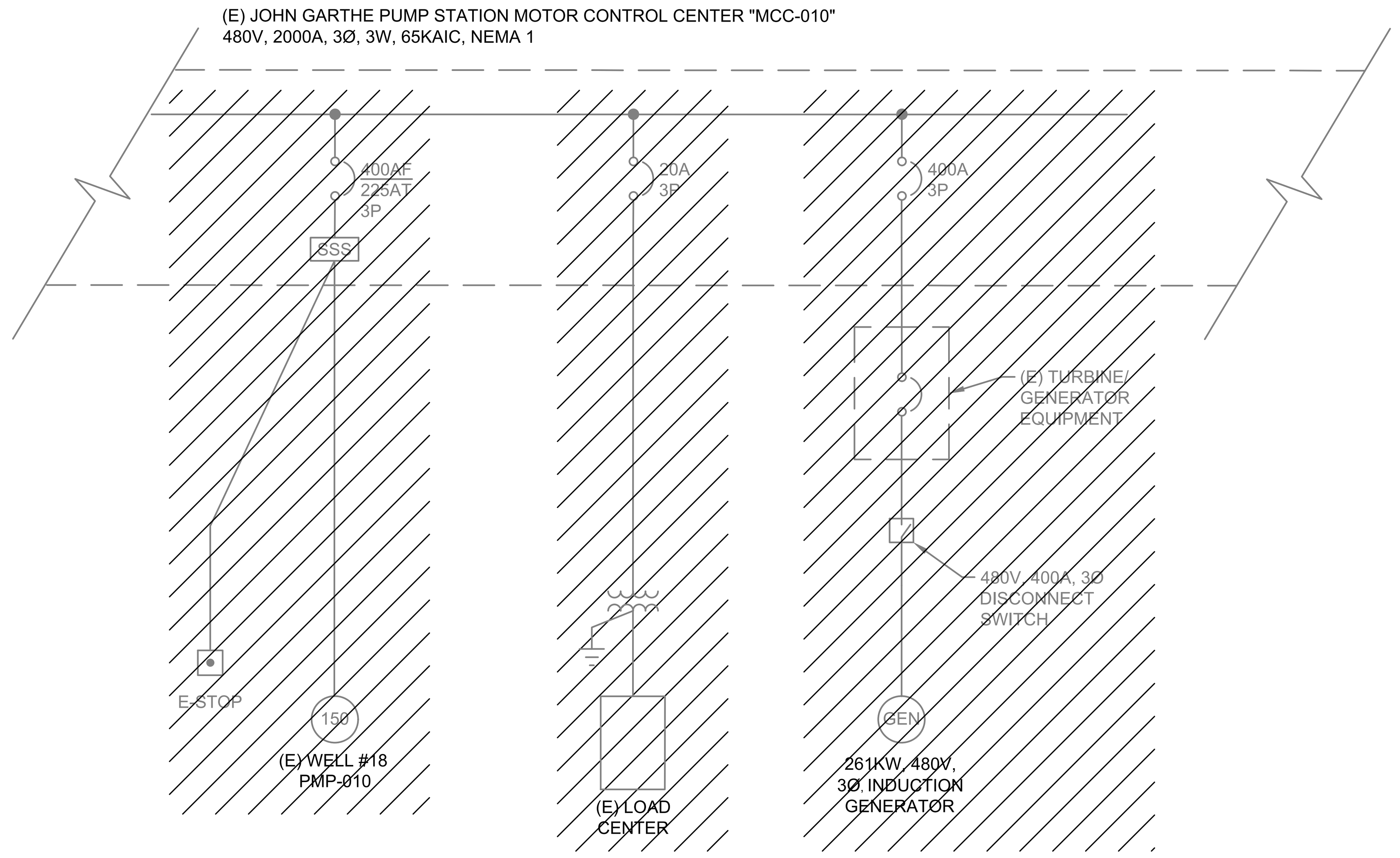
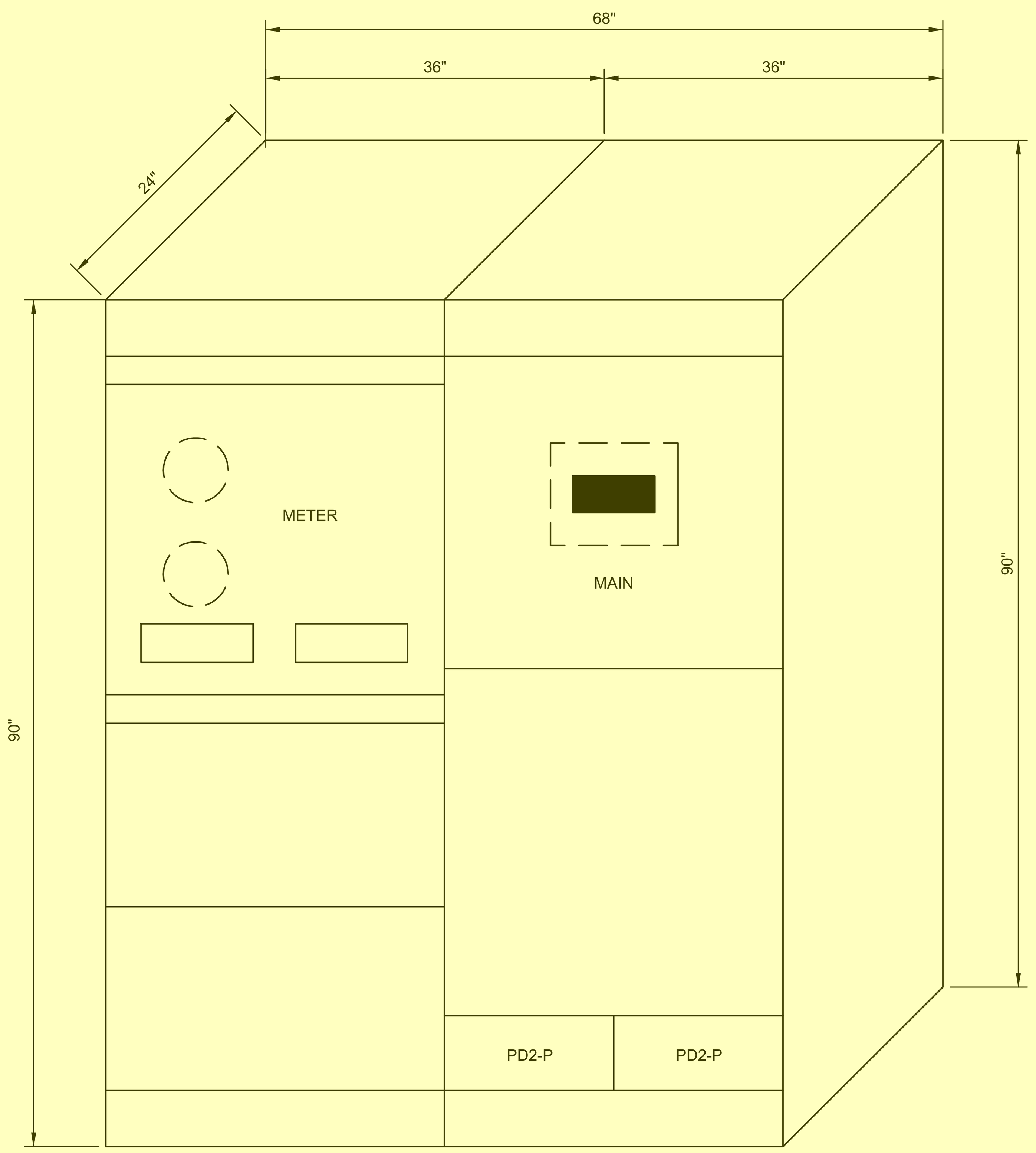


1 (E) SINGLE LINE DIAGRAM - JOHN GARTHE PUMP STATION MCC DEMO PLAN
NTS

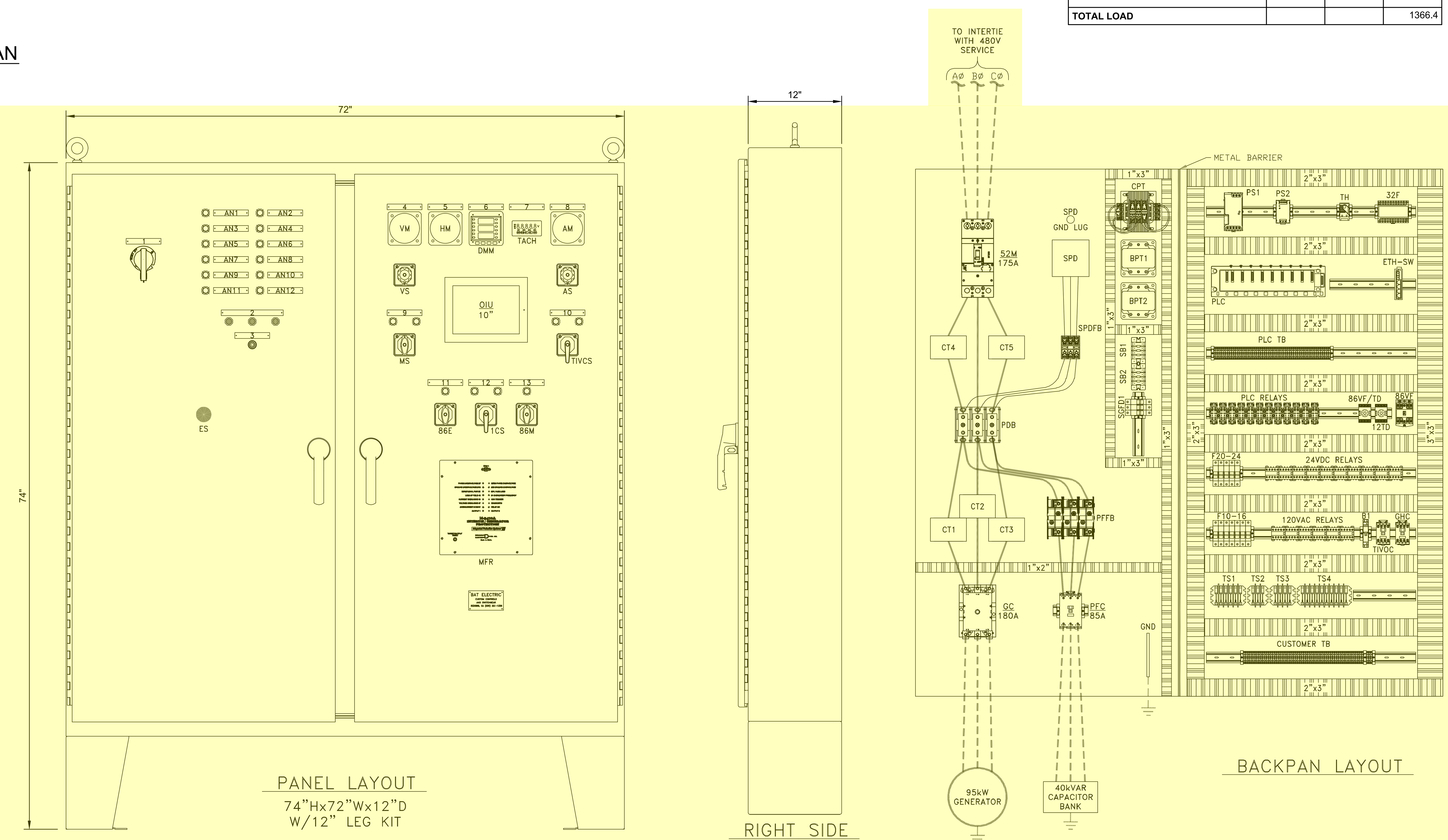
SA-1 Hydrogenerator

Scope of Work Exhibit

(E) JOHN GARTHE PS "MCC-010" LOAD SCHEDULE			
LOAD DESCRIPTION	KVA	HP	AMP
(E) PMP-010		100	124
(E) PMP-020		150	180
(E) PMP-030		150	180
(E) PMP-040		200	240
(E) PMP-050		250	302
(E) MOV-010		0.5	1.1
(E) MOV-020		0.5	1.1
(E) MOV-030		0.5	1.1
(E) MOV-040		0.5	1.1
(E) MOV-050		0.5	1.1
(E) SMP-010		10	14
(E) SMP-020		10	14
(E) WELL #24 LOAD			9
(E) EF-010		3	4.8
(E) EF-020		3	4.8
(E) EF-030		3	4.8
(E) EF-040		3	4.8
(E) EF-050		3	4.8
(E) EF-060		3	4.8
(E) PANEL "P" (30KVA XFMR)			36
(E) CHEMICAL BLDG			118.1
(E) PDP-100			115
TOTAL LOAD			1366.4



3 HYDRO-GENERATOR SWITCHBOARD "SWBD" ELEVATION
NTS



4 HYDRO-GENERATOR CONTROL PANEL ELEVATION
NTS

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BID SET
REGISTERED PROFESSIONAL ENGINEER
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No. E 15809
Exp. 12-31-26
ELECTRICAL
STATE OF CALIFORNIA
9/24/25

ORANGE COUNTY WATER DISTRICT
18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708
TELEPHONE (714) 378-3200

MARK	DATE	DESCRIPTION	BY

ORANGE COUNTY WATER DISTRICT
CITY OF SANTA ANA PFAS TREATMENT
AT JOHN GARTHE RESERVOIR
SINGLE LINE DIAGRAM - HYDRO-GEN

PROJ:	200-09382-23010
DESN:	J.LE
DRWN:	J.LE
CHKD:	M.KASSAR

E3602

Bar Measures 1 inch, otherwise drawing not to scale

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END OF ADDENDUM

MANDATORY FORM

ACKNOWLEDGE RECEIPT OF ADDENDUM NO. 4

ADDENDUM NO. 4
TO
CONTRACT DOCUMENTS
FOR
CITY OF SANTA ANA
PFAS TREATEMENT AT JOHN GARTHE RESERVOIR
CONTRACT NO. SA-2025-1
11/4/2025

THE BIDDER SHALL EXECUTE THE CERTIFICATION AT THE END OF THIS ADDENDUM AND SHALL ATTACH IT TO THE PROPOSAL SUBMITTED.

ORANGE COUNTY WATER DISTRICT

John C. Kennedy
General Manager

11/5/25
Date

BIDDER'S CERTIFICATION

I acknowledge receipt of the foregoing Addendum No. 4 to Contract No. SA-2025-1 and accept all conditions contained therein:

Date: ____________________

Bidder: ____________________

By: ____________________