

DIABLO VALLEY COLLEGE ACID WASTE TANK REPLACEMENT FOR LIFE SCIENCE BUILDING, 321 GOLF CLUB RD, PLEASANT HILL CA 94523

SCHOOL PROJECT NOTES

REPLACEMENT OF FAILING ACID DILUTION TANK FOR THE LIFE SCIENCES BUILDING. FURNISH AND INSTALL COMPLETE DILUTION TANK SYSTEM, INCLUDING SOIL, WASTE, VENT, SANITARY SEWER PIPING AND STRUCTURES, AND PROVISION FOR MECHANICAL EQUIPMENT DRAINAGE. CONNECT TO EXISTING PIPING SYSTEM. PROVIDE, PROCURE AND PAY FOR ALL LICENSES, PERMITS, FEES, ETC. AS REQUIRED TO CARRY ON AND COMPLETE THE WORK

VICINITY MAP



DRAWING INDEX

PLUMBING:
P-1.1 PLUMBING SCHEDULES AND LEGENDS.
P-2.1 ACID NEUTRALIZATION TANK REPLACEMENT PLAN.

CIVIL
C-2.1 ACID NEUTRALIZATION TANK CIVIL DRAWINGS
C-2.2 ACID NEUTRALIZATION TANK CIVIL DRAWINGS

ELETRICAL
E-2.1 ACID NEUTRALIZATION TANK ELECTRICAL DRAWINGS

DIRECTORY

OWNER:
CONTRA COSTA COMMUNITY COLLEGE
DISTRICT, 500 COURT ST, 6TH FL, MARTINEZ,
CA, 94553

PRESIDENT/CEO:
-FRED E. WOOD

MECHANICAL ENGINEERS:
-COSTA ENGINEERS

CONSULATANT ENGINEERS:
-

GENERAL NOTES

- A. PROCUREMENT AND CONTRACTING REQUIREMENTS PROVIDED BY THE CONTRA COSTA COMMUNITY COLLEGE DISTRICT, INCLUDING SUPPLEMENTARY GENERAL CONDITIONS APPLY TO THE WORK OF THIS PROJECT.
- B. ALL WORK SHALL BE COORDINATED WITH OTHER SERVICES ON THE SITE. CONFIRM LOCATION OF POINTS OF CONNECTION PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL UNDERSTAND THAT THE WORK HEREIN DESCRIBED SHALL BE COMPLETE IN EVERY DETAIL, NOTWITHSTANDING EVERY ITEM NECESSARILY INVOLVED IS NOT PARTICULARLY MENTIONED, AND THE CONTRACTOR SHALL BE HELD TO PROVIDE ALL LABOR AND MATERIAL NECESSARY FOR THE ENTIRE COMPLETION OF THE WORK.
- C. ALL WORK SHALL BE DONE IN CONFORMITY WITH ALL APPLICABLE LOCAL AND STATE SAFETY CODES, ORDINANCES AND REGULATIONS AND THE LATEST EDITION OF CALIFORNIA CODE OF REGULATIONS TITLE 8, 17, 19, 20, 21, **24**, AND 27. FURNISH ANY ADDITIONAL MATERIALS AND/OR LABOR TO COMPLY WITH THESE LAWS, RULES, AND/OR REGULATIONS, EVEN IF SUCH MATERIALS AND/OR LABOR ARE NOT SPECIFICALLY SET FORTH IN THE CONTRACT DOCUMENTS, WITH NO ADDITIONAL CHARGES TO OWNER.

APPLICABLE CODES



COSTA ENGINEERS INC.
3274 Villa Lane Napa, CA 94558 ph: 707-252-9177 fax: 707-252-6473



STAMP

CONSULTANT

DIABLO VALLEY
COLLEGE ACID
WASTE TANK
REPLACEMENT
FOR LIFE
SCIENCE
BUILDING

321 GOLF CLUB RD,
PLEASANT HILL CA
94523

DATE: 2021-07

DRAWN: Author

CHECKED: Checker

REVISION:

BY:

TITLE SHEET

T-1.1

PROJECT SCOPE

- A. Replacement of failing acid dilution tank for the Life Sciences Building. Furnish and install complete dilution tank system, including soil, waste, vent, sanitary sewer piping and structures, and provision for mechanical equipment drainage. Connect to existing piping system. Provide, procure and pay for all licenses, permits, fees, etc. as required to carry on and complete the work.

GENERAL

- A. Procurement and Contracting Requirements provided by the Contra Costa Community College District, including Supplementary General Conditions apply to the work of this Project.
- B. All work shall be coordinated with other services on the site. Confirm location of points of connection prior to commencement of work. The Contractor shall understand that the work herein described shall be complete in every detail, notwithstanding every item necessarily involved is not particularly mentioned, and the Contractor shall be held to provide all labor and material necessary for the entire completion of the work.
- C. All work shall be done in conformity with all applicable local and state safety codes, ordinances and regulations and the latest edition of California Code of Regulations Title 8, 17, 19, 20, 21, **24**, and 27. Furnish any additional materials and/or labor to comply with these laws, rules, and/or regulations, even if such materials and/or labor are not specifically set forth in the contract documents, with no additional charges to Owner.

SUBMITTALS

In addition to the requirements of the supplementary general conditions provided by CCCCD, the following shall be adhered to.

- A. Submit cut sheets for the tank and trim, including fittings, accessories, appurtenances, and supports and indicate materials and finishes, dimensions, construction details, and flow control rates. Submit manufacturer's product data for all plumbing piping, fittings, materials and equipment.
- B. Prepare complete consolidated and coordinated layout drawings for all new systems, and for existing systems that are in the same areas. Shop drawings shall be prepared using AutoCAD 2014 or newer and shall be drawn at a minimum 1/4" = 1' - 0" scale. Sections, details, and diagrams shall be to required scales for specified areas. Include diagrams for all piping, and power, signal and control wiring. Submit shop drawings to Engineer for approval prior to fabrication or installation of any work. Do not install equipment or piping until drawings have been approved. Any work installed without prior shop drawing approval shall be removed at the Contractor's expense. Use of contract documents for shop drawings is not allowed.
- D. Maintain approved set of shop drawings at the work site and indicate all changes in the work on a daily basis. In addition, show exact location, type and function of concealed valves and controllers and exact size and elevations of underground piping. This "As-Built" set shall be submitted to Engineer for approval.
- E. Provide all operating and maintenance instructions provided by the manufacturer, describing proper operation and maintenance of any equipment and devices installed and include preventative maintenance schedule and procedures. Also provide a parts list of all component parts. Include manufacturer's name, model number, and normal channel of supply for each item, and a description of start-up and operating procedures including controls diagrams and description of operating sequences.

performed. Control valves shall be also marked whether normally open (N.O.) or normally closed (N.S.).

1. Fasteners: Attach to stem or body of valve so that tag is visible but doesn't interfere with the valve operation. Use Brass wire-link chain or beaded chain.

- C. Equipment: All equipment shall be labeled with 1" high stencils showing identifying mark noted on drawings, and usage.

PIPING INSTALLATION

- A. Acid Waste Piping: Installation and testing shall be in accordance with the manufacturer's recommendations and the local plumbing codes. Testing with compressed air is prohibited. The entire system shall be installed free of stress and in proper alignment. Horizontal supports shall provide a wide bearing area and be free of burns or sharp edges. Vertical piping shall have riser clamps at each floor. Pipe supports should be installed so that horizontal piping is in uniform alignment and with a uniform slope of at least 1/8" per foot or in accordance with the local plumbing codes.
- B. Waste, Drain and Vent Piping: Soil, waste, and vent piping occurring within the building shall be installed to a uniform minimum grade of 1/4" per foot unless otherwise noted. Vent piping shall be graded so that all condensation shall flow directly to a soil or waste line. Changes in direction of drainage piping shall be accomplished by the use of appropriate drainage and sanitary fittings. Drilling and tapping of drains, soil, waste, or vent pipes and the use of saddle hubs and bands are prohibited. Protection against breakage of piping passing under or through walls shall be provided using specified sleeves and caulking. Adapters shall be installed between threaded iron and soil pipe. Test tees shall be installed at the foot of all soil, waste, and storm water stacks.
- C. Protect unattended openings in piping during construction. Install air vents at all water piping high points when direction of flow is downward. Install sediment drain faucets at all low points.
- E. Valves, cocks, etc., shall be installed to allow convenient accessibility and operation. All valves shall be accessible and shall not be installed with the stems below the horizontal plane. Provide access panels at walls, ceilings, or floors. Unions and flanges shall be installed to allow convenient replacement of all equipment and cleaning tubes
- F. Shut off valves shall be provided where required to permit proper servicing of equipment.
- G. A union connection shall be installed downstream from all valves, at equipment connections and at other locations as required or directed.
- H. Cleanouts shall be located where indicated on the Drawings; at all horizontal offsets; at ends of waste or sewer branches more than 5' in length; where drain exits the building; at intervals of 100' in straight runs of piping, or at closer intervals if directed or required by local code.

INSTALLATION OF SYSTEMS ID

- A. Pipe markers: Identify all piping on this project, except piping located within walls or inaccessible areas. Locate pipe labels where piping is exposed or above accessible ceilings in finished spaces, machine rooms, and accessible maintenance spaces such as shafts, tunnels, and plenums and at exterior exposed locations, as follows: Adjacent to all valves and flanges; Near each branch connection, excluding short takeoffs for fixtures and terminal units. Where flow pattern is not obvious, mark each pipe at branch; Before and after all wall, floor and ceiling penetrations and inaccessible enclosures; Adjacent to

- F. Warranty all materials, equipment, apparatus, and workmanship to be free from defects and faulty workmanship for a period of one year.

PIPE, FITTINGS

- A. Above and below grade waste, drain, and vent piping shall be standard weight, no-hub cast iron soil pipe and fittings and shall conform to the requirements of Cast Iron Soil Pipe Institute Standard 301 and ASTM A888 (latest editions). Hubless couplings shall be composed of stainless-steel shields, clamp assemblies and elastomeric sealing sleeve conforming to CISPI Standard 310, latest edition. Heavy/Medium duty no-hub couplings shall conform to the requirements of ASTM 1540. Hubless coupling gaskets shall conform to ASTM C564. Couplings 1-1/2" through 4" shall have 4 bands.
- B. Acid Waste, Drain and Vent: The acid waste piping system shall be Orion Flame Retardant "BlueLine" Schedule 40 or approved equal. The polypropylene acid waste pipe shall be manufactured from resin meeting ASTM D4101. Pipe shall meet the dimensional tolerances of ASTM D2447. All pipe shall be supplied in 10-ft.lengths and shall be pre-grooved at the factory.
1. Orion's "BlueLine" acid waste fittings shall be manufactured to Schedule 40 dimensions per ASTM F1412 and shall be made of fire-retardant polypropylene. Fitting layouts shall conform to ASTM D3311 and ASTM F1412. The polypropylene material shall conform to ASTM D4101.
2. Joining method: Rionfuse CF® (Clamp-Free) Electrofusion: The Orion Rionfuse CF system shall utilize plain end fittings and be joined using the "Rionfuse CF" couplings. The "Rionfuse" machine shall be used to produce a hermetically sealed joint. The joints shall conform to ASTM 1290, Technique 1.

ACID NEUTRALIZATION TANK

- A. Mifab "Mi-Neut" neutralization tank, model MI-NEUT-350, solid construction seamless polyethylene body with inlet and outlet, vent connections, acid resistant epoxy coated bolted won neoprene gasketed lid, and stainless-steel hardware. The tank shall be filled with neutralization medium, approximately 4,000 pounds of lump limestone 1" to 3" diameter size, and water added to help dilution.

VALVES

- a. Sewage check valve

CLEANOUTS

- A. Grade (COTG): Zurn Z-1474 or equal Jay R Smith. Cleanout housing to be dura-coated cast iron body with integral anchor flange and scoriated cover with lifting device. Cleanouts in un-paved areas shall be set in 18" x 18" x 14" concrete pads.

IDENTIFICATION OF SYSTEMS

- A. Pipe labeling shall be in compliance with ANSI/ASME A13.1 2015 "Scheme for the identification of Piping Systems" and ANSI Z535.1 2017 "Safety Color Code". Brady, Graphic Products, Seton or approved equal. All piping shall be identified. Labels shall be per ASME Standards for sizes and colors and shall include a flow direction arrow.
- B. For identification and Owner's maintenance records, all valves shall be numbered and identified with brass tags stamped with service abbreviation and sequential number, and pre-drilled holes for attachment hardware, in accordance with Drawings and service

changes in direction; At access doors, manholes, and similar access points that permit view of concealed piping; Near major equipment items and other points of origination and termination; On piping above removable acoustical ceilings, omit intermediately spaced labels. Install pipe markers on long straight runs every 20 feet. Reduce intervals in areas of congested piping and equipment. All piping shall be identified.

- B. Valve Schedule: For each piping system, on 8 1/2" x 11" bond paper, tabulate valve number, piping system, system abbreviation (as shown on valve tag), location of valve (room or space), and normal-operating position (open, closed, or modulating). The schedule shall be, shall be framed and posted in mechanical rooms and a copy provided in the maintenance manual. Identify all valves on this project, except drain lines. Attach tags so that they are easily visible but do not obstruct the operation of the valve.

TESTING, INSPECTIONS

- A. Contractor shall not allow or cause any work of this Section to be covered or enclosed until it has been inspected, tested, and approved by the Engineer or District Representative and the authorities having jurisdiction over the Work. Should any of this work be enclosed or covered up before such inspection, testing, and approval, this Contractor shall uncover the work, have the necessary inspections, tests, and approvals made and, at no expense to the Owner, make all repairs necessary to restore both his work and that of other contractors which may have been damaged to be in conformity with the Contract Documents.
- B. Contractor shall make all tests required by all local, state, and federal laws, codes, ordinances, and regulations having jurisdiction over this work. Furnish all necessary labor, materials, and equipment for conducting tests, and pay all expenses in connection therewith. Should leaks develop while testing, repairs shall be made, and tests shall be repeated until a satisfactory test is obtained
1. Acid Waste piping shall be hydrostatically tested to establish that all joints have been correctly made.
2. Drainage and Vent Piping: Shall be tested for 1 hour by plugging all outlets and filling the pipes with water to the top of vertical sections of pipes. No loss of water shall be permitted.

CLEANUP

- A. Upon completion of the work of this Section, remove all surplus material, debris, and equipment associated with or used in the performance of this work. All new piping shall be thoroughly cleaned of rust, scale, etc., prior to enclosing and placing in operation.

ACID NEUTRALIZATION TANK				
MARK	MFR	MODEL NO	STORAGE CAPACITY	REMARKS
ANT 1	MIFAB	MI-NEUT-350	350 gal	1
1. INSTALL LIME STONE PER MANUFACTURER INSTRUCTIONS.				

PLUMBING LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
		EQUIPMENT TYPE
		EQUIPMENT NUMBER
		DETAIL / DRAWING NUMBER
		SHEET NUMBER
		FIXTURE TYPE/NUMBER
	(N)	NEW PLUMBING AND PIPING SHOWN HEAVY
	(E)	EXISTING PLUMBING AND PIPING SHOWN LIGHT
	SS	SANITARY WASTE ABOVE GROUND
	AW	ACID WASTE BELOW GROUND
	GW	GREASE WASTE BELOW GROUND
	V	VENT PIPE
	DCW	DOMESTIC COLD WATER PIPE
	DHW	DOMESTIC HOT WATER PIPE
	DHWR	HOT WATER RETURN PIPE
	CD	CONDENSATE DRAIN
	G	NATURAL GAS PIPE
	RVD	RELIEF VALVE DISCHARGE
	RWL	RAIN WATER LEADER
	OD	OVER FLOW DRAIN PIPE
	VAC	VACUUM LINE
	GV	GATE VALVE
	BV	GLOBE VALVE
	BFV	BALL VALVE
	CV	BUTTERFLY VALVE
		CHECK VALVE
		BALANCING VALVE
		GAS COCK OR STOP
	PRV	PRESSURE REDUCING VALVE
	TV	TEMPERING VALVE
		STRAINER
		UNION
		PRESSURE GAUGE AND COCK
	P	PUMP
		THERMOMETER
	CO	CLEANOUT
	WCO	WALL CLEANOUT
	FCO	FLOOR CLEANOUT
	COTG	CLEANOUT TO GRADE
		PRESSURE GUAGE WELL ONLY (PETE'S PLUG)
	HB	HOSE BIBB
		PIPE UP
		PIPE DOWN
		BRANCH TOP CONNECTION
		BRANCH BOTTOM CONNECTION
		BRANCH SIDE CONNECTION
		CAP ON END OF PIPE
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		VALVE IN RISER
		POINT OF CONNECTION
		POINT OF DEMOLITION
		CENTER LINE
	AFF	ABOVE FINISHED FLOOR
	AFG	ABOVE FINISHED GRADE
	AFC	ABOVE FINISHED CEILING
	AP	ACCESS PANEL
	BFF	BELOW FINISHED FLOOR
	CI	CAST IRON
	COTG	CLEANOUT TO GRADE
	DMV	DRAIN, WASTE, AND VENT
	DN	DOWN
	DW	DISHWASHER
	DWG	DRAWING
	(E)	EXISTING
	FCO	FLOOR CLEANOUT
	IE	INVERT ELEVATION
	IW	IN WALL
	MFR	MANUFACTURER
	(N)	NEW
	NIC	NOT IN CONTRACT
	NTS	NOT TO SCALE
	SA	SHOCK ABSORBER
	SAD	SEE ARCHITECTURAL DRAWINGS
	SCD	SEE CIVIL DRAWINGS
	SED	SEE ELECTRICAL DRAWINGS
	SMD	SEE MECHANICAL DRAWINGS
	SSD	SEE STRUCTURAL DRAWINGS
	TYP	TYPICAL
	UMC	UNIFORM MECHANICAL CODE
	UPC	UNIFORM PLUMBING CODE
	UNO	UNLESS NOTED OTHERWISE
	V	VENT
	VTR	VENT THROUGH ROOF
	WCO	WALL CLEANOUT
	WA	WATER HAMMER ARRESTOR



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FOR LIFE
SCIENCE
BUILDING

321 GOLF CLUB RD,
PLEASANT HILL CA
94523

DATE: 2021-07

DRAWN: Author

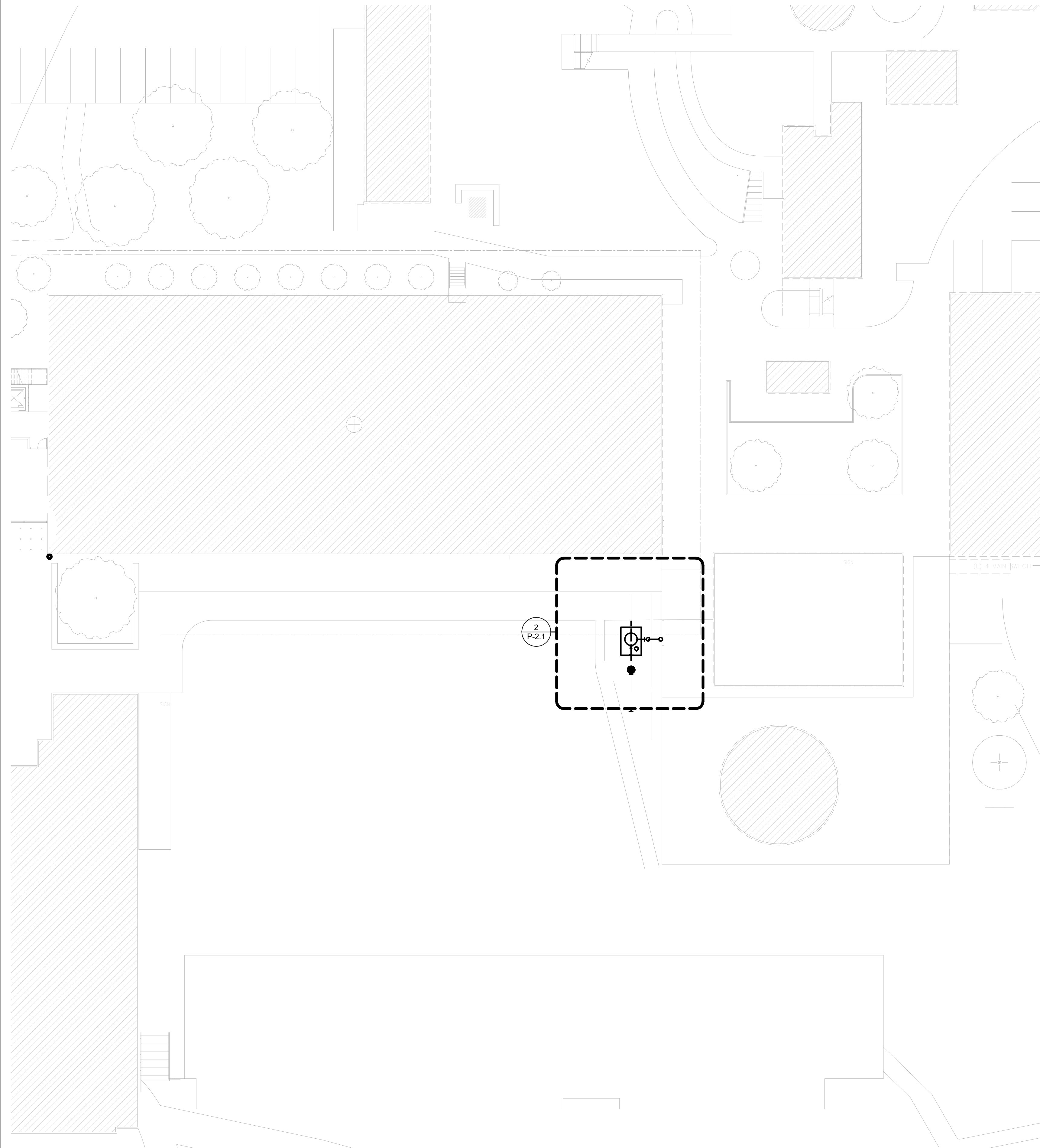
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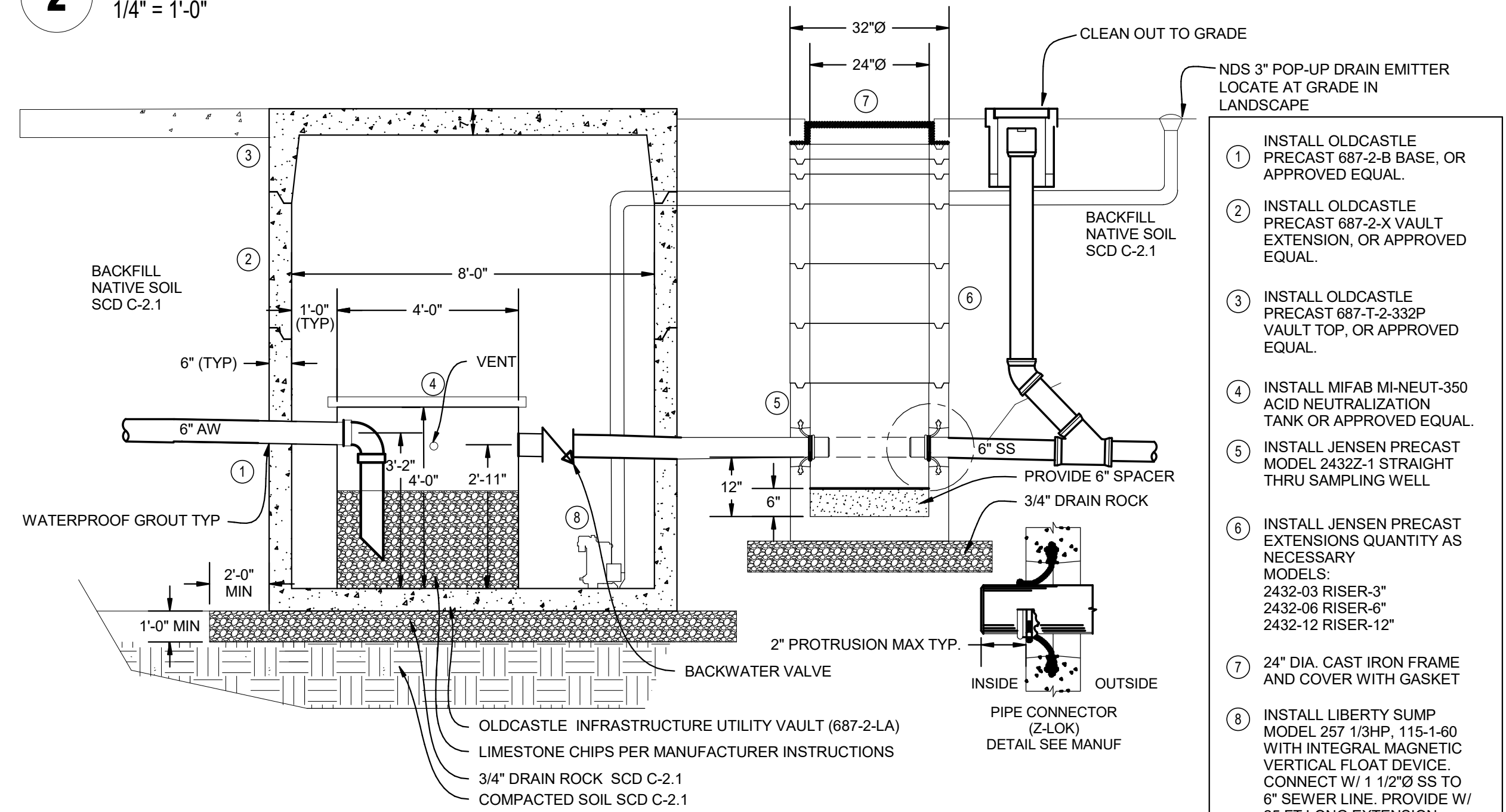
PLUMBING
SCHEDULES
& LEGENDS

P-1.1



1 PLUMBING SITE PLAN
1" = 20'-0"

2 ACID DELUTION TANK ENLARGEMENT
1/4" = 1'-0"



A ACID NEUTRALIZATION TANK
SCALE: NONE

- 1 INSTALL OLDCASTLE PRECAST 687-2-B BASE, OR APPROVED EQUAL.
- 2 INSTALL OLDCASTLE PRECAST 687-2-X VAULT EXTENSION, OR APPROVED EQUAL.
- 3 INSTALL OLDCASTLE PRECAST 687-T-2-332P VAULT TOP, OR APPROVED EQUAL.
- 4 INSTALL MIFAB MI-NEUT-350 ACID NEUTRALIZATION TANK OR APPROVED EQUAL.
- 5 INSTALL JENSEN PRECAST MODEL 2432Z-1 STRAIGHT THRU SAMPLING WELL
- 6 INSTALL JENSEN PRECAST EXTENSIONS QUANTITY AS NECESSARY. MODELS: 2432-03 RISER-3" 2432-06 RISER-6" 2432-12 RISER-12"
- 7 24" DIA. CAST IRON FRAME AND COVER WITH GASKET
- 8 INSTALL LIBERTY SUMP MODEL 257 1/3HP, 115-1-60 WITH INTEGRAL MAGNETIC VERTICAL FLOAT DEVICE. CONNECT W/ 1 1/2" Ø SS TO 6" SEWER LINE. PROVIDE W/ 25 FT LONG EXTENSION CORD.

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REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. DE LUCA
NO. 31600
Exp. 12-31-22
RESIDENCY
STATE OF CALIFORNIA

STAMP

CONSULTANT

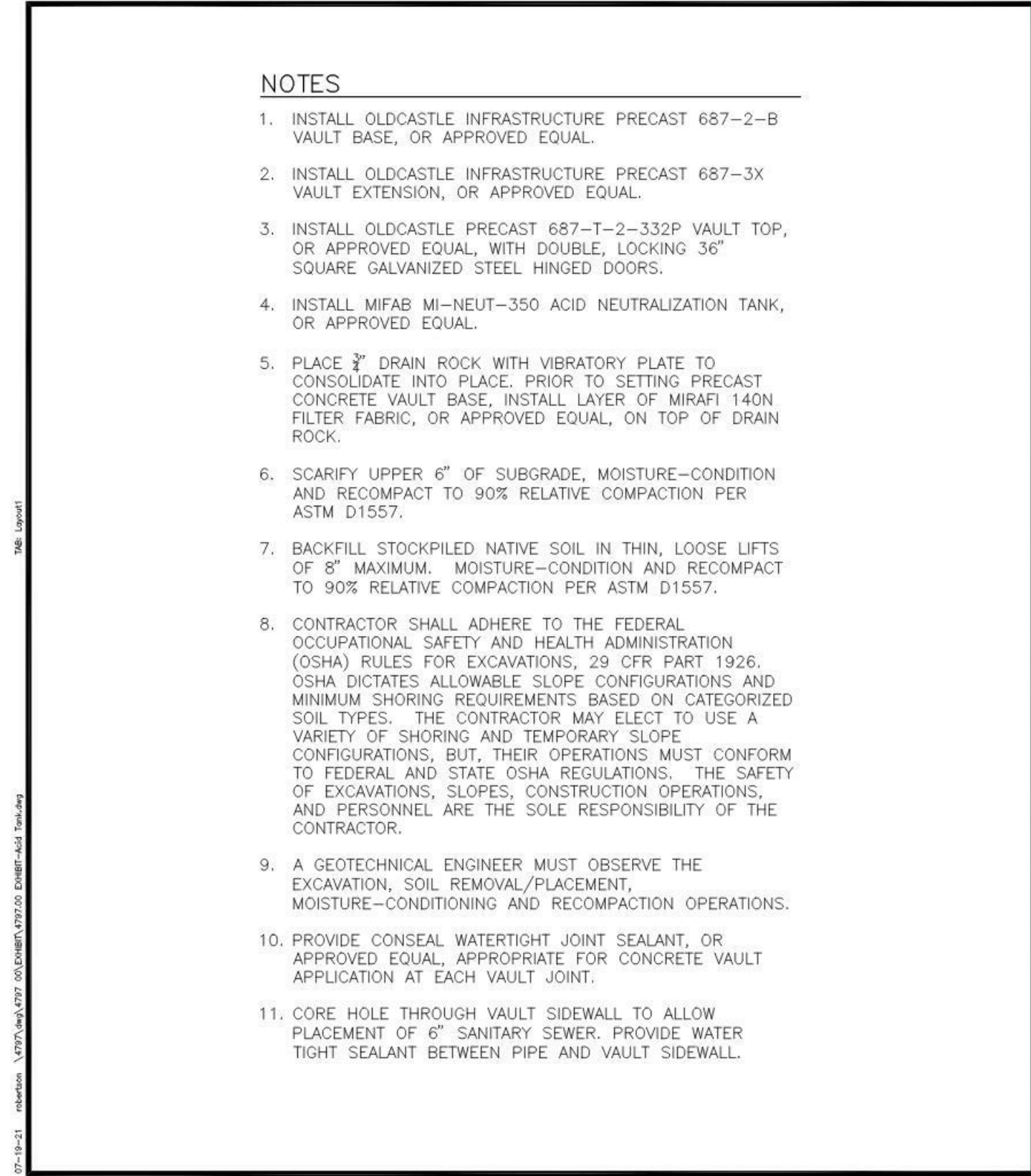
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ACID NEUTRALIZATION TANK REPLACEMENT PLAN

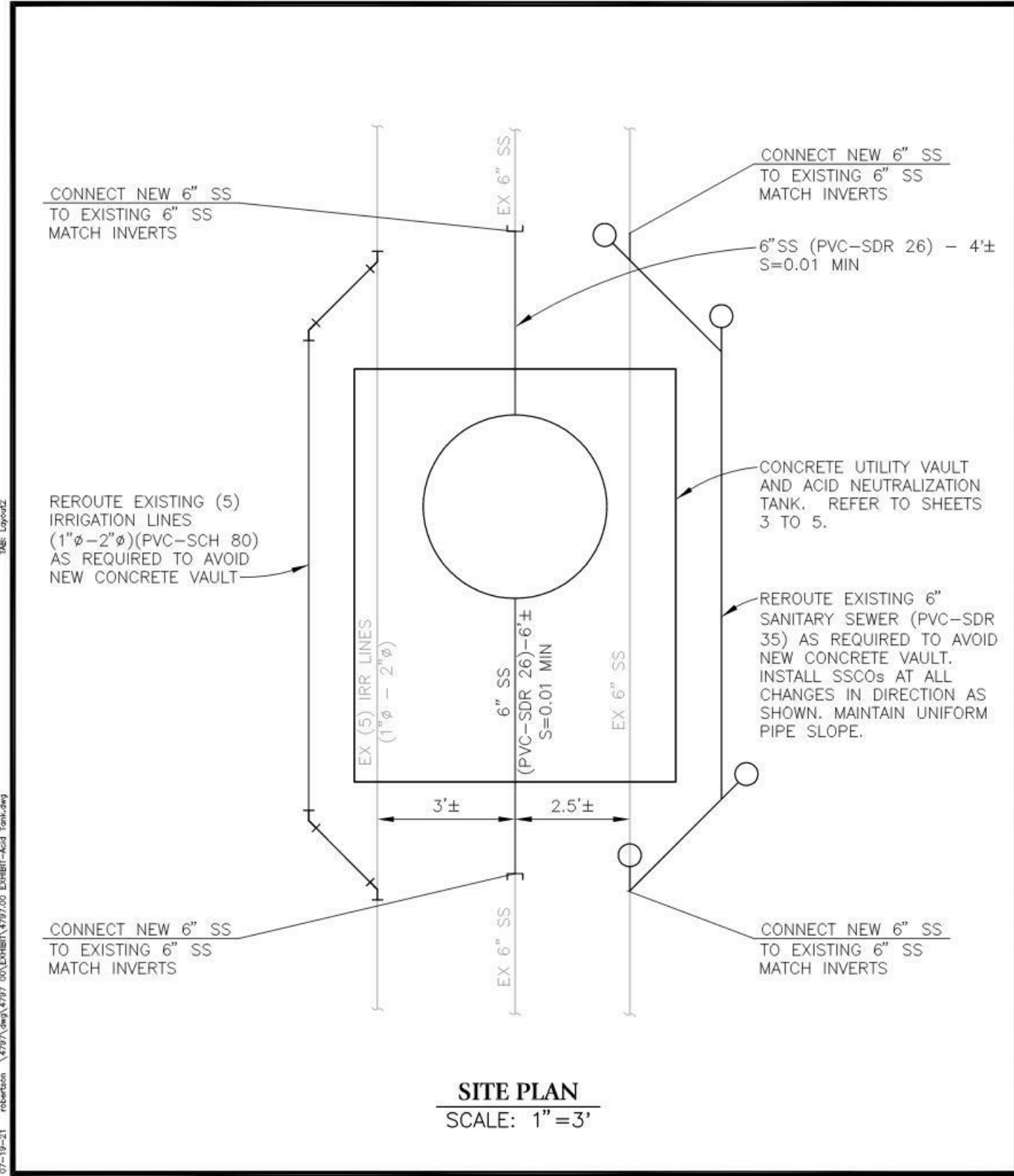
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DIABLO VALLEY COLLEGE
ACID NEUTRALIZATION TNK
JULY 2021

Brelje & Race
REGISTERED PROFESSIONAL ENGINEER
CIVIL
CALIFORNIA LICENSE NO. 51660
EXPIRATION DATE 12-31-22

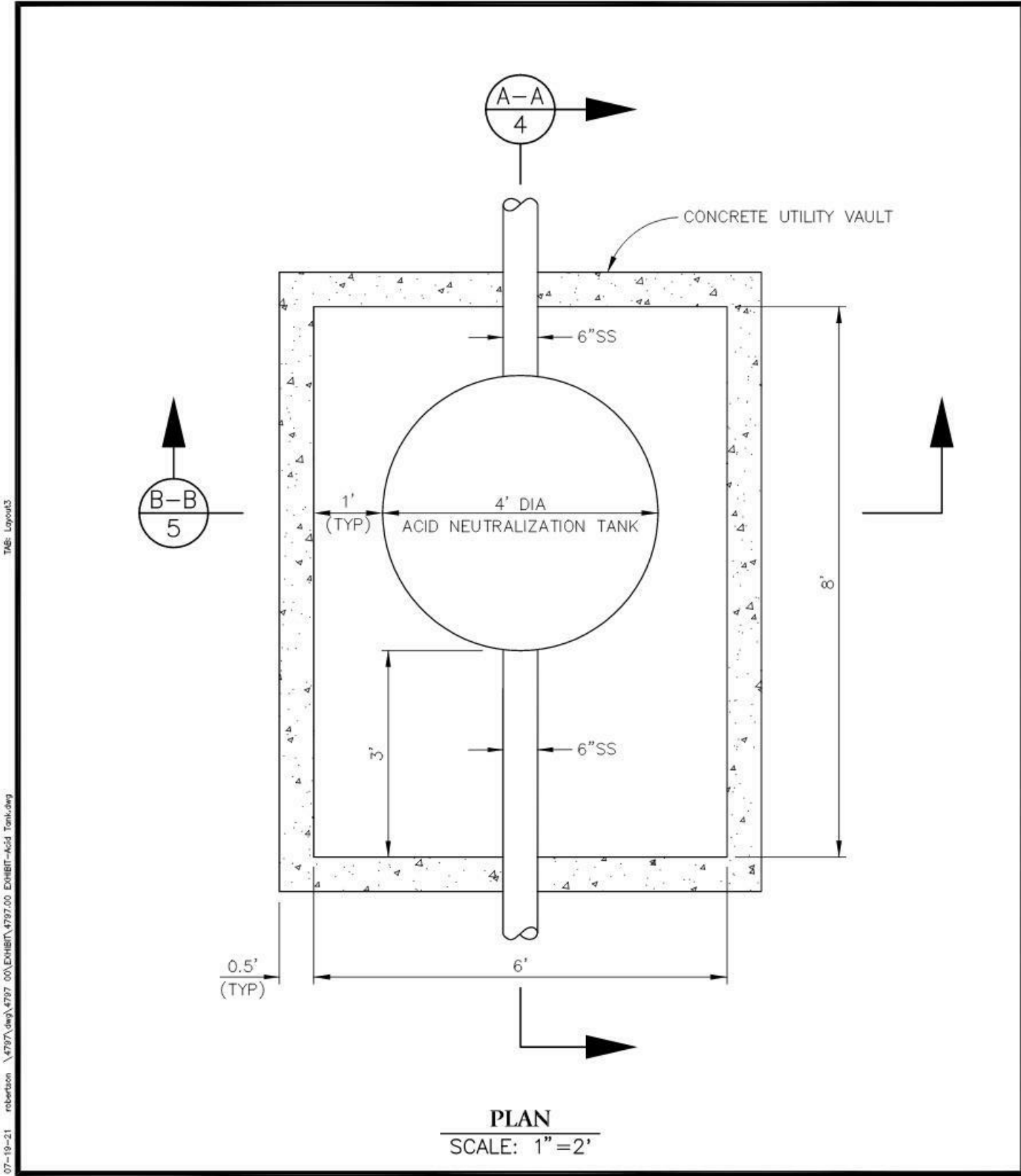
SHEET 1 OF 5



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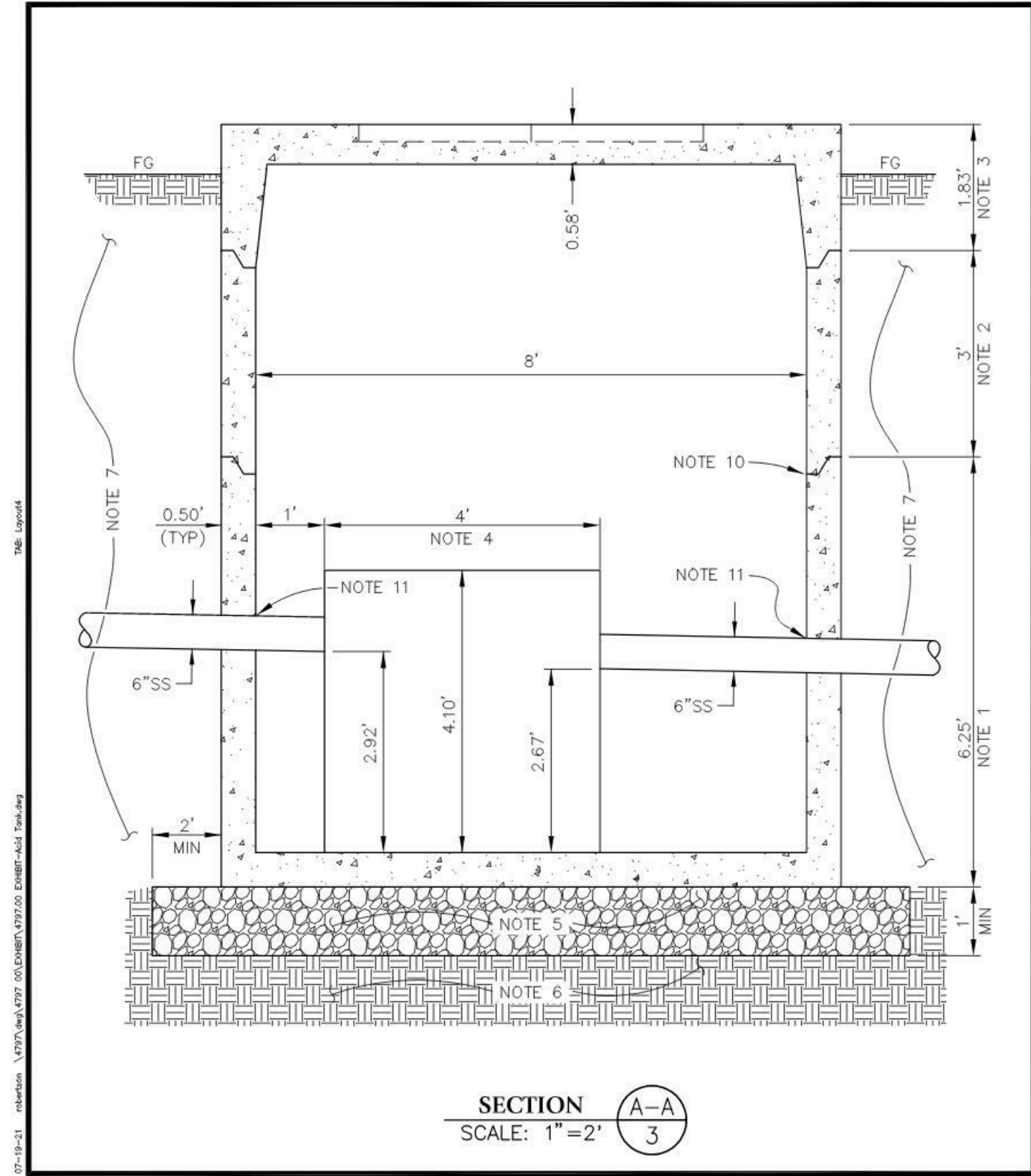
SHEET 2 OF 5



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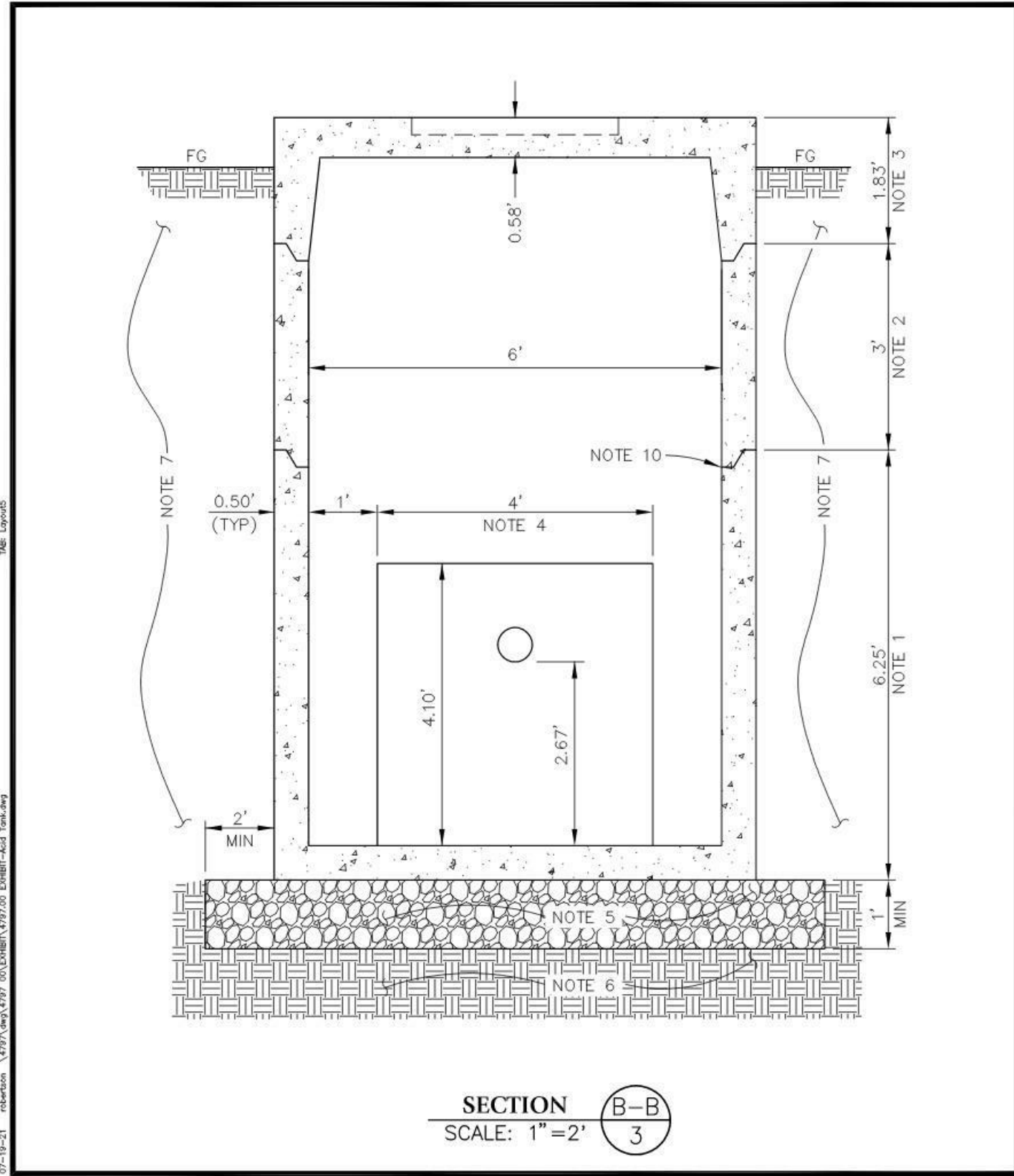
SHEET 3 OF 5



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SHEET 4 OF 5



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SHEET 5 OF 5



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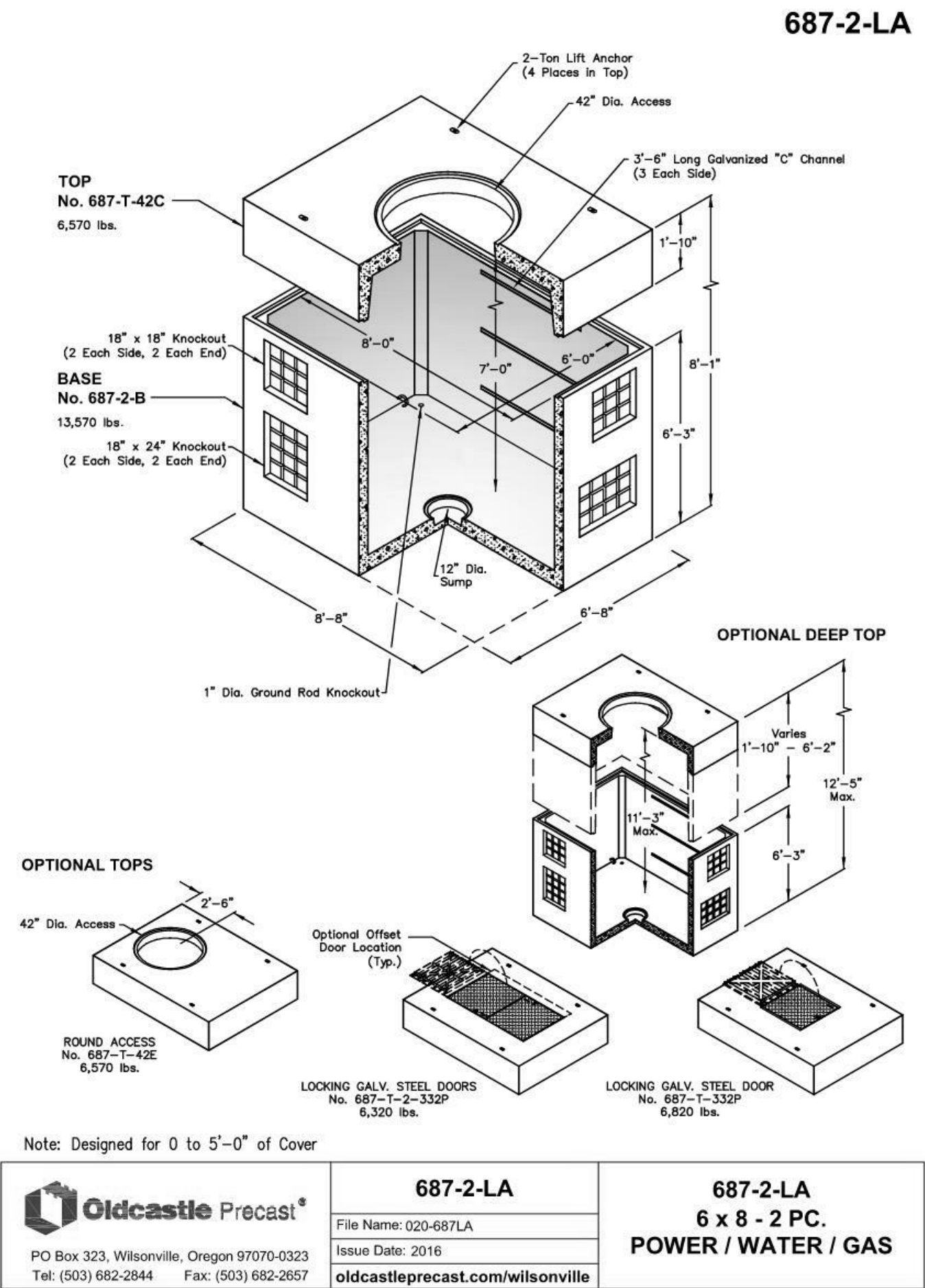
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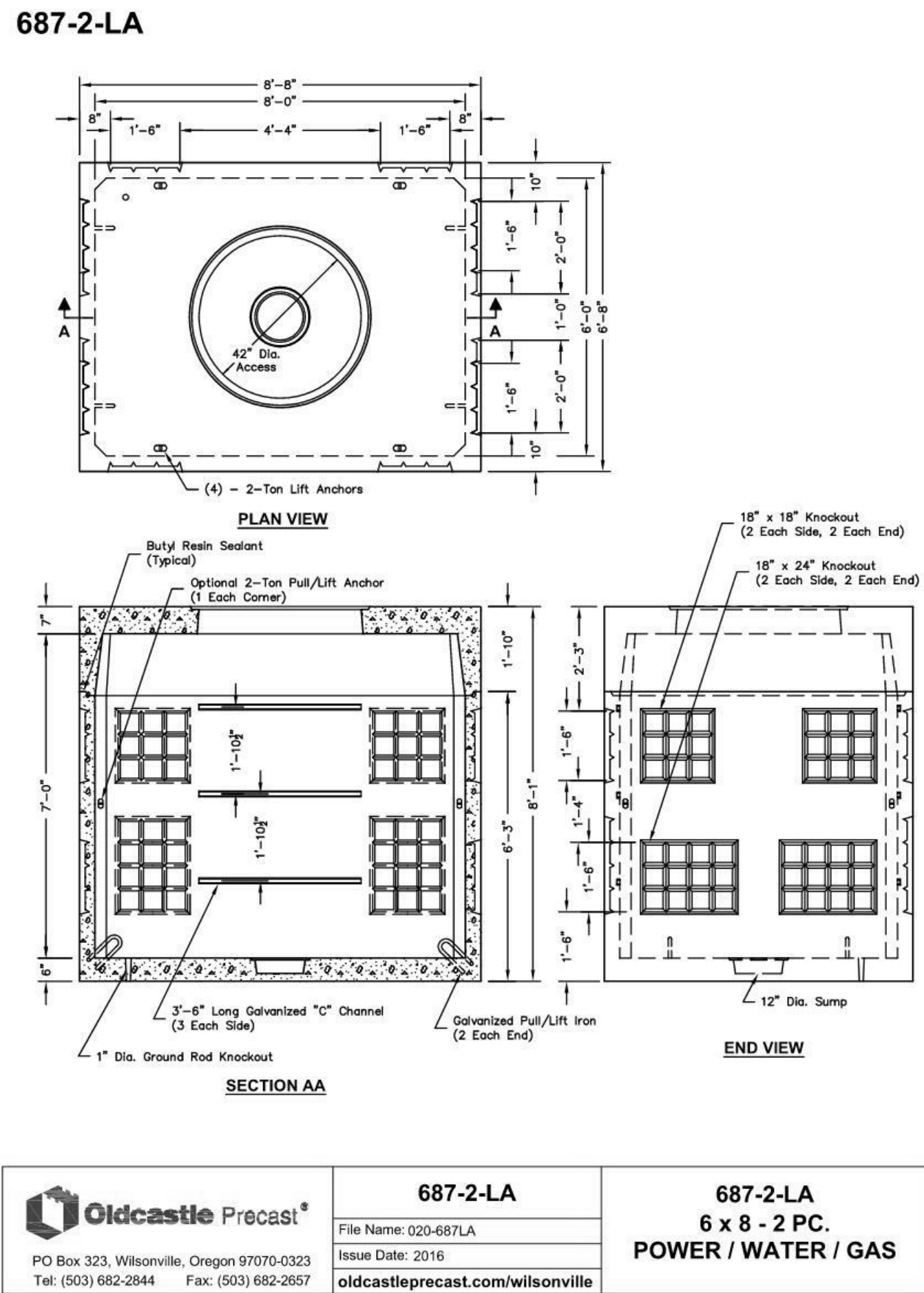
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ACID NEUTRALIZATION TANK CIVIL DRAWINGS

C-2.1



25.0



25.1



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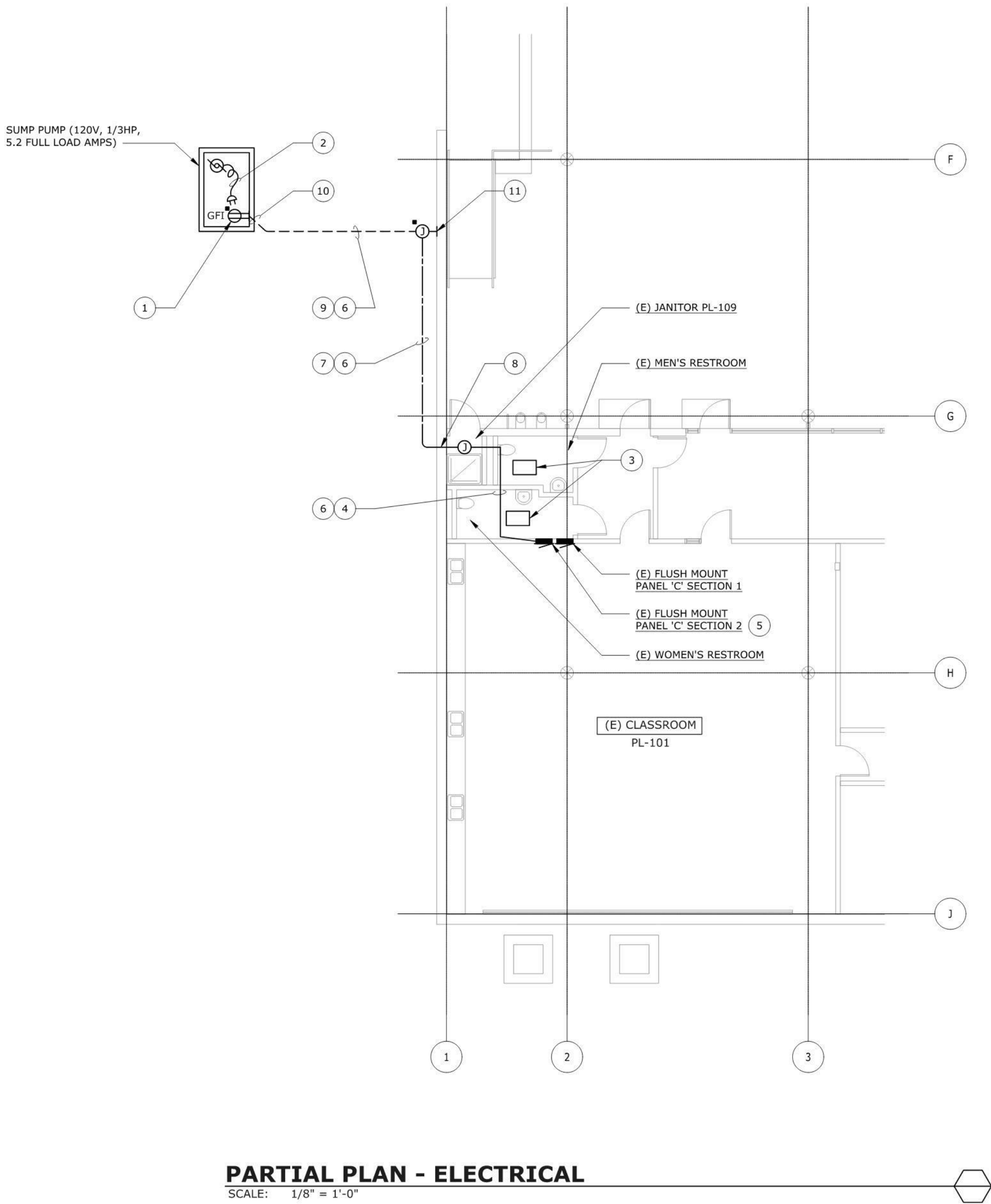
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ACID
NEUTRALIZATION
TANK CIVIL
DRAWINGS

C-2.2

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SYMBOLS LIST

	FLUSH MOUNTED PANELBOARD, 6'-6" TO TOP
	SURFACE MOUNTED PANELBOARD, 6'-6" TO TOP
	MOTOR
	CEILING MOUNTED JUNCTION BOX, U.O.N.
	WALL MOUNTED JUNCTION BOX, UP 18" U.O.N.
	20A 3PG 125V DUPLEX RECEPTACLE, WEATHERPROOF, UP 18" U.O.N.
	20A 3PG 125V DUPLEX RECEPTACLE, GROUND FAULT CIRCUIT INTERRUPTER TYPE, UP 18" U.O.N.
	WEATHERPROOF ENCLOSURE
	CONDUIT AND WIRE CONCEALED IN CEILING OR WALL
	CONDUIT AND WIRE CONCEALED IN OR UNDER SLAB OR UNDERGROUND
	CONDUIT AND WIRE RUN EXPOSED

NUMBERED SHEET NOTES

- 1 PROVIDE AND INSTALL GFI DUPLEX IN VAULT. INSTALL IN WEATHERPROOF SURFACE BOX WITH IN-USE COVER. INSTALL HIGH ON WALL WITHIN VAULT, 6" BELOW VAULT COVER.
- 2 SUMP PUMP TO PLUG INTO NEW GFI RECEPTACLE.
- 3 EXISTING ACCESS HATCH IN RESTROOM.
- 4 TRANSITION TO MC CABLE (2#12, 1#12G) ABOVE CEILING AND HOMERUN TO PANEL 'C', SECTION 2 AND FISH MC CABLE DOWN WALL TO PANEL. ALTERNATIVELY THE HOMERUN MAY USE EXISTING CONDUITS IN WALL BY PULLING OUT EXISTING BRANCH CIRCUIT WIRING AND PULLING THE NEW BRANCH CIRCUIT WIRING WITH THE EXISTING BRANCH CIRCUIT WIRING TO THE PANEL.
- 5 PROVIDE AND INSTALL NEW 20AMP, 120VOLT, SINGLE POLE CIRCUIT BREAKER IN EXISTING SPACE 68. THE CIRCUIT BREAKER SHALL BE SQUARE D TO MATCH EXISTING.
- 6 PROVIDE AND INSTALL NEW BRANCH CIRCUIT FOR VAULT RECEPTACLE 2#12, 1#12 GROUND TO EXISTING PANEL 'C' SECTION 2, SEE NOTE 5.
- 7 INSTALL NEW BRANCH CIRCUIT WIRING IN 3/4" RIGID GALVANIZED STEEL CONDUIT WITH WATER TIGHT FITTINGS. INSTALL ON EXTERIOR WALL.
- 8 CONDUIT TO PASS THROUGH WALL, SEAL CONDUIT PENETRATION.
- 9 INSTALL NEW BRANCH CIRCUIT WIRING UNDERGROUND IN 3/4" SCHEDULE 40 PVC CONDUIT. TRENCH AND BACKFILL. INSTALL CONDUITS AT 24" BELOW GRADE MINIMUM.
- 10 CONDUIT TO PASS THROUGH VAULT WALL, SEAL CONDUIT PENETRATION.
- 11 PROVIDE AND INSTALL WEATHERPROOF SURFACE JUNCTION BOX ON WALL AT +24" ABOVE FINISH GRADE.



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