

DOCUMENT 00 00 11

**ADDENDUM NO. 1
November 21, 2023**

**Red Hill Water Treatment Plant - Upgrades
IFB No. 403
Rivanna Sewer & Water Authority
Albemarle County, Virginia**

SEH No. RIVAN 168434

From: Short Elliott Hendrickson Inc.
615 9th Street North
Virginia, MN 55792-3761
218.741.4284

To: Document Holders

DOCUMENT HOLDERS on the above-named project are hereby notified that this document shall be appended to, take precedence over and become part of the original bidding documents dated September 28, 2023, for this work. Bids submitted for the construction of this work shall conform to this document.

This addendum consists of 3 pages and attached Pre-Bid PowerPoint Presentation (12 pages), Pre-bid Sing-in Sheet (1 page), Construction Form RA-1 Invitation for Bids (1 page), Section 32 31 13 - Chain Link Fences and Gates, Section 40 23 30 Valves and Accessories, and 43 23 00 Centrifugal Pumps, Drawings C03 Site Plan, C04 Civil Details, S110 Foundation Plan, E201 Power Plan, M201 - Domestic Water, Gas, and Sanitary Floor Plans, M401 - Plumbing Details and Schedules, M501 - Plumbing Riser Diagrams, P070 Removals Plan, P101 Building Plan, and P501 Chemical Feed Systems.

Note: Bid opening has been changed to December 21, 2023 at 10:00 a.m.

Pre-Bid Conference

1. A pre-bid meeting was held on October 26, 2023. The sign-in sheet for the conference is attached. The comments or questions from the conference, where applicable are addressed in this addendum.
2. A photo presentation was shared during the pre-bid conference. This photo presentation is attached.

Changes to Bidding Requirements:

3. Construction Form RA-1 Invitation for Bids, DELETE in its entirety and REPLACE with attached new Form RA-1.

Bid opening has been changed to December 21, 2023 at 10:00 a.m.

Changes to Specifications:

4. Section 32 31 13 Chain Link Fences and Gates, ADD new section in its entirety.
5. Section 40 23 10 Process Water and Waste Piping, 2.09, DELETE in its entirety.
6. Section 40 23 30 Valves and Accessories, replace in its entirety with the attached Revised Section 40 23 30 Valves and Accessories.
7. Section 40 90 00 Control System Functional Descriptions, 1.03.A, ADD the following lines to the end of the table:

FS-WT-1 – Waste Storage Tank High Level	Add	Alarm on SCADA
PT-GAC-1 – GAC Filter Differential High Alarm	Add	Alarm on SCADA

8. Section 46 61 21 Granular Activated Carbon Pressure Filters, 2.01.B, DELETE the table in its entirety and replace with the following:

Criteria	Observatory WTP
Design Flow per GAC Contactor	23 gallons per minute
Number of GAC Contactors	1
Design Empty Bed Contact Time (EBCT) at Design Flowrate	21 minutes
Total Vessel Volume	105ft ³
Total GAC Capacity	73ft ³
Total vessel height	96-3/8"
Side shell height	60"
Pressure Vessel Diameter	56"
Maximum Pressure Drop across Vessel System including face piping at the design flowrate	8 psi
Minimum Water Temperature	33 degrees F
Maximum Water Temperature	83 degrees F

9. Section 43 23 00 Process Valves and Accessories, replace in its entirety with the attached Revised Section 43 23 00 Process Valves and Accessories.

10. Section 46 61 21 Granular Activated Carbon Pressure Filters, 2.02.O:FLOW METERS

O. Flow Meters

- 1: GAC Effluent Flow Meter
 - a. Quantity: 1
 - b. Size: 4"
 - c. Manufacturer: Krohne Optiflux 2100
 - d. Connection Type: Flanged
 - e. Provide wall mounted transmitter and connect to plant PLC
 - f. Electrical Equipment Tag No.: FM-RW/FE-RW
2. GAC Backwash Supply Flow Meter
 - a. Quantity: 1
 - b. Size: 4"
 - c. Manufacturer: Krohne Optiflux 2100
 - d. Connection Type: Flanged
 - e. Provide wall mounted transmitter and connect to plant PLC
 - f. Electrical Equipment Tag No.: FM-BW/FE-BW

Changes to Drawings:

11. Drawing C03 Site Plan, DELETE in its entirety and REPLACE with attached new Drawing No. C03.
12. Drawing C04 Civil Details, DELETE in its entirety and REPLACE with attached new Drawing No. C04.
13. Drawing C05 Civil Details, Detail 1/C05, DELETE 24'-0".
14. Drawing S110 Foundation Plan, DELETE in its entirety and REPLACE with attached new Drawing No. S110.
15. Drawing E201 Power Plan, DELETE in its entirety and REPLACE with attached new Drawing No. E201 Power Plan
16. Drawing M101 Mechanical HVAC and Roof Plans, Detail 2/M101, Add the following item to the Notes list:
 5. Detail applies to generator pad, propane tank pad, and HP-1.
17. Drawing M201 - Domestic Water, Gas, and Sanitary Floor Plans, DELETE in its entirety and REPLACE with attached new Drawing No. M201 - Domestic Water, Gas, and Sanitary Floor Plans.
18. Drawing M401 - Plumbing Details and Schedules, DELETE in its entirety and REPLACE with attached new Drawing No. M401 - Plumbing Details and Schedules.

19. Drawing M501 - Plumbing Riser Diagrams, DELETE in its entirety and REPLACE with attached new Drawing No. M501 - Plumbing Riser Diagrams.
20. Drawing P070 Removals Plan, DELETE in its entirety and REPLACE with attached new Drawing No. P070.
21. Drawing P101 Building Plan, DELETE in its entirety and REPLACE with attached new Drawing No. P101.
22. Drawing P501 Chemical Feed Systems, DELETE in its entirety and REPLACE with attached new Drawing No. P501.

Note: Receipt of this Addendum No. 1, dated November 21, 2023 shall be acknowledged on Page 00 41 00-2 of the submitted Bid Form. Failure to do so may subject Bidder to disqualification.

END OF ADDENDUM

Rivanna Water & Sewer Authority

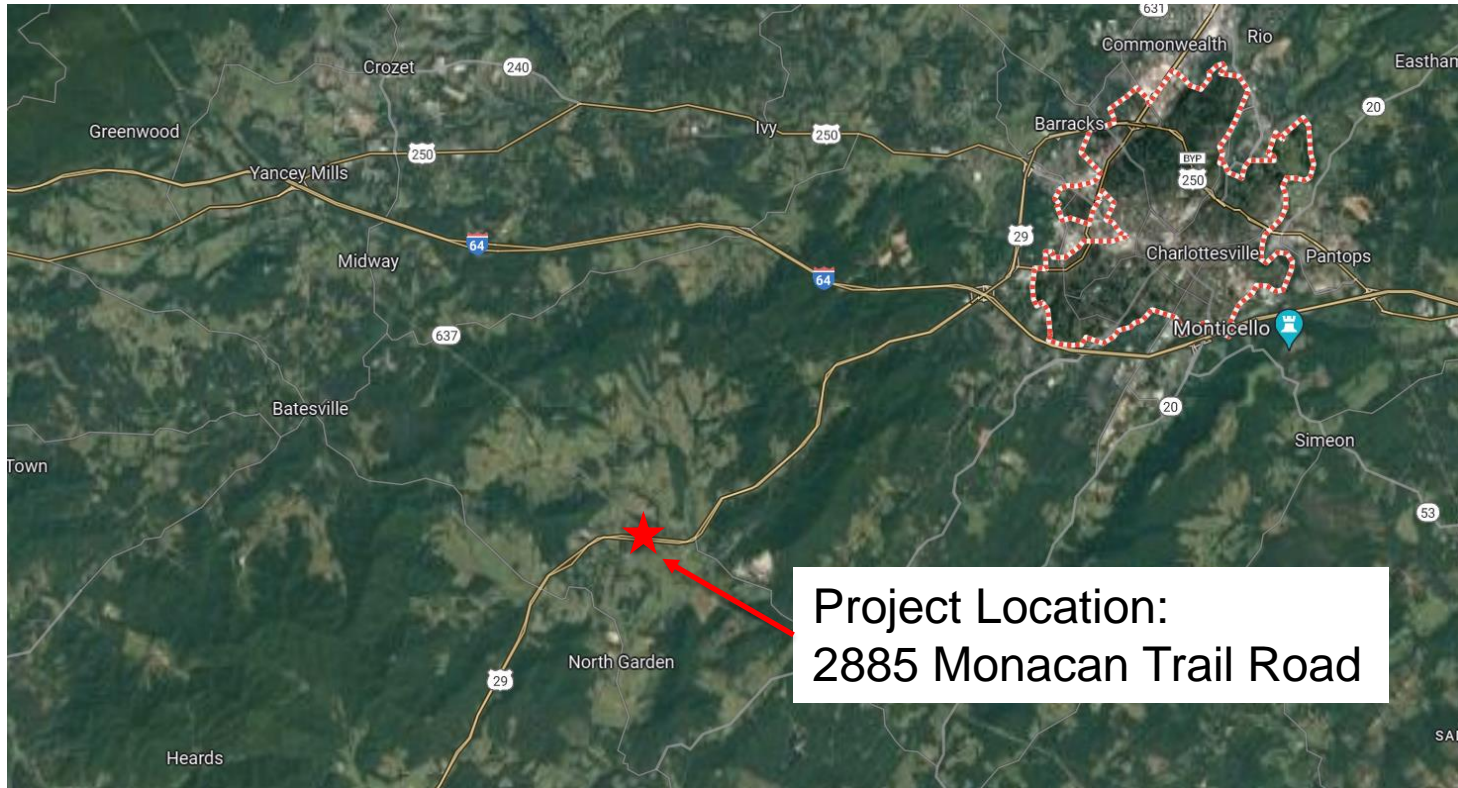
Red Hill Water Treatment Plant Upgrades

IFB No. 403

Pre Bid Meeting Photo Presentation



Project Location



Project Location



Exterior – North Side



Exterior – South Side



Exterior – West Side



Exterior – North and East Sides



Exterior – Ex. Gate



Interior – North Wall



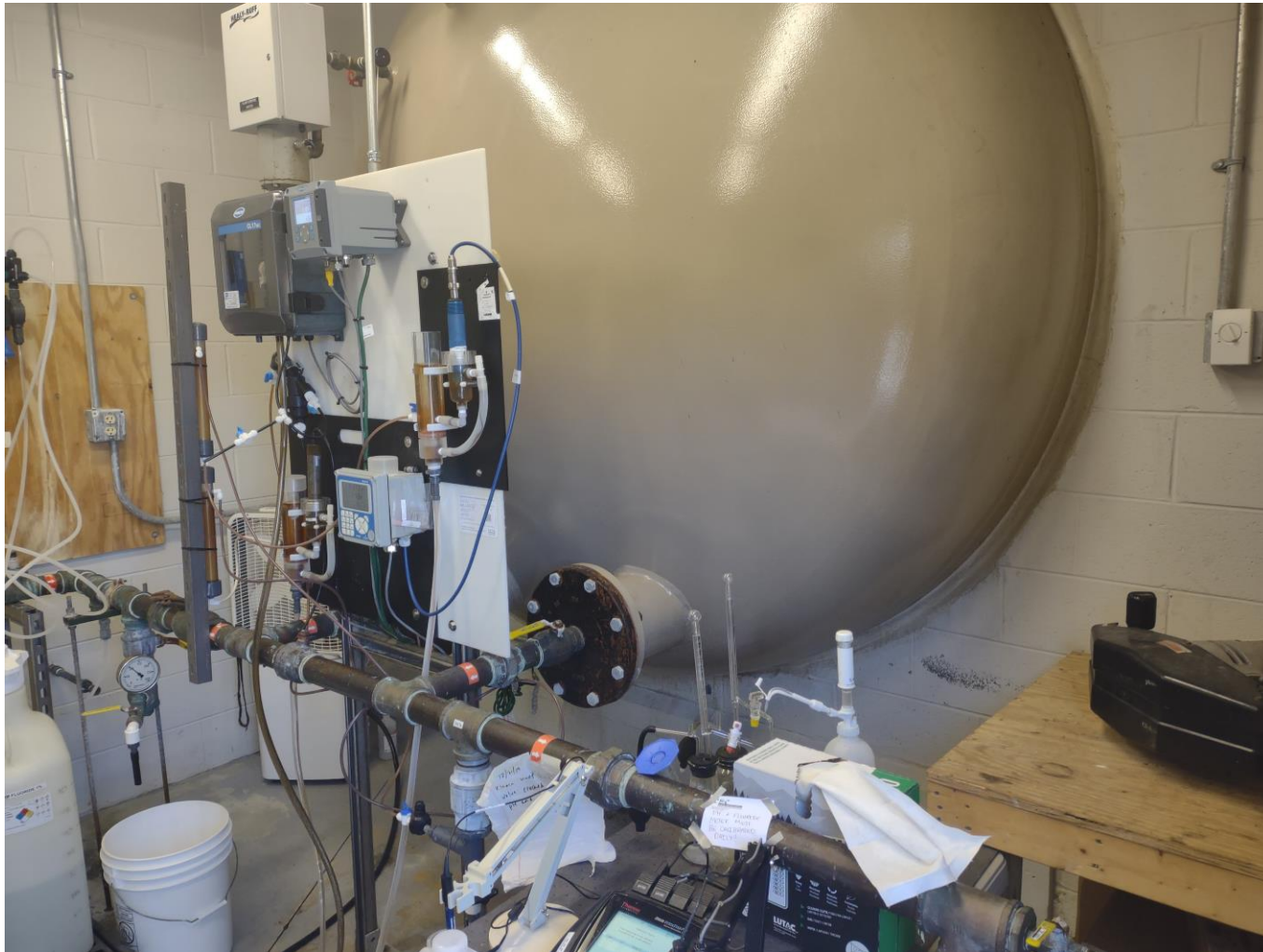
Interior – East Wall



Interior – South Wall



Interior – West Wall





PREBID CONFERENCE SIGN-IN




Red Hill Water Treatment Plant - Upgrades
Albemarle County, VA
Rivanna Water & Sewer Authority
IFB No. 403
SEH Project No. 168434
10:00 AM October 26, 2023

No.	Name	Affiliation
1	Brad Weiss	SEH
2	Santino Granato	RWSA
3	Scott Schiller	RWSA
4	John Thornton	MEB
5	Blake Begley	Morgan Contracting
6	Matt Harrison	Sherwood Logan
7	Jason Tucker	Rudy L Hawkins Electrical



RIVANNA SOLID WASTE AUTHORITY
RIVANNA WATER & SEWER AUTHORITY

695 Moores Creek Lane
Charlottesville, Virginia 22902-9016

434.977.2970 
434.293.8858 
www.rivanna.org 

INVITATION FOR BIDS (Construction Form RA-1)

*Rivanna Water and Sewer Authority
Rivanna Solid Waste Authority
Charlottesville, VA*

*Red Hill Water Treatment Plant - Upgrades
Charlottesville, Virginia*

IFB NO: 403

Due Date for Bids: December 21, 2023 at 10:00AM

*Short Elliot Hendrickson Inc.
400 Locust Avenue, Suite 2
Charlottesville, VA 22902*

DATE: September 28, 2023

SECTION 32 31 13

CHAIN LINK FENCES AND GATES

PART 1 GENERAL

1.01 SUMMARY

- A. Furnish and install steel fencing, posts, gates, etc., where shown on the Drawings and in compliance with these Specifications.
- B. Fencing shall be of the chain link type topped with barbed wire.
- C. Related Sections:
 - 1. Section 03 30 00 - Cast-in-Place Concrete
 - 2. Section 31 22 10 - Site Grading

1.02 MATERIALS AND CONSTRUCTION

- A. Fencing shall be of the chain link type topped with barbed wire.
- B. The fabric shall clear the final grade by 3 inches, and shall be topped with three strands of barbed wire.
- C. The barbed wire shall be angled outward at the top.
- D. All components which are to be galvanized shall be hot dipped galvanized, coating to be 1.8 ounces per square foot of surface.
- E. Alternate coatings which employ a zinc coating of less than 1.8 ounces per square foot are not acceptable.
- F. Fencing shall be PVC coated: **Black**.
- G. Fence posts, rails and all fixtures and appurtenances shall be black.
- H. Swing gate.
- I. Fence accessories.

1.03 REFERENCES

- A. Without limiting the generality of the other requirements of the Specifications, all work herein shall conform to the applicable requirements of the following documents. All referenced Specifications, codes, and standards refer to the most current issue available at the time of Bid.
- B. ASTM:
 - 1. A121 - Metallic Coated Carbon Steel Barbed Wire
 - 2. A123 - Hot Dip Galvanized Coatings on Iron and Steel Products
 - 3. A153 - Hot Dip Zinc Coating on Iron and Steel Hardware
 - 4. A181 - Carbon Steel Forgings for Piping
 - 5. A390 - Hot Dip Galvanized Steel Poultry Fence Fabric
 - 6. A491 - Aluminum-Coated Steel Chain Link Fence Fabric
 - 7. A780 - Repair of Damaged and Uncoated Areas of Hot Dip Galvanized Coatings
 - 8. A817 - Metallic Coated Steel Wire for Chain Link Fence Fabric
 - 9. A824 - Metallic Coated Steel Tension Wire for Chain Link Fence
 - 10. C33 - Concrete Aggregates

11. C150 - Portland Cement
12. F567 - Installation of Chain Link Fence
13. F626 - Fence Fittings
14. F668 - PVC Coated Steel Chain Link Fence Fabric
15. F900 - Industrial Swing Gates
16. F1043 - Strength and Protective Coatings on Chain Link Fence Framework
17. F1083 - Pipe, Steel, Hot-Dipped Galvanized Welded for Fence Structures
18. F1184 - Industrial and Commercial Horizontal Slide Gates

1.04 SUBMITTALS

- A. Product Data: Submit manufacturer's technical data, finishes, dimensions of individual components and profiles, and installation instructions for fencing, fabric, gates, and accessories.
- B. Shop Drawings:
 1. Show locations of fences, roller gates and swing gates, posts, rails, tension wires, details of extended posts, extension arms, gate swing, hardware, and accessories.
 2. Indicate materials, dimensions, sizes, weights, and finishes of components.
 3. Include plans, gate elevations, sections, details of post anchorage, attachment, bracing, and other required installation and operational clearances.
- C. Samples: 6-inch length of fabric wire for verification and selection of PVC color.
- D. Product Certificates: For each type of chain-link fence and gate, signed by product manufacturer.
- E. Testing: Strength test results for framing per ASTM F1043.

1.05 QUALITY ASSURANCE

- A. Provide chain link fences, gates as complete units by single source including necessary erection accessories, fittings, and fastenings.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering galvanize steel fencing and fabric which may be incorporated in Work include:
 1. Allied Tube and Conduit Corporation
 2. American Fence Corporation
 3. Ameristar Fence Products
 4. Anchor Fence, Inc.
 5. Cyclone Fence/United States Steel Corporation
 6. Merchants Metals, Inc. www.merchantsmetals.com
 7. Tymetal www.tymetal.com
 8. Manufacturer of comparable products submitted in compliance with Section 01 25 13.

2.02 CHAIN LINK FABRIC

- A. Fabric shall be 6 gauge aluminum coated core wire galvanized conforming to ASTM A641.
- B. Fabric shall be woven after PVC coating of black color.
- C. Top selvage shall have a twisted, barbed finish.
- D. Bottom selvage shall have upturned, or returned, finish.
- E. Minimum weight of coating shall be 0.40 ounce per square foot of wire surface.

- F. The coated wire shall have a minimum tensile strength of 80,000 lbs. per square inch.
- G. Install fabric at ground level.
- H. Fence shall be stretched tight and securely fastened to posts at points spaced no greater than 12 inches apart maximum.

2.03 FRAMING AND ACCESSORIES

- A. Dimensions: Pipe, roll-formed, H-sections are outside dimensions, exclusive of coatings.
- B. Steel Framework:
 - 1. Hot-dipped galvanized steel, ASTM F1083, not less than 1.8 ounce zinc per square foot of surface.
 - 2. All framework shall be PVC coated with minimum 0.40 ounce per sq.ft of member.
- C. Fittings and Accessories: Galvanized, ASTM F626.
- D. Posts
 - 1. Posts and rails shall be galvanized standard weight pipe conforming to the requirements of ASTM F1083.
 - a. Line Posts: Line posts shall be Schedule 40, 2-3/8 inch O.D. galvanized pipe with minimum bending strength of 201 pounds under a 6-foot cantilever load. Line posts shall be spaced at a maximum 10-foot O.C.
 - b. Terminal Posts: All end, corner, intermediate, and pull posts and gate leaves 6'-0" wide and less shall be 2-7/8 inch O.D. galvanized Schedule 40 pipe with minimum bending strength of 381 pounds on 6-foot cantilever load. Gate posts for gate leaves shall be Schedule 40 pipe complying with ASTM F1083 of diameters as follows:

Gate Leaf Width	Pipe O.D.	Weight per Ft.
0' to 6'	2-7/8"	5.79 lbs
Over 6' to 13'	4"	9.1 lbs
Over 13' to 18'	6-5/8"	18.97 lbs
Over 18'	8-5/8"	24.7 lbs

- E. Tension Wire:
 - 1. Top and bottom tension wire shall be No. 7 gauge aluminum coated steel wire. Fabric shall be securely tied to tension wire at intervals not to exceed 24-inches.
- F. Post tops and barbed wire support:
 - 1. Gate, end, corner and line post tops shall be malleable iron or pressed steel and shall be hot dipped galvanized conforming to ASTM A153.
 - 2. Extension arms for supporting the three (3) strands of barbed wire for line posts shall be of pressed steel with malleable iron base, or solid aluminum alloy castings.
 - 3. Angles for line post extension arms shall be approximately 45 degrees from the vertical and the top slot for barbed wire shall be a minimum of 12 inches above the fabric and a minimum of 10 inches from the fence line.
- G. End, Corner, Pull Posts: Minimum sizes and weights as follows:
 - 1. Up to 6 feet fabric height, 2.375-inch outside diameter steel pipe, 3.65 pounds per lineal foot, or 3.5 inch by 3.5 inch roll-formed sections, 4.85 pounds per lineal foot.
 - 2. Over 6 feet fabric height, 2.875-inch outside diameter steel pipe, 5.79 pounds per lineal foot, or 3.5 inch by 3.5 inch roll-formed sections, 4.85 pounds per lineal foot.
- H. Barbed Wire:
 - 1. Barbed wire shall consist of three strands of 12-1/2 gauge aluminum coated steel wire with 4-point barbs of 14 gauge aluminum wire spaced 5 inches apart, conforming to ASTM A585.

2. Additional strands of barbed wire shall be added beneath the chain link fabric at all ditch crossings to maintain the security of the fence installation.
- I. Braces and Top Rails:
 1. Braces and top rails (where shown on the Drawings) shall be 1.66-inch O.D., Schedule 40 galvanized pipe with minimum vertical bending strength of 202 pounds on 10-foot span.
 2. Top rails shall be continuous and shall pass through the post tops. The coupling used to join the top rail lengths shall allow for expansion. Brace rails shall be provided at all terminal posts, located between the top and grade lines and extend from the terminal post to the first adjacent post. Braces shall be securely fastened at both ends. Brace ends for receiving brace rails shall be malleable iron or castings of 356.0 (formerly SG70A) alloy, or equivalent of ASTM B26 or B108.
 3. Truss and stretcher bands shall be 1/8-inch x 7/8-inch pressed steel, supplied with carriage bolts and nuts. Bolts shall be 5/16-inch by 1¼ inch. Truss rods shall be 3/8-inch nominal diameter.
 - J. Fabric Ties:
 1. Wire ties shall be preformed 0.148-inch diameter (9 gauge) aluminum. Flat band type ties shall be 1100-H18 or 3003-H14, .064-inch thick by 1/2-inch wide.
 2. Hog rings for attaching tension wire to fabric shall be 0.105-inch diameter, Alloy 1100-H14.
 - K. Gates:
 1. Gate frames shall be made of 2-inch O.D. ASTM F1083 pipe, 2.72 lbs. per foot hot dipped galvanized. Fabric shall match fence. Gate frames shall be welded or assembled with riveted corner castings. Gate frames shall be equipped with 3/8-inch diameter adjustable truss bars. Hinges shall be ball and socket.
 2. Gate shall be equipped with positive latching device with provision for padlocking. Personnel gates shall be minimum 36-inch clear opening.
 3. Sliding gates
 - a. Sliding gates shall be cantilever type of the same height as adjacent fence.
 - b. Gate shall be furnished as a complete system inclusive of opener, card reader pedestal, and exit loop.
 - c. Gate operators shall be heavy duty rated for high frequency installation.
 - d. Shall be powered from Panelboard PP-1 as shown on Sheet 01E501.
 - e. Design intent is that gate shall open/close as follows:
 - 1) Card reader/security panel shall open gate when card is presented at pedestal reader
 - 2) Exit loop detector shall open the gate automatically as a vehicle approaches
 - 3) The gate shall close automatically after an adjustable 0-3 minute time delay. Field verify location of loop detector with Owner/Engineer in the field.
 4. Card Reader Pedestal
 - a. Contractor shall furnish and install conduit and pedestal for card reader installation
 - b. Card reader installation and wiring shall be by the Owner.
 - L. Concrete:
 1. All concrete shall be 3000 psi in conformance with Section 03 30 00.

PART 3 EXECUTION

3.01 PREPARATION

- A. Examine areas and conditions, with installer present, for compliance with requirements for a verified survey of property lines and legal boundaries, Site clearing, earthwork, pavement work, and other conditions affecting performance.
 1. Do not begin installation before final grading is completed, unless otherwise permitted by Engineer.
 2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. General:
 - 1. Install chain-link fencing to comply with ASTM F567 and more stringent requirements specified.
 - 2. Install fencing on established boundary lines inside property line.
- B. Excavation:
 - 1. Drill or hand excavate (using post hole digger) holes for posts to diameters and spacings indicated, in firm, undisturbed or compacted soil.
 - 2. If not indicated on Drawings, excavate holes for each post to minimum diameter recommended by fence manufacturer, but at least 4 times largest cross-section of post.
 - 3. Unless otherwise indicated, excavate hole depths approximately 3 inches lower than post bottom, with bottom of posts set at least 36 inches below finish grade surface.
- C. Setting Posts:
 - 1. Center and align posts in holes 3 inches above bottom of excavation.
 - 2. Place concrete around posts, vibrate or tamp for consolidation.
 - 3. Check for vertical and top alignment, hold in position during placement and finishing operations.
 - 4. Unless otherwise indicated, extend concrete footings 2 inches above grade, trowel to crown to shed water.
- D. Top Rails:
 - 1. Run rail continuously through post caps, bending to radius for curved runs.
 - 2. Provide expansion couplings as recommended by fencing manufacturer.
- E. Brace Assemblies: Install braces so posts are plumb when diagonal rod is under proper tension.
- F. Fabric:
 - 1. Leave approximately 3 inches between finish grade and bottom selvage, unless otherwise indicated.
 - 2. Pull fabric taut and tie to posts, rails, tension wires.
 - 3. Install on security side of fence, anchor to framework so that fabric remains in tension after pulling force released.
 - 4. Cantilevered gate fabric: Install using hook bolts inserted through pre-drilled holes in the frame, 15 inches on center and all 4 sides of the gate. Attach fabric with tension bar laced through last link of the fabric.
- G. Tension Bars: Thread through or clamp to fabric 4 inches on center, secure to posts with metal bands spaced 15 inches on center.
- H. Barbed Wire: Pull wire taut, install securely to extension arms, secure to end post or terminal arms in accordance with manufacturer's instructions.
- I. Tie Wires:
 - 1. Use U-shaped wire, conforming to diameter of pipe to which attached, clasping pipe and fabric firmly with ends twisted at least 2 full turns.
 - 2. Bend ends of wire to minimize hazard to persons or clothing.
 - 3. Tie fabric to line posts, with wire ties spaced 12 inches on center.
 - 4. Tie fabric to rails and braces, with wire ties spaced 24 inches on center.
 - 5. Tie fabric to tension wires, with hog rings spaced 24 inches on center.
- J. Fasteners:
 - 1. Install nuts for tension bands and hardware bolts on side of fence opposite fabric side.
 - 2. Peen ends of bolts or score threads to prevent removal of nuts.
- K. Gates:
 - 1. Install plumb, level, secure for full opening without interference.
 - 2. Install ground-set items in concrete for anchorage.
 - 3. Adjust hardware for smooth operation, lubricate where necessary.

3.03 POST FOUNDATIONS

- A. Post holes shall be in true alignment and of sufficient size to provide a permanent foundation of concrete. Holes shall be well centered on the posts. A minimum diameter of 12 inches shall be required for all posts.
- B. Post foundations shall be carefully rodded or tamped into place. The top of concrete shall extend 2 inches above ground line and shall be neatly troweled and leveled up from edges to the posts so as to have a pitch outward in all directions.
- C. No materials shall be installed on the posts, nor shall any load be applied to the posts within 3 days after the individual post foundation is completed.

3.04 RESETTING OF EXISTING FENCE

- A. Where shown on the Drawings that resetting of existing fence is required, the fence, after resetting, shall be in a condition that is equal to or better than before the fence was removed.
- B. The Contractor shall replace any of the fence components which have been unnecessarily damaged by him.

3.05 PADLOCK AND KEYS

- A. Padlocks and keys shall be provided by Owner..

3.06 ADJUSTING

- A. Adjust gate to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range.
- B. Confirm latches and locks engage accurately and securely without forcing or binding.
- C. Lubricate hardware.

3.07 CLEANING

- A. Site:
 - 1. Do not allow accumulation of scraps, debris arising from Work of this Section.
 - 2. Maintain premises in neat, orderly condition.
- B. System:
 - 1. Immediately after erection, clean field welds, bolted connections, and abraded areas.
 - 2. Refinish exposed or abraded areas with same material used for shop finishing to comply with SSPC-PA 1 for touching up shop-finished surfaces.
 - 3. Comply with ASTM A780 for repair of damaged hot dip galvanized coating.

3.08 TEMPORARY FENCING

- A. The Contractor shall furnish and install all temporary fencing and appurtenances as shown on the Drawings or as required during construction to adequately secure the site prior to installation of the permanent fence.

3.09 DEMONSTRATION

- A. Maintenance Instructions: Manufacturer's representative to schedule and attend meeting with Owner's representative to explain:
 - 1. Maintenance and care instructions.

2. Recommended maintenance program.
3. Warranty requirements.

END OF SECTION

SECTION 40 23 30

PROCESS VALVES AND ACCESSORIES

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Furnish and install all valves, complete with all assemblies and accessories, as specified herein at locations shown on the Drawings including all fittings, appurtenances and transition elements required for a complete and operable installation.
 - 2. Relocation of the filter function valve actuators from the upper filter operating floor to be directly mounted on the corresponding filter function valve located in the lower level pipe gallery. This work includes removal of all floorstands, extension shafts and shaft supports. Six (6) valves total.
 - 3. Except where noted otherwise, all valves shall conform to pertinent sections of the latest revision of AWWA C500 Specifications.
 - 4. All quantities of valves provided within each valve type specified below, shall be supplied from the same manufacturer.

- B. General Products Specified Herein
 - 1. Air/Vacuum Valves
 - 2. Gate Valves
 - 3. Ball Valves
 - 4. Solenoid Valves
 - 5. Static Mixers
 - 6. Miscellaneous process piping items.

- C. Related Sections:
 - 1. Supplementary Conditions of the Contract, General Conditions of the Contract and Division 1 Sections apply to the Work of this Section.
 - 2. Site and Infrastructure Subgroup.
 - 3. Section 09 97 20 - Coating Systems for Industrial Facilities.
 - 4. Division 22.
 - 5. Division 26.
 - 6. Division 40.

1.02 REFERENCES

- A. AWWA:
 - 1. C508 - Swing-Check Valves for Waterworks Service, 2-Inch Through 24 Inch
 - 2. C509/C515 - Resilient-Seated Gate Valves
 - 3. C512 - Air Release, Air/Vacuum, and Combination Air Valves for Waterworks Service

1.03 SUBMITTALS

- A. Comply with Section 01 33 00.

- B. Submit Product Data which includes the following for each item furnished:
 - 1. Manufacturer and model.
 - 2. Component materials.
 - 3. Dimensions.

- C. Provide Operation and Maintenance manuals in accordance with Section 01 78 23.

1.04 QUALITY ASSURANCE

- A. The materials used in this work shall be new and conform to the requirements of this Section.
- B. Refer to Section 09 97 20 for requirements for surface preparation, priming and finish coatings.

PART 2 PRODUCTS

2.01 MATERIAL

- A. Size, joint type and body material of the valves shall correspond to the size, joint type and material of the adjacent piping, unless otherwise stated on the Contract Drawings and specifications.

2.02 AUTOMATIC HYDROPNEUMATIC TANK PRESSURE RELEASE VALVES

- A. Approved Manufacturers:
 - 1. Watts
 - 2. Or approved equal
- B. Provide pressure release valves where called for in the plans.
- C. Conditions of Service:
 - 1. Application: Air
 - 2. Connection Size: 3/4" – Field verify existing
 - 3. Maximum pressure: 300 PSI
 - 4. Factory set pressure 125 PSI
 - 5. Material: Brass
 - 6. Operation: Automatic
 - 7. Approved for use on ASME certified tank
- D. All valves shall be furnished and installed with inlet shutoff ball valves unless specifically called out different in the plans.
- E. Route discharge to exterior of building. 1-inch copper pipe routed through exterior wall above CMU. Seal penetration weathertight. Install 20-mesh stainless steel screen on end of discharge pipe..

2.03 AUTOMATIC HYDROPNEUMATIC TANK PRESSURE RELEASE VALVES WITH PULL RING

- A. Approved Manufacturers:
 - 1. Milton
 - 2. Watts
 - 3. Or approved equal
- B. Provide pressure release valves where called for in the plans.
- C. Conditions of Service:
 - 1. Application: Air
 - 2. Connection Size: 1/2" – Field verify existing
 - 3. Maximum pressure: 300 PSI
 - 4. Factory set pressure 110 PSI
 - 5. Material: Brass
 - 6. Operation: Automatic. Pull ring for manual testing
 - 7. Approved for use on ASME certified tank
- D. All valves shall be furnished and installed with inlet shutoff ball valves unless specifically called out different in the plans.

- E. Route discharge to exterior of building. 0.75-inch copper pipe routed through exterior wall above CMU. Seal penetration weathertight. Install 20-mesh stainless steel screen on end of discharge pipe.

2.04 HYDROPNEUMATIC TANK VACUUM BREAKER VALVE

- A. Approved Manufacturers:
 - 1. Warren Controls
 - 2. Or approved equal
- B. Provide vacuum relief valve where called for in the plans.
- C. Conditions of Service:
 - 1. Application: Air
 - 2. Connection Size: 4" Flange– Field verify existing
 - 3. Material: stainless steel body and seat
 - 4. Maximum pressure: 150PSI
 - 5. Operation: Automatic
 - 6. Approved for use on ASME certified tank

2.05 BALL VALVES

- A. Lead free bronze ball valves:
 - 1. Two piece body
 - 2. Stainless steel ball
 - 3. Teflon seats and stuffing box ring
 - 4. Blow-out proof stem
 - 5. Level handle with balancing stops.
 - 6. FPT threaded ends for connection with threaded steel process pipe.

2.06 0STATIC MIXERS

- A. Contractor shall furnish and install a static mixer in the process piping upstream of the hydroneumatic tank.
- B. Approved Manufacturers:
 - 1. Koflo
 - 2. Equal Pre-approved by Engineer
- C. Quantity: 1
- D. Size: 2-inch Diameter
- E. Design
 - 1. Water flow range: 10 gpm to 50 gpm
 - 2. No. of mixing elements: 6
 - 3. Material: 316 SS
 - 4. End Connection: Threaded male NPT
- F. Miscellaneous
 - 1. Contractor shall furnish and install unions on both ends of the static mixer to facilitate installation/removal of the static mixer
 - 2. Contractor shall furnish a piece of threaded steel pipe of the same length as the static mixer to be installed in the process pipe in the event the static mixer is removed.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Inspect all material and equipment as it is received to determine damage and/or missing parts. Repair or replace damaged items in accordance with manufacturers' instructions.
- B. Determine locations and dimensions of existing structures, piping, and equipment associated with or potentially interfering with the proper fabrication and installation of proposed work.
- C. Coordinate final length and location of required pipe connections to all process equipment to meet the recommendations and requirements of the equipment manufacturer subject to approval of the Engineer.
- D. No work shall be installed that directly connects to equipment until such time as complete Shop Drawings of said equipment have been reviewed by the Engineer.
- E. Determine and be responsible for the proper locations and character of all hangers, chases, sleeves and other openings in the construction required for all process piping work.
- F. Refer to other drawings for exact locations of partitions, walls, doors, equipment, etc.

3.02 INSTALLATION AND TESTING

- A. General:
 - 1. All valves and accessories shall be installed as shown on the Drawings, as described herein, and in accordance with manufacturer's recommendations.
 - 2. Install all items in accordance with manufacturer's recommendations.
 - 3. Install items only where indicated on the Drawings.
 - 4. Installation at other location only with prior approved by the Engineer.
 - 5. All screwed or soldered piping shall have unions installed on both sides of all valves and at all connection points to all equipment.
 - 6. Install vertical piping runs plumb and horizontal runs parallel with structure wall unless otherwise noted on the Drawings.
- B. Air Release Valves and Air and Vacuum Valves:
 - 1. Gate valves or ball valves shall be installed below each air release valve.
 - 2. Gate valves or ball valves shall be installed below each air and vacuum valve.
 - 3. The air and vacuum valves shall have downward positioned return pipes that terminate directly over and 12 inches above the floor drain, unless noted otherwise within the Contract Documents. Each outlet shall be covered with a 24 mesh stainless steel screen.
 - 4. The air release valves shall be fitted with drain piping that directs vented water to, and down, the nearest wall or structural column to the nearest floor drain. The outlet shall be covered with a 24 mesh stainless steel screen and terminated 2 pipe diameters above the floor trench drain.
- C. After installation, operate each valve to ensure proper function.

3.03 CONNECTIONS WITH EXISTING PIPING

- A. Where connection between new and existing work is made, use suitable and proper fittings to suit conditions encountered.
- B. Provide suitable equipment and facilities to dewater, drain, and dispose of liquid removed without damage to adjacent property.
- C. Where connection involves potable water systems, provide disinfection methods as prescribed in these Specifications.

3.04 PAINTING

- A. The exterior of all valves, operators and accessories, unless otherwise specified, shall be painted as specified under Section 09 97 20.
- B. Valves shall be painted to match the color of the adjacent piping.

3.05 START-UP TRAINING

- A. Provide the services of a factory-trained technician for a minimum of two 1-hour operator training sessions for each type of valve or device provided in this section.
- B. Schedule training at Owner's convenience after the systems are operational.

END OF SECTION

This Page Left Blank Intentionally

SECTION 43 23 00
CENTRIFUGAL PUMPS

PART 1 GENERAL

1.01 DESCRIPTION

- A. Furnish, install, and test centrifugal pumping units and accessories as indicated on the Drawings and as specified herein.
- B. One (1) centrifugal pumps will be installed throughout the facility.
 - 1. One (1) end suction pump to recirculate water through the hydropneumatic tank.
- C. Related Sections
 - 1. Section 26 00 00 - Electrical General Provisions
 - 2. Section 40 90 00 - Instrumentation and Control for Process Systems

1.02 DEFINITIONS

- A. AFBMA: Anti-friction Bearing Manufacturers Association
- B. AISI: American Iron and Steel Institute
- C. ASTM: American Society for Testing and Materials
- D. FM: Factory Mutual
- E. HI: Hydraulic Institute Standards
- F. NEC: National Electrical Code
- G. NEMA: National Electrical Manufacturers Association
- H. NFPA: National Fire Protection Association

1.03 SUBMITTALS

- A. Shop Drawings in accordance with Section 01 33 00 and include the following:
 - 1. Name of manufacturer
 - 2. Size and model number
 - 3. Performance curves
 - 4. Certified performance curves
 - 5. Detailed specifications and dimensions
 - 6. Motor specifications
 - 7. Installation guide
 - 8. Printed warranty
- B. Operating and Maintenance Data in accordance with Section 01 78 23.
- C. Certified Installation Inspection and Start-up Services

1.04 WARRANTY

- A. The pump manufacturer shall warrant the pumps, motors, and guide removal systems to the Owner against defects in materials and workmanship for a period of five years or 10,000 hours of operation under normal use and service.

- B. The pump manufacturer's warranty shall be in printed form and previously published as the manufacturer's standard warranty for all similar units manufactured. A copy of the warranty shall be provided to the Owner at system start-up.

1.05 SYSTEM START-UP

- A. The pump manufacturer shall furnish the services of a qualified factory trained field service engineer for two 8-hour work days at the site to inspect the installation and instruct the Owner's personnel on the operation and maintenance of the pumping units.

PART 2 PRODUCTS

2.01 MANUFACTURER/MODEL:

- A. Approved Manufacturers
 - 1. EBARA
 - 2. Gould
 - 3. Little Giant
 - 4. Or Engineer pre-approved equal.

2.02 BASIS OF DESIGN

- A. The basis of design is Goulds Model 1BF40312.

2.03 COMPONENTS

- A. End Suction Pump:
 - 1. Pump casing shall be cast iron with smooth water passages and fitted with a steel replaceable wearing ring. Maximum casing working pressure shall be 100 psig.
 - 2. Shall be provided with a face type mechanical seal with Ni-Resist stationary seat, carbon washer, Buna rubber flexible members, 18-8 stainless steel spring and metal parts. Seal shall be mounted over 416 stainless steel shaft sleeve.
 - 3. Pump Shaft:
 - a. Carbon steel of a size and design to limit shaft deflection at the stuffing box to no more than 0.002 inches.
 - b. Connections to drives shall be connected through a flexible coupling.
 - 4. Impeller:
 - a. Shall be one piece iron casting
 - b. Suitable for use in chlorinated potable water
 - 5. Furnish all necessary fittings for connecting to suction and discharge piping.
 - 6. Pump manufacturer shall furnish necessary anchor bolts, nuts, washers, gaskets, and templates required for setting the pump. Anchor bolts shall be 304 stainless steel. Contractor shall place all anchors in accordance with certified prints supplied by pump supplier.

- B. Electrical Requirements:

Motors	End Suction Pump
Rating	120V, 1ph, 60 Hz
Minimum Horsepower	1/3
Speed, rpm	3500

PART 3 EXECUTION

3.01 DELIVERY OF EQUIPMENT

- A. Delivery of equipment shall be coordinated with the requirements of the Contractor.

3.02 INSTALLATION

- A. Install equipment in accordance with manufacturer's recommendations and as shown on Drawings.
- B. Equipment manufacturer to furnish necessary anchor bolts, nuts, washers, gaskets and anchor bolt templates.
- C. Install all anchors in accordance with certified prints supplied by equipment manufacturer.

3.03 SYSTEM AND EQUIPMENT STARTUP

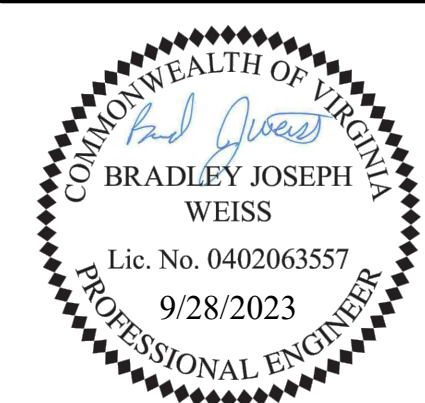
- A. Conform to the requirements of Section 01 75 00.
- B. The manufacturer or single source supplier of equipment included in each section shall inspect the completed installation; make all necessary adjustments, corrections, or modifications prior to start-up. See Section 44 44 00.
- C. Provide written certification that check-out services have been completed and 1 week notice prior to start-up and demonstration.
- D. Place various items of equipment into operation, along with related piping and control systems, at times acceptable to Owner. After satisfactory start-up of these systems and their related equipment, they will remain in continuous or intermittent operation as required by the Owner.
- E. All equipment and accessories shall be adjusted and calibrated prior to any start-up and any equipment placed into temporary operation prior to Final Completion of the total Project shall be readjusted and/or recalibrated as necessary.
- F. Contractor shall supervise, control, and be responsible for operation and maintenance of new equipment and/or systems during start up.
- G. No system start-ups will be held on holidays, Fridays, or the day before a holiday.

3.04 DEMONSTRATION AND TRAINING

- A. Provide factory trained serviceman to instruct the Owner's personnel in the proper operation and maintenance of the equipment and certify to the Engineer that system is installed and operating properly, refer to Sections 01 75 00 and 40 05 00.
- B. Following completion of successful equipment start-up, the Contractor shall arrange for a factory representative and installer of each operating piece of equipment and other work requiring regular or continuing maintenance, to meet at Site with Owner's personnel to provide necessary basic instruction in proper operation and maintenance of entire work. Where installers are not experienced in required procedures, include instruction by manufacturer's representatives.
- C. For each piece of operating equipment, the factory representative and installer shall provide two separate training sessions to the Owner's operations and maintenance staff. The two training sessions shall be separated in time by at least 1 week (7 days) and shall be arranged to meet the schedules of the Owner's operations and maintenance staff.
- D. Each training session shall be inclusive of a minimum 4 hours on-site instructional time. All travel time and costs necessary to perform each training session shall be considered as additional and incidental to four hours of on-site instructional training time.
- E. The training session time shall be separate and distinct from the time spent on equipment start-up.
- F. Contractor shall coordinate the schedule for each training session a minimum of 2 weeks (14 days) ahead of schedule.

- G. All final copies of the Operation & Maintenance manuals for each piece of operating equipment shall be delivered to the Engineer a minimum of 1 week (7 days) prior to scheduling the initial training session.
- H. At a minimum, each training session shall include the following:
 - 1. Utilize operation and maintenance manuals as basis for instructions.
 - 2. Review contents of manual with Owners' personnel in detail to explain all aspects of operation and maintenance.
 - 3. Include a detailed review of the following items:
 - a. Maintenance manuals.
 - b. Record documents.
 - c. Spare parts and materials.
 - d. Tools.
 - e. Lubricants.
 - f. Fuels.
 - g. Identification systems.
 - h. Control sequences.
 - i. Hazards.
 - j. Cleaning.
 - k. Warranties.
 - l. Maintenance agreements and similar continuing commitments.
 - 4. Manufacturer's representative shall demonstrate the following procedures to Owner's personnel prior to date of final inspection:
 - a. Startup.
 - b. Shutdown.
 - c. Emergency operations.
 - d. Noise and vibration adjustments.
 - e. Safety procedures.
 - f. Economy and efficiency adjustments.
 - g. Effective energy utilization.
 - h. Troubleshooting.
 - i. Maintenance.
- I. Prepare and insert additional data in operations and maintenance manuals if need for additional data becomes apparent during instructions.

END OF SECTION



Project Owner
RIVANNA WATER & SEWER AUTHORITY
695 MOORES CREEK LANE
CHARLOTTESVILLE, VA 22902

**RED HILL WATER TREATMENT PLANT - UPGRADES
RIVANNA WATER AND SEWER AUTHORITY**
SHEET NO. 403
ALBERMARLE COUNTY,
VIRGINIA

This drawing is an instrument of service and shall remain the property of Short Elliott Hendrickson, Inc. (SEH). This drawing, concepts and ideas contained herein shall not be used, reproduced, revised, or released without the express written approval of SEH.
Submission or distribution of this drawing to meet official or regulatory requirements or for purposes in connection with the project is not to be construed as publication in derogation of any of the rights of SEH.
COPYRIGHT © 2023
Short Elliott Hendrickson, Inc.
All Rights Reserved.

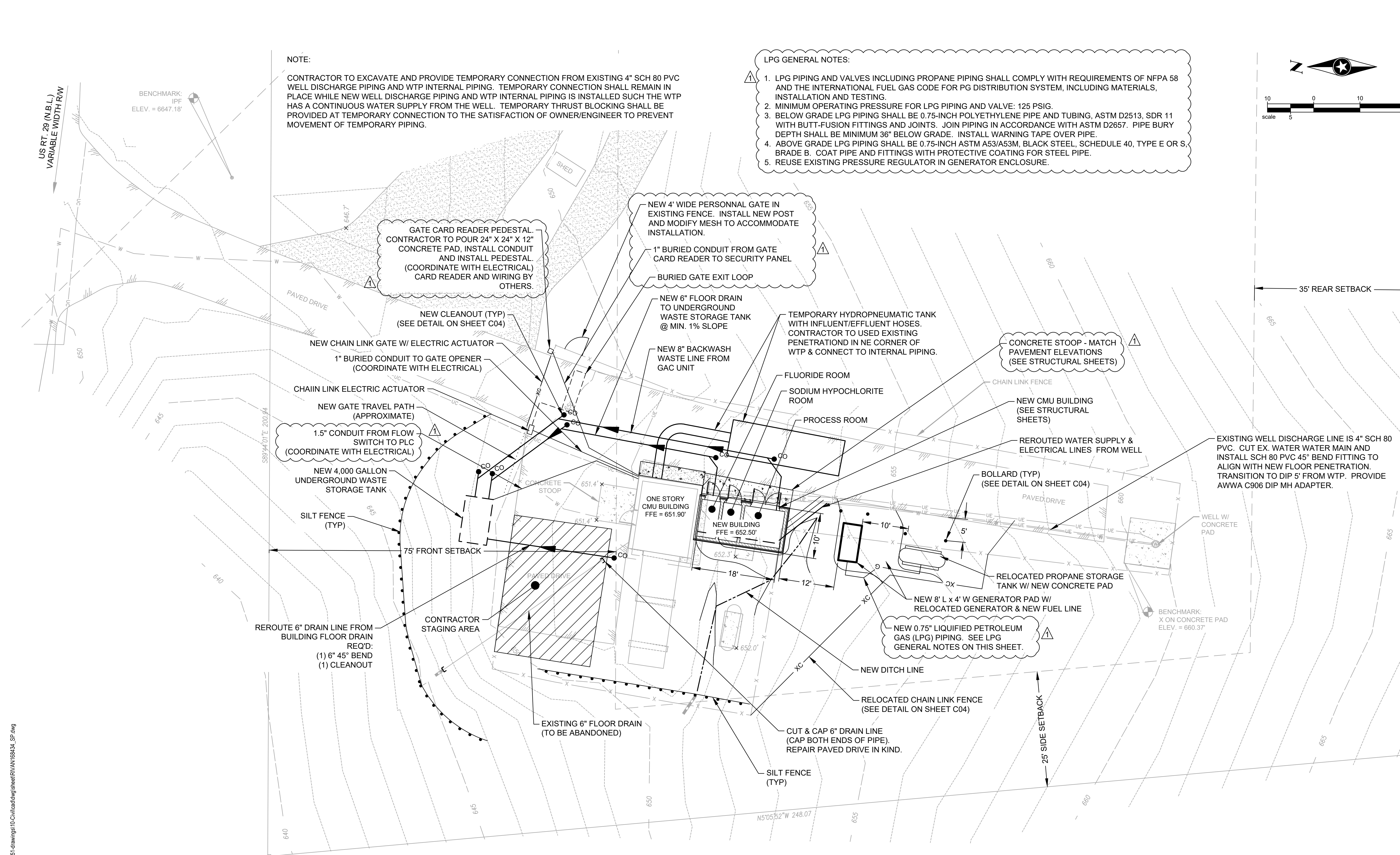
SEH Project 168434
Checked By TWW
Drawn By WSW

Project Status Issue Date
BID DOCS 9/28/2023

REV. #	DESCRIPTION	DATE
1	ADDENDUM 1	11/20/2023

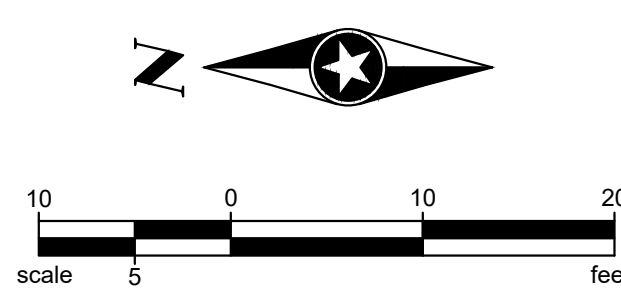
SITE PLAN

C03

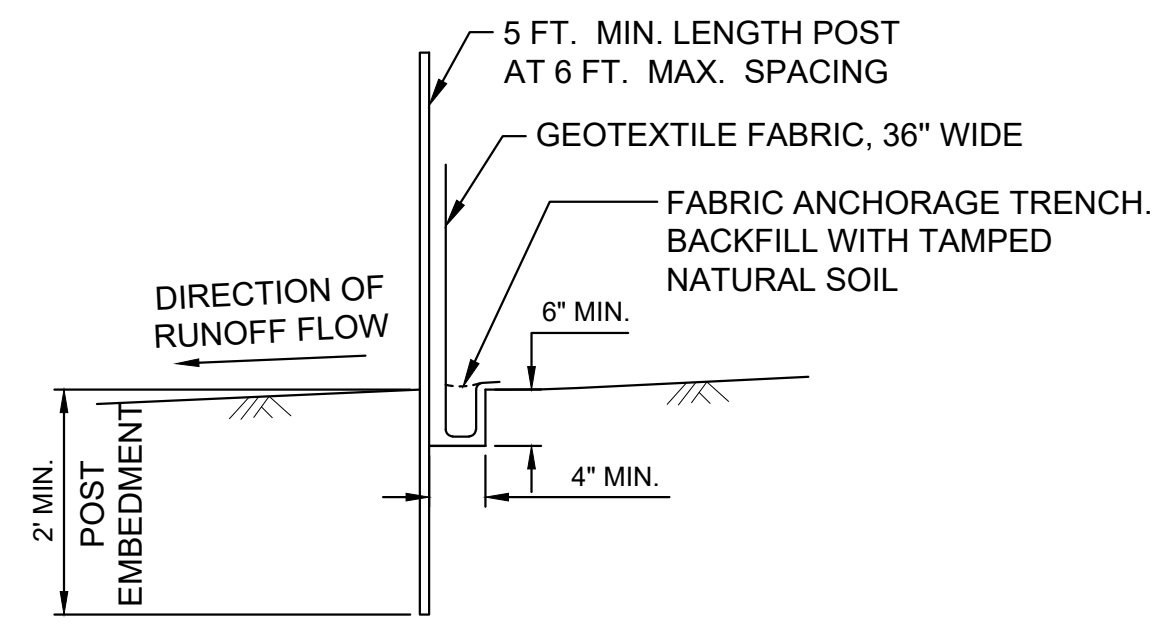
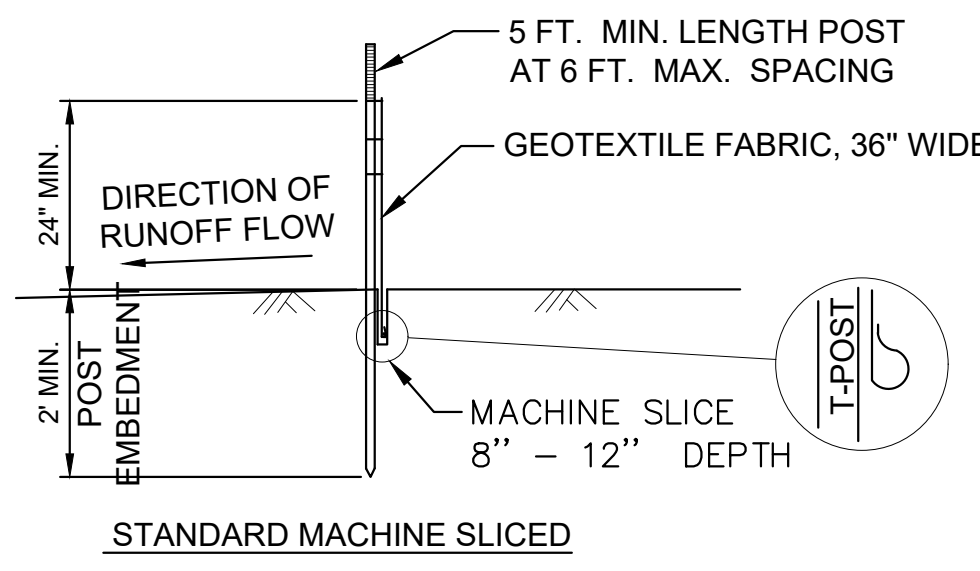
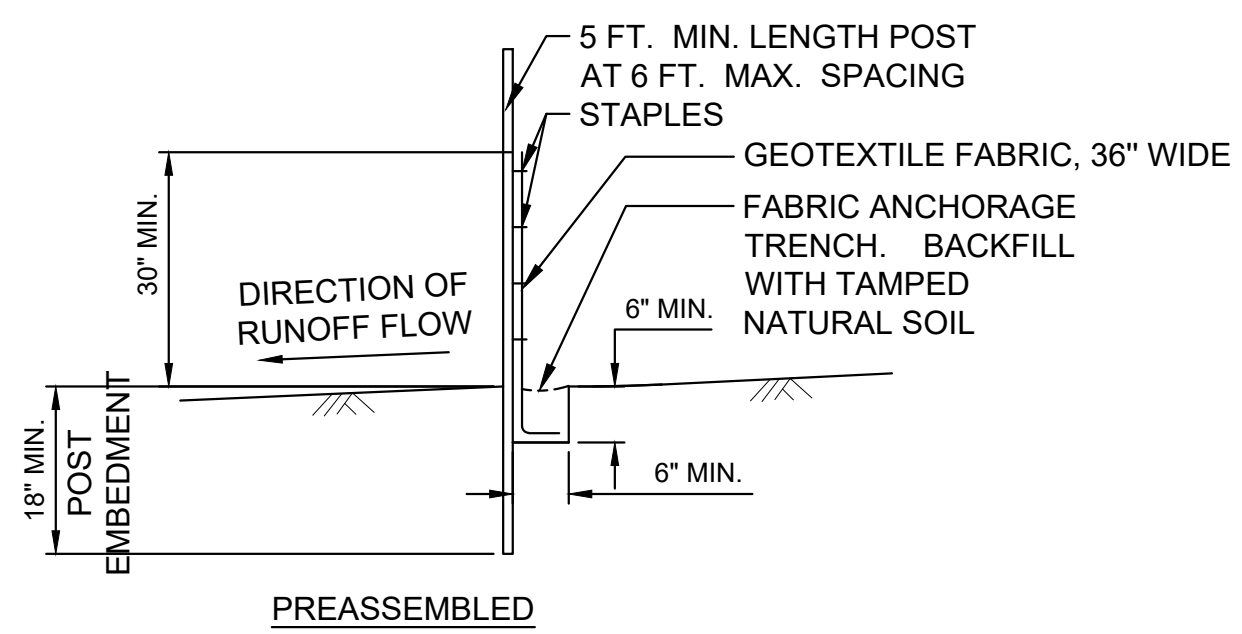


NOTE:
CONTRACTOR TO EXCAVATE AND PROVIDE TEMPORARY CONNECTION FROM EXISTING 4" SCH 80 PVC WELL DISCHARGE PIPING AND WTP INTERNAL PIPING. TEMPORARY CONNECTION SHALL REMAIN IN PLACE WHILE NEW WELL DISCHARGE PIPING AND WTP INTERNAL PIPING IS INSTALLED SUCH THE WTP HAS A CONTINUOUS WATER SUPPLY FROM THE WELL. TEMPORARY THRUST BLOCKING SHALL BE PROVIDED AT TEMPORARY CONNECTION TO THE SATISFACTION OF OWNER/ENGINEER TO PREVENT MOVEMENT OF TEMPORARY PIPING.

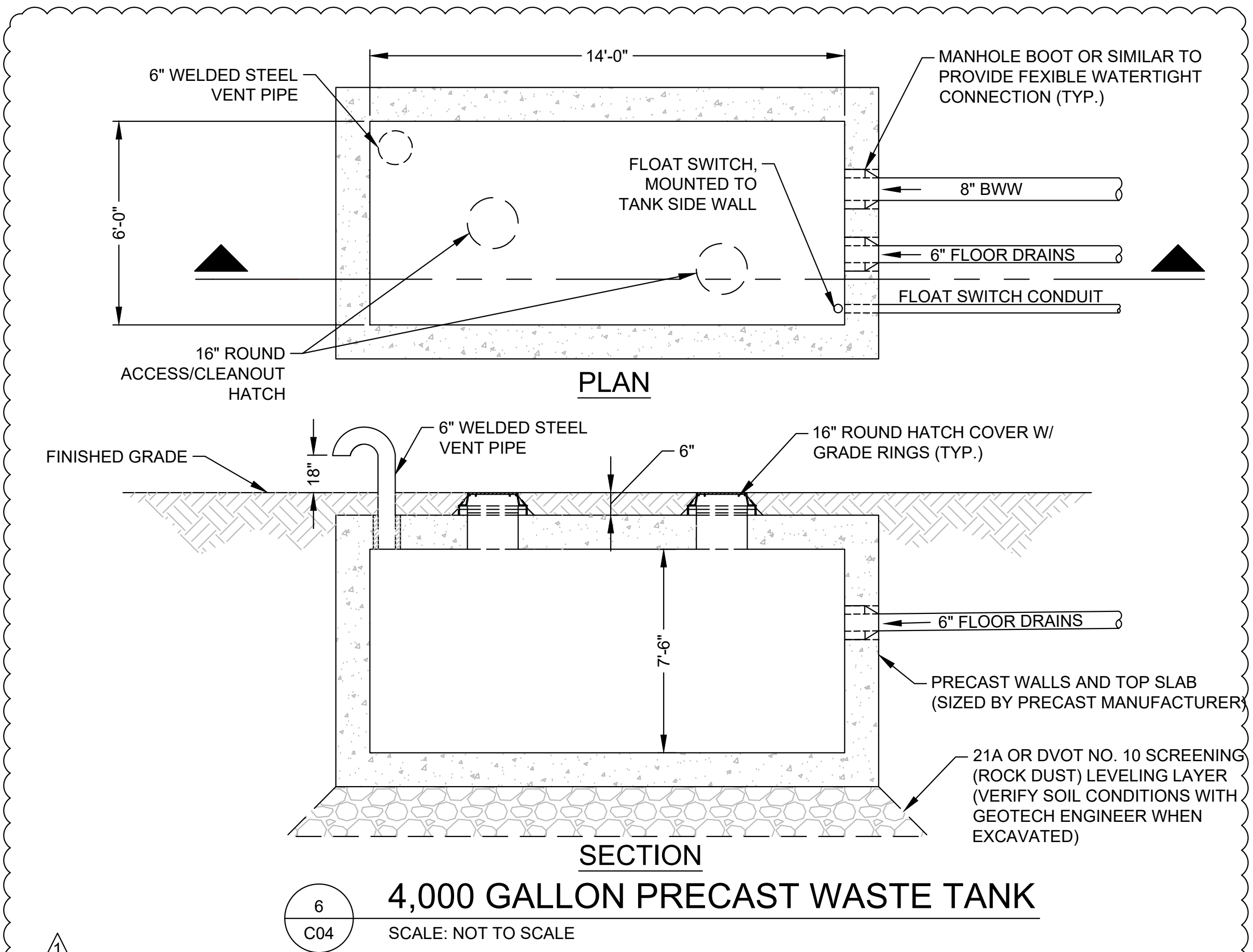
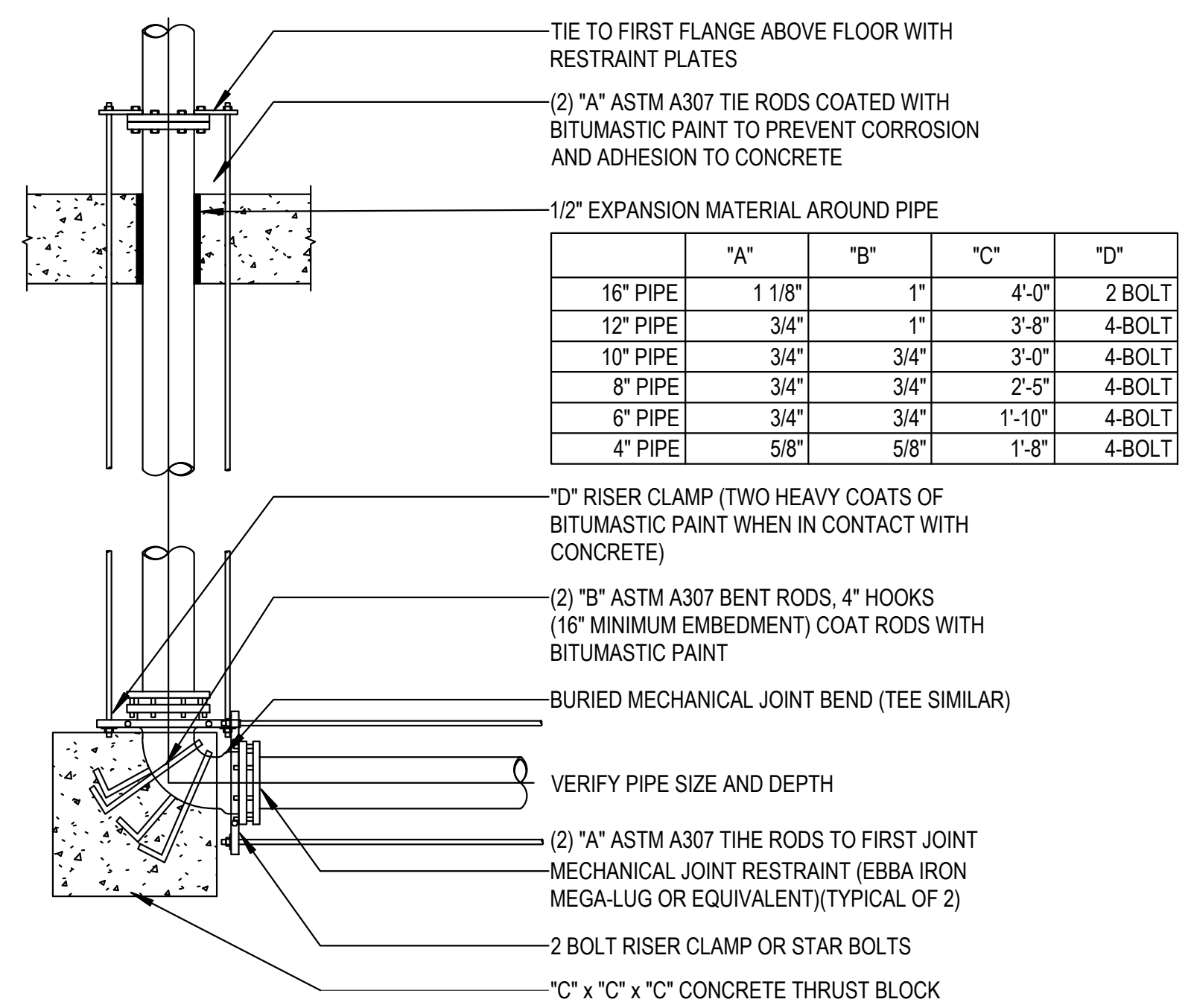
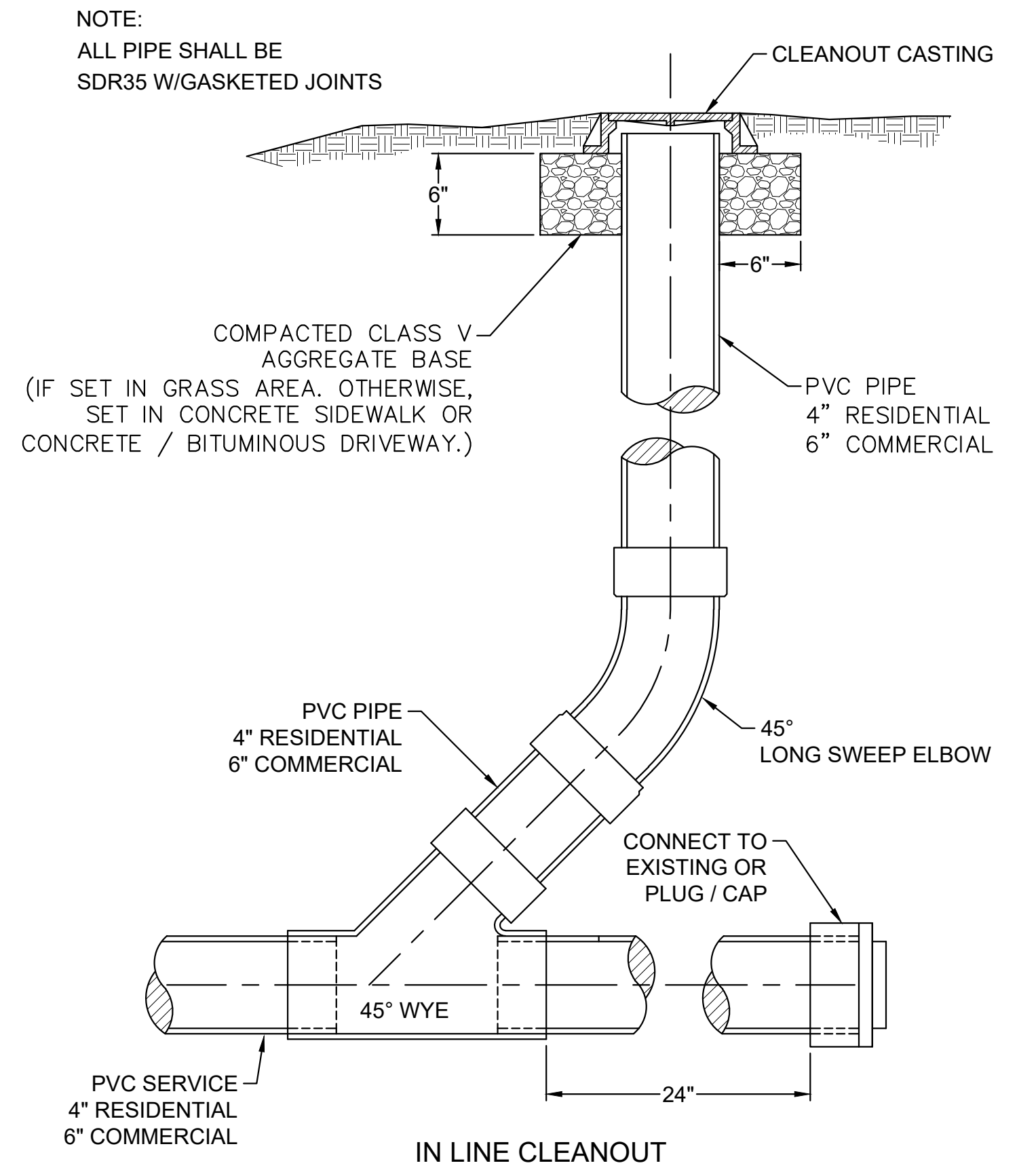
- LPG GENERAL NOTES:
1. LPG PIPING AND VALVES INCLUDING PROPANE PIPING SHALL COMPLY WITH REQUIREMENTS OF NFPA 58 AND THE INTERNATIONAL FUEL GAS CODE FOR PG DISTRIBUTION SYSTEM, INCLUDING MATERIALS, INSTALLATION AND TESTING.
 2. MINIMUM OPERATING PRESSURE FOR LPG PIPING AND VALVE: 125 PSIG.
 3. BELOW GRADE LPG PIPING SHALL BE 0.75-INCH POLYETHYLENE PIPE AND TUBING, ASTM D2513, SDR 11 WITH BUTT-FUSION FITTINGS AND JOINTS. JOIN PIPING IN ACCORDANCE WITH ASTM D2657. PIPE BURY DEPTH SHALL BE MINIMUM 36" BELOW GRADE. INSTALL WARNING TAPE OVER PIPE.
 4. ABOVE GRADE LPG PIPING SHALL BE 0.75-INCH ASTM A53/A53M, BLACK STEEL, SCHEDULE 40, TYPE E OR S, GRADE B. COAT PIPE AND FITTINGS WITH PROTECTIVE COATING FOR STEEL PIPE.
 5. REUSE EXISTING PRESSURE REGULATOR IN GENERATOR ENCLOSURE.



SAVE: 10/17/2023 12:09:47 PM swilby
PLOT: 11/20/2023 4:15:28 PM KJPT/RIVANNA/1684345-final-dsgn/10-Civil/caddwg/shed/rivan168434_SP.dwg



- NOTES:
- CONTRACTOR SHALL CONSTRUCT TRENCH AND PROVIDE PROTECTIVE MEASURES AS REQUIRED TO COMPLY WITH OSHA REGULATIONS.



STRUCTURAL METALS / FRP

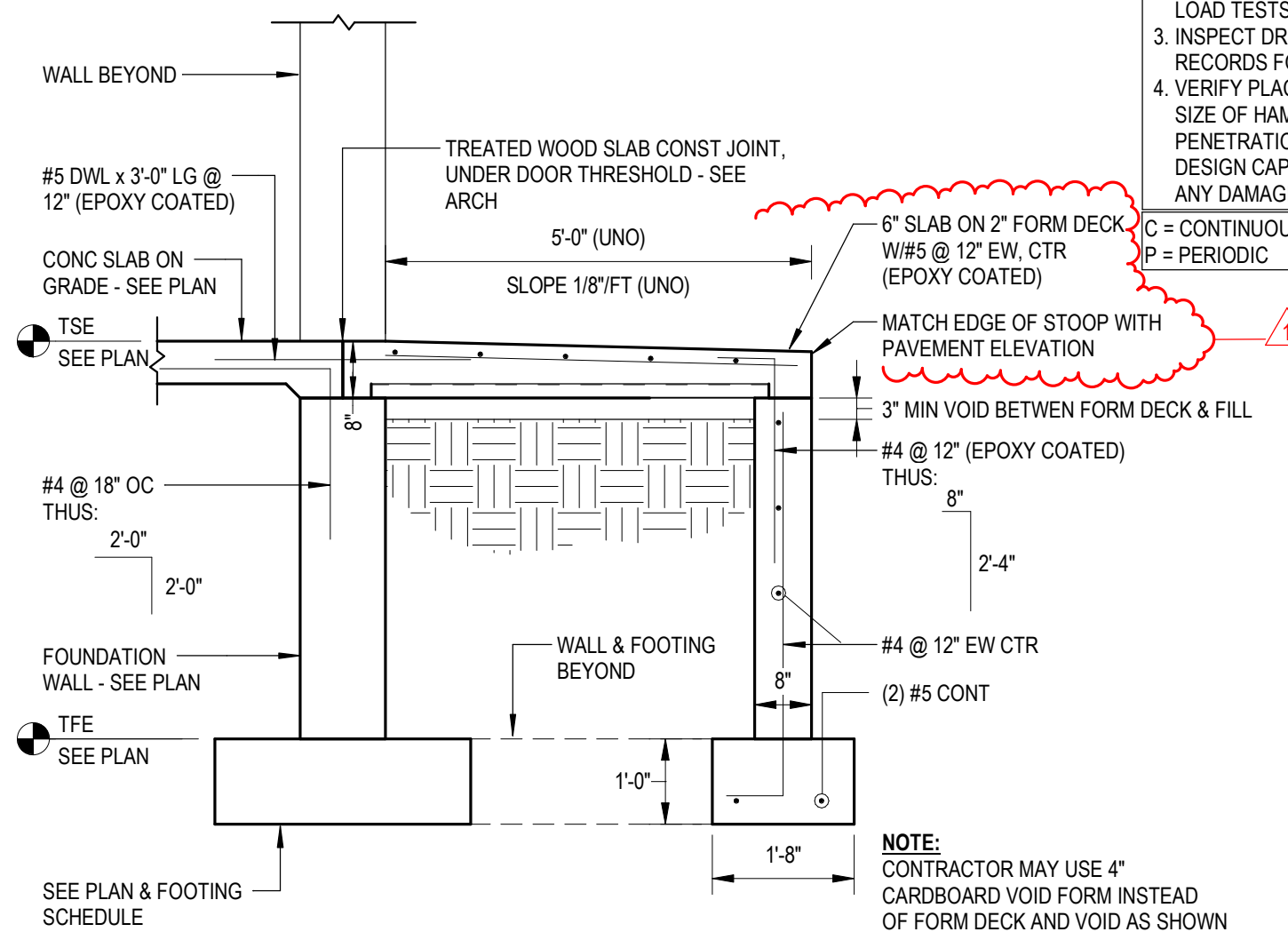
- All structural steel shall be as follows:
 - Wide flange beams and columns shall be ASTM A992, grade 50 steel.
 - All miscellaneous steel (angles, channels, plates) shall be ASTM A992, A529, or A36 steel (min. Fy = 36 KSI).
 - Rectangular steel tubes (RHS) shall be ASTM A500, grade C steel (fy = 50 KSI).
 - Pipe shall be ASTM A53 (fy = 35 KSI) unless A500 grade C (46 KSI) is noted.
 - Other shapes shall be ASTM A36 (36 KSI).
- Splicing or modification of members in the field is prohibited without prior written approval of the SER.
- All primary member bolted connections shall be two bolt minimum.
- Fabrication and erection shall be in accordance with the latest edition of the AISC Manual of Steel Construction, Code of Standard Practice for Steel Buildings and Bridges, except as follows:
 - To paragraph 3.1, add "The project architectural drawings are a part of the structural steel design drawings by reference and must be used concurrently with the structural steel design drawings for any information not shown on the structural steel design drawings"
 - Delete paragraph 3.2 and insert the following: "architectural, process, electrical and mechanical plans shall be used as a supplement to the structural steel design drawings to define detail configurations and construction information".
 - Paragraph 3.3 modify the last sentence to read, "in case of discrepancies between the structural steel plans and plans of other disciplines or existing conditions, such discrepancies shall be called to the architect / engineer's attention for resolution".
- All aluminum shapes shall be ASTM B209, B308, alloy 6061-T6, except handrail may be 6063-T5 or -T6. All welding shall be performed by a certified welder using compatible electrodes in accordance with the requirements of AWS D1.2 and visually inspected. Where designed by the fabricator, aluminum alloy and temper shall be stated on shop drawings.
- All steel shall receive a primer coat unless galvanized, refer to specification manual.
- All exposed steel shall be galvanized. Damaged galvanizing shall be repaired by application of cold galvanizing compound such as ZRC (minimum 3 coats). Paint finish per architectural.
- All steel welding shall be performed by a certified welder using E70 electrodes in accordance with the requirements of AWS D1.1 "Structural Welding Code" and visually inspected. Full-pen welds shall also be inspected by NDT methods such as ultrasonic, mag particle, or dye pen.
- All field welded connections shall be chipped, ground where required, wire brush cleaned and painted to match the paint system.
- All bolts not otherwise specified shall be 3/4" diameter high strength (ASTM A325-N). All bolts shall be fully pretensioned. Any non-twist off bolts shall have 10 percent checked with a torque wrench by the special inspector. All beam connections shall be designed per the AISC Manual of Steel Construction "Framed Beam Connections" for the indicated reactions but at least 0.60 x beam total shear capacity shown in the allowable uniform load tables, whichever is greater.
- All copes shall be made with a 1 inch minimum radius.
- All anchor rods shall be minimum 3/4" diameter ASTM A276 Stainless Steel type 304 OR 306 unless noted otherwise. Where headed rods are noted or specified, bent rods shall not be furnished; rods may be headed or nutted, with the nut tack welded at the bottom end of the anchor or double nutted.
- All cut or raw surfaces of FRP shall be coated with compatible epoxy meeting NSF 61.

LIGHT GAUGE METAL TRUSSES:

- Design for snow load as provided in Loads section of these notes, acting on horizontal projection of truss. Design for 10 PSF Dead Load considered on the surface area of the top chord, and 10 PSF Dead Load on the projected area of the bottom chord. Design for wind loading as required by State Building Code.
- Roof trusses shall be designed for wind uplift according to the specified Code, with 20 PSF minimum uplift (service load).
- Submit sealed calculations by a Professional Engineer licensed in the state of the project, and complete shop drawings showing design loads, material strength, truss analysis, member design, connection design, geometry, camber, bracing (erection and final), hold-down connection, and transfer of roof diaphragm forces to walls and diaphragm chord.
- Maximum live load deflection shall be limited to Span/360.
- Contractor shall provide all temporary and permanent bracing required for safe erection and long-term performance of the trusses.

SHOP DRAWING REVIEW

- Short Elliott Hendrickson Inc. (SEH) will review the general contractor's (GC) shop drawings and related submittals (as indicated below) with respect to the ability of the detailed work, when complete, to be a properly functioning integral element of the overall structural system designed by SEH. In general, submittals will not be reviewed for correct quantities or construction considerations. SEH shall review shop drawings and related materials with comments provided that each submission has met the requirements herein. SEH shall return without comment unrequired material or submittals without GC approval stamp.
 - Any items requiring submittal of calculation packages shall have calculations submitted prior to or as part of the shop drawing submittal they accompany. Shop drawings submitted prior to submittal of required calculations will be rejected. All calculations shall be sealed and signed by an engineer licensed in the state of the project. The supplier's engineer must provide calculations for all systems and connections that differ from the drawings. Design shall comply with the requirements in these notes, the drawings and the specifications.
 - Prior to submittal of a shop drawing or any related material to SEH, the GC shall:
 - Review each submission for conformance with the means, methods, techniques, sequences and operations of construction and safety precautions and programs incidental thereto, all of which are the sole responsibility of the GC.
 - Review and approve each submission.
 - Stamp each submission as approved.
- SEH shall assume that no submission comprises a variation from the contract documents unless the GC advises SEH with written documentation. Should SEH require more than ten (10) working days to perform the review, SEH shall so notify the GC. Submittals shall include drawings and related material (if any) as indicated below.
 - Concrete mix designs and material certificates including admixtures, compounds applied to the concrete after placement, and associated product data. See specifications.
 - Aggregate tests and concrete test history for each mix design, with the submission of concrete mix designs.
 - Reinforcing steel shop drawings including erection drawings and bending details. Bar list will not be reviewed for correct quantities. Include elevations of all reinforced concrete masonry walls and all concrete walls with footing steps or other elevation changes, at a scale no smaller than 1/8" = 1'-0" showing all required reinforcing.
 - GROUT MIX DESIGNS (FOR CMU) AND CMU BLOCK CERTIFICATION.
 - Design calculations, standard details, and bridging information for light gage metal framing. Erection plans and details for light gage metal joists and lintels spanning more than 6'-0" shall be submitted. Standard interior non-loadbearing wall framing need not be submitted.



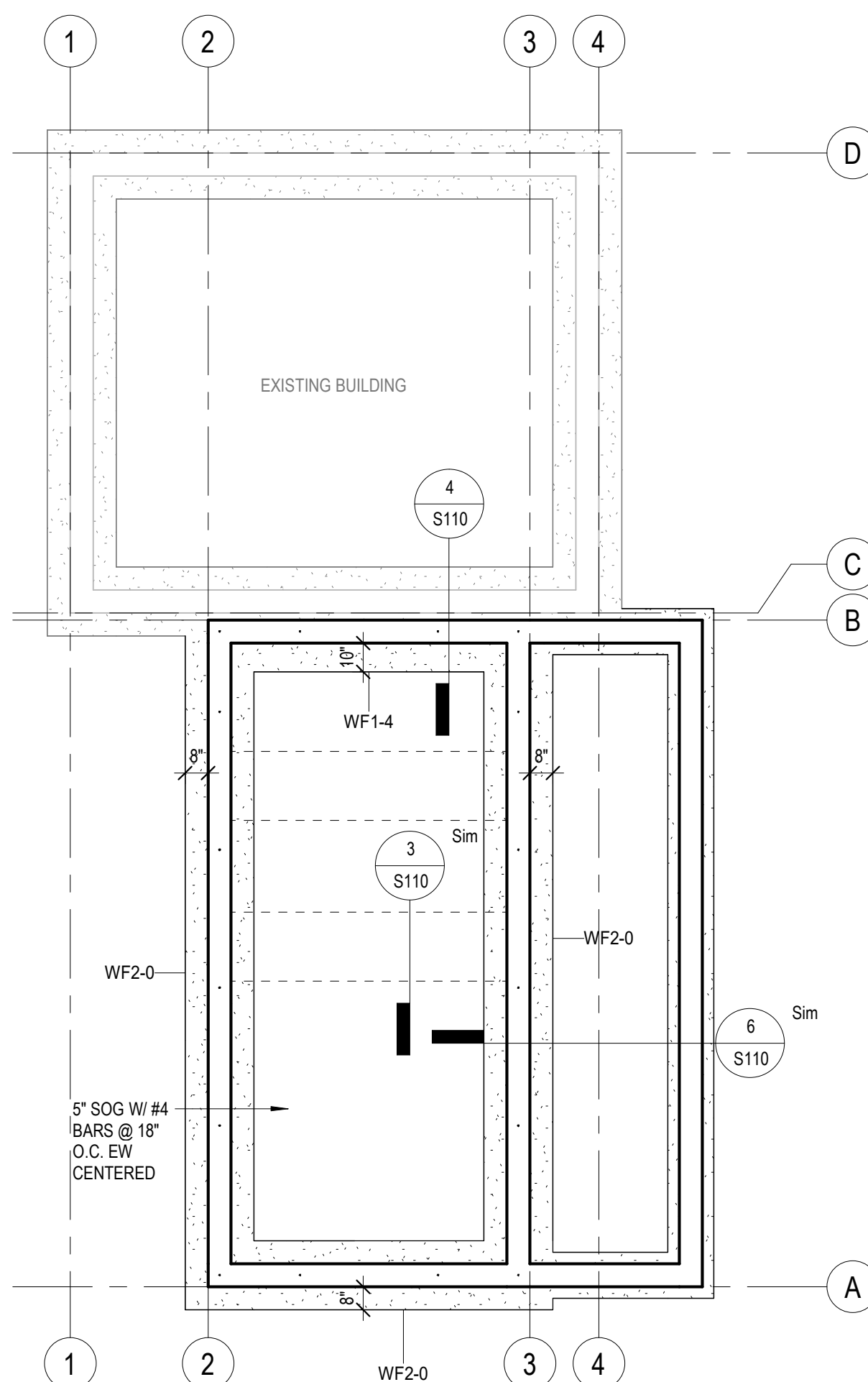
6 CONCRETE STOOP DETAIL

S110 1/2" = 1'-0"

INSPECTIONS

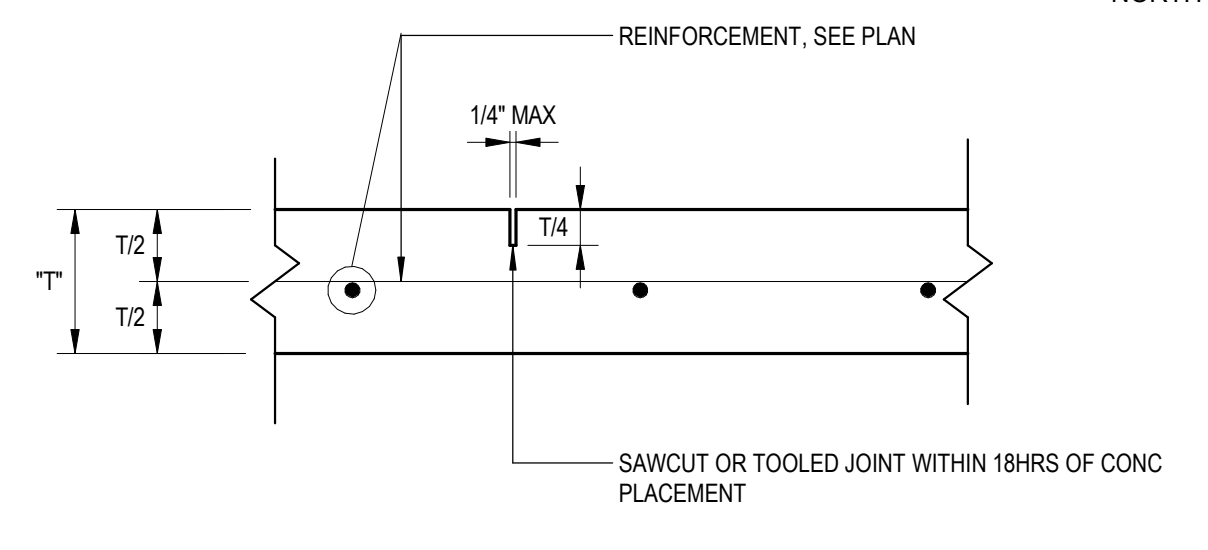
- Inspection and testing is required according to the table below. Refer to specification section 01 45 10 for responsibilities. Contractor shall coordinate with SER, testing agency and geotechnical engineer throughout the project.
 - Inspections shall be performed in accordance with IBC Chapter 17.
 - Inspection of reinforcing steel and anchor rod placement shall be performed prior to concrete placement or during anchor rod installation for adhesive anchors.
 - Continuous inspection during concrete placement is required.
 - Conduct concrete slump tests in accordance with ASTM C143.
 - Obtain set of a four (4) concrete test cylinders each time concrete is placed. Make test cylinders in accordance with ASTM C39.
 - It is assumed that shop welding will be performed on the premises of a fabricator registered and approved to perform such work.
 - GC shall submit fabricator documents, standards, and procedures in accordance with IBC 1705.2.
 - Reports of Inspections shall be provided, at the frequency noted above, to the Owner, Contractor, and Engineer of Record by the firm contracted to perform inspections.
 - Inspection criteria presented above and in specification shall apply to all footings and foundation walls, but does not apply to non-structural slab on grade and site work concrete.

DESCRIPTION OF WORK - PER IBC CH. 17	INSPECTION FREQUENCY		TESTING		NOT APPLICABLE
	C*	P*	YES	NO	
METAL CONSTRUCTION					
1. WELDING	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. DETAILS: BRACING, LOCATIONS, ETC.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. BOLTING	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. OPEN-WEB STEEL JOISTS & JOIST GIRDERS:					
A. INSTALLATION OF OPEN-WEB JOISTS & JOIST GIRDERS END CONNECTIONS WELD OR BOLT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
B. INSTALLATION OF STANDARD BRIDGING & BRIDGING THAT DIFFERS FROM SJI SPECS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. STEEL DECK INCLUDING WELDING OR MECHANICAL FASTENING	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. COMPOSITE CONSTRUCTION INCLUDING HEADED STUD ANCHORS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. COLD FORMED TRUSSES SPANNING 60FT OR GREATER	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CONCRETE CONSTRUCTION					
1. INSPECT REINFORCEMENT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. REINFORCING BAR WELD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. INSPECT ANCHORS CAST IN CONCRETE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. INSPECT ANCHORS POST-INSTALLED IN CONCRETE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. VERIFY USE OF REQUIRED DESIGN MIX	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. INSPECT PRESTRESSED CONCRETE MEMBERS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. VERIFY IN-SITU CONCRETE STRENGTH PRIOR TO POST-TENSIONING CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MASONRY CONSTRUCTION - LEVEL A					
1. VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MASONRY CONSTRUCTION - LEVEL B					
1. REINFORCEMENT, SIZE AND SPACING	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. PRISMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. DETAILS: GROUTING, LINTELS, ETC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WOOD AND LIGHT GAUGE METAL					
1. HIGH LOAD DIAPHRAGMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. METAL-PLATE-CONNECTED WOOD TRUSSES SPANNING 60FT OR GREATER	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SOILS					
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATION ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CAST-IN-PLACE DEEP FOUNDATIONS					
1. OBSERVE DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM ELEMENT DIAMETERS, LENGTHS, EMBEDMENTS INTO BEDROCK AND BELL DIAMETERS (IF APPLICABLE), AND ADEQUATE END BEARING STRATA CAPACITY, RECORD CONCRETE OR GROUT VOLUMES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DRIVEN DEEP FOUNDATIONS ELEMENTS					
1. VERIFY ELEMENT MATERIALS SIZE AND LENGTHS COMPLY WITH THE REQUIREMENTS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. DETERMINE CAPACITIES OF TEST ELEMENTS AND CONDUCT ADDITIONAL LOAD TESTS, AS REQUIRED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. INSPECT DRIVING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM TYPE AND SIZE OF HAMMER, RECORD NUMBER OF BLOWS PER FOOT OF PENETRATION, DETERMINE REQUIRED PENETRATIONS TO ACHIEVE DESIGN CAPACITY, RECORD TIP AND BUETT ELEVATIONS AND DOCUMENT ANY DAMAGE TO FOUNDATION ELEMENT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



1 FOUNDATION PLAN

S110 1/4" = 1'-0"



2 SLAB ON GRADE CONTROL JOINT

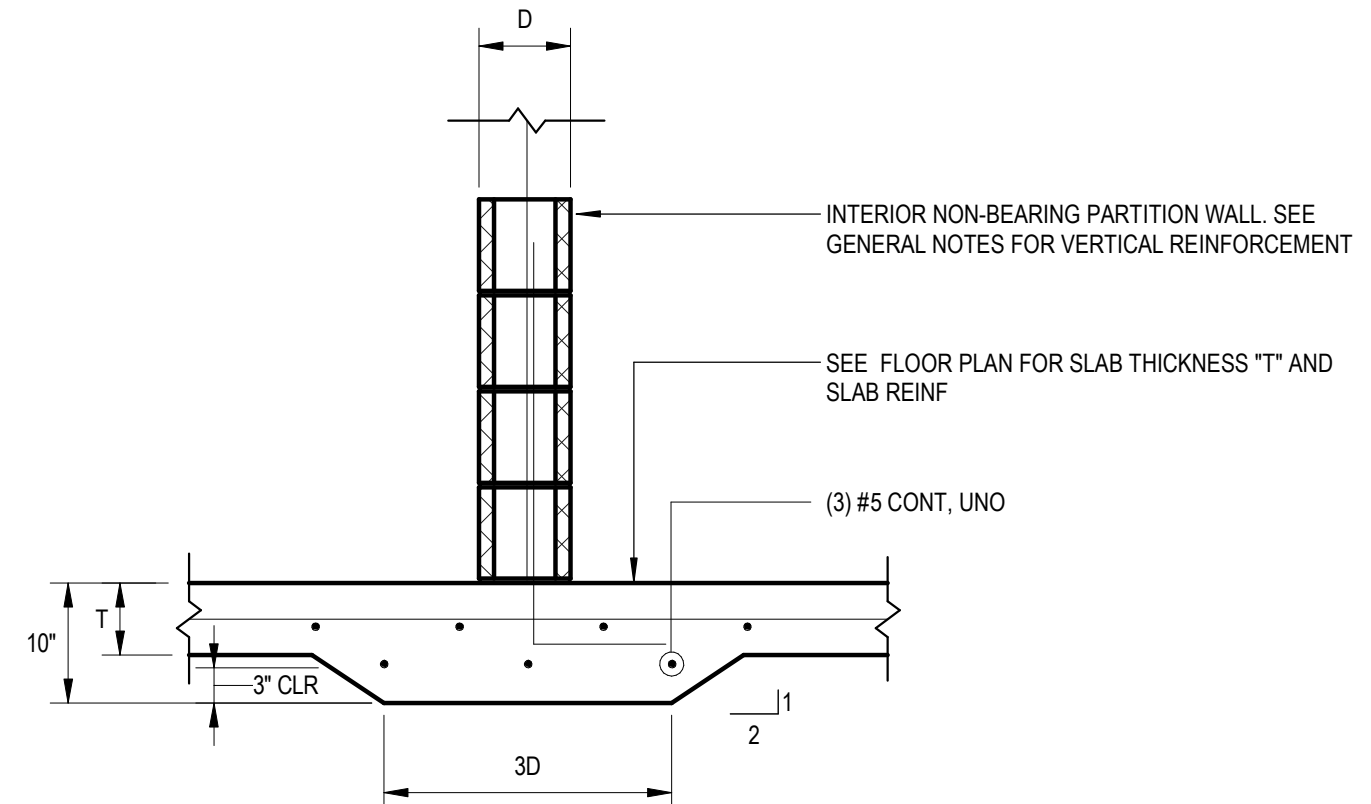
S110 1 1/2" = 1'-0"

GENERAL NOTES:

- 8" CMU REINFORCED WITH #5'S @ 48" O.C. TYPICAL AND AT EACH CORNER UNDERCUT FOOTINGS 6FT BELOW EXISTING GRADE. BACKFILL BELOW FOOTING (MATCHING FOOTING WIDTH) WITH LEAN CONCRETE OR FLOWABLE FILL. EXISTING SOIL IS SUITABLE FOR SLAB SUPPORT. BACKFILL VOID SPACE WITH STRUCTURAL FILL. PROTECT EXISTING WTP FOOTINGS DURING EXCAVATION AND SOIL CORRECTION.
- TOP OF MASONRY WALLS AND PARTITION WALLS TO HAVE 8" DEEP BOND BEAM WITH 2 - #5 BOTTOM BARS TYPICAL

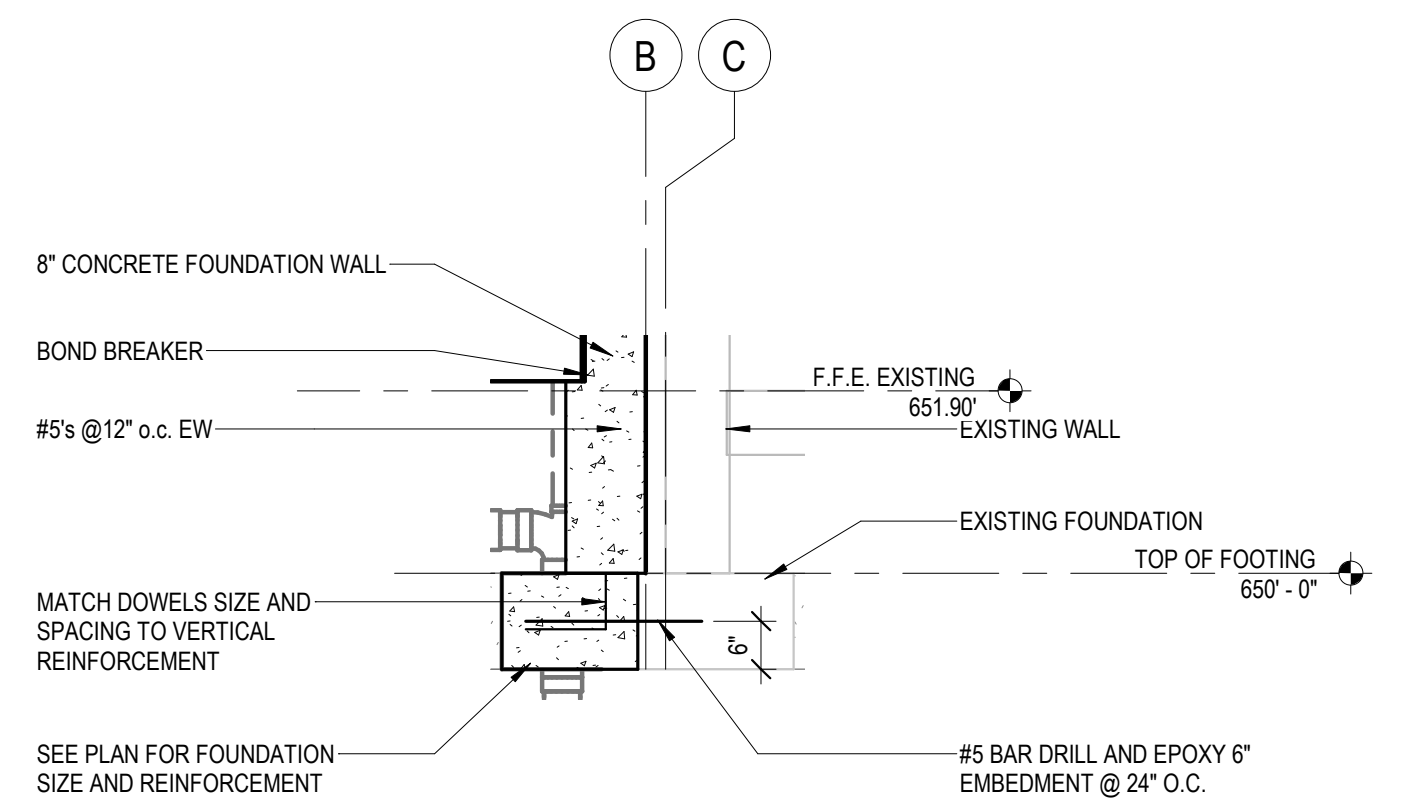
FOOTING SCHEDULE			
MARK	WIDTH	THICKNESS	REINFORCEMENT
WF-1-4	1'-4"	1'-0"	(2) #5 REBAR CONT. BOT
WF-2-0	2'-0"	1'-0"	(2) #5 REBAR CONT. BOT

LINTEL SCHEDULE		
MARK	SIZE	REINFORCEMENT
L1	8" DEEP CMU LINTEL (1 COURSE)	(2) CONT. #5 REBAR BOTTOM



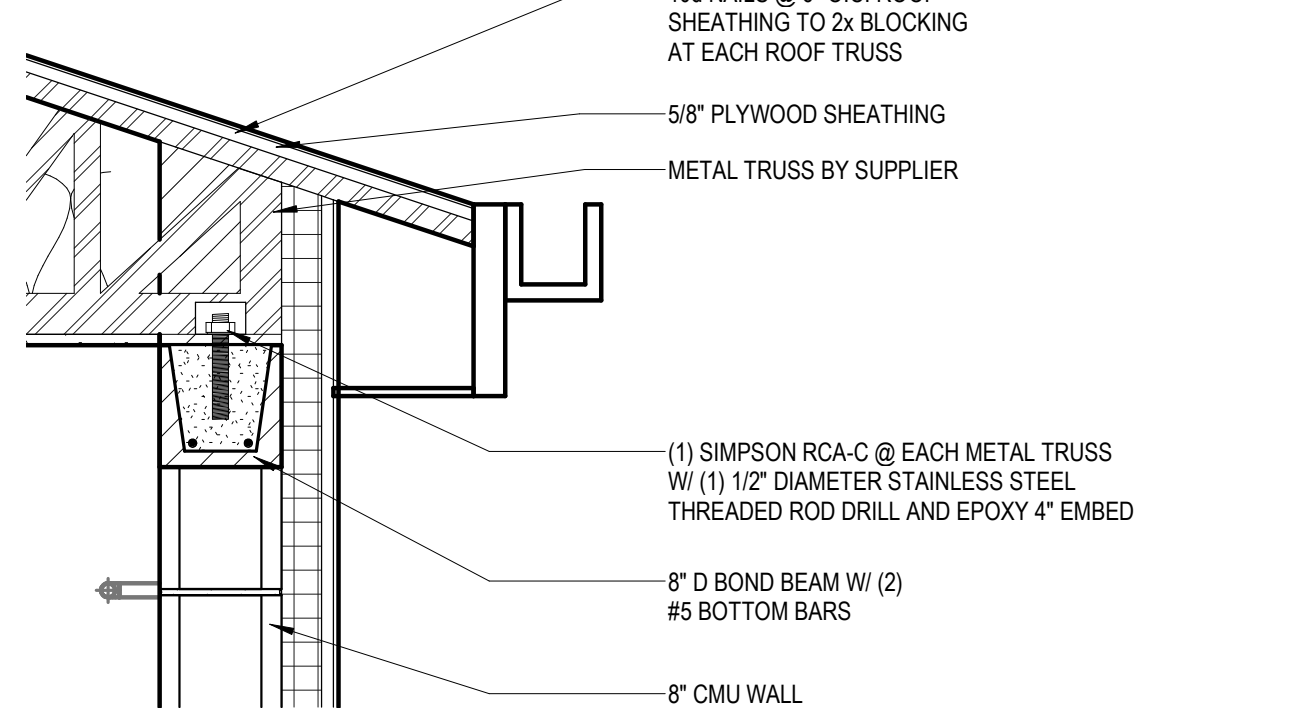
3 THICKENED SLAB AT NON-BEARING CMU WALL

S110 3/4" = 1'-0"



4 FOUNDATION DETAIL

S110 1/2" = 1'-0"



5 BUILDING SECTION

S110 1" = 1'-0"



Project Owner
RIVANNA WATER & SEWER AUTHORITY
695 MOORES CREEK LANE
CHARLOTTESVILLE, VA 22902

RED HILL WATER TREATMENT PLANT - UPGRADES
RIVANNA WATER AND SEWER AUTHORITY
IFB No. 405
ALBEMARLE COUNTY, VIRGINIA

This drawing is an instrument of service and shall remain the property of Short Elliott Hendrickson, Inc. (SEH). This drawing, concepts and ideas contained herein shall not be used, reproduced, revised, or related without the express written approval of SEH.

SEH Project 168434
Checked By JIM
Drawn By RV

Project Status BID DOCS Issue Date 9/28/2023

REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE
1	ADDENDUM 1	11/20/2023

FOUNDATION PLAN

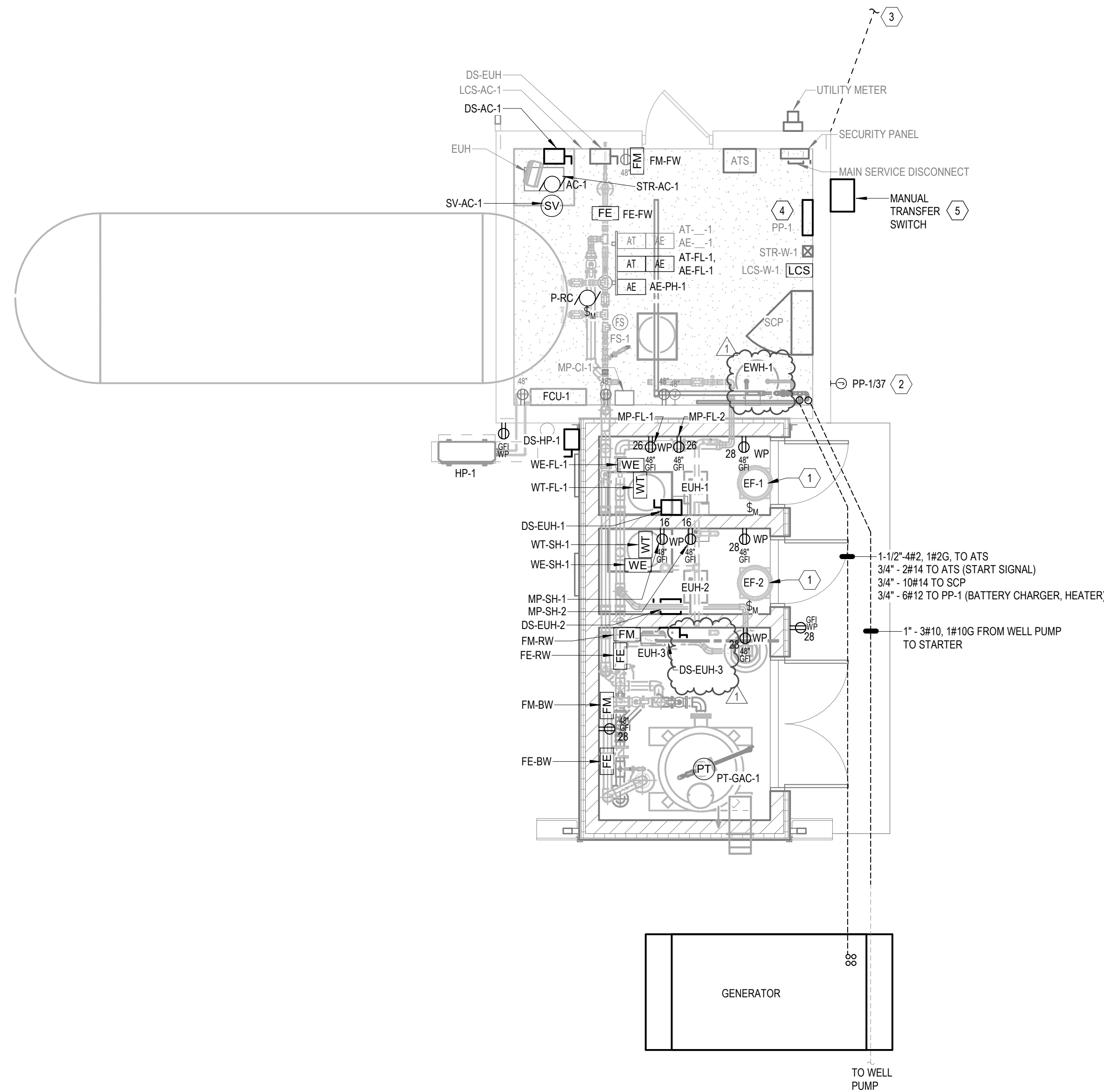
S110

POWER GENERAL NOTES

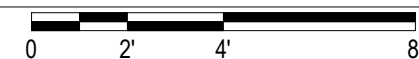
- A. PROVIDE HOUSE KEEPING PADS FOR ALL FLOOR AND GRADE MOUNTED ELECTRICAL EQUIPMENT. MINIMUM REQUIREMENTS: 4" HIGH, 4" WIDER AND LONGER THAN EQUIPMENT TO BE PLACED ON IT, 4% AIR ENTRAINED, POLYFIBER REINFORCED CONCRETE.
- B. REFER TO SPECIFICATION SECTION 26 05 19 FOR MINIMUM CONDUCTOR SIZE ADJUSTMENTS FOR VOLTAGE DROP.
- C. CIRCUIT NUMBERS SHOWN AT GENERAL RECEPTACLE, ELECTRICAL EQUIPMENT, AND MECHANICAL EQUIPMENT LOCATIONS CORRESPOND TO PANELBOARD BREAKERS. SEE PANELBOARD SCHEDULES ON SHEET E501.
- D. SEE ONE-LINE DIAGRAMS FOR CONDUIT AND WIRING REQUIREMENTS. SEE SHEETS E401.
- E. SEE PANELBOARD SCHEDULES ON SHEET E501 FOR CONDUIT AND WIRING REQUIREMENTS.
- F. SEE MECHANICAL PLANS AND SCHEDULES FOR ALL HVAC AND PLUMBING POWER REQUIREMENTS AND DETAILS.

KEYNOTES

- 1. EXHAUST FAN TO BE CONTROLLED BY ROOM LIGHT SWITCH. SEE SCHEMATIC 1/E501 FOR WIRING REQUIREMENTS.
- 2. J-BOX TO CONNECT HEAT TRACE. SEE DETAIL 2/E501.
- 3. PROVIDE ONE (1) 3/4" - 3#10, 1#10G FROM PANEL PP-1 TO GATE CONTROL PANEL AND ONE (1) 1" WITH PULL STRING BACK FROM THE SECURITY PANEL TO THE GATE CONTROL PANEL. SEE CIVIL PLAN FOR LOCATION OF GATE CONTROLLER.
- 4. EXISTING 42 CIRCUIT PANELBOARD TO BE REPLACED WITH NEW 52 CIRCUIT PANELBOARD PP-1. QUANTITY AND SIZE OF CIRCUIT BREAKERS SHALL MATCH EXISTING PANELBOARD CIRCUIT BREAKERS IN ADDITION TO ANY NEW BREAKERS FOR NEW LOADS. ALL EXISTING LOADS TO BE RECONNECTED TO NEW PANELBOARD. PROVIDE NEW WIRE AS NECESSARY. SEE PANEL SCHEDULE ON SHEET E501.
- 5. PROVIDE 2" - 3#30, #4G FROM LOAD TERMINALS OF ATS TO NORMAL POWER TERMINALS OF THE MANUAL TRANSFER SWITCH. PROVIDE 2" - 3#30, #4G FROM LOAD TERMINALS OF MANUAL TRANSFER SWITCH TO THE MAIN BREAKER IN PANELBOARD PP-1.



1
E201
POWER AND INSTRUMENTATION PLAN
1/4" = 1'-0"



Project Owner

RED HILL COMMUNITY
RED HILL COMMUNITY WATER SYSTEM EXPANSION
 ALBEMARLE COUNTY,
 VIRGINIA

This drawing is an instrument of service and shall remain the property of Short Elliott Hendrickson, Inc. (SEH). This drawing, concepts and ideas contained herein shall not be used, reproduced, revised, or retained without the express written approval of SEH. Submission or distribution of this drawing to meet official or regulatory requirements or for purposes in connection with the project is not to be construed as publication in derogation of any of the rights of SEH.

SEH Project RIVAN 168434
 Checked By CBW
 Drawn By NDS

Project Status Issue Date
 BID DOCS 9/28/2023

REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE
1	ADDENDUM 1	11/20/2023

POWER PLAN

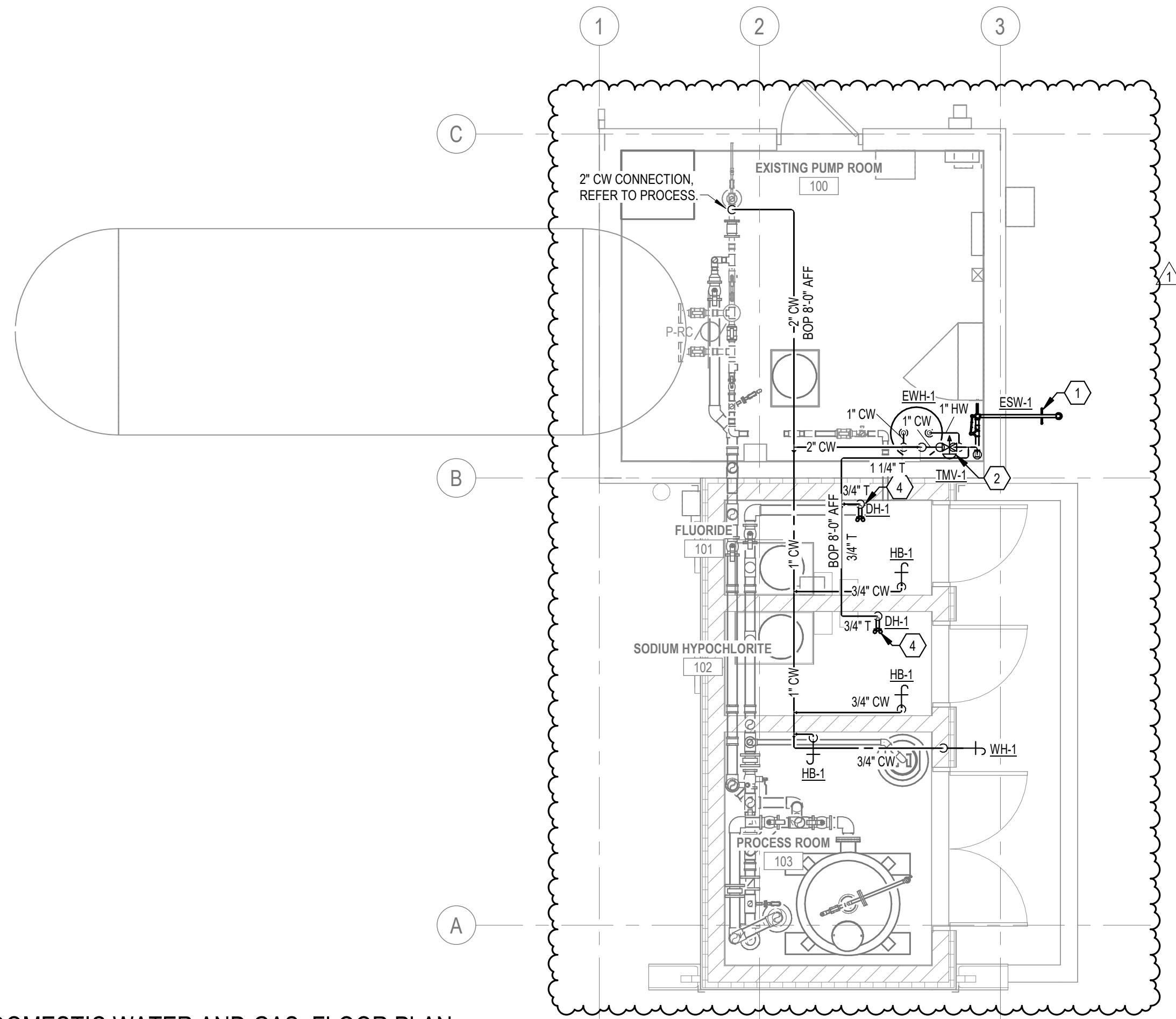
01
E201

GENERAL NOTES

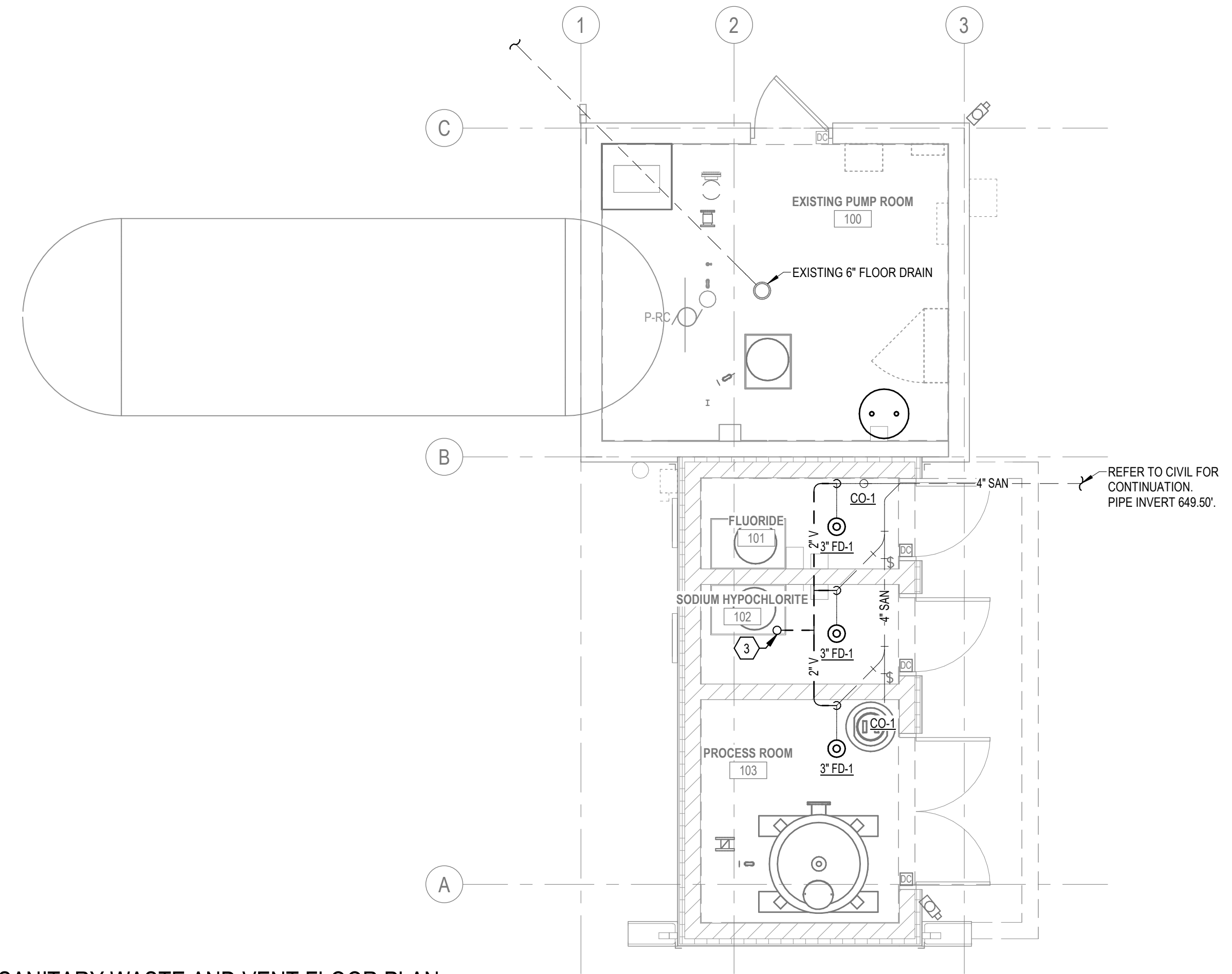
1. ALL DOMESTIC COLD, HOT, AND TEMPERED WATER PIPING TO BE SCHEDULE 80 CPVC.

KEYNOTES

1. FROST-PROOF THROUGH-WALL SAFETY SHOWER AND EYEWASH. REFER TO DETAIL 1/M401. PROVIDE EXTERIOR FORMED CONCRETE SPLASHBLOCK.
2. TEMPERED WATER MIXING VALVE. REFER TO DETAIL 2/M401.
3. 2" VENT UP TO 4" VENT THROUGH ROOF.
4. 3/4" T DROP TO WALL MOUNTED DRENCH HOSE. MOUNT 36" AFF.



1 DOMESTIC WATER AND GAS FLOOR PLAN
 M201 1/4" = 1'-0"



2 SANITARY WASTE AND VENT FLOOR PLAN
 M201 1/4" = 1'-0"

RED HILL WATER TREATMENT PLANT - UPGRADES
 RIVANNA WATER AND SEWER AUTHORITY

IFB NO. 403
 ALBEMARLE COUNTY,
 VIRGINIA

This drawing is an instrument of service and shall remain the property of Short Elliott Hendrickson, Inc. (SEH). This drawing, concepts and ideas contained herein shall not be used, reproduced, revised, or related without the express written approval of SEH. Submission or distribution of this drawing to meet official or regulatory requirements or for purposes in connection with the project is not to be construed as publication in derogation of any of the rights of SEH.

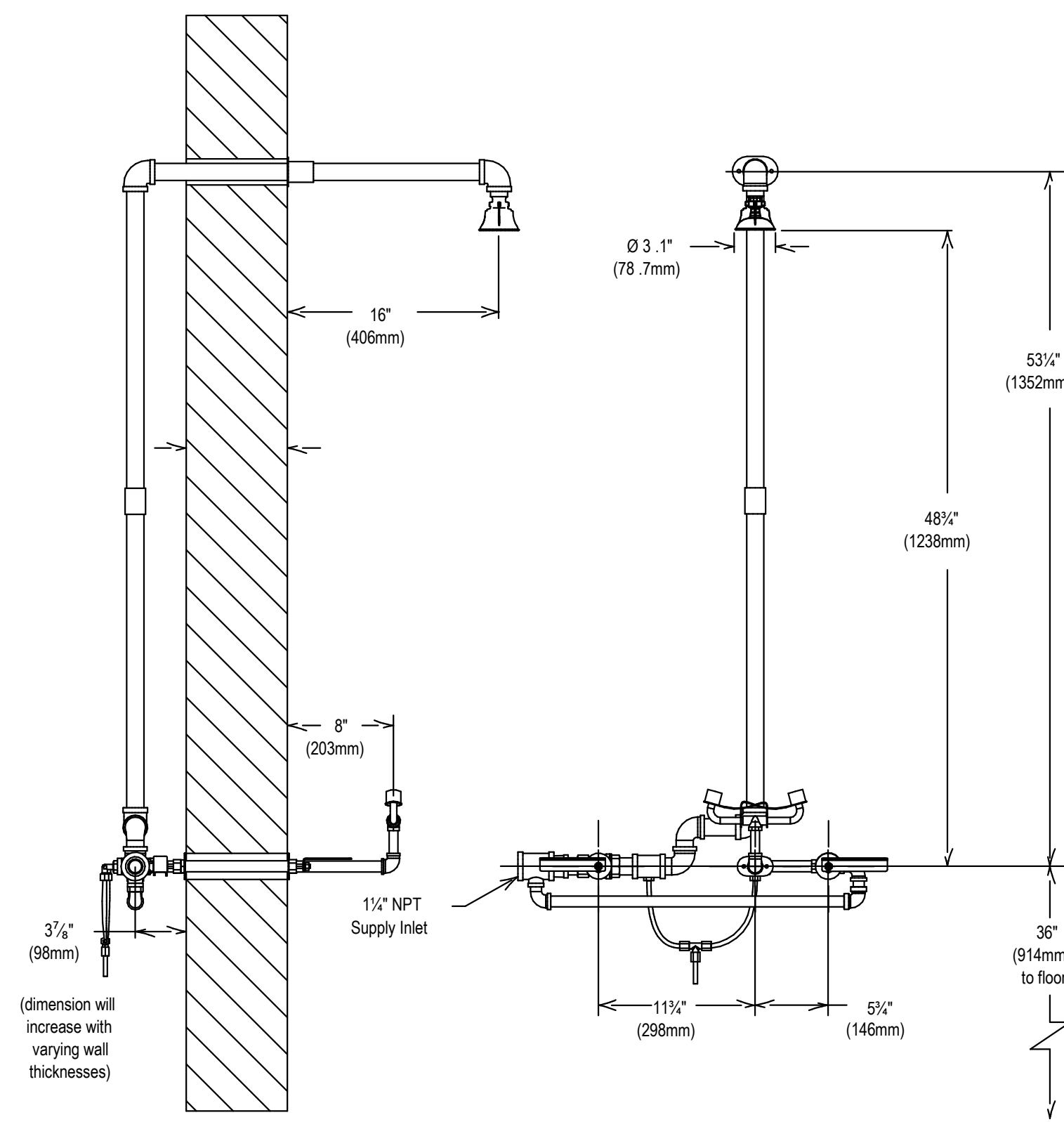
SEH Project 168434
 Checked By NJB
 Drawn By OBJ

Project Status Issue Date
 BID DOCS 9/28/2023

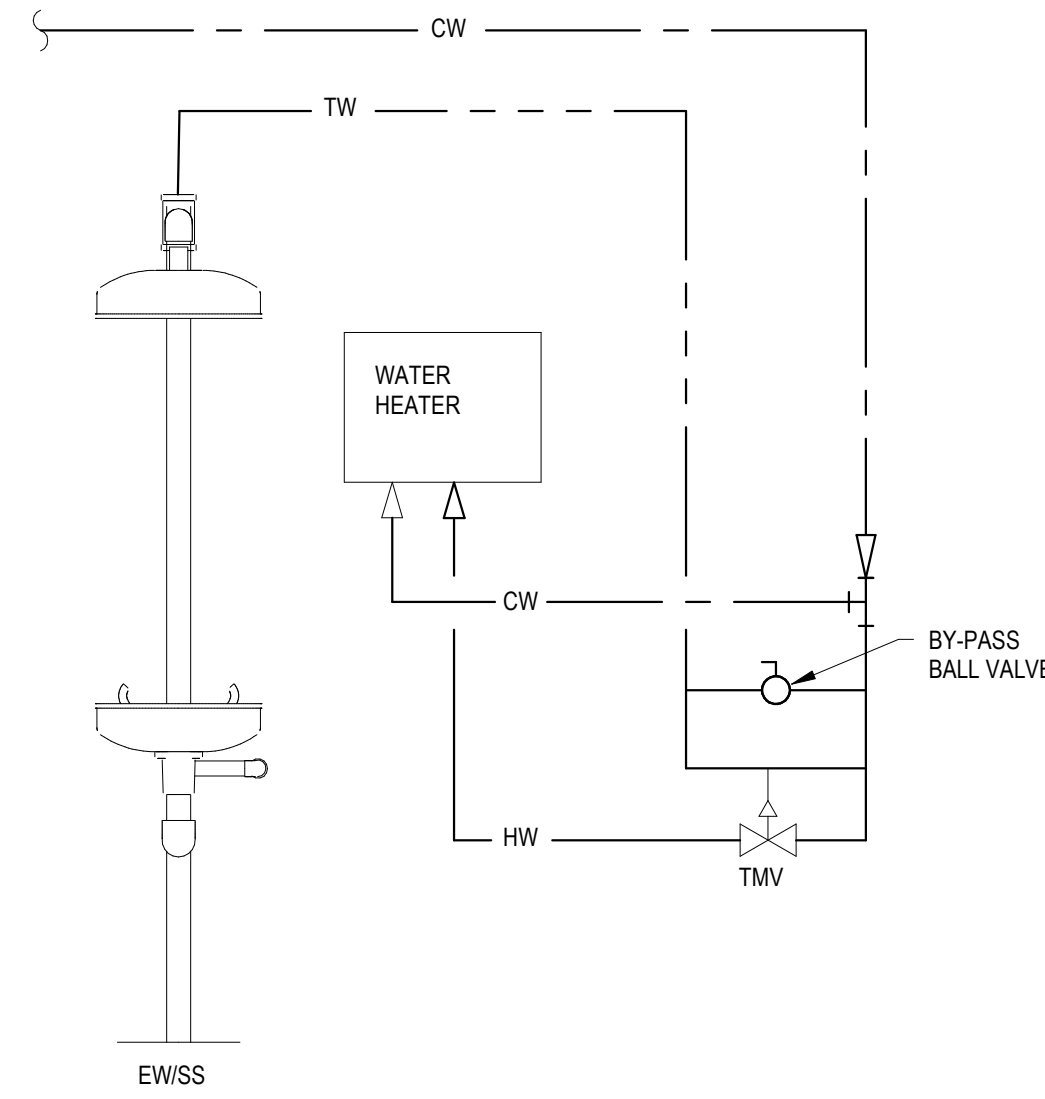
REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE
1	ADDENDUM 1	11/20/2023

DOMESTIC WATER, GAS,
 AND SANITARY FLOOR
 PLANS

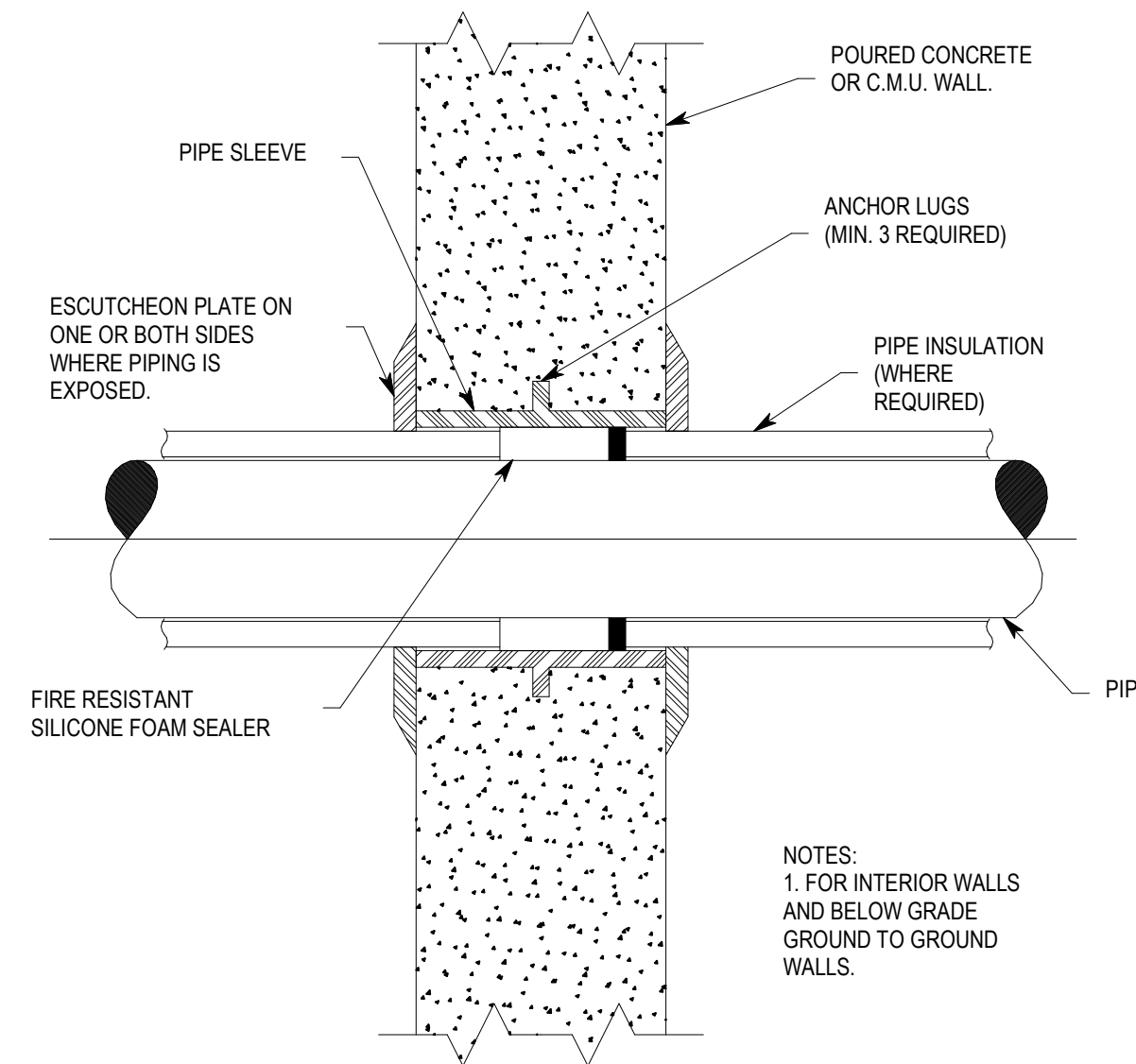
M201



1 M401 FROST PROOF EMERGENCY SHOWER
NOT TO SCALE



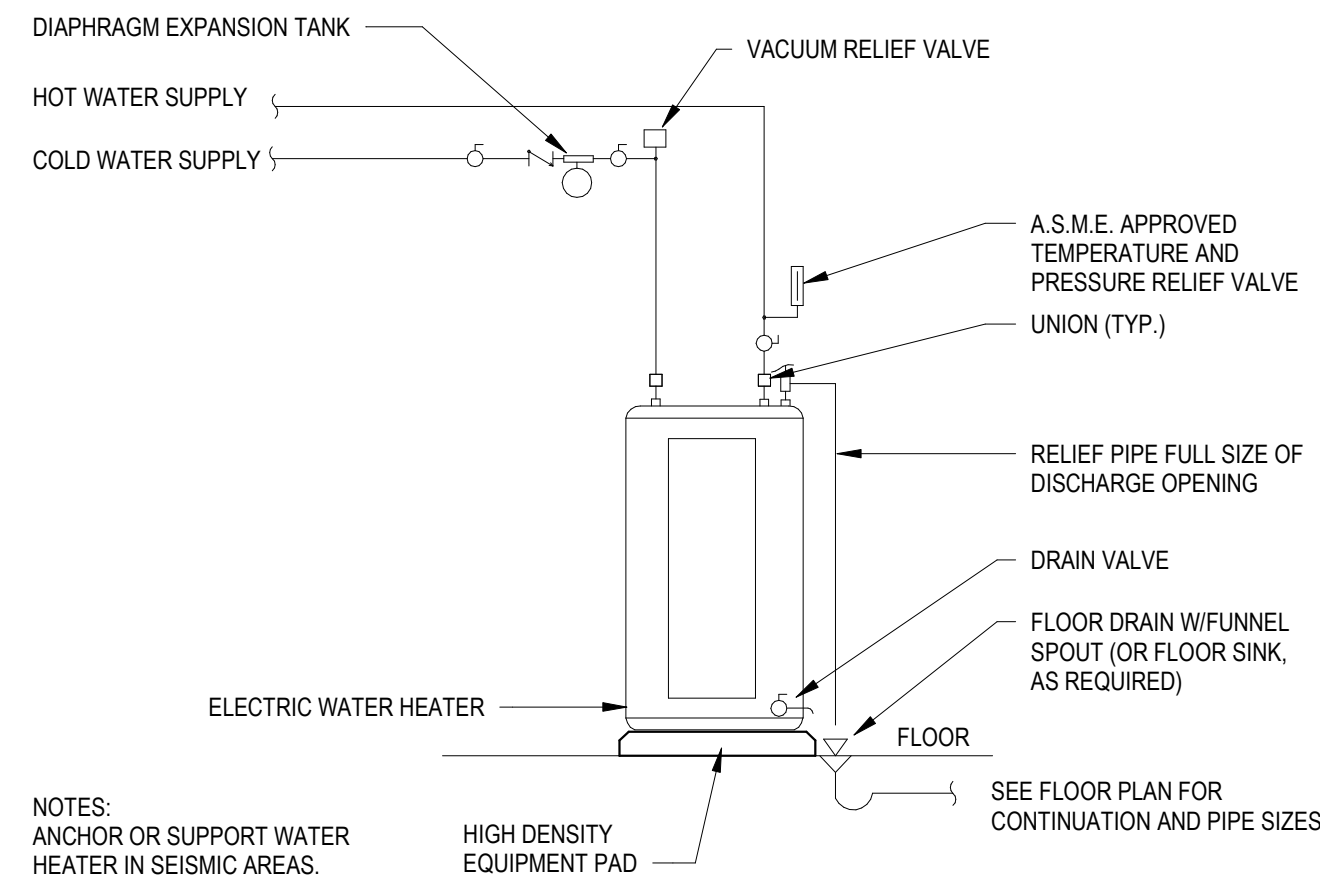
2 M401 TEMPERED WATER MIXING VALVE
NOT TO SCALE



3 M401 PIPE SLEEVE THROUGH WALL
NOT TO SCALE

PLUMBING FIXTURE SCHEDULE									
FIXTURE NUMBER	MANUFACTURER	MODEL NUMBER	DESCRIPTION	CONNECTIONS					NOTES
				WASTE	VENT	C.W.	H.W.	T.W.	
ESW-1	BRADLEY	S19-310TW	FROST PROOF DRENCH SHOWER AND EYEWASH UNIT. WALL MOUNTED. GALVANIZED STEEL WITH BRADTECT SAFETY YELLOW COATING. COMPLIES WITH ANSI Z358.1. LARGE HIGH VISIBLE PUSH HANDLE. SHOWERHEAD 3.1" DIAMETER IMPACT RESISTANT PLASTIC. INTEGRAL 22 GPM FLOW CONTROL. EYEWASH SPRAYHEAD CHROME-BRASS PLATED WITH TWIN SOFT FLOW EYEWASH HEADS AND PROTECTIVE SPRAYHEAD COVERS. OPERATED BY LARGE HIGHLY VISIBLE STAINLESS STEEL PUSH HANDLE. SHOWER HAS 1" NPT STAY OPEN VALVE. EYEWASH HAS 1/2" NPT STAY OPEN VALVE.	-	-	-	-	1-1/4"	-
DH-1	GUARDIAN	G5026	GUARDIAN EQUIPMENT EMERGENCY EYE WASH AND DRENCH HOSE UNIT. WALL MOUNTED. 8' PVC HOSE. WALL MOUNTING BRACKET, STAINLESS STEEL CONSTRUCTION, DUST COVERS. ANSI Z358.1.	-	-	-	-	3/8"	-
WH-1	WOODFORD	B67	AUTOMATIC DRAINAGE AND FREEZELESS WALL HYDRANT. BACKFLOW PROTECTION AND FLUSH WALL BOX.	-	-	3/4"	-	-	-
HB-1	WOODFORD	26	3/4" BACKFLOW PROTECTED HOSE BIBB. CHROME FINISH. METAL WHEEL HANDLE OPERATOR. 3/4" NPT INLET. AUTOMATIC DRAINING.	-	-	3/4"	-	-	-
FD-1	ZURN	Z-550	9" DIA DURA-COATED CAST IRON BODY, FLASHING COLLAR, CAST IRON BAR GRATE	SEE PLAN	2"	-	-	-	-
TMV-1	GUARDIAN	G-3802LF	EMERGENCY EYEWASH/SHOWER MIXING VALVE. BUILT IN PRIMARY AND SECONDARY CW BYPASS SUITABLE FOR EMERGENCY SHOWER/EYEWASH USE. STAINLESS STEEL SURFACE MOUNT CABINET.	-	-	1"	1"	1-1/4"	-

NOTES:



4 M401 ELECTRIC WATER HEATER
NOT TO SCALE

ELECTRIC WATER HEATER									
EQUIPMENT NUMBER	MANUFACTURER	MODEL NUMBER	CAPACITY (GALLONS)	WATER CONNECTIONS	RECOVERY GPH AT 100 F RISE	KW INPUT	FLA	V/PHCY	NOTES
EW-1	STATE	PCE-82-20RTA	80	1"	49	12.2	29.5	230/3/60	ALL

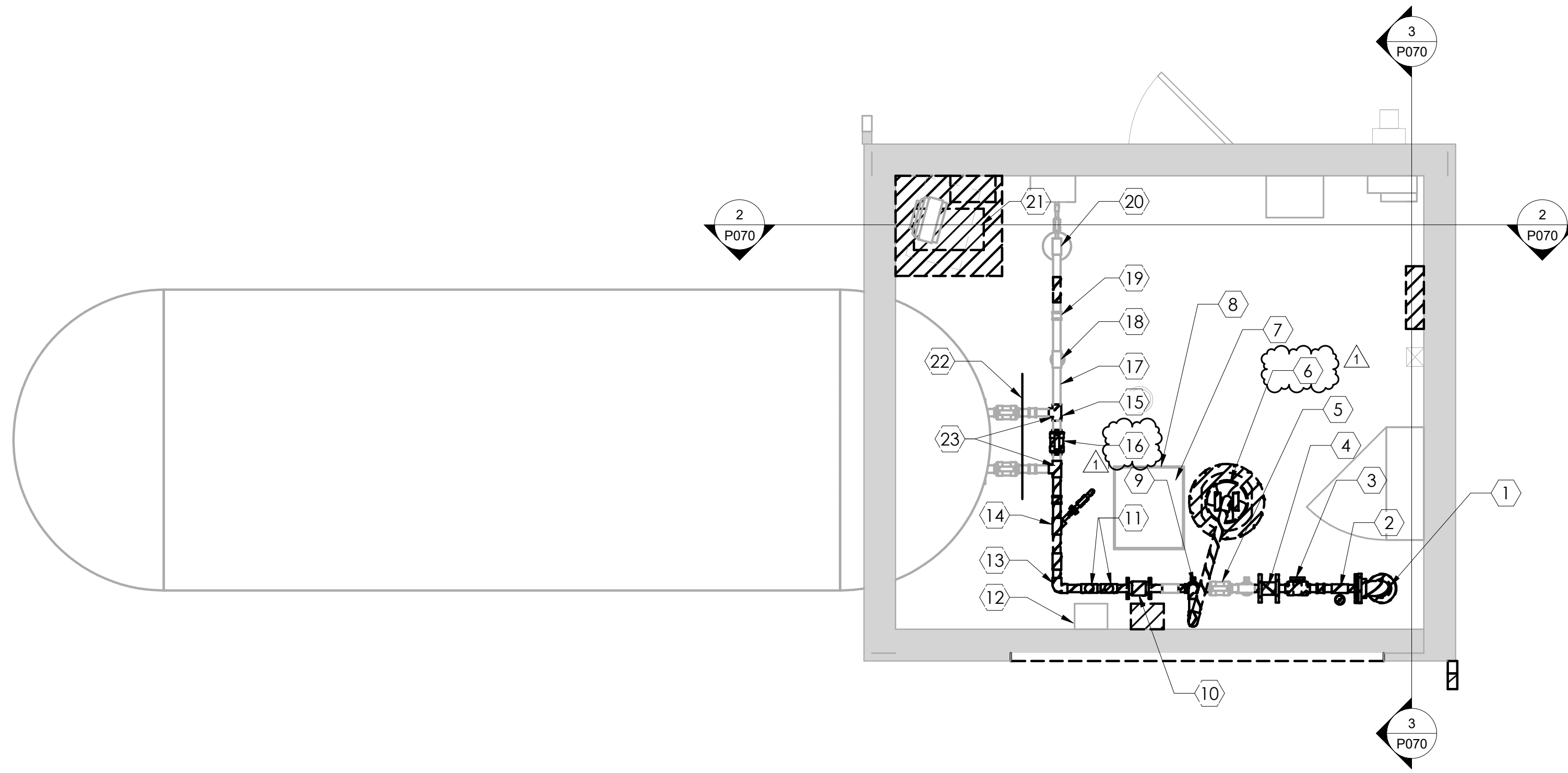
NOTES:

- 1) PROVIDE COMBINATION TEMPERATURE AND PRESSURE RELIEF VALVE.
- 2) T&P VALVE DISCHARGE SHALL BE INTO FLOOR DRAIN WITH 1" MIN. AIR GAP.
- 3) 4" HOUSE KEEPING PAD WITH 4" OVERLAP. REFER TO STRUCTURAL FOR PAD DETAILS.
- 4) PROVIDE AMTROL ST-5-C EXPANSION TANK.

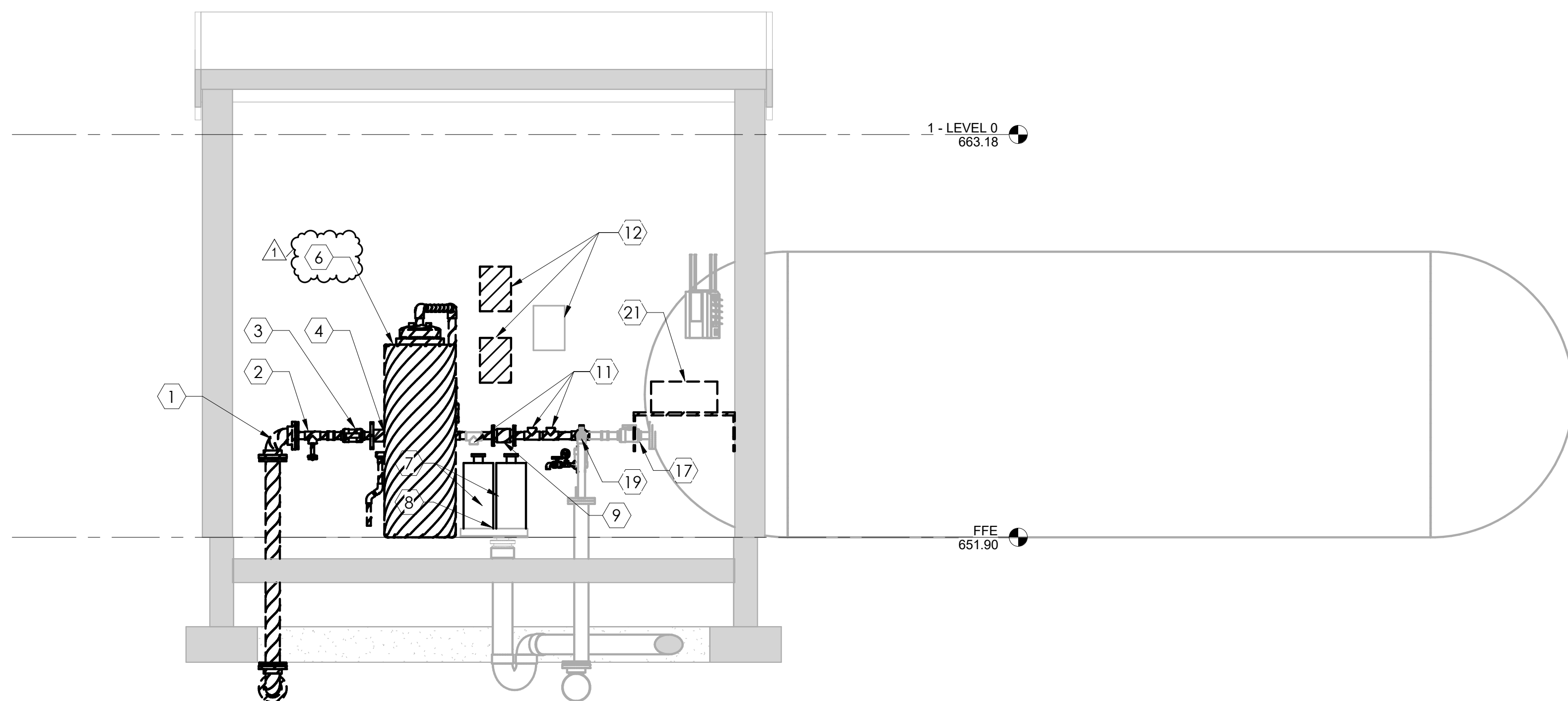
REVISION SCHEDULE		
REV. #	DESCRIPTION	DATE
1	ADDENDUM 1	11/20/2023

KEYNOTES

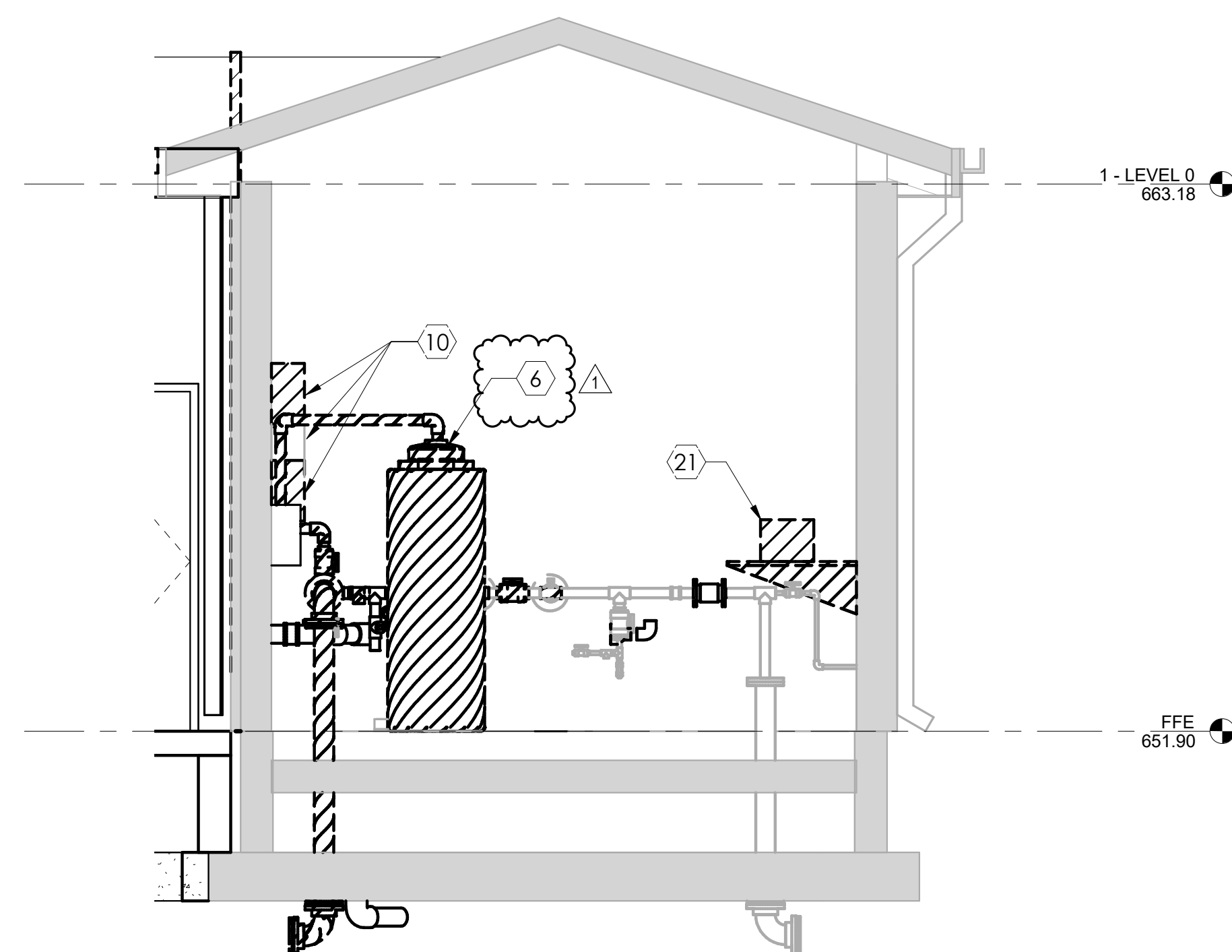
- 1 4" DI M.J. 90 DEGREE BEND (RAW WATER LINE FROM WELL). REMOVE SECTION ABOVE SLAB AND OUTSIDE OF WTP. SECTION BELOW SLAB TO REMAIN. PATCH FLOOR. CONNECT TEMPORARY WATER LINE FROM WELL DISCHARGE HERE.
- 2 2" x 2" x 2" TEE W/ 1/2" TEE W/ SPIGOT & PRESSURE GAUGE
- 3 2" BRASS BALL VALVE
- 4 2" BACKFLOW PREVENTER W/ DRAIN
- 5 2" UNION DIAPHRAM VALVE
- 6 119 GALLON CALCITE CONTACTOR & ASSOCIATED PIPING (TO BE RELOCATED).
- 7 30 GALLON CHEMICAL CARBOYS (FLUORIDE, CORROSION INHIBITOR & SODIUM HYPOCHLORITE - NOT SHOWN FOR CLARITY)
- 8 CHEMICAL CONTAINER PALLET
- 9 2" x 2" x 2" TEE W/ 2" BALL VALVE (CALCITE SUPPLY LINE TO BE REMOVED)
- 10 2" FLOW METER (TO BE RELOCATED)
- 11 2" x 2" x 2" TEE W/ CHEMICAL INJECTION POINT
- 12 CHEMICAL FEED PUMP (TYP OF 3) SHELF MOUNTED ON WALL W/ PLYWOOD. REMOVE & RELOCATE SODIUM HYPOCHLORITE & FLUORIDE PUMPS.
- 13 2" 90 DEGREE BEND
- 14 2" x 2" x 2" TEE W/ 2" BALL VALVE & SAMPLE POINT
- 15 2" x 2" x 2" TEE (RAW WATER TO HYDROPNEUMATIC TANK)
- 16 2" BALL VALVE (TYP) (TO BE REPLACED)
- 17 2" x 2" x 2" TEE (FINISHED WATER FROM HYDROPNEUMATIC TANK)
- 18 2" x 2" x 2" TEE W/ SAMPLE POINT
- 19 2" COUPLING (TYP)
- 20 2" x 2" x 2" TEE W/ 4" BLIND FLANGE FOR CONNECTION TO 4" FINISHED WATER LINE
- 21 EXISTING 1.5 HP AIR COMPRESSOR W/ SHELF (TO BE REMOVED)
- 22 EXISTING pH & FLUORIDE ANALYZER (TO BE REMOVED & REPLACED)
- 23 PROVIDE FOR CONNECTION OF HYDROPNEUMATIC TANK INFLUENT AND EFFLUENT HERE.



1 MAIN LEVEL REMOVAL PLAN
 P070 3/8" = 1'-0"
 0 2 4 6



2 SECTION
 P070 3/8" = 1'-0"
 0 2 4 6



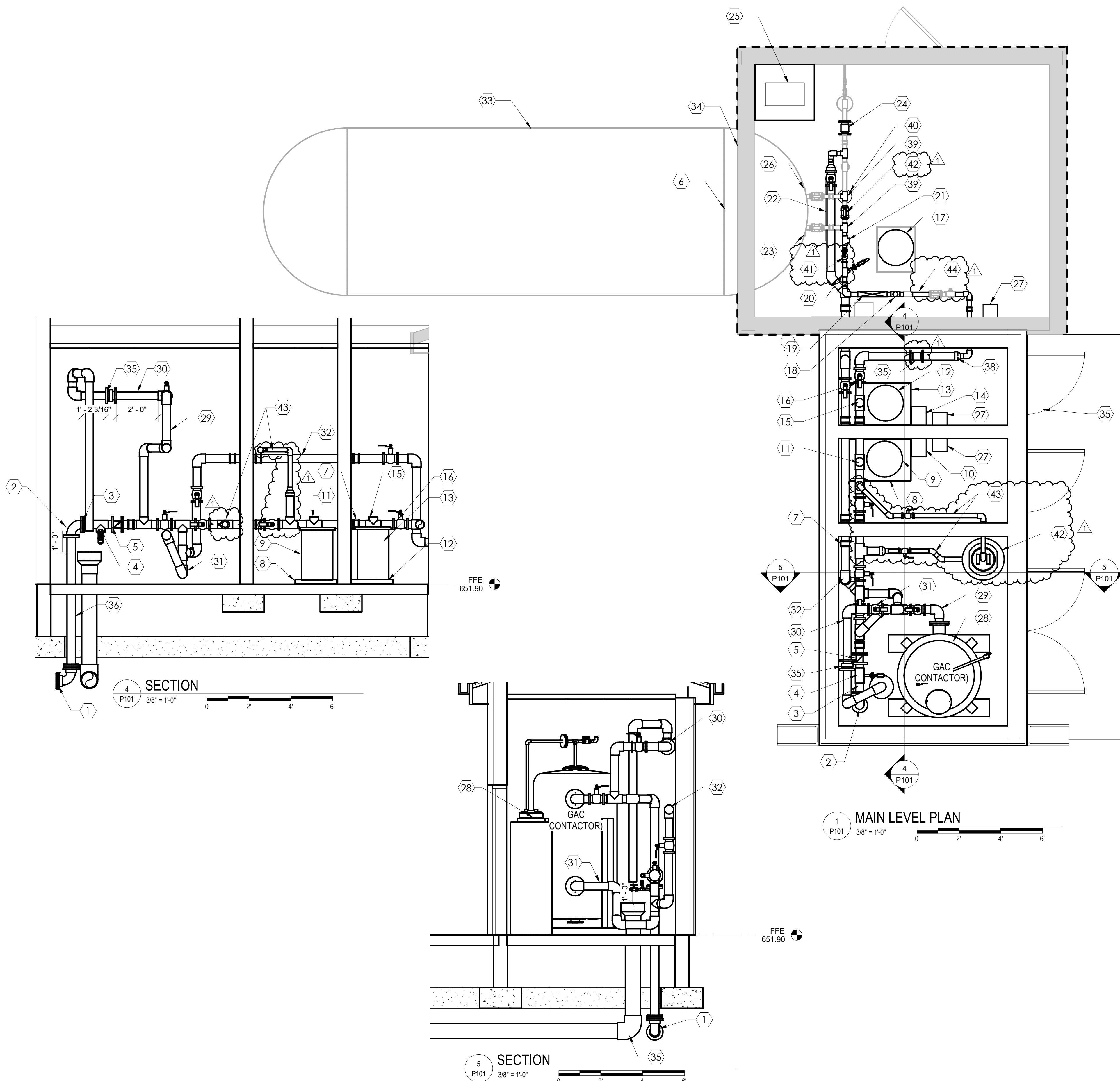
3 SECTION
 P070 3/8" = 1'-0"
 0 2 4 6

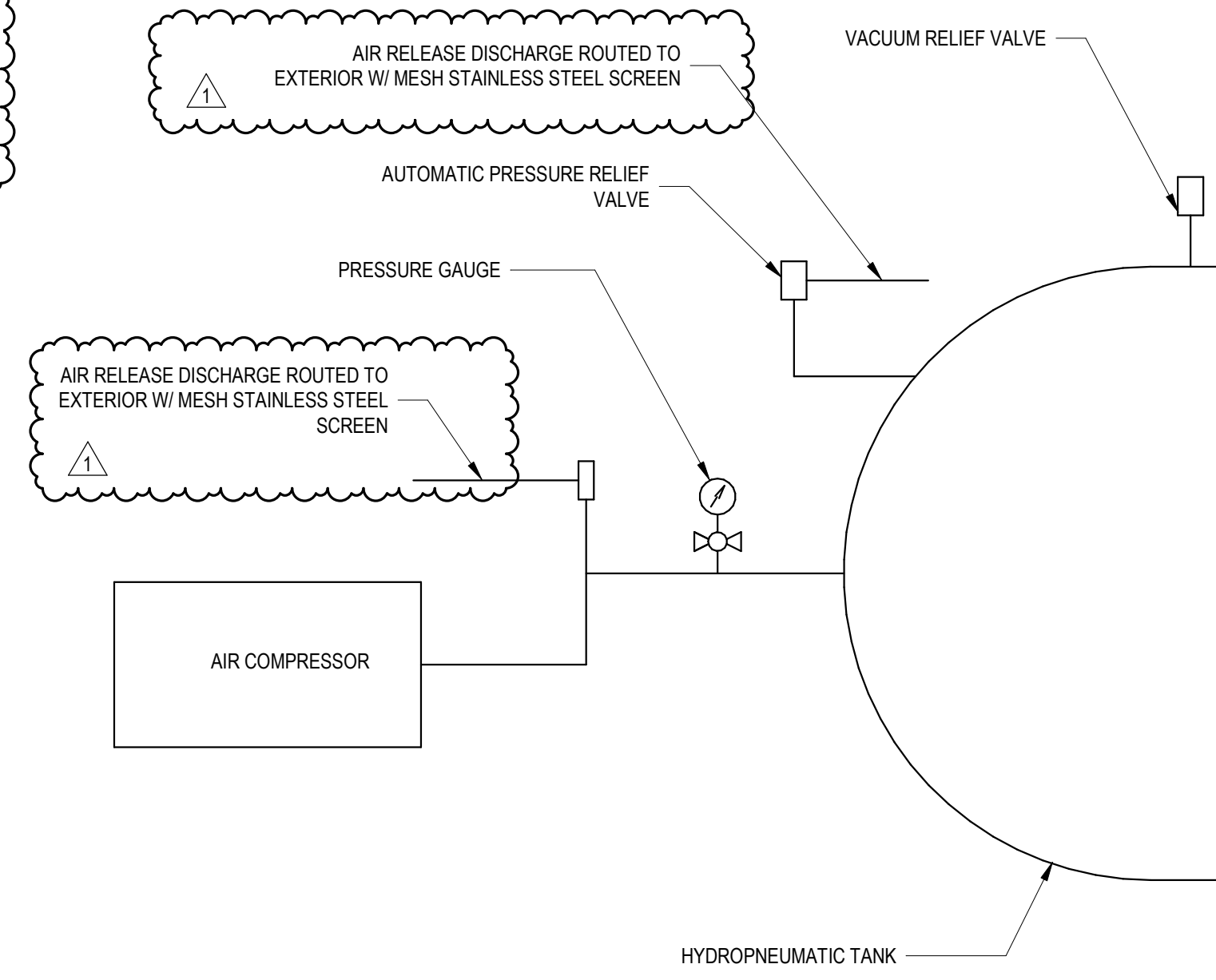
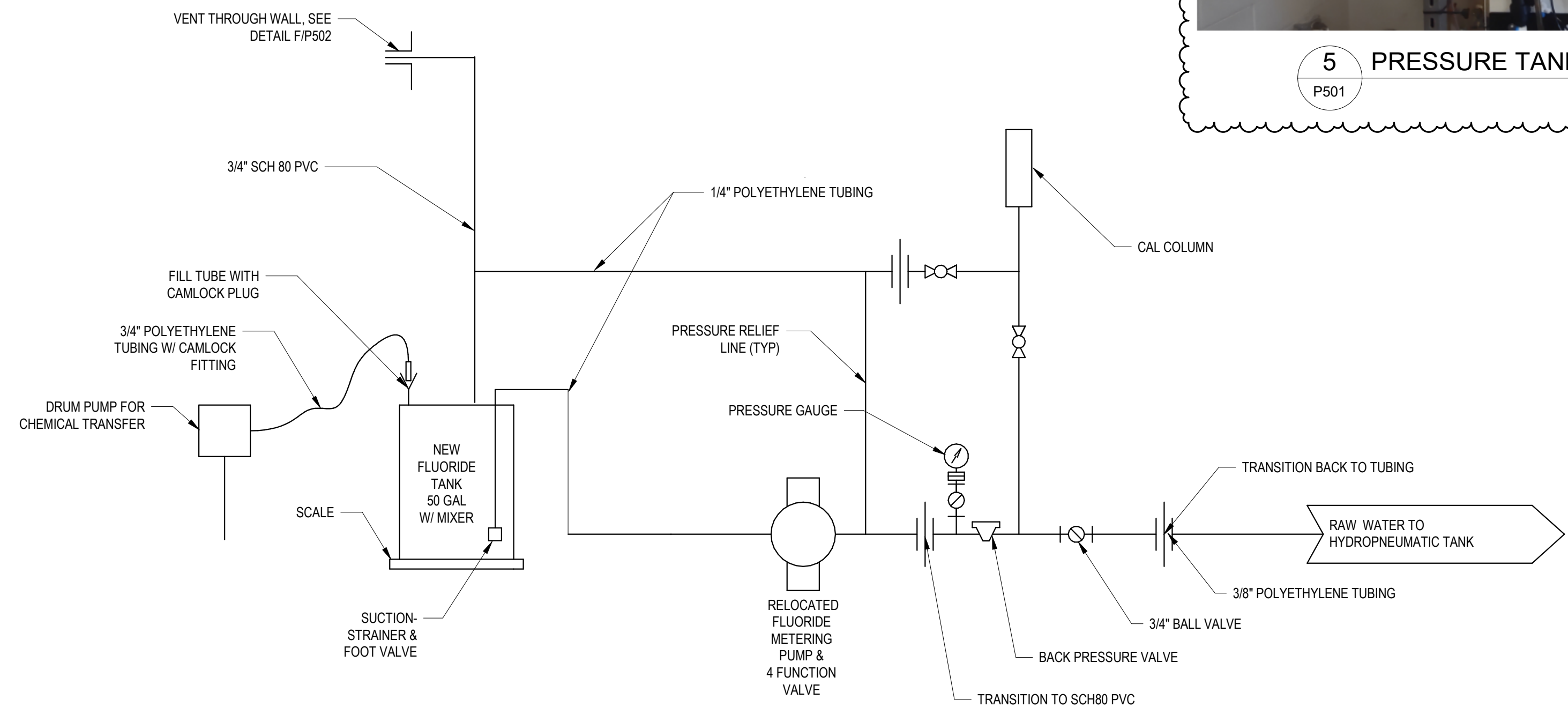
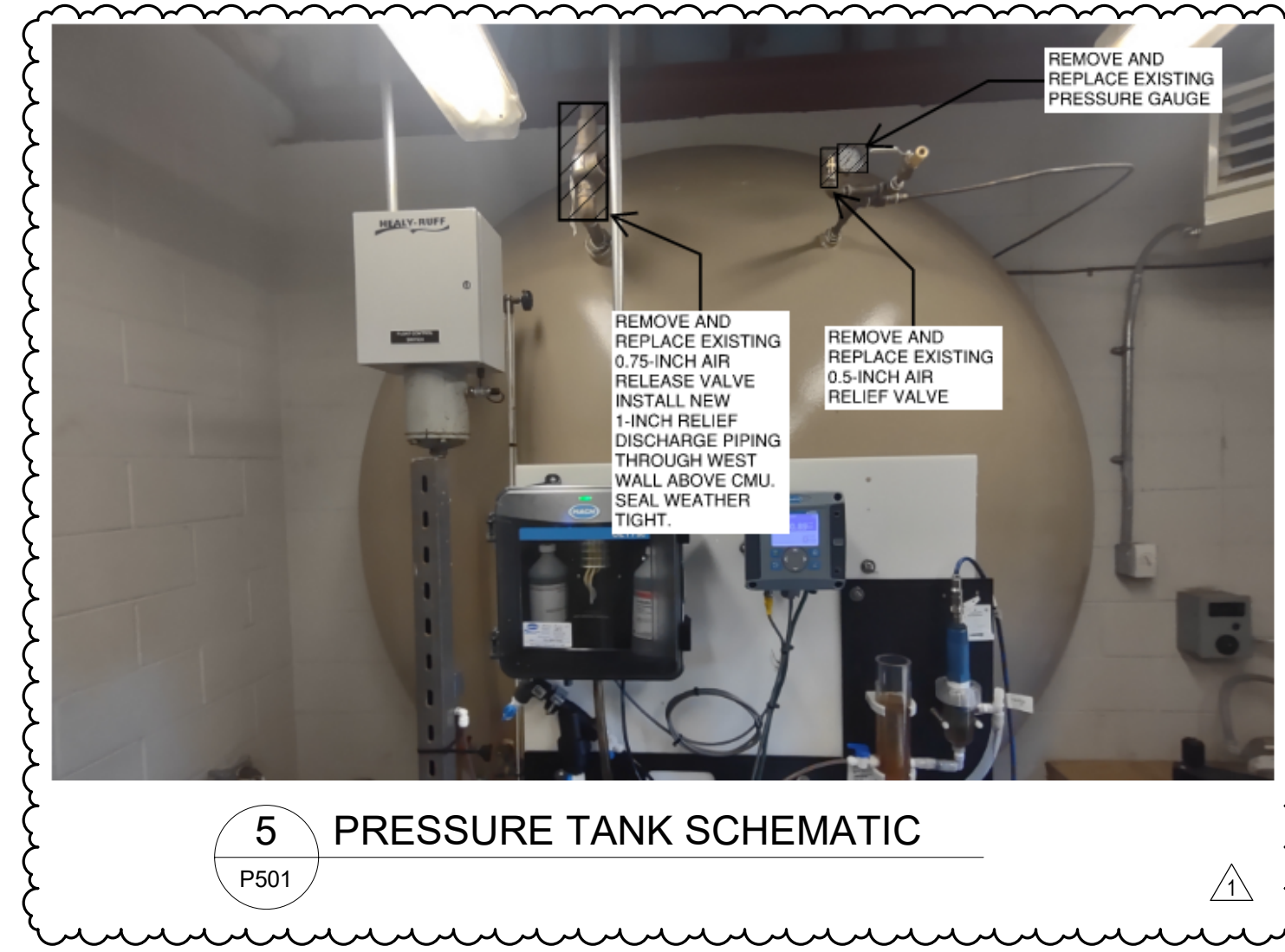
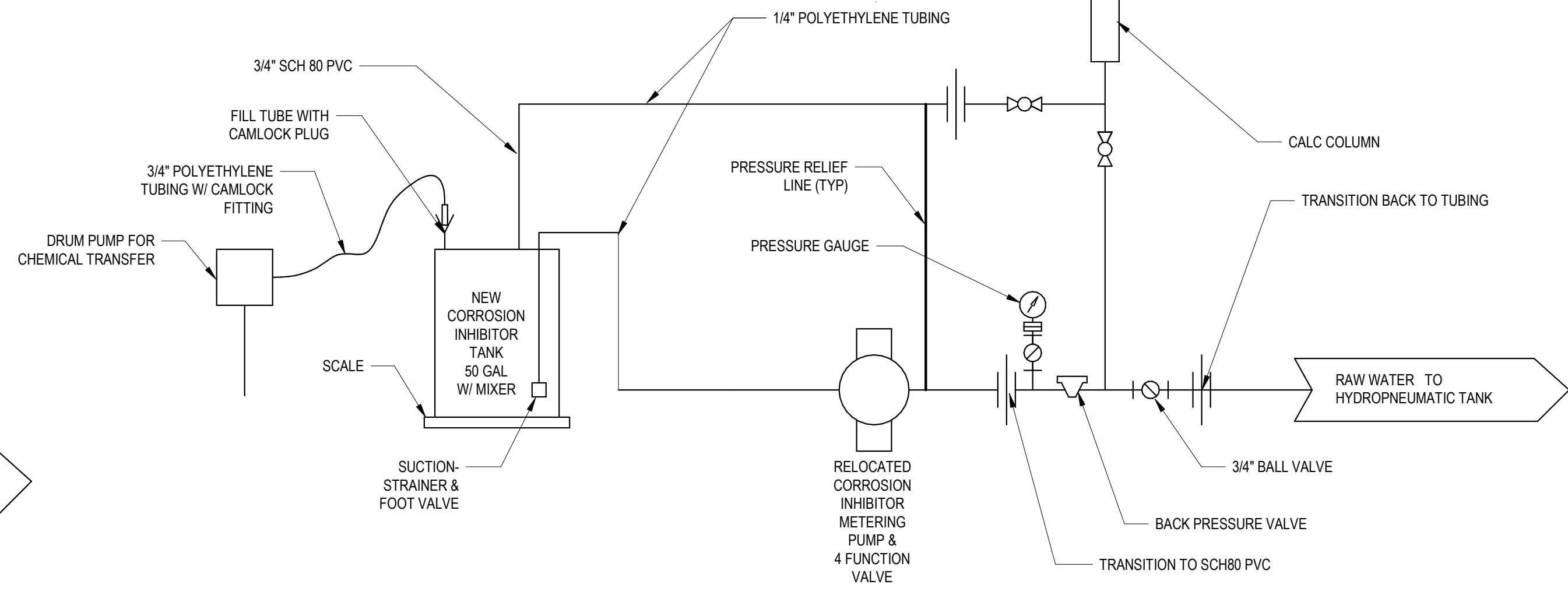
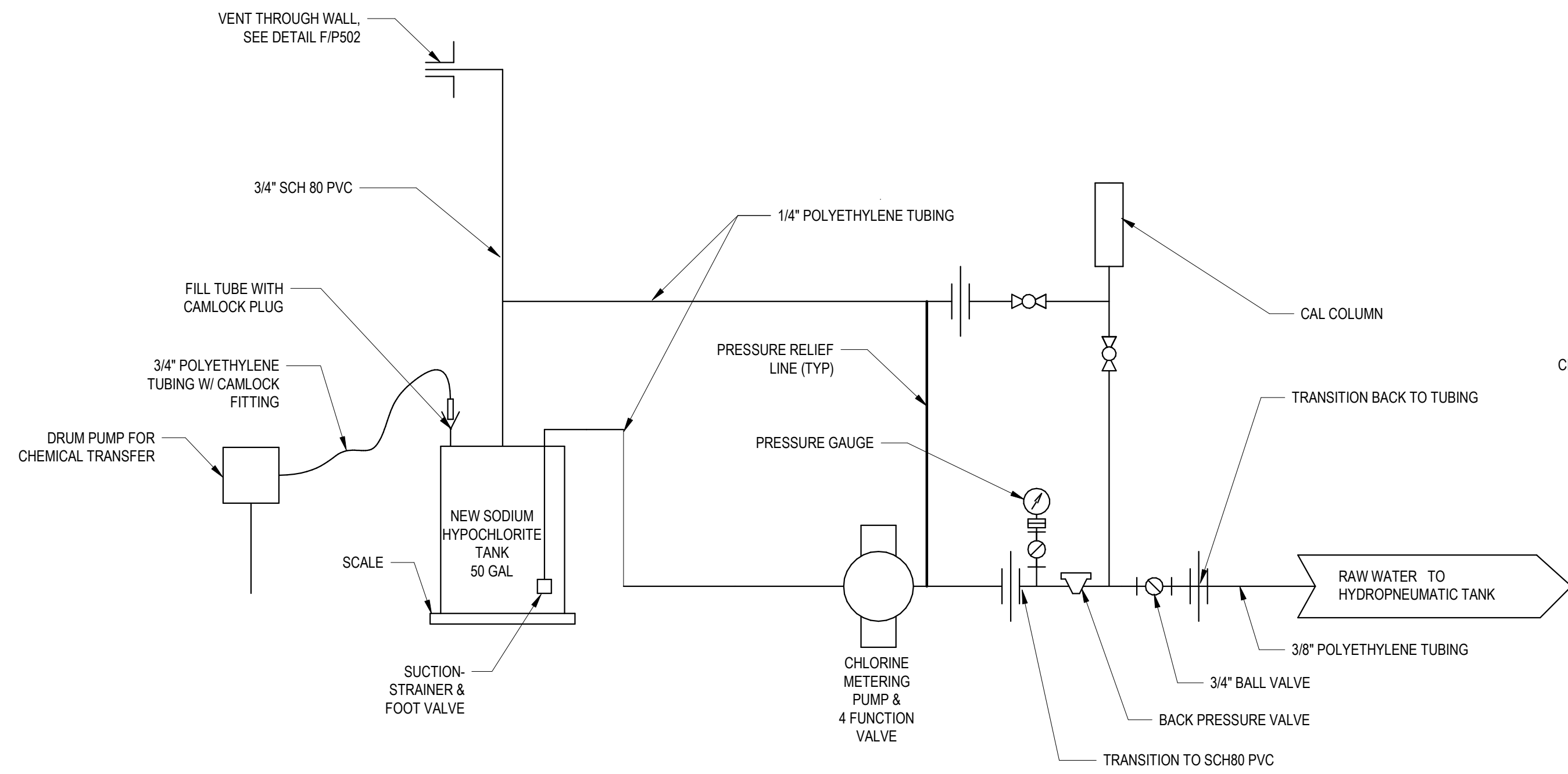
REVISION SCHEDULE

REV. #	DESCRIPTION	DATE
1	ADDENDUM 1	11/20/2023

KEYNOTES

- 1 4" 90 DEGREE MECHANICAL JOINT BEND.
- 2 4" 90 DEGREE FLANGED BEND W/ 4" BLIND FLANGE.
- 3 2" THREADED PIPE (TYP).
- 4 RELOCATED 2" TEE W/ SAMPLE PORT.
- 5 RELOCATED 2" BACKFLOW PREVENTER W/ DRAIN.
- 6 1 1/2" VACUUM BREAKER ON EXISTING FLANGE. CONTRACTOR TO CONFIRM EXISTING FLANGE SIZE.
- 7 2" BRASS UNION (TYP)
- 8 50 GAL TANK ON SCALE (SODIUM HYPOCHLORITE).
- 9 SODIUM HYPOCHLORITE CONTAINMENT PALLET.
- 10 RELOCATED SODIUM HYPOCHLORITE FEED PUMP ON NEW WALL MOUNTED SHELF.
- 11 2" SODIUM HYPOCHLORITE INJECTION POINT AND DIFFUSER.
- 12 50 GALLON DRUM (FLUORIDE).
- 13 FLUORIDE CONTAINMENT PALLET (TYP).
- 14 RELOCATED FLUORIDE FEED PUMP ON NEW WALL MOUNTED SHELF.
- 15 2" FLUORIDE INJECTION POINT AND DIFFUSER.
- 16 4" BALL VALVE (TYP).
- 17 50 GALLON TANK ON SCALE W/ MIXER (CORROSION INHIBITOR) W/ EXISTING CONTAINMENT PALLET.
- 18 RELOCATED CORROSION INHIBITOR INJECTION POINT AND DIFFUSER.
- 19 STATIC MIXER.
- 20 RELOCATED SAMPLE POINT (FINISHED WATER).
- 21 2" TEE W/ CAMLOCK FITTING ON BRANCH.
- 22 pH & FLUORIDE ANALYZER MOUNTED ON EXISTING STAND.
- 23 REPLACE EXISTING AIR RELEASE VALVE & ROUTE DISCHARGE TO EXTERIOR. SEAL WALL PENETRATION WEATHERIGHT. PROVIDE STAINLESS STEEL MESH SCREEN ON END OF AIR RELEASE VALVE DISCHARGE PIPING.
- 24 RELOCATED 2" FLOW METER.
- 25 3 HP AIR COMPRESSOR. REPLACE AIR LINES TO TANK INLET AS NEEDED.
- 26 REPLACE AIR RELIEF & PRESSURE GAUGE ON HYDROPNEUMATIC TANK COMPRESSED AIR INLET.
- 27 DRUM PUMPS W/ WALL MOUNTED BRACKET.
- 28 GAC CONTACTOR.
- 29 4" GAC INFLUENT.
- 30 4" THREADED STEEL BACKWASH WASTE LINE.
- 31 4" WATER LINE FROM GAC CONTACTOR.
- 32 4" THREADED STEEL BACKWASH SUPPLY LINE.
- 33 HYDROPNEUMATIC TANK EXTERIOR OVERCOAT AND SELECTIVE INTERIOR COATING REPAIRS. SEE SECTION 09 97 21.
- 34 REMOVE EXISTING CAULK AT HYDROPNEUMATIC TANK/WALL INTERFACE AND RECAULK. INTERIOR AND EXTERIOR.
- 35 4" FLOW METER.
- 36 8" THREADED STEEL BACKWASH WASTE LINE W/ 12" X 8" REDUCER FOR AIR GAP.
- 37 NOT USED.
- 38 4" X 2" THREADED STEEL REDUCER.
- 39 REPLACE EXISTING 2" TEE WITH 2" SIDE OUTLET TEE. CONNECT TANK INFLUENT TO PUMP DISCHARGE. CONNECT TANK EFFLUENT WITH PUMP SUCTION.
- 40 FLOOR MOUNTED TANK RECIRCULATION PUMP.
- 41 IN-LINE BALL CHECK VALVE.
- 42 RELOCATED CALCITE CONTACTOR.
- 43 2" THREADED STEEL CALCITE INFLUENT & EFFLUENT LINES W/ (5) 2" BENDS, (2) 4" X 2" REDUCERS, (2) 4" THREADED STEEL SPOOL PIECES, (2) 4" X 4" X 4" TEES & (2) 2" DIAPHRAGM VALVES.
- 44 2" THREADED STEEL SPOOL PIECE.





11/21/2023 9:55:29 AM