

EAST CASEY COUNTY WATER DISTRICT

CONTRACT 1 - 2022 PUMP STATIONS

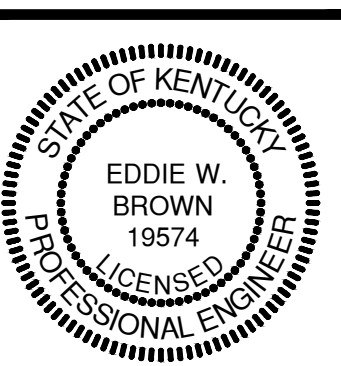
CASEY COUNTY, KENTUCKY



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Prepared By:



GENERAL NOTES

- Stations shown on the water line are for reference only and do not reflect the actual linear lengths of pipe required for construction.
- The Contractor shall be responsible for coordinating all construction work with local utility companies and other concerned parties.
- Existing buried utilities are shown on the drawings in their general location utilizing available information. Before construction begins near or through existing utilities (i.e. Gas Co., Telephone Co., etc.) each utility company shall be notified, a request for the exact location of the utility shall be made, and permission to proceed with construction. The Contractor shall contact BUD at telephone no. 1-800-752-6007 or 811.
- Before construction begins through any property, the Contractor shall make himself aware of the exact location of construction through the property and the bounds of the permanent and temporary construction easements.
- The Contractor shall have on hand at the job site 11 1/4", 22 1/2", 45" and 90" bends for use where necessary for proper installation.
- Pipe joint deflection shall not exceed 2". Bending of PVC pipe will not be allowed.
- At some locations, the Contractor may be required to provide extra cover over line. Cost of extra cover is to be included in unit price bid for line installation and no separate payment will be made for such extra cover. All such locations are shown on the plans.
- Connecting new lines to existing lines or to work in other contracts is subsidiary to the contract unless specifically itemized in the Bid Schedule. It includes fittings, sleeves, etc., but does not include gate valves, which are an extra pay item.
- All fittings, thrust restraint and appurtenances to construct the pipelines as shown shall be included in the unit cost for the pipe and are not separate pay items.
- The pipe lengths have been estimated as close as possible. The Contractor shall be responsible for ordering pipe quantities necessary for installation to the limits as shown on the Drawings unless otherwise instructed. Any left-over pipe quantities shall be the property of the Contractor unless other arrangements are made. The Owner shall not be responsible for re-stocking or other charges associated with the left over pipe.
- Ductile iron pipe shall be installed in accordance with Standard AWWA C150/ANSI A21.50 Laying Condition Type 3 unless otherwise noted.
- All open cut streets and roads and trenches cut in existing pavements shall be backfilled with compacted crushed stone or DGA in accordance with the miscellaneous details drawings.
- Paved driveways shall be free-bored. Free bore unit prices are contained in Bid Schedule. The material in which the free bore is made is unclassified.
- It is the responsibility of the Contractor to comply with all regulations regarding the effect on the environment from the discharge of chlorinated water. See Technical Specification 15103 for methods of sterilization and for disposing of heavily chlorinated water.
- The time period for pressure testing in this project shall be 6 hours.
- Detectable marking tape and Tracer wire shall be installed with all pipe. See Technical Specification 15100, and the miscellaneous details drawings. Tracer wire shall be installed a minimum of six inches directly above the pipe. Under no circumstances shall the tracer wire come in contact with the pipe.
- During the process of tapping asbestos cement mains, the contractor shall conform to OSHA regulations governing the handling of hazardous waste. Pieces of asbestos cement resulting from the tap shall be double bagged, placed in a rigid container and disposed of in an approved landfill.
- Locations where pipeline is to be installed on state road right of way are approximately delineated on the drawings. The Contractor, along with the Engineer's Representative, shall determine the field locations for transitions between private easements, and state and county road rights of way.
- The pipeline trench width will be strictly enforced. See Technical Specification 15100 for trench width requirements.
- Rough cleanup must be performed as the pipe is laid or as soon thereafter as possible. Failure to keep rough cleanup current with the pipe laying may be grounds for additional retainage.
- Do not cut fences except where specifically shown and noted.
- The Contractor shall obtain and pay for all grading, storm water, etc. permits, if any required to complete the work. The contractor shall maintain compliance with all conditions, limitations and stipulations of all permits. The contractor shall not commence work, except mobilization, until he has obtained all required permits for said work. The contractor shall supply the owner with copies of all permits within 24 hours of receipt. A KPDES Storm Water Discharge Permit will be required for this project. The contractor shall fill out, sign and submit the Notice of Intent (NOI) and the Notice of Termination (NOT).
- All work shall be provided in compliance with all applicable local, state and national building codes.
- All work shall be executed in compliance with the current workplace safety regulations of the U.S. Department of Labor, Occupational Safety and Health Administration (O.S.H.A.).
- The Contractor shall restrict all construction activities to within the limits of the public right of way and the private easements and fee parcels unless otherwise approved by the Owner in writing. The Contractor shall be solely liable for any and all Work he performs outside of the boundaries of the public road right of way and the private easements and fee parcels provided by the Owner.
- The Contractor is solely responsible for determination of the existence and location of any and all other buried utilities in the vicinity of his Work. Utilities shown on the Project Drawings are purported to be approximate only and not warranted to be complete nor accurately located. Additional buried utility lines, other than as shown on the Project Drawings, may exist in the vicinity of the Project work. The Contractor shall contact local utilities and/or locating service at least 48 hours prior to commencing work on the Project.
- The Contractor shall be responsible for all traffic control measures necessary to the safe execution of his work, including but not limited to flaggers, traffic signage, barricades, construction fencing and nighttime warning lights. Traffic safety provisions shall be employed by the Contractor in accordance with the Standards of the appropriate State and local public highway authorities.
- All excavation and all boring shall be considered unclassified excavation and unclassified boring. No additional payment shall be due and payable to the Contractor for dewatering of pipe trenches/excavations or for excavation and removal of rock or for boring casing through rock.
- All water main fittings shall be ductile iron, mechanical joint compact fittings for water service complying with AWWA Standard C153. Unless otherwise specifically shown or noted, no PVC fitting, other than in-line repair couplings, will be accepted.
- All water main fittings shall be anchored with poured concrete thrust blocks as shown in the miscellaneous details. Wrap fittings in minimum 5-mil plastic wrap prior to forming and pouring the block.

GENERAL NOTES (CONT.)

- Prior to cutting existing driveways, the Contractor shall notify the property owner/occupant at least 24 hours in advance and shall schedule his Work such to restrict access to not more than 2 hours in one (1) day.
- The Contractor shall repair/replace any and all existing utility lines and equipment damaged by the Contractor's Work, to the satisfaction of the damaged utility and at no additional cost to the Owner.
- The Contractor shall protect all drainage culverts in the vicinity of his work and shall repair or replace all culverts damaged by his Work and at no additional cost to the Owner. All existing culverts may not be shown/noted on the Project Drawings.
- Existing utility lines may be cathodically protected. The installation of all ductile iron pipe, fittings and appurtenances within 100' of cathodically protected utility lines shall comply with AWWA Standard C105 (Polyethylene Encasement), latest revision, and at no additional cost to the Owner. This requirement will be specifically applicable to all new iron pipe located within 100' of the cathodically protected new primary booster station.
- There are sanitary sewers known to exist in the vicinity of the proposed new water main and known locations are shown on the plans. The Contractor shall maintain a minimum of 10 feet horizontally from any sanitary sewer pipeline. If unforeseen sewer or other sanitary facility is encountered, the Engineer shall direct the relocation of the water main to provide separation and/or other protection of the water main in accordance with terms of the Kentucky Department for Environmental Protection, Division of Water Construction Permit. The Contractor shall provide relocation of the water main as directed by the Engineer and the Contract Price adjusted only by/to the number of Bid Item units actually provided.
- No water service shall be activated until the new work has been completed, sterilized, and tested in accordance with the Contract Documents and accepted in writing by the Owner.

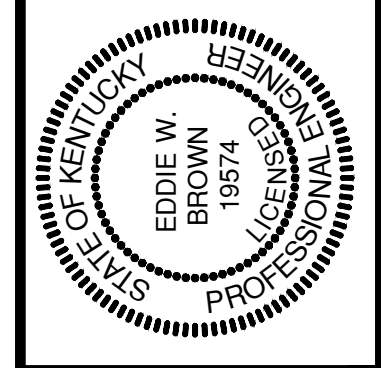
ENVIRONMENTAL NOTES

- When crossing all streams and ditches, silt barriers, ie. straw bales or silt fences, shall be put in place to prevent sediment runoff into stream. Conventional stream crossings shall be accomplished during low flow periods. Stream banks shall be reseeded with native vegetation beneficial to wildlife immediately following completion of the stream crossing. Disturbed surfaces shall be restored to original contours and excess materials removed to a properly confined area.
- Contractor shall not disturb any trees with a diameter at breast height greater than three (3) inches.
- Any excavation by the Contractor that uncovers a historical or archaeological artifact shall be immediately reported to the Owner and Engineer. Construction shall be temporarily halted pending the notification process and further directions after consultation with the State Historic Preservation Officer (SHPO).

HIGHWAY DEPARTMENT NOTES

- Underground utilities installed inside state right of way shall be located within 3-5 feet from the edge of the right of way unless otherwise shown on the plans.
- Underground utilities on state right of way shall be installed at a minimum depth of 42" under roadways, ramps, and ditch lines and 30" in all other areas within state right of way.
- Underground utilities crossing any paved driveway inside state right of way shall be installed by boring unless written permission to open cut is obtained from the property owner.
- Underground utilities shall not be installed in embankment fills or between edge of pavement and ditchline unless specifically noted on permitted plans.
- Fire Hydrants or utility service boxes should be located within 2 feet from the edge of right of way line, or off right of way.
- Contact KTC-DOH District Office prior to beginning work.
- All affected KYTC ditchlines shall remain free of excess silt or erosion and constructed to the normal typical section of the roadway with a minimum depth of 18 inches from the shoulder break point.
- All necessary steps shall be taken to prevent erosion or siltation of the public right of way, adjoining property and waterways.
- All traffic control for construction and maintenance operations will conform to the *Manual on Uniform Traffic Control Devices*. All construction and maintenance operations must be planned with full regard to safety to keep traffic interference to an absolute minimum. Closure of intersecting streets, road approaches or other access points is to be held to a minimum.
- All areas disturbed by utility installation should be kept to a minimum and restoration methods should be in accordance with Kentucky Transportation Cabinet's *2012 Standard Specifications for Road and Bridge Construction*.

EAST CASEY COUNTY WATER DISTRICT
 CONTRACT 1 - 2022 PUMP STATIONS
 CASEY COUNTY, KENTUCKY



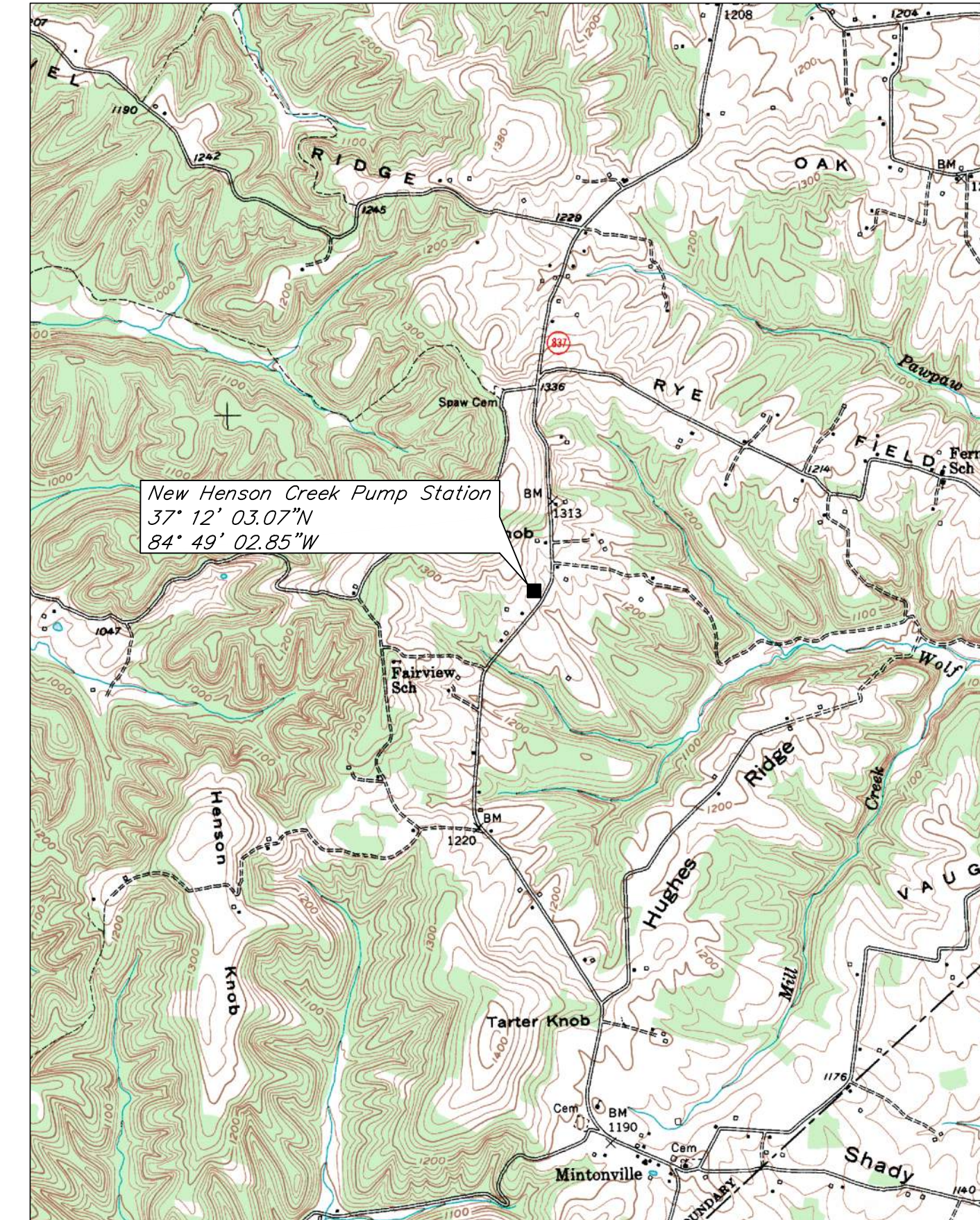
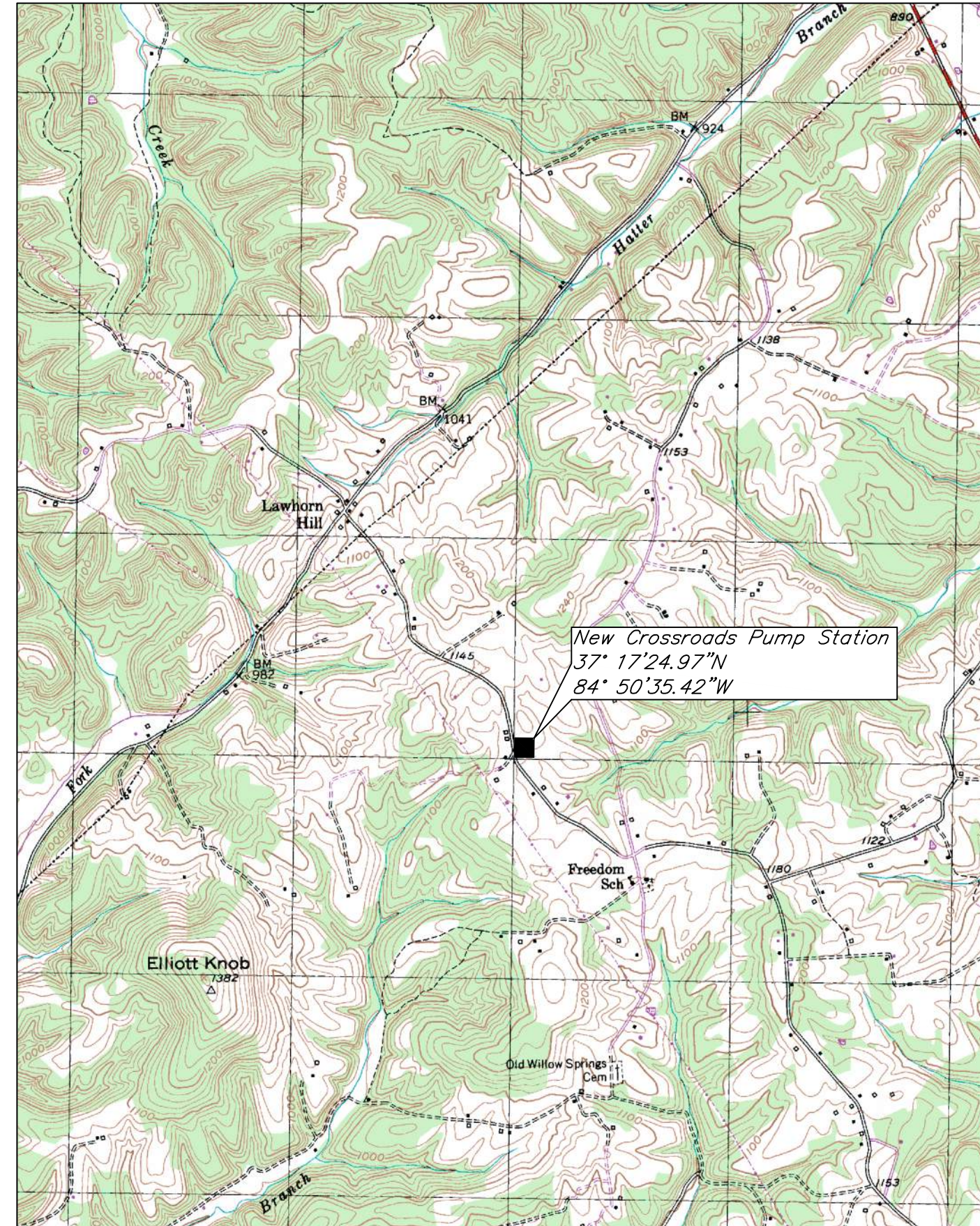
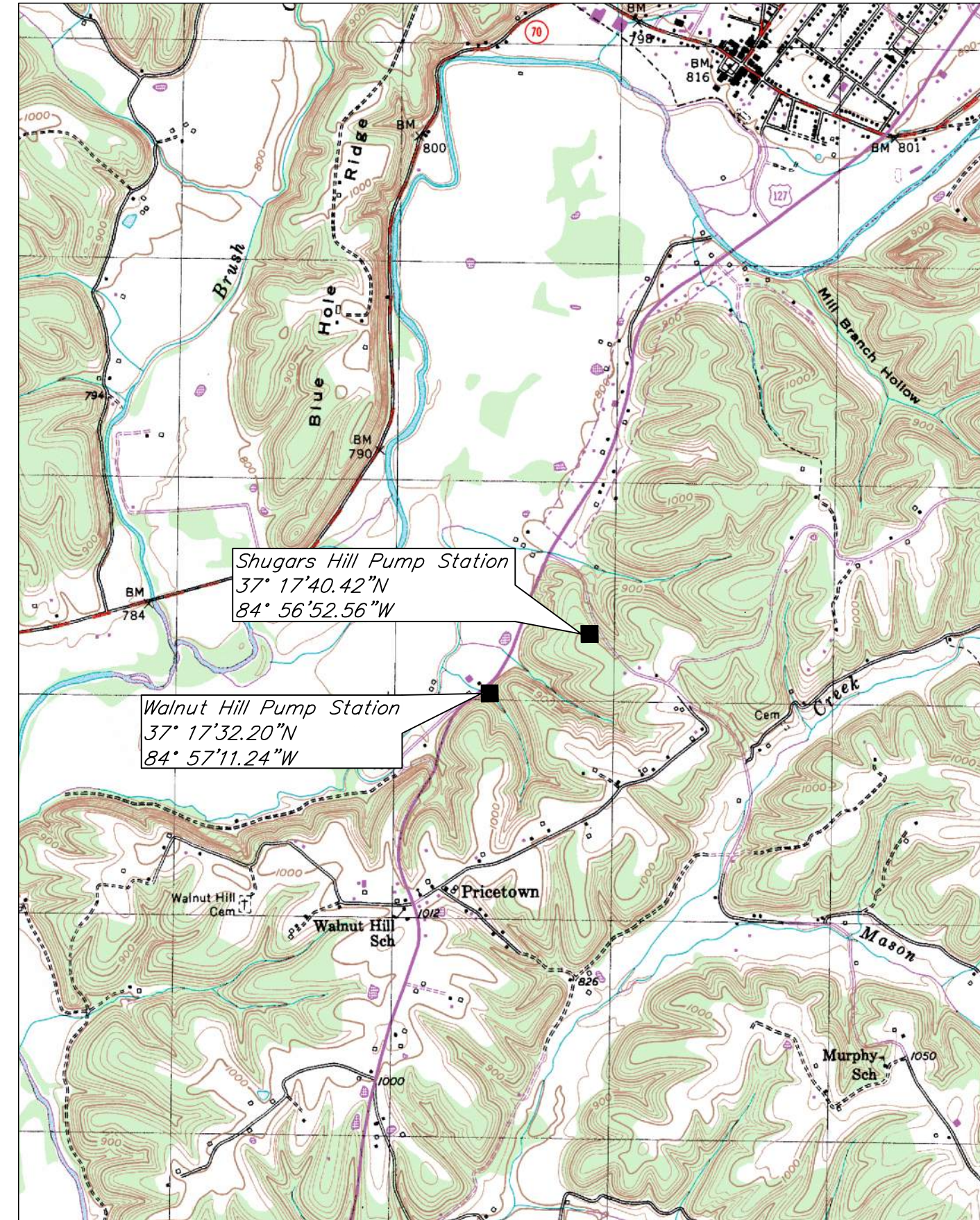
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	REVISIONS

KENVIRONS
 Civil & Environmental Engineers



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2018132
 SHEET NO.
C.02

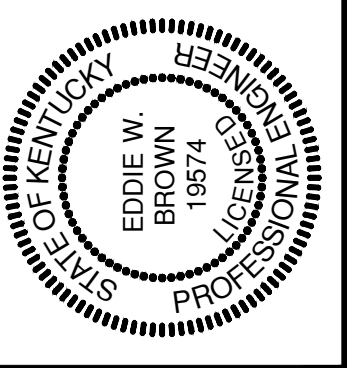




LOCATION MAP LAYOUT

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EAST CASEY COUNTY WATER DISTRICT
CONTRACT 1 - 2022 PUMP STATIONS
CASEY COUNTY, KENTUCKY

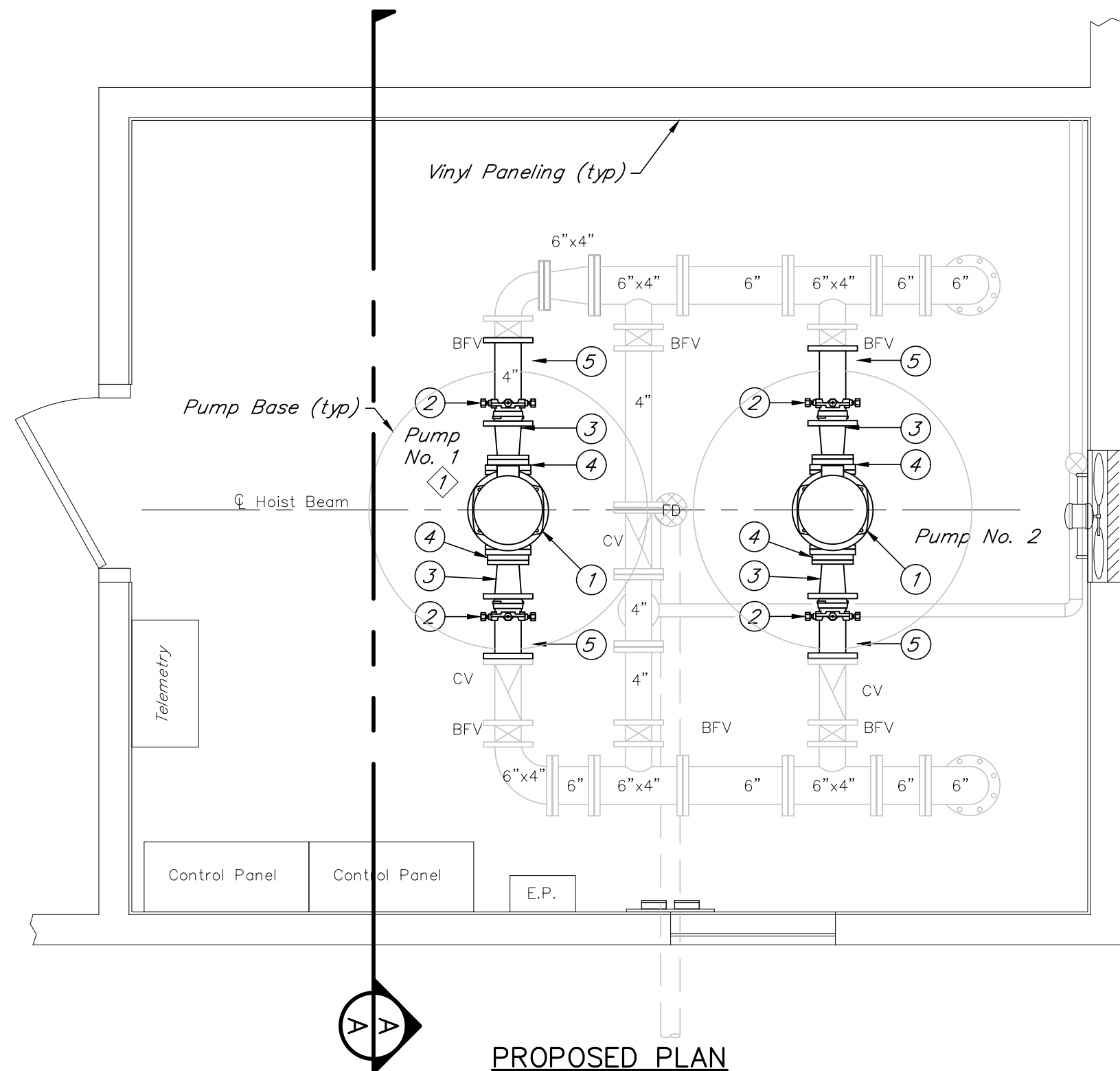
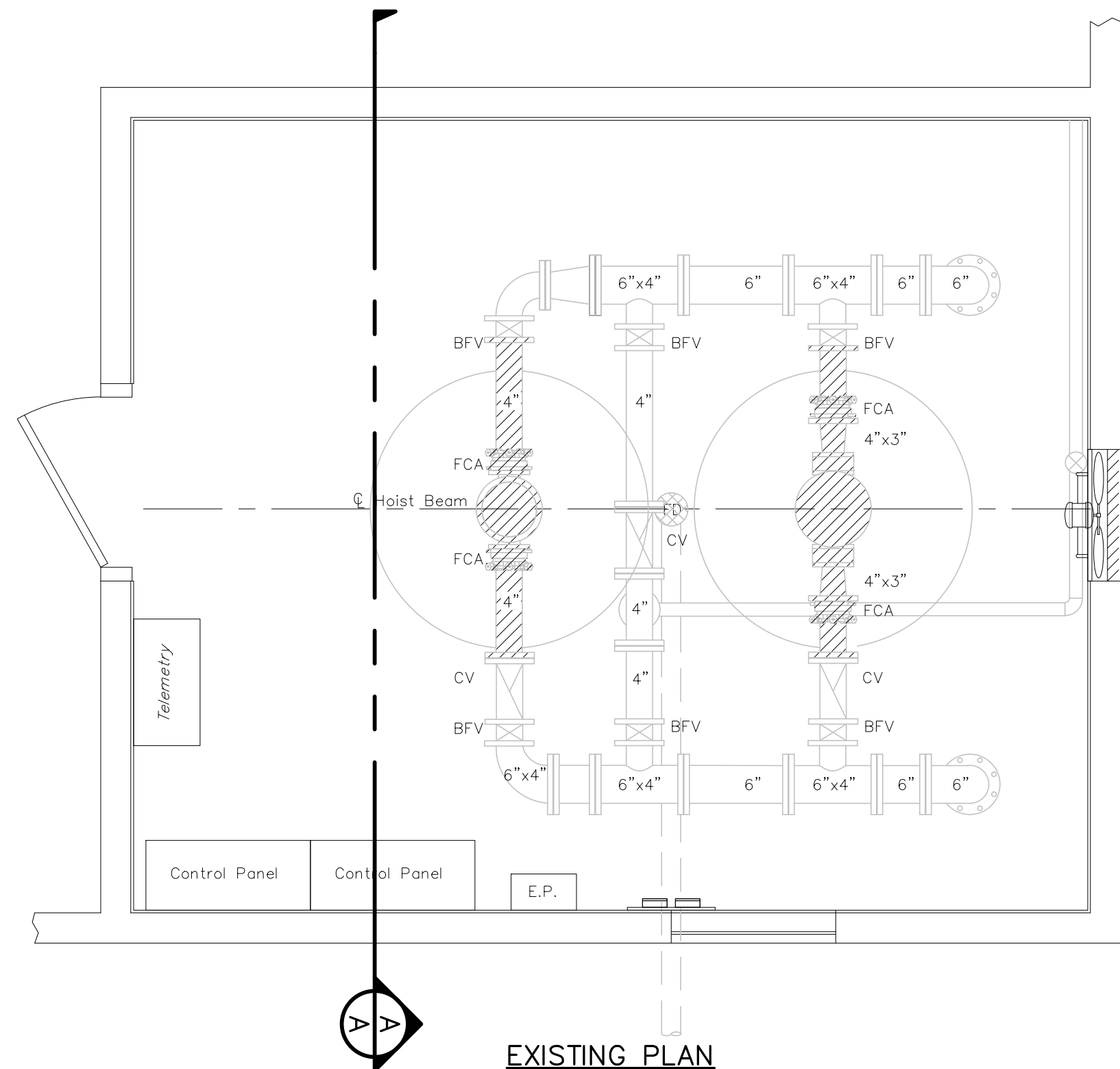


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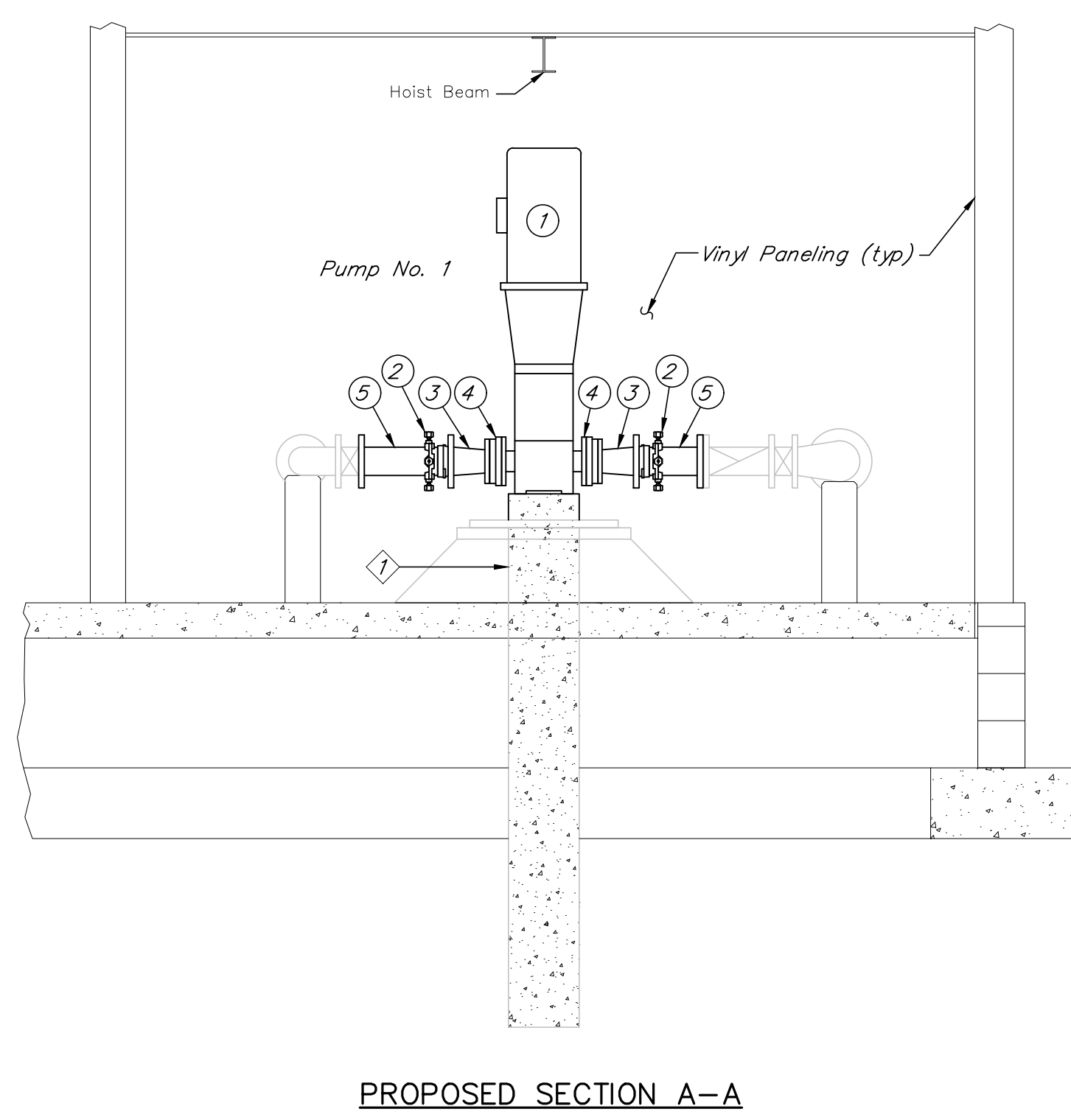
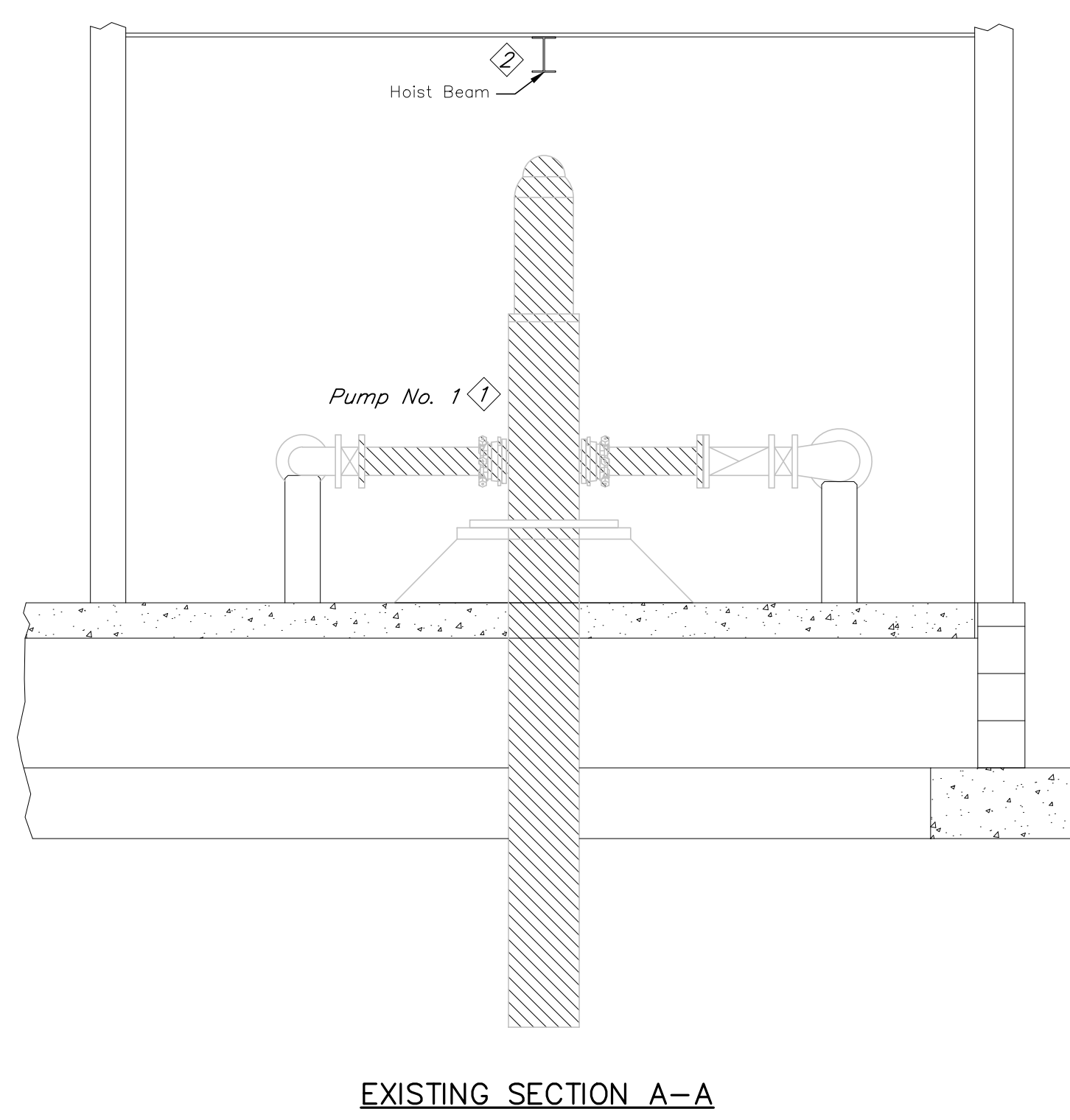
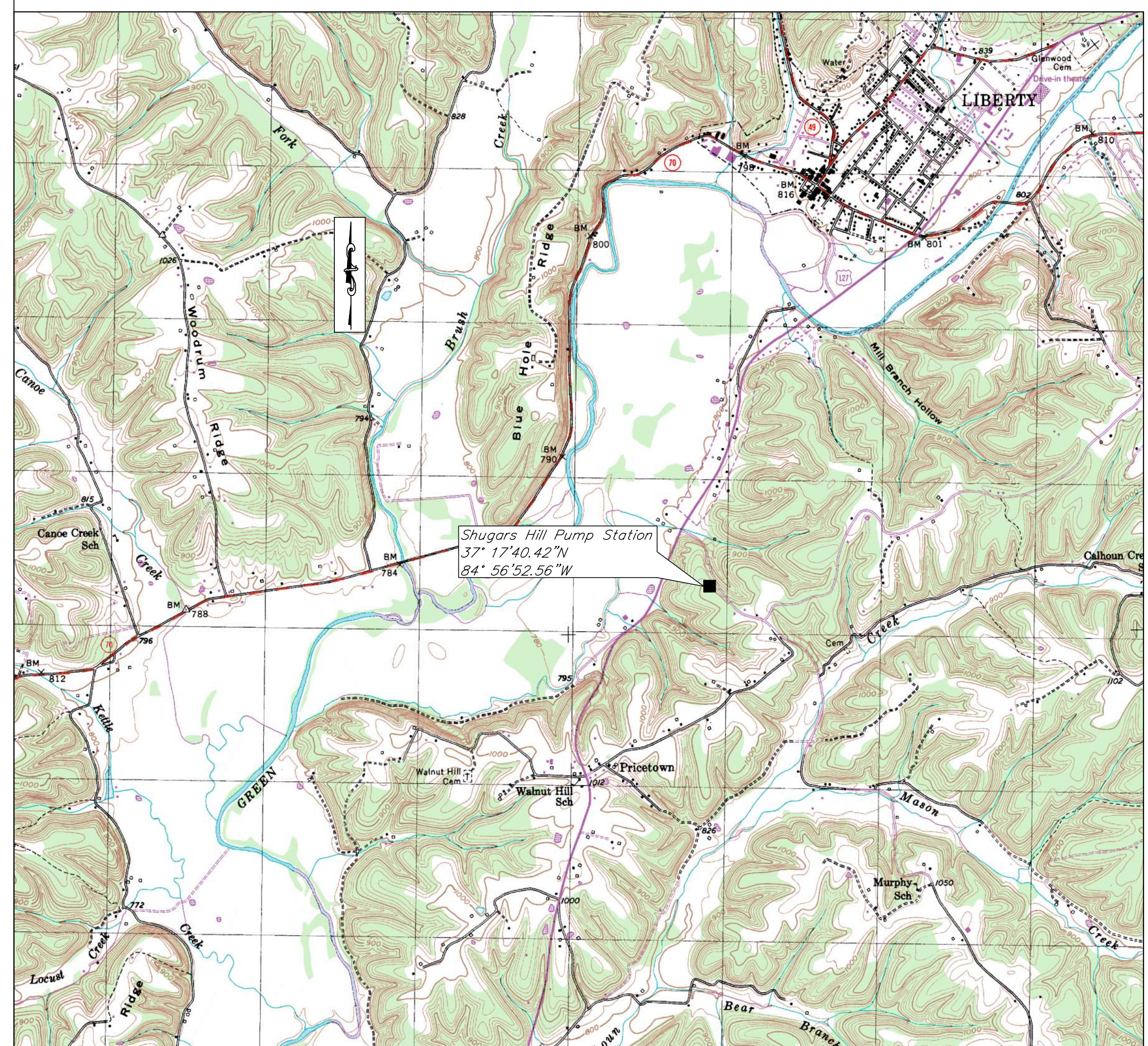
SHEET NO.
CO.3



- Sheet Notes:
- /// Indicates items to be removed and given to the OWNER.
 - 1. Pump No. 1: Remove Vertical Turbine Pump. Fill Can with concrete and form concrete base for new pump. See existing Pump No. 2 Base for example.
 - 2. Contractor to verify size and clearance of existing hoist beam to ensure installation of new pumps.
 - 3. Contractor is responsible for removal/disposal of all drywall from the walls and installing the new PVC vinyl paneling as specified in Section 06600 in the Technical Specifications.
 - 4. The structural integrity of the existing hoist beam is unknown. The Contractor shall utilize temporary adjustable jack posts (or approved equal) under each end of the hoist beam when removing and/or installing the new pumps or equipment.
 - 5. Contractor shall be responsible for interior paint coatings. See Specification Section 09901 "High Performance Coatings" for Schedule.

SHUGARS HILL PUMP STATION		
ITEM	QTY.	DESCRIPTION
1	2	Pumps: 30 Hp, 230V/460V/3φ, 238 GPM @ 367.8' TDH; 3,500 RPM
2	4	Grundfos CR 45-4-1, 4" 125 lb. Flange (or equal)
3	4	Flange Coupling Adapter (FCA)
4	1	4"x3" Reducer
4	1	3" 250# to 125# Flange Converter
5	4	4" Spool Piece (FLXPE)

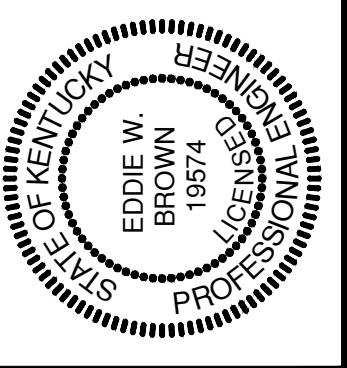
SHUGARS HILL PUMP STATION UPGRADE PLAN
Scale: 1/2"=1'-0"



SHUGARS HILL PUMP STATION UPGRADE SECTION
Scale: 1/2"=1'-0"

SHUGARS HILL PUMP STATION DEMO/UPGRADE & LOCATION MAP

EAST CASEY COUNTY WATER DISTRICT
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CASEY COUNTY, KENTUCKY

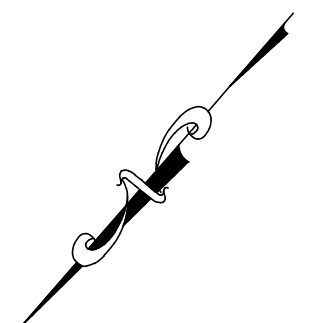


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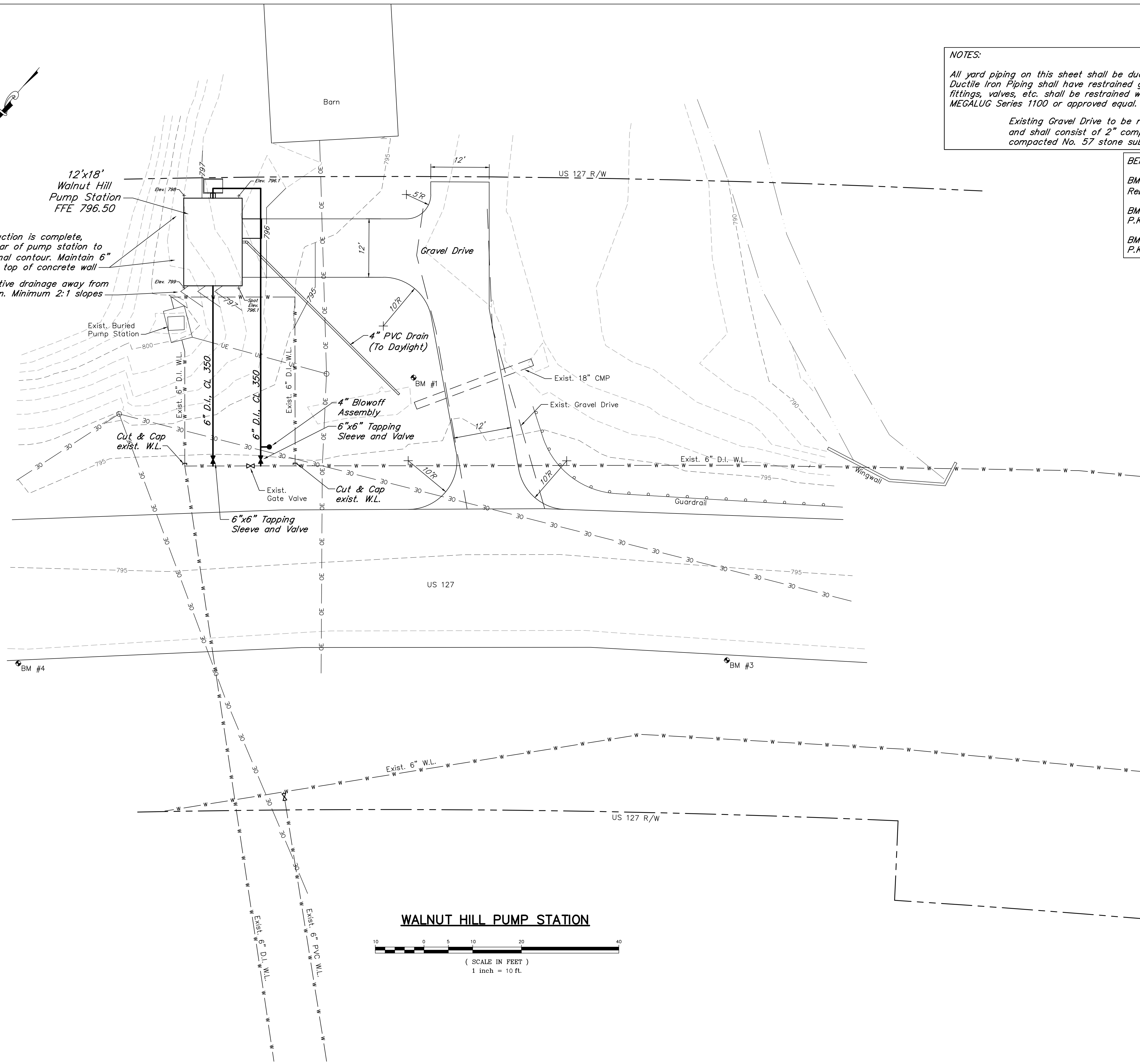
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12'x18'
Walnut Hill
Pump Station
FFE 796.50

Once construction is complete,
backfill in rear of pump station to
approx. original contour. Maintain 6"
clearance to top of concrete wall

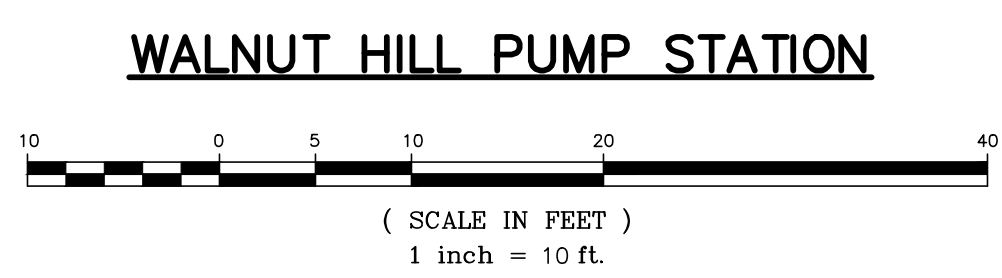
Provide positive drainage away from
pump station. Minimum 2:1 slopes



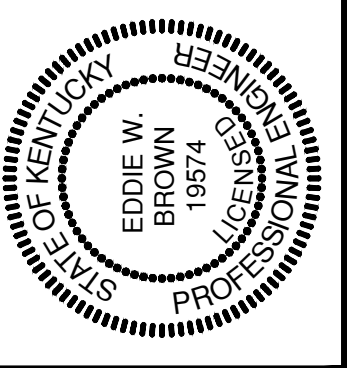
NOTES:
All yard piping on this sheet shall be ductile iron pipe. All Ductile Iron Piping shall have restrained gaskets. All M.J. fittings, valves, etc. shall be restrained with EBBA IRON MEGALUG Series 1100 or approved equal.
Existing Gravel Drive to be regraded as shown and shall consist of 2" compacted DGA on 4" compacted No. 57 stone subgrade.

BENCH MARK DATA

BM #1:	Elev. 794.54
	Rebar w/ Cap
BM #3:	Elev. 793.89
	P.K. Nail
BM #4:	Elev. 793.94
	P.K. Nail



EAST CASEY COUNTY WATER DISTRICT
CONTRACT 1 - 2022 PUMP STATIONS
CASEY COUNTY, KENTUCKY



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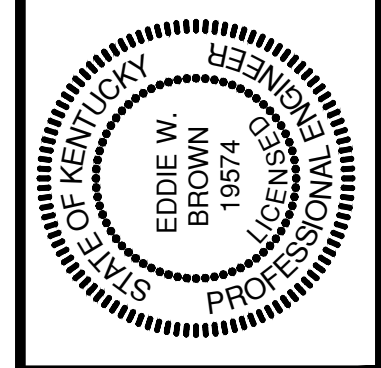


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WALNUT HILL PUMP STATION SITE PLAN

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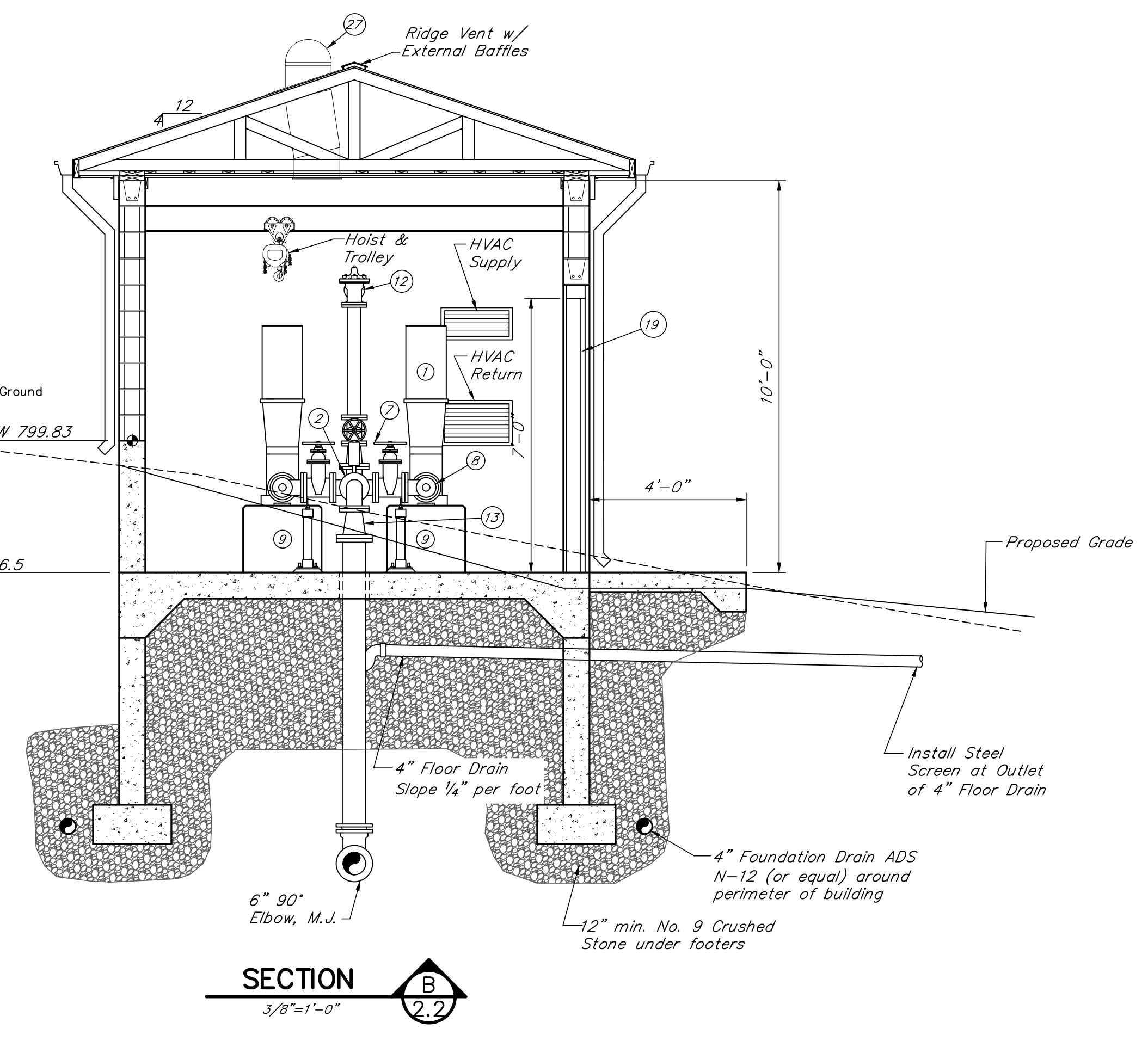
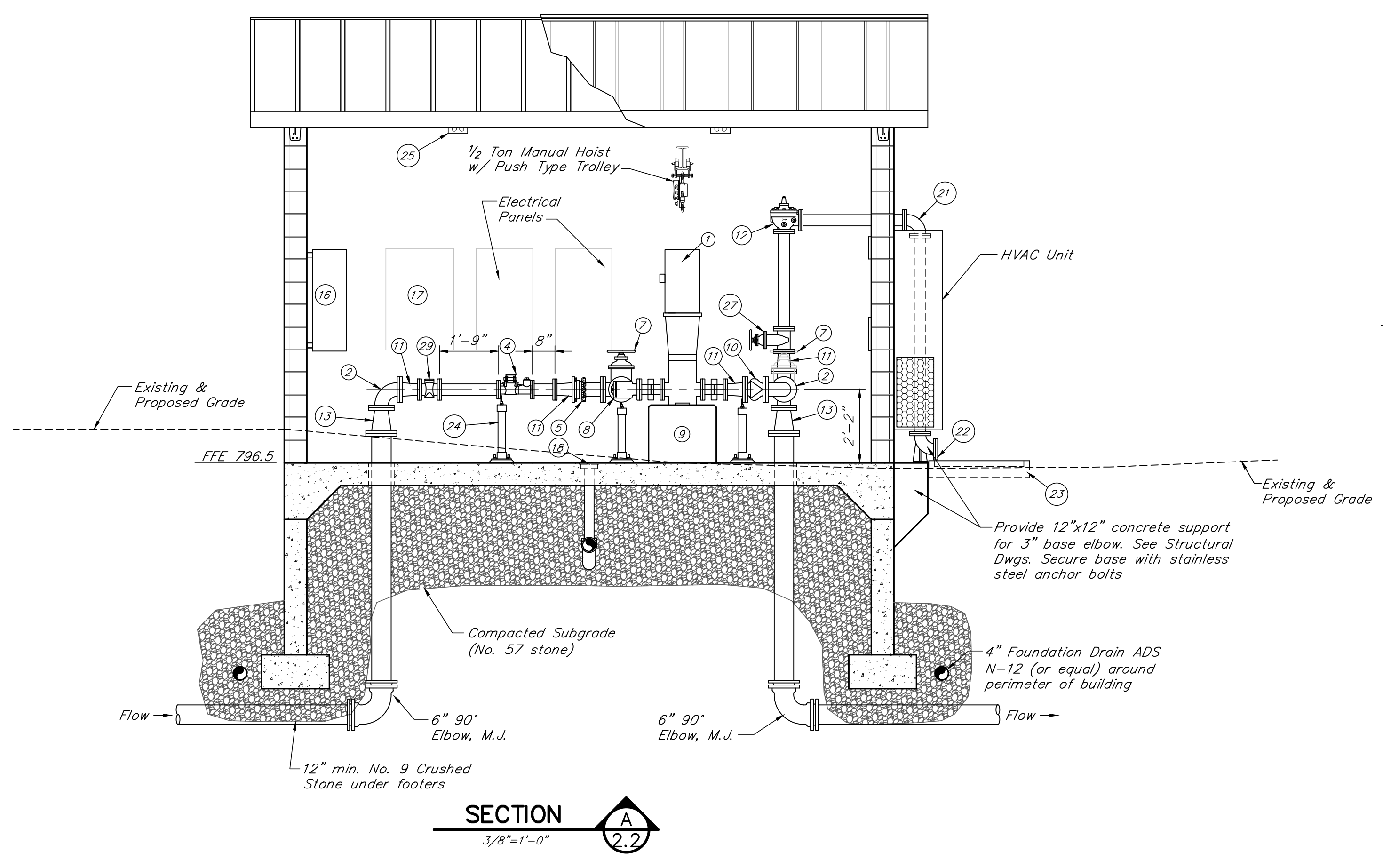
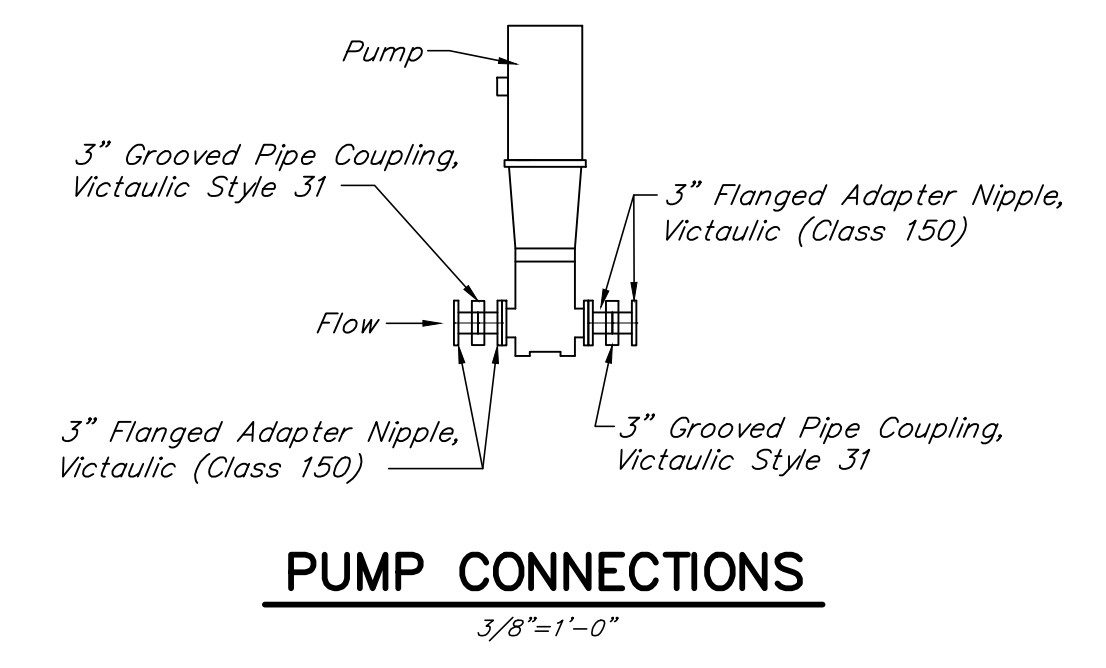
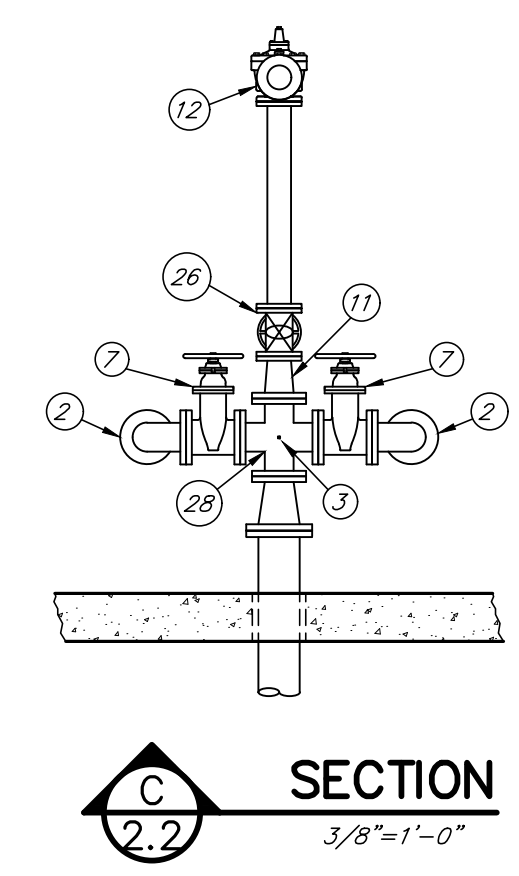
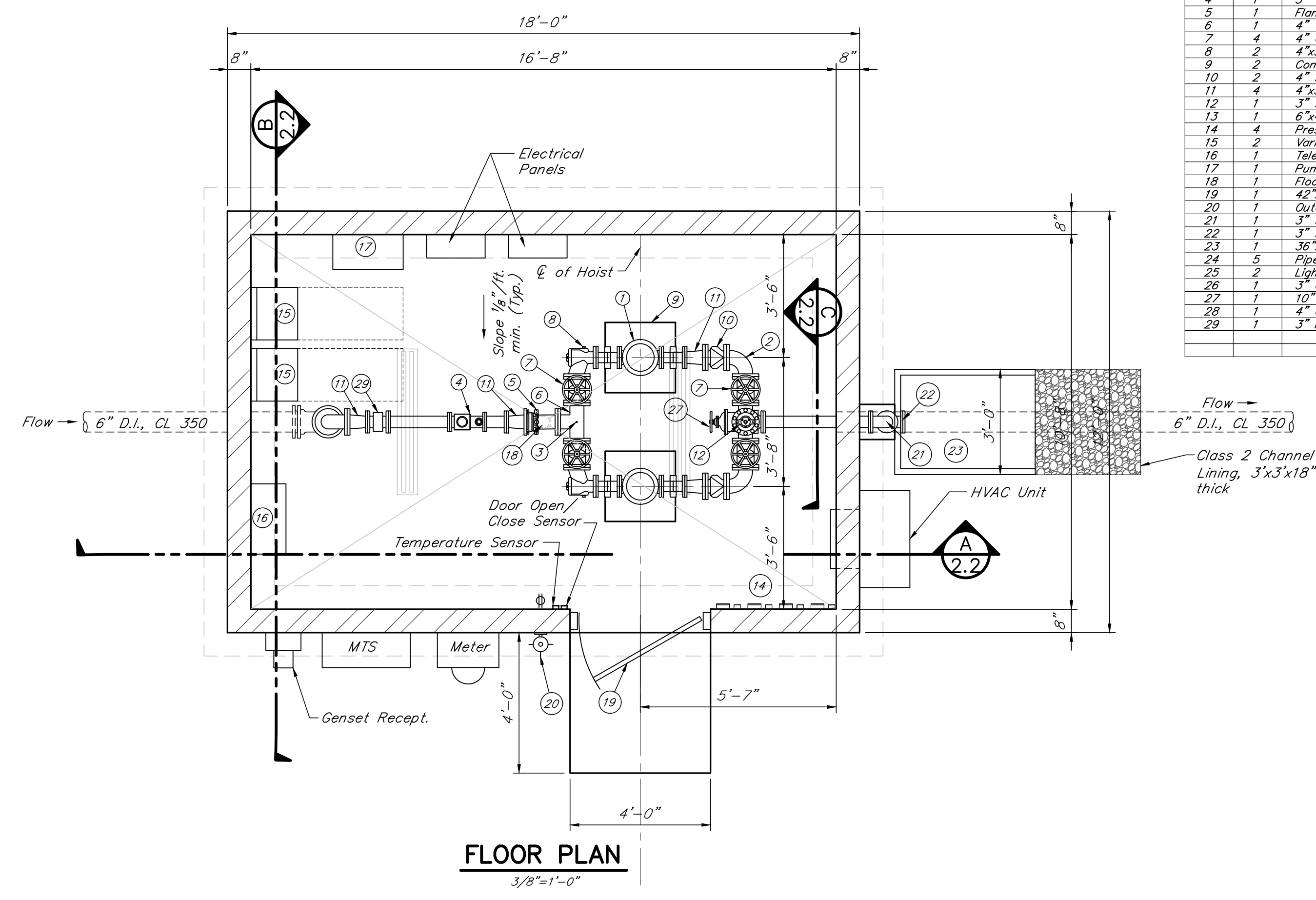


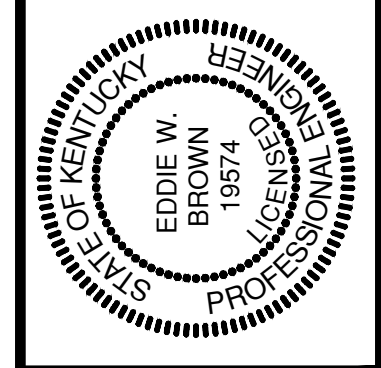
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WALNUT HILL PUMP STATION		
ITEM	QTY.	DESCRIPTION
1	2	Pumps: 15 Hp, 208-230V/460V/3PH/ 250 GPM @ 250' TDH; 3,500 RPM Grundfos CR 45-3-1, 3" 125 lb. Flange (or equal)
2	2	4" 90° Elbow
3	2	1/4" Stop Cock (Tap for Pressure Transducer)
4	1	3" Turbo Flow Meter
5	1	Flange Coupling Adapter (FCA)
6	1	4" Tee
7	4	4" Gate Valve
8	2	4"x3" Suction Diffuser w/ outlet and Pressure Transducer
9	2	Concrete Pump Base (Cast in Place)
10	2	4" Slant Globe Check Valve
11	4	4"x3" Reducer
12	1	3" Surge Anticipating Valve (Angle Style)
13	1	6"x4" Reducer
14	4	Pressure Gauge w/ Pressure Transducer
15	2	Variable Frequency Drive Panel (VFD)
16	1	Telemetry Panel (RTU)
17	1	Pump Control Panel
18	1	Floor Drain and 4" PVC Sch. 80 Drain Pipe w/ Trap
19	1	42"x7'-2" Insulated Steel Door
20	1	Outdoor Light Fixture w/ dusk to dawn sensor and light guard
21	1	3" 90° Elbow
22	1	3" 90° Base Elbow with aluminum screen
23	1	36"x48"x6" Concrete Splash Pad
24	5	Pipe Supports
25	2	Light Fixture
26	1	3" Gate Valve
27	1	10" Tubular Skylight
28	1	4" Cross
29	1	3" Plate Strainer

- GENERAL NOTES**
- All flanged piping be rated for 350 psi. Standard flat gaskets will not be allowed. Gaskets, such as American's Toruseal, rated for 350 psi will be required.
 - All yard piping shall be ductile iron, CL 350 pipe. All Ductile Iron Piping shall have restrained gaskets. All M.J. fittings, valves, etc. shall be restrained with EBAA IRON MEGALUG Series 1100 or approved equal.
 - The Contractor shall coordinate with the pump Supplier and Engineer regarding the base and other pump dimensions. This coordination is absolutely necessary to assure that the concrete pump pedestals are constructed to the desired dimensions.
 - All couplings and flanged coupling adaptors shall be rodded through the adjacent flanges and bolted securely.
 - Pipe drainage from any pump, valve, or device within the pump station shall utilize PVC conduit through the floor slab to the floor drain piping below slab.
 - Caulk all control joints, construction joints including slab to wall joint, and frame installations.
 - All conduits shall be aluminum. Seal the tubing raceways.
 - Use shark bite fittings with all tubing.
 - Construct a 1/4" chamfer at all construction joints and corners.
 - Floor shall be sloped to drain between 1/4" & 1/8" per foot.
 - Tubular Skylight shall be 10" in diameter with a Tube Reflectivity of 98%. The short shaft installation shall include a severe weather roof dome, a formable leak-proof roof flashing, mirror finish adjustable tubes, a ceiling trim ring, and a standard diffuser lens assembly. The tubular skylight shall be as manufactured by ODL (or approved equal). The diffuser lens assembly shall be located as close to the center of the ceiling as possible.
 - Contractor shall be responsible for interior paint coatings. See Specification Section 09901 "High Performance Coatings" for Schedule.





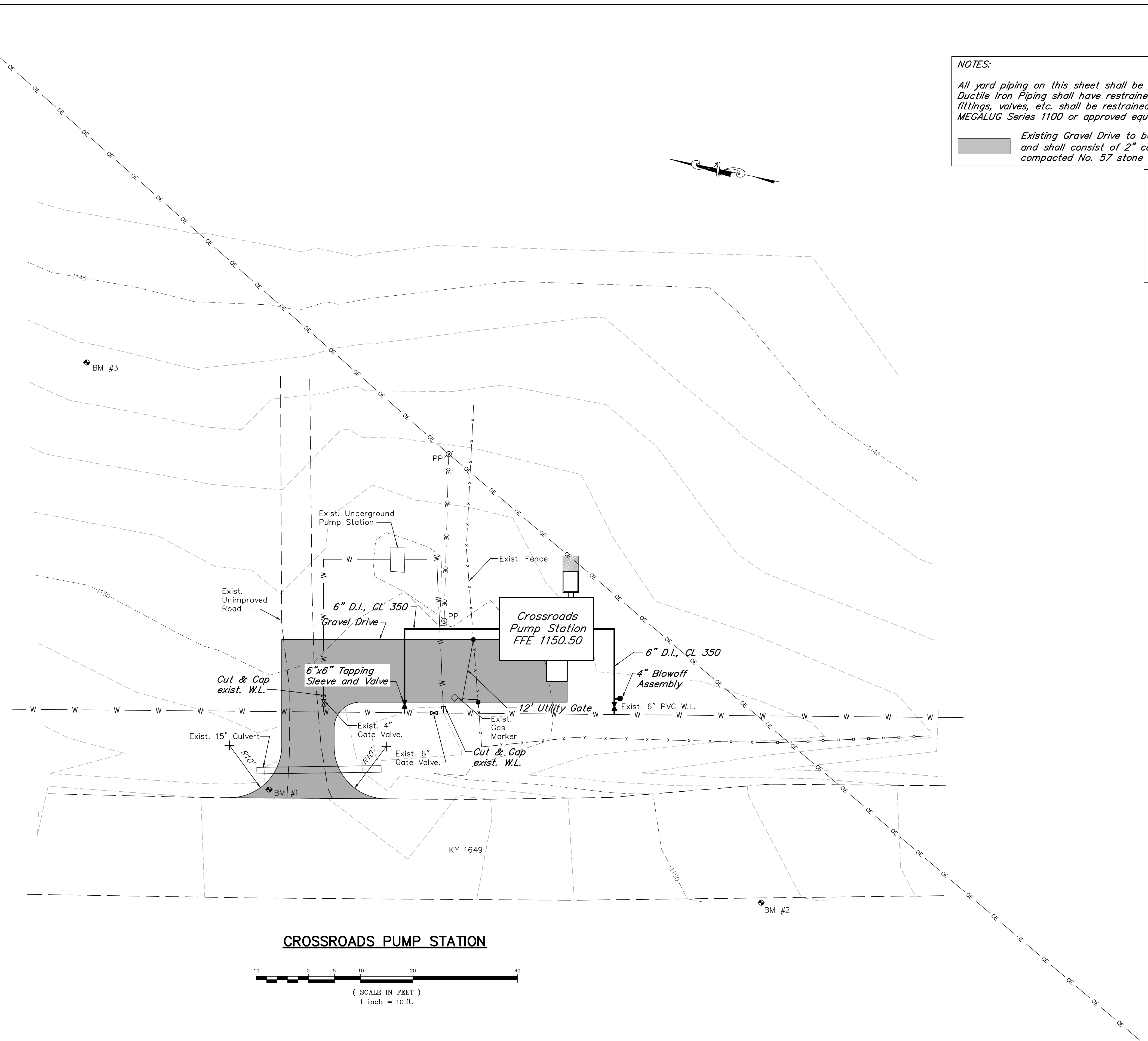
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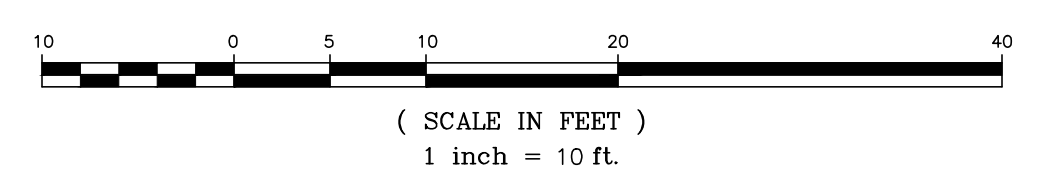
NOTES:
 All yard piping on this sheet shall be ductile iron pipe. All Ductile Iron Piping shall have restrained gaskets. All M.J. fittings, valves, etc. shall be restrained with EBBA IRON MEGALUG Series 1100 or approved equal.

Existing Gravel Drive to be regraded as shown and shall consist of 2" compacted DGA on 4" compacted No. 57 stone subgrade.

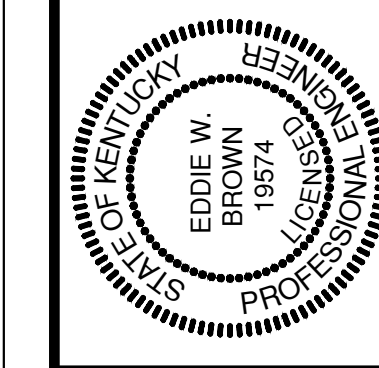
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 P.K. Nail
 BM #2: Elev. 1149.55
 P.K. Nail
 BM #3: Elev. 1146.29
 Rebar w/ Cap



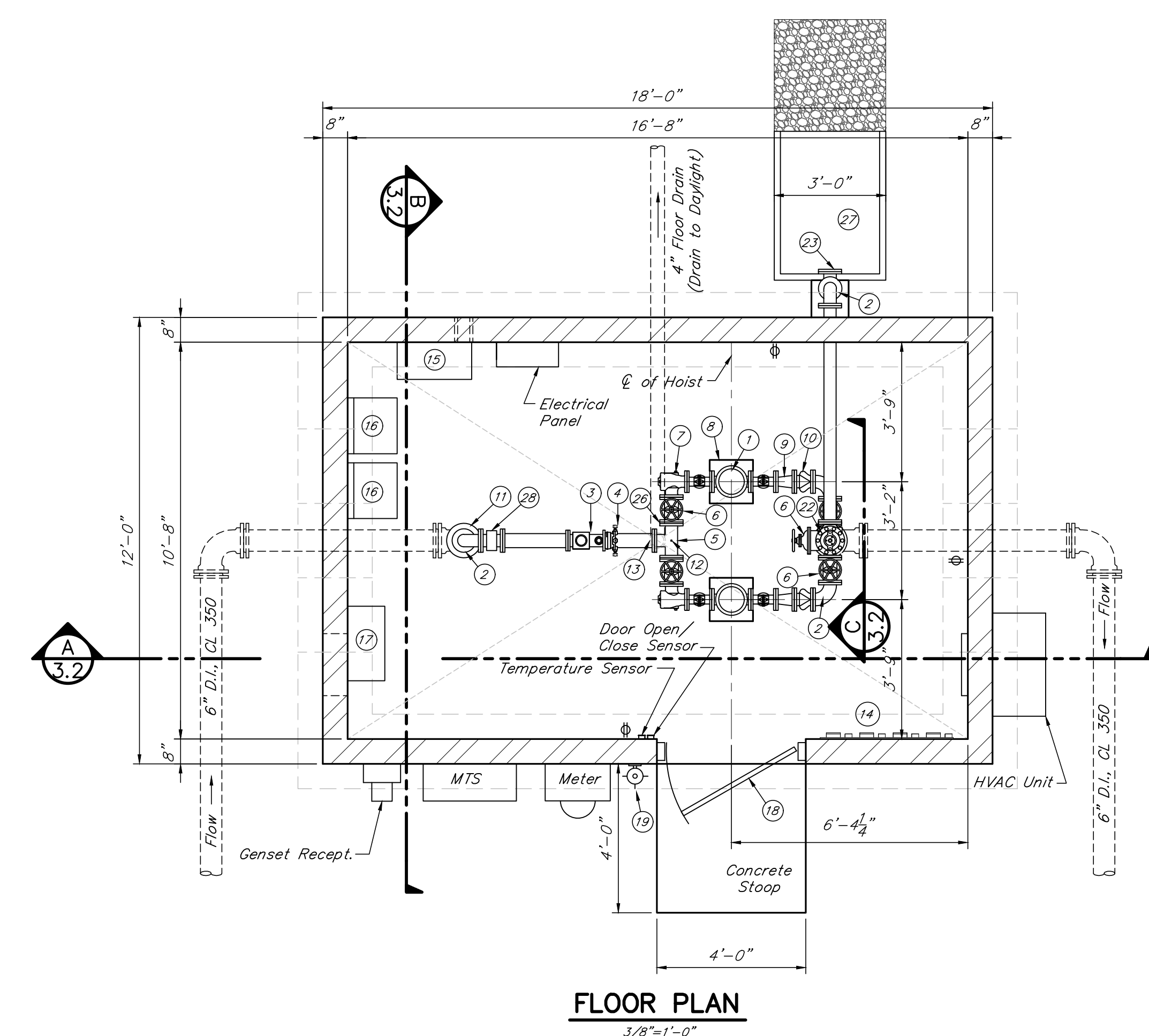
CROSSROADS PUMP STATION



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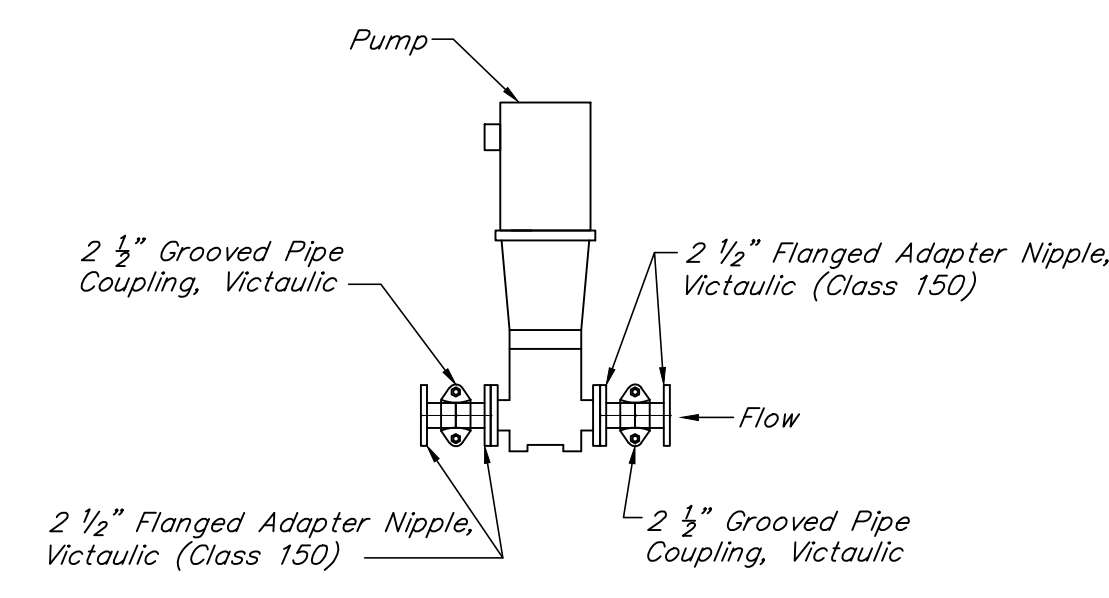


FLOOR PLAN
 3/8"=1'-0"

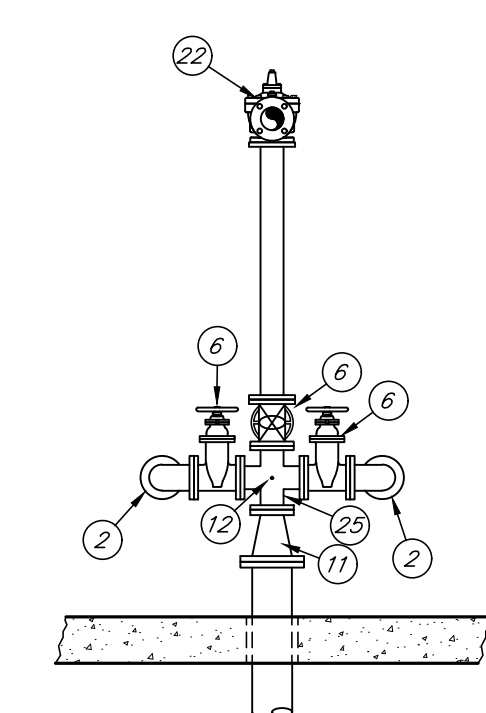
CROSSROADS PUMP STATION		
ITEM	QTY.	DESCRIPTION
1	2	Pumps: 10 Hp, 208-230V/480V/3PH/140 GPM @ 190' TDH, 3,500 RPM Grundfos CR 32-3-2, 2 1/2" ANSI (or equal)
2	4	3" 90° Elbow, Fl
3	1	3" Turbo Meter
4	1	3" Flange Coupling Adapter (FCA)
5	1	3" Tee
6	5	3" Gate Valve
7	2	3/2 1/2" Suction Diffuser w/ outlet and Pressure Transducer
8	2	Concrete Pump Base (Cast in Place)
9	2	3/2 1/2" Concentric Reducer
10	2	3" Silent Globe Check Valve
11	2	6"x3" Reducer
12	2	1/4" Stop Cock (Tap for Pressure Transducer)
13	1	Floor Drain and 4" PVC Sch. 80 Drain Pipe w/ Trap
14	4	Pressure Gauge w/ Pressure Transducer
15	1	Pump Control Panel
16	2	Variable Frequency Drive Panel (VFD)
17	1	Trolley Panel
18	1	42"x25" Insulated Steel Door
19	1	Outdoor Light Fixture w/ Dusk to Dawn Sensor and light guard
20	5	Pipe Supports
21	2	Light Fixture
22	1	Surge Anticipating Valve
23	1	3" 90° Base Elbow w/ aluminum screen
24	1	10" Tubular Skylight
25	1	3" Cross
26	2	3" Flange Filler
27	1	36"x48"x6" Concrete Splash Pad
28	1	3" Flare Strainer

GENERAL NOTES

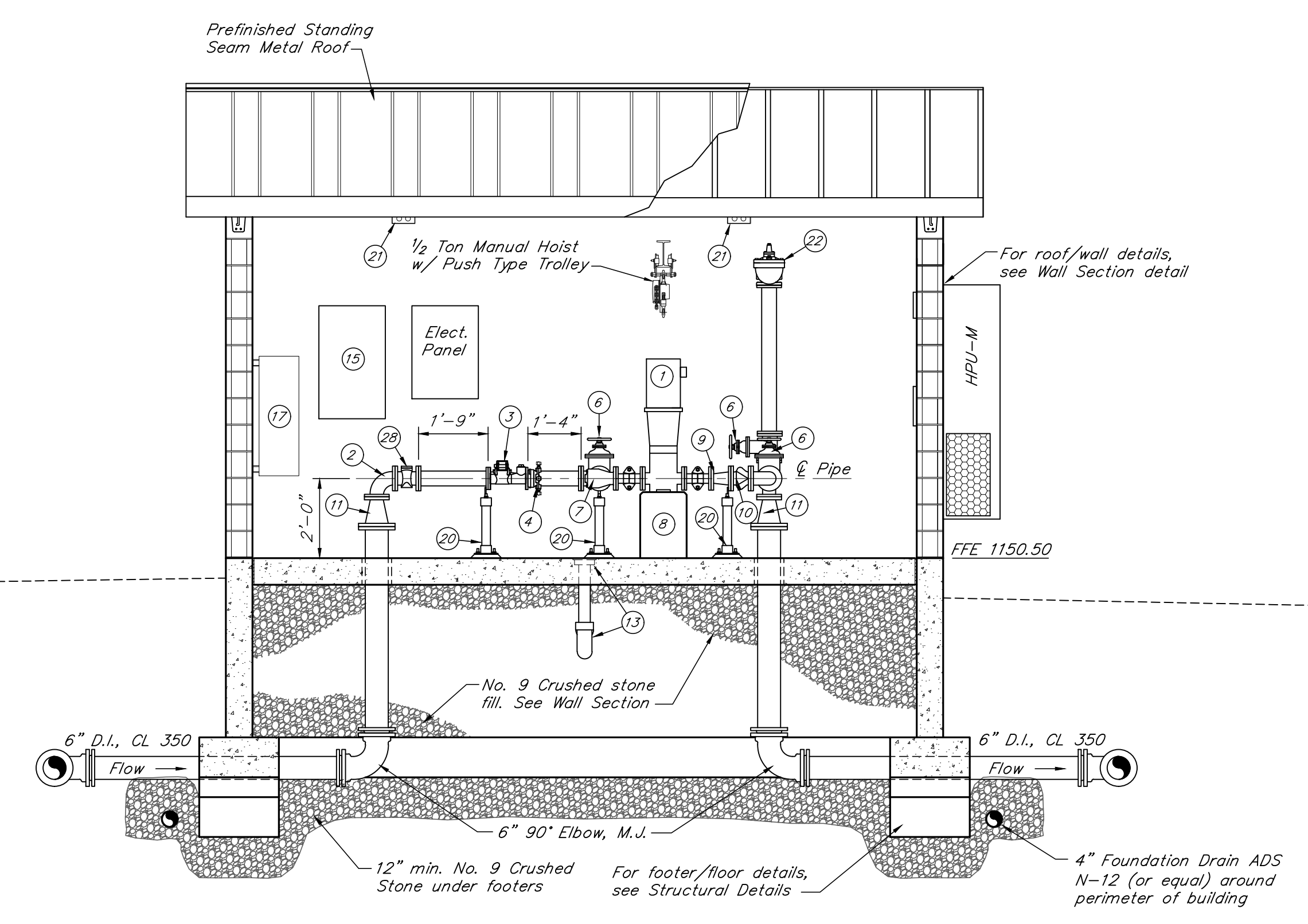
- All yard piping shall be ductile iron, CL 350 pipe. All Ductile Iron Piping shall have restrained gaskets. All M.J. fittings, valves, etc. shall be restrained with EBAA IRON MEGALUG Series 1100 or approved equal.
- The Contractor shall coordinate with the pump Supplier and Engineer regarding the base and other pump dimensions. This coordination is absolutely necessary to assure that the concrete pump pedestals are constructed to the desired dimensions.
- All couplings and flanged coupling adaptors shall be rodded through the adjacent flanges and bolted securely.
- Provide pipe sleeves for all penetrations of walls and floor.
- Pipe drainage from any pump, valve, or device within the pump station shall utilize PVC conduit through the floor slab to the floor drain piping below slab.
- Caulk all control joints, construction joints including slab to wall joint, and frame installations.
- All conduits shall be aluminum. Seal the tubing raceways.
- Use shark bite fittings with all tubing.
- Construct a 3/4" chamfer at all construction joints and corners.
- The flanged pipe gaskets shall be full face gaskets, 1/8 inch thick equal to TORUSEAL as manufactured by American Cast Iron Pipe Company (or equal).
- Floor shall be sloped to drain between 1/4" & 1/8" per foot.
- Tubular Skylight shall be 10" in diameter with a Tube Reflectivity of 98%. The short shaft installation shall include a severe weather roof dome, a formable leak-proof roof flashing, mirror finish adjustable tubes, a ceiling trim ring, and a standard diffuser lens assembly. The tubular skylight shall be as manufactured by OOL (or approved equal). The diffuser lens assembly shall be located as close to the center of the ceiling as possible.
- Contractor shall be responsible for interior paint coatings. See Specification Section 09901 "High Performance Coatings" for Schedule.



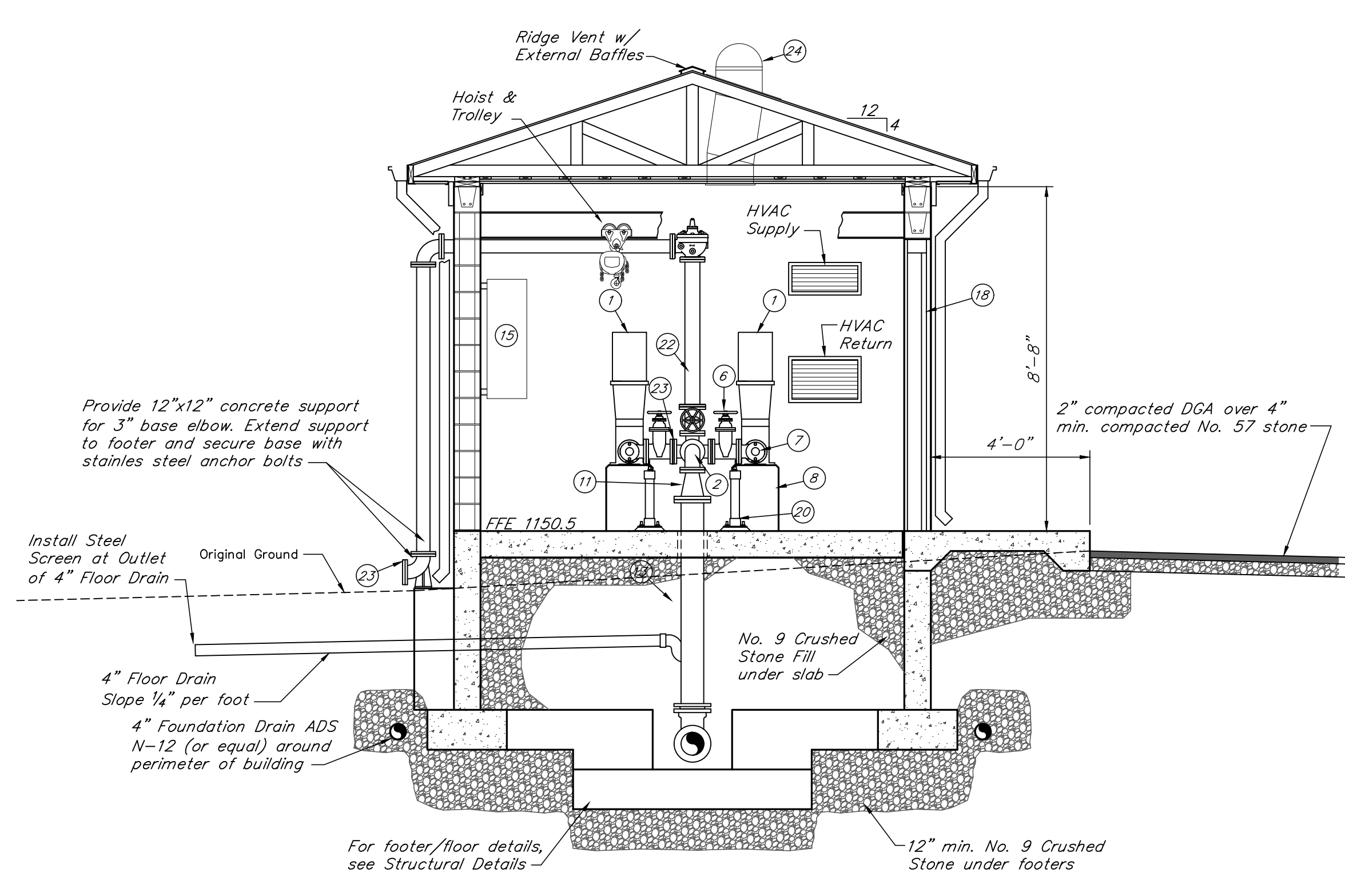
PUMP CONNECTIONS
 N.T.S.



SECTION C
 3/8"=1'-0"

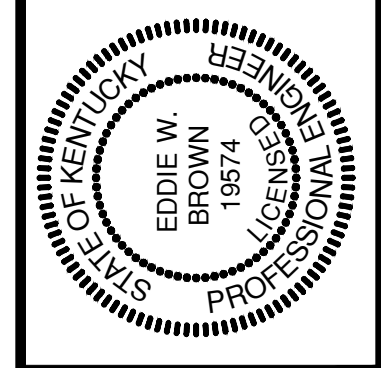


SECTION A
 3/8"=1'-0"

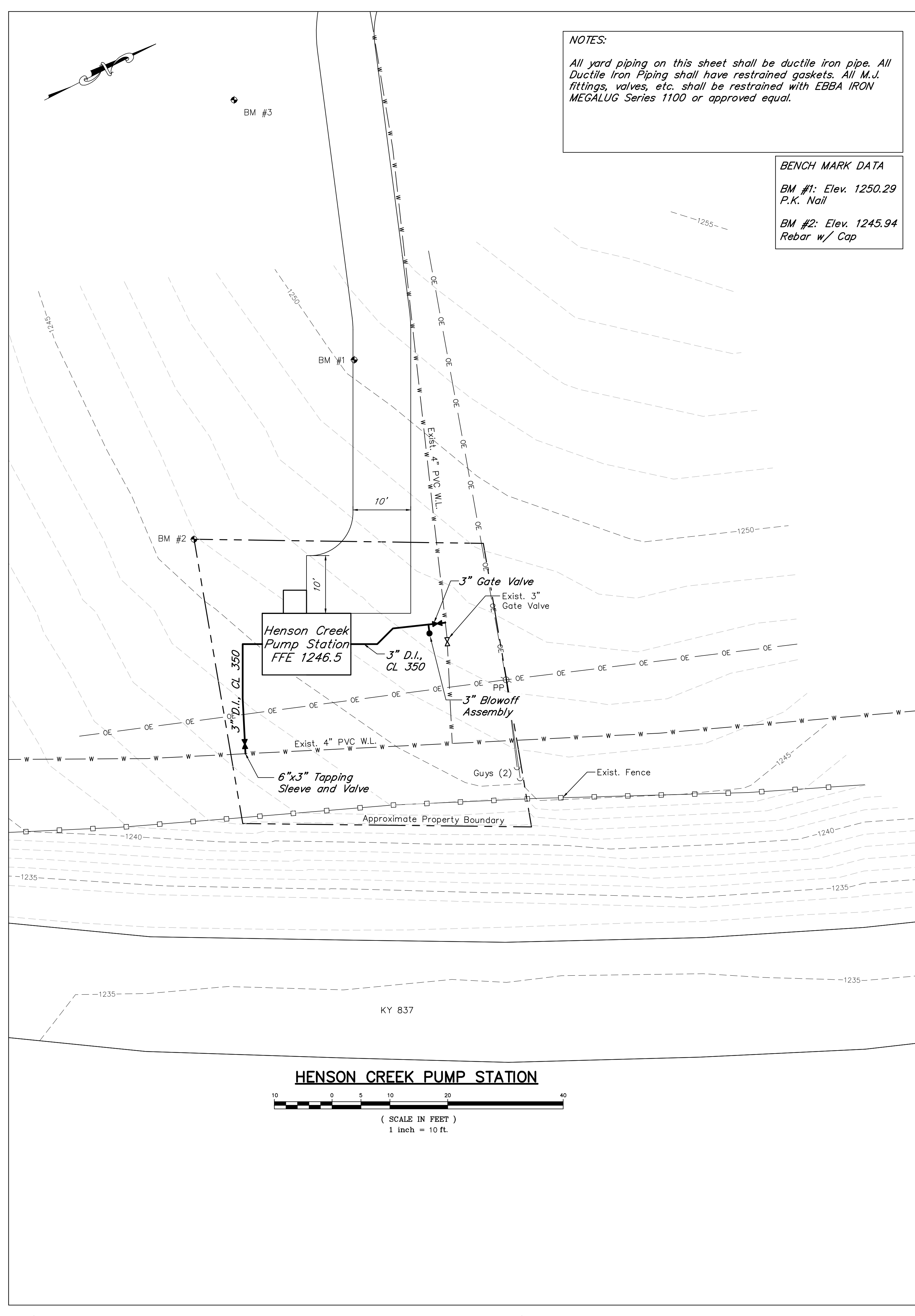


SECTION B
 3/8"=1'-0"

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CHECKED BY: E.W.B.
DATE:
SCALE: As Noted
REVISIONS:

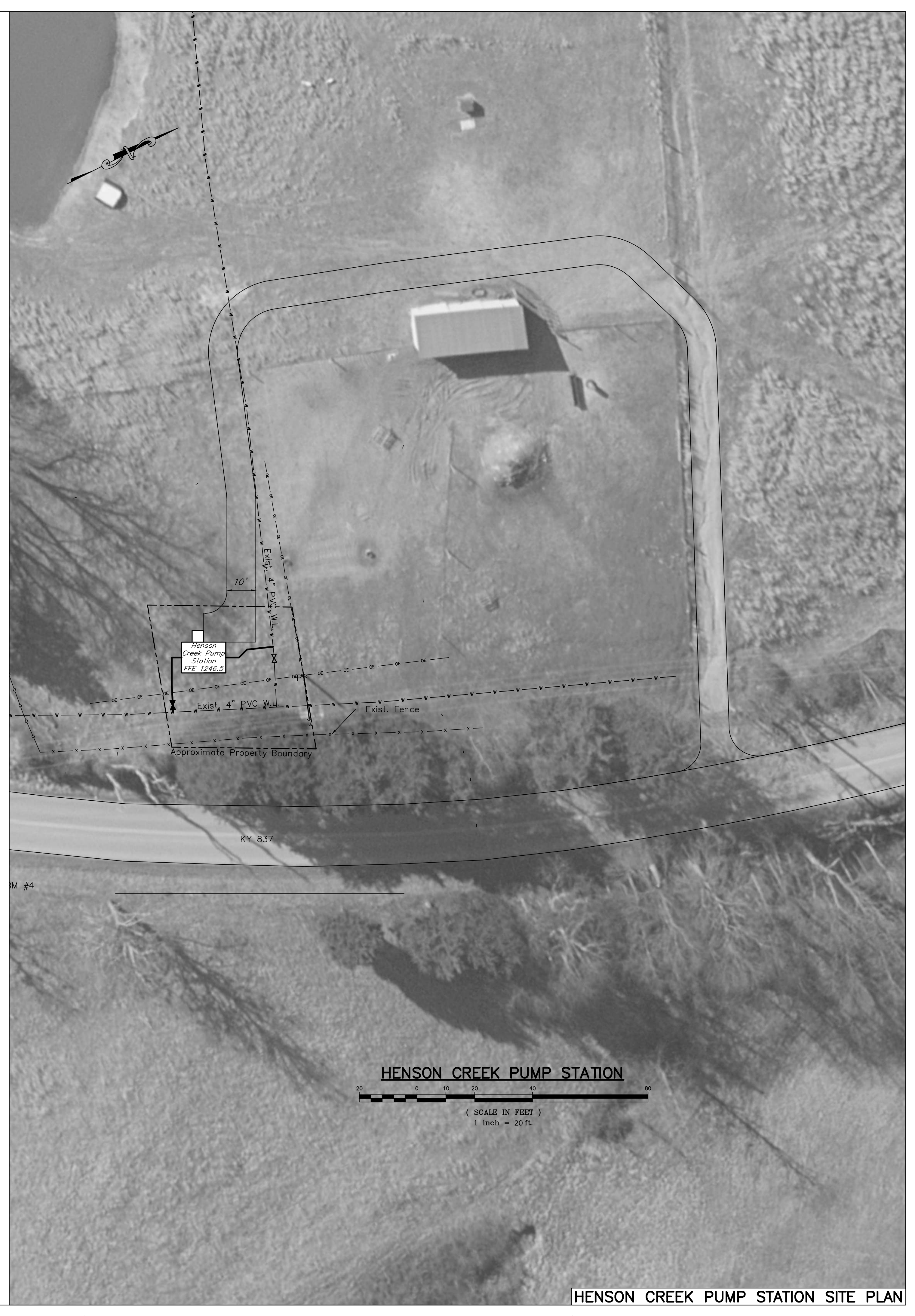


NOTES:
 All yard piping on this sheet shall be ductile iron pipe. All Ductile Iron Piping shall have restrained gaskets. All M.J. fittings, valves, etc. shall be restrained with EBBA IRON MEGALUG Series 1100 or approved equal.

BENCH MARK DATA
 BM #1: Elev. 1250.29
 P.K. Nail

BM #2: Elev. 1245.94
 Rebar w/ Cap

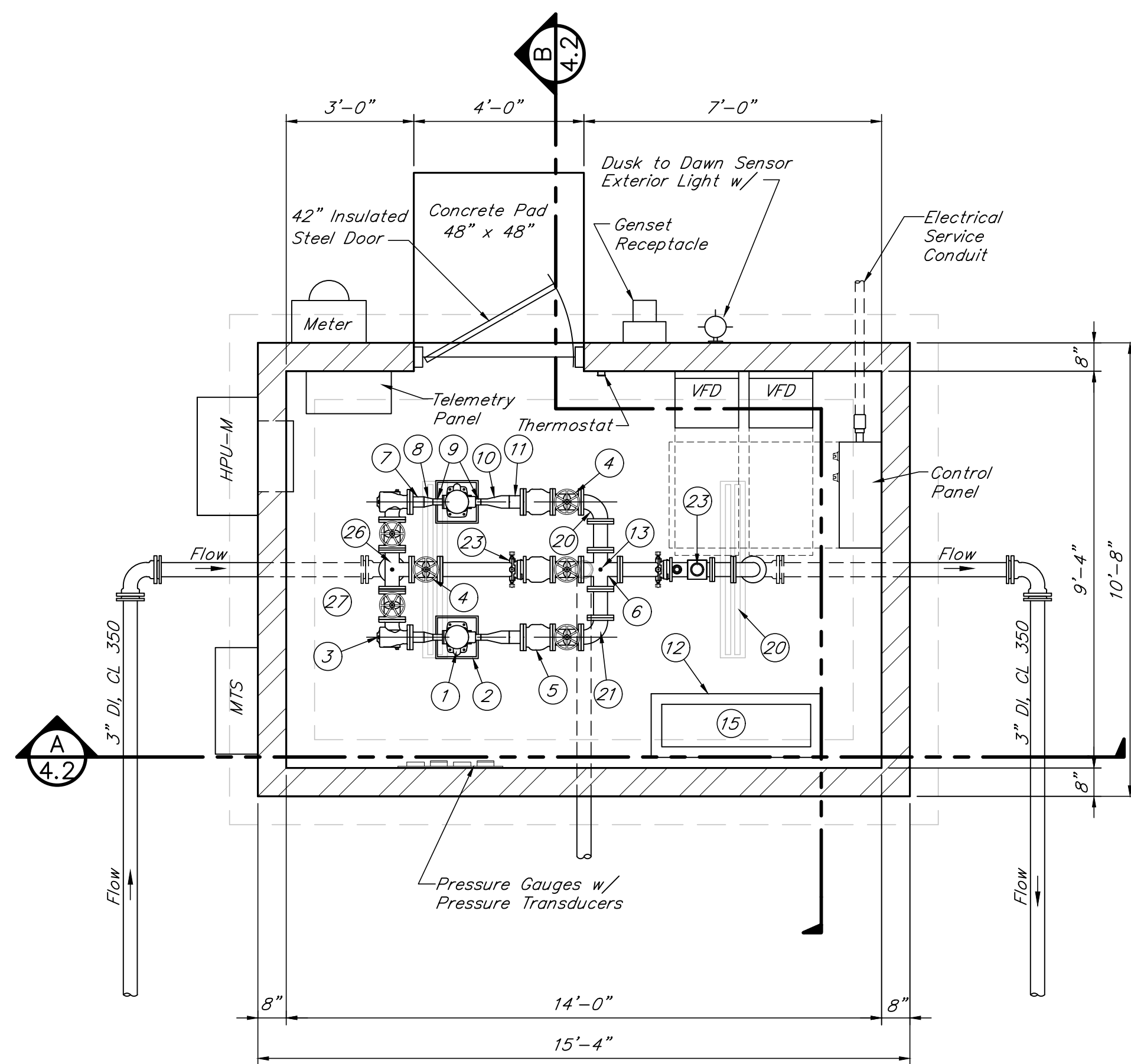
HENSON CREEK PUMP STATION
 (SCALE IN FEET)
 1 inch = 10 ft.



HENSON CREEK PUMP STATION
 (SCALE IN FEET)
 1 inch = 20 ft.

HENSON CREEK PUMP STATION SITE PLAN

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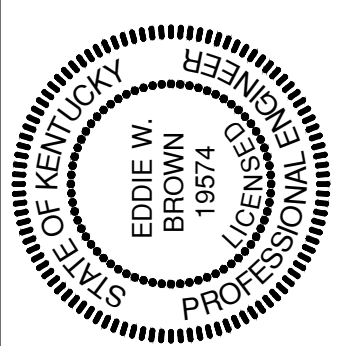
PUMP STATION PLAN
Scale: 3/8" = 1'-0"

GENERAL NOTES

- All yard piping shall be ductile iron, CL 350 pipe. All Ductile Iron Piping shall have restrained gaskets. All M.J. fittings, valves, etc. shall be restrained with EBAA IRON MEGALUG Series 1100 or approved equal.
- The Contractor shall coordinate with the pump Supplier and Engineer regarding the base and other pump dimensions. This coordination is absolutely necessary to assure that the concrete pump pedestals are constructed to the desired dimensions.
- All couplings and flanged coupling adaptors shall be rodded through the adjacent flanges and bolted securely.
- Provide pipe sleeves for all penetrations of walls and floor.
- Pipe drainage from any pump, valve, or device within the pump station shall utilize PVC conduit through the floor slab to the floor drain piping below slab.
- Caulk all control joints, construction joints including slab to wall joint, and frame installations.
- All conduits shall be aluminum. Seal the tubing raceways.
- Use shark bite fittings with all tubing.
- Construct a 1/4" chamfer at all construction joints and corners.
- The flanged pipe gaskets shall be full face gaskets, 1/8 inch thick equal to TORUSEAL as manufactured by American Cast Iron Pipe Company (or equal).
- Floor shall be sloped to drain between 1/4" & 1/8" per foot.
- Tubular Skylight shall be 10" in diameter with a Tube Reflectivity of 98%. The short shaft installation shall include a severe weather roof dome, a formable leak-proof roof flashing, minor finish adjustable tubes, a ceiling trim ring, and a standard diffuser lens assembly. The tubular skylight shall be as manufactured by ODL (or approved equal). The diffuser lens assembly shall be located as close to the center of the ceiling as possible.
- Pressure Gauges and Transducers shall be mounted to a FRP panel secured to the wall with unistrut channels.
- Contractor shall be responsible for interior paint coatings. See Specification Section 09901 "High Performance Coatings" for Schedule.

HENSON CREEK PUMP STATION	
ITEM	DESCRIPTION
1	Duplex Grundfos CR(E) 5-6, 2 HP, 30 GPM @ 140' TDH 3 Phase/ 230 Volt Package w/VFD's to maintain constant delivery pressure.
2	12"x12"x12" Pump Pedestal (Cast in Place)
3	3"x2 1/2" Suction Diffuser w/ Outlet End Pressure Transducer
4	3" Gate Valve, FL.
5	3" Silent Globe Check Valve
6	3"x3" Cross, FL.
7	Victaulic 2 1/2" Flanged Adapter Nipple (No. 45f)
8	Victaulic 2 1/2"x1 1/4" Reducer (No. 50)
9	Victaulic 1 1/4" Threaded Hose Nipple (No. 48)
10	Victaulic 3"x1 1/2" Swaged Nipple (No. 53)
11	Victaulic 3" Flanged Adapter Nipple (No. 45f)
12	4'-0"x1'-6"x3" Concrete Pad
13	1/4" Tap for Pressure Gauge
14	Floor Drain and 4" PVC Sch. 80 Drain Pipe w/ Trap
15	Genset w/ Automatic Transfer Switch
16	Not Used
17	Not Used
18	Not Used
19	Pipe Supports
20	Light Fixture
21	3" 90° El, FL.
22	10" Tubular Skylight
23	3" Turbo Meter
24	3" Restrained Flanged Coupling Adaptor
25	Tap 90° El at pipe boss and install corp stop.
26	3" Side Outlet Tee, FL.
27	3" Flange Filler

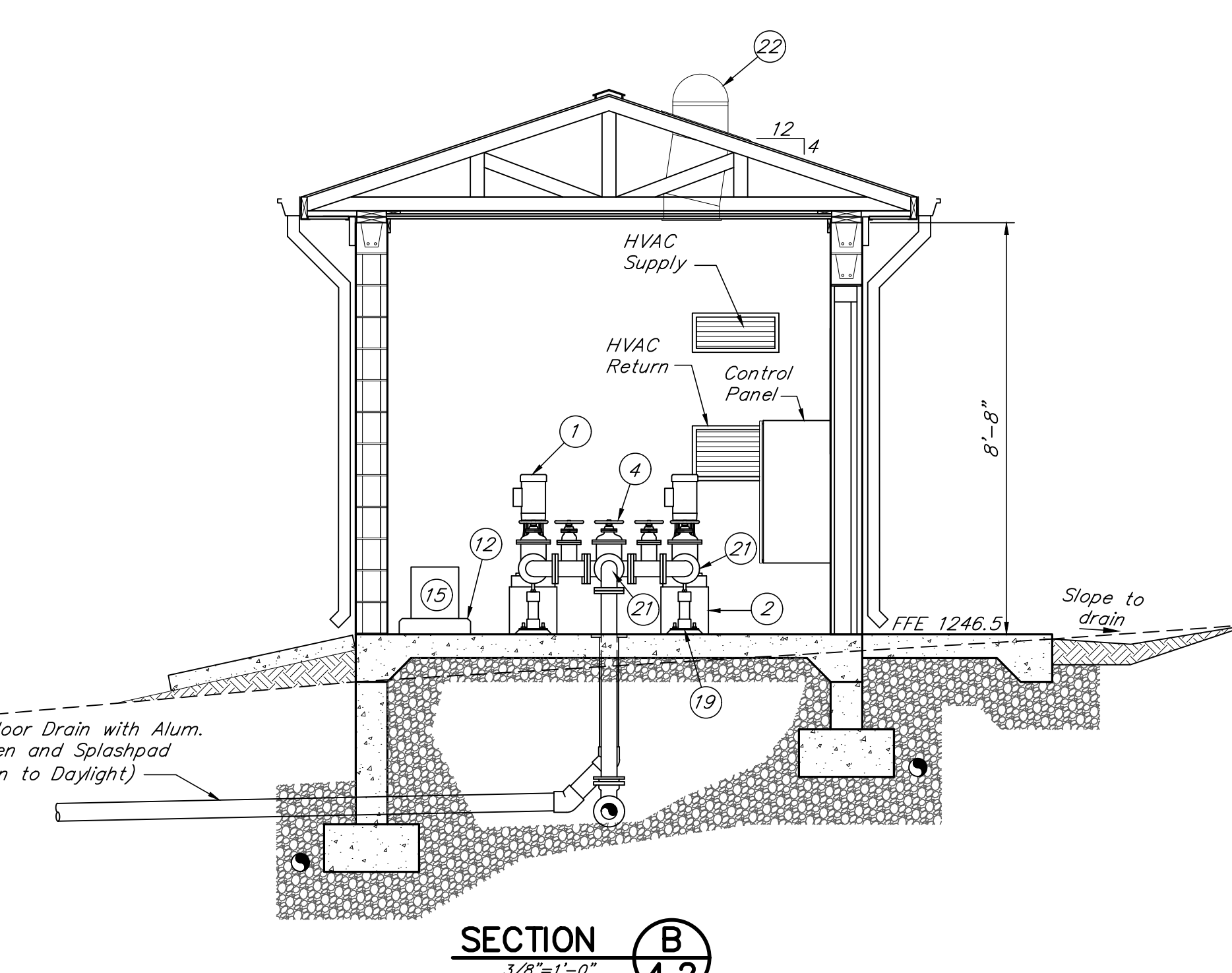
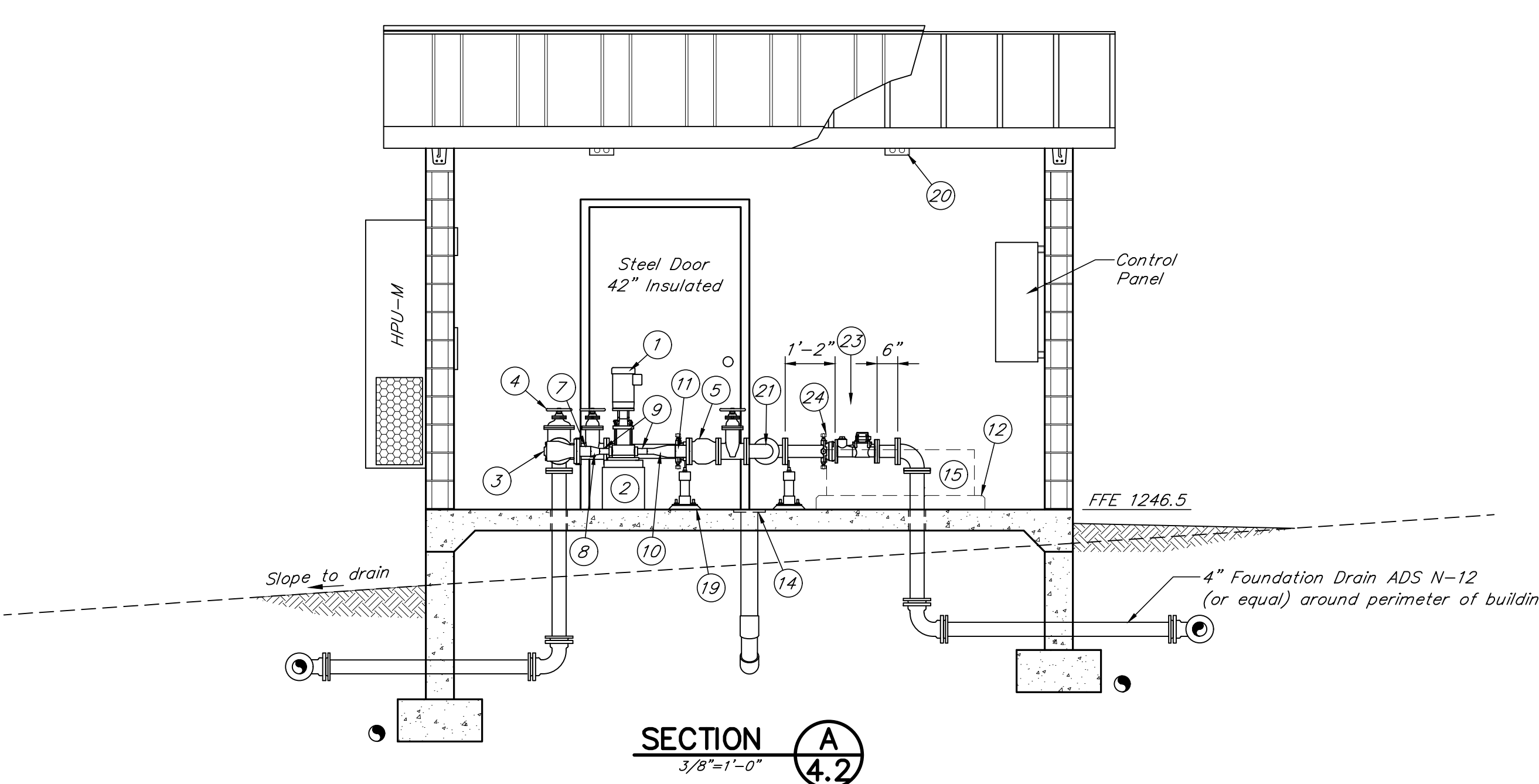
EAST CASEY COUNTY WATER DISTRICT
CONTRACT 1 - 2022 PUMP STATIONS
CASEY COUNTY, KENTUCKY



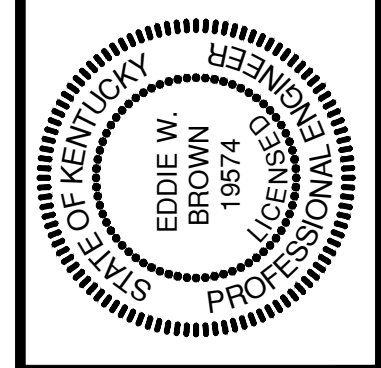
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DATE:	
SCALE:	As Noted
REVISIONS	

KENVIRONS
 Civil & Environmental Engineers

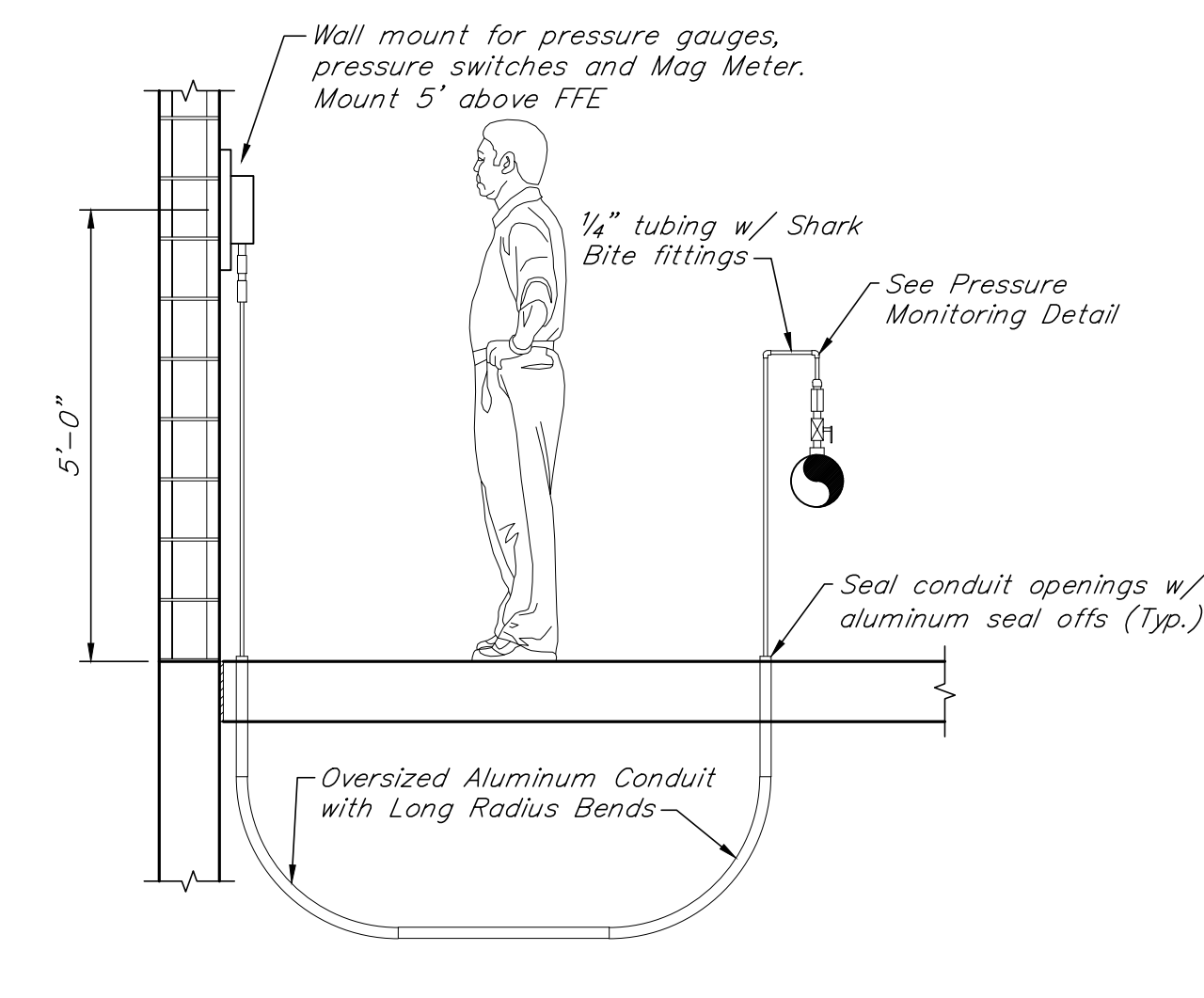
PROJECT NO.
2018132
 SHEET NO.
C4.2



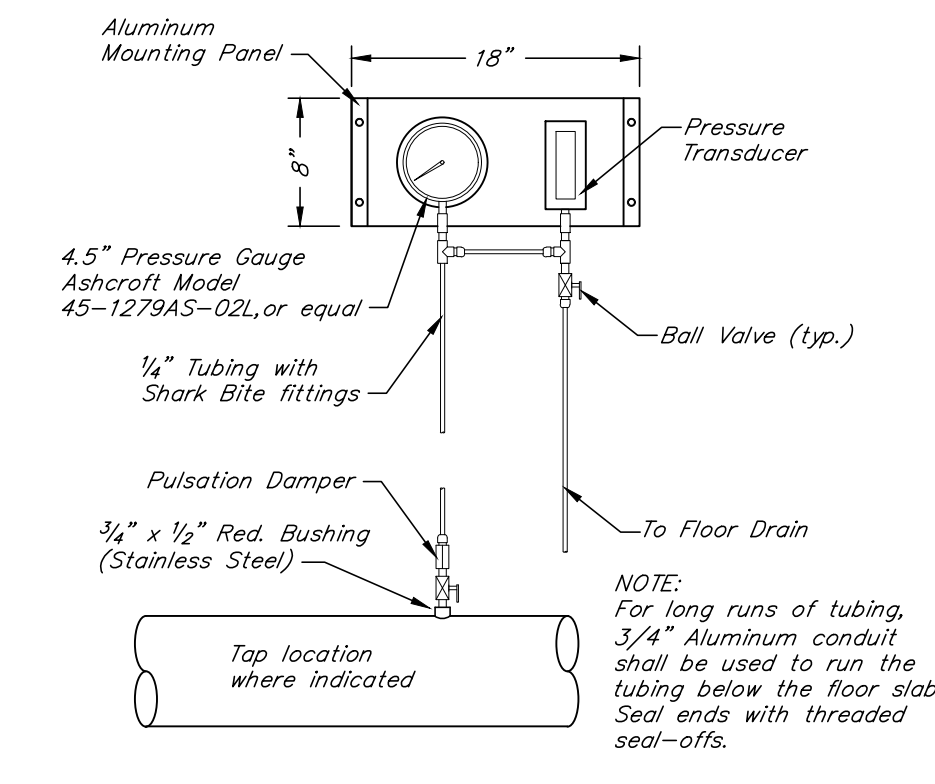
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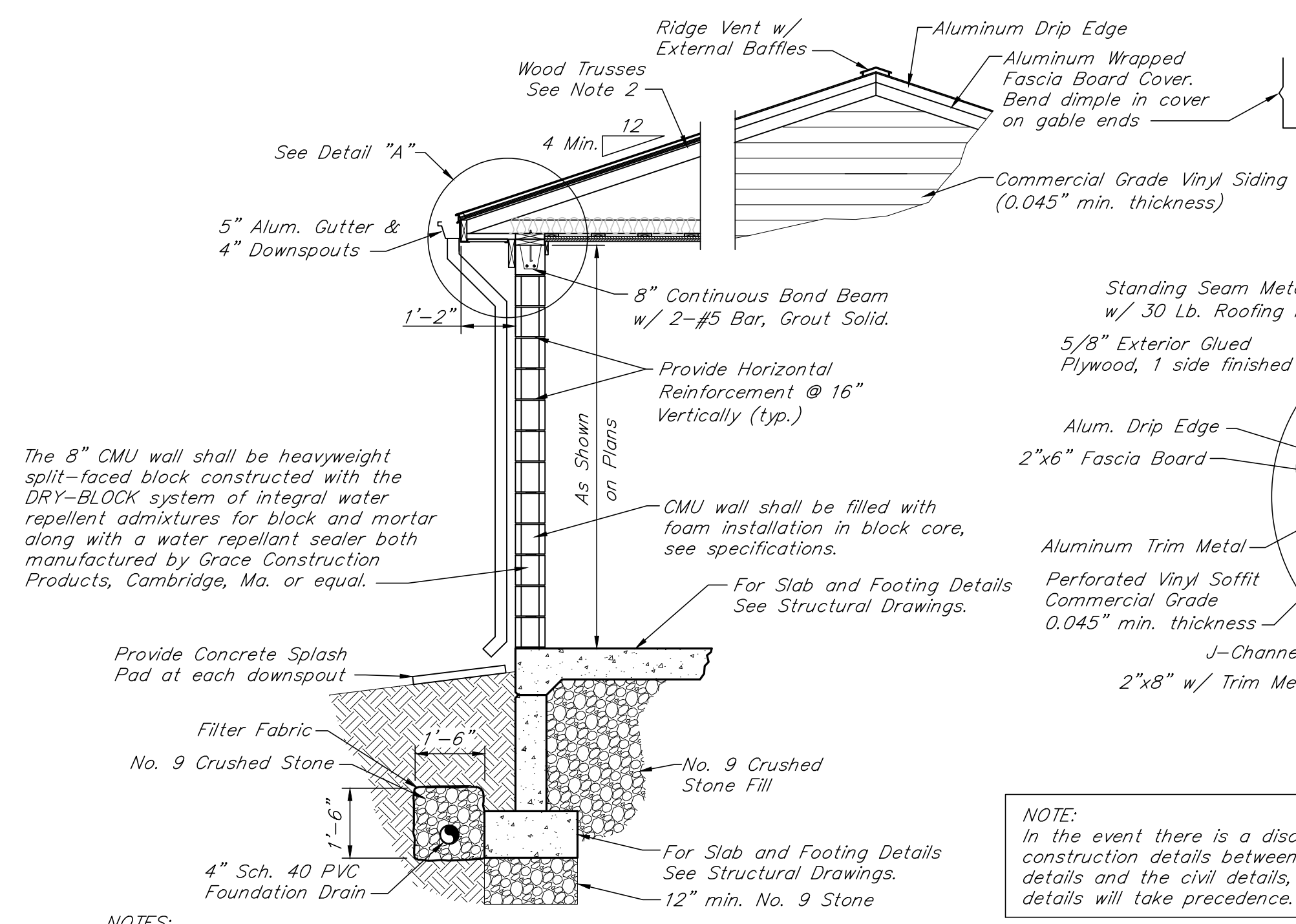
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PRESSURE TAP CONNECTION
 N.T.S.



PRESSURE MONITORING DETAIL
 1"=1'-0"



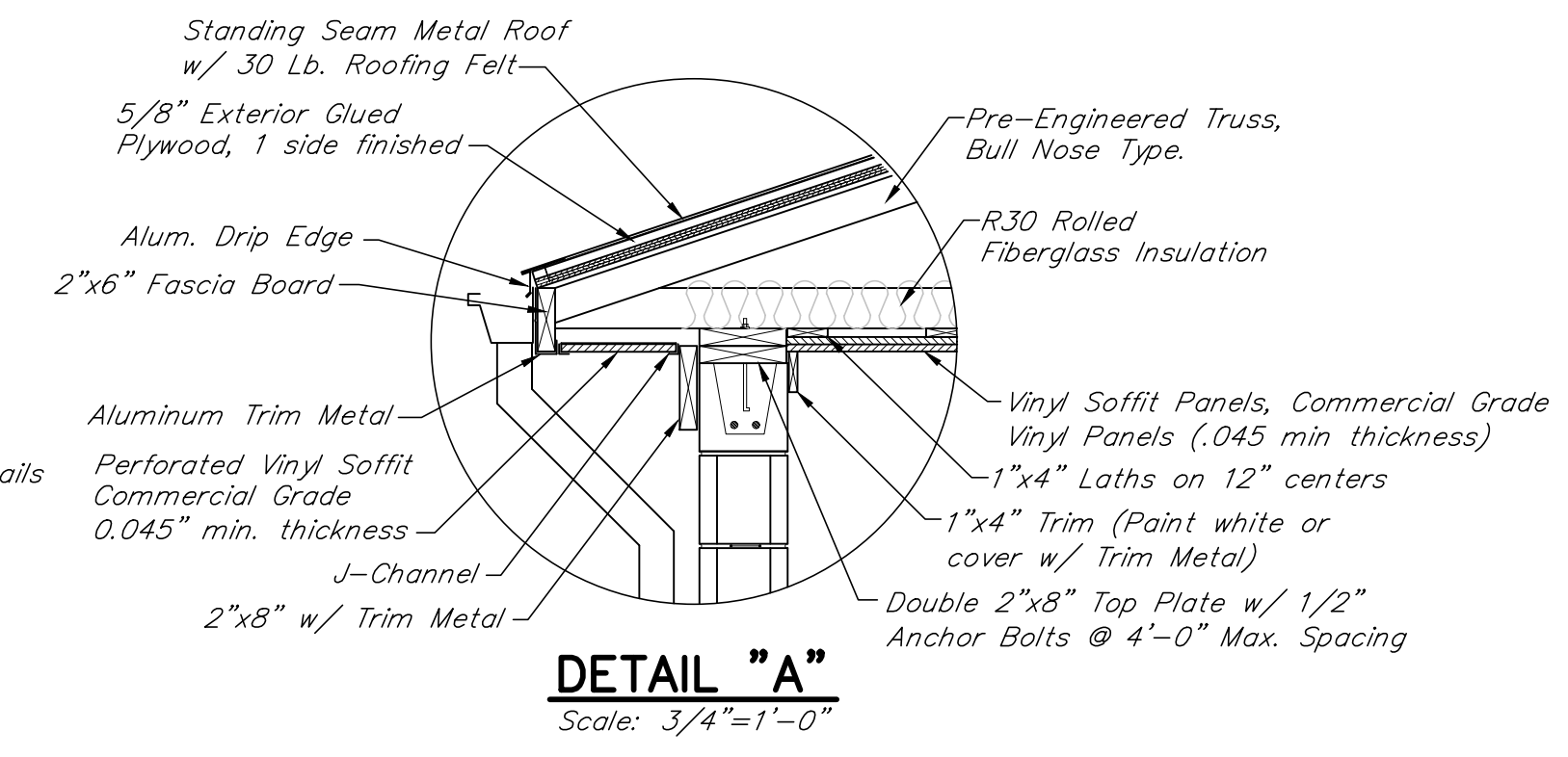
WALL SECTION
 Scale: 3/8"=1'-0"

The 8" CMU wall shall be heavyweight split-faced block constructed with the DRY-BLOCK system of integral water repellent admixtures for block and mortar along with a water repellent sealer both manufactured by Grace Construction Products, Cambridge, Ma. or equal.

- NOTES:
- WOOD TRUSSES

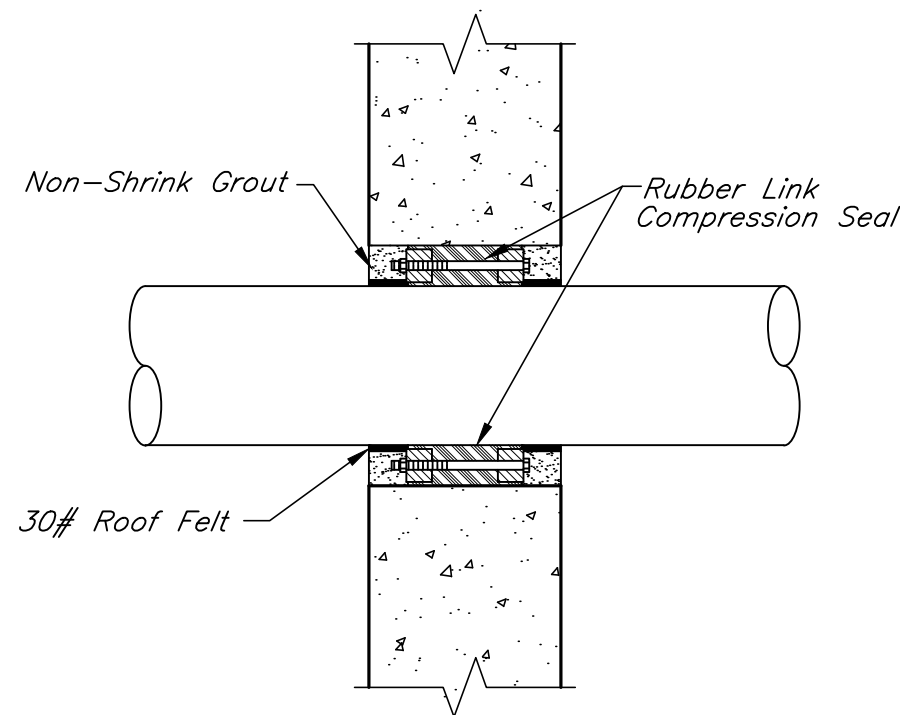
Wood trusses to be designed by the manufacturer. Trusses shall meet all applicable building codes and the standards of the Truss Plate Institute. Design criteria shall be as follows:
 Span..... 13'-4" (Out to out of bearing)
 Spacing..... 24" o.c.
 Max Deflection... L/240 (where L=span)
 Top dead load... 15psf
 Bottom dead load... 15psf
 Top live load... 30psf

- Provide lintels over all openings with lintel block grouted solid with 2-#5 Bars. Length of lintels shall be at least equal to the rough opening plus 8-inch bearing on each side of opening. The lintel block shall have the same face as the wall block.

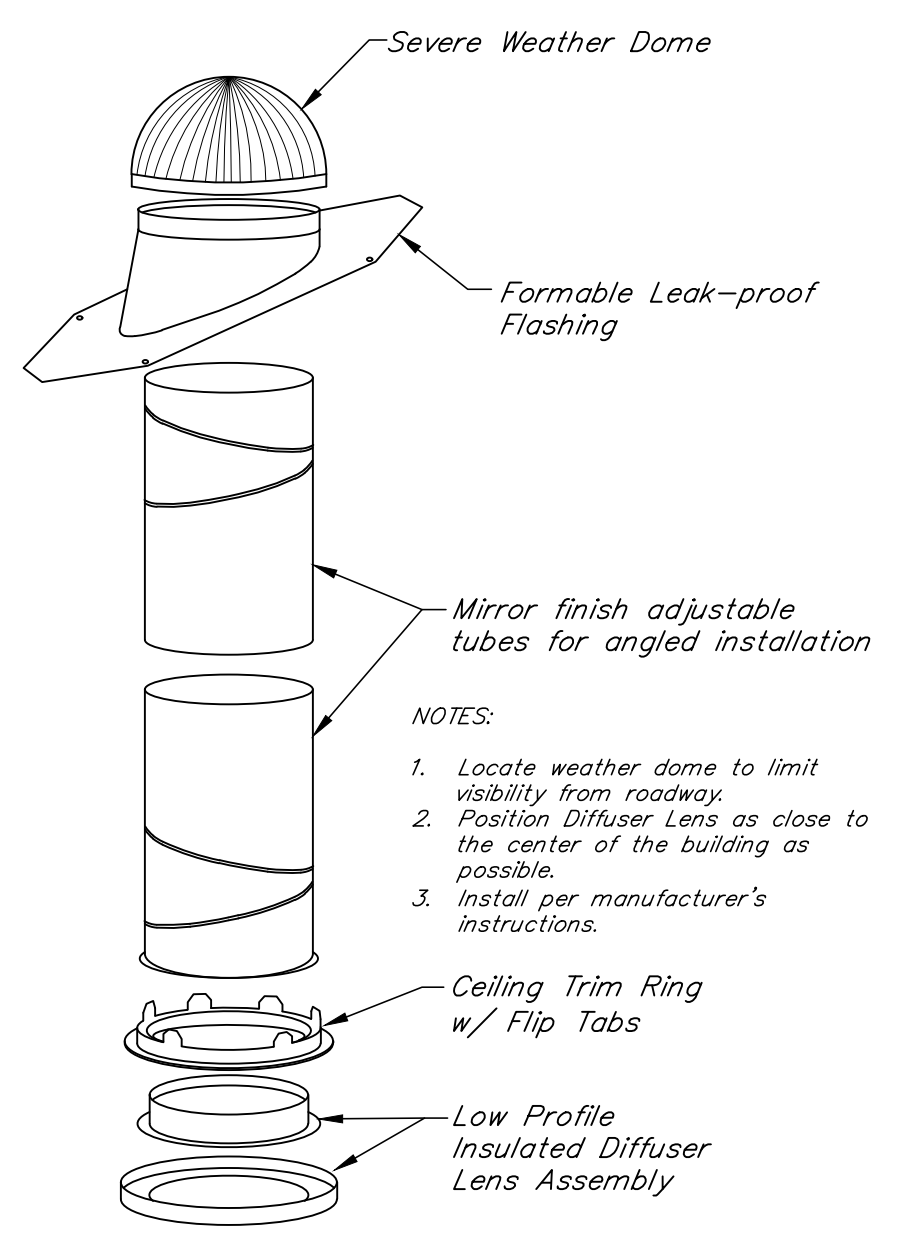


DETAIL "A"
 Scale: 3/4"=1'-0"

NOTE:
 In the event there is a discrepancy in the construction details between the structural details and the civil details, the structural details will take precedence.

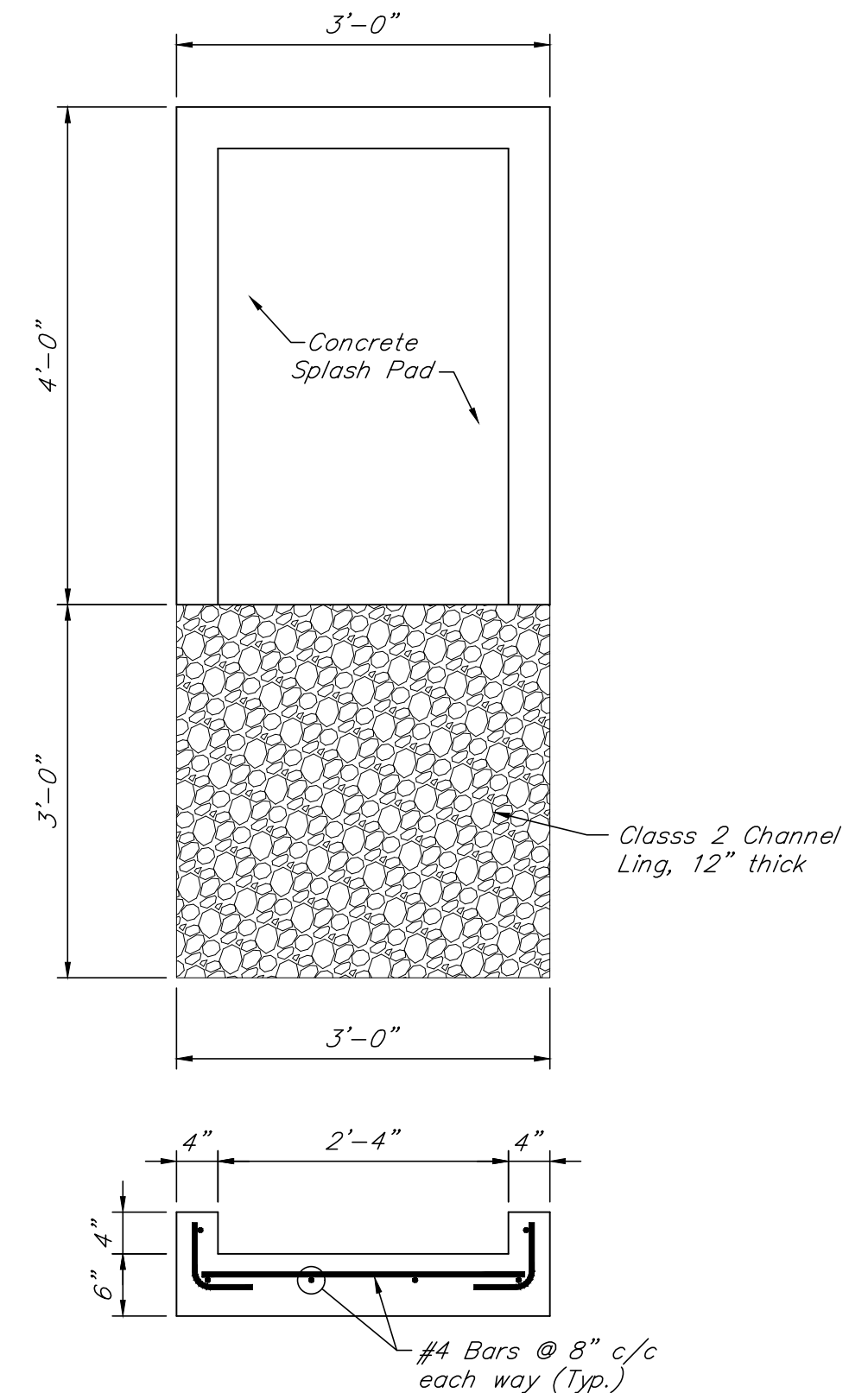


WALL/FLOOR PENETRATION SEAL
 N.T.S.

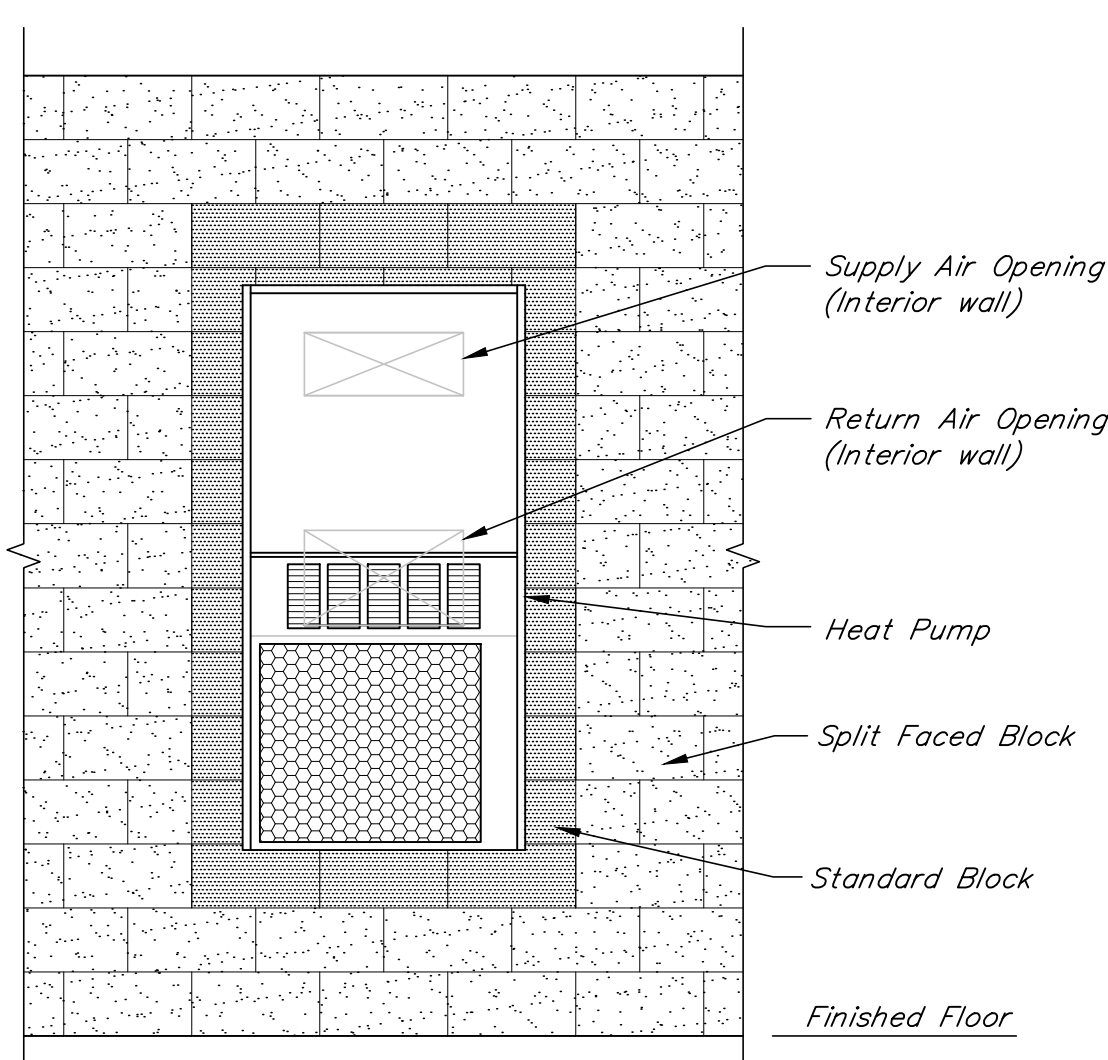


TUBULAR SKYLIGHT
 N.T.S.

- NOTES:
- Locate weather dome to limit visibility from roadway.
 - Position Diffuser Lens as close to the center of the building as possible.
 - Install per manufacturer's instructions.

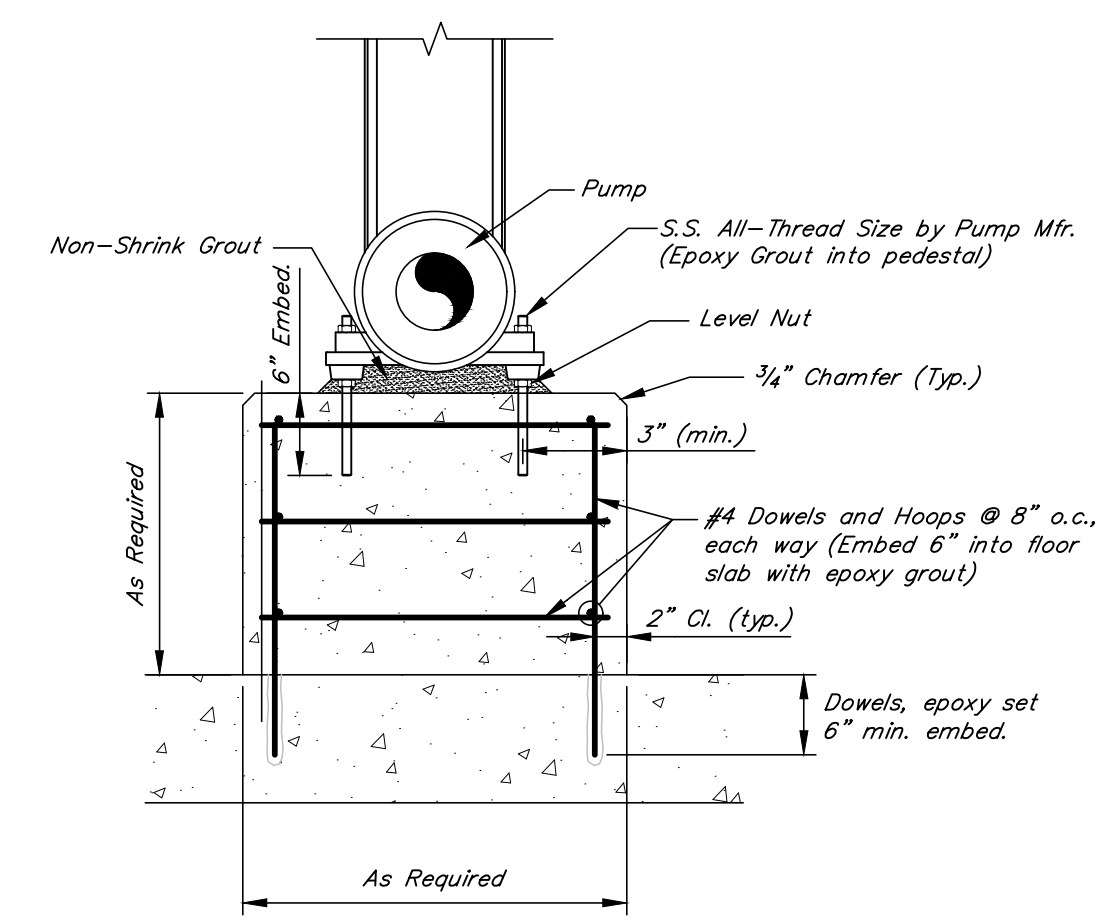


CONCRETE SPLASH PAD
 Jan. 2017 3/4" = 1'-0"

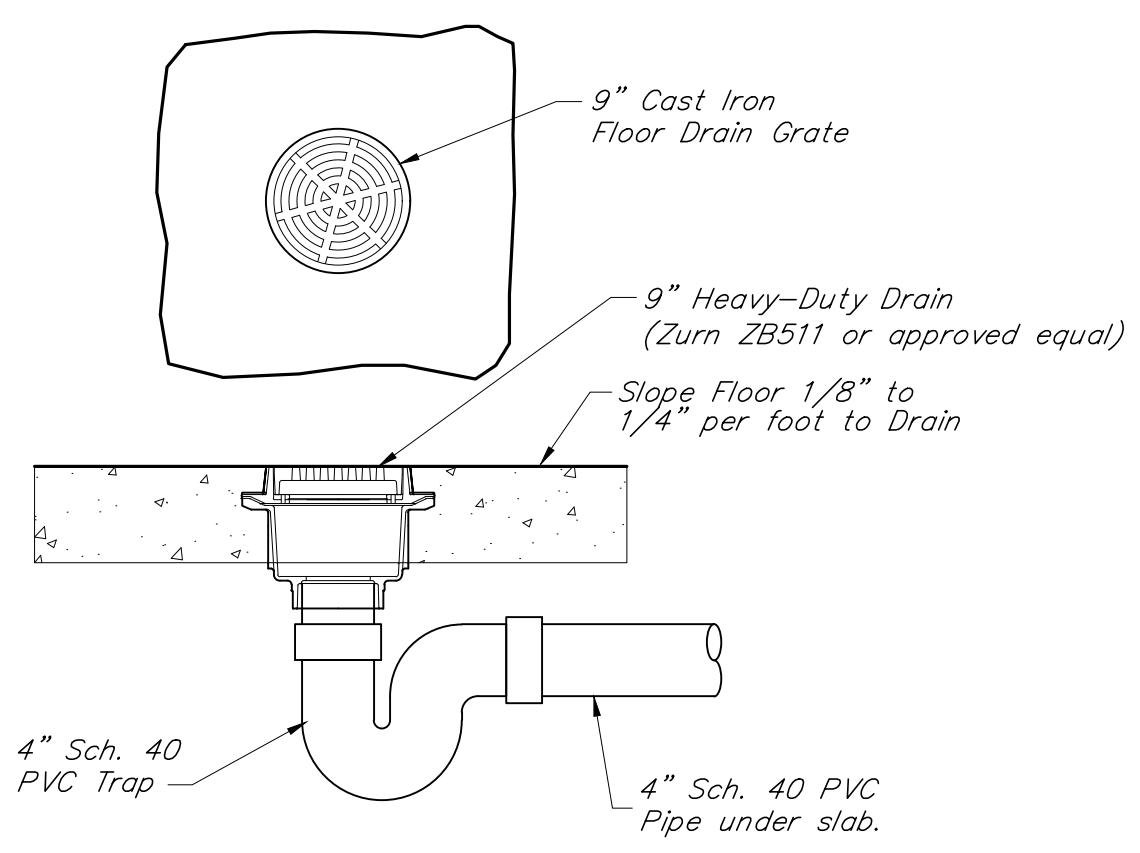


CMU DETAIL AT HEAT PUMP
 Scale: 1/2"=1'-0"

The Contractor shall furnish and install standard CMU's to ensure flush mounting of the heat pump. The Contractor shall use a minimal amount of standard CMU's required for installation for aesthetic appeal. Coordinate mounting height and penetration locations with manufacturer dimensions and recommendations.



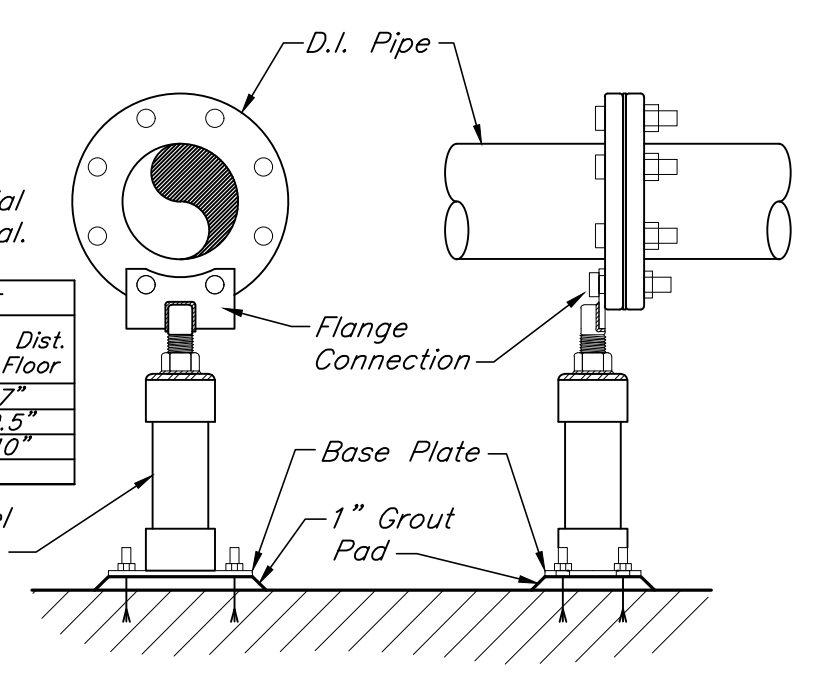
TYPICAL PUMP PEDESTAL CONCRETE SUPPORT REINFORCEMENT
 N.T.S.



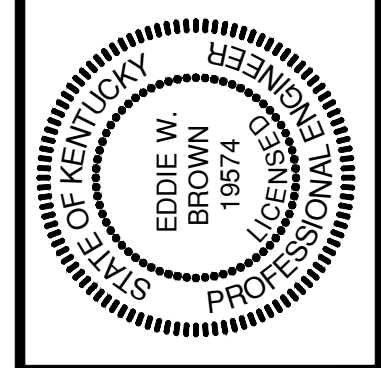
FLOOR DRAIN
 1" = 1'-0"

Support to be as manufactured by Material Resources, Inc., or equal.

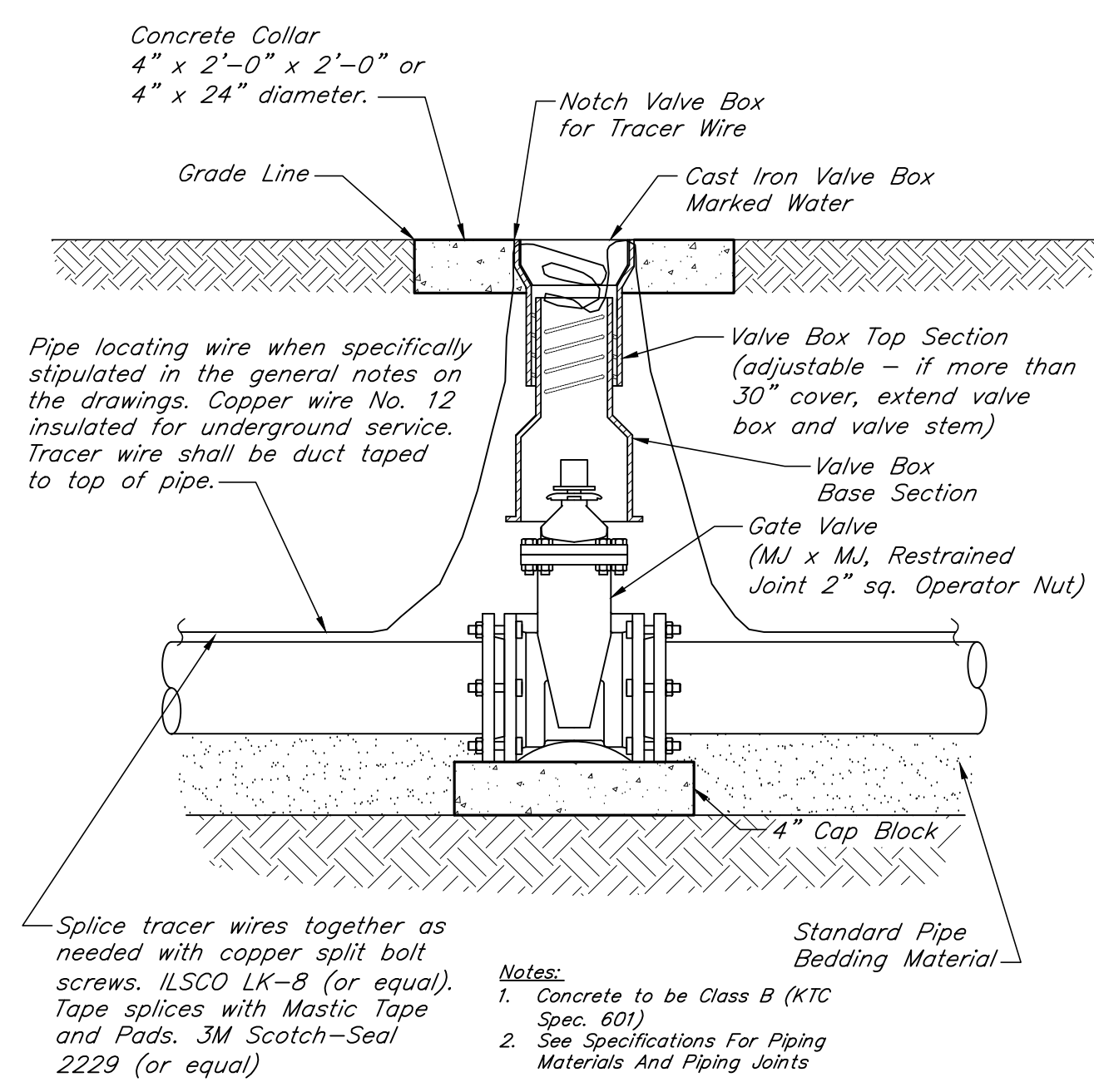
PIPE SIZE	SUPPORT POST SIZE	MIN. DIST. TO FLOOR
Less than 12"	2"	7"
14" to 16"	3"	9.5"
18" to 24"	4"	10"



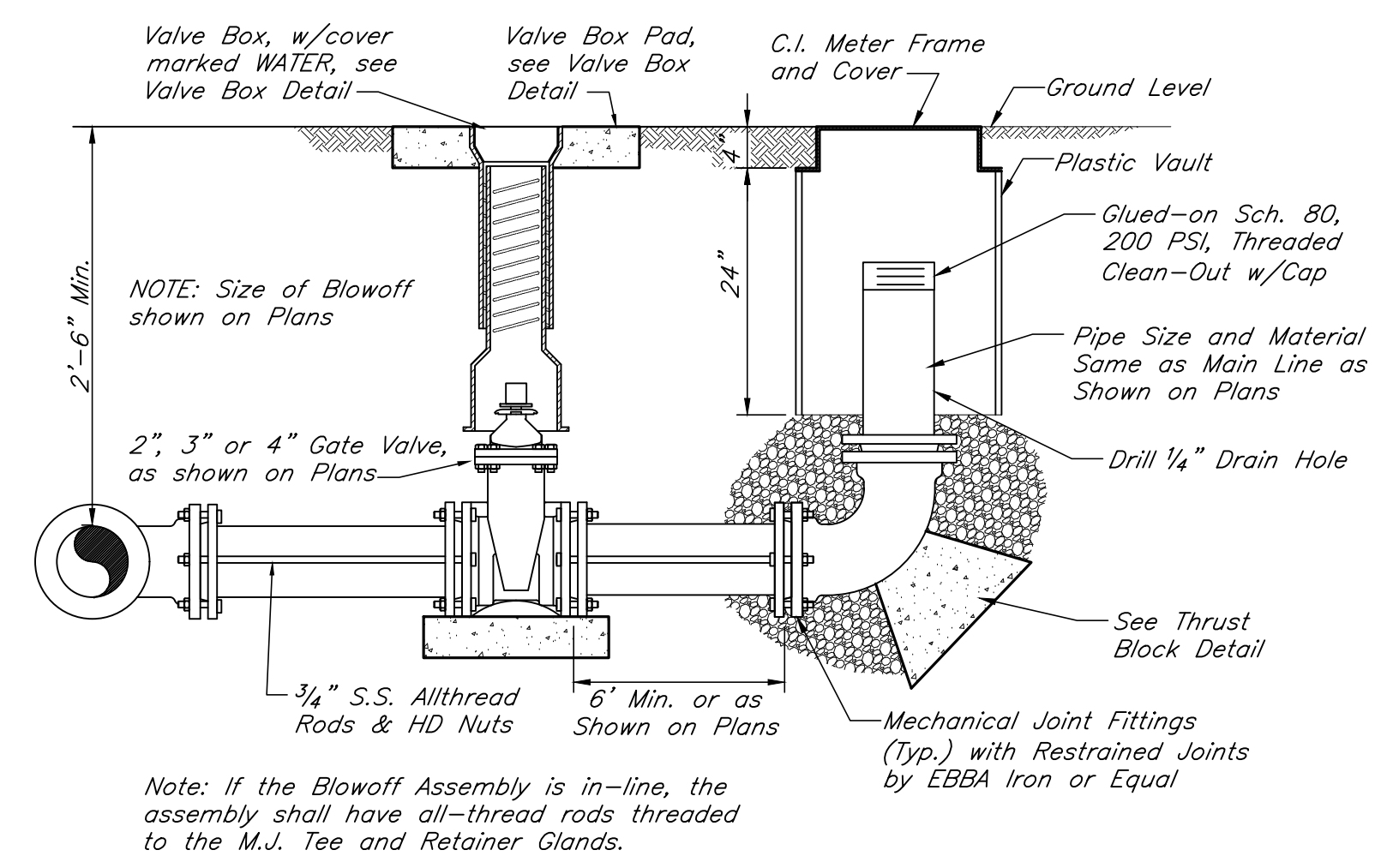
FLANGED PIPE SUPPORT
 N.T.S.



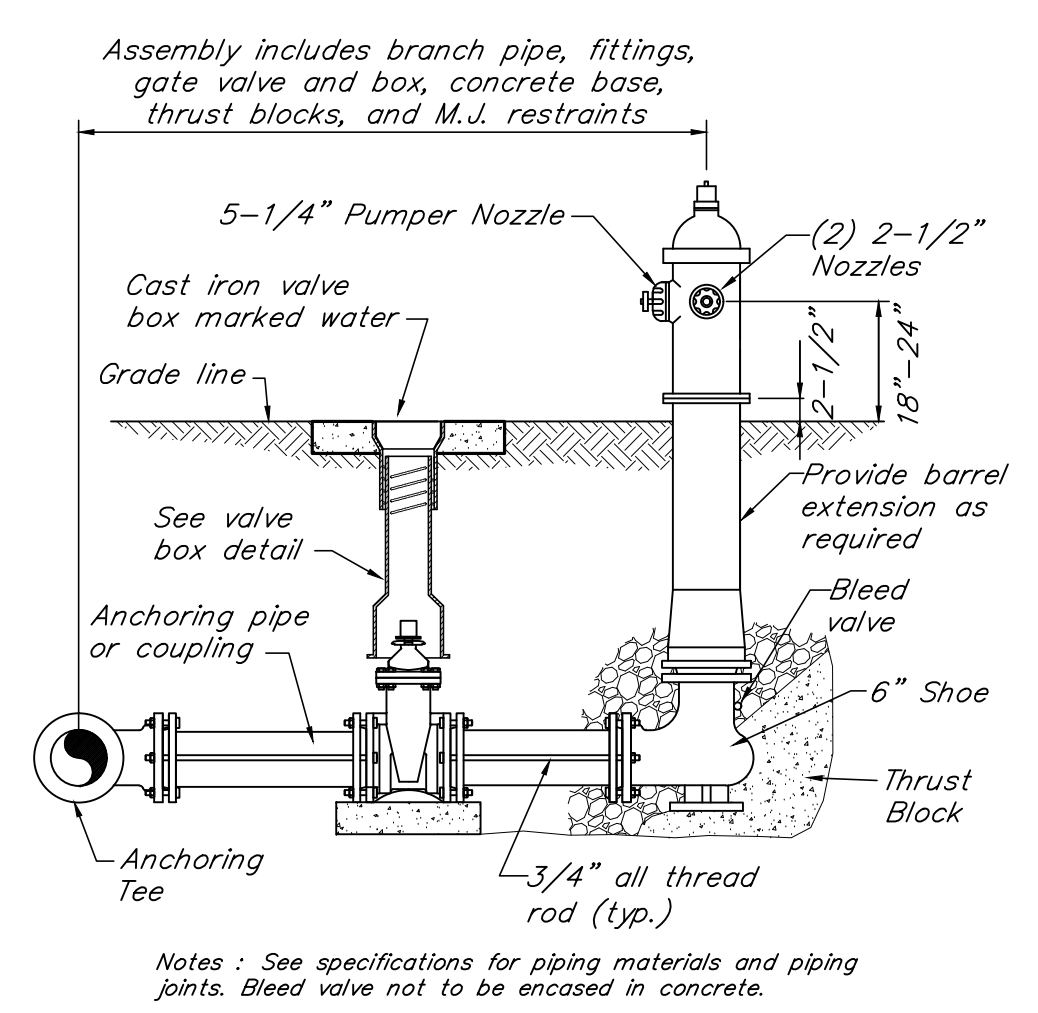
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DATE: 8/1/20
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REVISIONS:



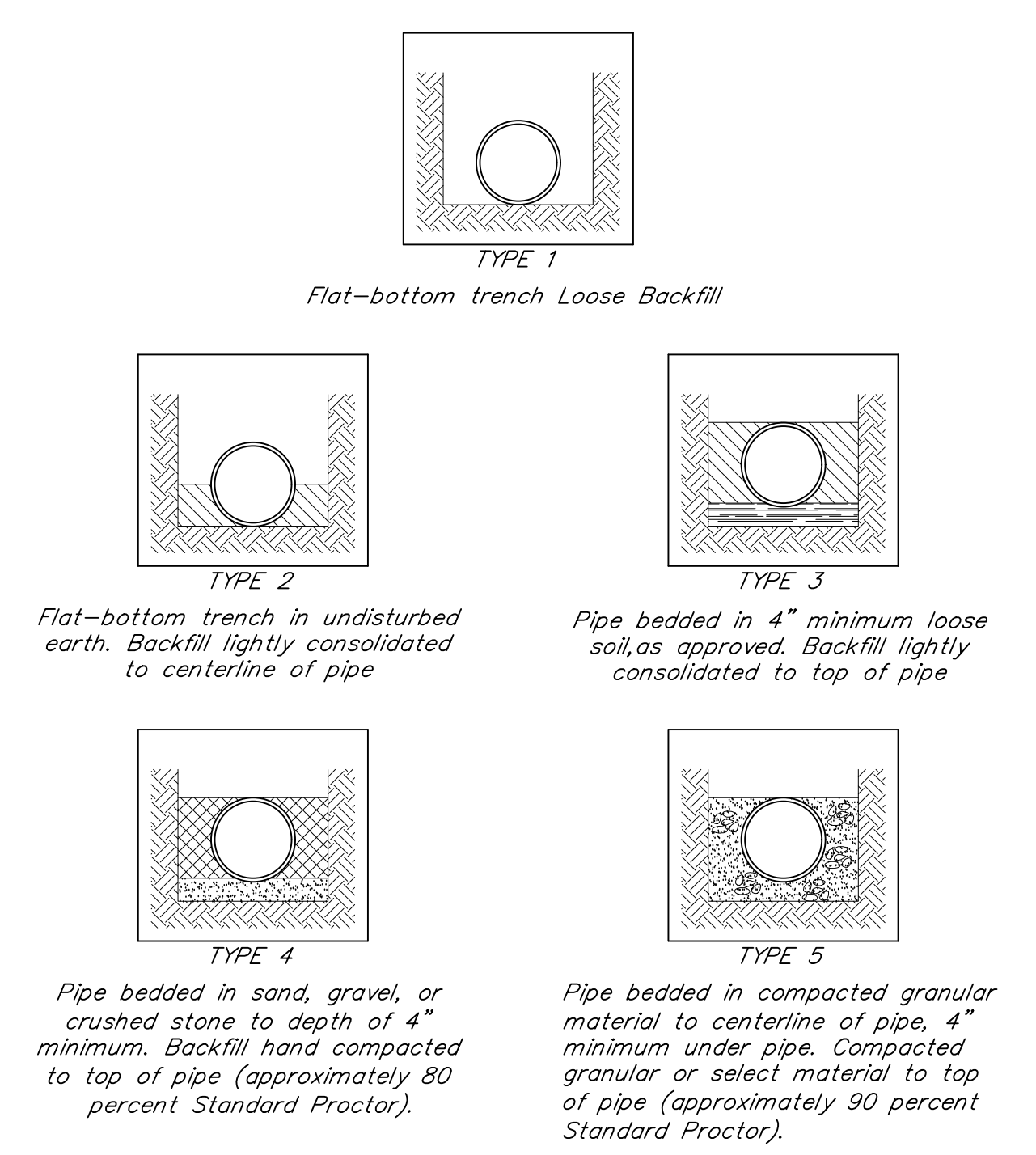
VALVE BOX INSTALLATION
 July 2015 Scale: 1"=1'-0"



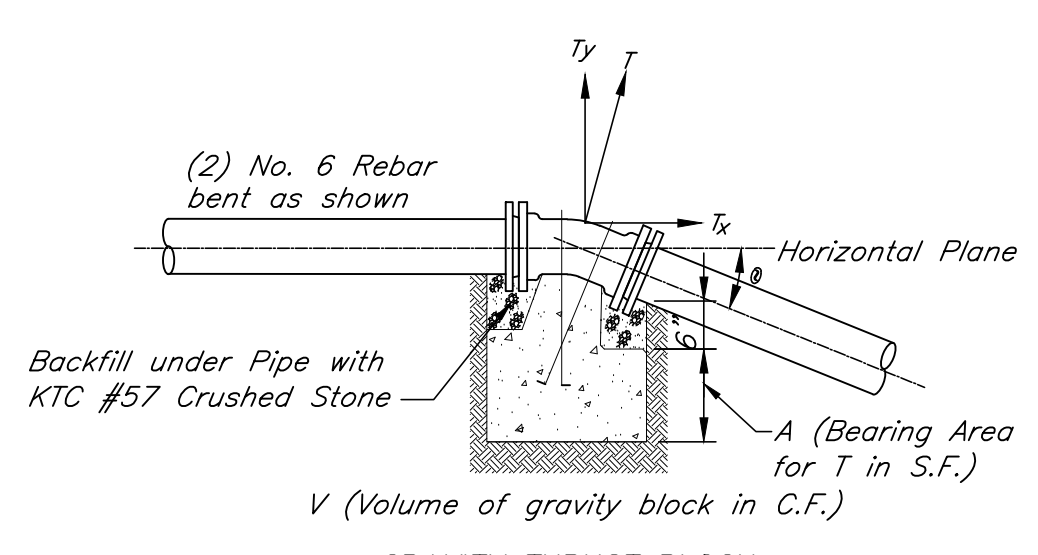
BLOWOFF ASSEMBLY DETAIL
 Feb. 2015 Scale: 3/4"=1'-0"



FIRE HYDRANT
 Scale: 1/2"=1'-0"
 Dec. 2014



LAYING CONDITIONS FOR DUCTILE IRON PIPE
 Dec., 2010 N.T.S. Ref. AWWA C150

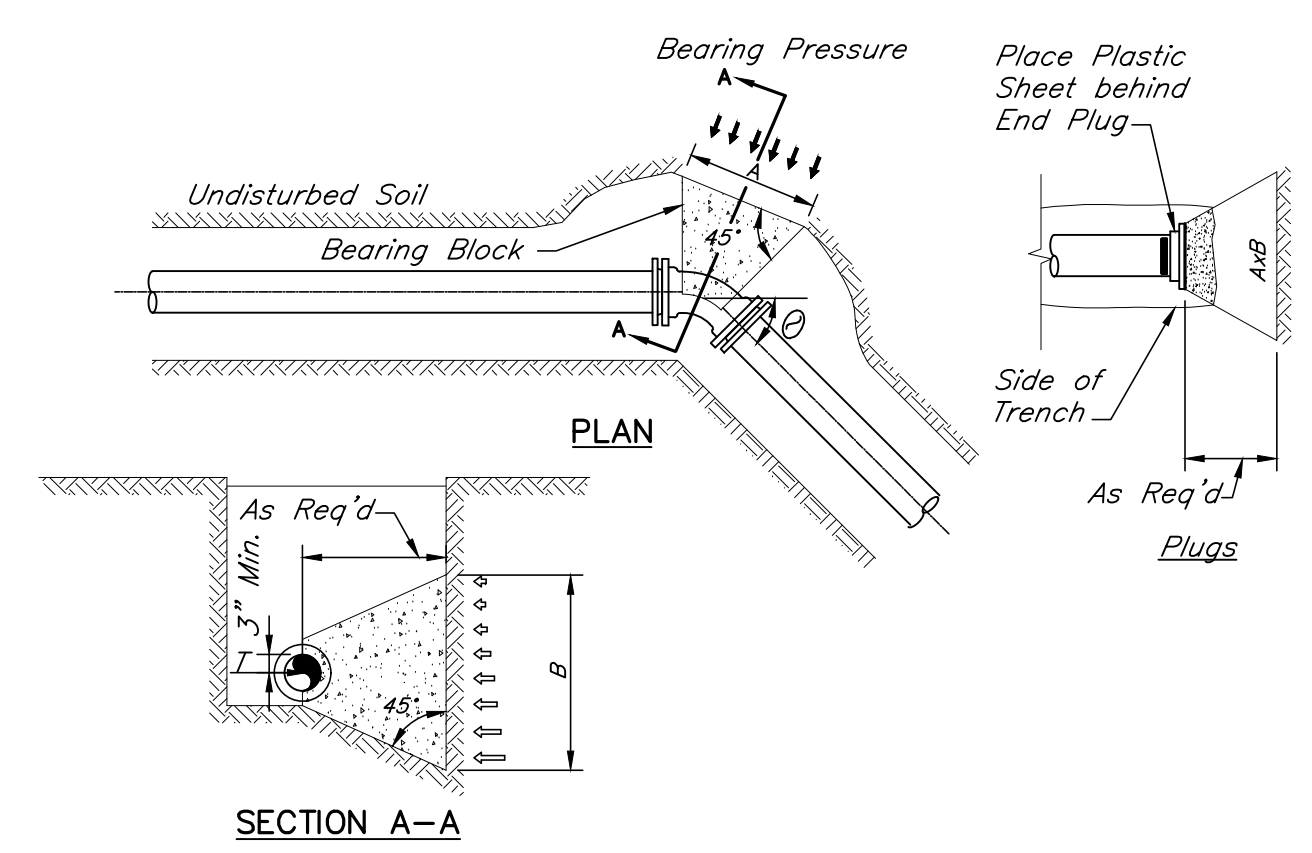


- GRAVITY THRUST BLOCK**
- NOTES:
1. Thrust restraint table is based on pipeline pressure of 200 psi and earth bearing capacity of 1500psf. During construction, the specific soil type may be evaluated and concrete thrust block size revised at the discretion of the Engineer.
 2. On large diameter pipes where space limitations or construction difficulties render concrete thrust blocks not feasible or impractical, a joint restraint system may be used. This restrained joint system must be approved by the Engineer.
 3. Concrete shall be 3000 psi minimum conforming to KTC Specifications 601.
 4. Accessibility to fittings and bolts must be maintained.
 5. Wrap fittings in plastic prior to placing concrete.

VERTICAL THRUST BLOCK SCHEDULE

PIPE SIZE (INCHES)	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND	
	V	A	V	A	V	A	V	A
3 & 4	29	2	20	1	11	1	6	1
6	64	5	46	2	25	1	13	1
8	114	8	81	4	43	1	23	1
10	174	12	123	5	66	2	35	1
12	248	17	176	8	95	2	50	1
14	337	23	238	10	128	3	67	1
16	439	29	311	13	167	4	88	1
18	555	37	393	16	211	5	111	1
20	685	46	484	20	260	6	137	2
24	985	66	696	29	374	8	197	2

VERTICAL THRUST BLOCK
 July, 2015 Scale: 1/8"=1'-0"

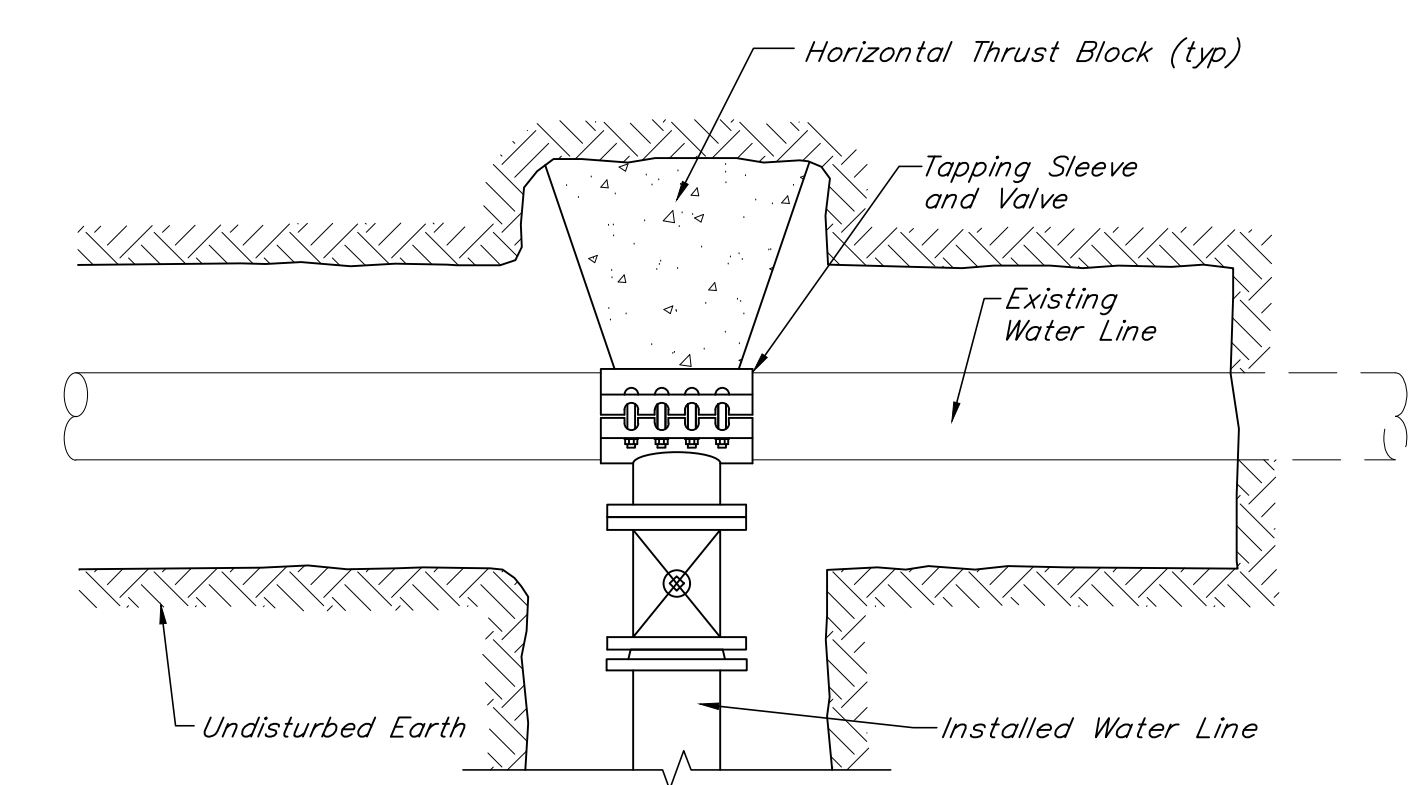


- HORIZONTAL THRUST BLOCK**
- NOTES:
1. Thrust restraint table is based on pipeline pressure of 200 psi and earth bearing capacity of 1500 psf. During construction, the specific soil type may be evaluated and concrete thrust block size revised at the discretion of the Engineer.
 2. On large diameter pipes where space limitations or construction difficulties render concrete thrust blocks not feasible or impractical, a joint restraint system may be used. This restrained joint system must be approved by the Engineer.
 3. Concrete shall be 3000 psi minimum conforming to KTC Specifications 601.
 4. Accessibility to fittings and bolts must be maintained.
 5. Wrap fittings in plastic prior to placing concrete.

HORIZONTAL THRUST BLOCK SCHEDULE

PIPE SIZE (INCHES)	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEE, DEAD END	
	A	B	A	B	A	B	A	B	A	B
3 & 4	3'-3"	1'-8"	2'-4"	1'-2"	1'-8"	1'-0"	1'-0"	1'-0"	2'-8"	1'-4"
6	4'-8"	2'-4"	3'-5"	1'-8"	2'-6"	1'-3"	1'-6"	1'-0"	3'-10"	2'-0"
8	6'-0"	3'-0"	4'-5"	2'-3"	3'-2"	1'-7"	2'-3"	1'-2"	5'-0"	2'-6"
10	7'-6"	3'-9"	5'-5"	2'-9"	3'-10"	2'-0"	2'-9"	1'-5"	6'-3"	3'-2"
12	8'-10"	4'-5"	6'-6"	3'-3"	4'-8"	2'-4"	3'-4"	1'-8"	7'-5"	3'-9"
14	10'-3"	5'-2"	7'-6"	3'-9"	5'-4"	2'-8"	3'-10"	2'-0"	8'-8"	4'-4"
16	11'-8"	5'-10"	8'-7"	4'-4"	6'-1"	3'-0"	4'-4"	2'-2"	9'-9"	4'-11"
18	13'-0"	6'-6"	9'-7"	4'-9"	6'-10"	3'-5"	4'-10"	2'-5"	11'-0"	5'-6"
20	14'-5"	7'-3"	10'-7"	5'-4"	7'-7"	3'-9"	5'-4"	2'-8"	12'-2"	6'-1"
24	17'-3"	8'-8"	12'-8"	6'-4"	9'-0"	4'-6"	6'-5"	3'-3"	14'-6"	7'-3"

HORIZONTAL THRUST BLOCK
 July, 2015 Scale: 3/8"=1'-0"



TAPPING SLEEVE & VALVE TIE-IN
 August 2020 N.T.S.

DESIGN CRITERIA

Table with 2 columns: Design Criteria and Value. Includes Building Code (ASCE 7 / 2018 Kentucky Building Code), County (Casey), Occupancy Category (III), Floor Loads (100 psf), and ROOF LOADS (20 psf).

WIND LOAD DATA table with 2 columns: Basic wind speed (120 mph) and other wind-related parameters.

EARTHQUAKE LOAD DATA table with 2 columns: Seismic site class (D) and various seismic acceleration and design parameters.

MATERIAL STRENGTHS USED IN DESIGN table listing various materials like concrete, rebar, and steel with their respective strengths.

- GENERAL notes 1-6 detailing design requirements, construction phases, and material handling instructions.

FOUNDATIONS

- Foundations notes 1-12 covering design assumptions, soil capacity, footing support, and construction details.

CAST-IN-PLACE CONCRETE

- CAST-IN-PLACE CONCRETE notes 1-7 detailing construction procedures, reinforcement, and curing requirements.

Table for reinforcement specifications with columns for bar size, concrete strength, and lap length.

- Foundations notes 8-26 covering reinforcement details, concrete protection, and construction quality control.

CONCRETE MASONRY

- CONCRETE MASONRY notes 1-26 detailing wall construction, mortar, grout, and reinforcement requirements.

STRUCTURAL STEEL

- STRUCTURAL STEEL notes 1-3 detailing fabrication, erection, and inspection requirements.

Table for structural steel specifications with columns for member type and specification.

- Structural steel notes 4-10 covering grout, connections, and surface preparation requirements.

PREFABRICATED WOOD TRUSS CONSTRUCTION

- PREFABRICATED WOOD TRUSS CONSTRUCTION notes 1-15 detailing truss design, erection, and bracing requirements.

ROOF AND WALL PLYWOOD SHEATHING

- ROOF AND WALL PLYWOOD SHEATHING notes 1-7 detailing plywood selection, installation, and nailing requirements.

STRUCTURAL WOOD

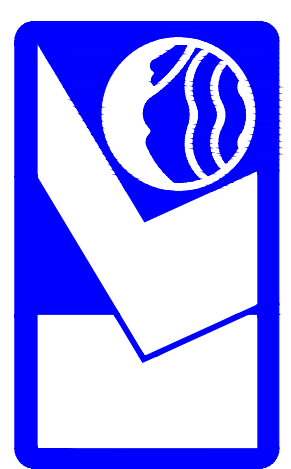
- STRUCTURAL WOOD notes 1-15 detailing lumber selection, fasteners, and construction details.

EAST CASEY COUNTY WATER DISTRICT
2018 WATER SYSTEM IMPROVEMENTS
CASEY COUNTY, KENTUCKY



Table for drawing control with columns: DRAWN BY, CHECKED BY, DATE, SCALE, REVISIONS.

KENVIRONS Civil & Environmental Engineers



SDG LLC
306 W Main St Ste 410
Frankfort, KY 40601
(859) 351-9169

PROJECT NO.
2018132

SHEET NO.
S1

STRUCTURAL GENERAL NOTES

SPECIAL INSPECTION

1. Special inspection is required according to section 1704 of the building code.
2. Special inspection on this project applies only to the following construction:
 - 2.1. the superstructure (c.m.u. and up) of the filter building addition,
 - 2.2. the chemical feed building addition.

All other structures shall be inspected according to these notes, but those inspections are not considered "special inspections" as required by the building code because these structures are not primarily for human occupancy and are not in the scope of the building code. The inspector shall keep special inspections and non-"special" inspections reports and tests separate and identifiable for record keeping purposes.
3. Special inspections shall be performed for the following work as required in the building code:
 - 3.1. Contractor's statement of responsibility in accordance with section 1704.4
 - 3.1.1. Contractor shall submit a statement that:
 - 3.1.1.1. acknowledges the requirements stated in this statement of special inspections.
 - 3.1.1.2. acknowledges that control will be exercised over the quality of construction to conform to the approved construction documents.
 - 3.1.1.3. acknowledges that there are organizational procedures in place for exercising control of quality of the construction including:
 - 3.1.1.3.1. appointment of a person within the contractor's organization to exercise control quality of construction
 - 3.1.1.3.2. the persons within the contractor's organization to whom the quality control reports are distributed
 - 3.1.1.3.3. the method and frequency of reporting the quality control results within the contractor's organization.
 - 3.2. Fabricators in accordance with section 1704.2
 - 3.2.1. Submit report of inspector's approval of fabricator's qc plan or fabricator's nationally recognized qc certification.
 - 3.2.2. Submit fabricator's certificate of compliance stating that the work was performed in accordance with the approved construction documents, submitted at the completion of such work.
 - 3.3. Steel construction in accordance with section 1705.2
 - 3.3.1. Submit mill test reports and material certifications for all steel members, fasteners, bolts, nuts, washers, deck, and reinforcement steel for concrete and masonry.
 - 3.3.2. Submit report of inspection of marking and connection details for all members and connections. verify all steel members and steel deck are installed in the correct locations and are connected in accordance with the construction documents and approved erection drawings.
 - 3.3.3. Submit report of inspection of bolt tensioning for each applicable connection.
 - 3.3.4. Submit report of visual inspection of all field welds.
 - 3.4. Concrete construction in accordance with section 1705.3
 - 3.4.1. Submit material certifications of cement, aggregate, admixtures and reinforcement.
 - 3.4.2. Submit report of compressive strength, slump and air content test results. sample and test concrete at least once per day and once for every additional 100 cubic yards of concrete per day thereafter.
 - 3.4.3. Submit report of inspection of forms, reinforcement, and concrete delivery tickets prior to each placement of concrete.
 - 3.4.4. Submit report of inspection of installation of all wedge and chemical adhesive anchors in concrete.
 - 3.5. Masonry construction in accordance with section 1705.4
 - 3.5.1. Submit material certifications of cement, aggregate, admixtures and reinforcement.
 - 3.5.2. Submit report of test of mortar aggregate ratio and air content and observation of mortar proportioning. test once at beginning of project and once every 5,000 s.f. of wall thereafter.
 - 3.5.3. Submit report of placement of masonry, reinforcement and grout prior to and during each placement of grout.
 - 3.5.4. Submit report of installation of chemical adhesive anchorage in concrete at base of masonry walls. inspect installation of 10% of anchorage installations.
 - 3.6. Wood construction in accordance with section 1705.5
 - 3.6.1. See "Inspection of Fabricators" for inspection of prefabricated wood trusses.
 - 3.6.2. Submit material certifications for wood members, sheathing and fasteners.
 - 3.6.3. Submit report of inspection of connection of roof trusses to structure.
 - 3.6.4. Submit report of inspection of all wood framing members and their connections. verify all wood framing members are the correct size and grade and are installed in the correct locations, and are connected in accordance with the construction documents.
 - 3.6.5. Submit report of inspection of nailing of roof sheathing to trusses and structure.
 - 3.7. Soils construction in accordance with section 1705.6
 - 3.7.1. Submit report that soil bearing capacity is adequate according to the geotechnical report prior to each placement of foundation concrete.
 - 3.7.2. Submit report of density and moisture content of controlled fill for each lift under building structure.
 - 3.8. Cast-in-place deep foundations in accordance with section 1705.8
 - 3.8.1. Submit report of continuous observation of all drilling operations including complete and accurate records for each drilled shaft.
 - 3.8.2. Submit report indicating the location, plumbness, diameter, length, concrete volume, embedment into bedrock, and adequate end-bearing strata capacity of each pier.
 - 3.8.3. For concrete, perform tests & inspections as required by the concrete special inspection requirements.
 4. The type and extent of each test and inspection required for each type of work shall be as indicated in the specifications and/or the building code and the references incorporated therein.
 5. Inspection reports shall include the:
 - 5.1. name, address, and telephone number of special inspector performing the inspection and making the report.
 - 5.2. dates and locations of samples and tests or inspections, date of report.
 - 5.3. record of temperature and weather conditions at time of sample taking and testing and inspecting.
 - 5.4. description of the work, identification of products, specification section, tests, and inspection methods.
 - 5.5. photographs of the work inspected for that report
 - 5.6. complete test or inspection data.
 6. Special inspection shall be performed by a qualified inspection and testing agency approved by the building official and the structural engineer.
 7. Work requiring special inspection shall be inspected by the special inspector for conformance with the approved drawings and specifications. Inspection reports indicating the results of special inspections shall be promptly submitted to the contractor, the civil engineer, the structural engineer.
 8. The special inspector shall observe activities, actions, and procedures performed before and during execution of the work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
 9. All special inspections indicating non-conforming work shall be reported immediately to the contractor, the civil engineer and the structural engineer. Impending construction work that would impede economical correction of non-conforming work shall not proceed without written approval. The contractor shall maintain a discrepancy log on the site. log shall list each discrepancy documented by the special inspector, state the date of discovery and special inspector's report number, and room for the special inspector to sign and date when said discrepancy is corrected. Cost of additional retesting that are required due to non-conforming work may be charged to the contractor.
 10. A final report certifying completion of all required special inspections and correction of any non-conforming work noted in the inspections shall be submitted by the special inspector at the completion of the project, or if not, detailing non-inspected and/or unresolved non-conformances.
 11. The contractor shall notify the inspector when construction is ready to be inspected. contractor shall give timely and adequate notice to the special inspector.
 12. The contractor shall provide the special inspector access to plans, shop drawings, and change orders at the jobsite.
 13. The contractor shall retain at the jobsite all special inspection records submitted by the special inspector and provide these records for review by the engineer and building inspector upon request.

EXPANSION ANCHORS

1. Expansion anchors shall be one of the following products:
 - Kwik Bolt TZ by HILTI
 - Trubolt+ by ITW Red Head
 - Strong-bolt by Simpson Strong-tie
2. All expansion anchors for the project shall be produced by the same manufacturer unless approved by the structural engineer.
3. Expansion anchor product data and a keyed plan showing the location, diameter, length, material and finish of each expansion anchor shall be submitted for approval.
4. The expansion anchor manufacturer's installation instructions shall be strictly followed, particularly with regard to drilling and cleaning out the hole.
5. If any of the following minimum distances are not indicated or available then verify the detail and field conditions with the structural engineer prior to installing:


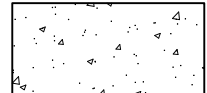
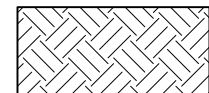
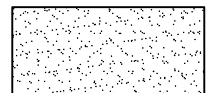
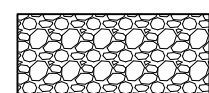
anchor dia	c to c distance	edge distance	embed distance	mat'l thickness
1/2"	3 1/2"	4"	3 1/2"	5 1/2"
5/8"	4"	5"	4"	6"
3/4"	6"	6"	5"	8"
6. If any of the following conditions are indicated or present then verify acceptability of expansion anchor type, material or finish with the structural engineer prior to installing:
 - cracked concrete or masonry near installation (see edge distance above)
 - corrosive, chemical or abnormal temperature environment
 - vibratory or fatigue loading of anchor
 - impact or shock loading of anchor
 - continuous tension (e.g. hanging loads from ceilings)

CHEMICAL ADHESIVE AND PROPRIETARY ADHESIVE ANCHORS

1. Chemical adhesives and proprietary adhesive anchors shall be produced by one of the following manufacturers:
 - HILTI, Inc.
 - ITW Red Head
 - Simpson Strong-tie
2. All chemical adhesives and proprietary adhesive anchors for the project shall be produced by the same manufacturer unless approved by the structural engineer.
3. Proprietary adhesive anchors shall be fastened with compatible chemical adhesive from the same manufacturer.
4. Chemical adhesive and proprietary adhesive anchor product data and a keyed plan showing the location, type of chemical adhesive and installation conditions of each adhesive anchor shall be submitted for approval. installation conditions are:
 - dry, damp or wet hole
 - cored hole or hammer drilled hole
 - standard (per manufacturer) or oversize hole
 - horizontal, vertical or overhead surface
 - temperature range of installation.
5. The chemical adhesive and proprietary adhesive anchor manufacturer's installation instructions shall be strictly followed, particularly with regard to drilling and cleaning out the hole and the installation conditions.
6. If any of the following minimum distances are not indicated or available then verify the detail and field conditions with the structural engineer prior to installing:

anchor dia	c to c distance	edge distance	embed distance	mat'l thickness
1/2"	3 1/2"	4"	3 1/2"	5 1/2"
5/8"	4"	5"	4"	6"
3/4"	6"	6"	5"	8"
7. If any of the following conditions are indicated or present then verify acceptability of chemical adhesive or proprietary adhesive anchor type, material or finish with the structural engineer prior to installing:
 - corrosive, chemical or abnormal temperature environment
 - vibratory or fatigue loading of anchor
 - impact or shock loading of anchor
 - continuous tension (e.g. hanging loads from ceilings).

MATERIAL PATTERN LEGEND

	COMPETENT ROCK		CONCRETE
	UNDISTURBED SOIL ENGINEERED FILL		LEAN CONCRETE FLOWABLE FILL GROUT
	CRUSHED STONE DENSE GRADED AGGREGATE		

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STRUCTURAL GENERAL NOTES

**EAST CASEY COUNTY WATER DISTRICT
 2018 WATER SYSTEM IMPROVEMENTS
 CASEY COUNTY, KENTUCKY**



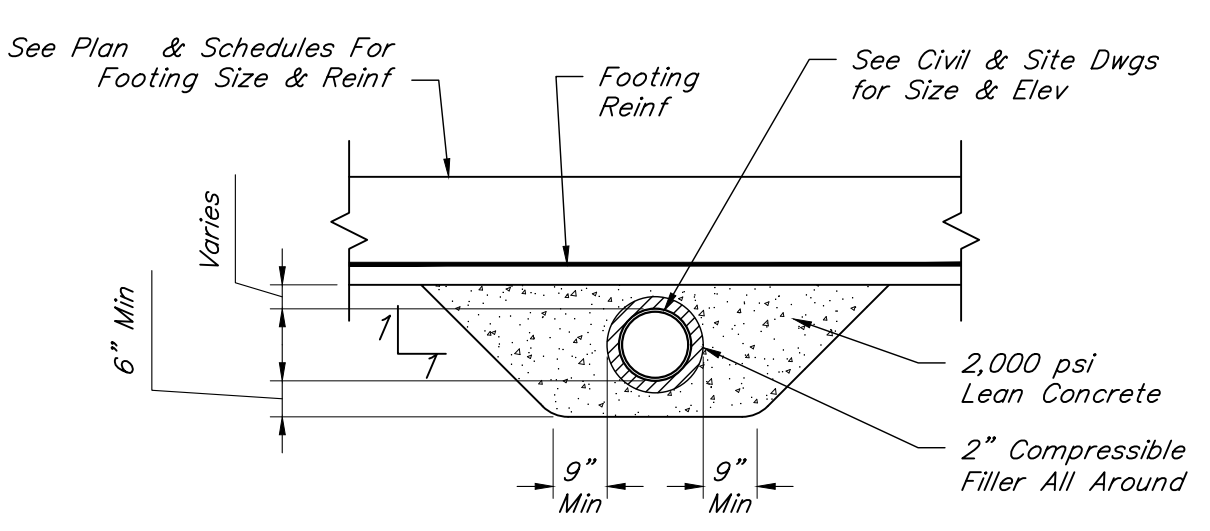
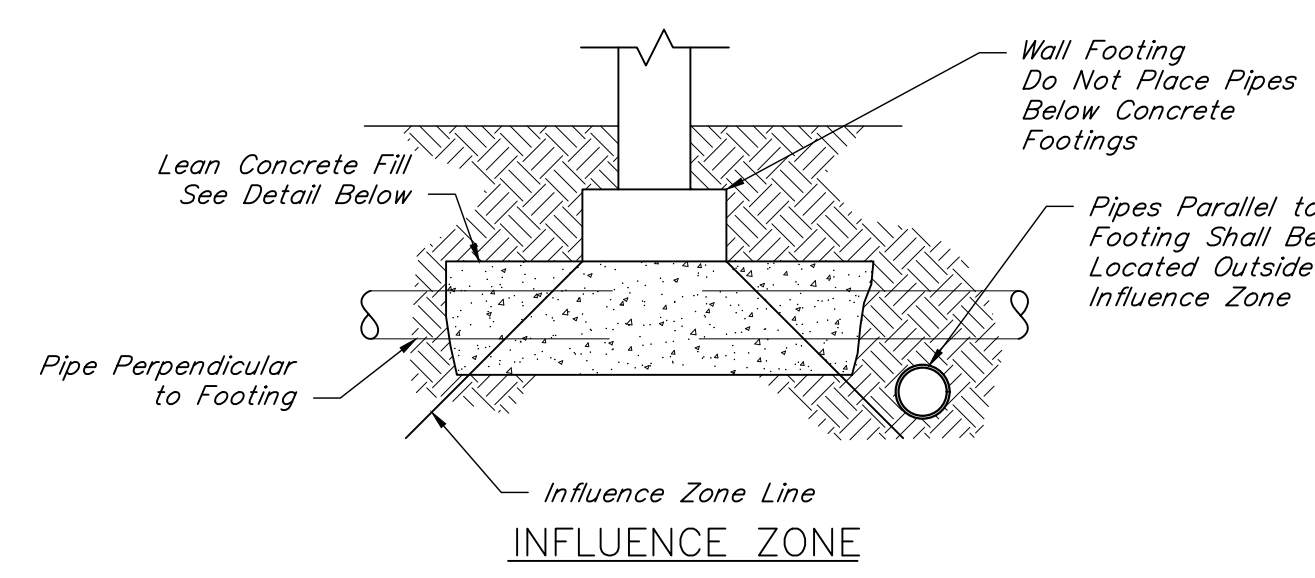
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PROJECT NO.
 2018132
 SHEET NO.
 S1

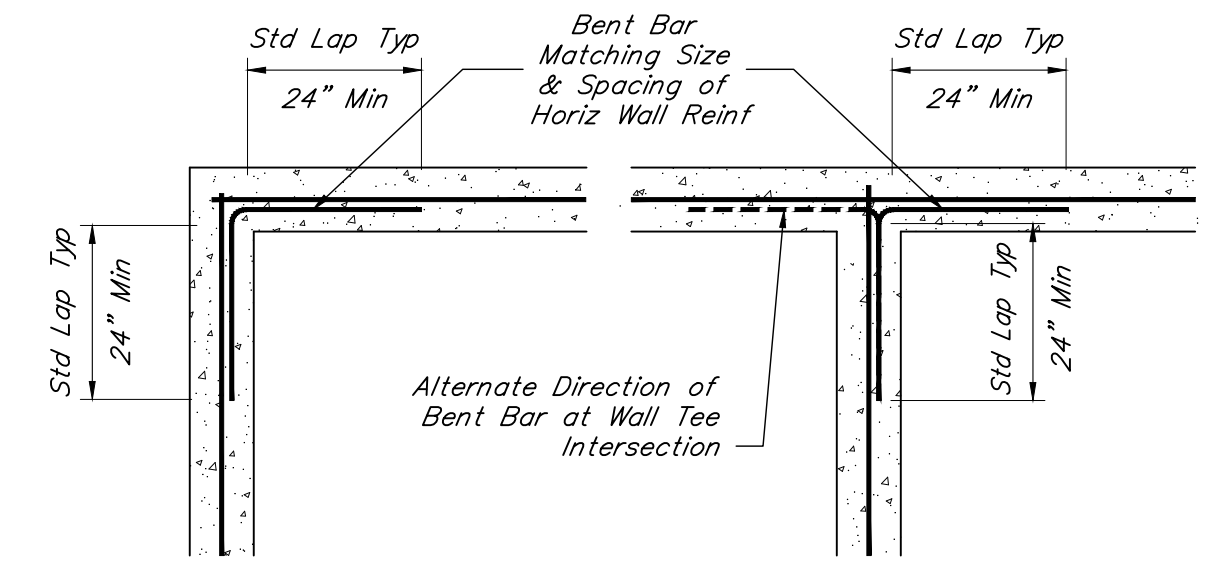


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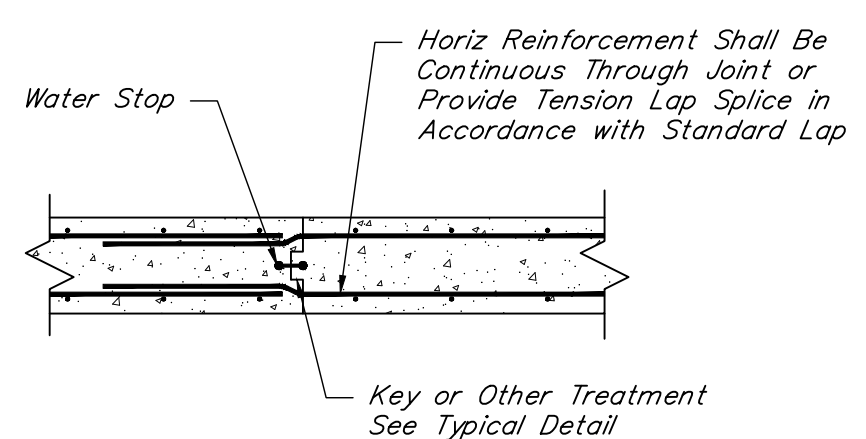
NOTE:
 Provide concrete protection around utility line when line is within footing influence zone. See detail above for influence zone definition.

TYPICAL UTILITY LINE BELOW FOOTING
 Not to Scale



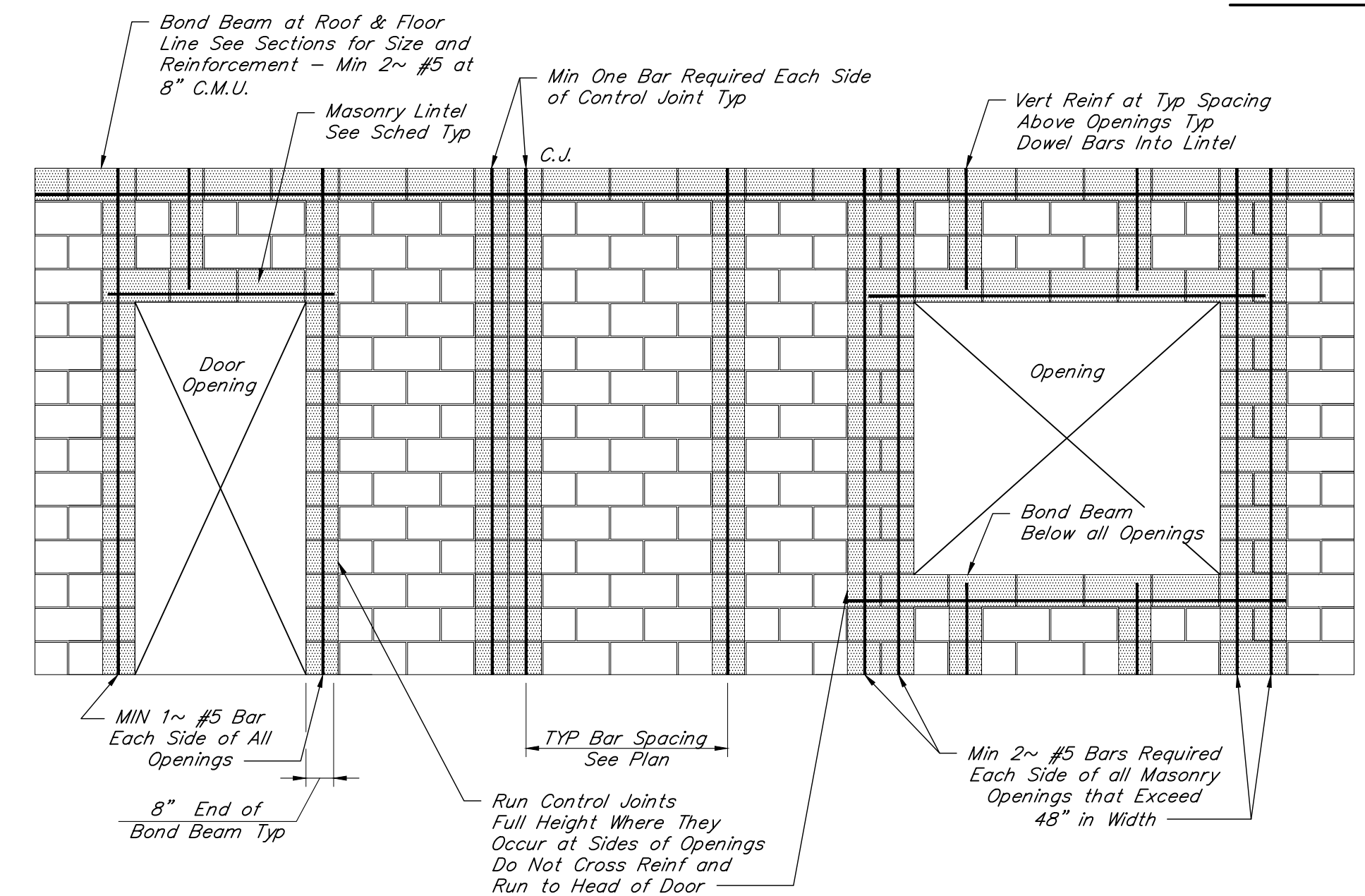
NOTES:
 1. Where bar sizes differ, lap for larger size.
 2. If bend radius creates problems fitting hairpins in wall, provide more smaller hairpins with equal total area to main bars.
 3. Construction joints shall not occur within 5'-0" of a corner or tee unless indicated otherwise on the drawings.

TYPICAL WALL INTERSECTION REINF
 Not to Scale



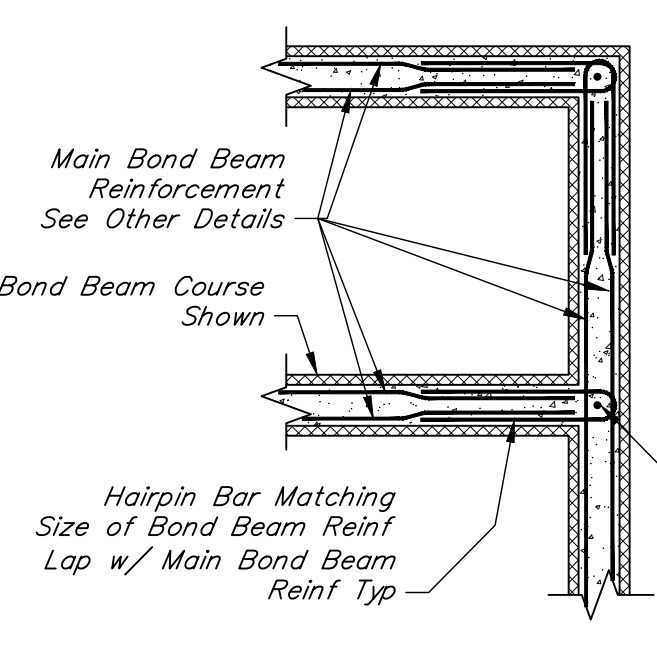
NOTES:
 1. Maximum Length of Wall Pour = 40'-0".
 2. Minimum 48 Hours Between Adjacent Pours.
 3. See Plans for Additional Joint Locations.
 4. Submit Construction Joint Location Plan For Approval Prior to Construction.
 5. Do Not Form Joints Within 5'-0" of a Corner or Tee Intersection.

TYPICAL WALL CONSTRUCTION JOINT
 Not to Scale



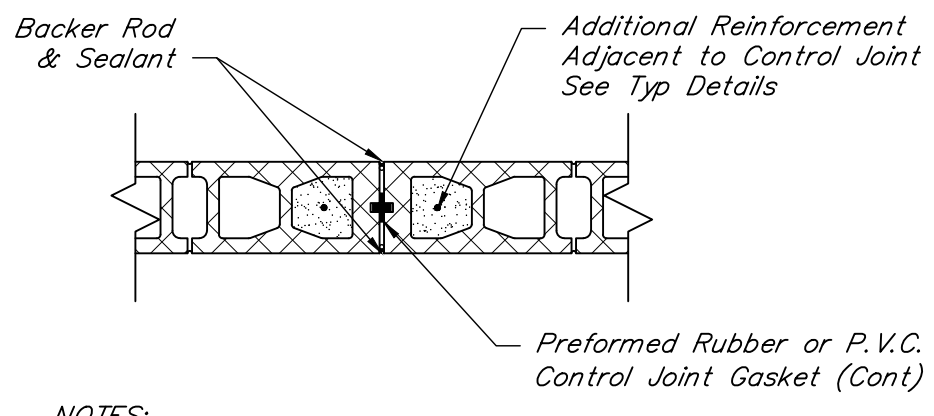
NOTES:
 1. Minimum vertical wall reinforcing shall be #5 @ 2'-0" unless noted otherwise.
 2. Vertical wall reinforcing shall be continuous.
 3. See typical detail for dowels required at base of walls.
 4. Center reinforcing bars in grouted cells unless noted otherwise.
 5. Use bar positioners at minimum 4'-0" spacing to support reinforcing bars.
 6. Follow specified grouting procedures.
 7. Clean mortar from edges of cells so grout can flow smoothly and fill entire cell.
 8. Use lintel block over openings and continue with open-bottom bond beam from edge of opening into wall so that vertical reinforcing at jamb can pass.
 9. Control joints shall extend full height of wall and align from floor to floor.
 10. Where a control joint occurs through a bond beam or lintel bearing, provide 2~1/2" dowels across joint with grease on one side. Do not continue horizontal reinforcing across control joint.

TYPICAL C.M.U. WALL REINFORCEMENT DETAILS
 Not to Scale



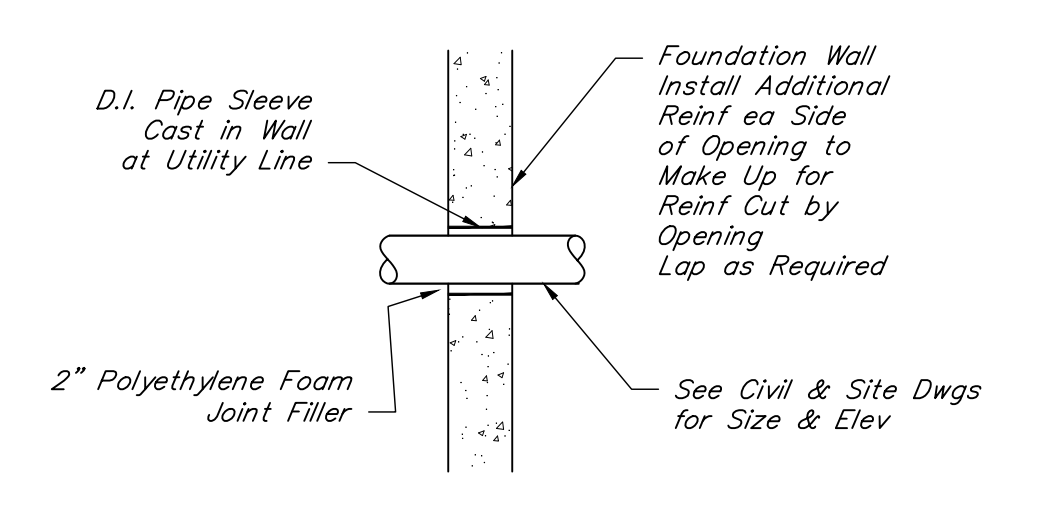
NOTES:
 1. Tooth intersecting walls together in running bond with min 6" overlap or use masonry strap every third course unless noted otherwise on plans.
 2. #5 vertical bar centered in grouted cell shall be installed at intersection.
 3. Horizontal joint reinforcement shall be lapped min 6" at wall intersection.

TYPICAL MASY WALL INTERSECTION DETAIL
 Not to Scale

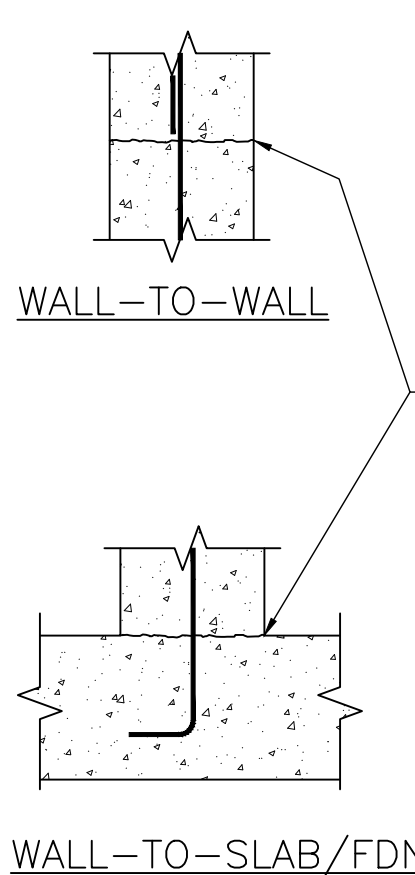


NOTES:
 1. See architectural drawings for control joint locations.
 2. Discontinue horizontal joint reinforcing at control joints.
 3. Unless otherwise shown or noted, spacing of control joints shall not exceed 24 feet.

TYPICAL C.M.U. CONTROL JOINT DETAIL
 Not to Scale



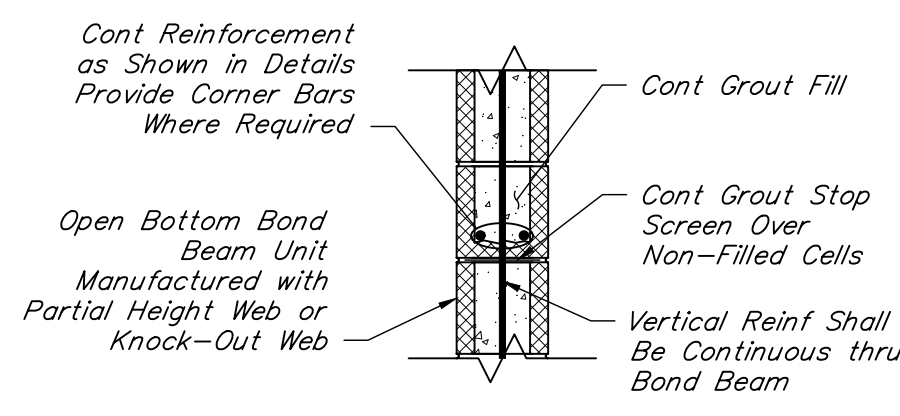
TYPICAL UTILITY LINE THRU FDN WALL
 Not to Scale



Either Provide a Keyway That Is One-Third the Wall/Slab Thickness Wide By One-Sixth the Wall/Slab Thickness Deep or Remove Laitance and Roughen Joint to One Quarter Inch Average Amplitude and Apply Bonding Agent Prior to Placing Concrete

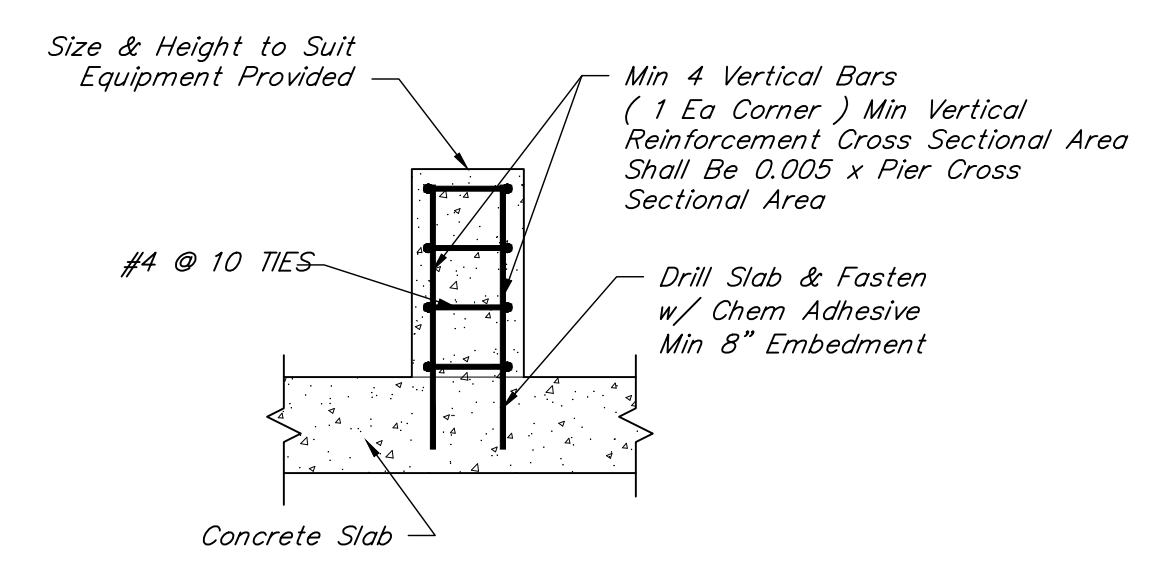
NOTES:
 1. Joint May Be Wall-to-Wall or Slab-to-Slab.
 2. Waterstop May Be Required See Plans & Sections.
 3. See Other Details for More Joint Information.

TYPICAL CONSTRUCTION JOINT CONCRETE PREPARATION
 Not to Scale

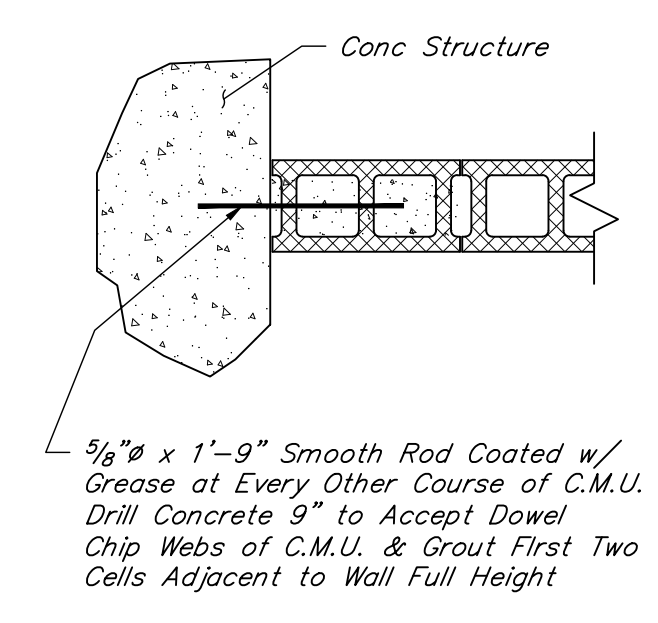


NOTE:
 Reinforcing shall have 3/4" minimum grout cover to all c.m.u. surfaces.

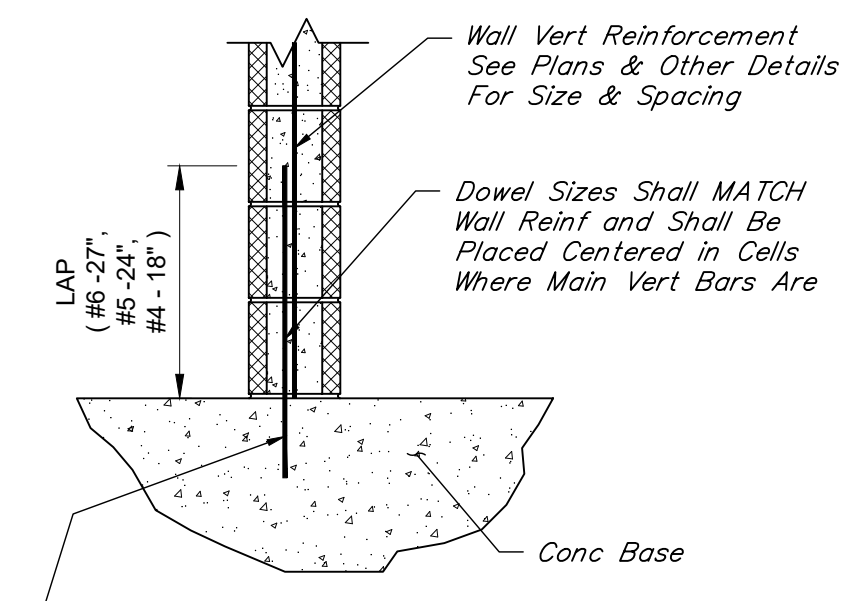
TYPICAL C.M.U. BOND BEAM DETAIL
 Not to Scale



TYPICAL CONCRETE EQUIPMENT PEDESTAL
 Not to Scale



PLAN VIEW



Drill Conc Base & Fasten Dowel w/ Chemical Adhesive for Full Strength of Dowel According to Mfr's Published Installation Instructions

TYPICAL C.M.U. WALL DOWEL DETAIL
 Not to Scale

MASONRY LINTEL SCHEDULE					
MARK	MAX OPENING SIZE	D	BOTTOM REINF	TOP REINF	STIRRUPS
ML-1	5'-0"	8"	2~#5	None	None
ML-2	8'-0"	16"	2~#5	None	None
ML-3	11'-8"	24"	2~#5 (8" C.M.U.) 2~#5 (12" C.M.U.)	None	None
ML-4	18'-0"	24"	2~#5 (8" C.M.U.) 2~#5 (12" C.M.U.)	2~#5	#3@8"

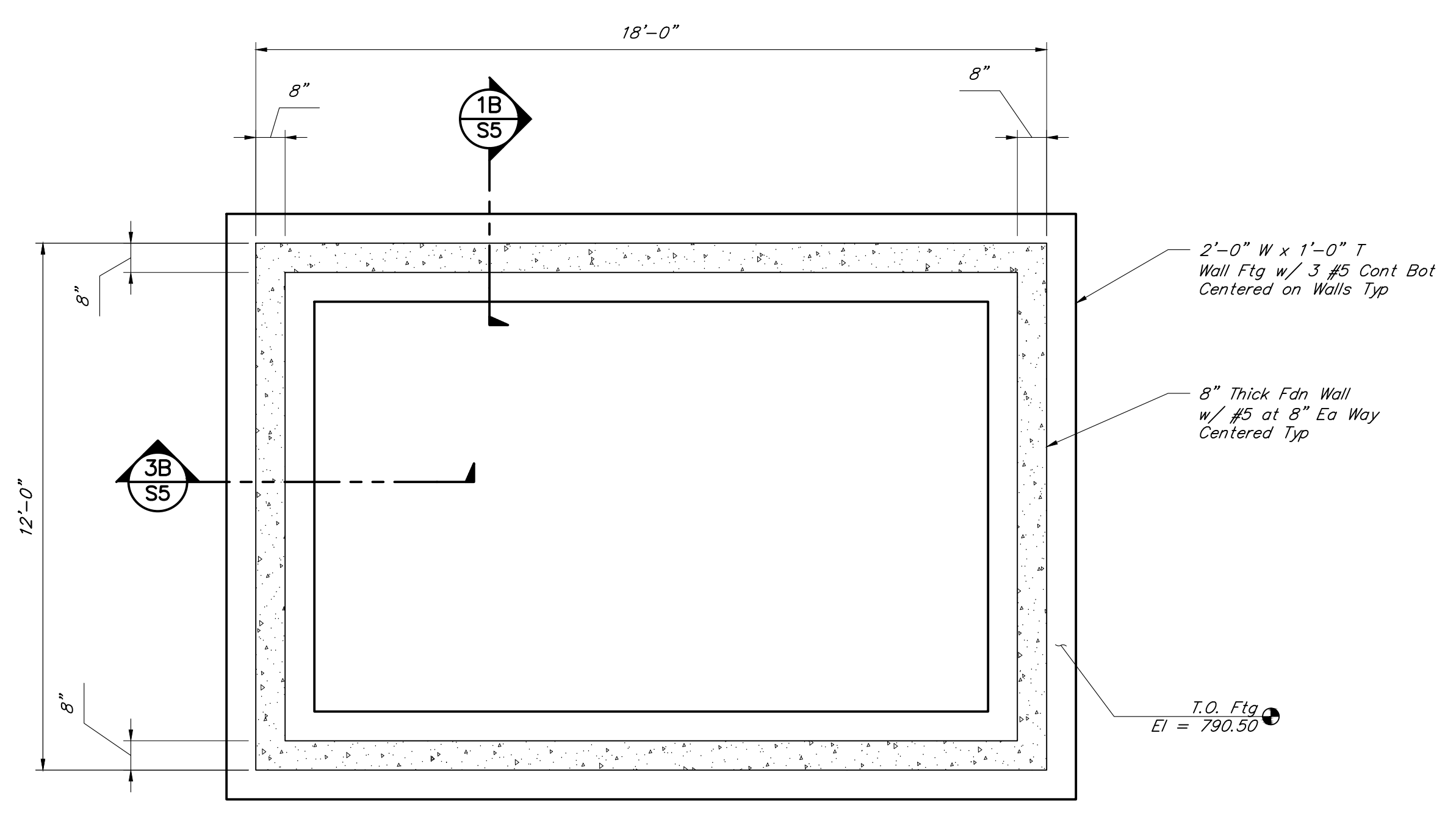
NOTES:
 1. Do not use this schedule if concentrated load is applied to the lintel at a height less than half the span above the lintel or if stack bond is specified.
 2. In lieu of using lintel block on the bottom of lintels which requires shoring during construction, contractor may use prestressed, precast concrete lintels by "cast-crete" (www.castcrete.com) or approved equal. Submit product data and a plan and schedule of lintel locations and sizes for approval for this option.

TYPICAL C.M.U. LINTEL DETAIL
 Not to Scale

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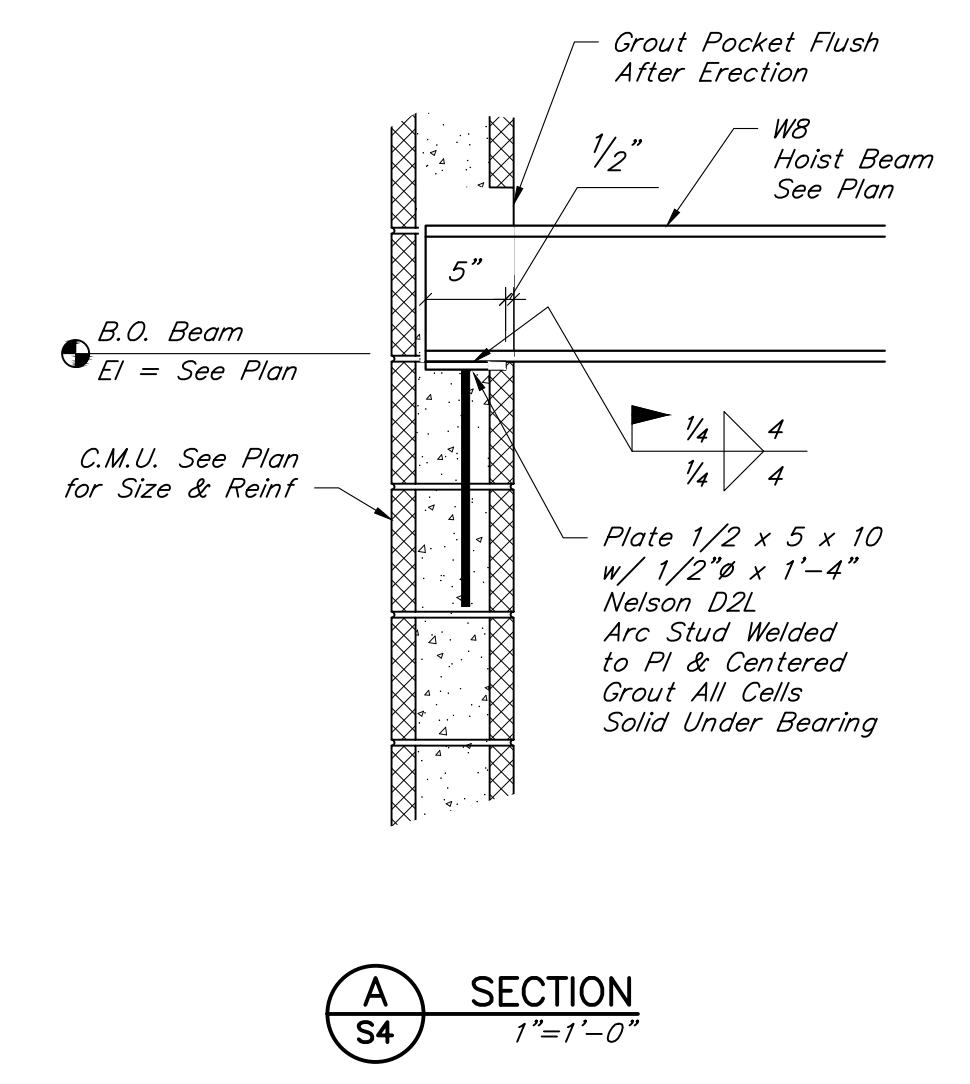


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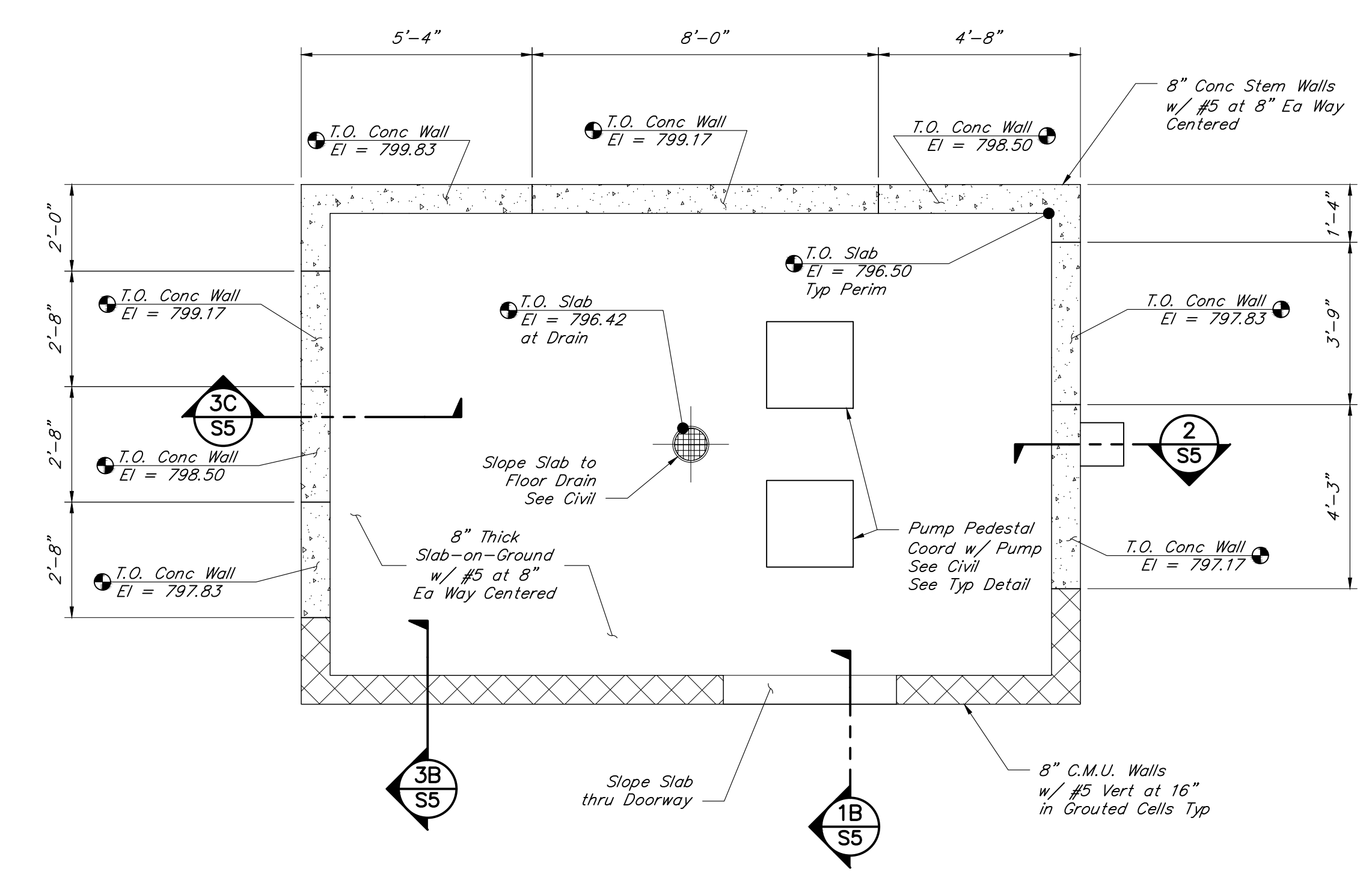


FOUNDATION PLAN
3/8"=1'-0"

Note:
Backfill foundation walls balanced inside and out so that the grade elevation difference on either side of the walls is no more than 24" at any time.

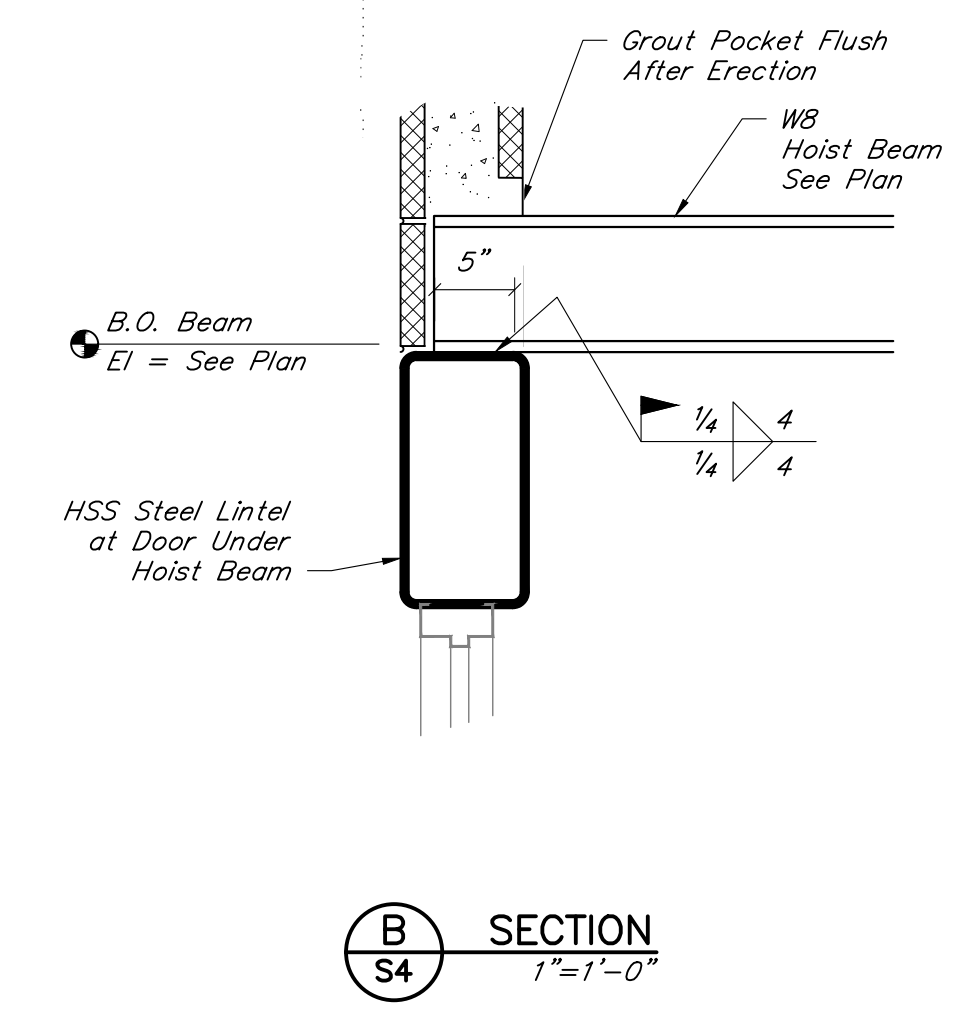


A SECTION
1"=1'-0"

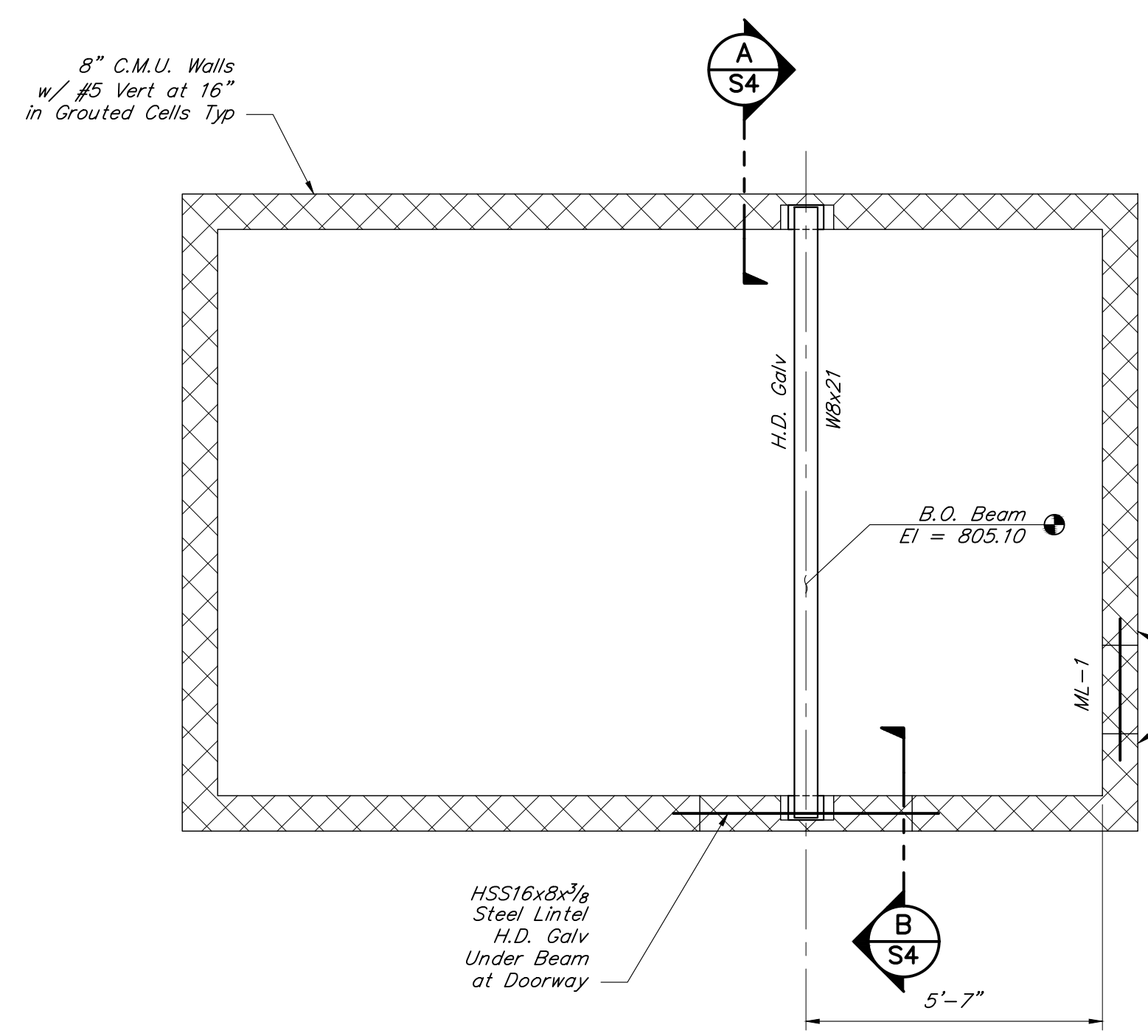


SLAB PLAN
3/8"=1'-0"

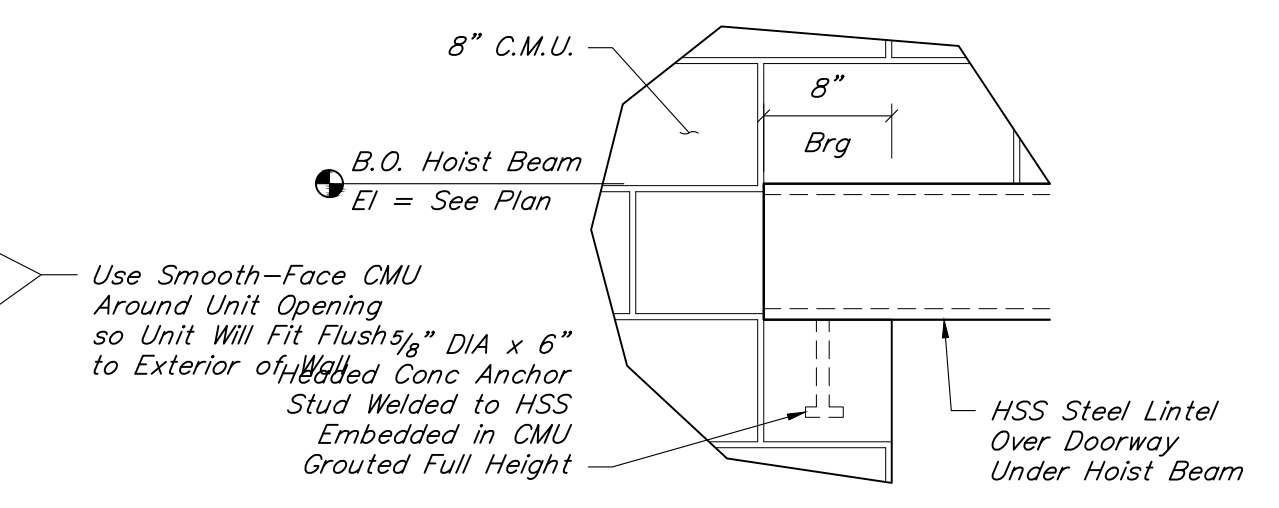
Note:
Coordinate location of pedestals and hoist beam with actual final locations of equipment. Confirm with Engineer and Owner if necessary.



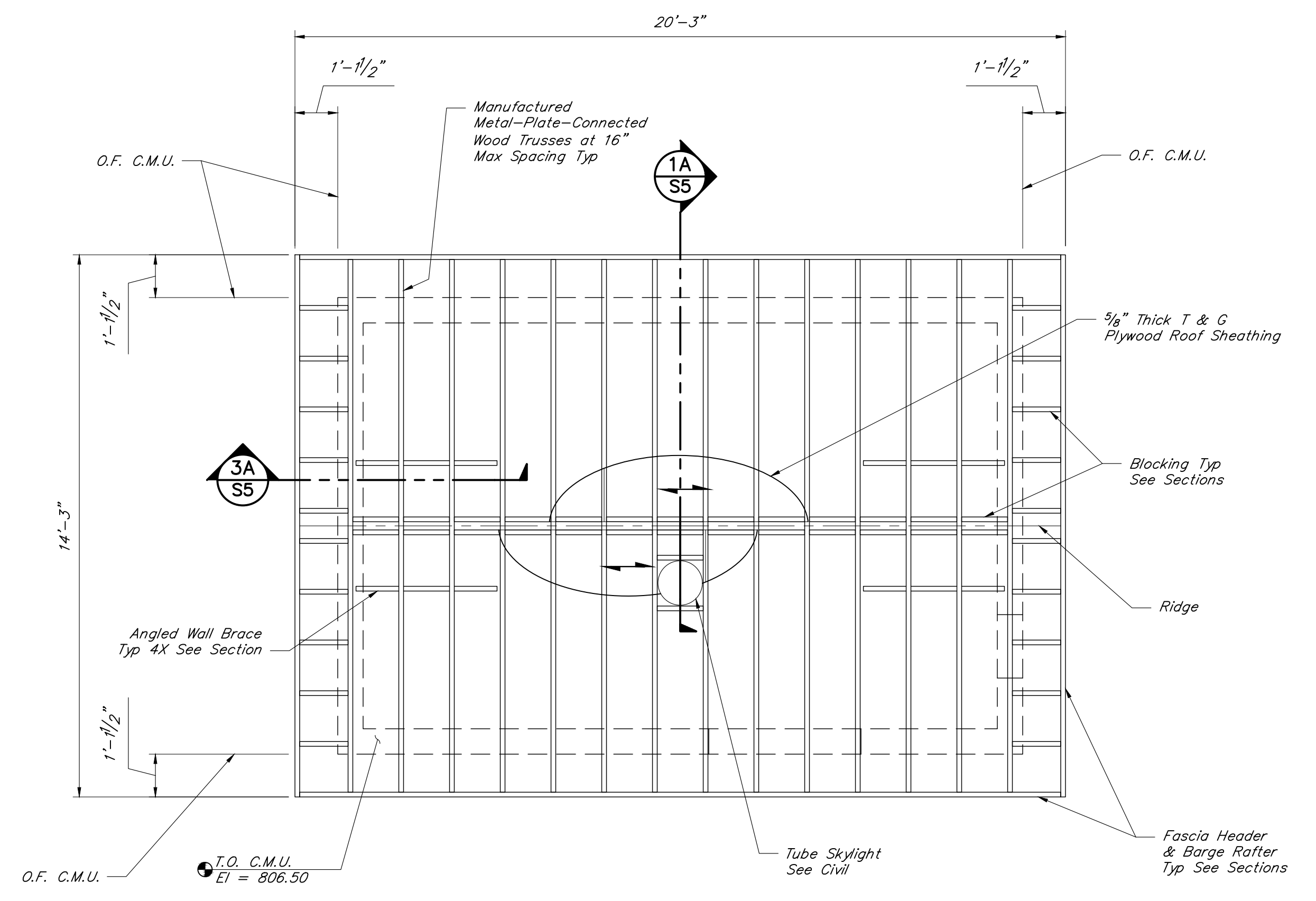
B SECTION
1"=1'-0"



HOIST BEAM FRAMING PLAN
3/8"=1'-0"



TYP HSS LINTEL BEARING
N.T.S.

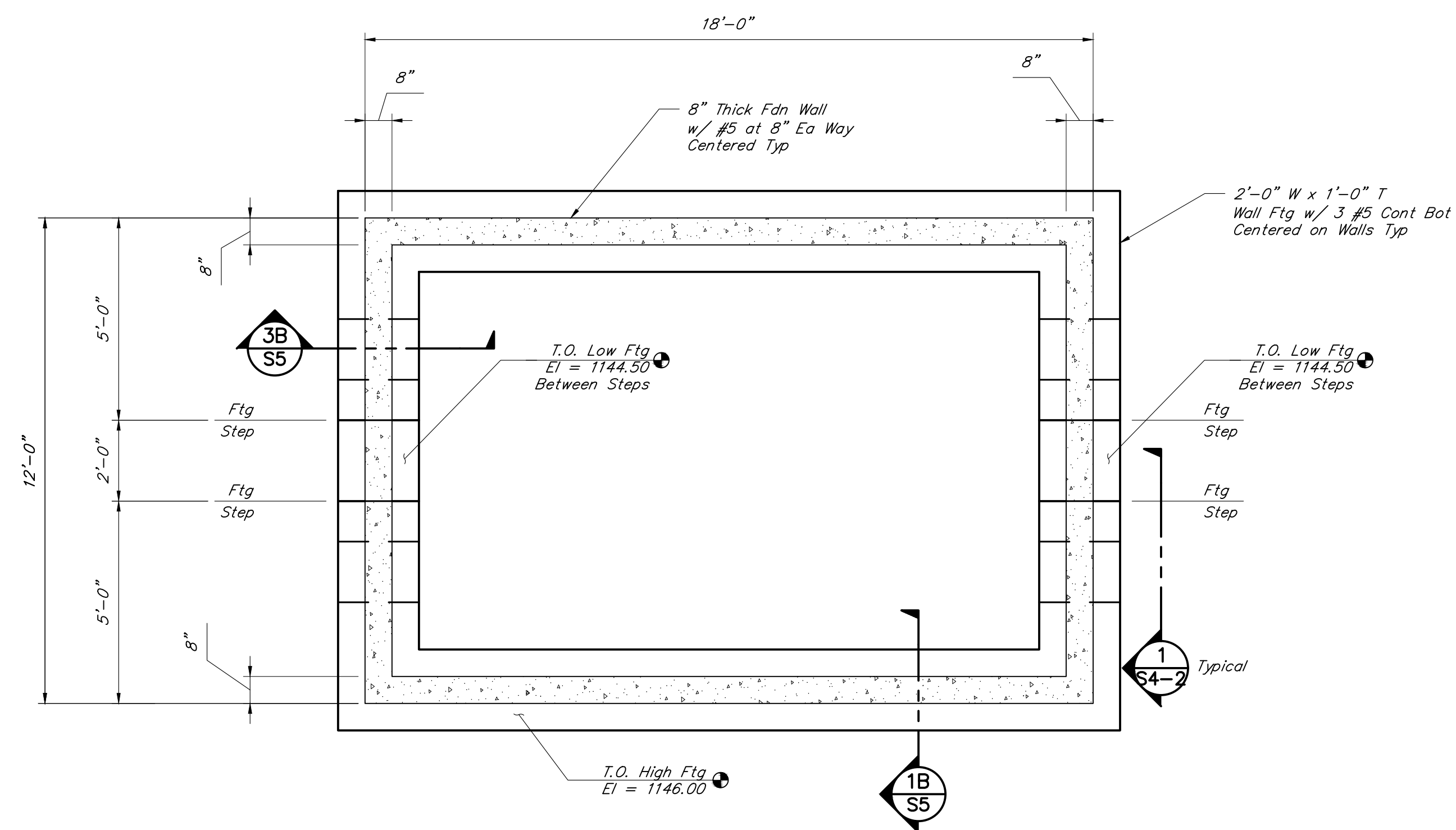


ROOF FRAMING PLAN
3/8"=1'-0"

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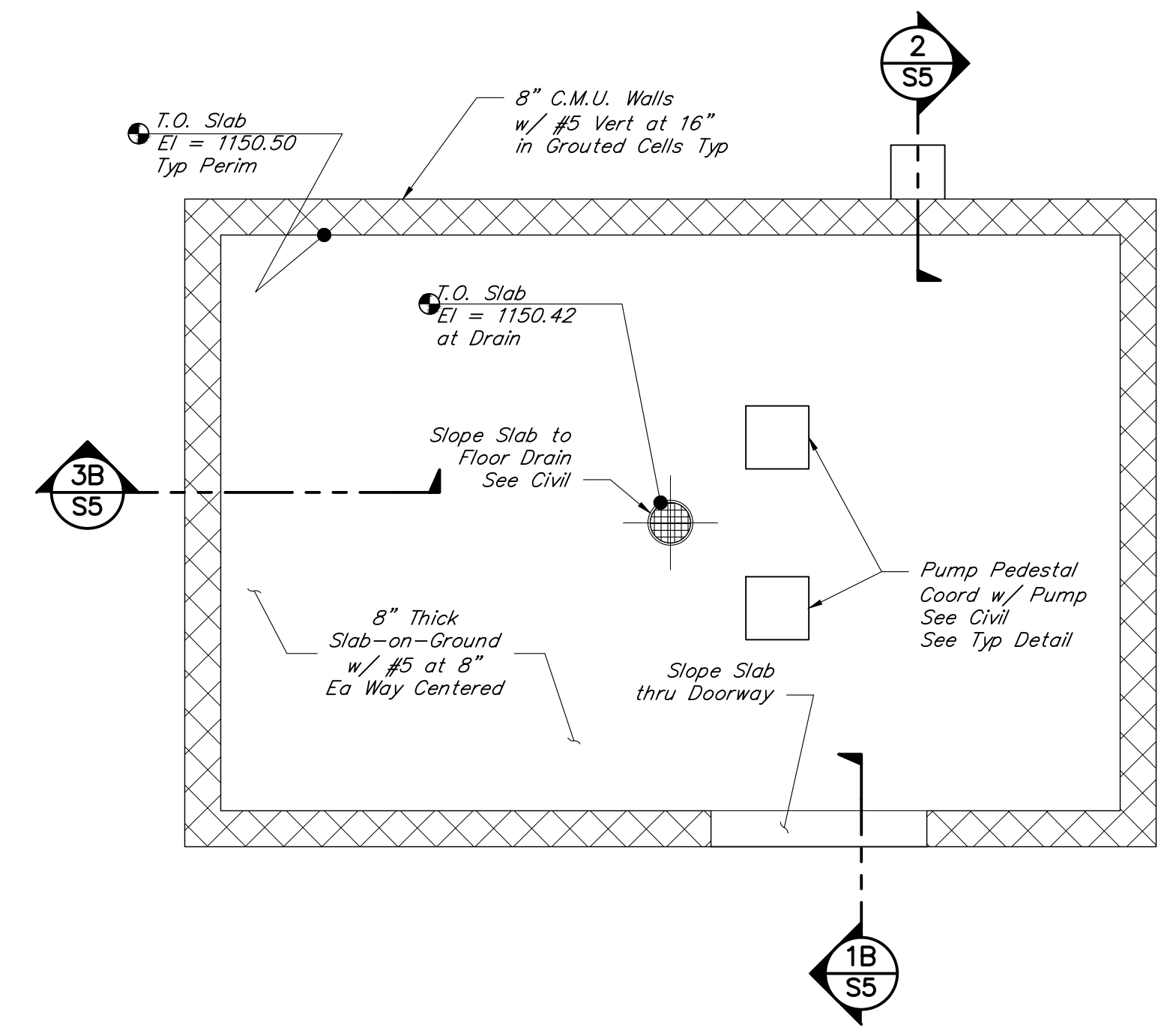
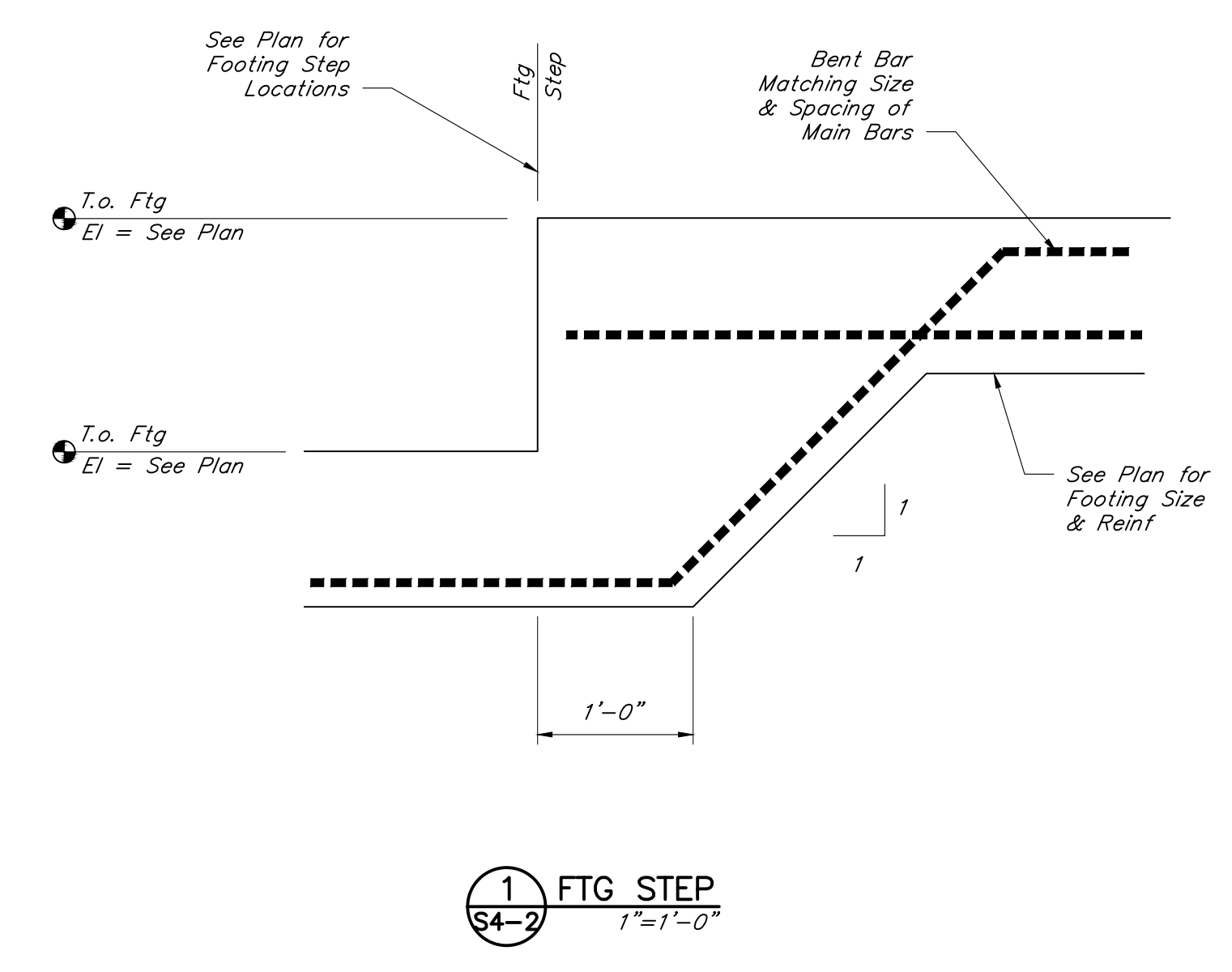


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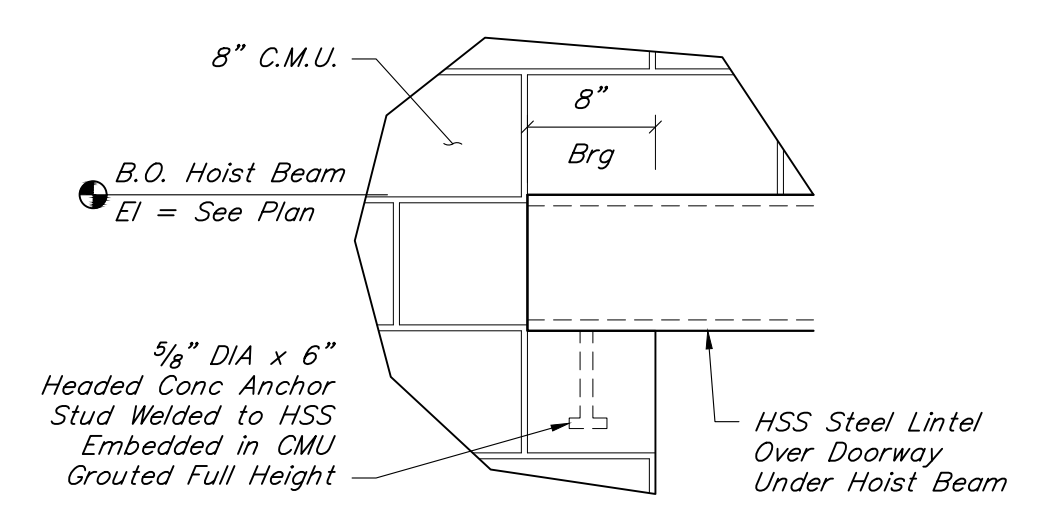
FOUNDATION PLAN
 3/8"=1'-0"

- Notes:
- Backfill foundation walls balanced inside and out so that the grade elevation difference on either side of the walls is no more than 24" at any time.
 - Coordinate footing step locations with finished grades to maintain proper footing depth.

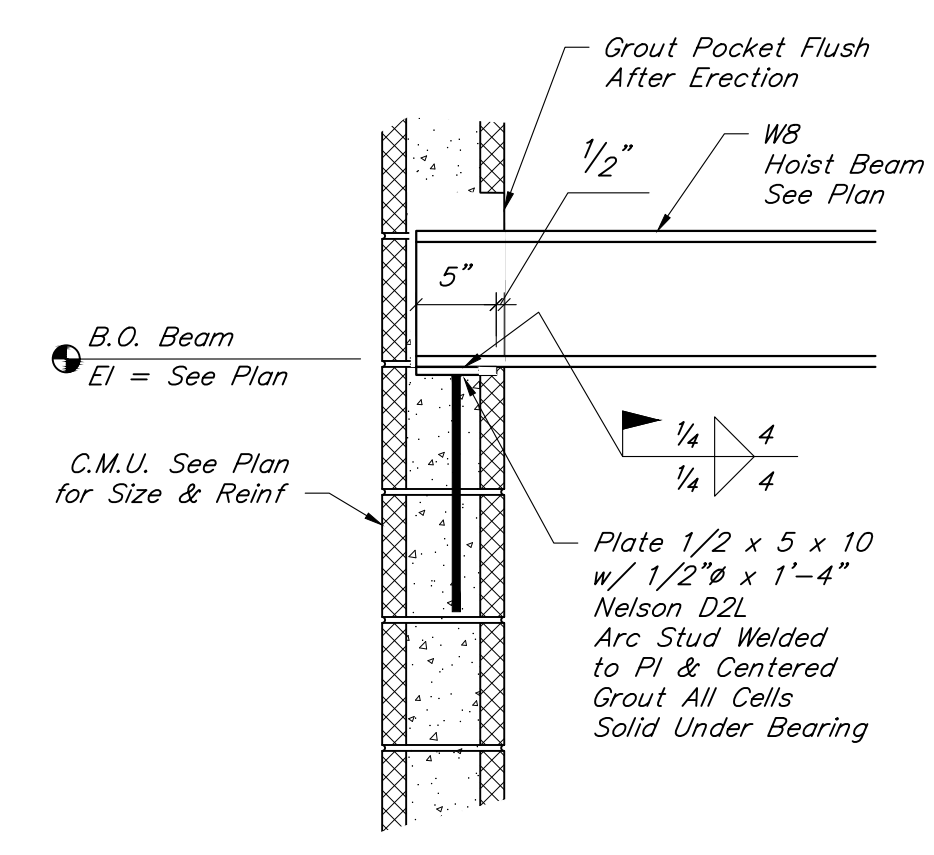


SLAB PLAN
 3/8"=1'-0"

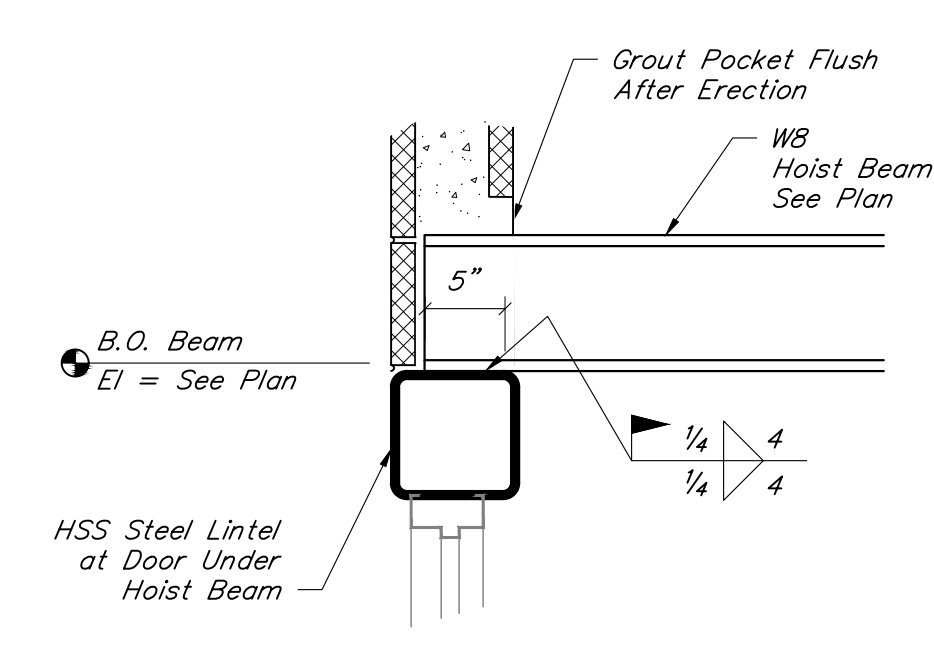
Note:
 Coordinate location of pedestals and hoist beam with actual final locations of equipment. Confirm with Engineer and Owner if necessary.



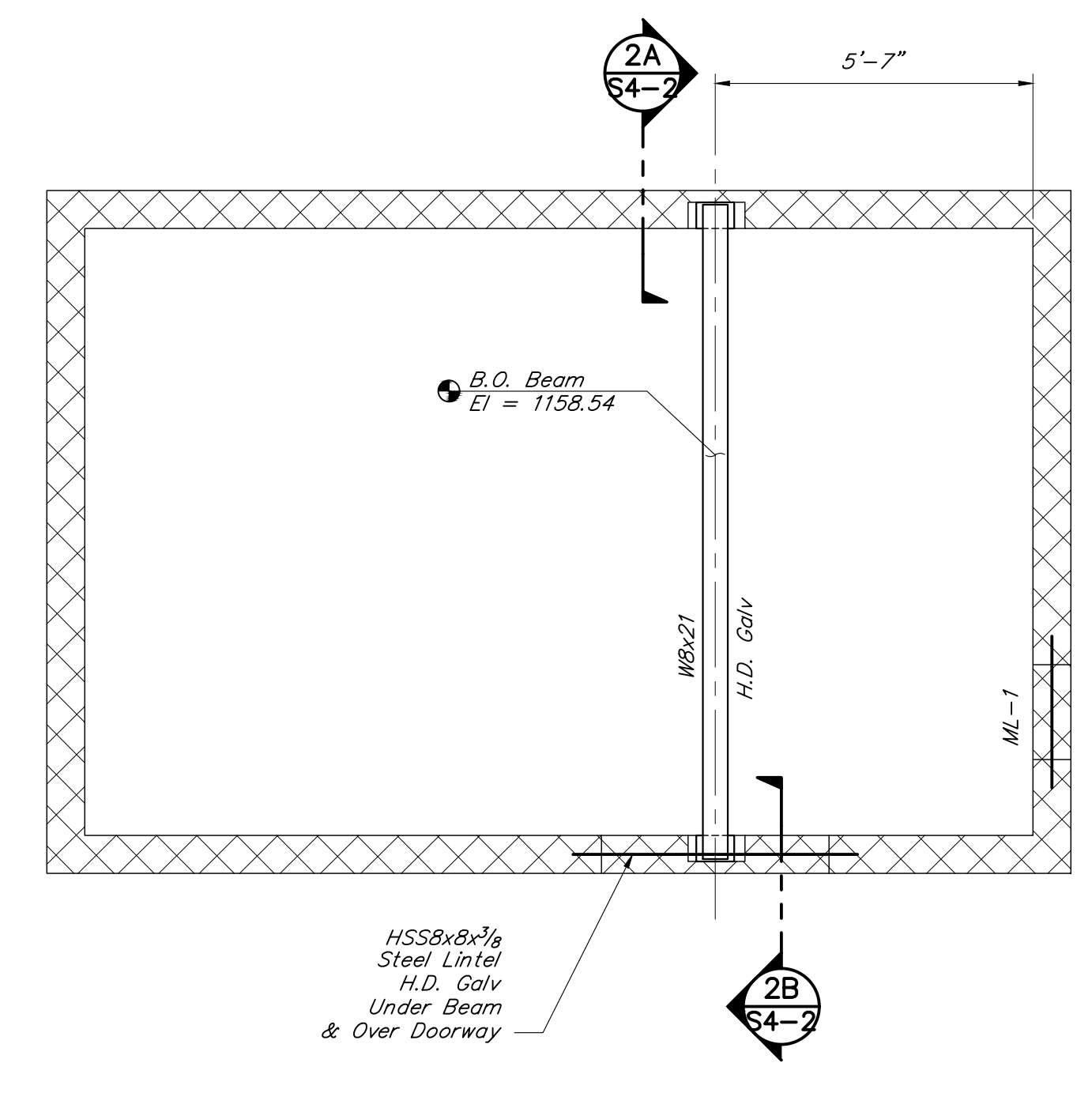
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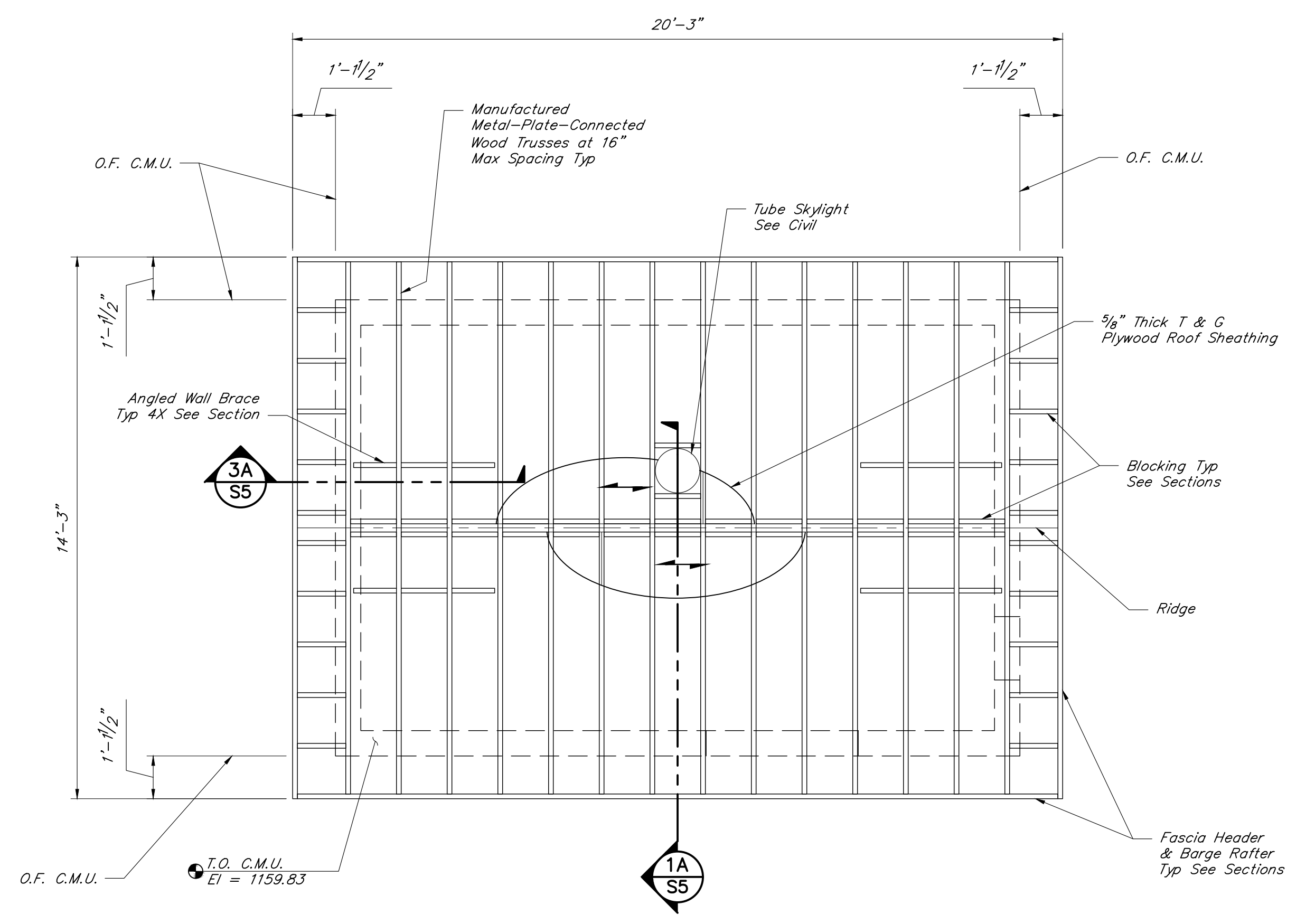
2A SECTION
 1"=1'-0"



2B SECTION
 1"=1'-0"

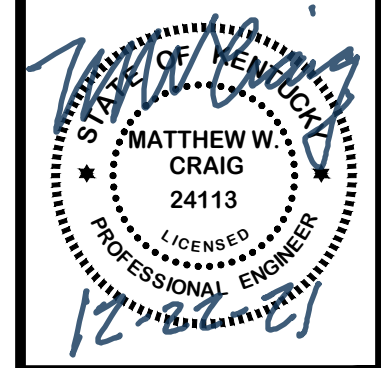


HOIST BEAM FRAMING PLAN
 3/8"=1'-0"

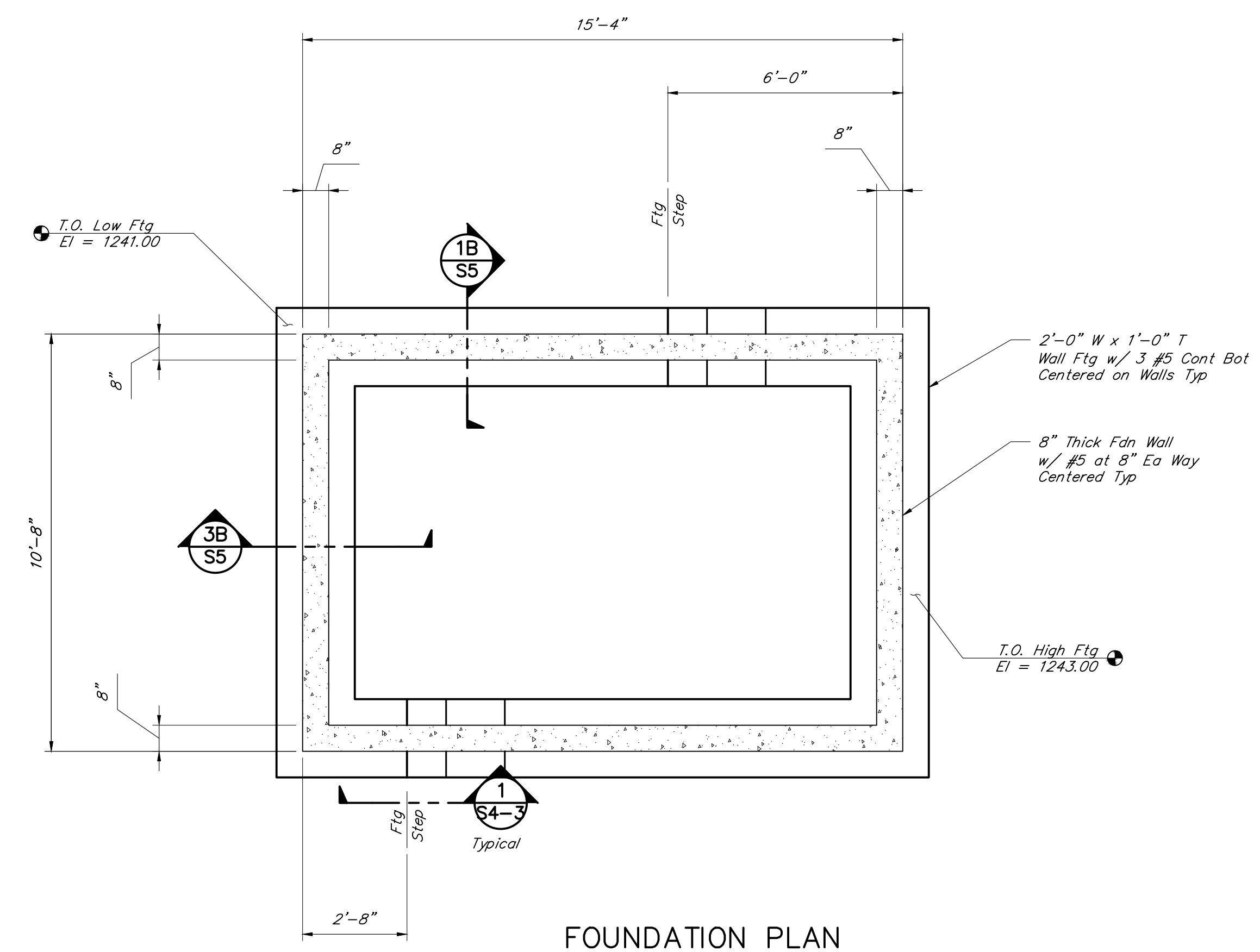


ROOF FRAMING PLAN
 3/8"=1'-0"

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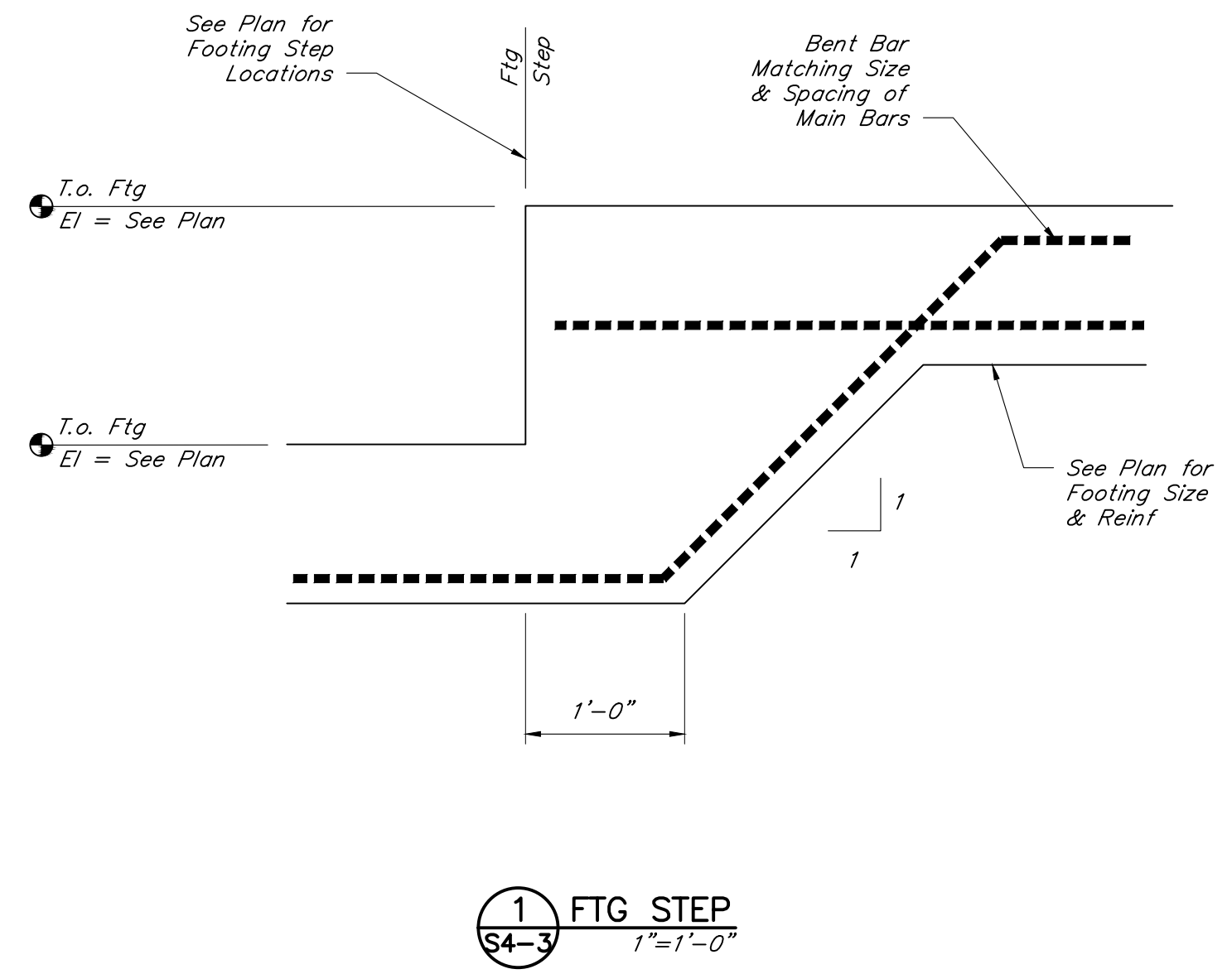


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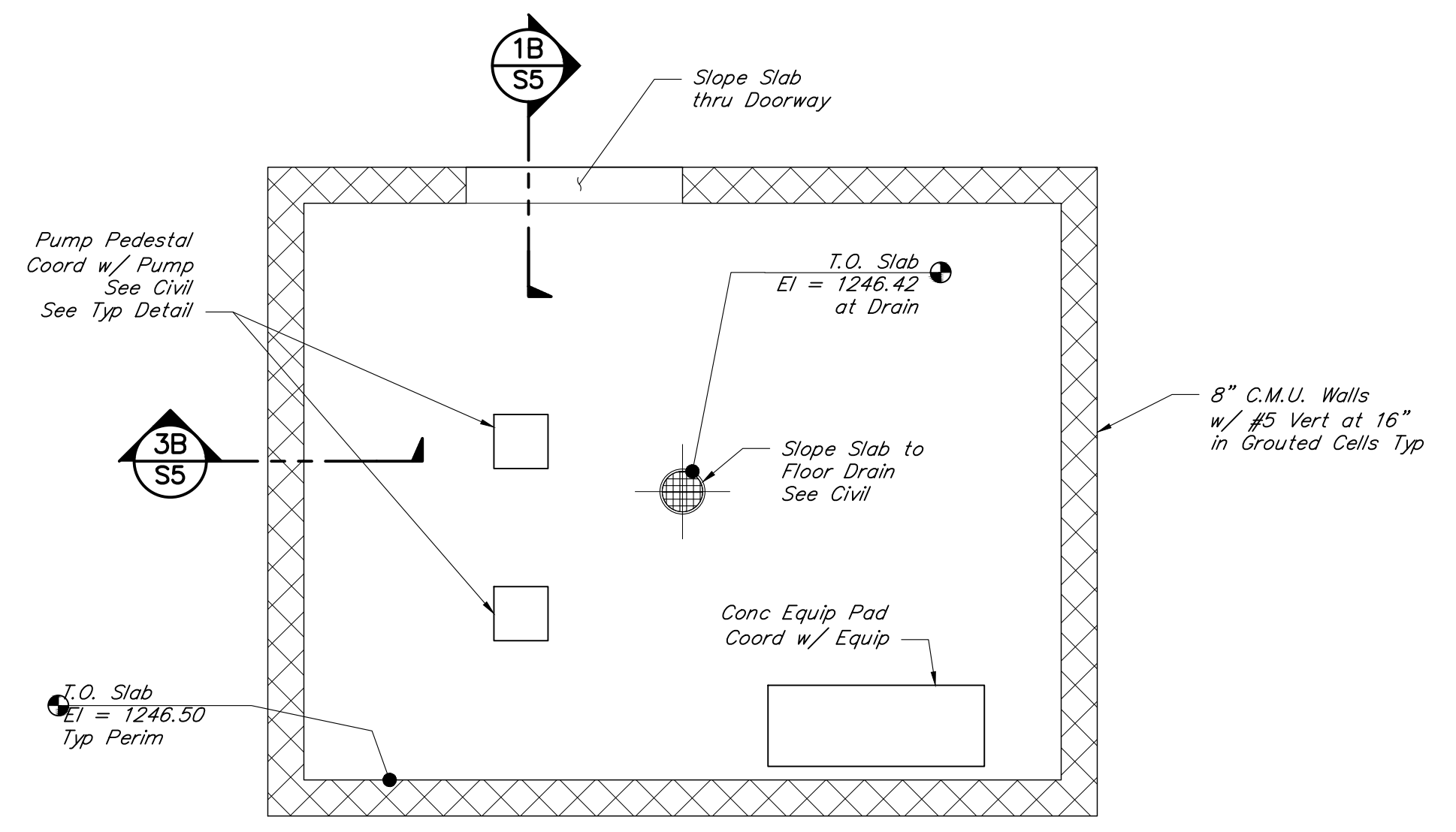


FOUNDATION PLAN
3/8"=1'-0"

- Notes:
1. Backfill foundation walls balanced inside and out so that the grade elevation difference on either side of the walls is no more than 24" at any time.
 2. Coordinate footing step locations with finished grades to maintain proper footing depth.

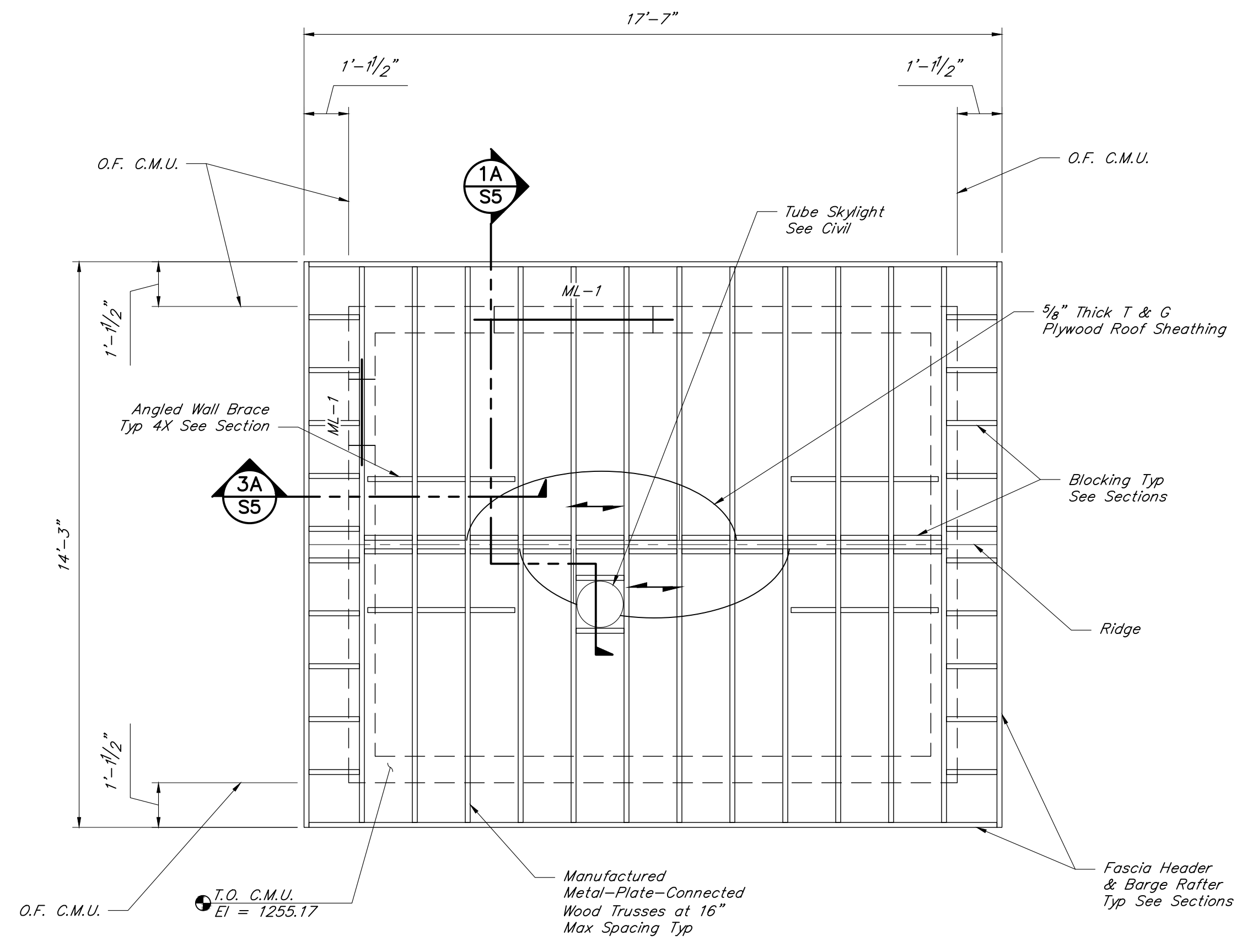


1 FTG STEP
1'-0"



SLAB PLAN
3/8"=1'-0"

Note:
Coordinate location of pedestals and hoist beam with actual final locations of equipment. Confirm with Engineer and Owner if necessary.



ROOF FRAMING PLAN
3/8"=1'-0"

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ELECTRICAL ABBREVIATIONS

A	AMPERE
AF	AMPERE FRAME
AFF	ABOVE FINISHED FLOOR
AFD	ADJUSTABLE FREQUENCY DRIVE
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER
C	CONDUIT (RACEWAY)
Ⓢ	AT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
C/L	CENTERLINE
CLG	CEILING
CP	CONTROL PANEL
CT	CURRENT TRANSFORMER OR CONSTANT TORQUE CONTROL
CTL	CONTROL
CU	COPPER OR CONDENSING UNIT
Δ/Y	DELTA/WYE
DB	DIRECT BURIAL
DN	DOWN
DPST	DOUBLE POLE-SINGLE THROW
EC	EMPTY CONDUIT
EF	EXHAUST FAN
EG	EQUIPMENT GROUND
EGC	EQUIPMENT GROUND CONDUCTOR
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC
EOL	END-OF-LINE
EMERG	EMERGENCY
EUH	ELECTRIC UNIT HEATER
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WALL HEATER/WATER HEATER
EX	EXISTING
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FO	FIBER OPTIC
FNVR	FULL VOLTAGE, NON-REVERSING
GEC	GROUNDING ELECTRODE CONDUCTOR
GFCI OR GFI	GROUND FAULT CURRENT INTERRUPTING
GND	GROUND
HQA	HAND-OFF-AUTO SELECTOR SWITCH
HP	HORSEPOWER
J OR JB	JUNCTION BOX
KVA	KILOVOLT-AMPERES
KWH	KILOWATT-HOUR
KCMIL	THOUSAND CIRCULAR MILS
LF	LIGHTING FIXTURE (LUMINAIRE)
LTG	LIGHTING
LTS	LIGHTS
LS	LIMIT SWITCH
LV	LOW VOLTAGE
MCB	MAIN CIRCUIT BREAKER
MCP	MOTOR CIRCUIT PROTECTOR
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MV	MEDIUM VOLTAGE
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NL	NON LINEAR
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OH	OVERHEAD
OL	OVERLOAD
P	POLE
OT	OVER TEMPERATURE
PH OR Ⓢ	PHASE
PNL	PANEL
PVC	POLY-VINYL CHLORIDE
PWR	POWER
RECEPT	RECEPTACLE
SHT	SHEET
S/N	SOLID NEUTRAL
SP	SINGLE POLE
SPD	SURGE PROTECTION DEVICE
SS	STAINLESS STEEL
STA	STATION
STD	STANDARD
STIC	SHIELDED TWISTED INSTRUMENT CABLE
SW	SWITCH
TB	TERMINAL BOX
TEL	TELEPHONE
TM	THERMAL MAGNETIC
TS	TAMPER SWITCH
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
UG	UNDERGROUND
UH	UNIT HEATER
V	VOLTAGE OR VOLTS
W	WIRE
WP	WEATHERPROOF
W/	WITH
XFMR	TRANSFORMER

ELECTRICAL DIAGRAM SYMBOLS

	TRANSFORMER
	GROUND
	CURRENT TRANSFORMER
	CIRCUIT BREAKER (GENERAL)
	CIRCUIT BREAKER, THERMAL-MAGNETIC
	CIRCUIT BREAKER, MAGNETIC-ONLY
	GROUND FAULT PROTECTED CIRCUIT BREAKER
	RELAY CONTACTS (NORMALLY OPENED)
	RELAY CONTACTS (NORMALLY CLOSED)
	THERMAL OVERLOAD PROTECTION
	FUSE
	DOT INDICATES A CONNECTION OF TWO WIRES
	TERMINALS FOR CONNECTION OF REMOTE WIRING
	RELAY/CONTACTOR COIL: C = CONTRACTOR; CR = CONTROL RELAY; TR = TIMING RELAY; M = MOTOR
	HAND-OFF-AUTOMATIC SWITCH
	FULL VOLTAGE NON-REVERSING MOTOR STARTER; X = NEMA SIZE
	PILOT LIGHT: R = RED; G = GREEN; A = AMBER; W = WHITE
	PILOT LIGHT - PUSH-TO-TEST
	MOTOR
	FUSED DISCONNECT SWITCH
	TEMPERATURE SWITCH (THERMOSTAT)
	PRESSURE SWITCH
	LIMIT SWITCH
	SOLENOID VALVE COIL
	ELAPSED TIME METER
	PUSHBUTTONS, N.C. & N.O. RESPECTIVELY
	SELECTOR SWITCH - TWO POSITION
	TIMER RELAY CONTACT: NORMALLY OPEN - TIMED OPEN UPON DEENERGIZATION
	TIMER RELAY CONTACT: NORMALLY CLOSED - TIMED CLOSE UPON DEENERGIZATION
	TIMER RELAY CONTACT: NORMALLY OPEN - TIMED CLOSE UPON ENERGIZATION
	TIMER RELAY CONTACT: NORMALLY CLOSED - TIMED OPEN UPON ENERGIZATION
	TRANSFER SWITCH
	GENERATOR
	EXTERNAL WIRING

ELECTRICAL PLAN SYMBOLS

	ELECTRICAL CIRCUIT: SHORT=PHASE CONDUCTOR; LONG = NEUTRAL, DASHED = EQUIPMENT GROUND SWITCH: 3=3 WAY; 4=4 WAY; K=KEY; WP=WEATHERPROOF; M=MOTOR STARTER; PL=PILOT LT DUPLEX RECEPTACLE: WP = WEATHERPROOF; GFI = GROUND FAULT; NUMBER = MOUNTING HEIGHT 208 or 240 VOLT RECEPTACLE THERMOSTAT MOTOR JUNCTION BOX - SMALL JUNCTION BOX - FLUSH-MOUNTED SAFETY SWITCH - NONFUSED UNLESS NOTED OTHERWISE MAGNETIC COMBINATION STARTER - THREE PHASE MAGNETIC COMBINATION STARTER - SINGLE PHASE CONDUIT TURNED UP CONDUIT TURNED DOWN HEATER-WALL MOUNTED EXHAUST FAN/VENTILATOR EXISTING POWER POLE NEW POWER POLE LIGHTING POLE PHOTO CELL MANHOLE PULLBOX MUSHROOM HEAD EMERGENCY SWITCH DUCT SMOKE DETECTOR HEAT DETECTOR SMOKE DETECTOR ALL WORK IN THE ROOM/AREA SHALL CONFORM TO THE NEMA RATING INDICATED ELECTRICAL LINE UNDERGROUND ELECTRICAL LINE OVERHEAD INSTRUMENTATION LINE UNDERGROUND INSTRUMENTATION LINE OVERHEAD
--	--

WALL MOUNT PACKAGED HEAT PUMP SCHEDULE

TAG	MODEL	COOLING		TOTAL COOLING MBH	SENSIBLE COOLING MBH	EER ARI-390	HEATING @ 5F MBH	COP @ 5F	VOLTAGE / PHASE	OA CFM	FAN			ELEC. HEAT KW
		EAT DB/MB	OAT DB								CFM	ESP	RPM	
HP-SH	BARD W18HB	85/72	95	19.5	12.9	11.0	7.0	1.61	230/1φ	25	540	0.2"	A/R	4.0
HP-CR	BARD W18HB	85/72	95	19.5	12.9	11.0	7.0	1.61	230/1φ	25	540	0.2"	A/R	4.0
HP-WH	BARD W24HB	85/72	95	26.1	17.6	11.0	10.5	1.67	480/3φ	25	800	0.2"	A/R	5.0

NOTES:
 1. REFER TO HEAT PUMP SPECIFICATION FOR ADDITIONAL REQUIREMENTS
 2. BASIS OF DESIGN IS BARD
 3. PROVIDE MOTORIZED FRESH AIR DAMPER
 4. PROVIDE DIGITAL PROGRAMMABLE AUTO-CHANGEOVER THERMOSTAT
 5. PROVIDE BAKED ENAMEL FINISH, 100QHR ASTM BH117, COLOR TO BE SELECTED BY OWNER
 6. PROVIDE LOW AMBIENT CONTROL
 7. PROVIDE ALARM RELAY

GRILLES, REGISTERS, DIFFUSERS, AND LOUVERS SCHEDULE

TAG	BASIS OF DESIGN MFR	MODEL	NECK SIZE	MAX. CFM	AIR PATTERN	MAX P.D. IN W.C.	N.C.	REMARKS
LD-HC	GREENHECK	ECD-601	18" x 24"	900	46% FREE AREA	0.1	-	1,2,3,4,5

REMARKS:
 1. HORIZONTAL FRONT BLADES.
 2. FURNISH WITH CUSTOM COLOR AAMA 2605 70% KYNAR FINISH. COLOR TO BE SELECTED BY OWNER.
 3. PROVIDE BIRD SCREEN
 4. DAMPER SHALL BE EQUIPPED WITH ELECTRIC ACTUATOR, 120V, WITH LIMIT SWITCH
 5. PROVIDE FLANGED FRAME

LOCATION	CONDUCTORS	IO TAG	TYPE	UNIT	TOTAL	MONITOR	TREND	HISTORIZE	AVERAGE	ALARM	REPORT	NOTES
HENSON CREEK	2#14	POWER LOSS ALARM	DI							X		
	2#14	DOOR OPEN ALARM	DI							X		
	2#14	PUMP 1 CALL-TO-RUN	DO	X								
	2#14	PUMP 1 RUNNING STATUS	DI		X	X				X		REPORT # STARTS & RUNTIMES
	2#14	PUMP 1 OVERTEMP	DI							X		
	2#14	PUMP 1 DRIVE FAULT	DI							X		
	2#14	PUMP 1 SUCTION PRESSURE ALARM	DI							X		
	2#14	PUMP 2 CALL-TO-RUN	DO	X								
	2#14	PUMP 2 RUNNING STATUS	DI		X	X				X		REPORT # STARTS & RUNTIMES
	2#14	PUMP 2 OVERTEMP	DI							X		
	2#14	PUMP 2 DRIVE FAULT	DI							X		
	2#14	PUMP 2 SUCTION PRESSURE ALARM	DI							X		
	2#18 STIC	FLOWRATE	AI	GPM	X	X	X			X		REPORT DAILY & MONTHLY FLOW
	2#18 STIC	FLOW TOTAL PULSE	DI	GAL				X		X		
	2#18 STIC	SUCTION PRESSURE PRE-STRAINER	AI	PSIG	X	X	X			X		
	2#18 STIC	SUCTION PRESSURE PUMP 1	AI	PSIG	X	X	X			X		
	2#18 STIC	SUCTION PRESSURE PUMP 2	AI	PSIG	X	X	X			X		
	2#18 STIC	DISCHARGE PRESSURE	AI	PSIG	X	X	X			X		
	2#14	PLATE STRAINER DIFF. PRESSURE ALARM	DI							X		REPORT # STARTS & RUNTIMES
	2#14	GENSET RUN STATUS	DI		X	X				X		
	2#14	GENSET SUMMARY ALARM	DI							X		
	2#14	GENSET LOW-FUEL ALARM	DI							X		
CROSSROADS & WALNUT HILL (2 RTUs REQUIRED)	2#14	POWER LOSS ALARM	DI							X		
	2#14	DOOR OPEN ALARM	DI							X		
	2#14	PUMP 1 CALL-TO-RUN	DO	X								
	2#14	PUMP 1 RUNNING STATUS	DI		X	X				X		REPORT # STARTS & RUNTIMES
	2#14	PUMP 1 OVERTEMP	DI							X		
	2#14	PUMP 1 DRIVE FAULT	DI							X		
	2#14	PUMP 1 SUCTION PRESSURE ALARM	DI							X		
	2#14	PUMP 2 CALL-TO-RUN	DO	X								
	2#14	PUMP 2 RUNNING STATUS	DI		X	X				X		REPORT # STARTS & RUNTIMES
	2#14	PUMP 2 OVERTEMP	DI							X		
	2#14	PUMP 2 DRIVE FAULT	DI							X		
	2#14	PUMP 2 SUCTION PRESSURE ALARM	DI							X		
	2#18 STIC	FLOWRATE	AI	GPM	X	X	X			X		REPORT DAILY & MONTHLY FLOW
	2#18 STIC	FLOW TOTAL PULSE	DI	GAL				X		X		
	2#18 STIC	SUCTION PRESSURE PRE-STRAINER	AI	PSIG	X	X	X			X		
	2#18 STIC	SUCTION PRESSURE PUMP 1	AI	PSIG	X	X	X			X		
	2#18 STIC	SUCTION PRESSURE PUMP 2	AI	PSIG	X	X	X			X		
	2#18 STIC	DISCHARGE PRESSURE	AI	PSIG	X	X	X			X		
	2#14	PLATE STRAINER DIFF. PRESSURE ALARM	DI							X		
	2#14	HVAC UNIT ALARM	DI							X		
SHUGAR HILL	2#14	POWER LOSS ALARM	DI							X		
	2#14	DOOR OPEN ALARM	DI							X		
	2#14	PUMP 1 CALL-TO-RUN	DO	X								
	2#14	PUMP 1 RUNNING STATUS	DI		X	X				X		REPORT # STARTS & RUNTIMES
	2#14	PUMP 1 OVERTEMP	DI							X		
	2#14	PUMP 1 DRIVE FAULT	DI							X		
	2#14	PUMP 1 SUCTION PRESSURE ALARM	DI							X		
	2#14	PUMP 2 CALL-TO-RUN	DO	X								
	2#14	PUMP 2 RUNNING STATUS	DI		X	X				X		REPORT # STARTS & RUNTIMES
	2#14	PUMP 2 OVERTEMP	DI							X		
	2#14	PUMP 2 DRIVE FAULT	DI							X		
	2#14	PUMP 2 SUCTION PRESSURE ALARM	DI							X		
	2#18 STIC	FLOWRATE	AI	GPM	X	X	X			X		REPORT DAILY & MONTHLY FLOW
	2#18 STIC	FLOW TOTAL PULSE	DI	GAL				X		X		
	2#18 STIC	SUCTION PRESSURE PRE-STRAINER	AI	PSIG	X	X	X			X		
	2#18 STIC	SUCTION PRESSURE PUMP 1	AI	PSIG	X	X	X			X		
	2#18 STIC	SUCTION PRESSURE PUMP 2	AI	PSIG	X	X	X			X		
	2#18 STIC	DISCHARGE PRESSURE	AI	PSIG	X	X	X			X		
	2#14	PLATE STRAINER DIFF. PRESSURE ALARM	DI							X		
	2#14	HVAC UNIT ALARM	DI							X		

SCADA I-0
NO TO SCALE

ELECTRIC HEATER SCHEDULE

UNIT NO.	CAPACITY KW	CFM	VOLT / PHASE	MFR / MODEL NO.	REMARKS
EUH-HC	5.0	400	208/3φ	MARKEL 5100	1, 2, 3

REMARKS:
 1. BUILT IN ELECTRICAL DISCONNECT SWITCH.
 2. INTEGRAL THERMOSTAT.
 3. FURNISH WITH SWIVEL WALL BRACKET

FAN SCHEDULE

TAG	BASIS OF DESIGN MFR	MODEL NO.	CFM	EXT. S.P. (IN W.C.)	RPM	HP	VOLTAGE / PHASE	REMARKS
EF-HC	GREENHECK	CUE-095	900	0.3	1725	1/6	120/1φ	1, 2, 3

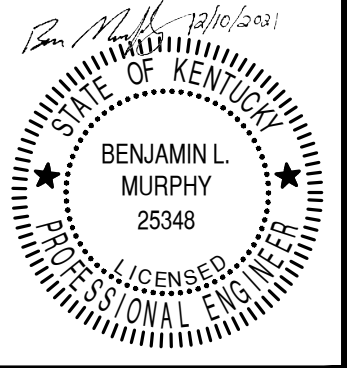
REMARKS:
 1. FURNISH GRAVITY BACKDRAFT DAMPER.
 2. FURNISH WITH ELECTRIC DISCONNECT SWITCH INTERNAL TO MOTOR COMPARTMENT
 3. FURNISH WITH BIRD SCREEN.

LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOG SERIES	LAMPS	VOLTAGE	MOUNTING	DESCRIPTION	SYMBOL
LF-1	HOLOPHANE	EMS LED	LED	120V	SURFACE	LINEAR ENCLOSED, 6000 LUMEN, 5000K, 90 CRI, ACRYLIC CLEAR LOW PROFILE LENS, 48" LENGTH, 5-YEAR WARRANTY, 3SW	
LF-1E	HOLOPHANE	EMS LED	LED	120V	SURFACE	SAME AS LF-1 WITH EMERGENCY BATTERY PACK, 90 MINUTE	
LF-2	HOLOPHANE	W4GLED	LED	120V	SURFACE	WALLPACK, 3400 LUMEN, 5000K, WITH PHOTOCELL, POWDER-COATED ALUMINUM, VANDAL-RESISTANT POLYCARBONATE LENS, WET LOCATION, FULL CUTOFF, 5YR WARRANTY, COLOR TO BE SELECTED BY OWNER	
LF-3	HOLOPHANE	CZAFD	LED	120V	SURFACE	EMERGENCY FIXTURE, ARCHITECTURAL DIE-CAST HOUSING, WET LOCATION, POWDER-COAT PAINT COLOR TO BE SELECTED BY OWNER, COLD WEATHER -22F TO 122F 90-MINUTE BATTERY, TEST BUTTON, PHOTOCELL NORMALLY-ON, WIDE THROW, 5-YEAR WARRANTY	

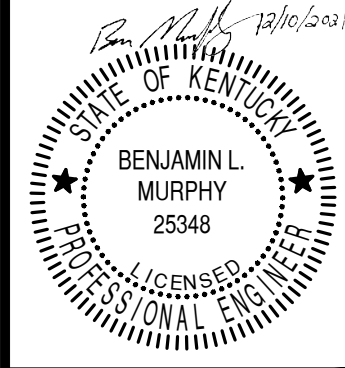


EAST CASEY COUNTY WATER DISTRICT
 2018 WATER SYSTEM IMPROVEMENTS
 CASEY COUNTY, KENTUCKY

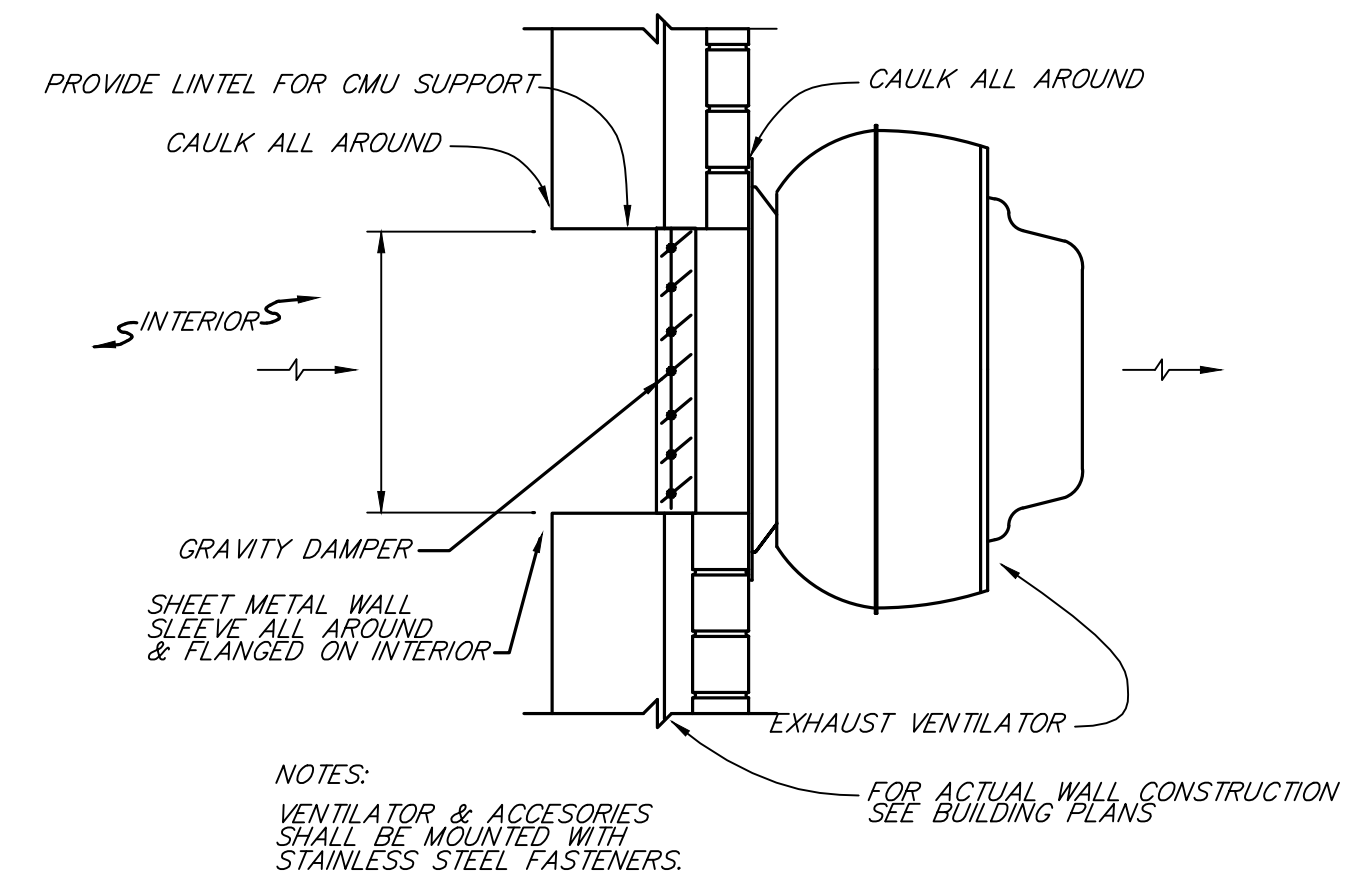
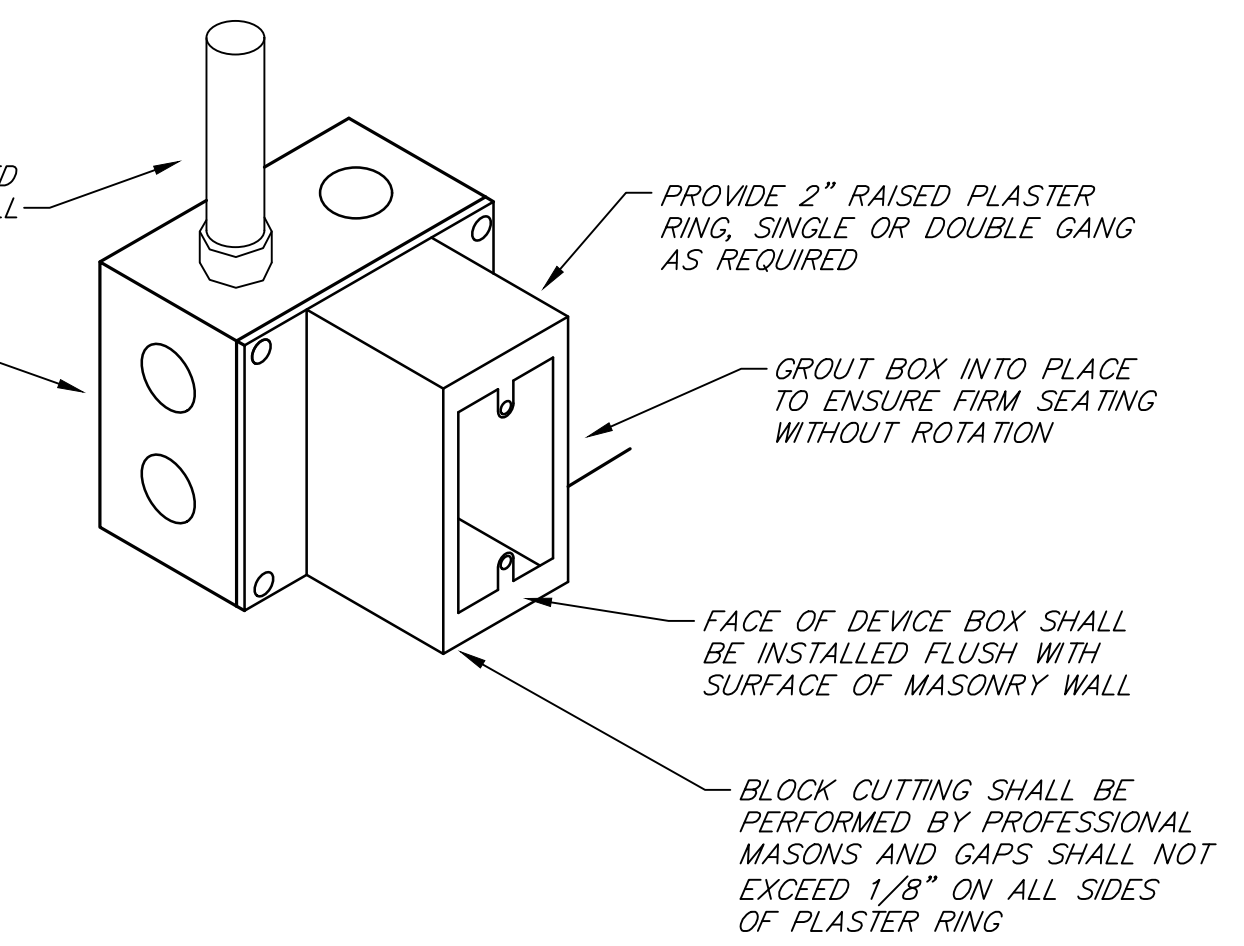
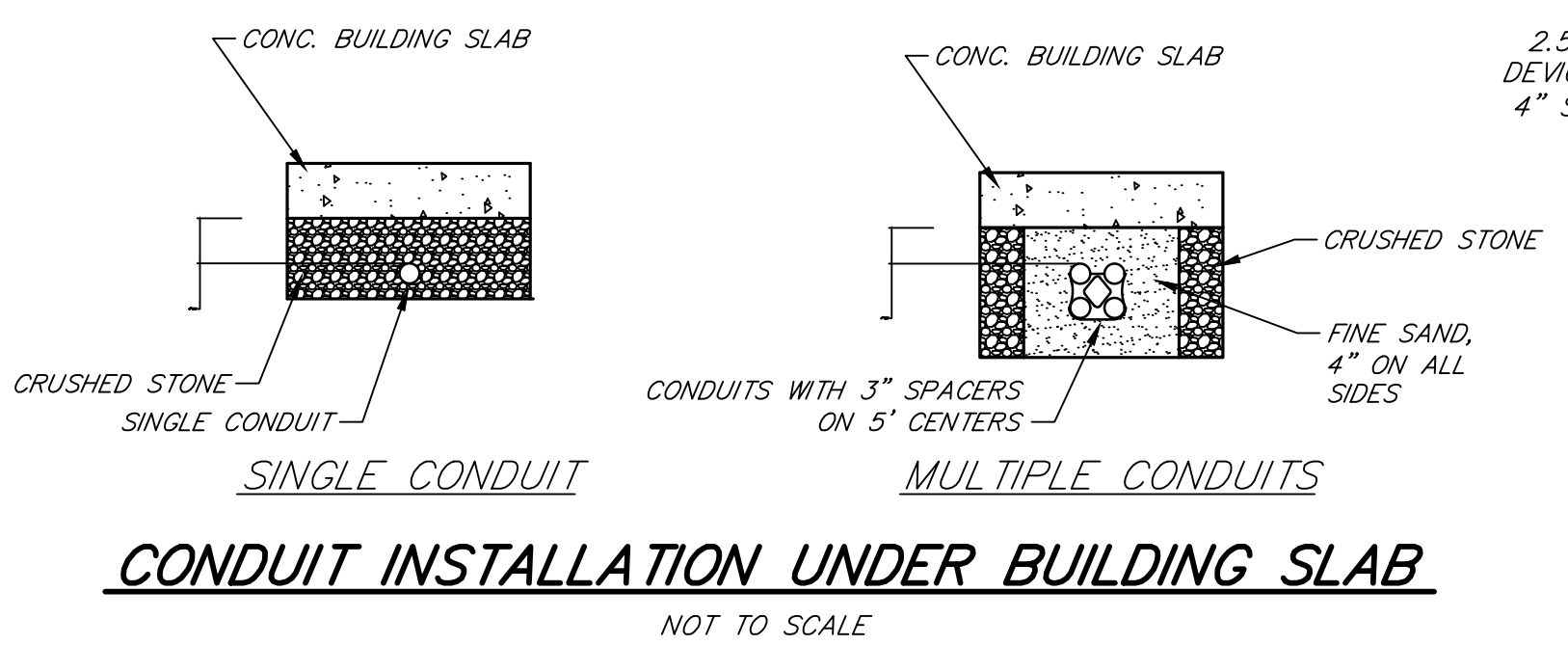
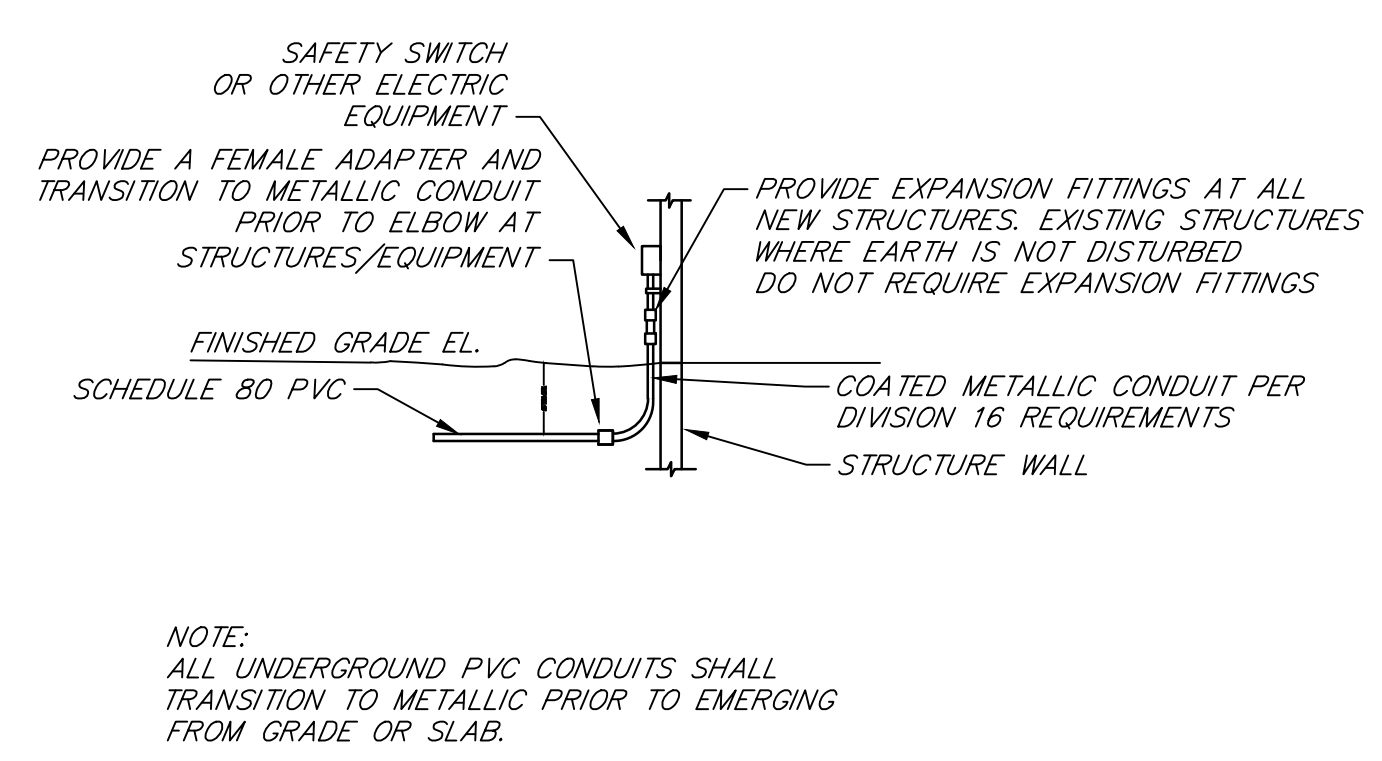
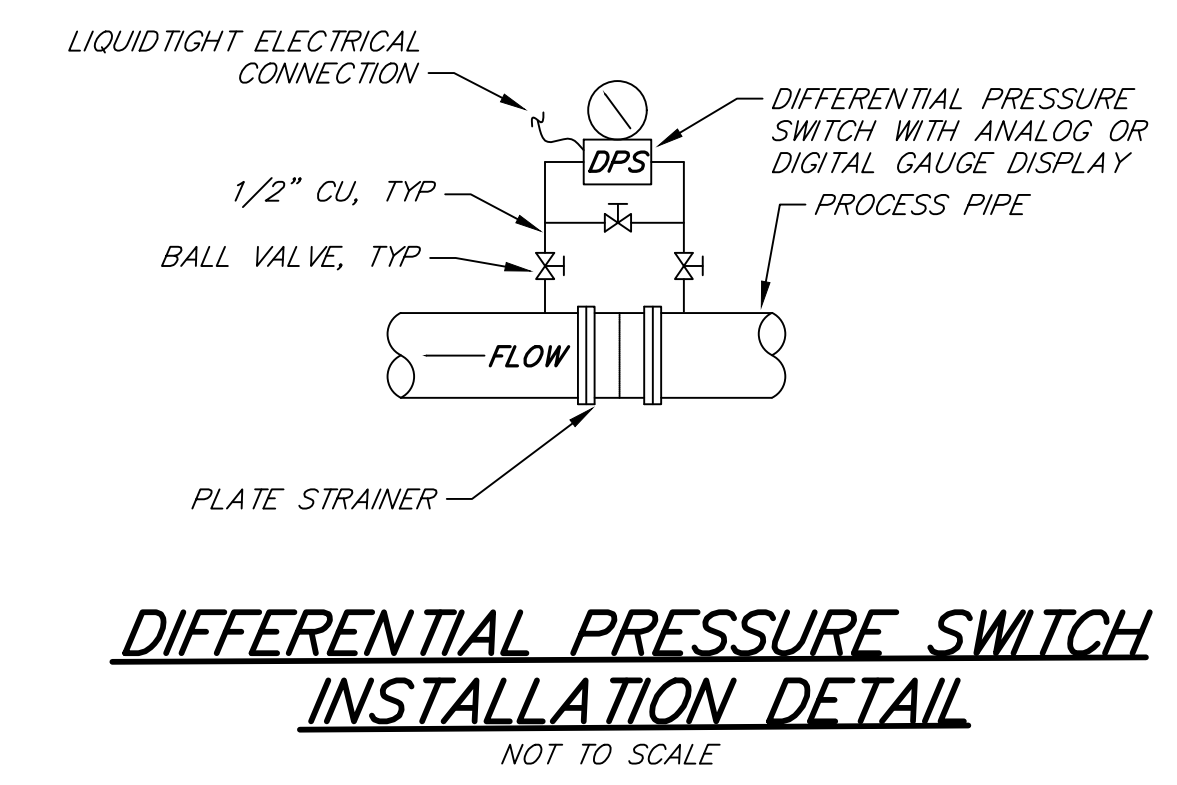
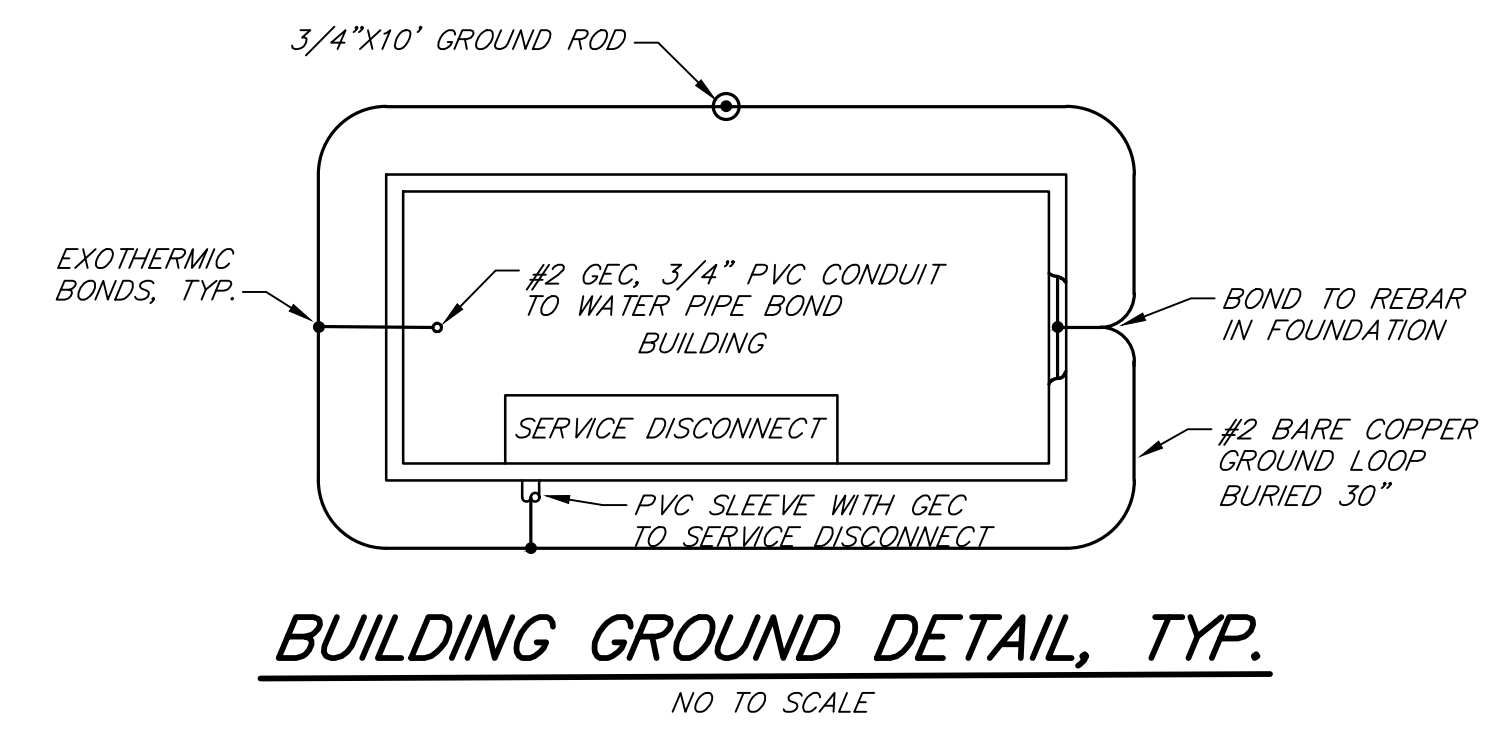
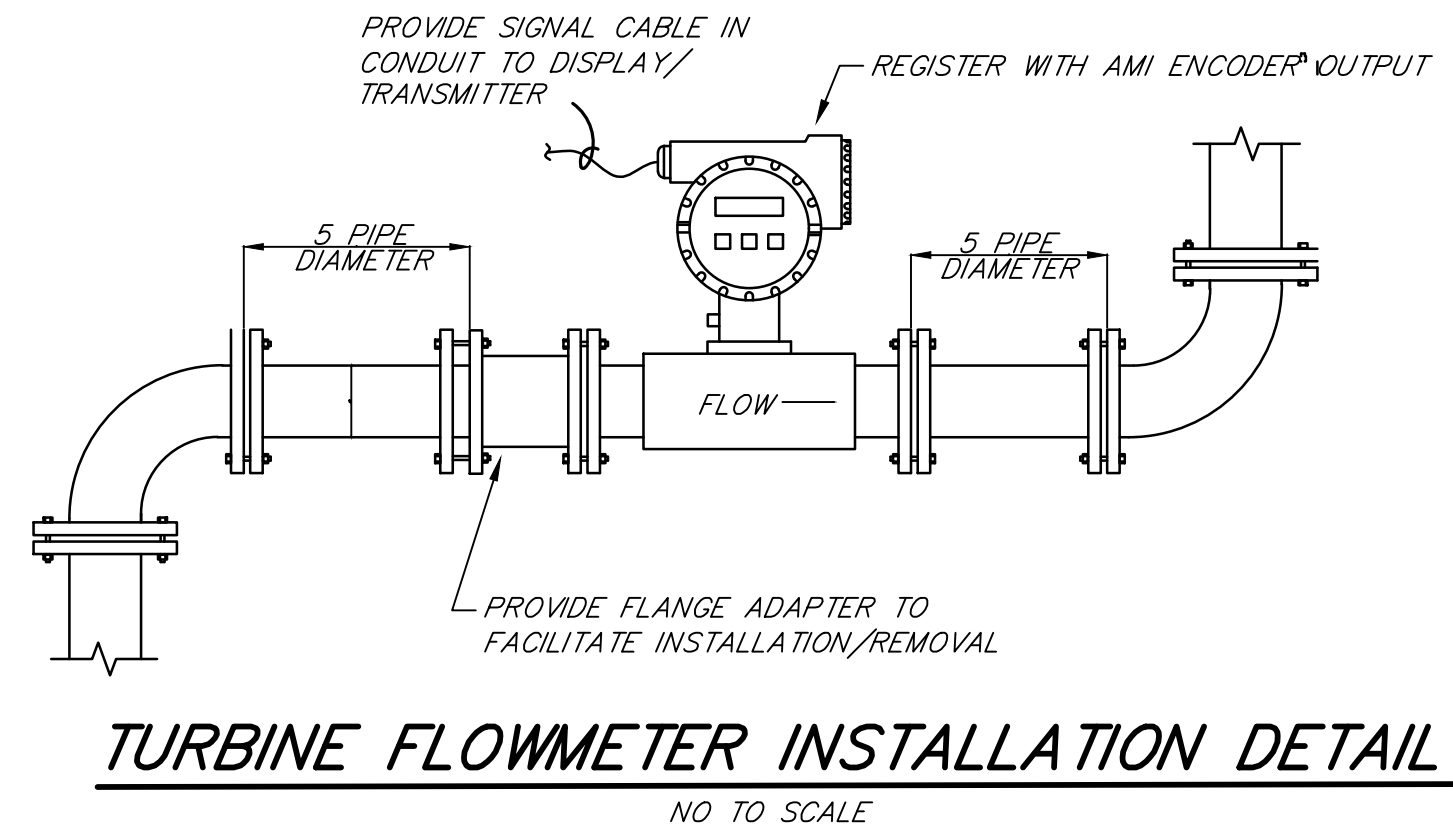
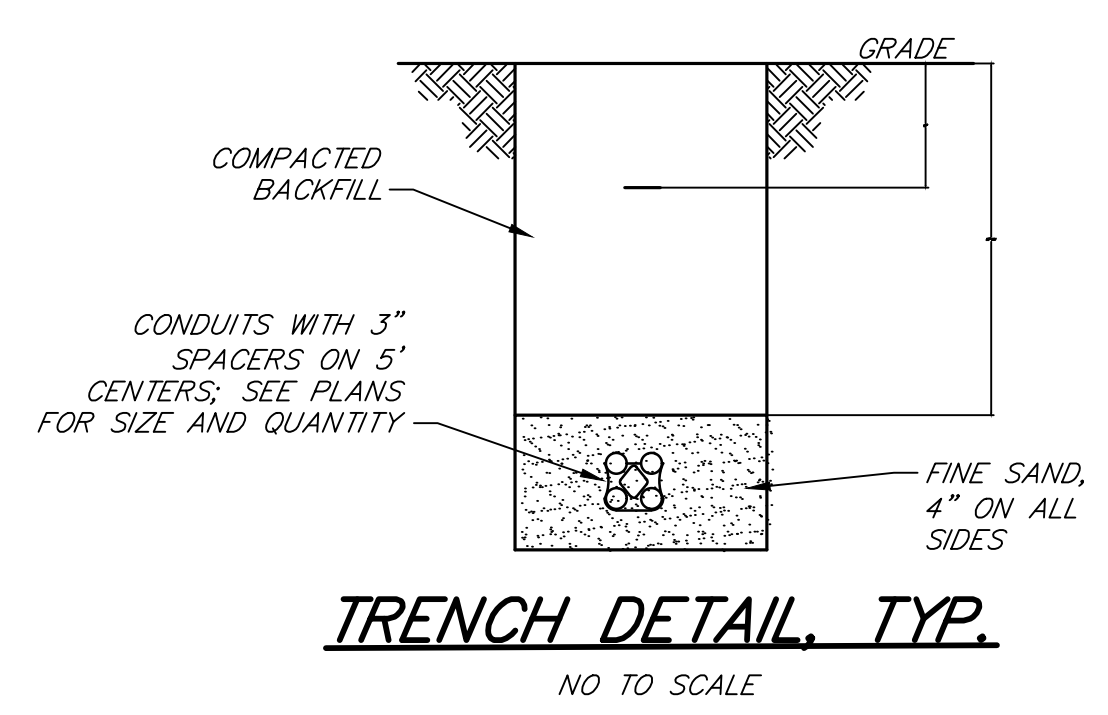


DRAWN BY: CA
CHECKED BY: BLM
DATE: JUNE 2021
SCALE: AS NOTED
REVISIONS





DRAWN BY: CA	REVISIONS
CHECKED BY: BIM	
DATE: 08/20/2018	
SCALE: AS NOTED	

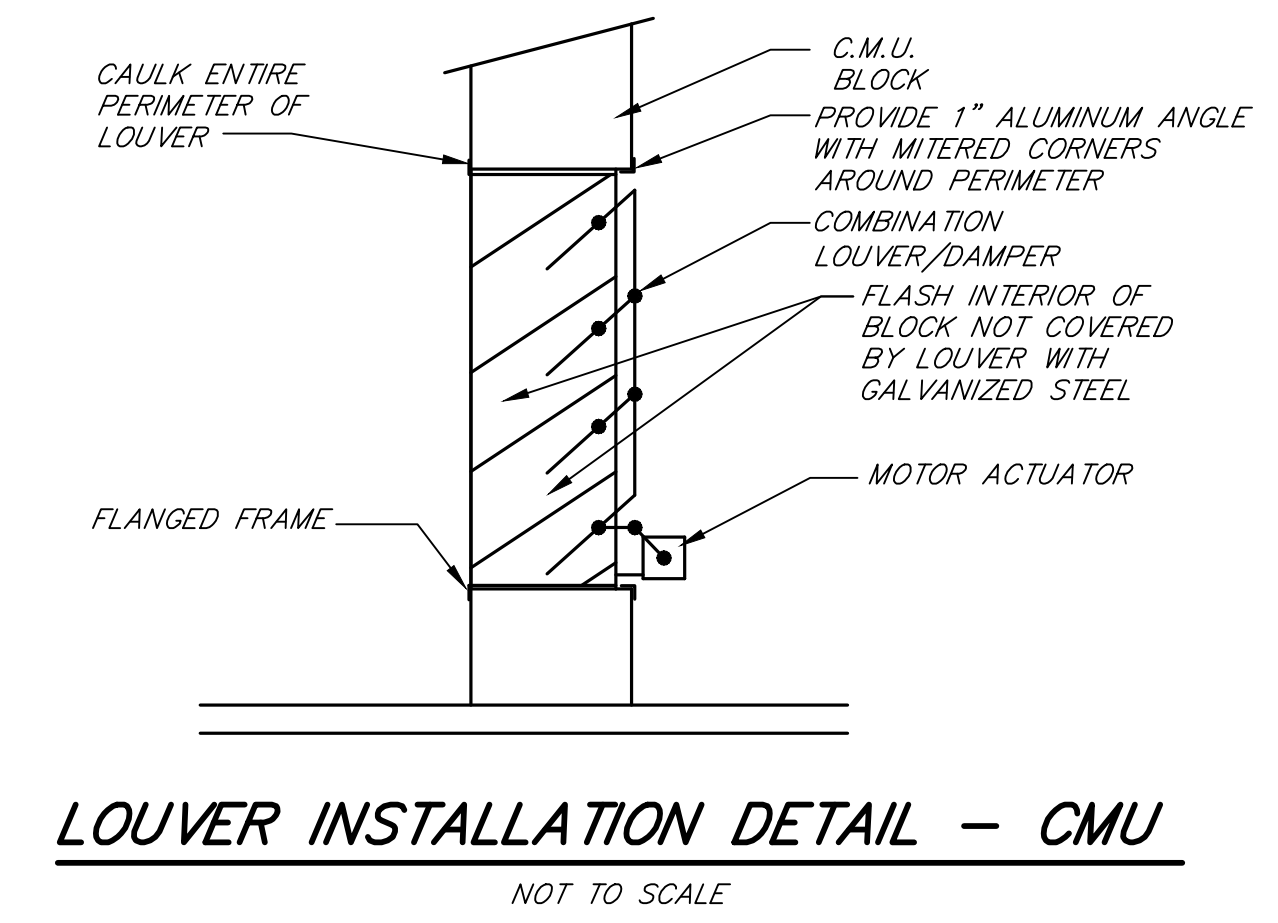
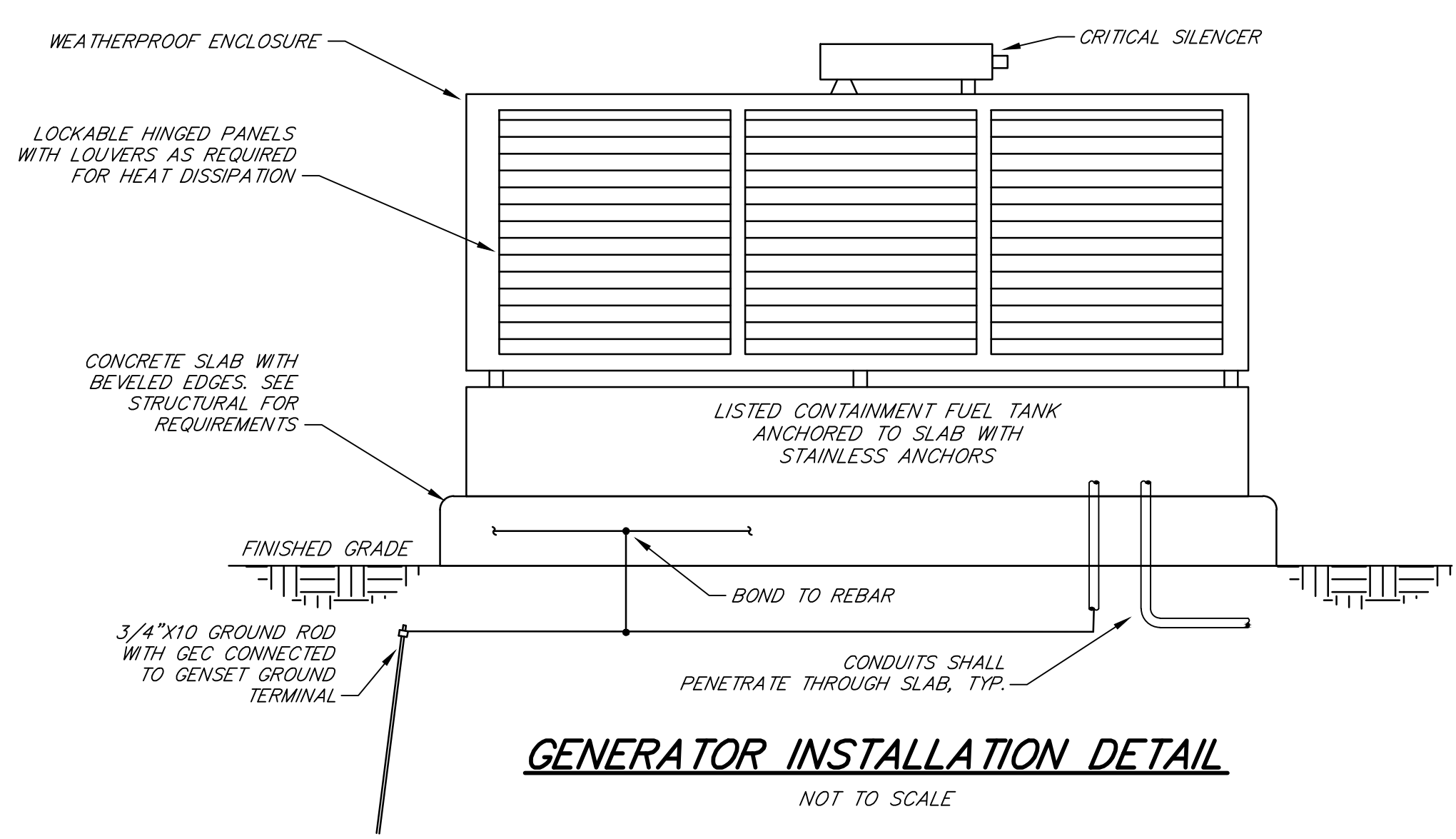
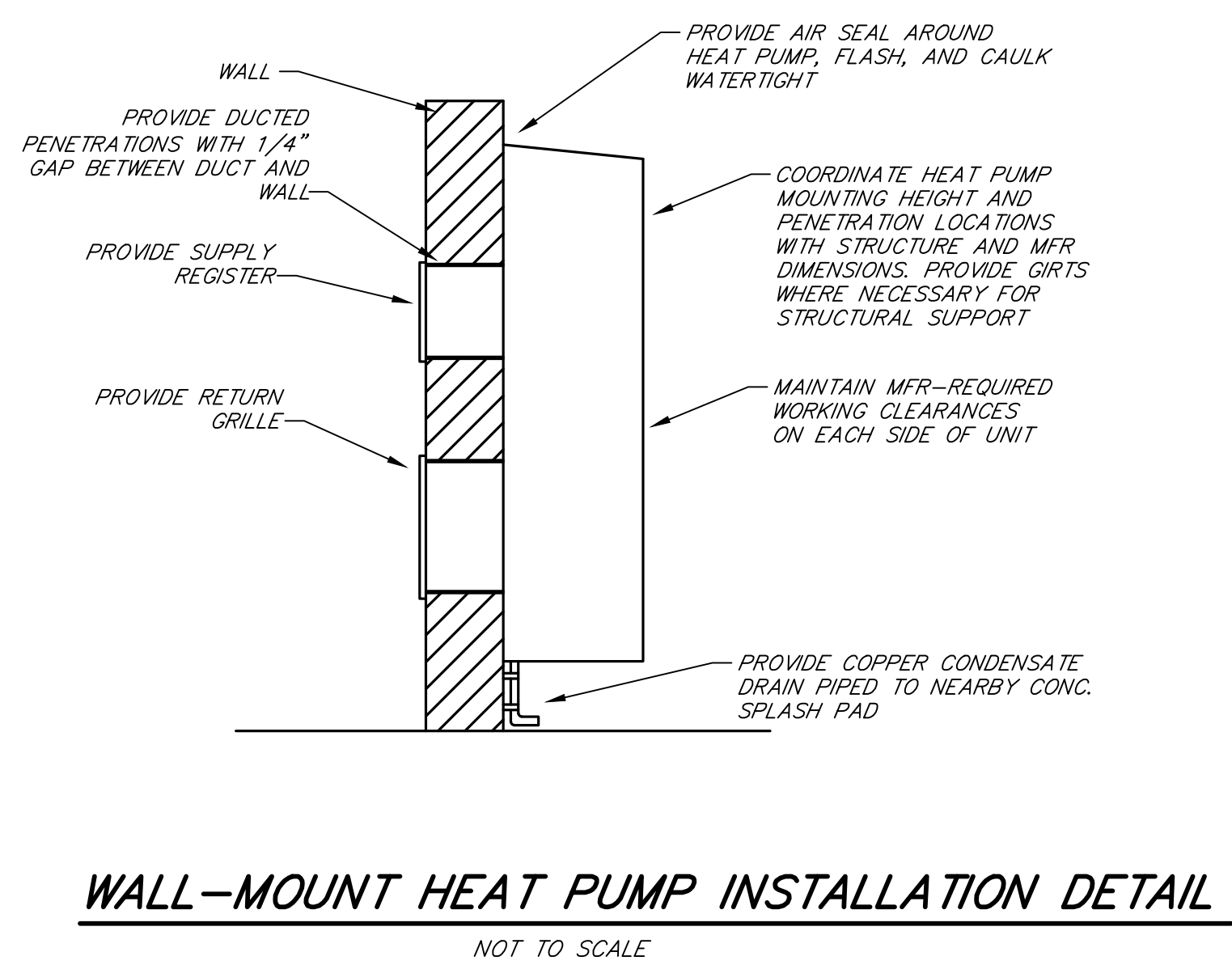


TYPICAL UNDERGROUND PVC CONDUIT TRANSITION TO METALLIC CONDUIT
NO TO SCALE

CONDUIT INSTALLATION UNDER BUILDING SLAB
NOT TO SCALE

MASONRY DEVICE BOX DETAIL
NOT TO SCALE

WALL EXHAUST VENTILATOR
NOT TO SCALE

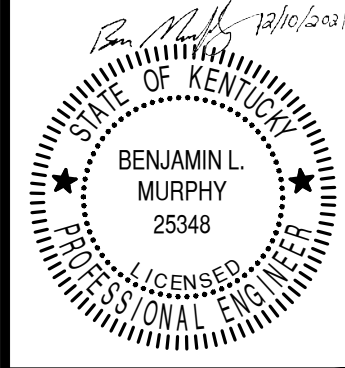


WALL-MOUNT HEAT PUMP INSTALLATION DETAIL
NOT TO SCALE

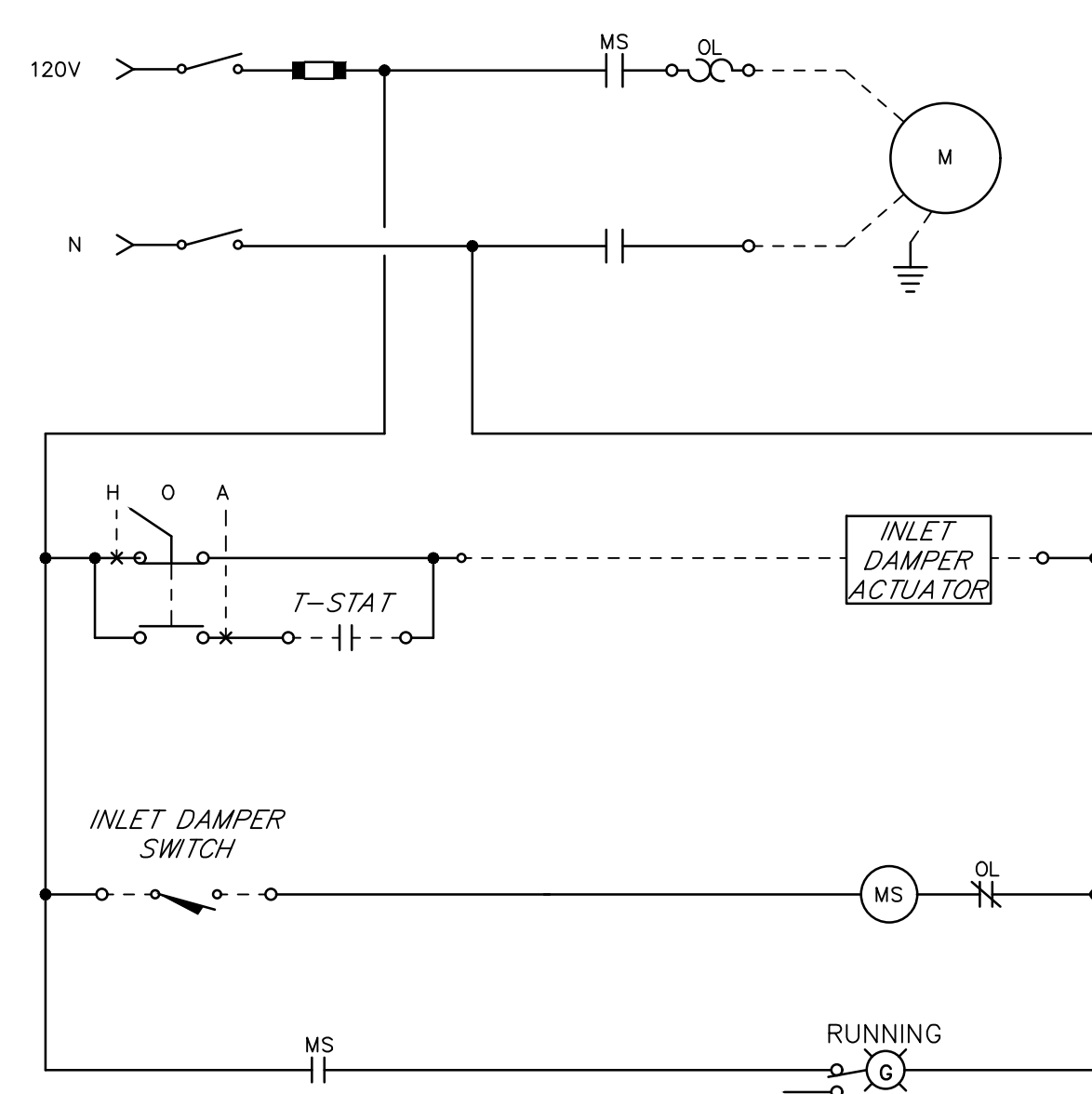
GENERATOR INSTALLATION DETAIL
NOT TO SCALE

LOUVER INSTALLATION DETAIL - CMU
NOT TO SCALE

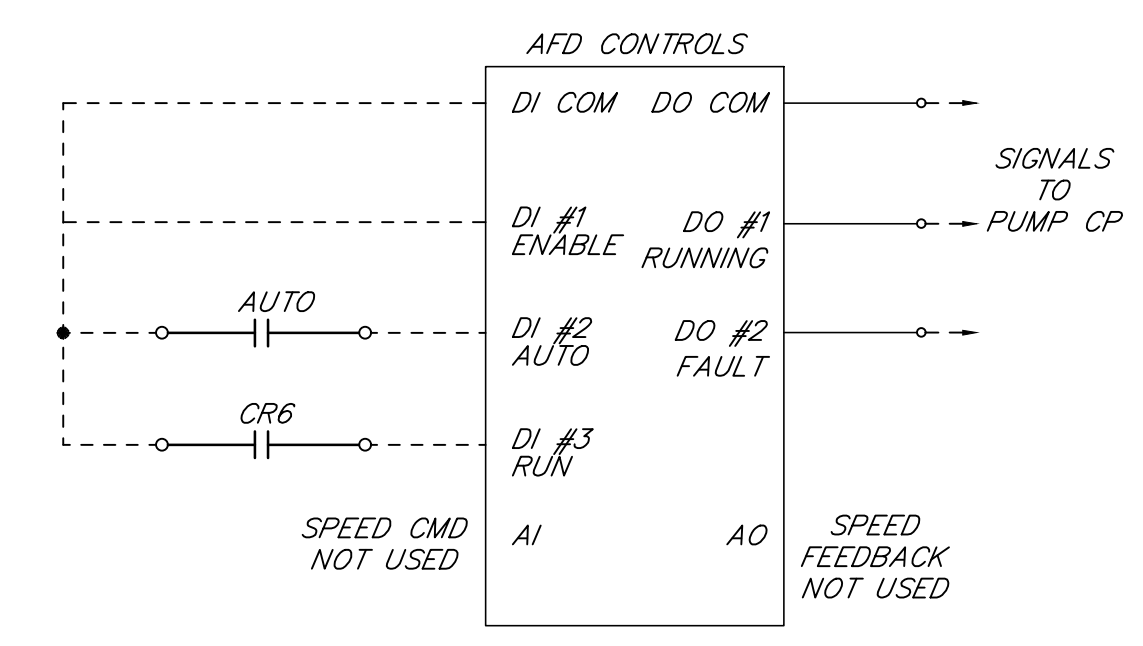
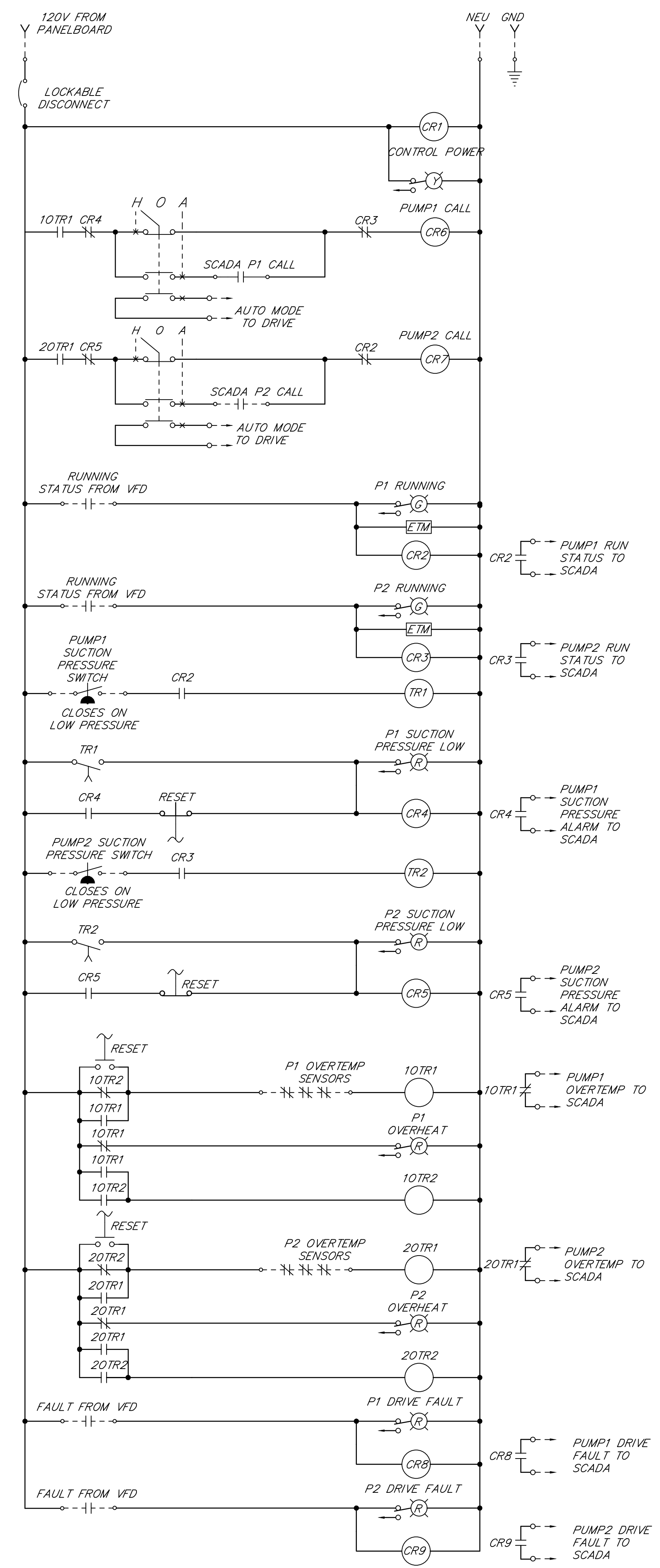




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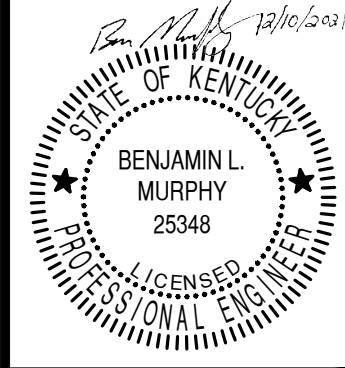
EXHAUST FAN/LOUVER CONTROL CIRCUIT
 NOT TO SCALE



PUMP STATION CONTROL PANEL
 NOT TO SCALE

- SEE PLANS, SPECIFICATIONS AND SCADA I/O TABLE FOR FURTHER REQUIREMENTS.
- IN HAND MODE, SPEED SHALL BE SET FROM DRIVE INTERFACE MODULE. IN AUTO MODE, SPEED SHALL BE SET IN PRESET FREQUENCY PARAMETER.
- DRIVES SHALL BE WALL-MOUNTED SEPARATE FROM PANEL AS INDICATED ON PLANS





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DESIGNED BY: BIM
SCALE: AS NOTED
REVISIONS

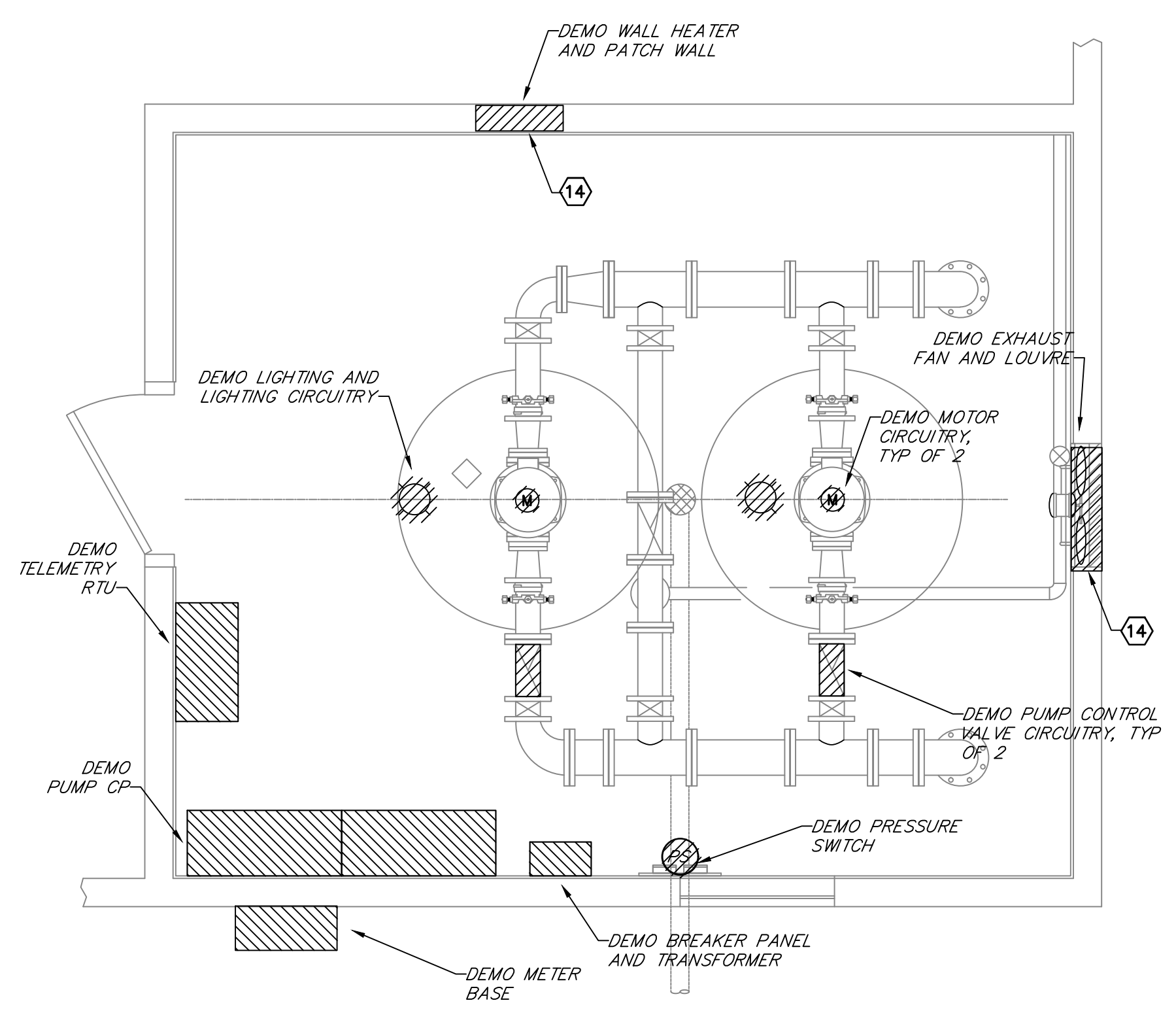


GENERAL SHEET NOTES:

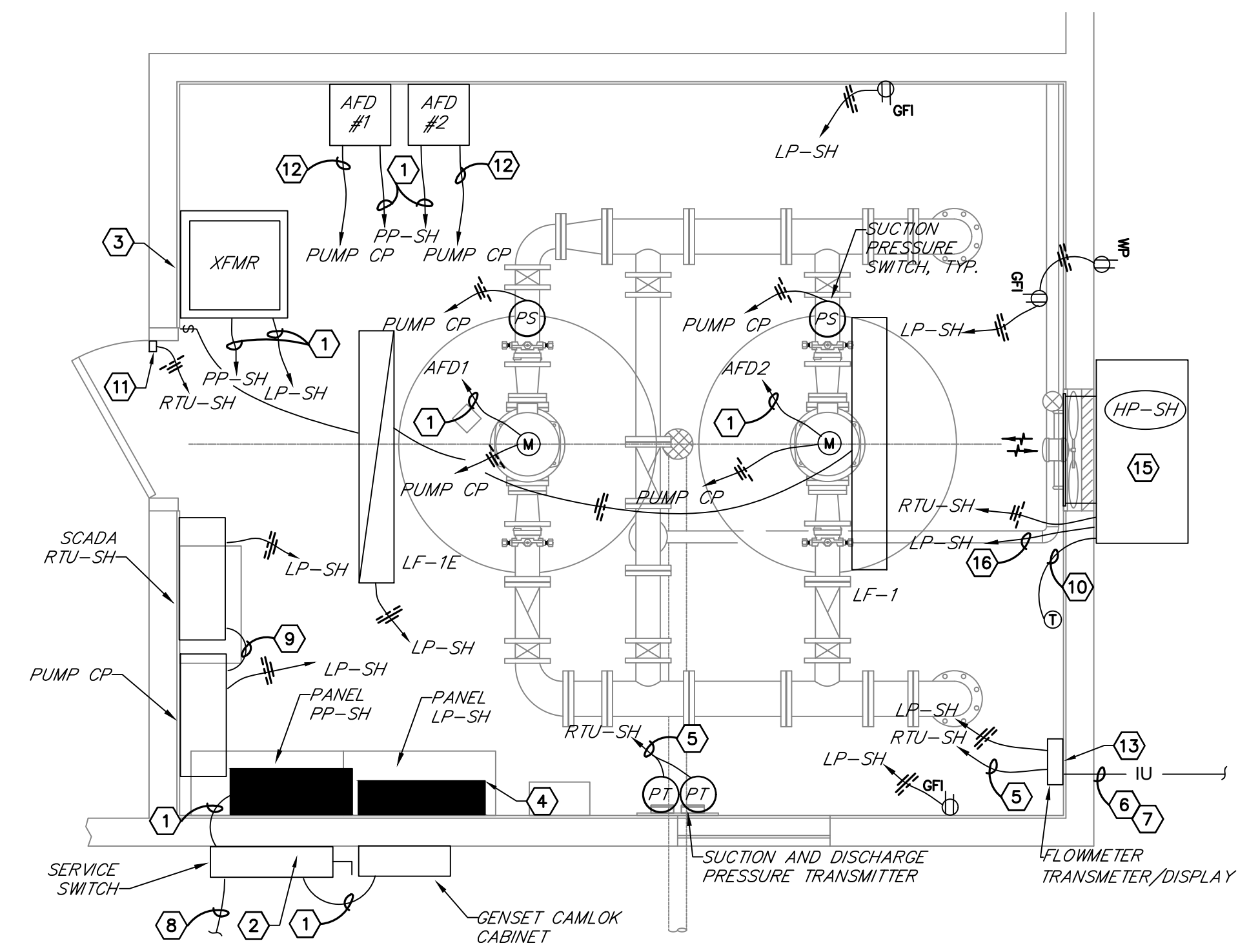
- SHUGARS HILL UTILITY IS TAYLOR COUNTY RECC
- EXTERIOR EQUIPMENT SHALL BE NEMA 4X SS 316. INTERIOR EQUIPMENT SHALL BE NEMA 1 OR 12

SHEET NOTES:

- SEE ONE-LINE DIAGRAM FOR REQUIREMENTS
- PROVIDE REPLACEMENT OR RECONNECTION OF EXISTING THRU-ROOF RISER WITH WEATHERHEAD
- PROVIDE TRANSFORMER PER ONE-LINE DIAGRAM INSTALLED ON 4" CONC PAD
- RECONNECT APPROXIMATELY 10 EXISTING SINGLE-PHASE CIRCUITS TO NEW PANELBOARD
- PROVIDE 2-2#18 STIC, 1#14G, 3/4"C
- PROVIDE 80FT OF UNDERGROUND 4#18 STIC, 1#14G, 1"C TO FLOWMETER SENSOR
- PROVIDE FLOWMETER INTERFACE SENSOR/REGISTER FOR EXISTING MUELLER-HERSEY FLOWMETER
- PROVIDE #4 GEC, 3/4"C AND PROVIDE 2-3/4"X10' GROUND RODS SPACED 10' APART
- PROVIDE 20#14, 1#14G, 1"C
- PROVIDE THERMOSTAT CABLE, 1#14G, 3/4"C
- PROVIDE DOOR CONTACT SWITCH
- PROVIDE 10#14, 1#14G, 3/4"C
- PROVIDE FLOW METER DISPLAY/TRANSMITTER IN WINDOWED NEMA 4X ENCLOSURE WITH POWER SUPPLY
- PATCH EX WALL WITH INSULATION AND PAINTED PLYWOOD
- PROVIDE WALL-MOUNTED HEAT PUMP. SEE HEAT PUMP SCHEDULE AND INSTALLATION DETAIL
- PROVIDE 2#8, 1#10G, 3/4"C



SHUGARS HILL ELECTRICAL DEMOLITION PLAN
 SCALE: 1/2"=1'-0"



SHUGARS HILL ELECTRICAL NEW WORK PLAN
 SCALE: 1/2"=1'-0"

PANEL:	LP-SH	VOLTAGE:	120/240V, 1Ø, 3W
ENCLOSURE:	NEMA 1	MAINS AMPACITY:	100A
MOUNTING:	WALL	MAIN C.B. SIZE:	75A
LOCATION:	SHUGARS HILL P.S.	TOTAL SPACES:	30

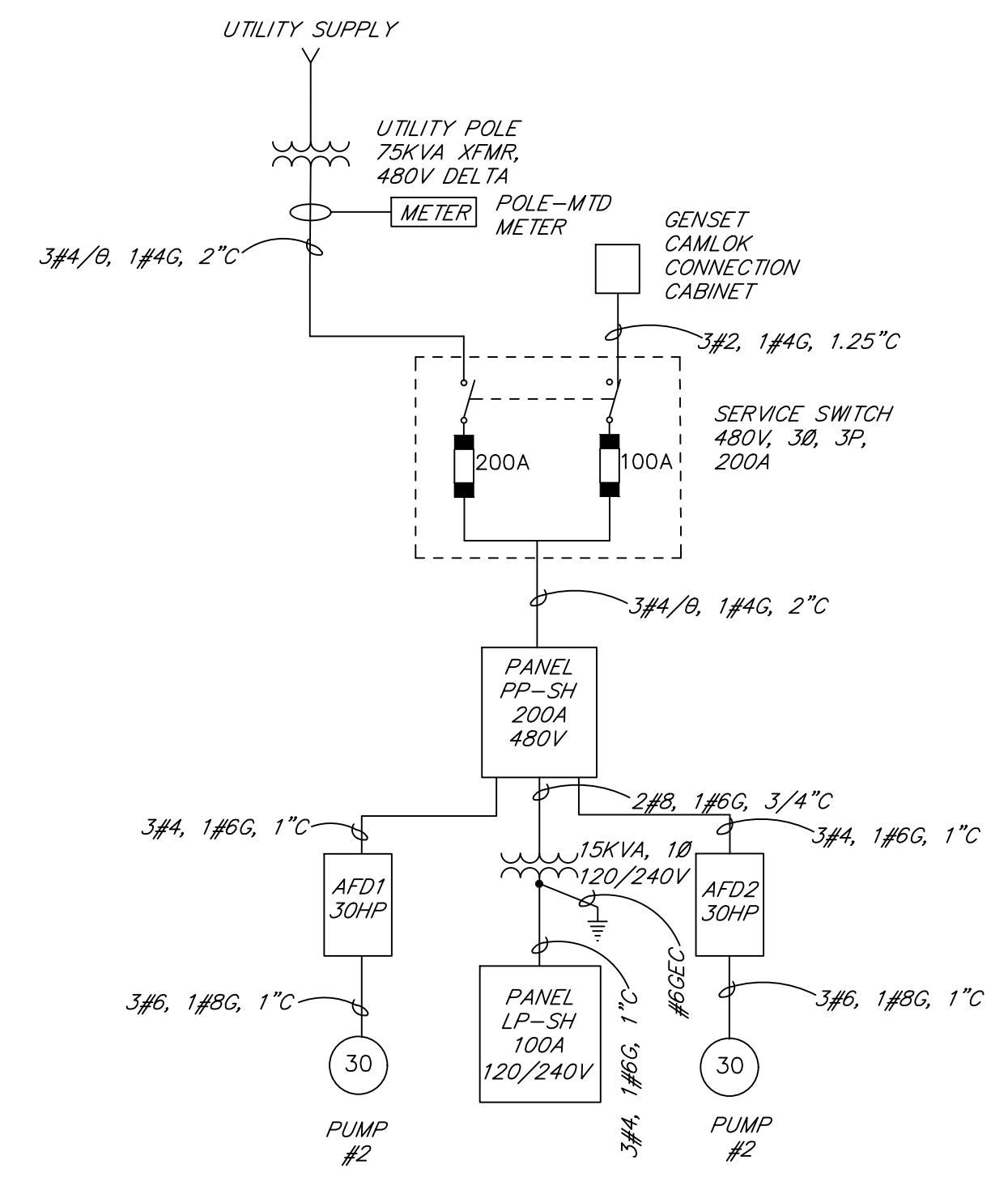
CIRCUIT DESCRIPTION	VA	POLES	BREAKER	NO	PHASE A VA	PHASE B VA	NO	BREAKER	POLES	VA	CIRCUIT DESCRIPTION
SPD		2	30A	1	600		2	20A	1	600	PUMP CP
				3			4	20A	1	500	SCADA RTU
RECEPTACLE	200	1	20A	5	300		6	15A	1	100	FLOWMETER
RECEPTACLE	200	1	20A	7		300	8	20A	1	100	PUMP ROOM LIGHTS
RECEPTACLE	200	1	20A	9	200		10	20A	2		SPARE
SPARE		1	20A	11		0	12				
HP-SH HEAT PUMP	4200	2	40A	13	4200		14	20A	2		SPARE
	4200		40A	15		4200	16				
SPARE		1	20A	17	0		18	20A	1		SPARE
SPARE		1	20A	19		0	20	20A	1		SPARE
SPARE		1	20A	21	0		22	20A	1		SPARE
SPARE		1	15A	23		0	24	15A	1		SPARE
SPARE		1	15A	25	0		26	15A	1		SPARE
				27		0	28				
				29		0	30				
TOTAL VA PER PHASE: 5300 5000											
TOTAL AMPS PER PHASE: 44.2 41.7											
TOTAL PANEL VA: 10300											

NOTES:
1. PROVIDE AN INTEGRAL SURGE PROTECTION DEVICE (SPD), 80KA MIN

PANEL:	PP-SH	VOLTAGE:	480V, 3Ø, 3W
ENCLOSURE:	NEMA 1	MAINS AMPACITY:	200
MOUNTING:	WALL	MAIN C.B. SIZE:	200
LOCATION:	SHUGARS HILL P.S.	TOTAL SPACES:	30

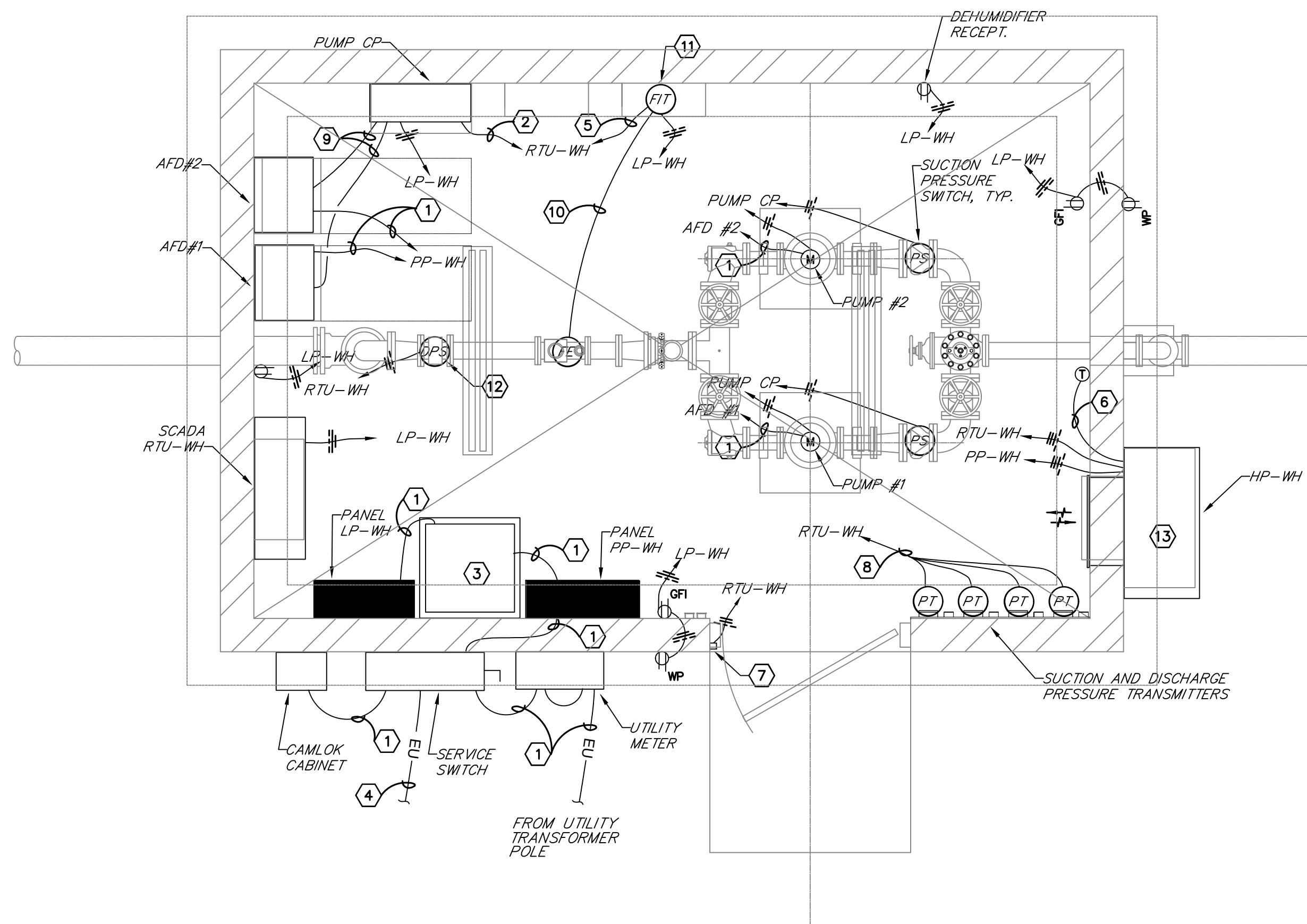
CIRCUIT DESCRIPTION	VA	POLES	BREAKER	NO	PHASE A VA	PHASE B VA	PHASE C VA	NO	BREAKER	POLES	VA	CIRCUIT DESCRIPTION
PANEL LP-SH / XFMR	7500	2	60A	1	19500			2	60A	3	12000	PUMP #1 DRIVE
	7500			3		19500		4			12000	
				5			12000	6			12000	
SPARE		3	60A	7	12000			8	60A	3	12000	PUMP #2 DRIVE
				9		12000		10			12000	
				11			12000	12			12000	
SPARE		3	15A	13	0			14	20A	3		SPARE
				15		0		16				
				17			0	18				
				19		0		20				
				21			0	22				
				23			0	24				
				25			0	26				
				27			0	28				
				29			0	30				
TOTAL VA PER PHASE: 31500 31500 24000												
TOTAL AMPS PER PHASE: 113.7 113.7 86.6												
TOTAL PANEL VA: 87000												

NOTES:
1. PROVIDE INTEGRAL SURGE PROTECTION DEVICE, 150KA MIN.



SHUGARS HILL ONE-LINE DIAGRAM
 NO TO SCALE





WALNUT HILL POWER PLAN

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

PANEL:	LP-WH	VOLTAGE:	120/240V, 1Ø, 3W
ENCLOSURE:	NEMA 1	MAINS AMPACITY:	100A
MOUNTING:	SURFACE	MAIN C.B. SIZE:	75A
LOCATION:	WALNUT HILL P.S.	TOTAL SPACES:	30

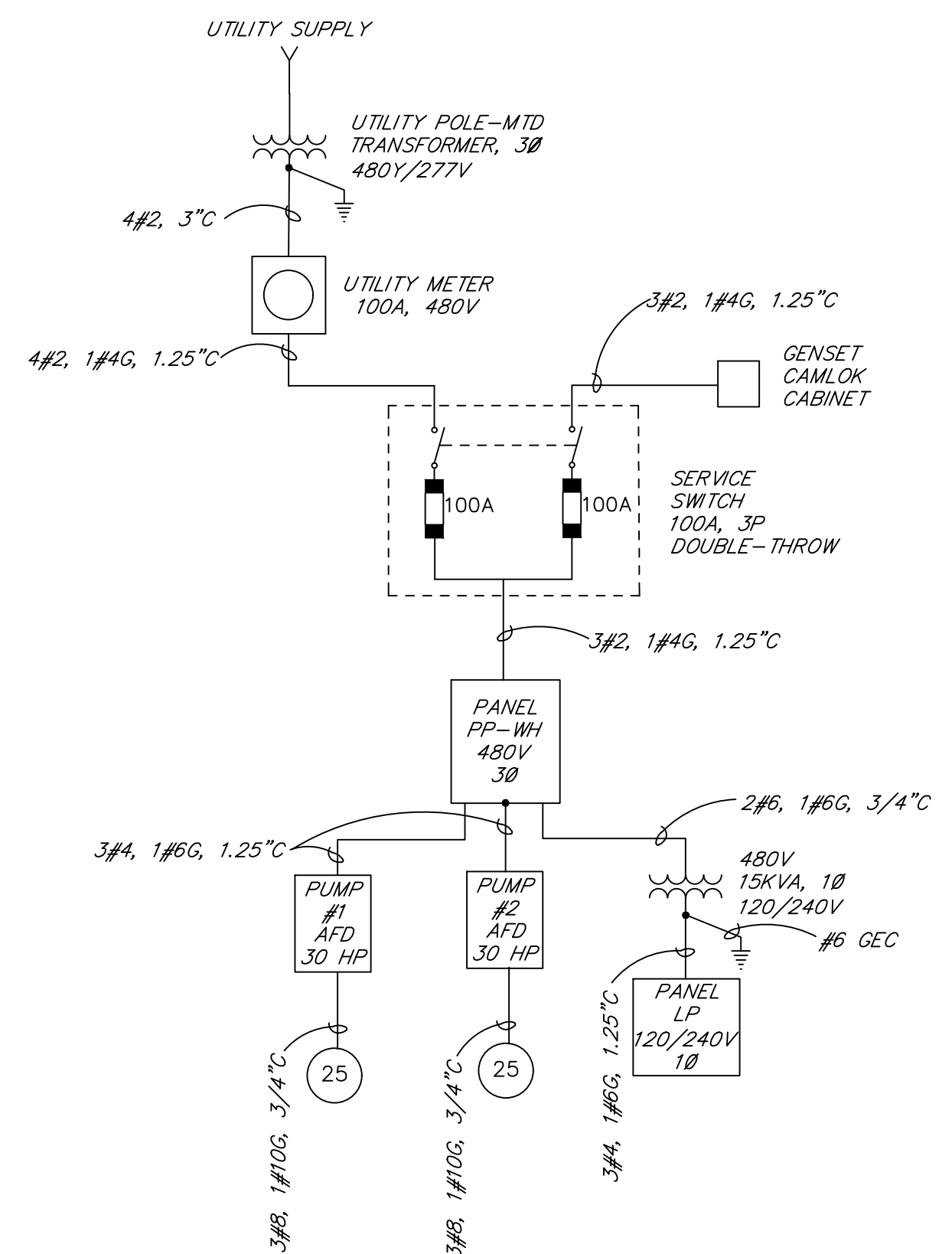
CIRCUIT DESCRIPTION	VA	POLES	BREAKER	NO	PHASE A		PHASE B		BREAKER	POLES	VA	CIRCUIT DESCRIPTION
					VA	NO	VA	NO				
SPD		2	30A	1	0	2	30A	2				SPARE
LIGHTING - INTERIOR	700	1	20A	5	1200	6	20A	1	500			SCADA RTU-WH
RECEPTACLES	600	1	20A	7		700	8	15A	1	100		FLOWMETER
RECEPTACLES	600	1	20A	9	1200	10	20A	1	600			RECEPTACLE
PUMP CP	500	1	20A	11		2000	12	20A	1	1500		DEHUMIDIFIER RECEPT.
LIGHTING - EXTERIOR	100	1	20A	13	100	14	20A	1				SPARE
SPARE	1	20A	15		0	16	15A	1				SPARE
SPARE	1	20A	17		0	18	15A	1				SPARE
SPARE	1	20A	19		0	20	15A	1				SPARE
SPARE	1	20A	21		0	22	15A	1				SPARE
			23		0	24						
			25		0	26						
			27		0	28						
			29		0	30						
TOTAL VA PER PHASE:					2500	2700						
TOTAL AMPS PER PHASE:					20.8	22.5	TOTAL PANEL VA:		5200			

NOTES:
1. PROVIDE AN INTEGRAL SURGE PROTECTION DEVICE (SPD), 80KA MIN.

PANEL:	PP-WH	VOLTAGE:	480V, 3Ø, 3W
ENCLOSURE:	NEMA 1	MAINS AMPACITY:	100
MOUNTING:	WALL	MAIN C.B. SIZE:	100
LOCATION:	WALNUT HILL P.S.	TOTAL SPACES:	30

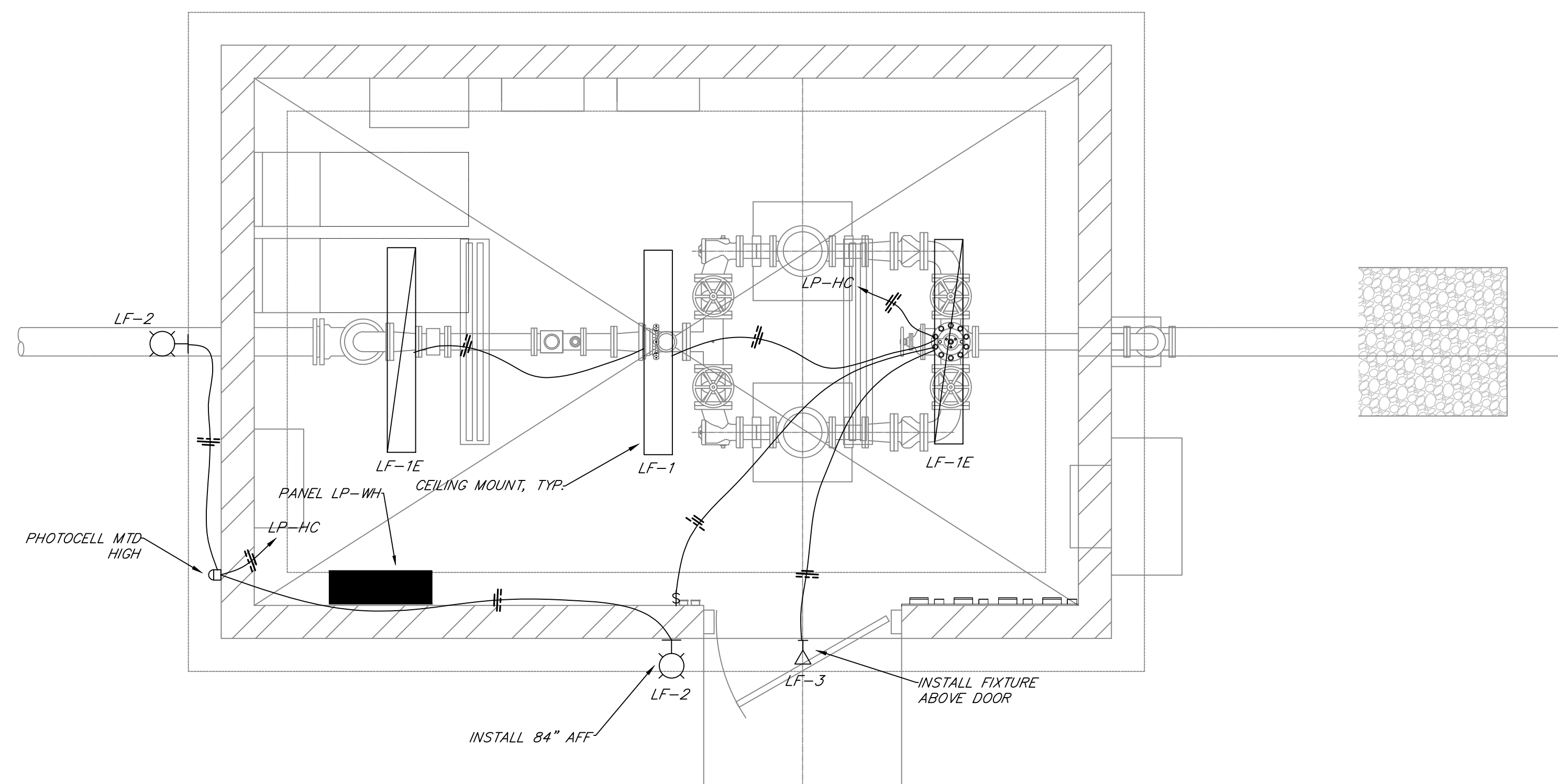
CIRCUIT DESCRIPTION	VA	POLES	BREAKER	NO	PHASE A		PHASE B		PHASE C		BREAKER	POLES	VA	CIRCUIT DESCRIPTION
					VA	NO	VA	NO	VA	NO				
PANEL LP-WH / XFMR	7500	2	60A	1	19500	2	60A	3	12000					PUMP #1 DRIVE
	7500			3		19500	4		12000					
				5		12000	6		12000					
SPARE		3	60A	7	0		8	60A	3					PUMP #2 DRIVE
				9		0	10							
				11		0	12							
HEAT PUMP HP-WH	4200	3	20A	13	4200	14	15A	1						SPARE
	4200			15	4200	16								
	4200			17		4200	18							
				19	0		20							
				21		0	22							
				23		0	24							
				25	0		26							
				27		0	28							
				29		0	30							
TOTAL VA PER PHASE:					23700	23700	16200							
TOTAL AMPS PER PHASE:					85.6	85.6	58.5	TOTAL PANEL VA:		63600				

NOTES:
1. PROVIDE INTEGRAL SURGE PROTECTION DEVICE, 150KA MIN.



WALNUT HILL ONE-LINE DIAGRAM

NO TO SCALE



WALNUT HILL LIGHTING PLAN

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

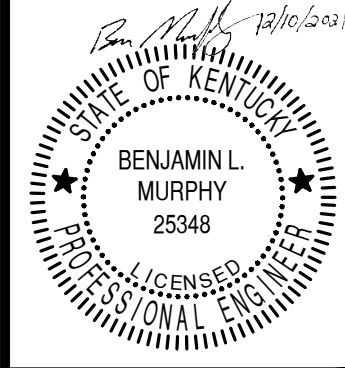
GENERAL SHEET NOTES:

- EXTERIOR ELECTRICAL EQUIPMENT SHALL BE NEMA 4X STAINLESS TYPE 316. INTERIOR ELECTRICAL EQUIPMENT SHALL BE NEMA 1 OR NEMA 12

SHEET NOTES:

- SEE ONE-LINE DIAGRAM, THIS SHEET, FOR REQUIREMENTS
- PROVIDE 2Ø#14, 1#14G, 1"Ø
- PROVIDE TRANSFORMER MTD ON 4" CONC. PAD
- PROVIDE #4 GEC AND PROVIDE BUILDING GROUND LOOP PER DETAIL
- PROVIDE 2-2#18 STIC, 1#14G, 3/4"Ø
- PROVIDE THERMOSTAT CABLE, 1#14G, 3/4"Ø
- PROVIDE DOOR CONTACT SWITCH
- PROVIDE 4-2#18 STIC, 1#14G, 1"Ø
- PROVIDE 10#14, 1#14G, 3/4"Ø
- PROVIDE 4#18 STIC, 1#14G, 3/4"Ø
- PROVIDE FLOW METER DISPLAY/TRANSMITTER IN WINDOWED N4X ENCLOSURE WITH POWER SUPPLY
- PROVIDE DIFFERENTIAL PRESSURE SWITCH AND GAUGE TO MONITOR PLATE STRAINER. SEE INSTALLATION DETAIL
- PROVIDE WALL-MOUNT HEAT PUMP. SEE HEAT PUMP SCHEDULE AND INSTALLATION DETAIL

EAST CASEY COUNTY WATER DISTRICT
2018 WATER SYSTEM IMPROVEMENTS
CASEY COUNTY, KENTUCKY



DRAWN BY:	CA
CHECKED BY:	BJM
DATE:	08/20/2018
SCALE:	AS NOTED
REVISIONS:	

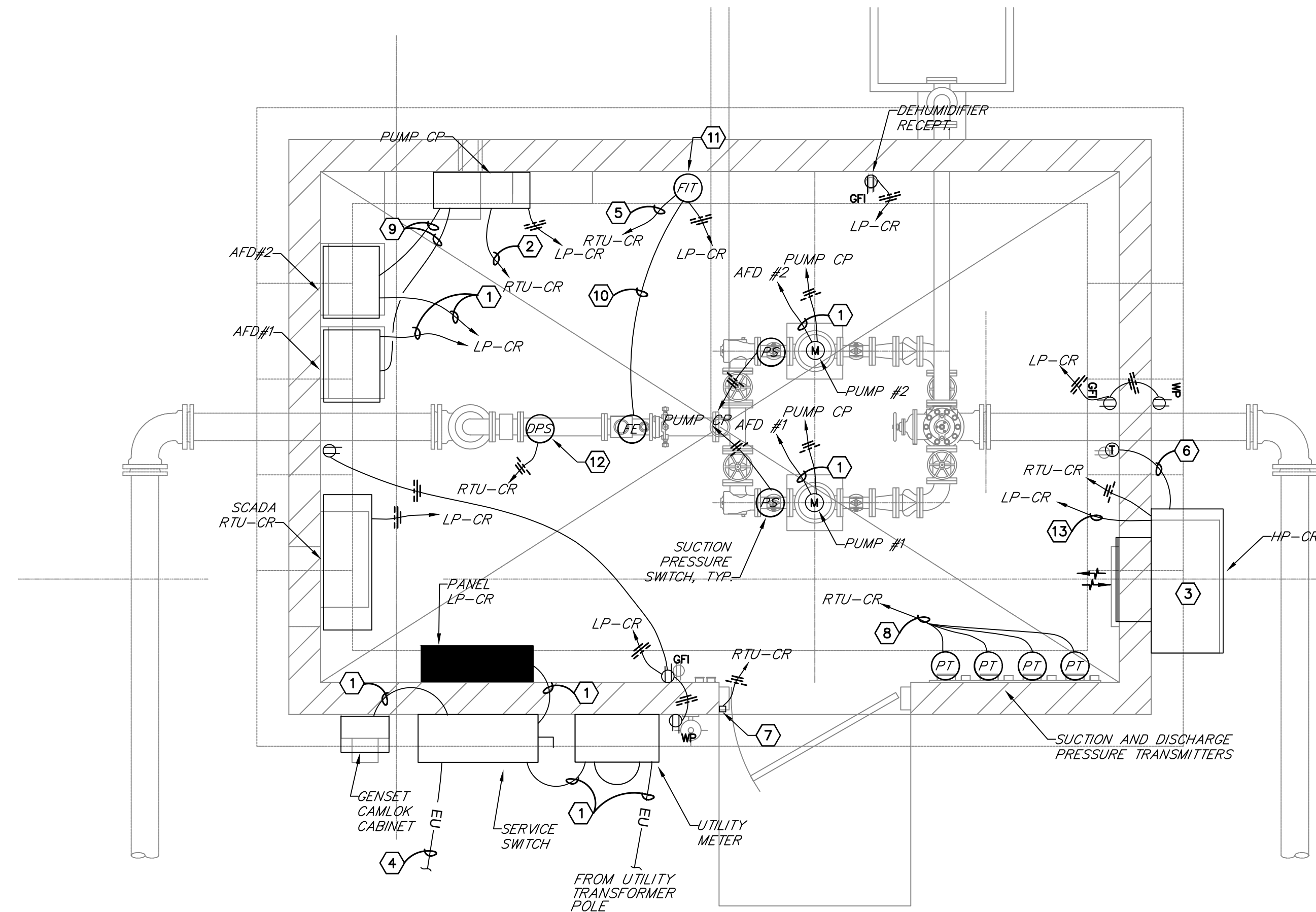


PROJECT NO.
2018132

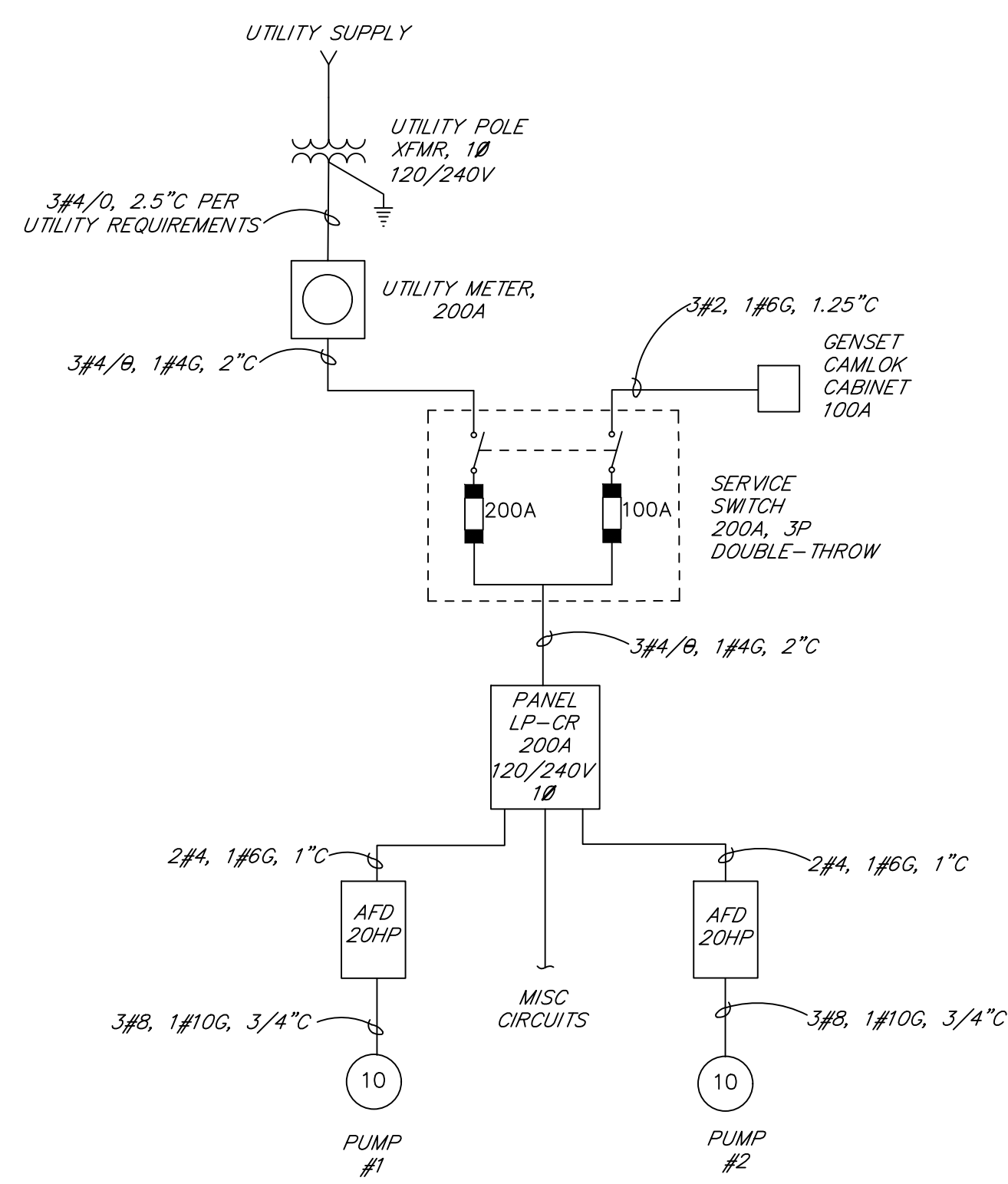
SHEET NO.
E-5



WALNUT HILL PUMP STATION ELECTRICAL



CROSSROADS POWER PLAN
SCALE: 1/2"=1'-0"



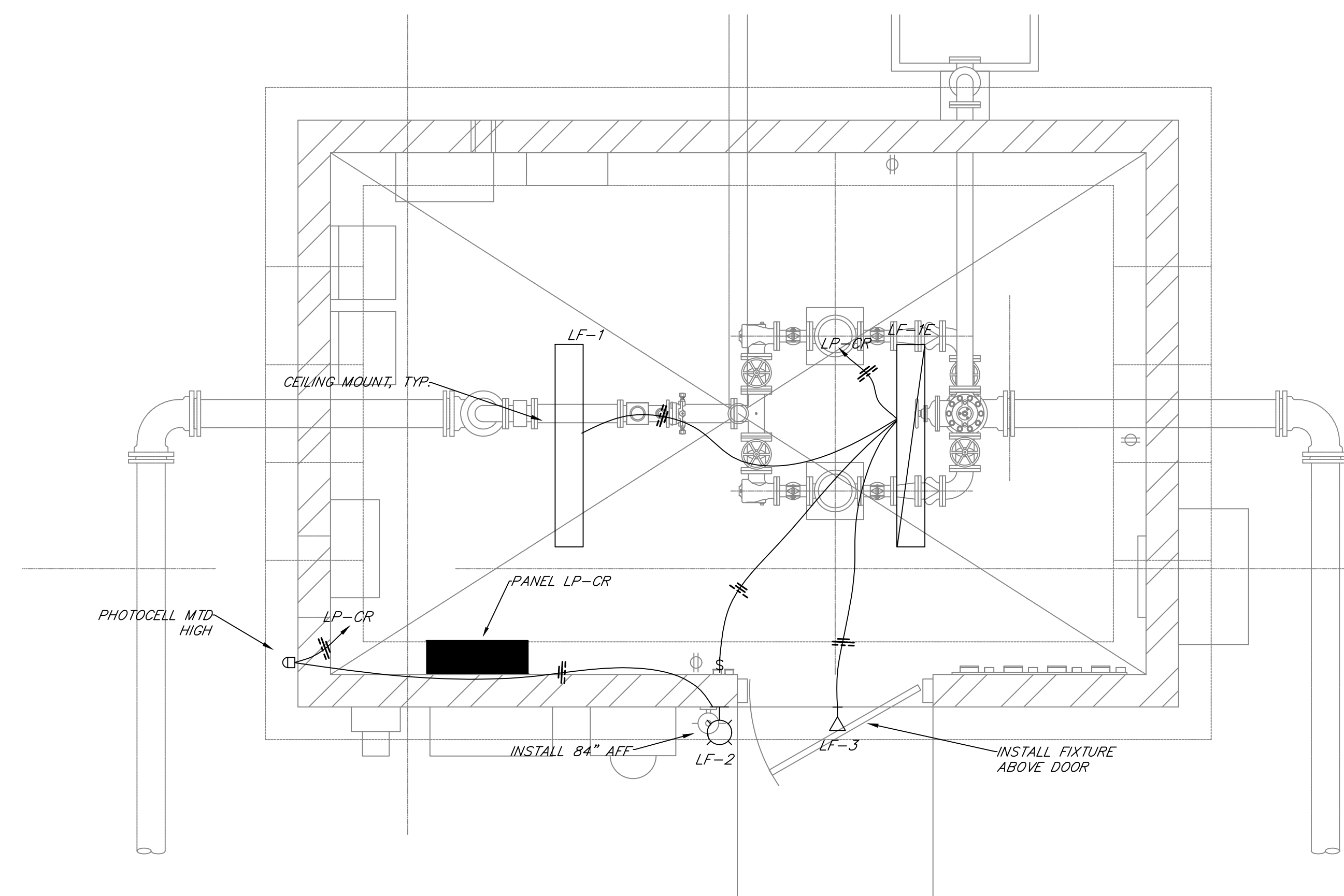
CROSSROADS ONE-LINE DIAGRAM
NO TO SCALE

GENERAL SHEET NOTES:

- EXTERIOR ELECTRICAL EQUIPMENT SHALL BE NEMA 4X SS TYPE 316 UNLESS NOTED OTHERWISE. INTERIOR ELECTRICAL EQUIPMENT SHALL BE NEMA 1 OR NEMA 12
- CROSSROADS ELECTRICAL UTILITY IS TAYLOR COUNTY RECC

SHEET NOTES:

- 1 SEE ONE-LINE DIAGRAM, THIS SHEET, FOR REQUIREMENTS
- 2 PROVIDE 20#14, 1#14G, 1°C
- 3 PROVIDE WALL-MOUNT HEAT PUMP. SEE HEAT PUMP SCHEDULE AND INSTALLATION DETAIL
- 4 PROVIDE #4 GEC, 3/4" PVC AND PROVIDE BUILDING GROUND LOOP PER DETAIL
- 5 PROVIDE 2-2#18 STC, 1#14G, 3/4°C
- 6 PROVIDE THERMOSTAT CABLE, 1#14G, 3/4°C
- 7 PROVIDE DOOR CONTACT SWITCH
- 8 PROVIDE 4-2#18 STC, 1#14G, 1°C
- 9 PROVIDE 10#14, 1#14G, 3/4°C
- 10 PROVIDE 4#18 STC, 1#14G, 3/4°C
- 11 PROVIDE FLOW METER DISPLAY/TRANSMITTER IN WINDOWED N4X ENCLOSURE WITH POWER SUPPLY
- 12 PROVIDE DIFFERENTIAL PRESSURE SWITCH AND GAUGE TO MONITOR PLATE STRAINER. SEE INSTALLATION DETAIL
- 13 PROVIDE 2#8, 1#10G, 3/4°C

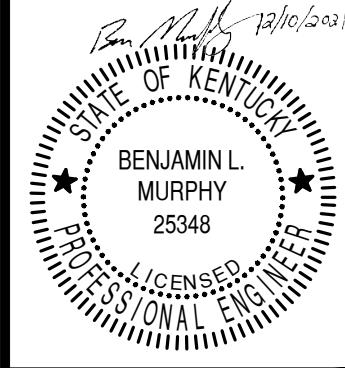


CROSSROADS LIGHTING PLAN
SCALE: 1/2"=1'-0"

PANEL:	LP-CR	VOLTAGE:	120/240V, 1Ø, 3W
ENCLOSURE:	NEMA 1	MAINS AMPACITY:	200A
MOUNTING:	SURFACE	MAIN C.B. SIZE:	200A
LOCATION:	CROSSROADS P.S.	TOTAL SPACES:	30

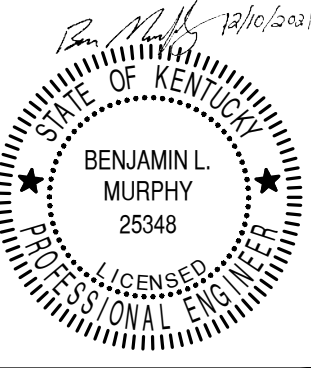
CIRCUIT DESCRIPTION	VA	POLES	BREAKER	NO	PHASE A		PHASE B		VA	CIRCUIT DESCRIPTION	
					VA	VA	VA	VA			
SPD		2	30A	1	6500	2	80A	2	6500	PUMP #2 AFD	
PUMP #1 AFD	6500	2	80A	5	10700	6	40A	2	4200	HEAT PUMP HP-CR	
SCADA RTU-CR	500	1	20A	9	1000	10	20A	1	500	PUMP CONTROL PANEL	
DEHUMIDIFIER RECEPT.	1500	1	20A	11		1600	12	15A	1	100	FLOWMETER
RECEPTACLES	600	1	20A	13	600		14	20A	1		SPARE
RECEPTACLES	600	1	20A	15		600	16	20A	1		SPARE
SPARE		1	20A	17	0		18	15A	1		SPARE
SPARE		1	20A	19	0	0	20	15A	1		SPARE
SPARE		1	20A	21	0		22	15A	1		SPARE
SPARE		1	15A	23		0	24	15A	1		SPARE
				25	0		26				
				27	0		28				
				29	0		30				
TOTAL VA PER PHASE:					18800	19400					
TOTAL AMPS PER PHASE:					156.7	161.7	TOTAL PANEL VA: 38200				

NOTES:
1. PROVIDE AN INTEGRAL SURGE PROTECTION DEVICE (SPD)



DRAWN BY:	CA
CHECKED BY:	BJM
DATE:	08/14/2018
SCALE:	AS NOTED
REVISIONS:	





DRAWN BY: CA
CHECKED BY: BIM
DATE: 01/11/2018
SCALE: AS NOTED
REVISIONS



PROJECT NO.
2018132

SHEET NO.
E-7

GENERAL SHEET NOTES:

- HENSON CREEK ELECTRICAL UTILITY IS SOUTH KY RECC

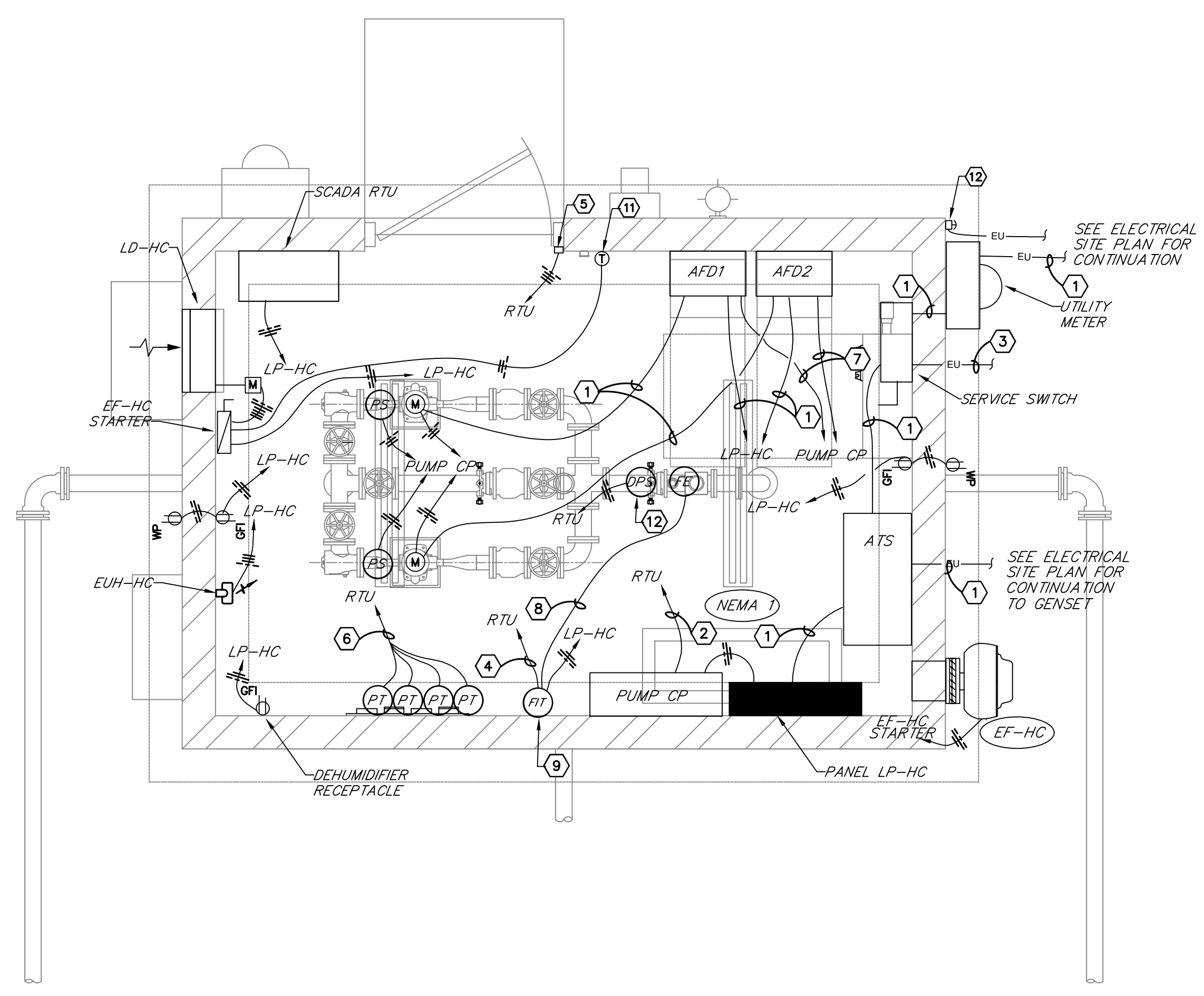
SHEET NOTES:

- SEE ONE-LINE DIAGRAM, THIS SHEET, FOR REQUIREMENTS
- PROVIDE 20#14, 1#14G, 1" C
- PROVIDE #2 GEC, 3/4" C, AND PROVIDE BUILDING GROUND LOOP PER DETAIL
- PROVIDE 2-2#18 STC, 1#14G, 3/4" C
- PROVIDE DOOR CONTACT SWITCH
- PROVIDE 4-2#18 STC, 1#14G, 1" C
- PROVIDE 10#14, 1#14G, 3/4" C
- PROVIDE 4#18 STC, 1#14G, 3/4" C
- PROVIDE FLOW METER DISPLAY/TRANSMITTER IN WINDOWED N4X ENCLOSURE WITH POWER SUPPLY
- PROVIDE DIFFERENTIAL PRESSURE SWITCH AND GAUGE TO MONITOR PLATE STRAINER. SEE INSTALLATION DETAIL.
- PROVIDE LINE VOLTAGE THERMOSTAT
- PROVIDE NEMA 4X E-STOP BUTTON LABELED "GENERATOR EMERGENCY STOP"

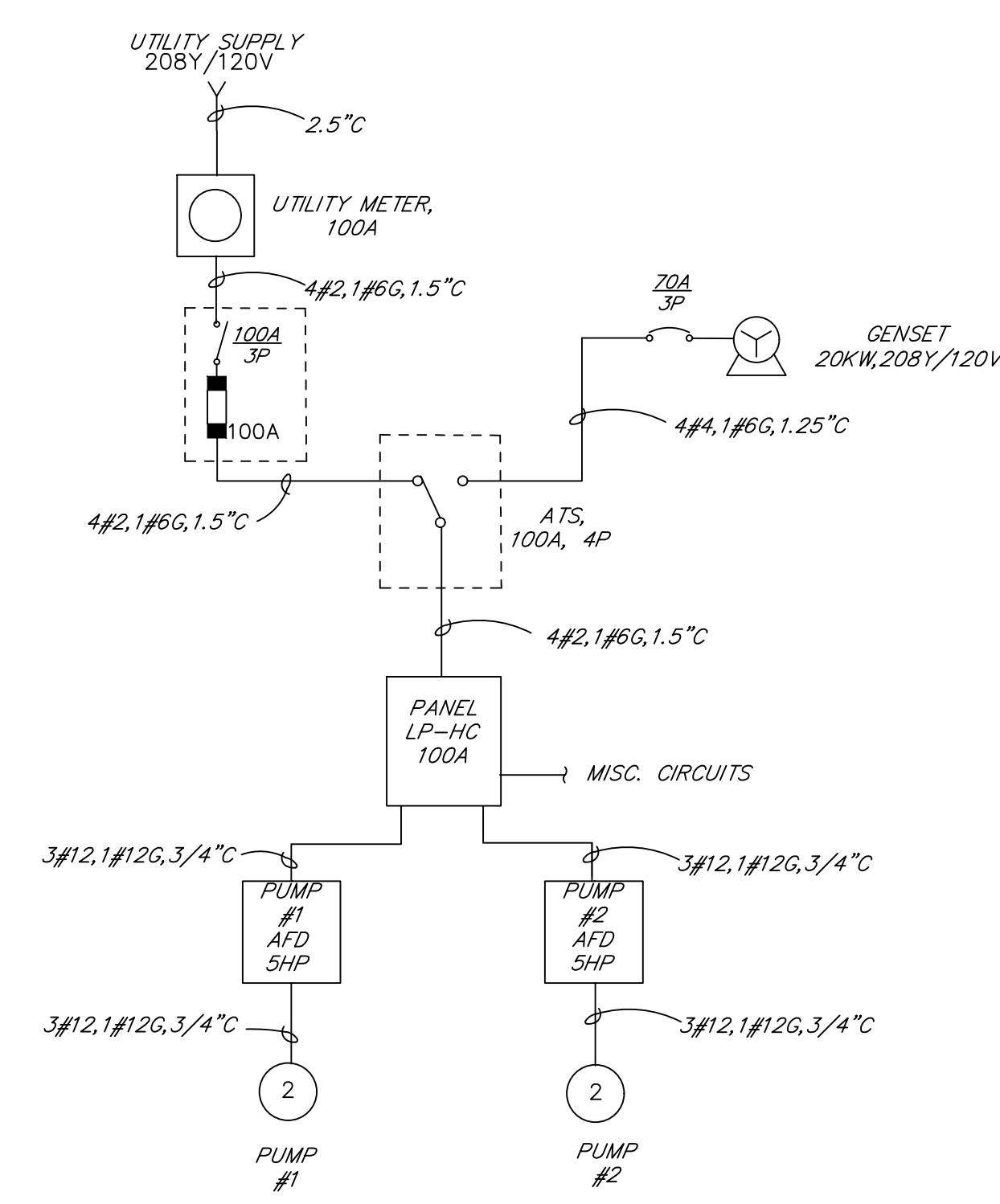
PANEL:	LP-HC	VOLTAGE:	208/120V, 3Ø, 4W
ENCLOSURE:	NEMA 1	MAINS AMPACITY:	100A
MOUNTING:	WALL	MAIN C.B. SIZE:	100A
LOCATION:	HENSON CREEK BPS	BREAKER SPACES:	30

CIRCUIT DESCRIPTION	VA	POLES	BREAKER	NO.	PHASE A VA	PHASE B VA	PHASE C VA	NO.	BREAKER	POLES	VA	CIRCUIT DESCRIPTION
SPD		3	30A	1	2000			2	20A	3	2000	PUMP #1 AFD
				3		2000		4			2000	
				5			2000	6			2000	PUMP #2 AFD
LIGHTING - INTERIOR	700	1	20A	7	2700			8	20A	3	2000	
RECEPTACLES	600	1	20A	9			2600	10			2000	
RECEPTACLES	600	1	20A	11			2600	12			2000	
PUMP CP	200	1	20A	13	700			14	20A	1	500	EXHAUST FAN & LOUVER
SCADA RTU	500	1	20A	15		2000		16	20A	1	1500	DEHUMIDIFIER
FLOWMETER	100	1	15A	17			700	18	20A	1	600	GENSET CHARGER
HEATER EUH-HC	1800	3	20A	19	2000			20	20A	1	200	GENSET ANTI-COND.
	1800			21			3300	22	20A	2	1500	GENSET BLOCK HEATER
	1800			23				24	20A	1	1500	
SPARE		3	20A	25	0			26	20A	1		SPARE
				27		0		28	20A	1		SPARE
				29			0	30	20A	1		SPARE
TOTAL VA PER PHASE:					7400	9900	8600					
TOTAL AMPS PER PHASE:					61.7	82.5	71.7	TOTAL PANEL VA: 25900				

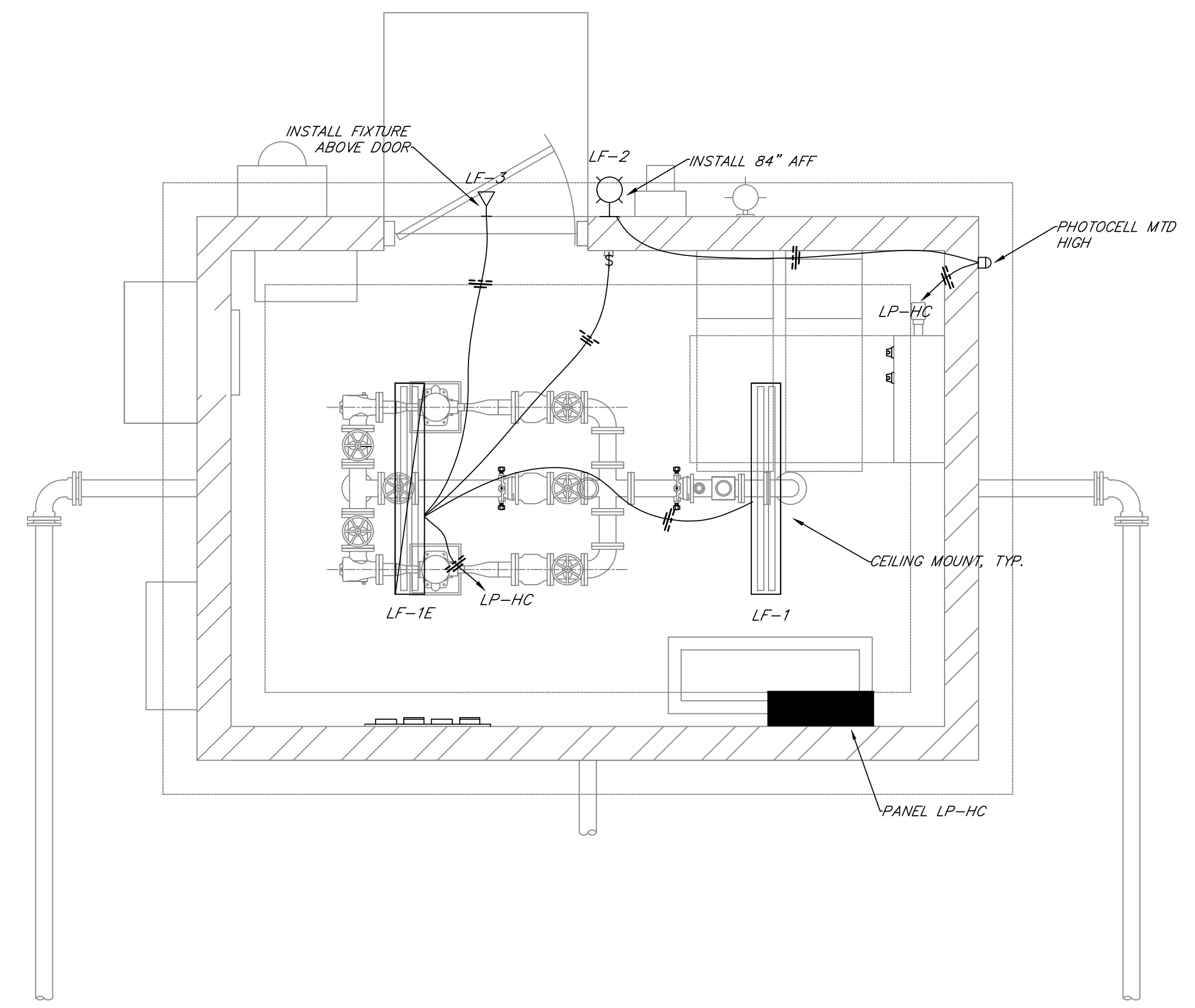
NOTES:
1. PROVIDE INTEGRAL SURGE SUPPRESSION SPD



HENSON CREEK PUMP STATION POWER PLAN
SCALE: 1/2" = 1'-0"

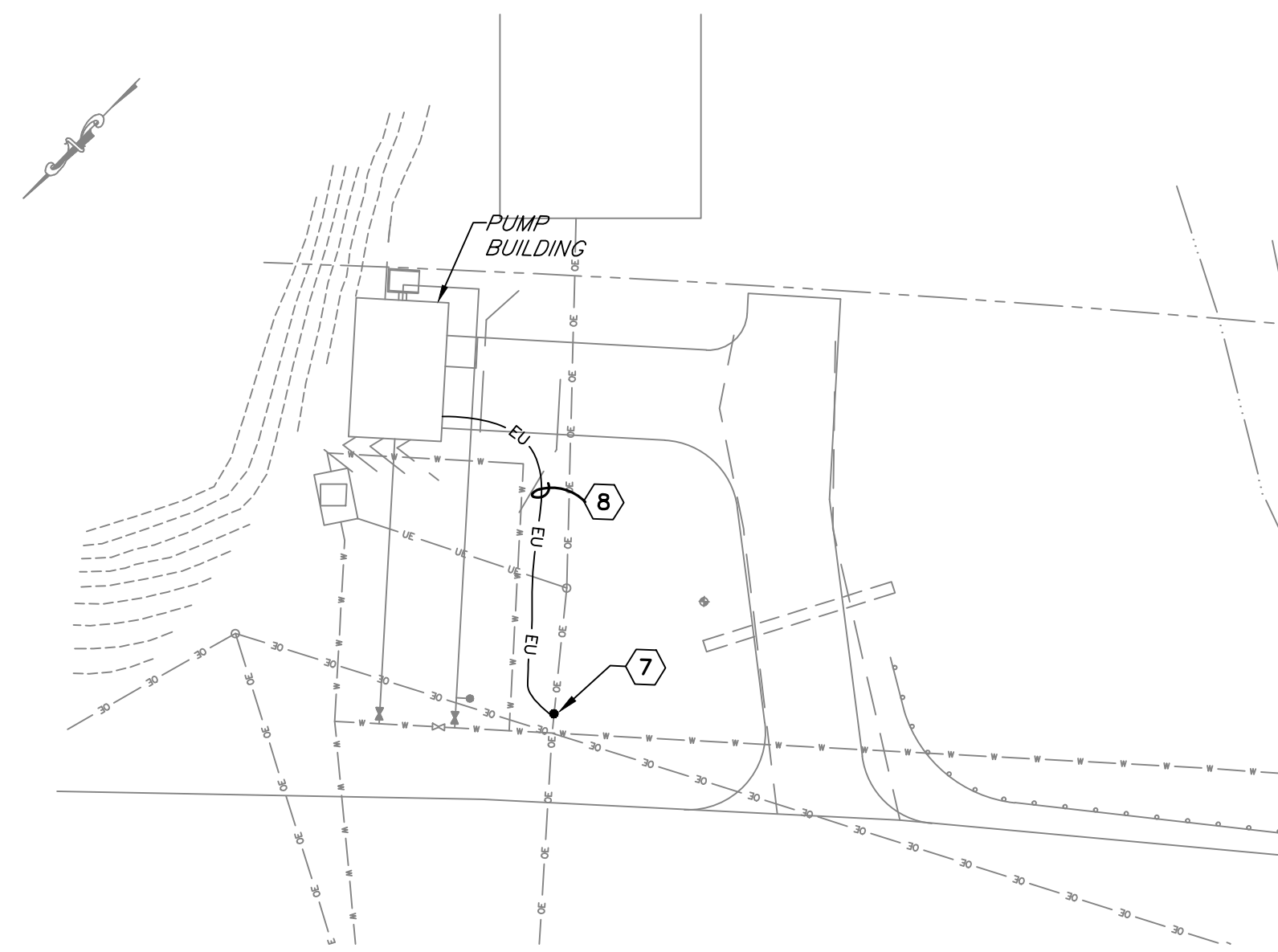


HENSON CREEK ONE-LINE DIAGRAM
NO TO SCALE

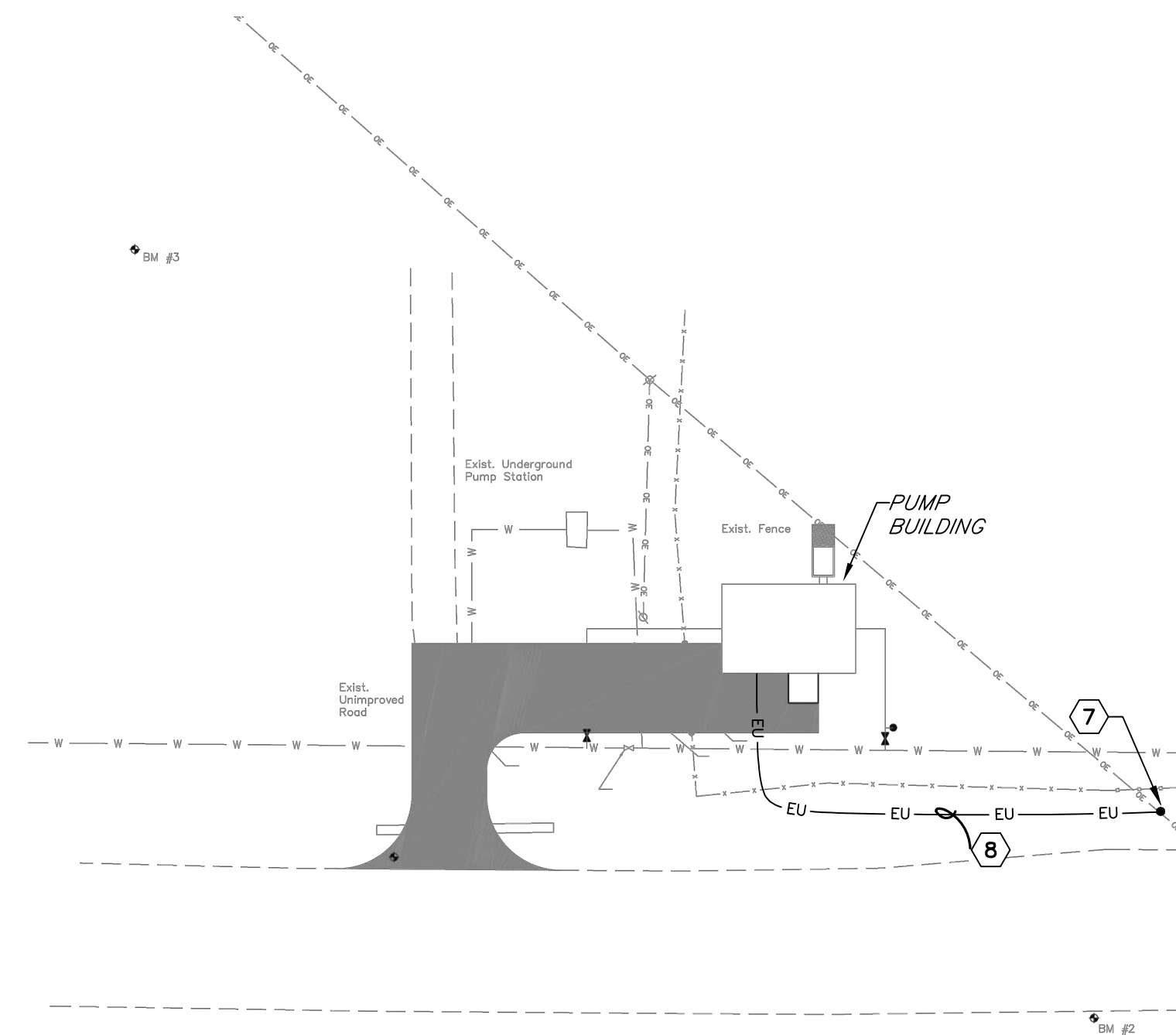


HENSON CREEK PUMP STATION LIGHTING PLAN
SCALE: 1/2" = 1'-0"

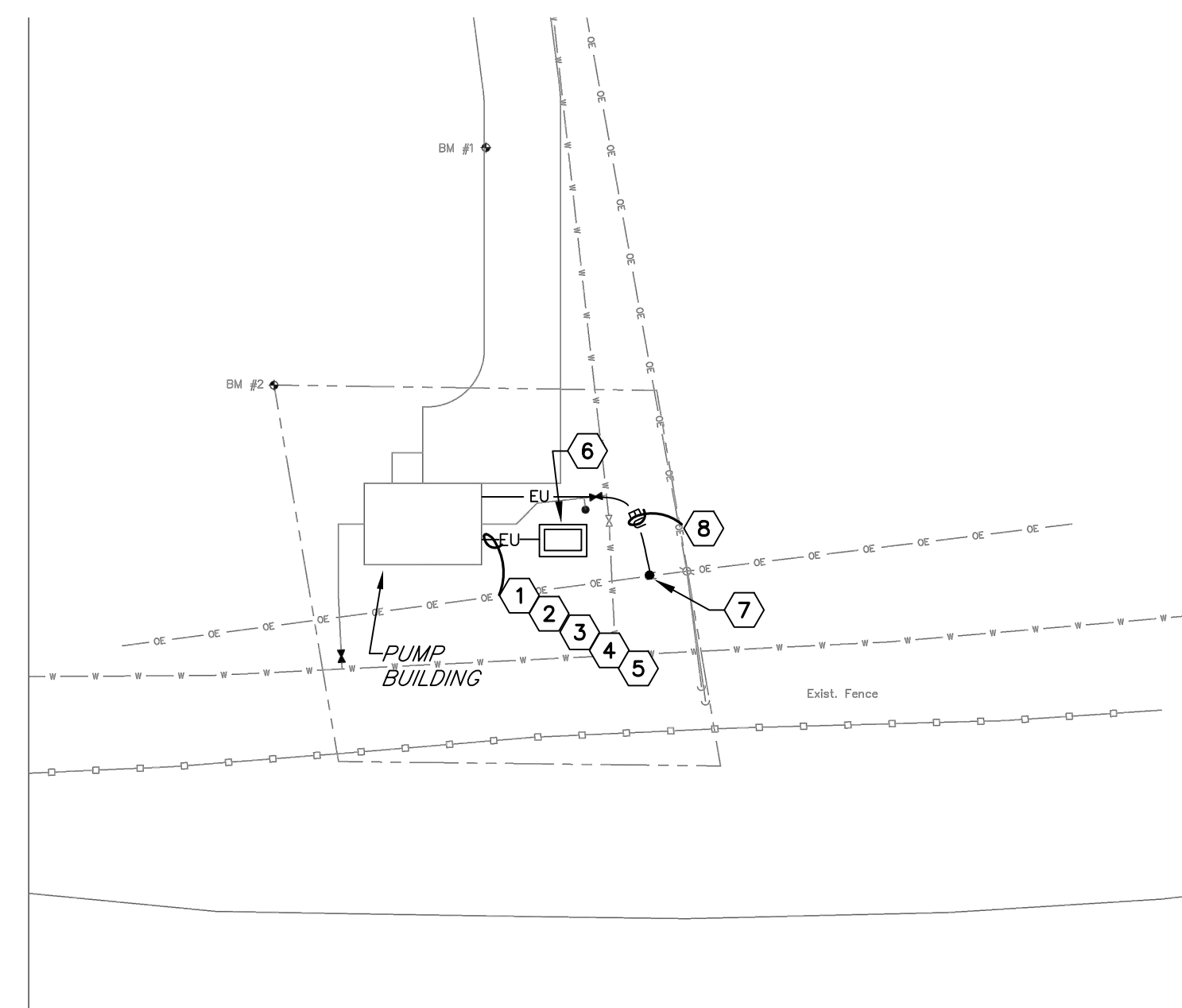




WALNUT HILL ELECTRICAL SITE PLAN
SCALE: 1" = 20'-0"



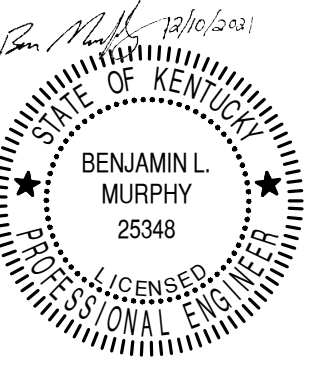
CROSSROADS ELECTRICAL SITE PLAN
SCALE: 1" = 20'-0"



HENSON CREEK ELECTRICAL SITE PLAN
SCALE: 1" = 20'-0"

SHEET NOTES:

- 1 PROVIDE POWER FEEDER FROM GENSET TO ATS. SEE HENSON CREEK ONE-LINE DIAGRAM FOR REQUIREMENTS
- 2 PROVIDE 10#14, 1#14G, 1" C FROM GENSET TO ATS
- 3 PROVIDE 2#14, 1#14G, 3/4" C FROM GENSET TO E-STOP BUTTON
- 4 PROVIDE THE FOLLOWING CIRCUITS FROM PANEL LP-HC TO GENSET
2#10 FOR BLOCK HEATER,
2#12 FOR ANTI-COND. HEATER,
2#12 FOR CHARGER,
1#10G, 1" C
- 5 PROVIDE 6#14, 1#14G, 1" C FROM GENSET TO RTU-HC
- 6 PROVIDE GENERATOR INSTALLED ON CONC. SLAB. SEE GENERATOR INSTALLATION DETAIL
- 7 NEW TRANSFORMER POLE BY UTILITY—APPROXIMATE LOCATION. COORDINATE WITH UTILITY FOR ACTUAL POLE LOCATION
- 8 PROVIDE SERVICE ENTRANCE FEED FROM UTILITY TRANSFORMER PER UTILITY REQUIREMENTS. SEE ONE-LINE DIAGRAM



DRAWN BY: CA	
CHECKED BY: BLM	
DATE: JUNE 2021	
SCALE: AS NOTED	
REVISIONS	

