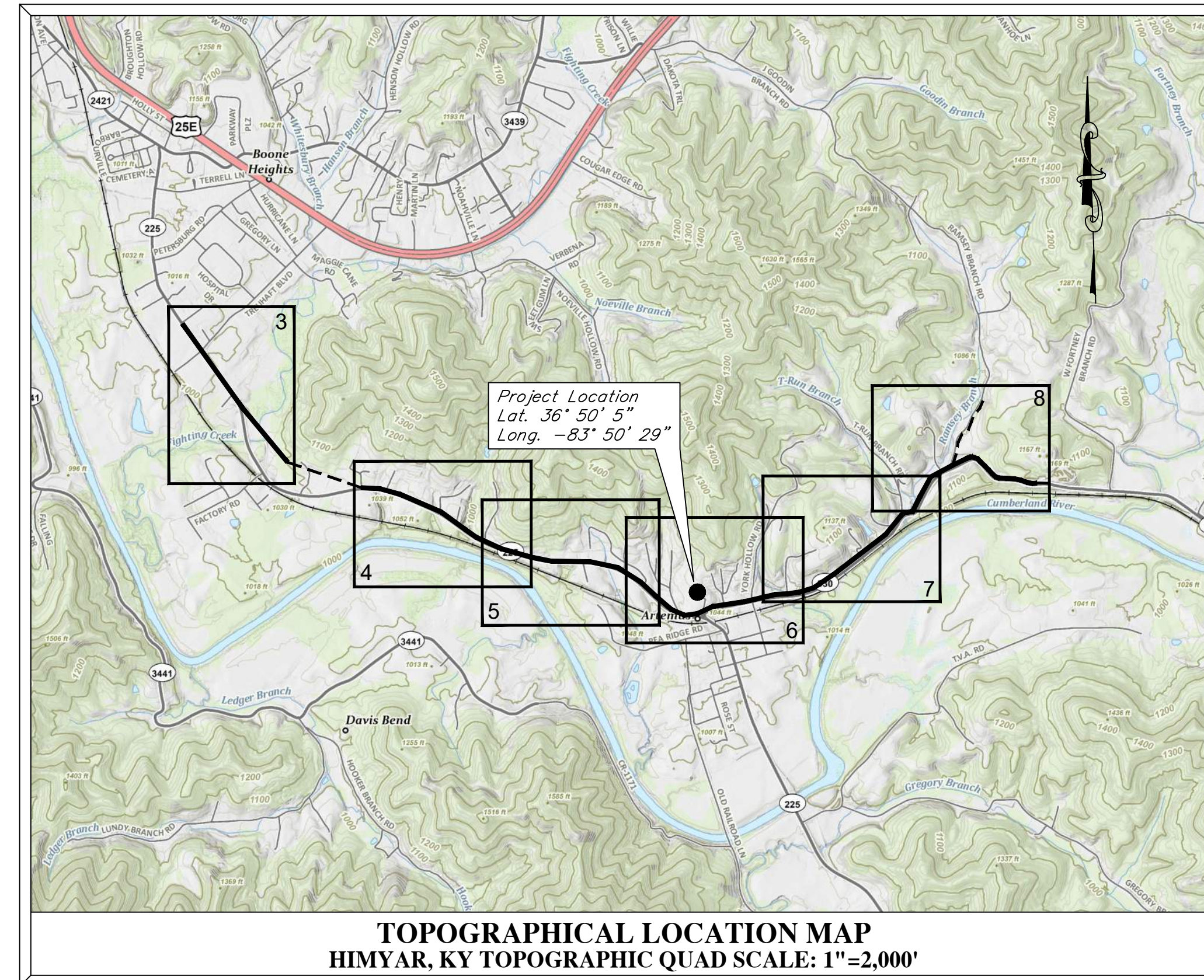
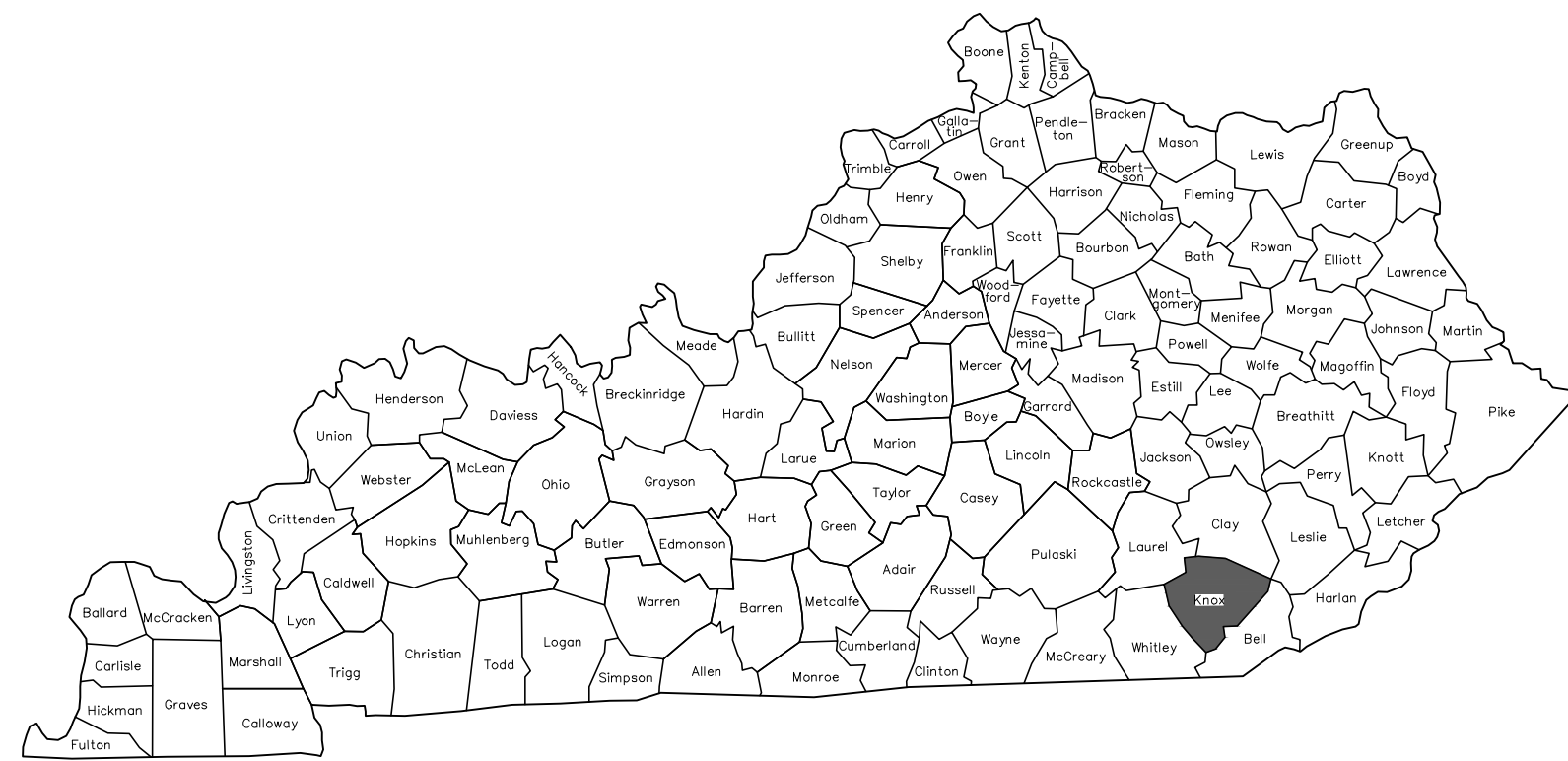


KNOX COUNTY UTILITY COMMISSION

BARBOURVILLE CONNECTION-KY 225

KNOX COUNTY, KENTUCKY



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GENERAL NOTES

1. Stations shown on the water line are for reference only and do not reflect the actual linear lengths of pipe required for construction.
2. The Contractor shall be responsible for coordinating all construction work with local utility companies and other concerned parties.
3. Existing buried utilities are shown on the drawings in their general location utilizing the best 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 and permission to proceed with construction obtained. The utility shall be given at least one week advance notice for location verification. BUD provides a clearinghouse service for member utilities relative to underground utilities location. The Contractor shall contact BUD at telephone no. 1-800-752-6007 or 811.
4. 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.
5. 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.
6. Pipe joint deflection shall not exceed 2'. Bending of PVC pipe will not be allowed.
7. 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.
8. 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.
9. 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.
10. 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.
11. Ductile iron pipe shall be installed in accordance with Standard AWWA C150/ANSI A21.50 Laying Condition Type 3 unless otherwise noted.
12. All driveways that are cut shall be backfilled with KTC #8 or 9-M and shall be included in the unit price for pipe installation.
13. 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.
14. 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.
15. 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 Subsection 3 for methods of sterilization and for disposing of heavily chlorinated water.
16. The time period for pressure testing in this project shall be 6 hours.
17. Final cleanup is not a separate pay item in the Bid Schedule which includes seeding and straw mulch along the entire length of the pipeline trench. A power landscape rake shall be used for seedbed preparation. See the Specifications for specific requirements.
18. Tracer wire and marking tape shall be installed with the PVC pipe. See Technical Specification 15100, and the miscellaneous details drawings.
19. During the process of tapping asbestos concrete mains, the contractor shall conform to OSHA regulations governing the handling of hazardous waste. Pieces of asbestos concrete resulting from the tap shall be double bagged, placed in a rigid container and disposed of in an approved landfill.
20. The pipeline shall be "swabbed" prior to pressure testing and sterilization. Pipeline swabbing is not a separate bid item but shall be included in the unit price for pipe. See Technical Specification 15103 of the Specifications.
21. Final Cleanup payment is for transmission and distribution pipelines only. It does not include service lines.
22. 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, precisely, the field locations for transitions between private easements, and state and county road rights-of-way.
23. All pipelines installed in the ditchline on state or county rights-of-way shall have 42" minimum cover over top of pipe.
24. The pipeline trench width will be strictly enforced. See Technical Specification 15100 for trench width requirements.
25. The GENERAL CERTIFICATION - NATIONWIDE PERMIT #12 - UTILITY LINE BACKFILL AND BEDDING is contained in the Specifications. The Contractor shall read, understand and comply with the requirements and procedures. All crossings of streams that appear as a blue line on a USGS 7.5 minute topographical map shall be accomplished in accordance with: PERMIT #12, UTILITY LINE BACKFILL AND BEDDING. It is the intent of the plans to identify a stream crossing at each blue line stream. Small creek crossings, less than 15 feet measured from top of bank to top of bank, may be accomplished by trenching when the stream is in a no-flow condition. If the stream is in a flow condition, the crossing shall be accomplished by directional boring or other method that complies with the General Certification and is approved by the Engineer. Specific details for stream crossings are contained in the Miscellaneous Details. Bid items for specific stream crossings may be contained in the Bid Schedule with the type of crossing shown on the Plan Sheets. Payment shall be "Each" for directional bores of small stream crossings. All small stream crossings in the project shall be considered the same regardless of width (up to 15 L.F.) or depth. It is the responsibility of the Contractor to determine an average unit price that will be used for payment for each instance a blue line stream is crossed. Stream crossings may be added, for extended lines beyond those shown on the plans, at the same unit price providing the crossings are reasonably similar to those in the initial project. Stream crossings may be deleted, without effecting the unit price, if a line is deleted or shortened. Payment for specific bid item directional bored stream crossings shall be "Lump Sum".
26. Rough cleanup is included in the unit price for pipe installation and must be done before payment for pipe will be approved.
27. Do not cut fences except where specifically shown and noted.
28. 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). The Notice to Proceed will not be issued until the Permit has been provided.
29. All work shall be provided in accordance with all terms of the General Construction Permit and the Floodplain Construction Permit as issued for the Project by the Kentucky Department for Environmental Protection, Division of Water. The Owner will secure said Construction Permits and deliver a copy of each to the Contractor, to be maintained on-site at all times during construction.

GENERAL NOTES (CONT.)

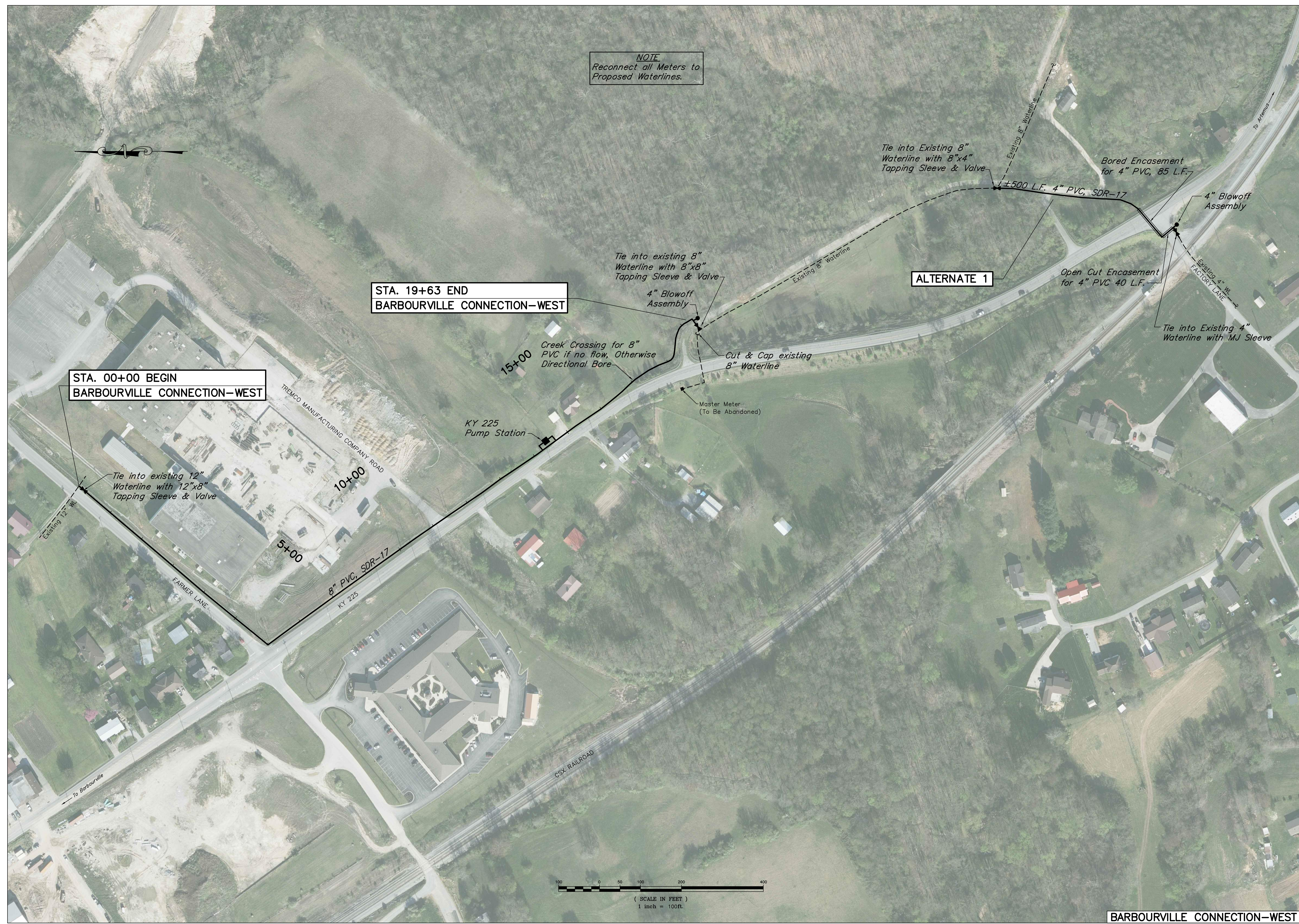
30. All work shall be provided in compliance with all applicable local, state and national building codes.
31. All work shall be executed in compliance with the current workplace safety regulations of the U.S. Department of Labor, Occupational Safety and Health Administration (O.S.H.A.).
32. The Contractor 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.
33. 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.
34. 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.
35. 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.
36. 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.
37. All water main fittings shall be anchored with poured concrete thrust blocks as shown in the miscellaneous details drawings. Wrap fittings in minimum 5-mil plastic (PVC) wrap prior to forming and pouring the block.
38. 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.
39. 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.
40. 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.
41. 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.
42. There are no sanitary sewers or drains known to exist in the vicinity of the proposed new water main. 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.
43. 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

1. When crossing all streams, silt barriers, i.e. 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.
2. If the removal of any trees greater than (6) inches in diameter at breast height is required, The tree removed shall be accomplished between October 15 and March 31.
3. 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

1. 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.
2. Underground utilities on state right of way shown more than 5 feet from the edge of the right of way shall be installed with a minimum depth of cover of 42 inches.
3. 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.
4. Underground utilities shall not be installed in embankment fills or between edge of pavement and ditchline unless specifically noted on permitted plans.
5. 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.
6. Contact KTC-DOH District Office prior to beginning work.
7. 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.
8. All necessary steps shall be taken to prevent erosion or siltation of the public right of way, adjoining property and waterways.
9. 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.
10. 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*.

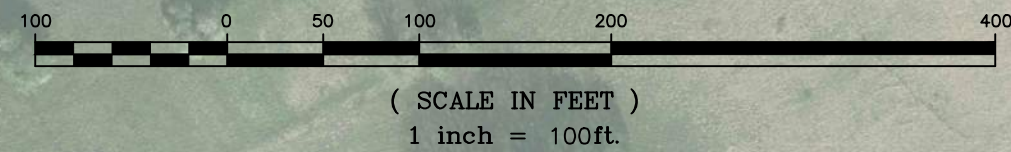


NOTE
Reconnect all Meters to Proposed Waterlines.

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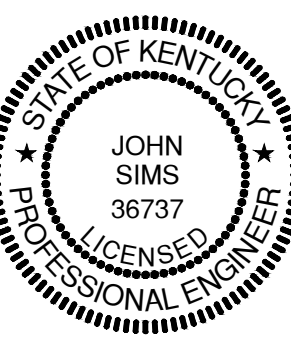
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BARBOURVILLE CONNECTION-WEST

ALTERNATE 1



BARBOURVILLE CONNECTION-WEST

KNOX COUNTY UTILITY COMMISSION
BARBOURVILLE CONNECTION - KY 225
KNOX COUNTY, KENTUCKY



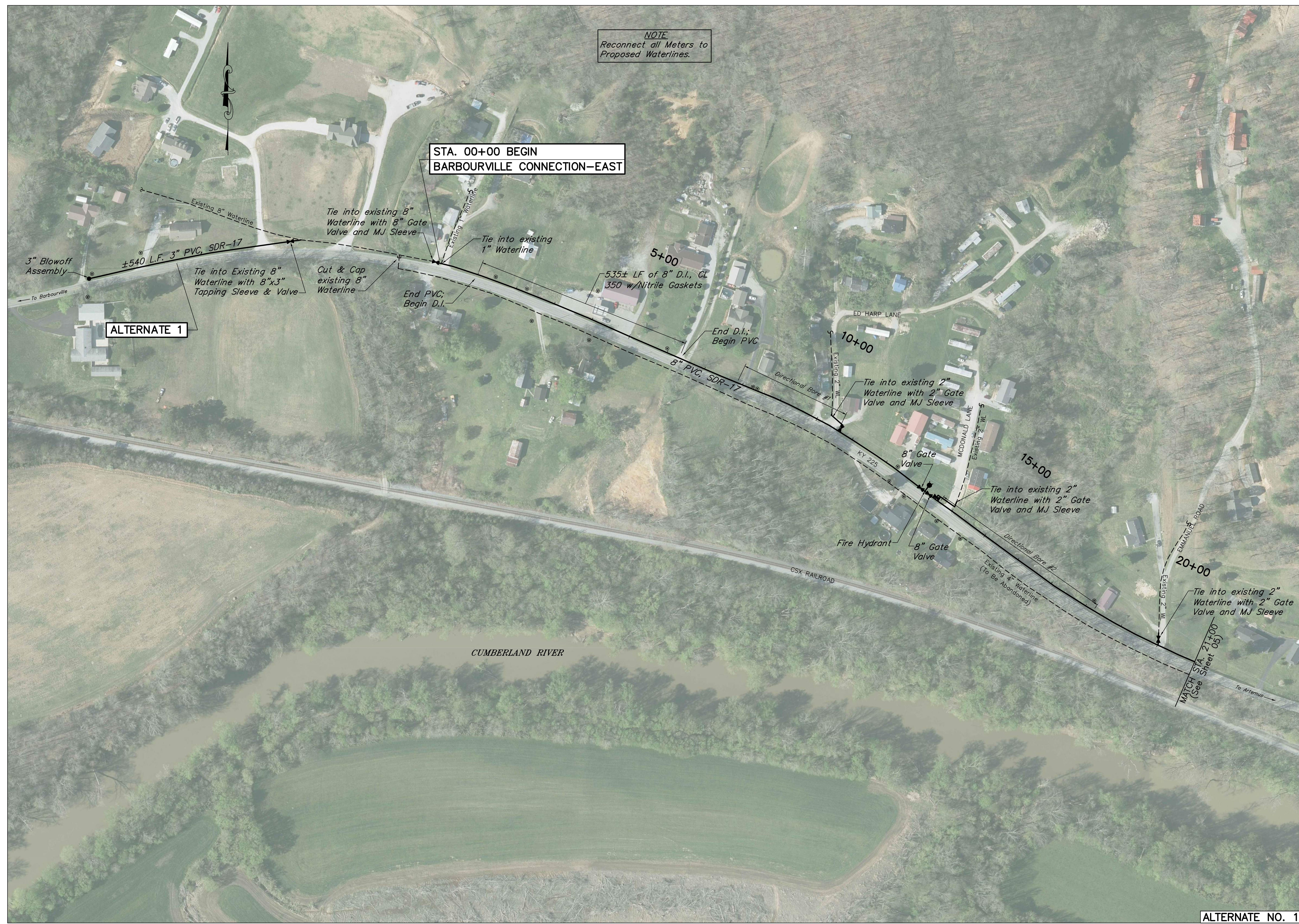
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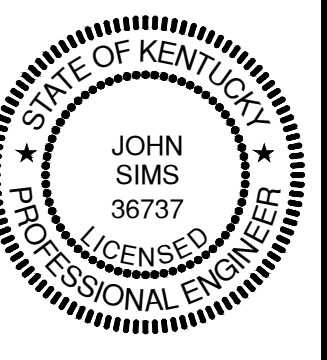
NOTE
Reconnect all Meters to Proposed Waterlines.

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BARBOURVILLE CONNECTION-EAST

ALTERNATE 1

ALTERNATE NO. 1

KNOX COUNTY UTILITY COMMISSION
BARBOURVILLE CONNECTION - KY 225
KNOX COUNTY, KENTUCKY



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PROJECT NO.
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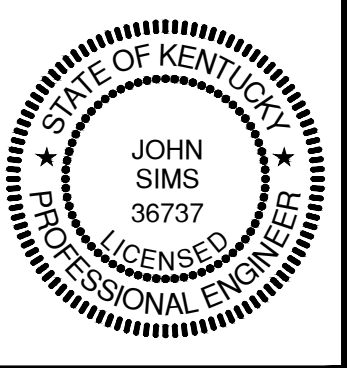
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NOTE
Reconnect all Meters to Proposed 8" Waterline.



KNOX COUNTY UTILITY COMMISSION
BARBOURVILLE CONNECTION - KY 225
KNOX COUNTY, KENTUCKY



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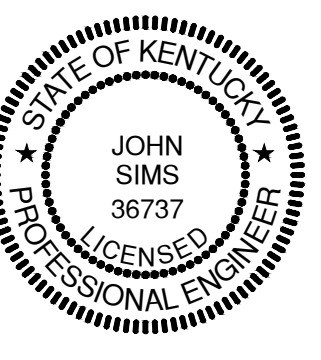
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NOTE
Reconnect all Meters to
Proposed 8" Waterline.



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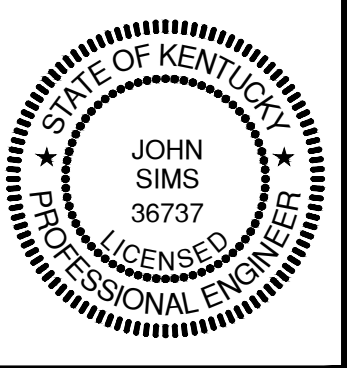
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NOTE
Reconnect all Meters to Proposed 8" Waterline.

KNOX COUNTY UTILITY COMMISSION
BARBOURVILLE CONNECTION - KY 225
KNOX COUNTY, KENTUCKY



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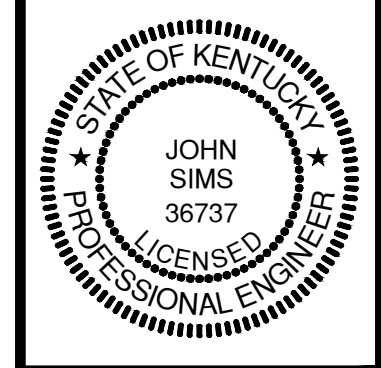
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BARBOURVILLE CONNECTION—EAST



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BARBOURVILLE CONNECTION - KY 225
 KNOX COUNTY, KENTUCKY



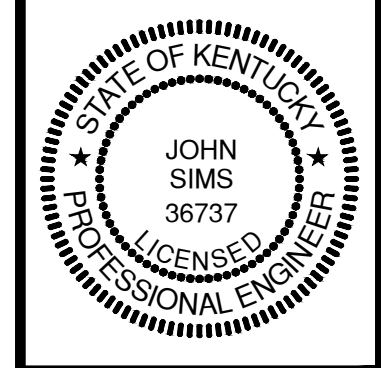
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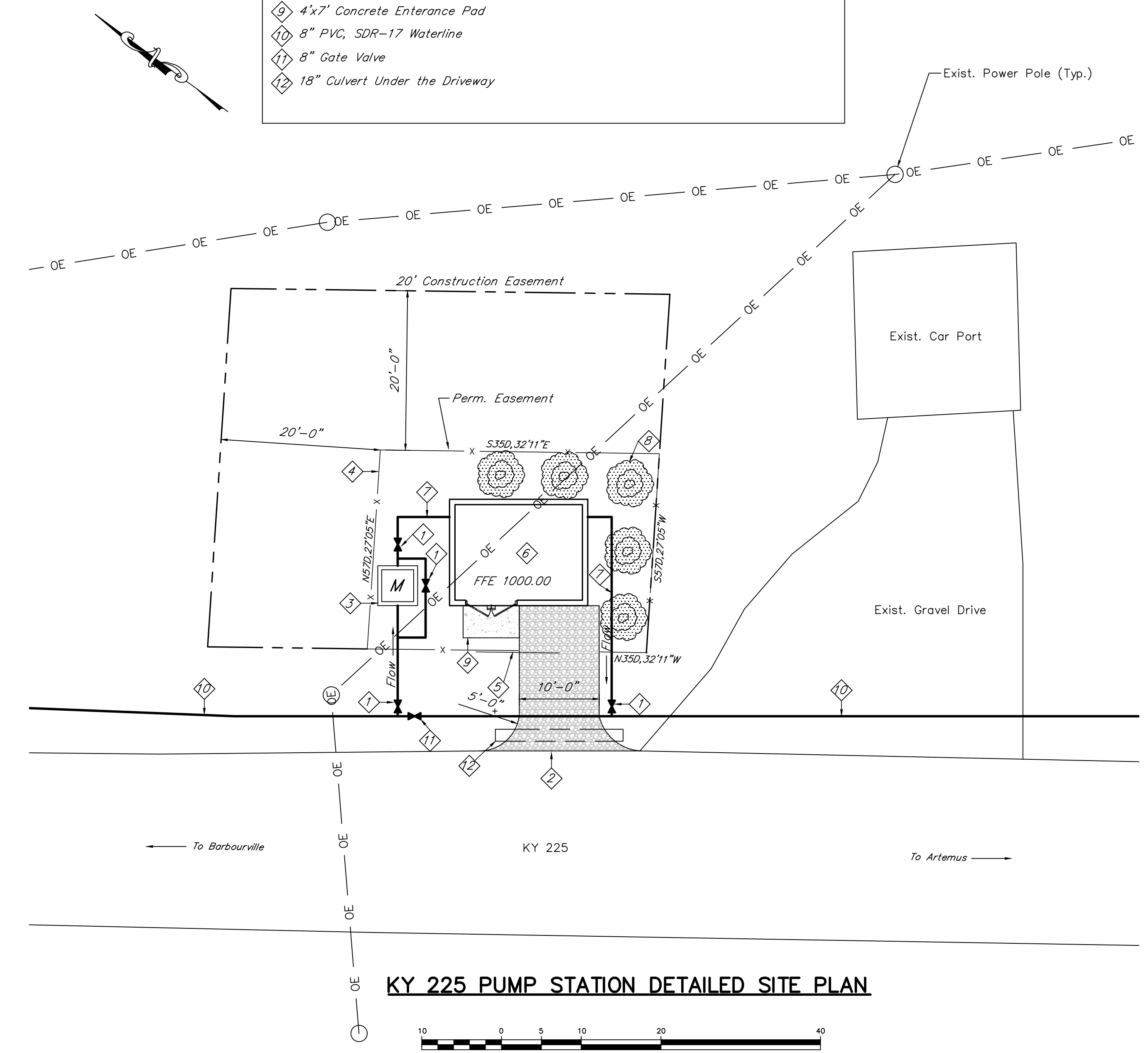
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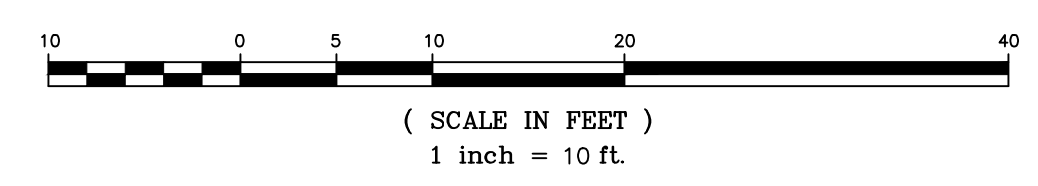
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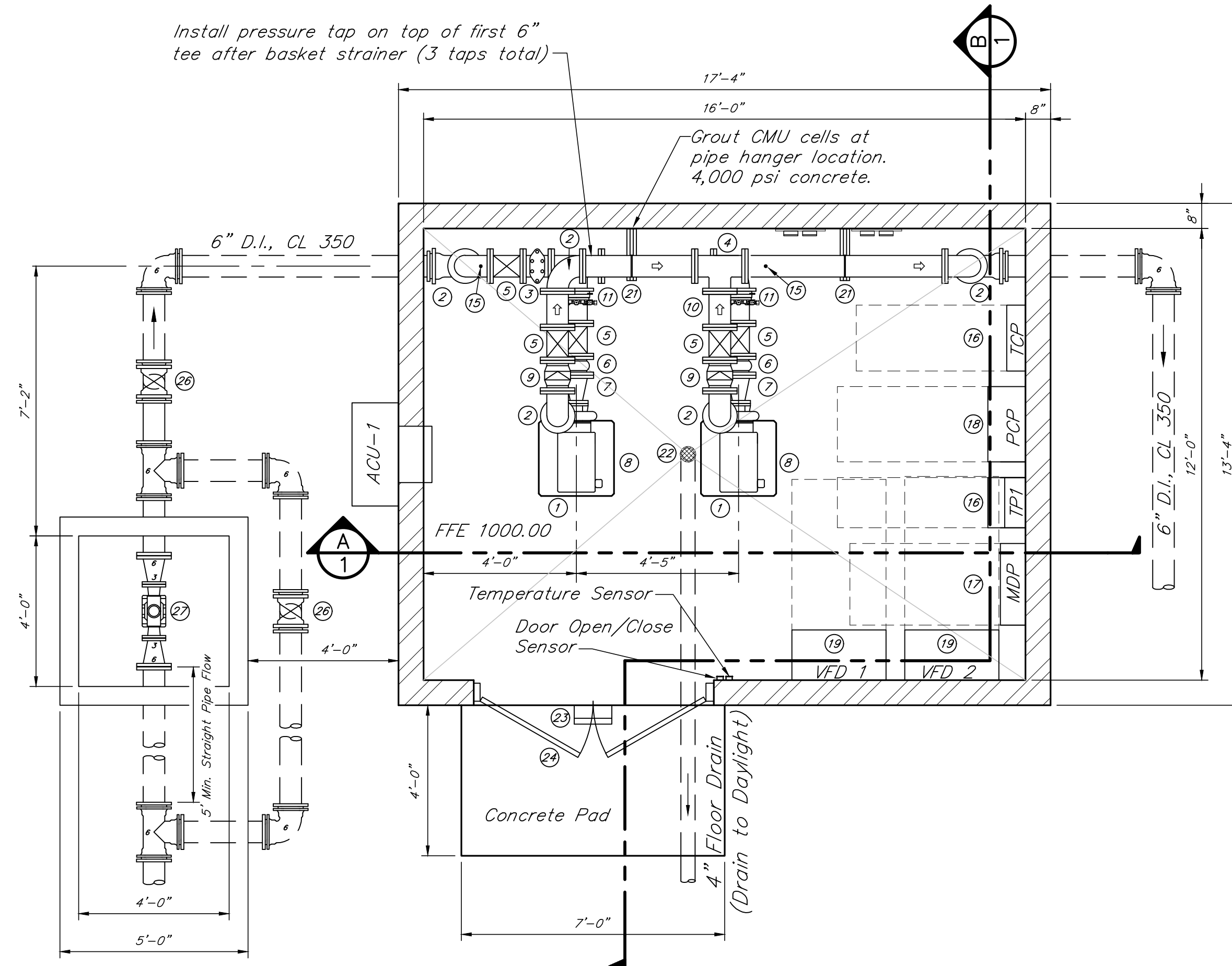
- SHEET NOTES**
- 1 6" Gate Valve
 - 2 Gravel Drive: (230 S.F.) 2" compacted DGA on 4" compacted No. 57 stone subgrade
 - 3 4'x4' Master Meter Vault (See Detail)
 - 4 Construct 110 L.F. 6' High Chain Link Fence (25'x35')
 - 5 Install 12' Sliding Gate
 - 6 Pump Station
 - 7 6" Ductile Iron, C.L. 350
 - 8 Install Five (5) Burning Bushes on 8' Centers
 - 9 4'x7' Concrete Entrance Pad
 - 10 8" PVC, SDR-17 Waterline
 - 11 8" Gate Valve
 - 12 18" Culvert Under the Driveway



KY 225 PUMP STATION DETAILED SITE PLAN



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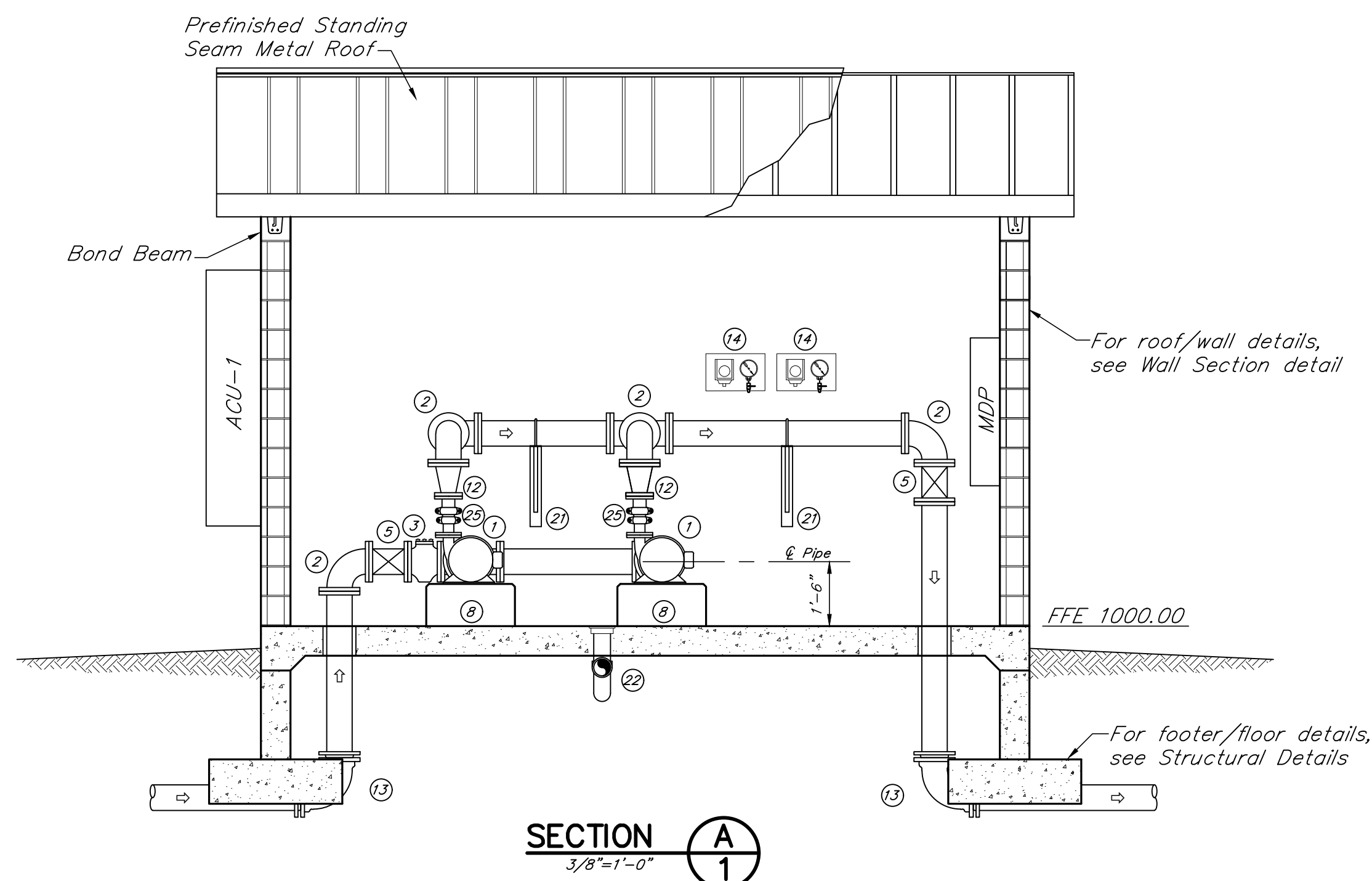


PUMP STATION PLAN VIEW
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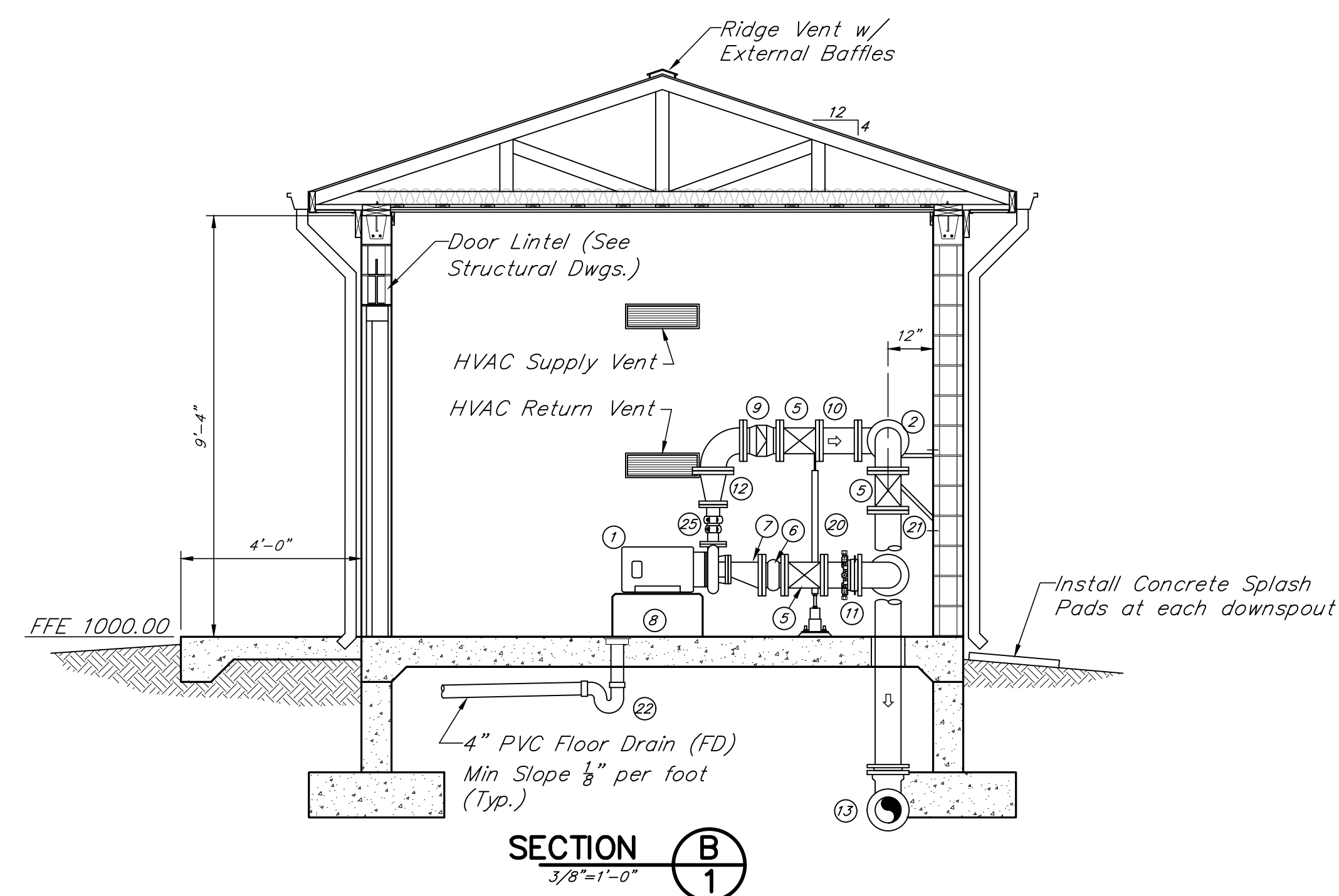
KY 225 PUMP STATION		
ITEM	QTY.	DESCRIPTION
1	2	Pumps: 20 Hp, 480V/3PH/60Hz 300 GPM @ 165' TDH; 3500 RPM
2	4	6" 90° Elbow
3	1	6" Plate Strainer
4	2	6" Tee
5	6	6" Gate Valve
6	2	6" Metrasphere Coupling w/ Control Rods (or equal)
7	2	6"x3" Eccentric Reducer
8	2	Pump Pedestal (Cast in Place)
9	2	6" Globe Style Silent Check Valve
10	2	8" Spool
11	1	6" Flanged Coupling Adapter (FCA)
12	2	6"x3" Concentric Reducer
13	2	6" 90° Elbow, M/J
14	3	Pressure Gauge w/ Pressure Transducer
15	4	1/4" Stop Cock
16	1	Telemetry Panel
17	1	Main Distribution Panel
18	1	Pump Control Panel
19	2	Variable Frequency Drives
20	2	Pipe Supports
21	2	Pipe Support Bracket w/ U-bolt
22	1	Floor Drain and 4" PVC Sch. 80 Drain Pipe w/ Trap
23	1	Outdoor Light Fixture w/ Dusk to Dawn Sensor
24	2	36" Insulated Steel Doors
25	2	3" Flanged Adapter (No. 41), 3" Flexible Coupling (Style 31), 3" to 2.5" Reducer (No. 53), 2.5" Flexible Coupling (Style 31), 2.5" Flanged Adapter (No. 41) (Victaulic or Equal)
26	2	6" Mechanical Gate Valve
27	1	3" Neptune MACH 10 Ultrasonic Meter

GENERAL NOTES

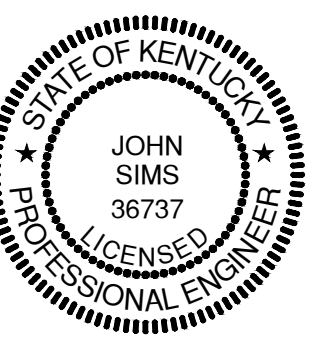
- All yard piping shall be ductile iron, CL 350 pipe. All Ductile Iron Piping shall have restrained gaskets. All M.J. fittings, valves, etc. shall be restrained with EBAA IRON MEGALUG Series 1100 or approved equal.
- The Contractor shall coordinate with the pump Supplier and Engineer regarding the base 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.
- Floor shall be sloped to drain between 1/4" & 1/8" per foot.
- Contractor shall be responsible for interior paint coatings. See Specification Section 09901 "High Performance Coatings" for Schedule.



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

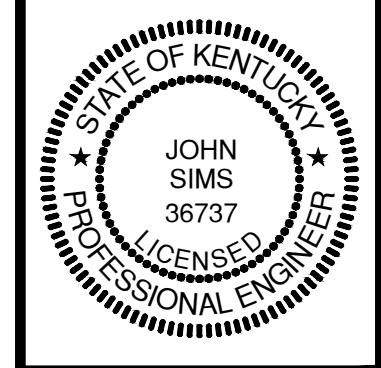


SECTION B-1
3/8"=1'-0"

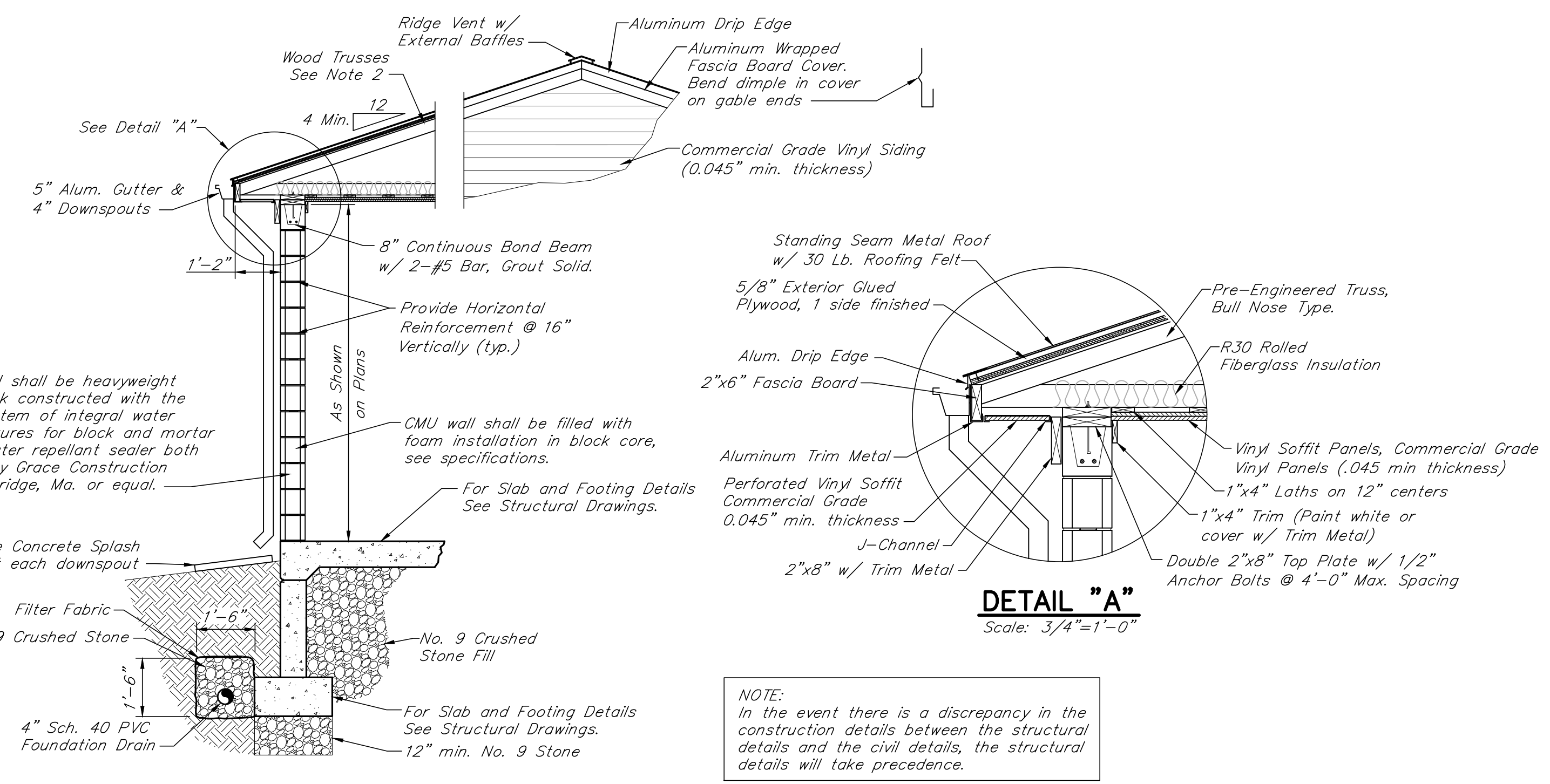


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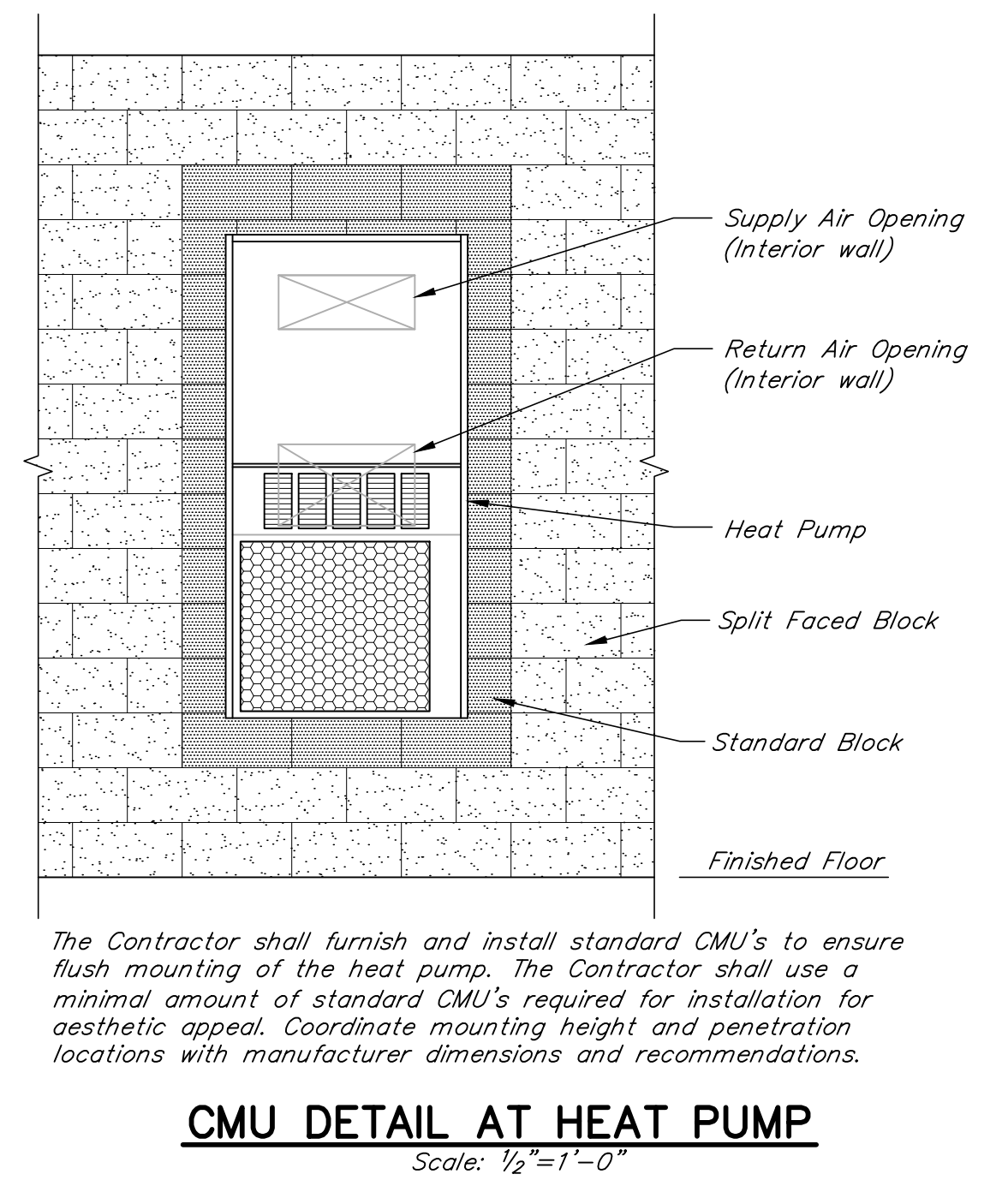
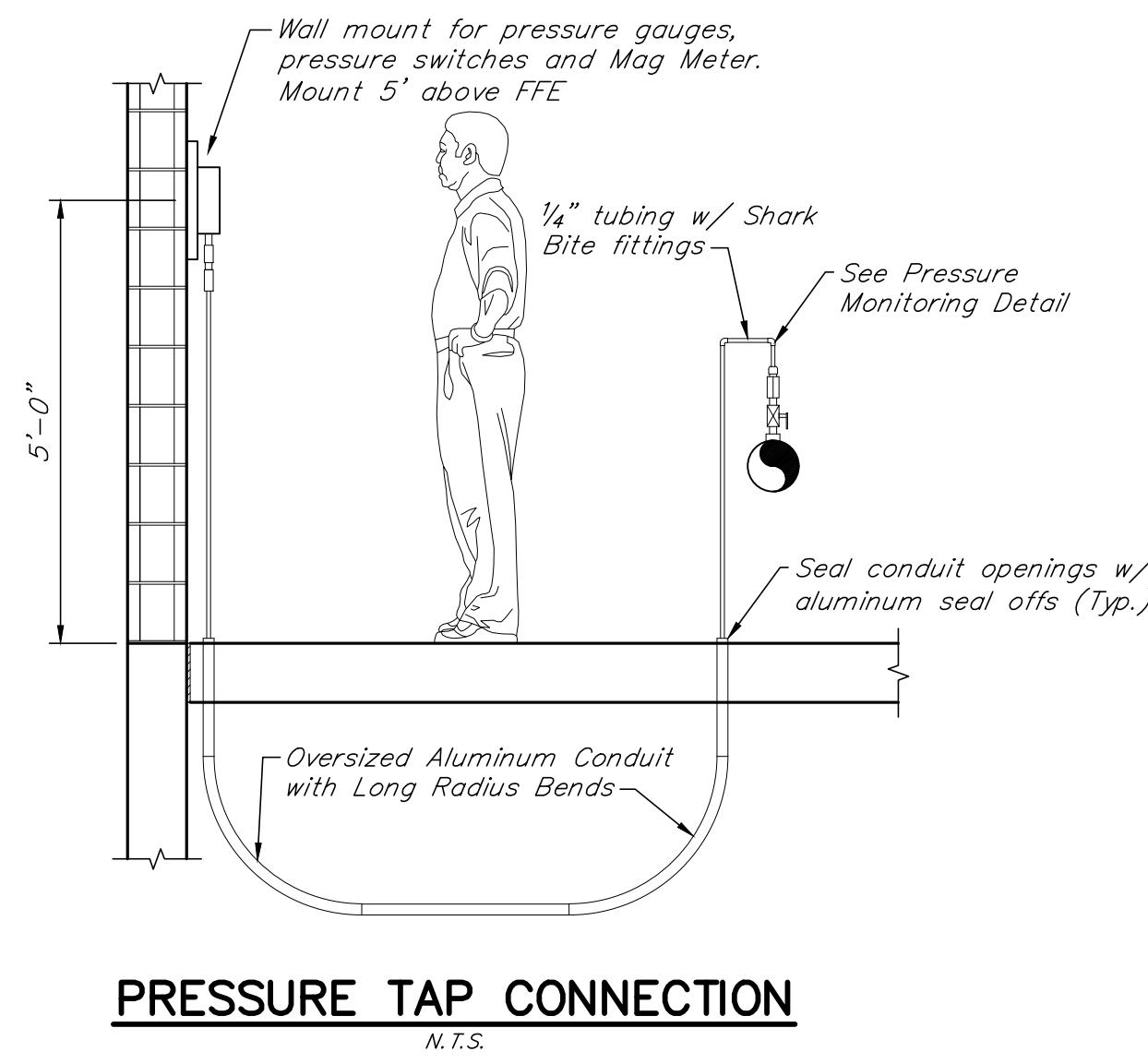
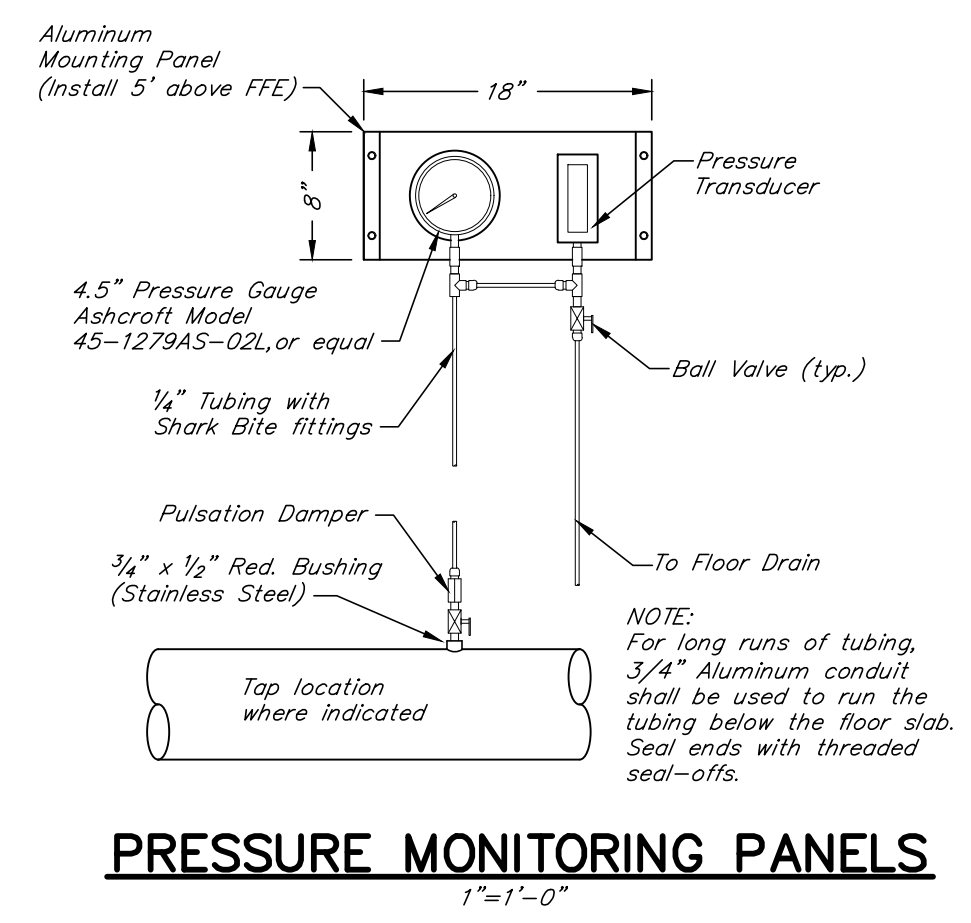
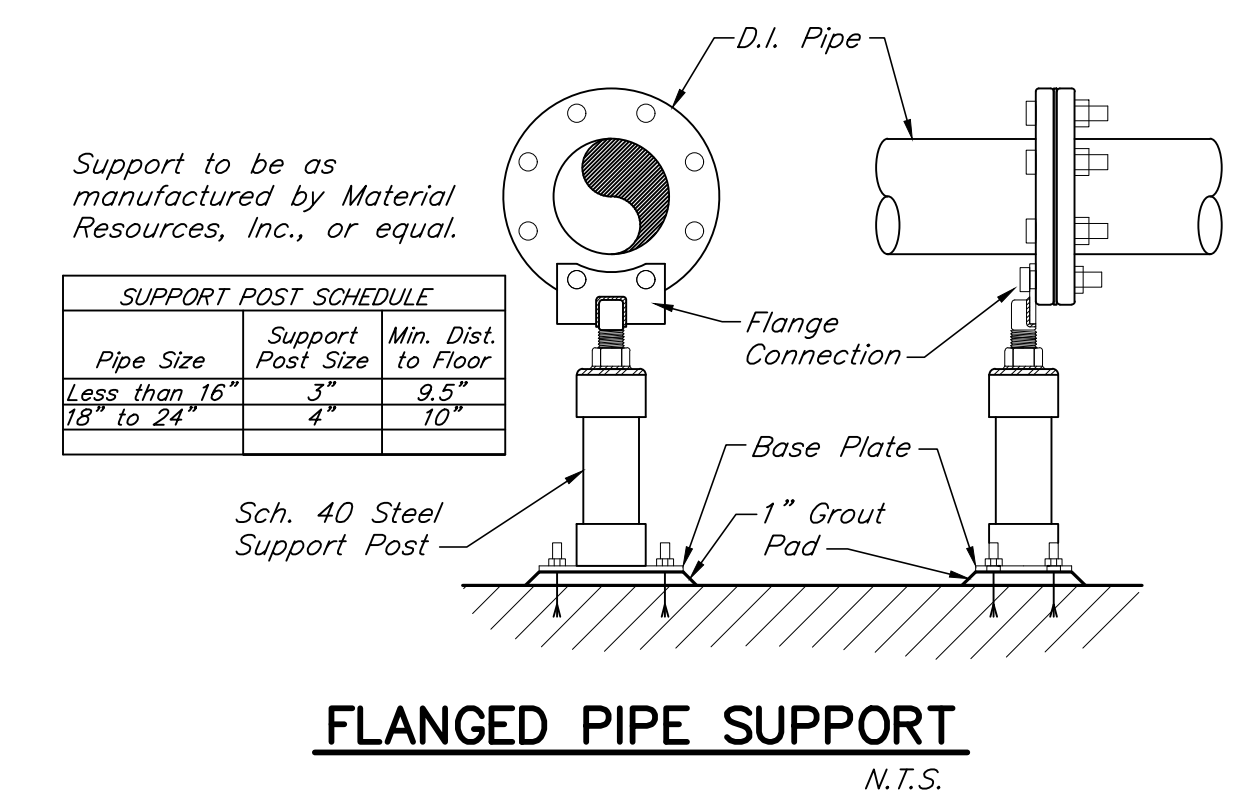
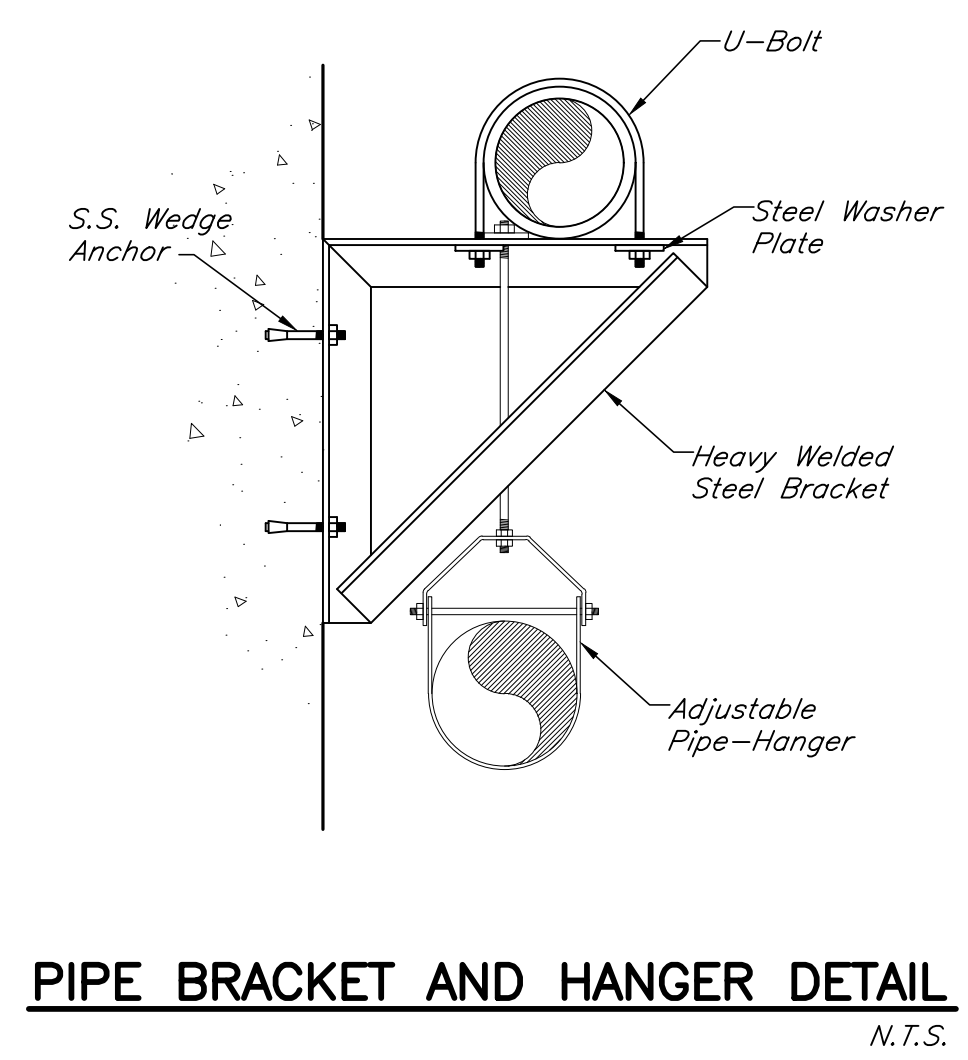
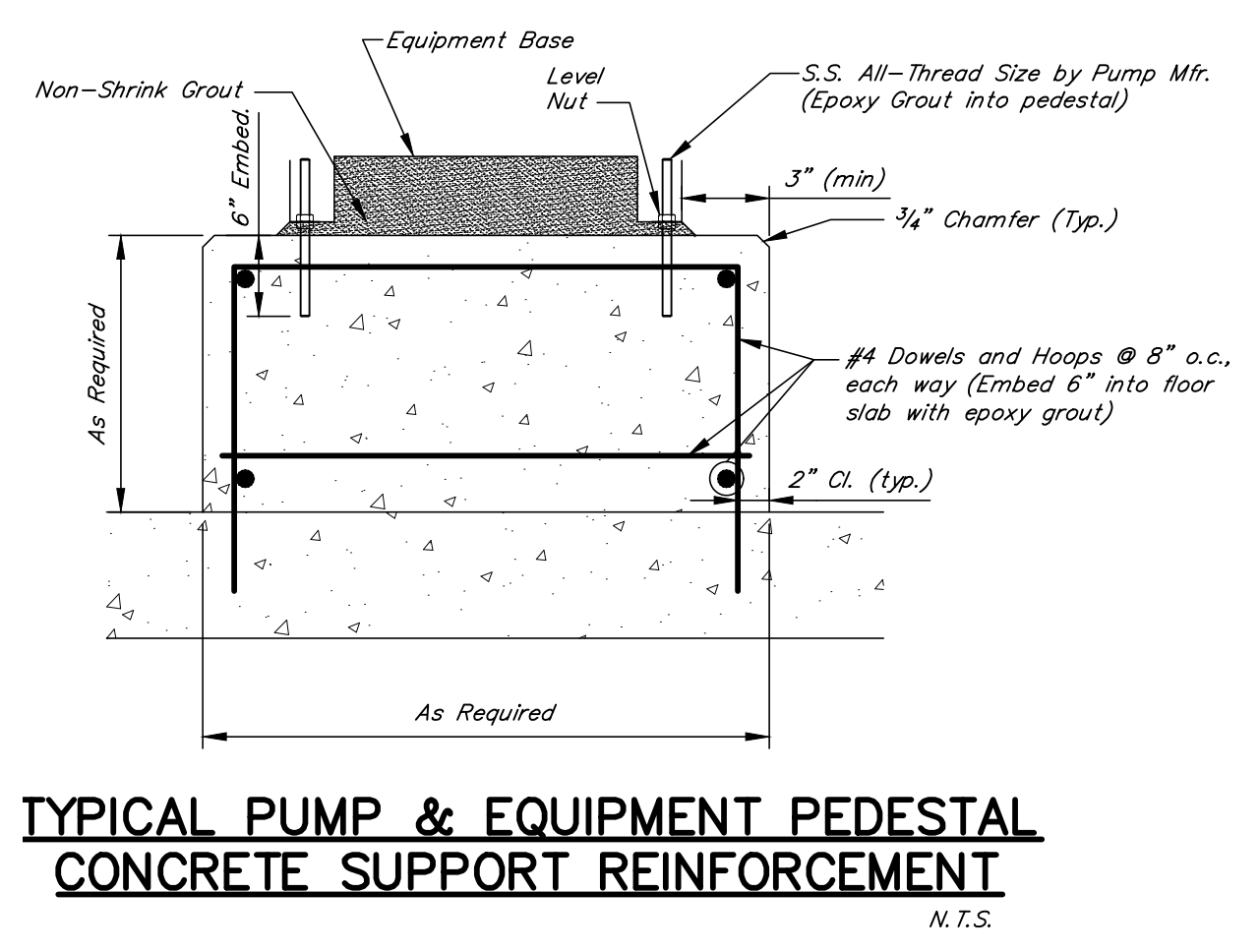
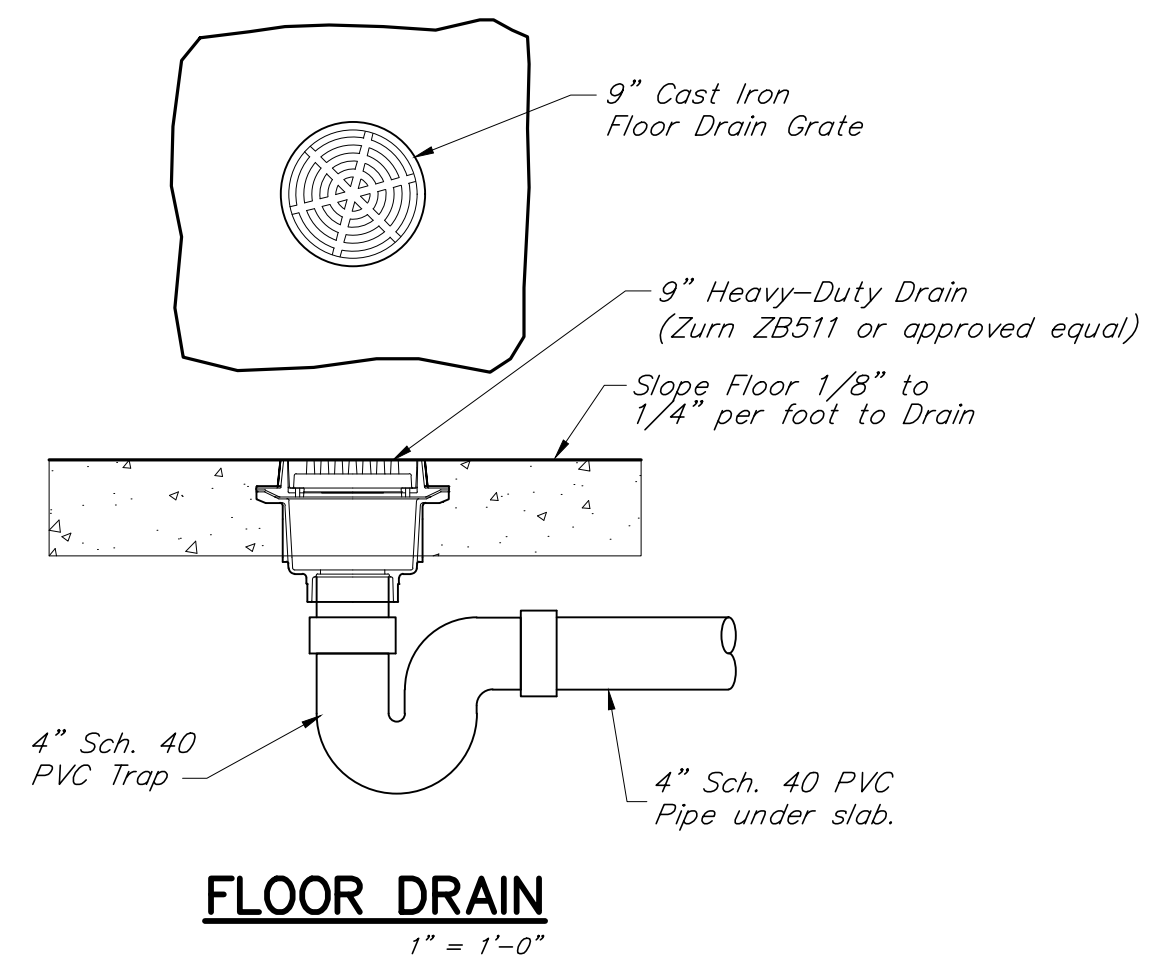
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DATE: July 2021
SCALE: As Noted
REVISIONS



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:
1. 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
2. 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"-mch bearing on each side of opening. The lintel block shall have the same face as the wall block.



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.

DESIGN CRITERIA

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

WIND LOAD DATA

Table with 2 columns: Wind Load Data and Value. Includes Basic wind speed (120 mph), Wind exposure category (C), and Components and cladding wind design pressures (28 psf).

EARTHQUAKE LOAD DATA

Table with 2 columns: Earthquake Load Data and Value. Includes Seismic site class (D), Mapped short period spectral response acceleration (Ss = 0.347), and Seismic coefficient (Cs = 0.22).

MATERIAL STRENGTHS USED IN DESIGN

Table with 2 columns: Material and Strength. Lists materials like Concrete, Reinforcing bars, and Structural steel sections with their respective strengths.

GENERAL

- 1. The requirements of these general notes apply unless otherwise noted on plans or in specifications.
2. All dimensions of existing conditions shall be verified prior to commencing work.
3. This structure is designed to be stable and self-supporting only when fully completed.

FOUNDATIONS

- 1. The foundations have been designed based on assumed bearing capacities.
2. Foundation design is based on an allowable bearing capacity of 2,000 psf for native soil.
3. If required, a qualified testing company shall be engaged by the contractor to verify bearing capacities prior to installing foundations.

CAST-IN-PLACE CONCRETE

- 1. All concrete construction shall be performed in accordance with aci 301-10, aci 318-11, ACI 117-10, ACI 308.1-11, and ACI SP-66.
2. Shop drawings showing the size, length, quantity, location and mark of all reinforcing bars, supports and accessories shall be submitted for approval prior to fabrication.

Table with 3 columns: bar size, 3,000 psi conc. lap length, and >=4,000 psi conc. lap length. Lists bar sizes #3 through #9 and their corresponding lap lengths.

- 8. Concrete protection for reinforcement shall be in accordance with the following table:
condition clear cover over bars
concrete cast against and permanently exposed to earth 3"
concrete exposed to earth or weather #6 through #18 bars 2"
#5 bar, W31 or D31 wire and smaller 1 1/2"

CONCRETE MASONRY

- 1. Concrete masonry walls shown on the structural drawings are structural walls. concrete masonry walls not shown on the structural drawings are partitions.
2. Concrete masonry walls shown on structural drawings shall be constructed in accordance with ACI 530.1 "Specifications for Masonry Structures".
3. Installation drawings, product data and material certifications shall be submitted for approval.

STRUCTURAL STEEL

- 1. Detailing, fabrication, and erection of structural steel shall conform to the AISC "Specification for Structural Steel", (ANSI/AISC 360-10), AISC "Code of Standard Practice for Structural Steel Buildings and Bridges", AISC / RCSC "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" and AWS D1.1 "Structural Welding Code."
2. Shop drawings shall be submitted for approval prior to fabrication of structural steel.

Table with 2 columns: member type and specification. Lists various steel members like wide flange, standard beam, channel, angle, plate, bar and rod, etc. with their specifications.

- 4. Grout shall conform to requirements in the specifications.
5. The typical details on the drawings contain additional general steel construction notes and details.
6. High-strength bolted connections shall be fully pretensioned unless noted as snug tight on the drawings.

PREFABRICATED WOOD TRUSS CONSTRUCTION

- 1. Truss design and manufacture shall conform to the current building code authorized edition of ANSI TPI-1, "National Design Standard for Metal-Plate Connected Wood Truss Construction."
2. Truss handling and erection shall conform to the latest edition of BCSI guides.
3. Truss layout and truss shop drawings shall be submitted for approval.

ROOF AND WALL PLYWOOD SHEATHING

- 1. All sheathing shall be plywood (not OSB) manufactured in accordance with industry specification PS-1 and shall bear the stamp of either the American Plywood Association (APA) or Timberco Inc. (TECO).
2. All sheathing shall be exterior grade.
3. All roof and wall sheathing shall have veneer grade C-C or better.

STRUCTURAL WOOD

- 1. All structural wood dimension lumber shall be Southern Pine No. 2 species stress grade and shall bear a stamp by the southern pine inspection bureau (SPIB) indicating this.
2. All structural composite lumber (LVLs) shall have the following allowable design stresses:
Fb = 2,750 psi FcPERP = 750 psi
Fv = 285 psi E = 2.0 Mpsi
Ft = 1,150 psi Fc = 2,600 psi

KNOX COUNTY UTILITY COMMISSION
BARBOURVILLE CONNECTION - KY 225
KNOX COUNTY, KENTUCKY

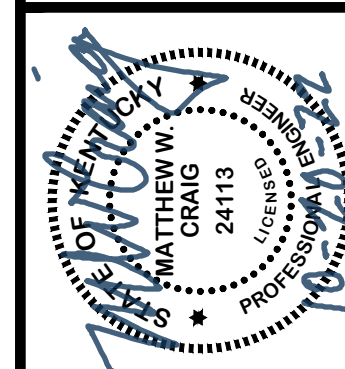


Table with 2 columns: Check/Drawn/Checked By and Date. Includes fields for KAD, JDS, and dates for 2022.

KENVIRONS
Civil & Environmental Engineers

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

STRUCTURAL GENERAL NOTES

PROJECT NO. 2020132
SHEET NO. S1

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.
 - 3.4. Masonry construction in accordance with section 1705.4
 - 3.4.1. Submit material certifications of cement, aggregate, admixtures and reinforcement.
 - 3.4.2. 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.
 - 3.4.3. Submit report of placement of masonry, reinforcement and grout prior to and during each placement of grout.
 - 3.4.4. Submit report of installation of chemical adhesive anchorage in concrete at base of masonry walls. inspect installation of 10% of anchorage installations.
 - 3.5. Wood construction in accordance with section 1705.5
 - 3.5.1. See "Inspection of Fabricators" for inspection of prefabricated wood trusses.
 - 3.5.2. Submit material certifications for wood members, sheathing and fasteners.
 - 3.5.3. Submit report of inspection of connection of roof trusses to structure.
 - 3.5.4. 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.
 - 3.5.5. Submit report of inspection of nailing of roof sheathing to trusses and structure.
 - 3.6. Soils construction in accordance with section 1705.6
 - 3.6.1. Submit report that soil bearing capacity is adequate according to the geotechnical report prior to each placement of foundation concrete.
 - 3.6.2. Submit report of density and moisture content of controlled fill for each lift under building structure.
 - 3.7. Cast-in-place deep foundations in accordance with section 1705.8
 - 3.7.1. Submit report of continuous observation of all drilling operations including complete and accurate records for each drilled shaft.
 - 3.7.2. Submit report indicating the location, plumbness, diameter, length, concrete volume, embedment into bedrock, and adequate end-bearing strata capacity of each pier.
 - 3.7.3. 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:



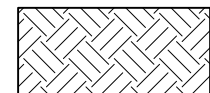
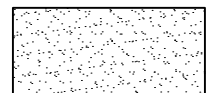
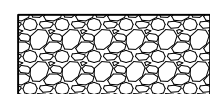
anchor dia	c to c distance	edge distance	embed distance	mat'l thickness
1/2"	3 1/2"	4"	3 1/2"	5 1/2"
5/8"	4"	5"	4"	6"
3/4"	6"	6"	5"	8"
6. If any of the following conditions are indicated or present then verify acceptability of expansion anchor type, material or finish with the structural engineer prior 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

KNOX COUNTY UTILITY COMMISSION
BARBOURVILLE CONNECTION - KY 225
KNOX COUNTY, KENTUCKY



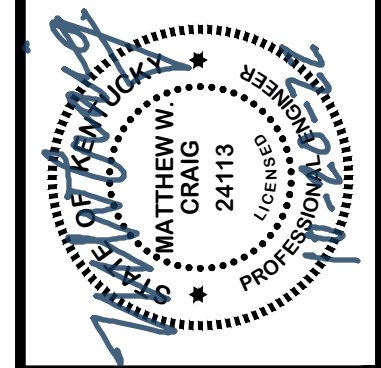
DRAWN BY:	CHECKED BY: JDS
CHECKED BY: JDS	DATE: OCT 2022
SCALE: AS NOTED	REVISIONS:

KENVIRONS
 Civil & Environmental Engineers

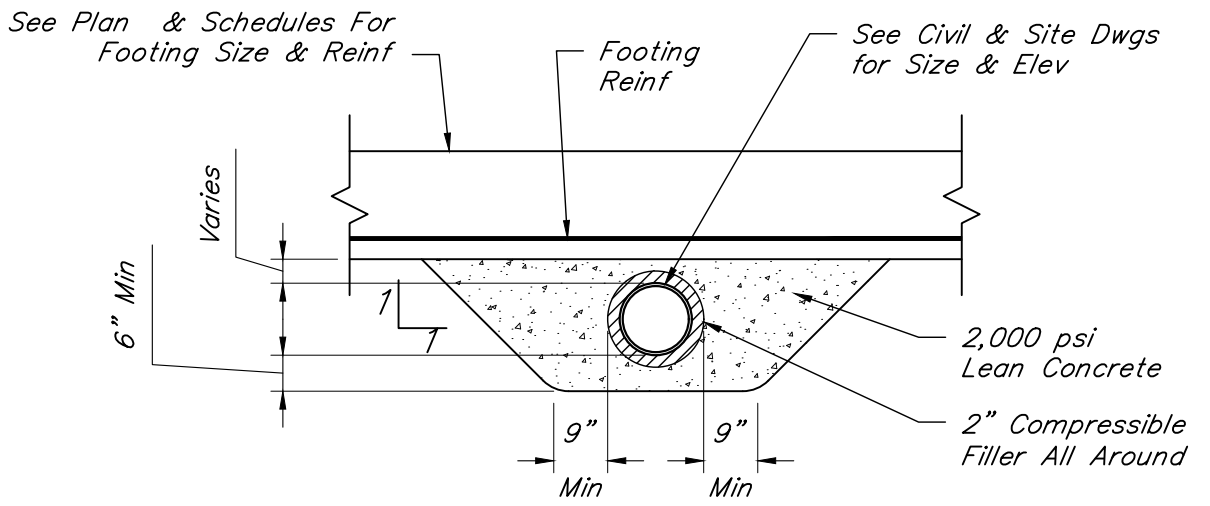
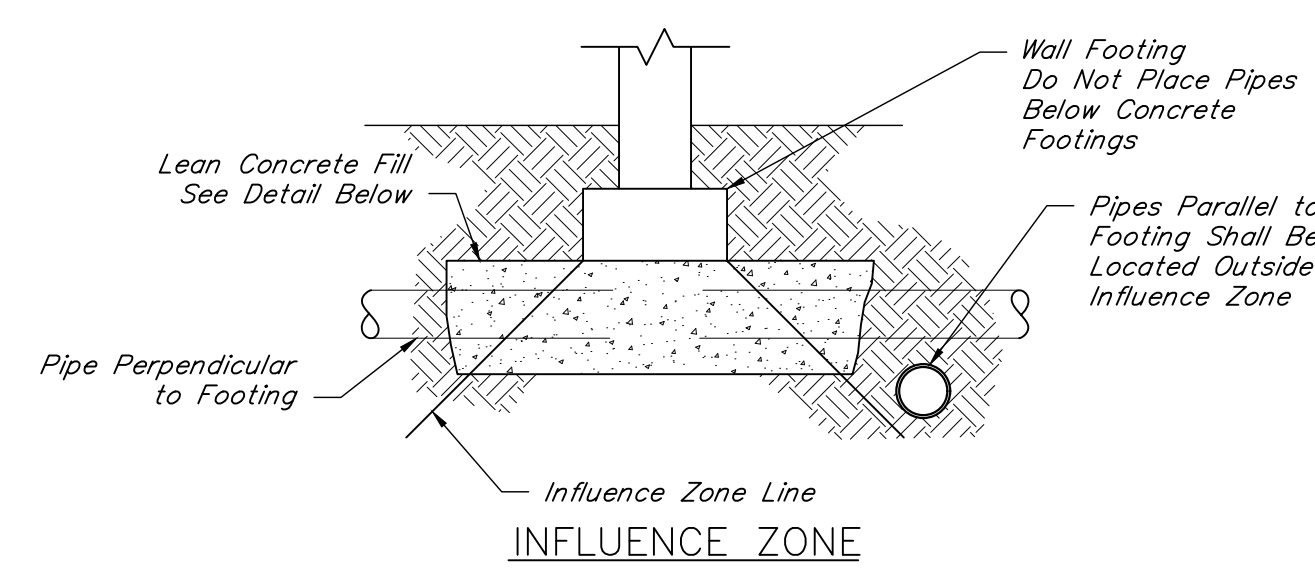


PROJECT NO.
2020132

SHEET NO.
S2

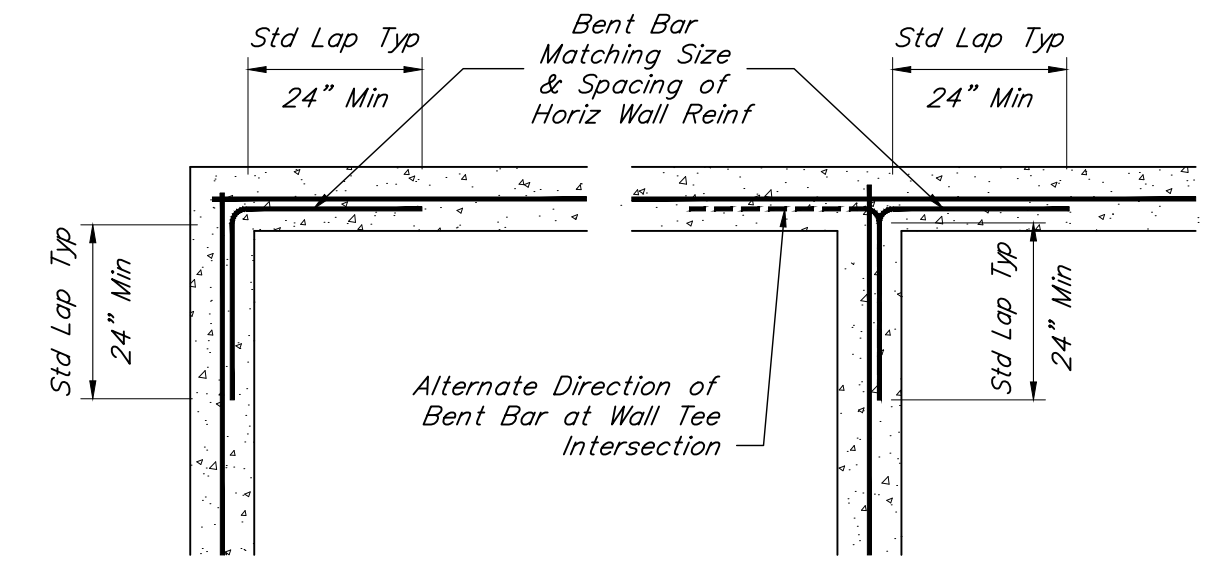


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CHECKED BY: JDS	
DATE: OCT 2022	
SCALE: AS NOTED	
REVISIONS:	



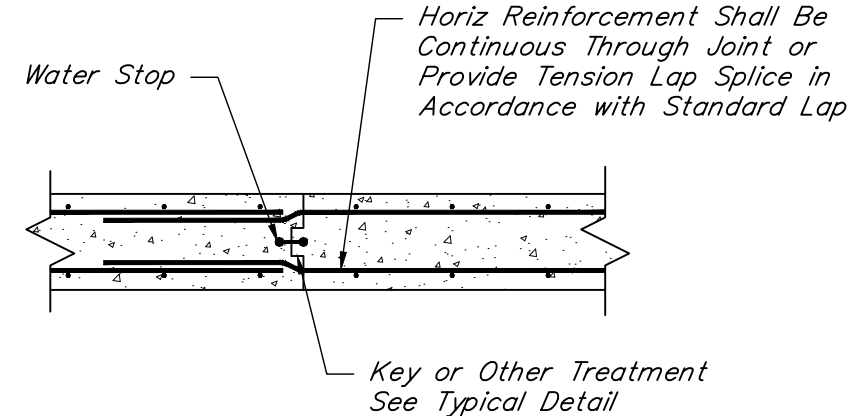
NOTE:
Provide concrete protection around utility line when line is within footing influence zone. See detail above for influence zone definition.

TYPICAL UTILITY LINE BELOW FOOTING
Not to Scale



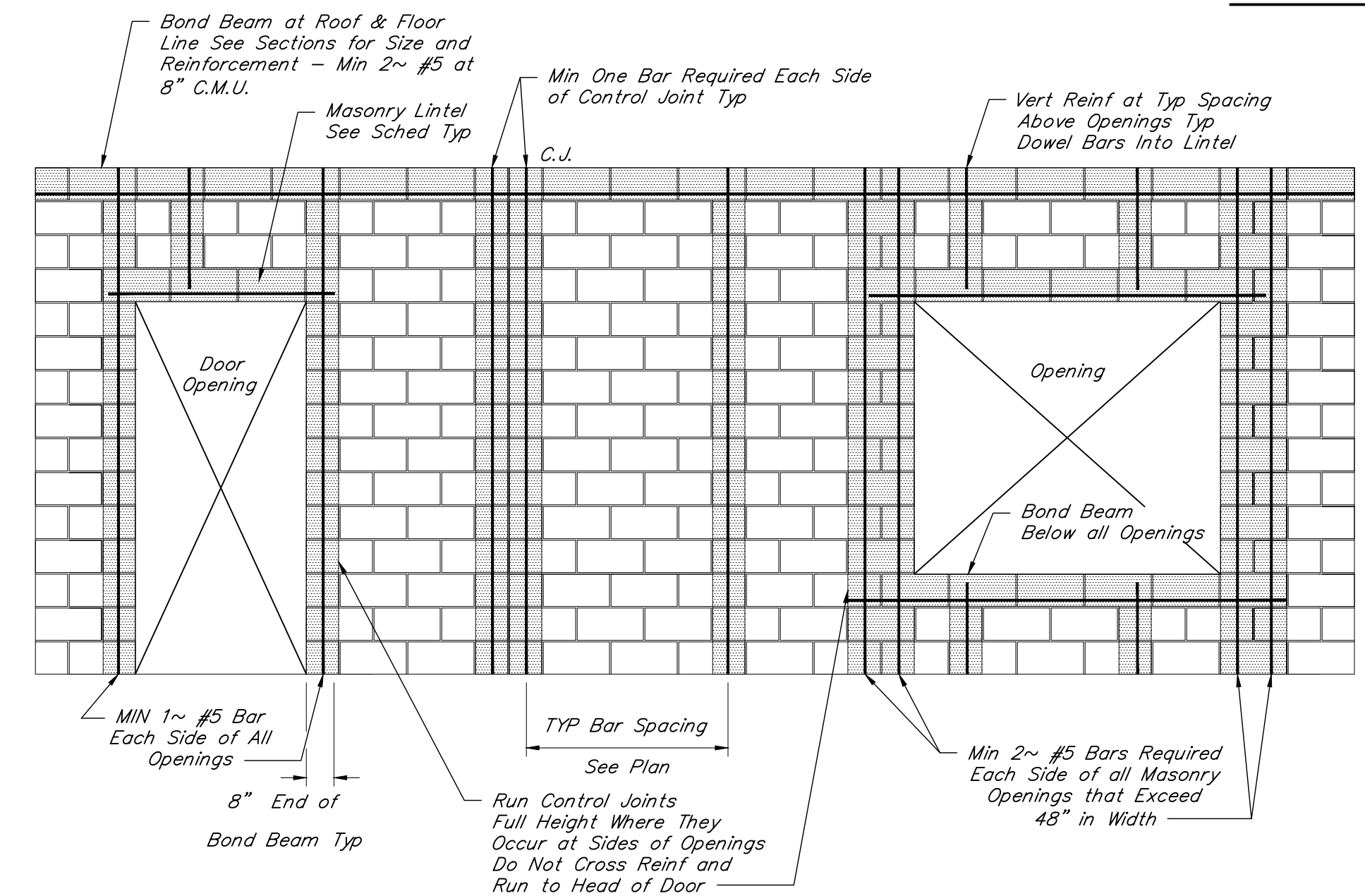
NOTES:
 1. Where bar sizes differ, lap for larger size.
 2. If bend radius creates problems fitting hairpins in wall, provide more smaller hairpins with equal total area to main bars.
 3. Construction joints shall not occur within 5'-0" of a corner or tee unless indicated otherwise on the drawings.

TYPICAL WALL INTERSECTION REINF
Not to Scale



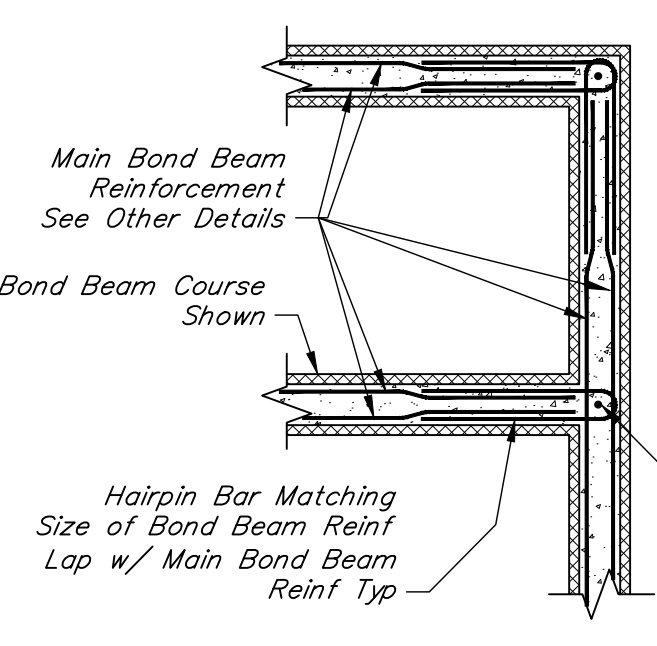
NOTES:
 1. Maximum Length of Wall Pour = 40'-0".
 2. Minimum 48 Hours Between Adjacent Pours.
 3. See Plans for Additional Joint Locations.
 4. Submit Construction Joint Location Plan For Approval Prior to Construction.
 5. Do Not Form Joints Within 5'-0" of a Corner or Tee Intersection.

TYPICAL WALL CONSTRUCTION JOINT
Not to Scale



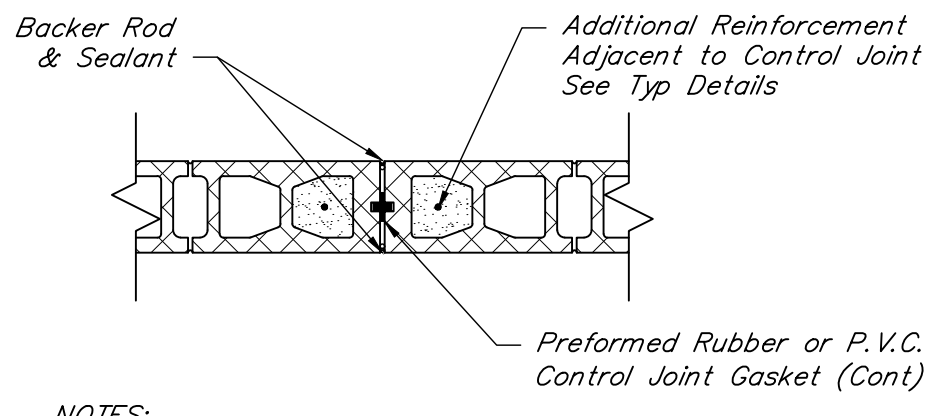
NOTES:
 1. Minimum vertical wall reinforcing shall be #5 @ 2'-0" unless noted otherwise.
 2. Vertical wall reinforcing shall be continuous.
 3. See typical detail for dowels required at base of walls.
 4. Center reinforcing bars in grouted cells unless noted otherwise.
 5. Use bar positioners at minimum 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



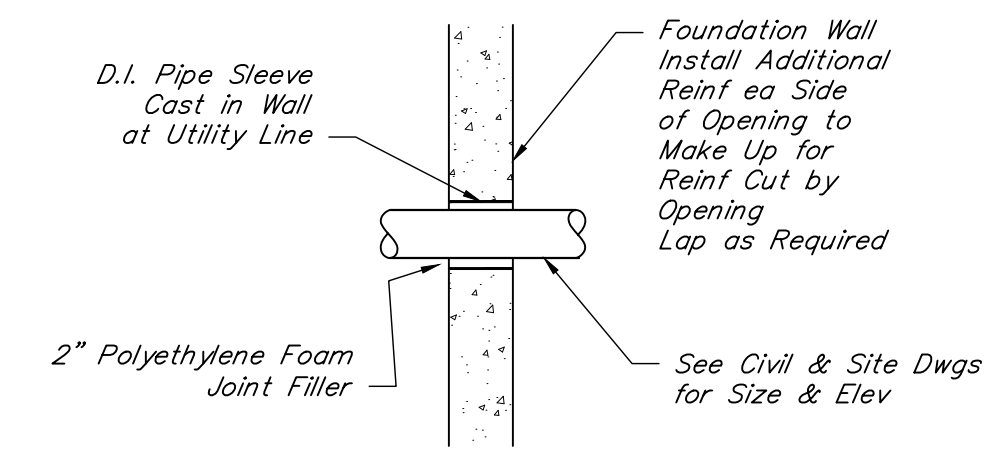
NOTES:
 1. Tooth intersecting walls together in running bond with min 6" overlap or use masonry strap every third course unless noted otherwise on plans.
 2. #5 vertical bar centered in grouted cell shall be installed at intersection.
 3. Horizontal joint reinforcement shall be lapped min 6" at wall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

TYPICAL MASY WALL INTERSECTION DETAIL
Not to Scale

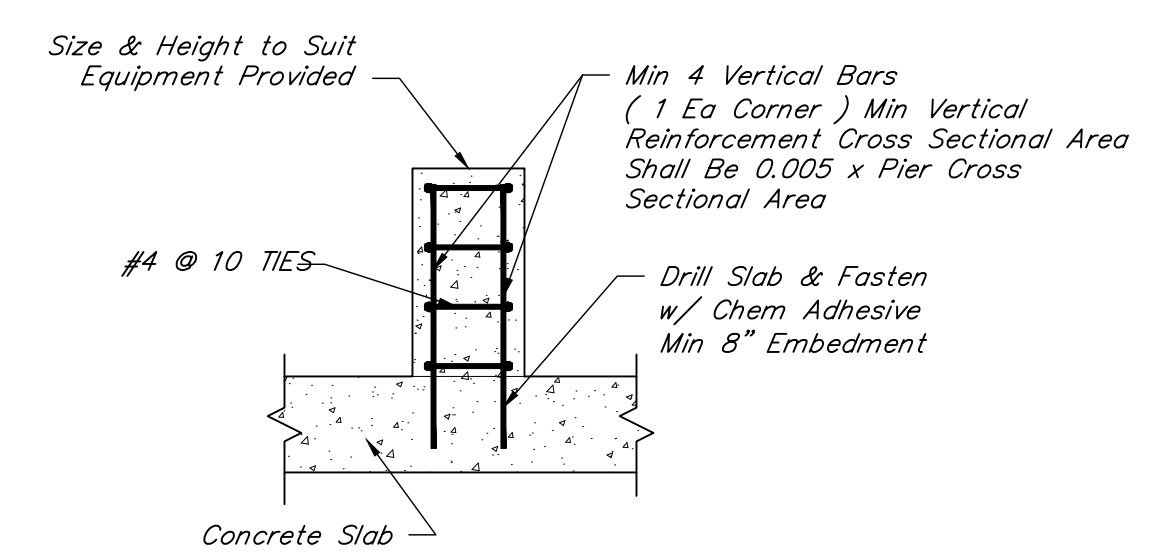


NOTES:
 1. See architectural drawings for control joint locations.
 2. Discontinue horizontal joint reinforcing at control joints.
 3. Unless otherwise shown or noted, spacing of control joints shall not exceed 24 feet.

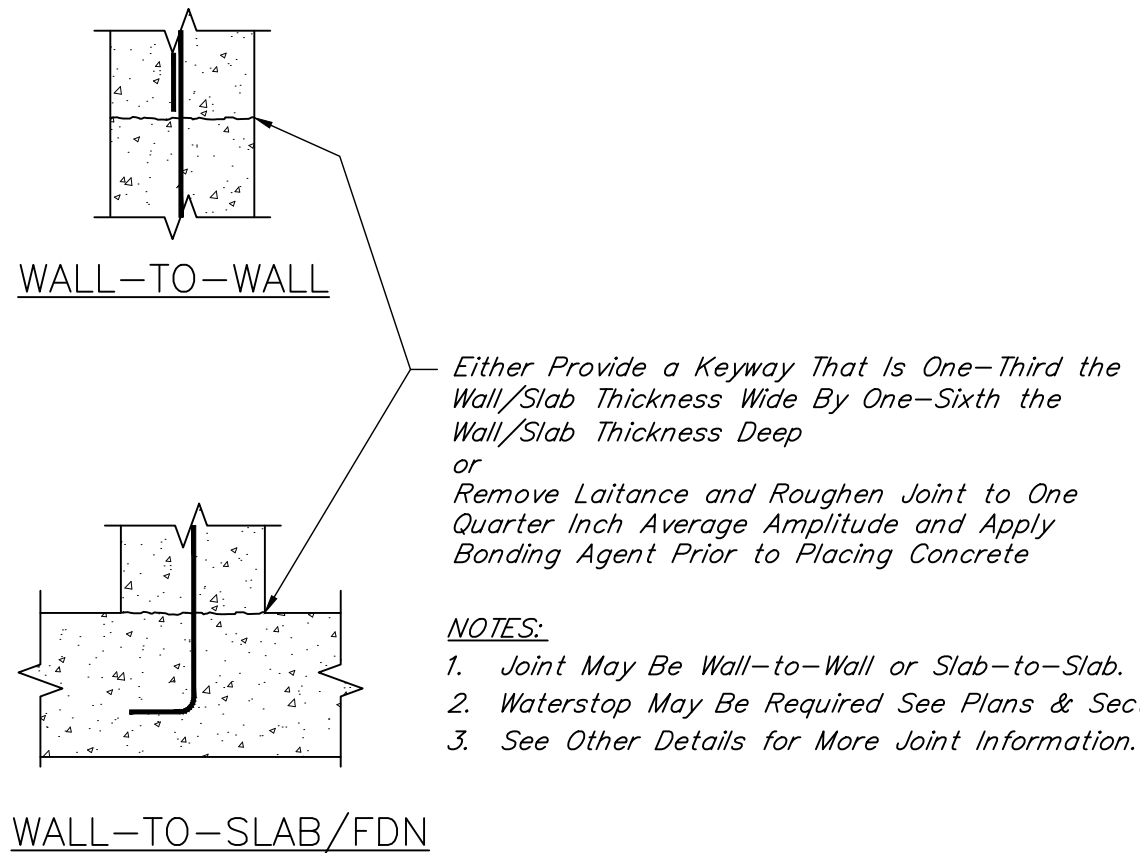
TYPICAL C.M.U. CONTROL JOINT DETAIL
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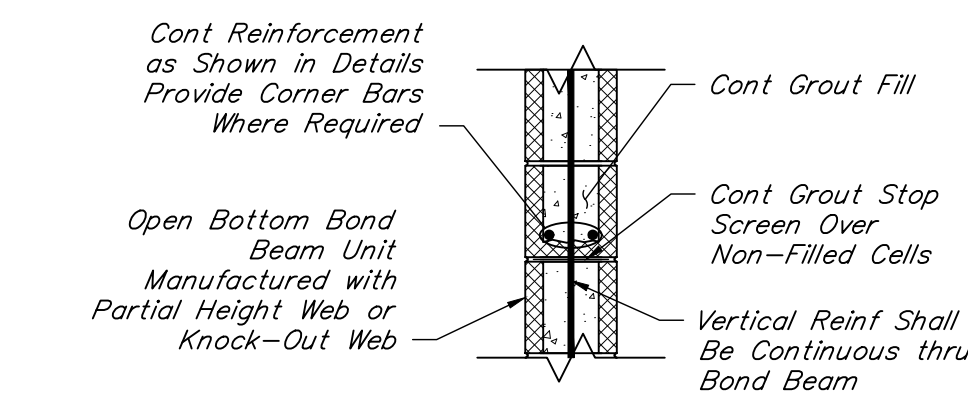
TYPICAL UTILITY LINE THRU FDN WALL
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TYPICAL CONCRETE EQUIPMENT PEDESTAL
Not to Scale

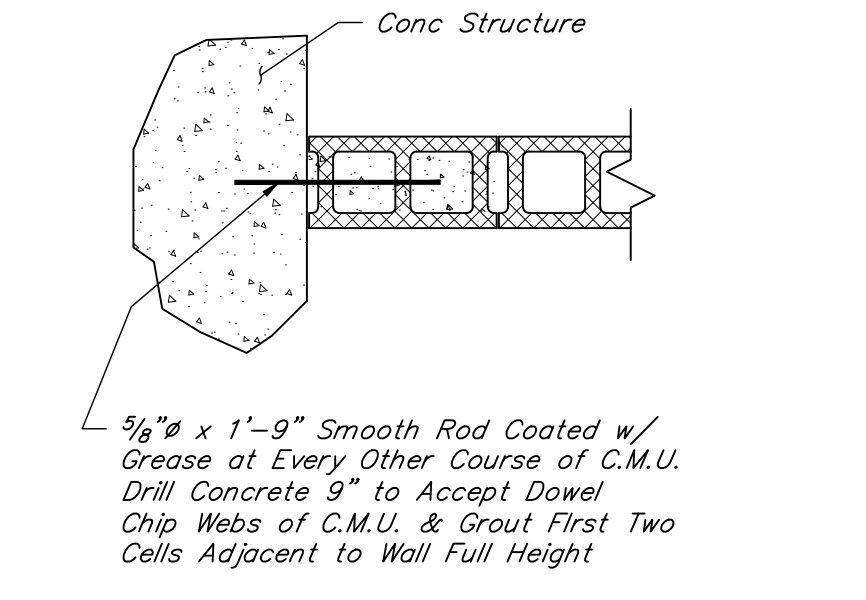


TYPICAL CONSTRUCTION JOINT CONCRETE PREPARATION
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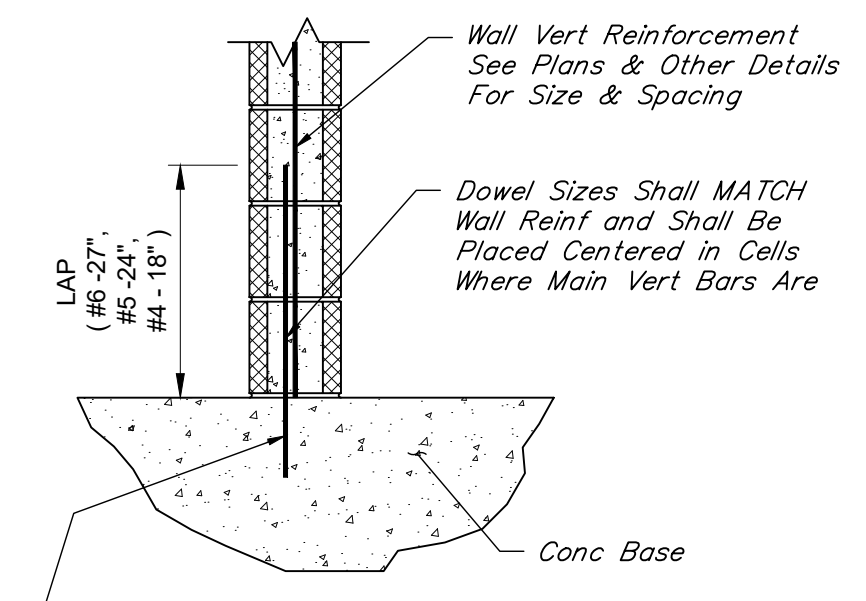


NOTE:
Reinforcing shall have 3/4" minimum grout cover to all c.m.u. surfaces.

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



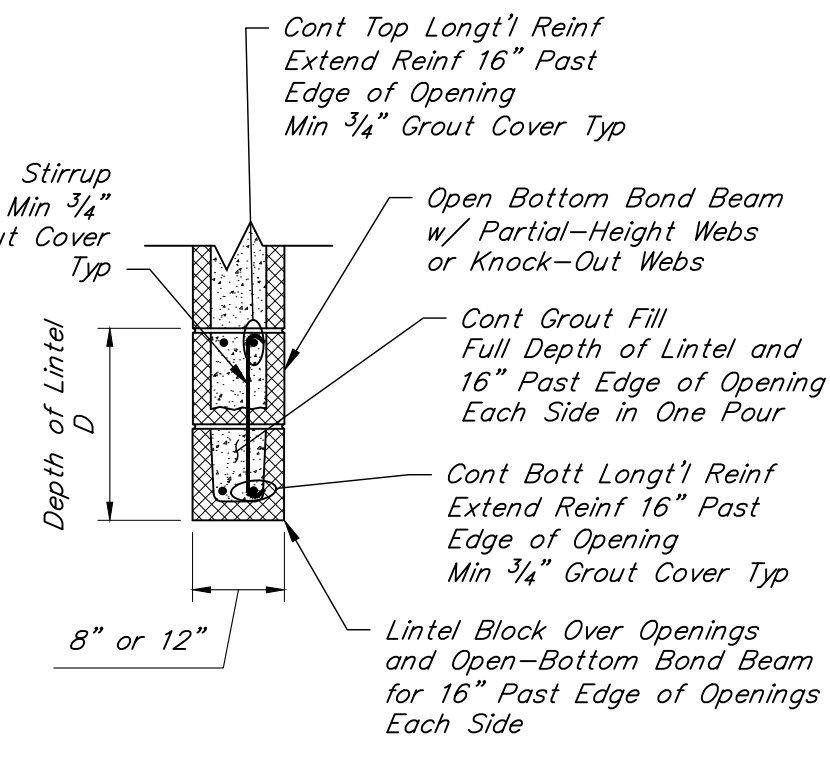
TYPICAL C.M.U. WALL DOWEL DETAIL
Not to Scale



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

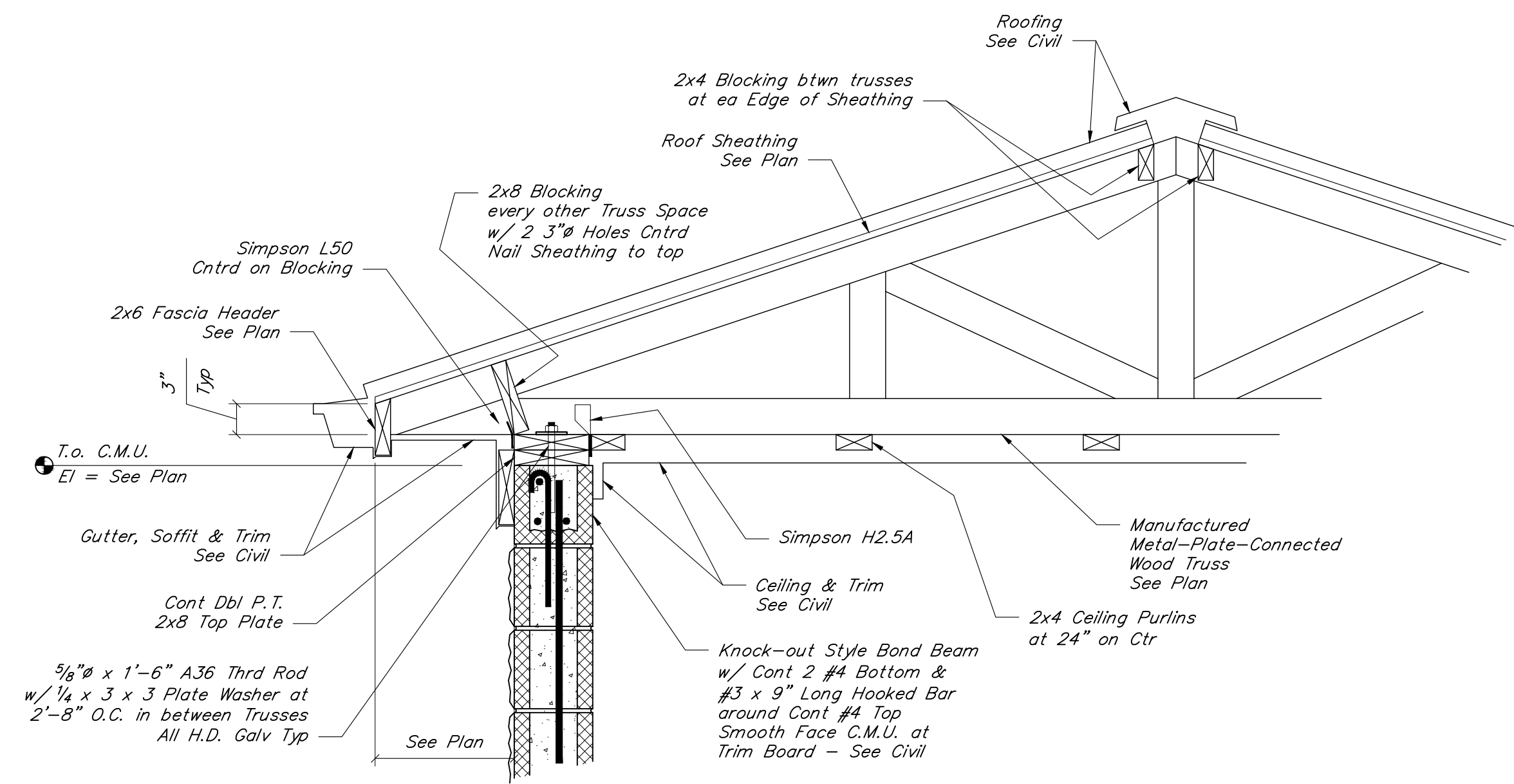
MASONRY LINTEL SCHEDULE					
MARK	MAX OPENING SIZE	D	BOTTOM REINF	TOP REINF	STIRRUPS
ML-1	5'-0"	8"	2~#5	None	None
ML-2	8'-0"	16"	2~#5	None	None
ML-3	11'-8"	24"	2~#5 (8" C.M.U.) 2~#5 (12" C.M.U.)	None	None
ML-4	18'-0"	24"	2~#5 (8" C.M.U.) 2~#5 (12" C.M.U.)	2~#5	#3@8"

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 stock 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.

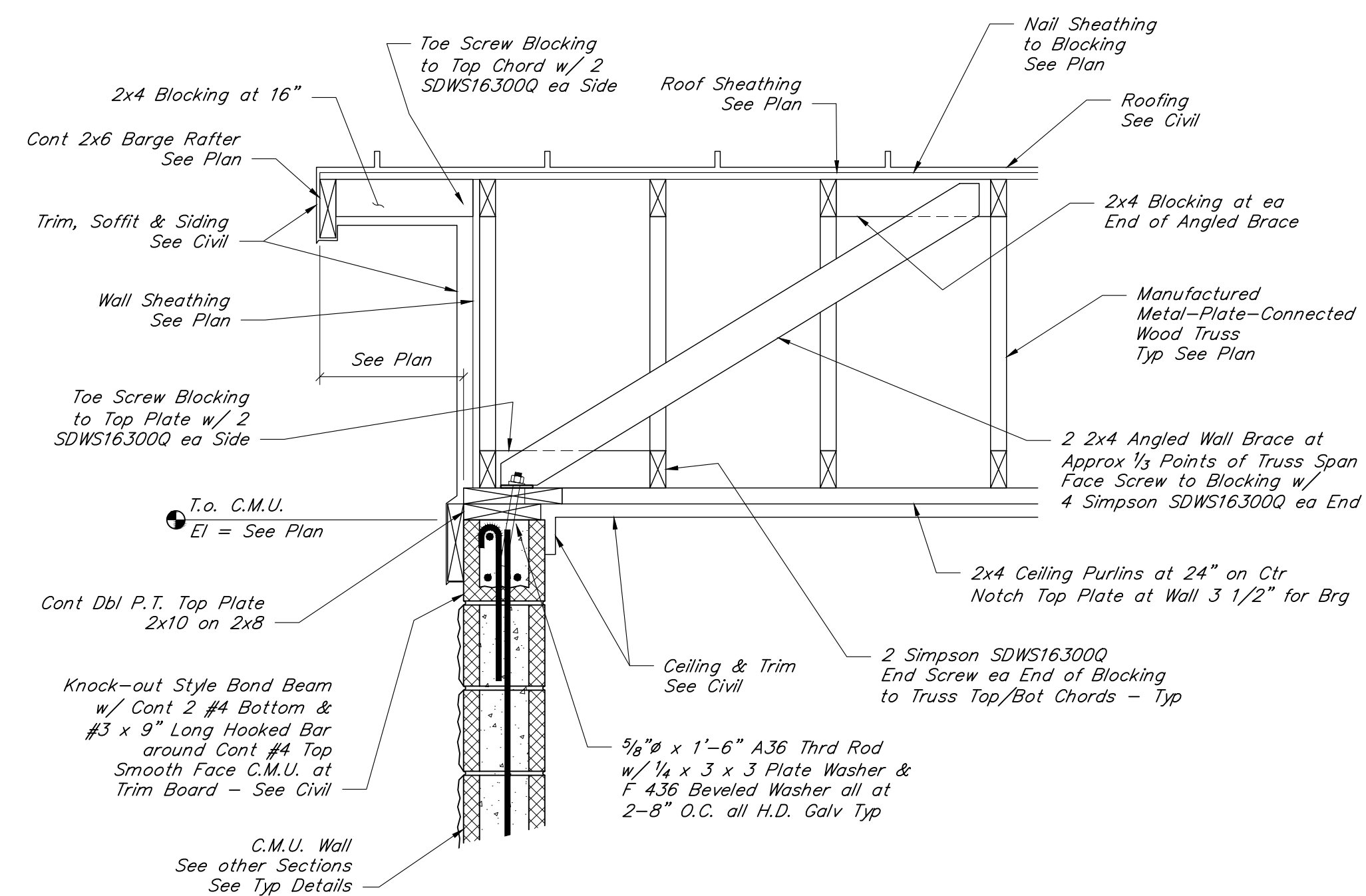


TYPICAL C.M.U. LINTEL DETAIL
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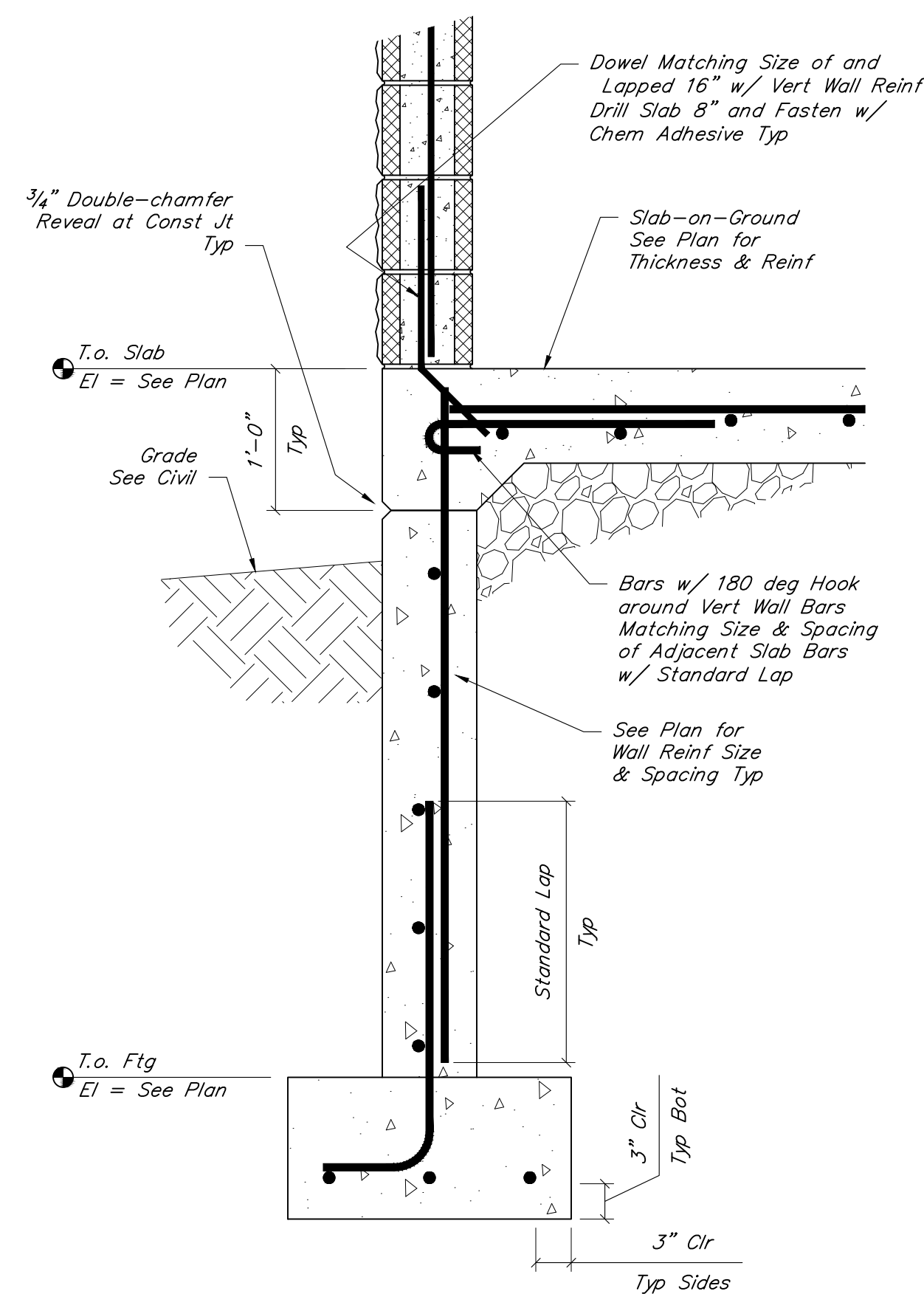
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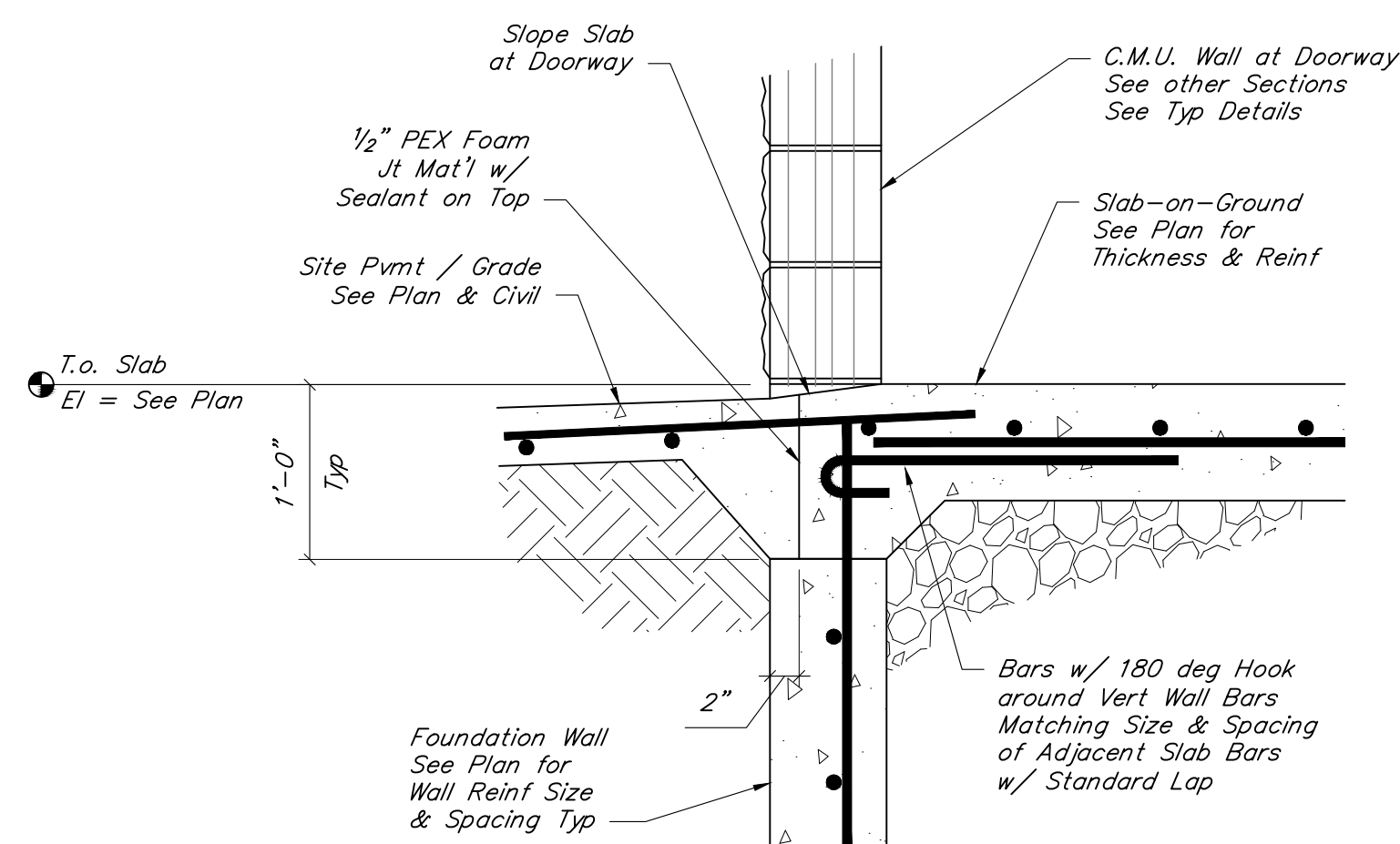
1 SECTION
S5
1"=1'-0"



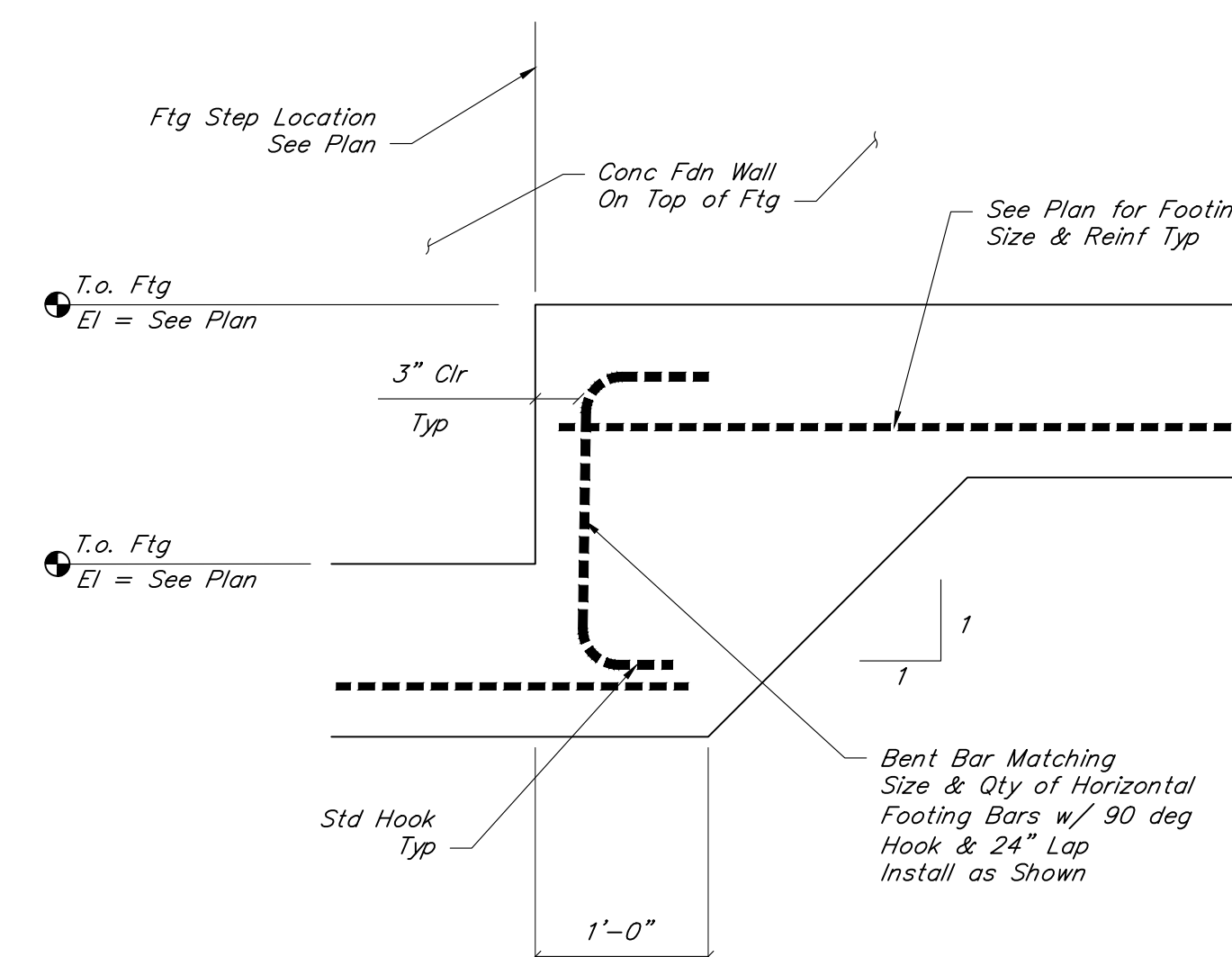
2 SECTION
S5
1"=1'-0"



3 SECTION
S5
1"=1'-0"



3A SECTION
S5
1"=1'-0"



4 SECTION
S5
1"=1'-0"



DRAWN BY:	
CHECKED BY: KDT	
CHECKED BY: JDS	
DATE: OCT 2022	
SCALE: AS NOTED	
REVISIONS:	

ELECTRICAL ABBREVIATIONS

A	AMPERE
AF	AMPERE FRAME
AFB	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
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
EGG	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
FVNR	FULL VOLTAGE, NON-REVERSING
GEC	GROUNDING ELECTRODE CONDUCTOR
GFCI OR GFI	GROUND FAULT CURRENT INTERRUPTING
GND	GROUND
HOA	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)
LM	LUMEN
LIG	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 Ø	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 PLAN SYMBOLS

	ELECTRICAL CIRCUIT: SHORT=PHASE CONDUCTOR; LONG = NEUTRAL, DASHED = EQUIPMENT GROUND; EMERGENCY CIRCUIT
	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
	SINGLE RECEPTACLE
	208 or 240 VOLT RECEPTACLE
	DUPLEX RECEPTACLE, FLUSH FLOORBOX MOUNTED
	SPECIAL PURPOSE RECEPTACLE OUTLET
	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
	TELECOM OUTLET: D = DATA; T = TELEPHONE; C = CABLE; NUMBER = QTY OF CABLES & JACKS; CONDUIT TURNED UP
	CONDUIT TURNED DOWN
	WALL MOUNTED SPEAKER OR ALARM HORN
	PANELBOARD (SURFACE MOUNTED)
	PANELBOARD (FLUSH MOUNTED IN WALL)
	HEATER-WALL MOUNTED
	EXHAUST FAN/VENTILATOR
	SPEAKER GENERAL
	CLOCK
	EXISTING POWER POLE
	NEW POWER POLE
	LIGHTING POLE
	PHOTO CELL
	MANHOLE
	PULLBOX
	MUSHROOM HEAD EMERGENCY SWITCH
	DUCT SMOKE DETECTOR
	HEAT DETECTOR
	SMOKE DETECTOR
	FIRE ALARM MANUAL PULL STATION
	FIRE ALARM HORN/STROBE
	FIRE ALARM STROBE
	FIRE ALARM ZONE ADDRESSABLE MODULE
	SPRINKLER SYSTEM FLOW SWITCH
	TAMPER SWITCH
	MAGNETIC DOOR HOLDER
	KEYNOTE
	CALL SWITCH
	PASSIVE INFRARED MOTION 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
	TELEPHONE LINE UNDERGROUND
	TELEPHONE LINE OVERHEAD
	GROUND ROD

ELECTRICAL DIAGRAM SYMBOLS

	TRANSFORMER
	CAPACITOR
	GROUND
	CURRENT TRANSFORMER
	POTENTIAL TRANSFORMER
	CIRCUIT BREAKER (GENERAL)
	CIRCUIT BREAKER, THERMAL-MAGNETIC
	CIRCUIT BREAKER, MAGNETIC-ONLY
	CIRCUIT BREAKER (DRAWOUT)
	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
	FLOAT 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
	EMERGENCY STOP BUTTON

ELECTRICAL DEVICE MOUNTING HEIGHT SCHEDULE

DEVICE	HEIGHT AFF	REMARKS
RECEPTACLE - LOW	1'-4"	TO BOTTOM OF DEVICE BOX
LIGHT SWITCH	4'-0"	TO BOTTOM OF DEVICE BOX
CONTROL STATIONS & PUSH-BUTTONS	4'-0"	TO BOTTOM OF DEVICE BOX
PANELBOARDS & CONTROL PANELS	6'-6"	TO TOP OF BOX
SAFETY SWITCH	4'-0"	TO TOP OF BOX
THERMOSTAT	4'-8"	TO BOTTOM OF DEVICE BOX
EMERGENCY LIGHT FIXTURES	7'-4"	TO BOTTOM OF DEVICE BOX

CONDUCTORS	I/O TAG	TYPE	UNIT	CONTROL	MONITOR	TREND	HISTORIZE	TOTALIZE	AVERAGE	ALARM	REPORT	NOTES
2#14	POWER LOSS ALARM	DI								X		
2#14	DOOR OPEN ALARM	DI								X		
2#14	HEAT PUMP UNIT 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	PUMP1 DRIVE FAULT	DI								X		
2#14	PUMP 1 SUCTION PRESSURE ALARM	DI								X		
2#18 STIC	PUMP 1 SPEED FEEDBACK	AI	HZ		X	X	X					
2#18 STIC	PUMP 1 AMP DRAW	AI	AMP		X	X	X					
2#14	PUMP 2 CALL-TO-RUN	DO		X								
2#14	PUMP 2 RUNNING STATUS	DI			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	PUMP 2 SPEED FEEDBACK	AI	HZ		X	X	X					
2#18 STIC	PUMP 2 AMP DRAW	AI	AMP		X	X	X					
2#18 STIC	FLOWRATE	AI	GPM		X	X	X					
2#18 STIC	FLOW TOTAL PULSE	DI	GAL				X				X	REPORT DAILY & MONTHLY FLOW
2#18 STIC	SUCTION PRESSURE	AI	PSIG		X	X	X			X		
2#18 STIC	DISCHARGE PRESSURE	AI	PSIG		X	X	X			X		

SCADA I-O TABLE

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/WB	OAT DB								CFM	ESP	RPM	
HPU-1	BARD W18H	80/67	95	17.5	13.1	11.3	7.0	1.61	230/1Ø	20	600	0.1	A/R	4.0

- 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 CUSTOM-COLOR - OWNER TO SELECT COLOR DURING SUBMITTAL REVIEW

CIRCUIT DESCRIPTION	AMPS	POLES	BREAKER	NO.	PHASE A AMPS	PHASE B AMPS	PHASE C AMPS	NO.	BREAKER	POLES	AMPS	CIRCUIT DESCRIPTION	
SPD		3	30A	1	0	0	0	2	80A	3		AFD2 PUMP #2	
				3				4					
				7				6					
AFD1 PUMP #1	61	3	80A	7	61	61	61	8	80A	3		SPARE	
	61			11				10					
	61			11				12					
HEAT PUMP HPU-1	35	2	40A	13	40			14	20A	1	5	NORTH RECEPTACLES	
	35			15		35		16				SPACE	
FLOWMETER	1	1	15A	17				18	20A	1	5	SOUTH RECEPTACLES	
SCADARTU	3	1	15A	19	6			20	15A	1	3	PUMP CONTROL PANEL	
				21				22				SPACE	
INTERIOR LIGHTING	2	1	20A	23				4	24	20A	1	2	EXTERIOR LIGHTING
SPARE				25	1			26	20A	1	1	GENSET ANTI-COND. HEATER	
SPACE				27		13		28	30A	2	13	GENSET BLOCK HEATER	
GENSET CHARGER	2	1	20A	29				15	30				
SPARE				31	0			32	20A	1		SPACE	
SPACE				33		0		34				SPACE	
SPACE				35				0	36	20A	1	SPACE	
SPACE				37				38	20A	1	SPACE		
SPACE				39		0		40				SPACE	
SPACE				41				0	42	15A	1	SPACE	
TOTAL AMPS PER PHASE:				108	109	86							

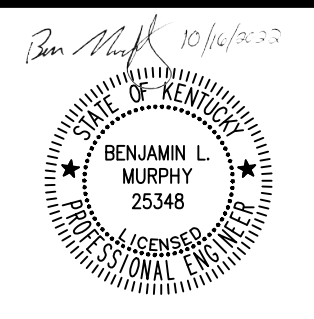
- NOTES:
 1. PROVIDE AN INTEGRAL SURGE PROTECTION DEVICE (SPD) RATED 80KA MIN.

LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOG SERIES	LAMPS	VOLTAGE	MOUNTING	DESCRIPTION	SYMBOL
LF-1	HOLOPHANE	EMS LED	4000 LM LED	120V	SURFACE	LINEAR FIXTURE, FIBERGLASS N4X WET LOCATION, CLEAR ACRYLIC DIFFUSER, 6KV/3KA SURGE, 5-YR WARRANTY, MEDIUM DISTRIBUTION, 4000K, 80 CRI	
LF-2	HOLOPHANE	DM30	2X1.9W LED	120V	SURFACE	EMERGENCY FIXTURE, WET LOCATION THERMOPLASTIC HOUSING, NICKEL-CADMIUM BATTERY WITH TEST SWITCH, 5-YR WARRANTY, WITH CAPACITY FOR REMOTE HEADS	
LF-3	HOLOPHANE	CZQRW	2X1.2W LED	9.6 VDC	SURFACE	EMERGENCY EGRESS FIXTURE, WET LOCATION, ALUMINUM POWDER-COAT, COLOR SELECTION BY OWNER, COLD RATED TO -22F, 5-YR WARRANTY, TWIN LAMP	
LF-4	HOLOPHANE	HLWPC2	11700 LM LED	120V	WALL	WALLPACK, ALUMINUM POWDER-COAT, WET LOCATION IP-65, COLOR SELECTION BY OWNER, 10KV/10KA SURGE, FULL CUTOFF, 4000K, TYPE 3 MEDIUM DISTRIBUTION, 70 CRI, 5-YEAR WARRANTY, WITH INTEGRAL PHOTOCCELL	

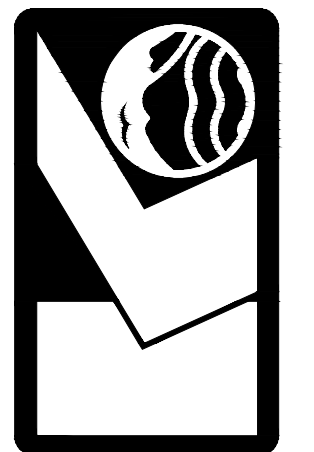
ELECTRICAL SYMBOLS, ABBREVIATIONS, AND SCHEDULES

KNOX COUNTY UTILITY COMMISSION
 BARBOURVILLE CONNECTION - KY 225
 KNOX COUNTY, KENTUCKY



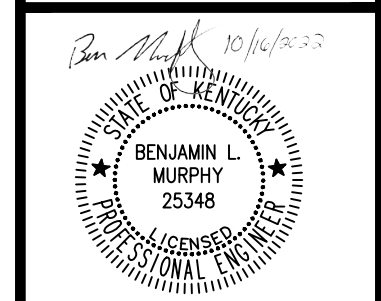
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CHECKED BY: BLM
DATE: JULY 2021
SCALE:
REVISIONS:

KENVIRONS
 Civil & Environmental Engineers

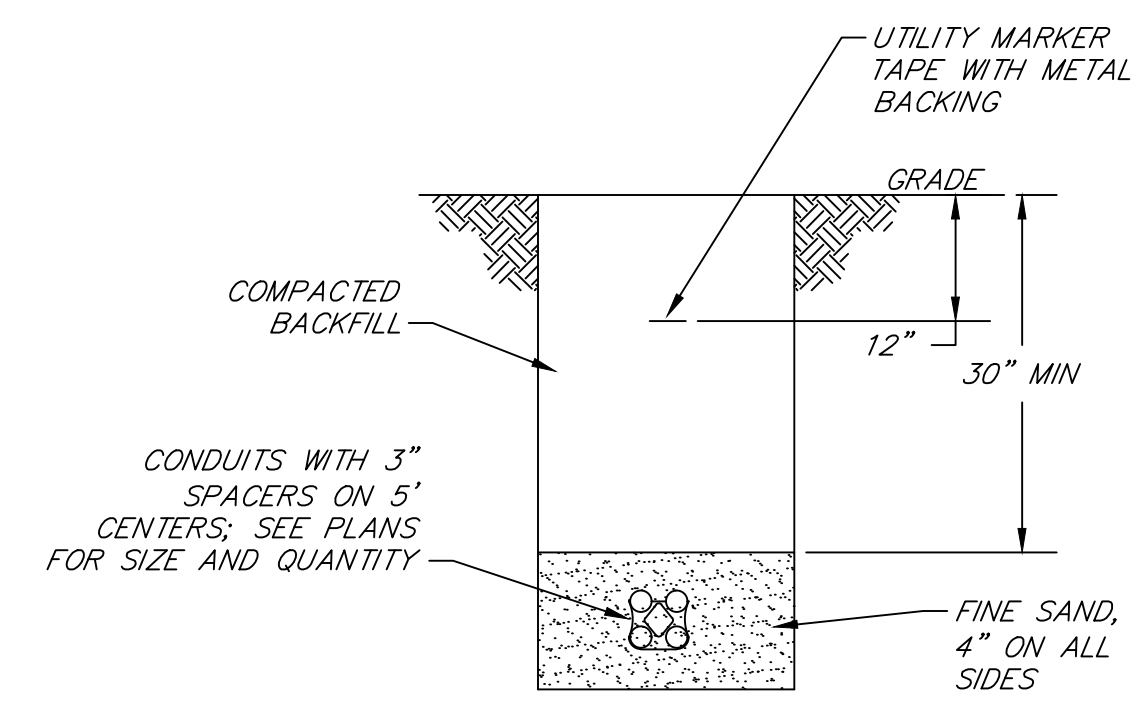
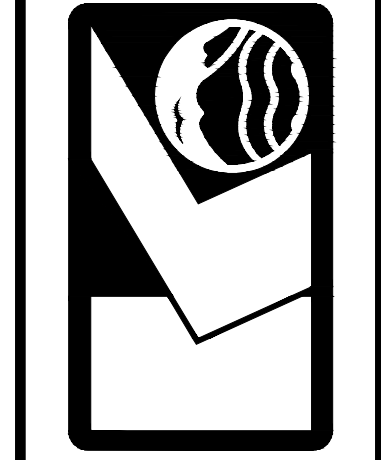


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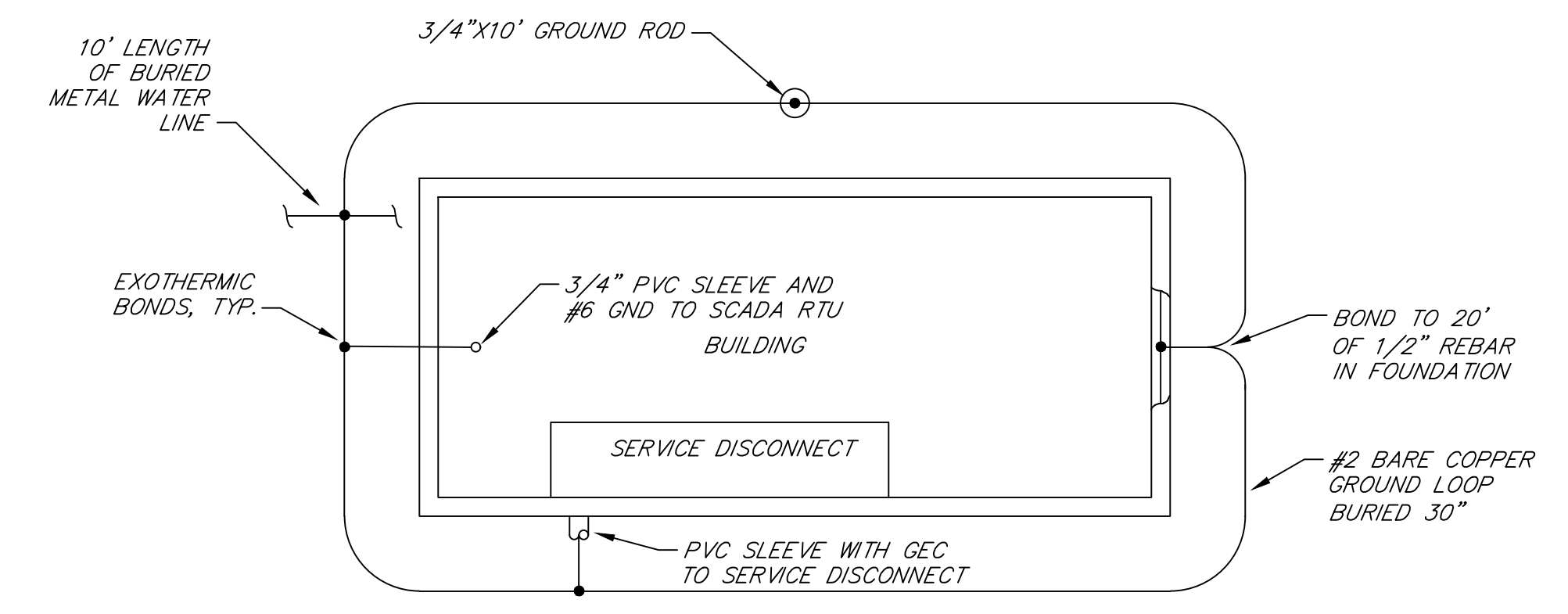
SHEET NO.
 E-1



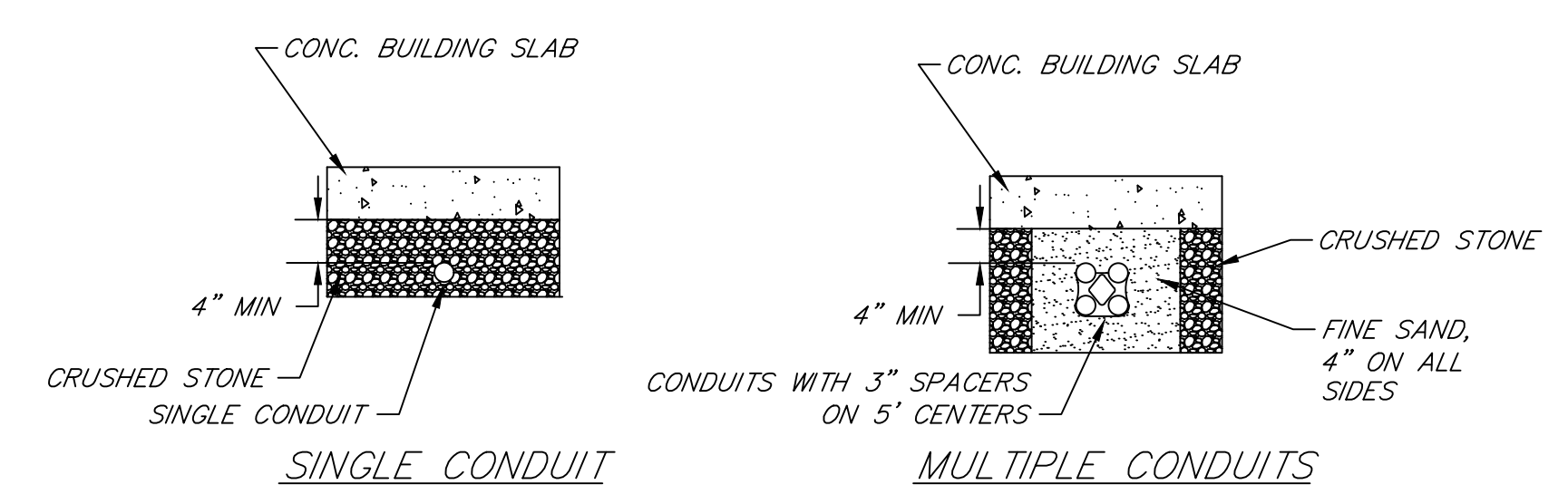
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CHECKED BY: BLM	
DATE: JULY 2021	
SCALE:	



TYPICAL TRENCH DETAIL
N.T.S.



TYPICAL BUILDING GROUNDING DETAIL
N.T.S.

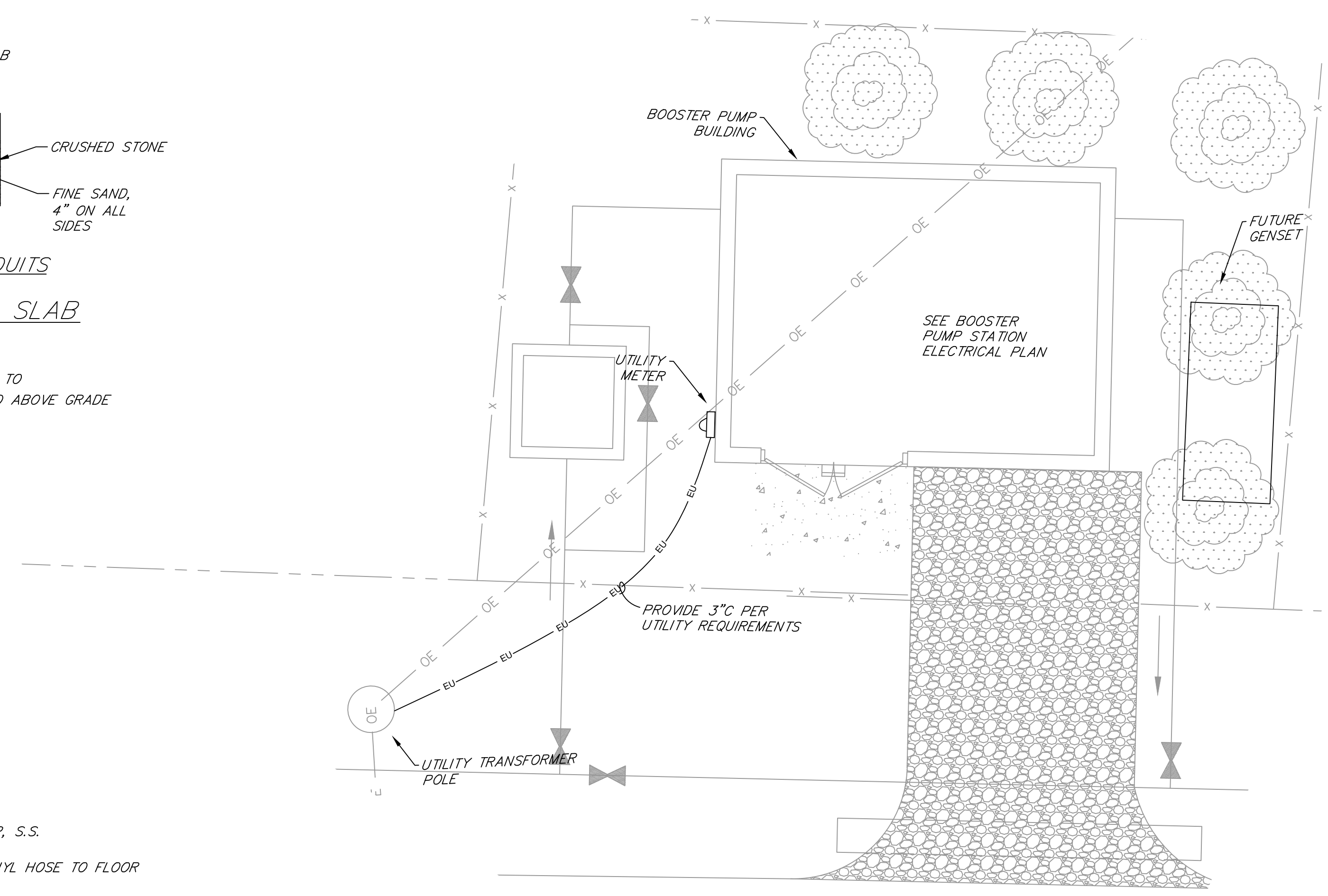


CONDUIT INSTALLATION UNDER BUILDING SLAB
N.T.S.

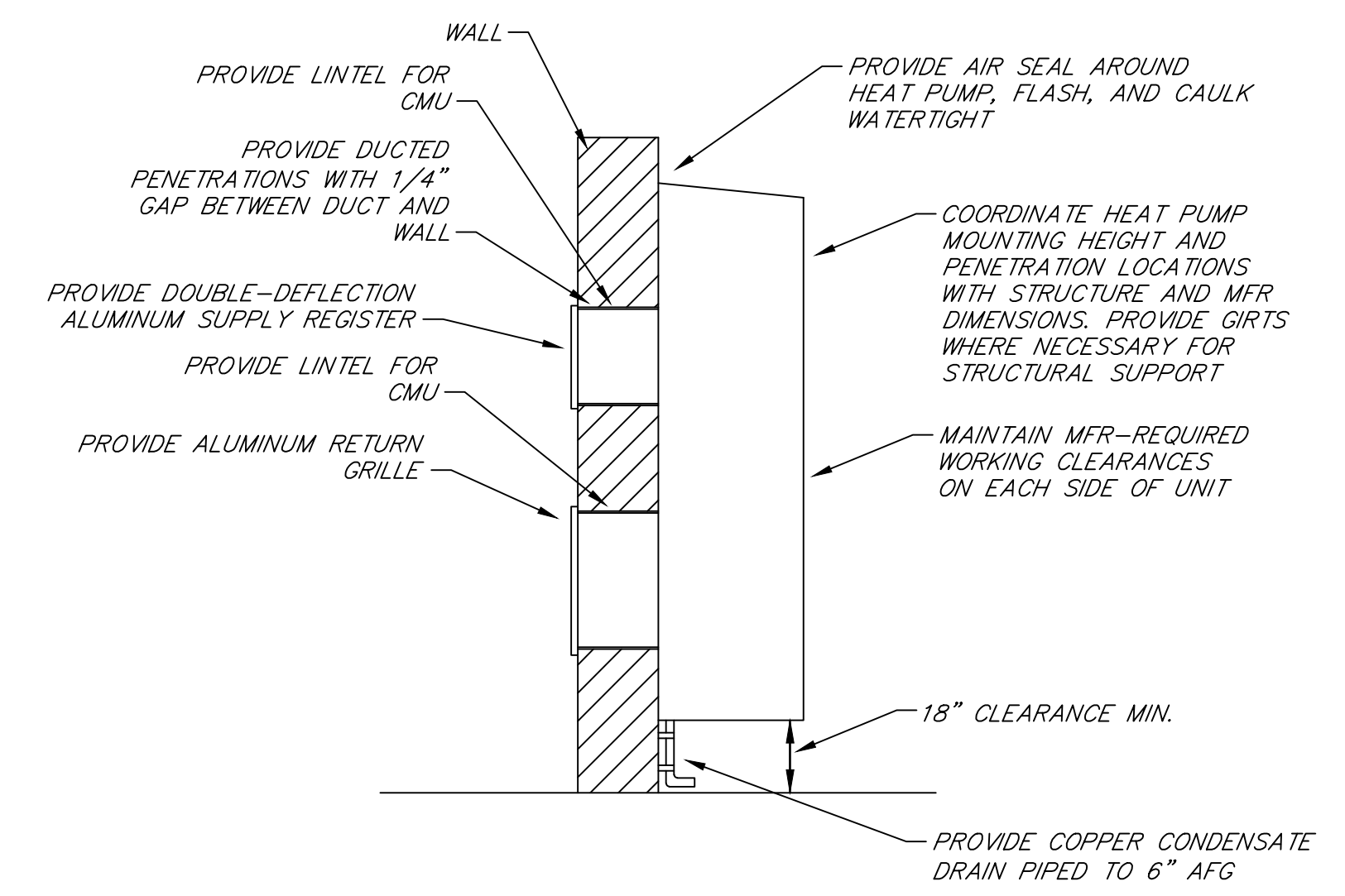
NOTE: CONDUITS SHALL BE INSTALLED DEEPER WHERE NECESSARY TO PREVENT CURVED PORTION OF ELBOW FROM BEING EXPOSED ABOVE GRADE

TRENCHING NOTES:

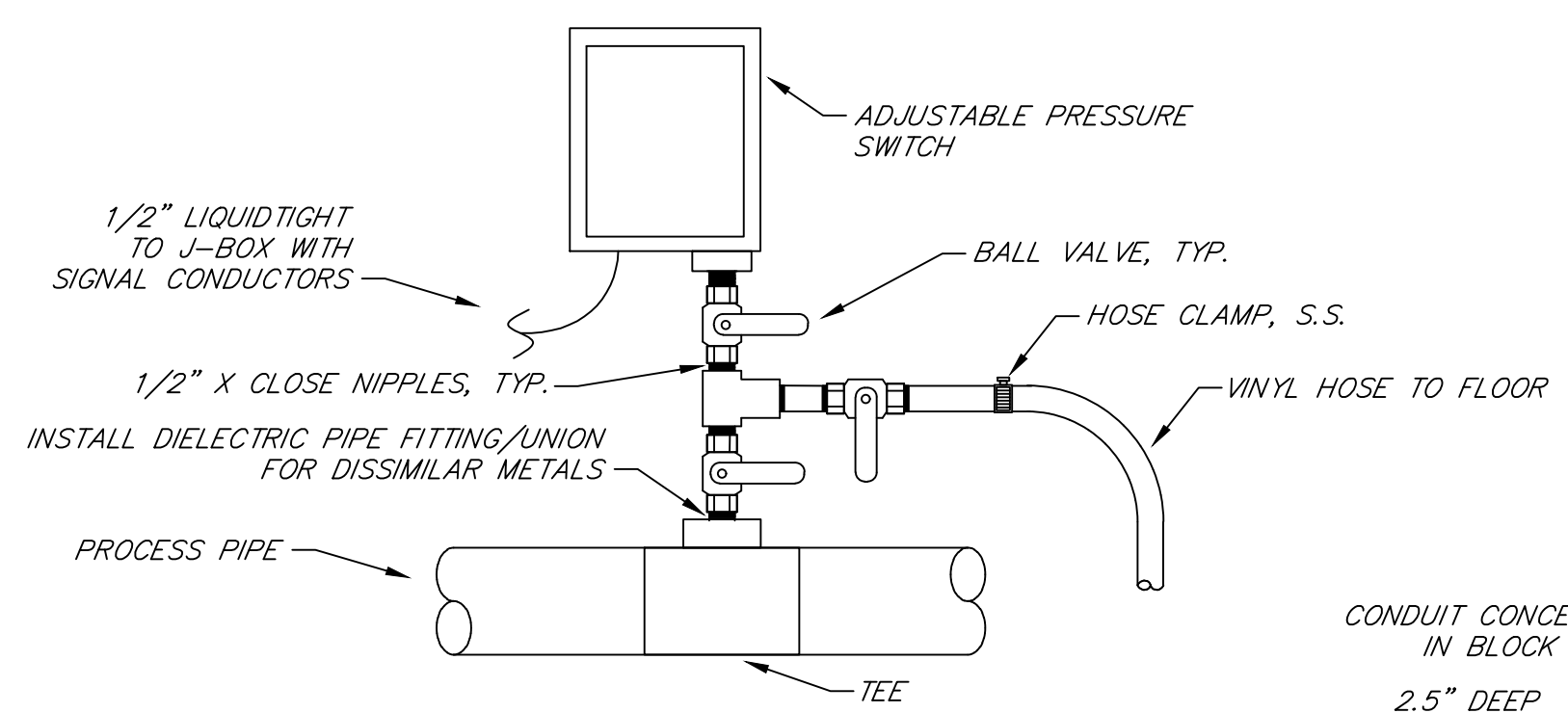
- UTILITY MARKER TAPE SHALL RUN THE ENTIRE LENGTH OF DUCT BANK.
- MAINTAIN MINIMUM 12" SPACING BETWEEN INSTRUMENTATION AND POWER.
- MAINTAIN MINIMUM 36" SPACING BETWEEN OTHER SITE PIPING, INCLUDING WATER, AND GAS.



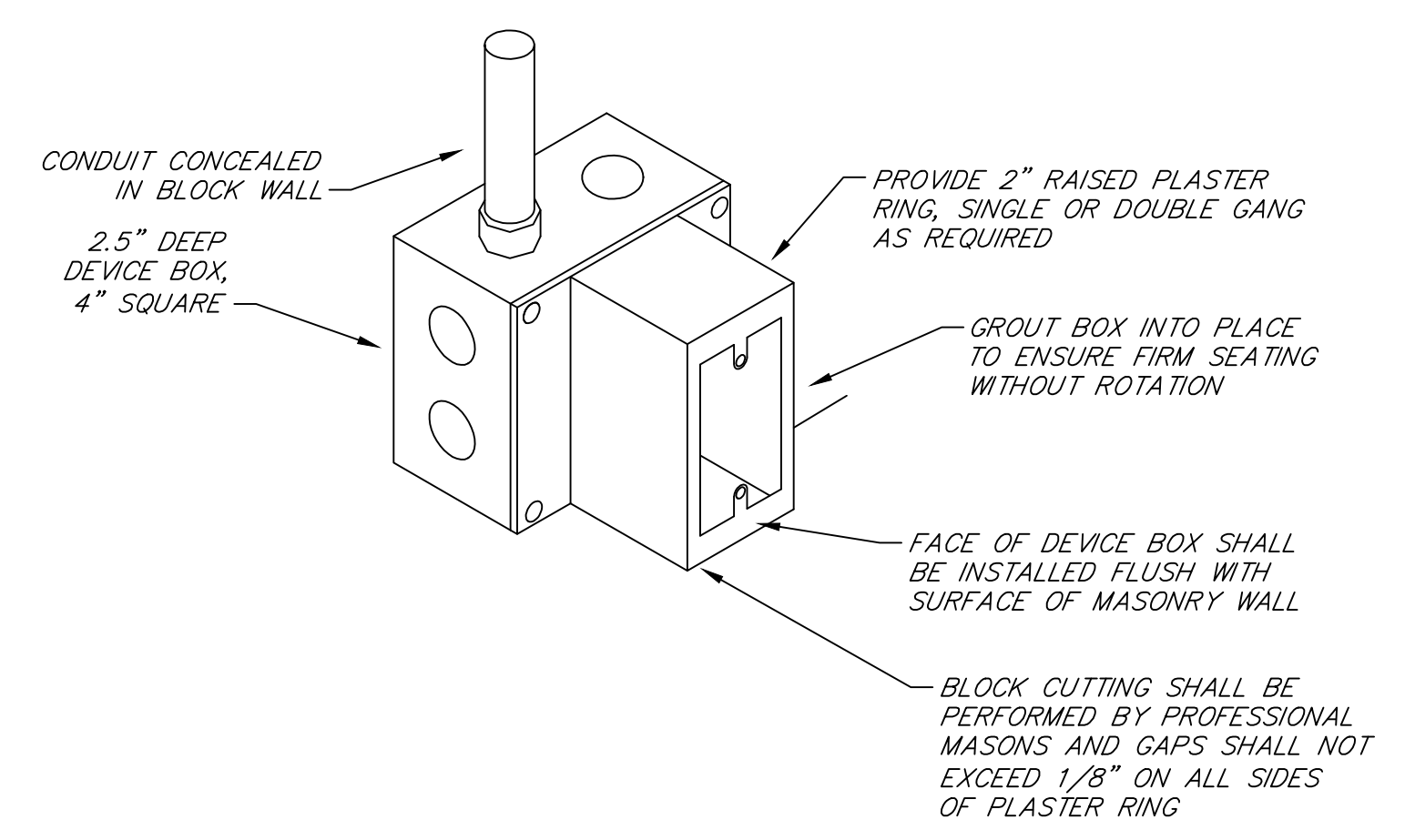
ELECTRICAL SITE PLAN
1/4"=1'-0"



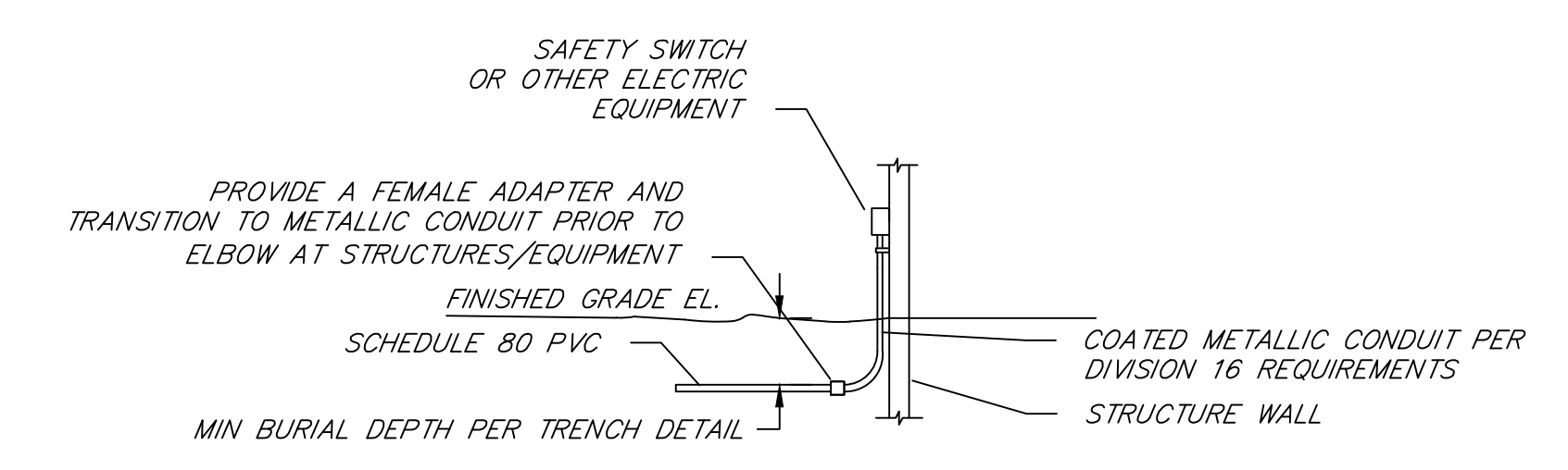
WALL-MOUNT HEAT PUMP INSTALLATION DETAIL
N.T.S.



PRESSURE SWITCH INSTALLATION DETAIL
N.T.S.

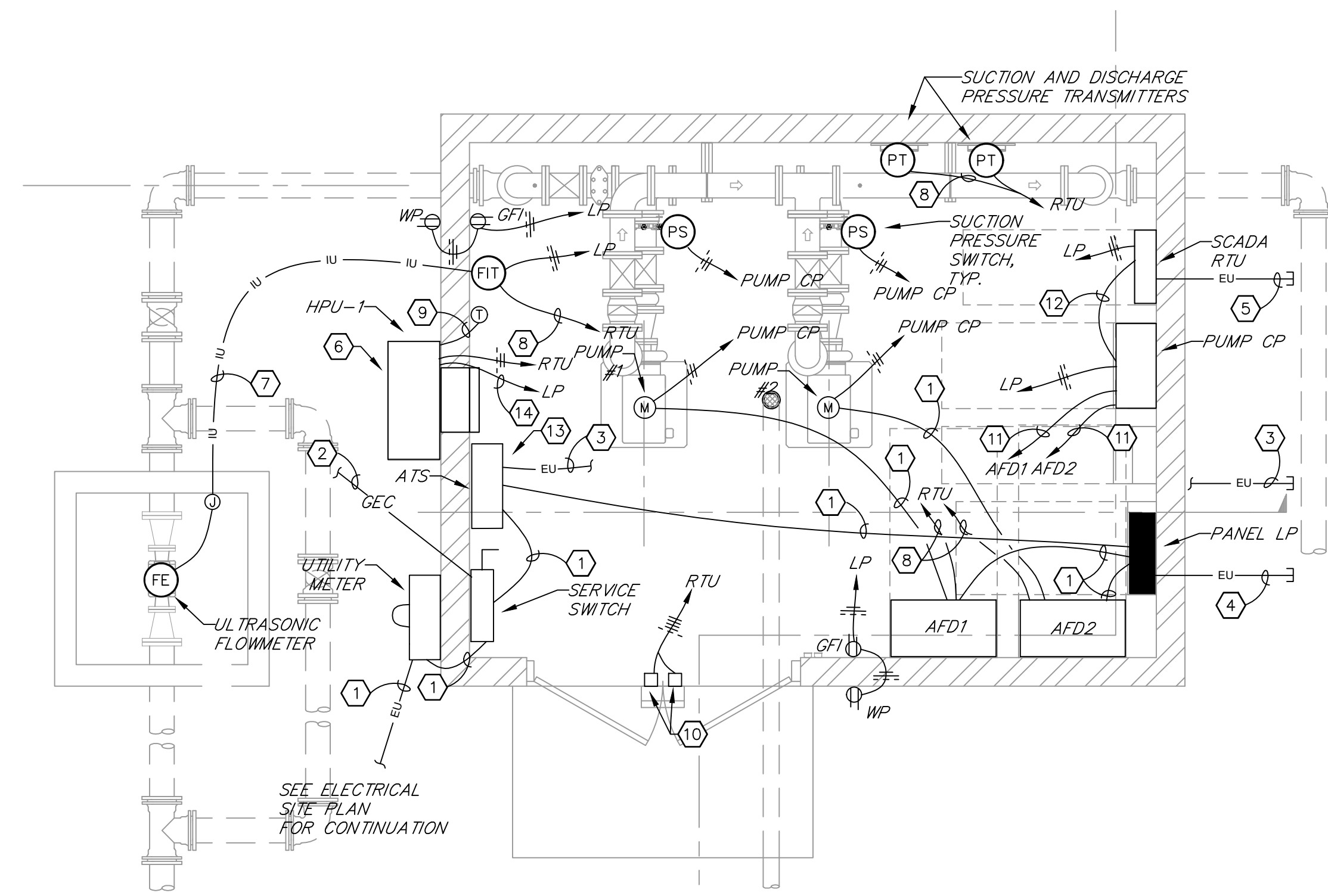


MASONRY DEVICE BOX DETAIL
NOT TO SCALE

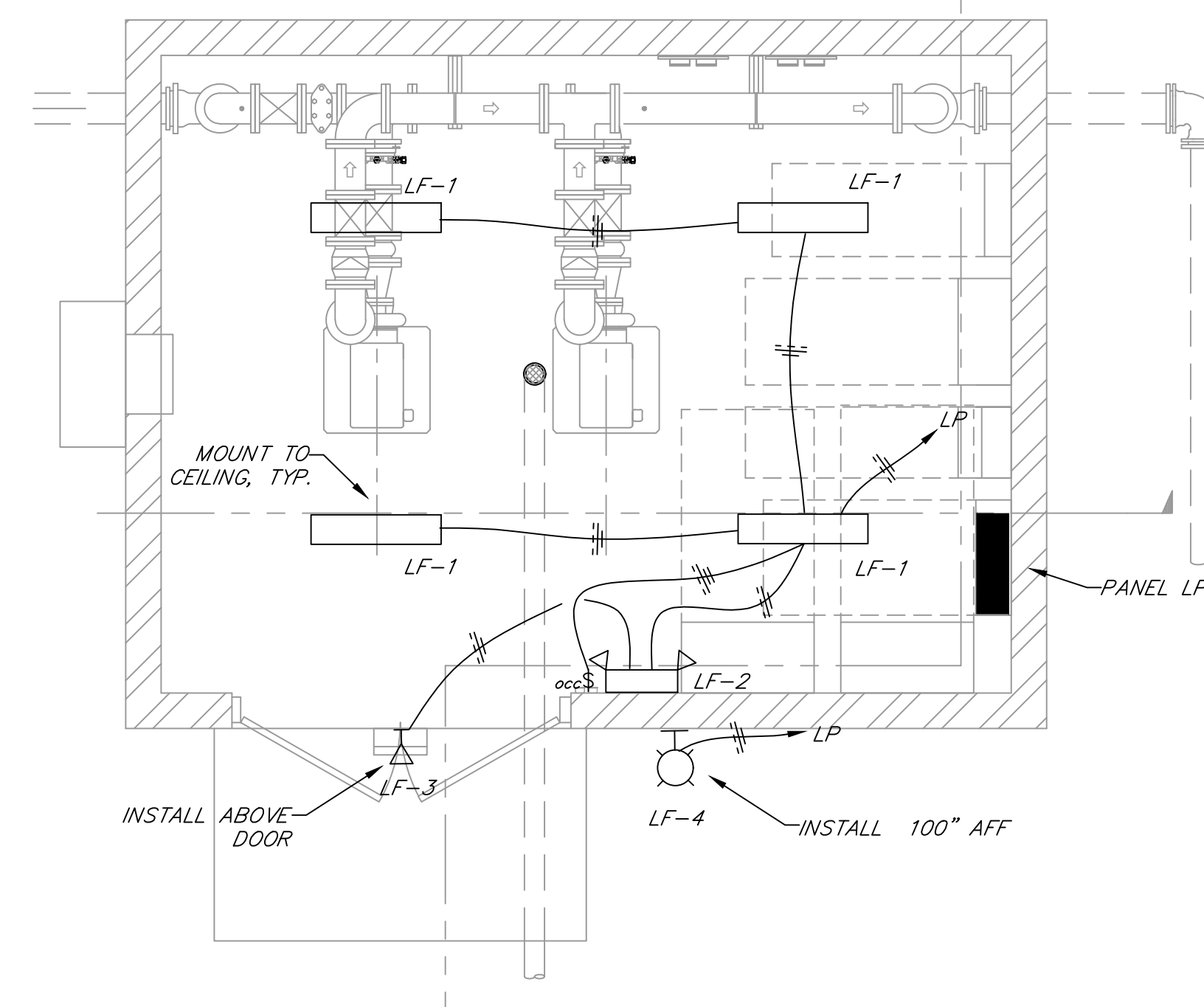


TYPICAL UNDERGROUND PVC CONDUIT TRANSITION TO METALLIC CONDUIT
NOT TO SCALE

NOTE:
ALL UNDERGROUND PVC CONDUITS SHALL TRANSITION TO METALLIC PRIOR TO EMERGING FROM GRADE OR SLAB. SEE SECTION 16020 FOR ACCEPTABLE CONDUIT TYPES



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



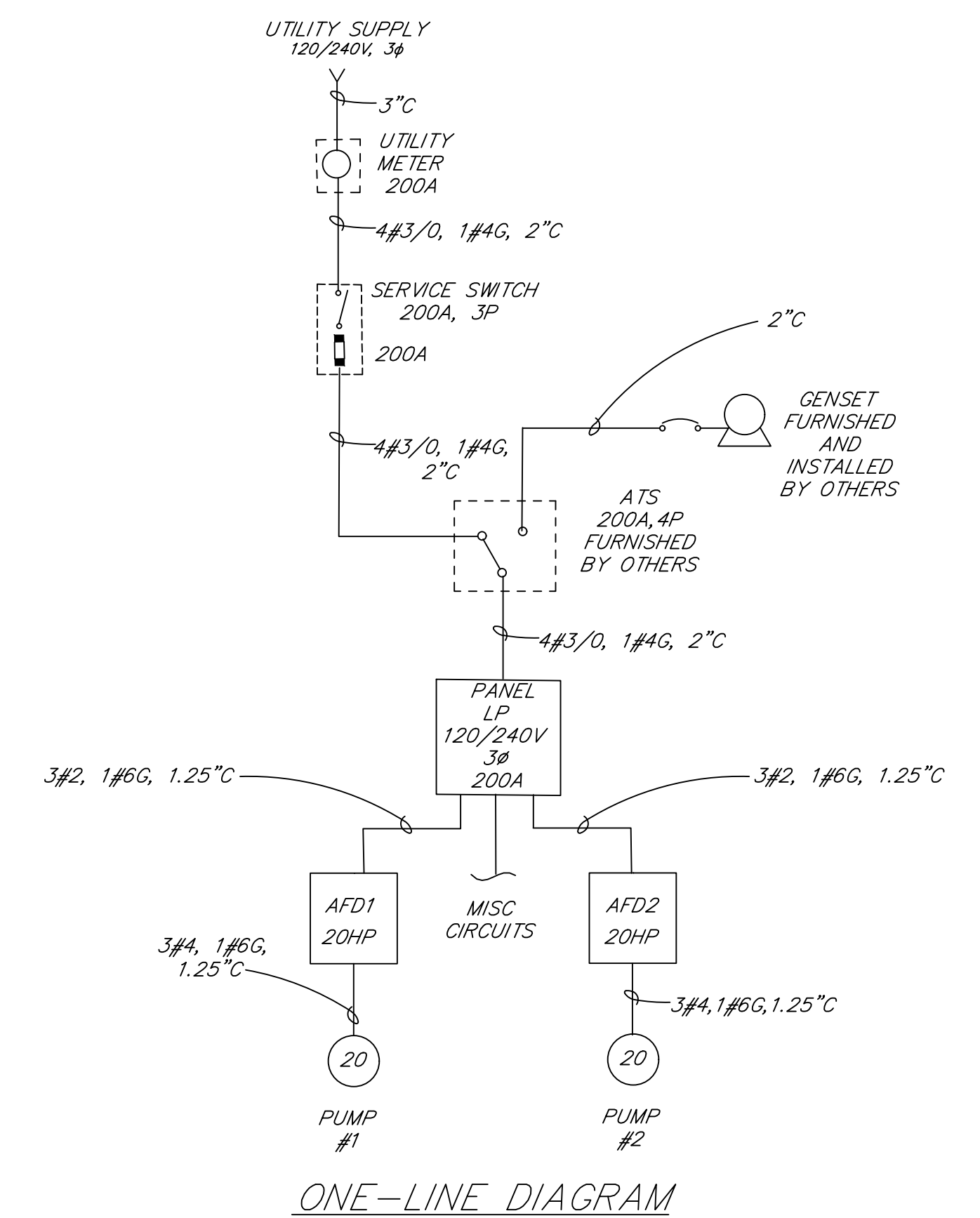
LIGHTING PLAN
3/8"=1'-0"

GENERAL SHEET NOTES:

• ELECTRICAL EQUIPMENT INSIDE BUILDING SHALL BE NEMA 1 MINIMUM. EXTERIOR EQUIPMENT SHALL BE NEMA 3R

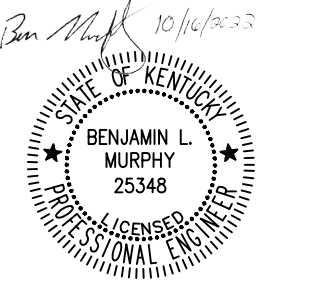
SHEET NOTES:

- 1) SEE ONE-LINE DIAGRAM FOR REQUIREMENTS
- 2) PROVIDE #2 GEC, 3/4" PVC CONDUIT AND PROVIDE BUILDING GROUND LOOP PER DETAIL
- 3) PROVIDE 1-2°C AND 1-1°C FROM ATS STUBBED OUT 5' BEYOND BUILDING FOOTER AND CAPPED FOR FUTURE EXTENSION TO GENERATOR
- 4) PROVIDE 1°C FROM PANEL LP STUBBED OUT 5' BEYOND BUILDING PERIMETER AND CAPPED FOR FUTURE EXTENSION TO GENERATOR
- 5) PROVIDE 3/4°C FROM RTU STUBBED OUT 5' BEYOND BUILDING PERIMETER AND CAPPED FOR FUTURE EXTENSION TO GENERATOR
- 6) PROVIDE HEAT PUMP UNIT. SEE INSTALLATION DETAIL
- 7) PROVIDE BELDEN 3106DB OR EQUAL CABLE, 1#14G, 3/4°C
- 8) PROVIDE 2-2#18 STIC, 1#14G, 3/4°C
- 9) PROVIDE THERMOSTAT CABLE, 1#14G, 3/4°C
- 10) PROVIDE DOOR CONTACT SWITCHES
- 11) PROVIDE 10#14, 1#14G, 3/4°C
- 12) PROVIDE 20#14, 1#14G, 1°C
- 13) ATS TO BE FURNISHED BY OTHERS AND INSTALLED BY CONTRACTOR
- 14) PROVIDE 2#8, 1#10G, 3/4°C



ONE-LINE DIAGRAM

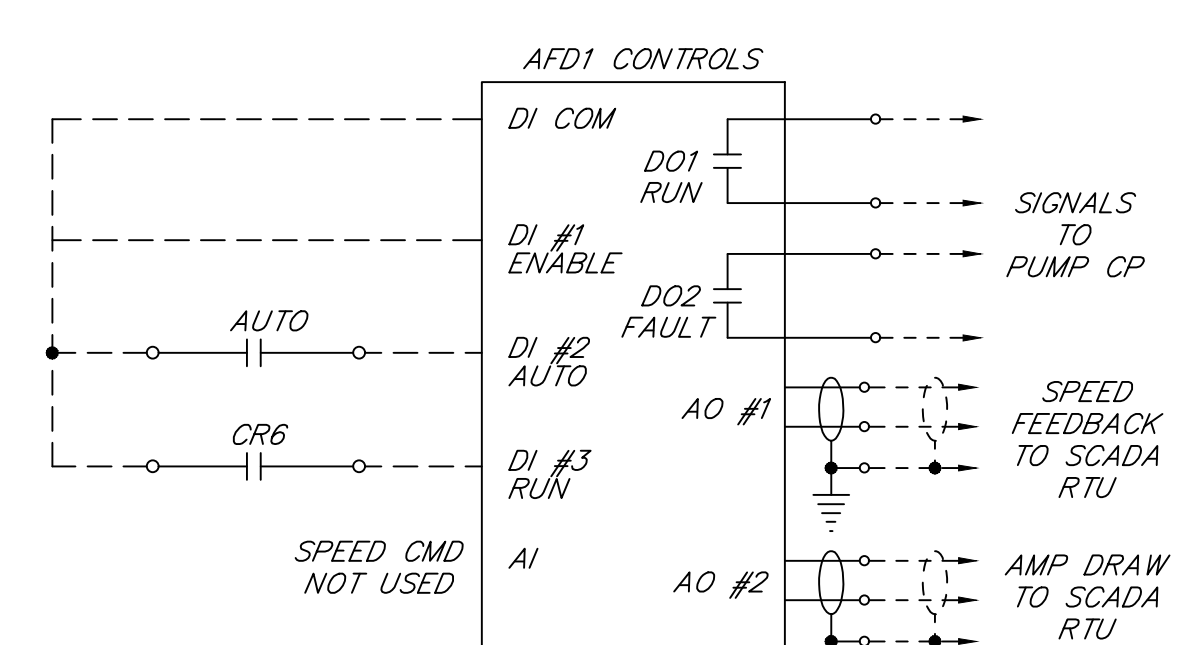
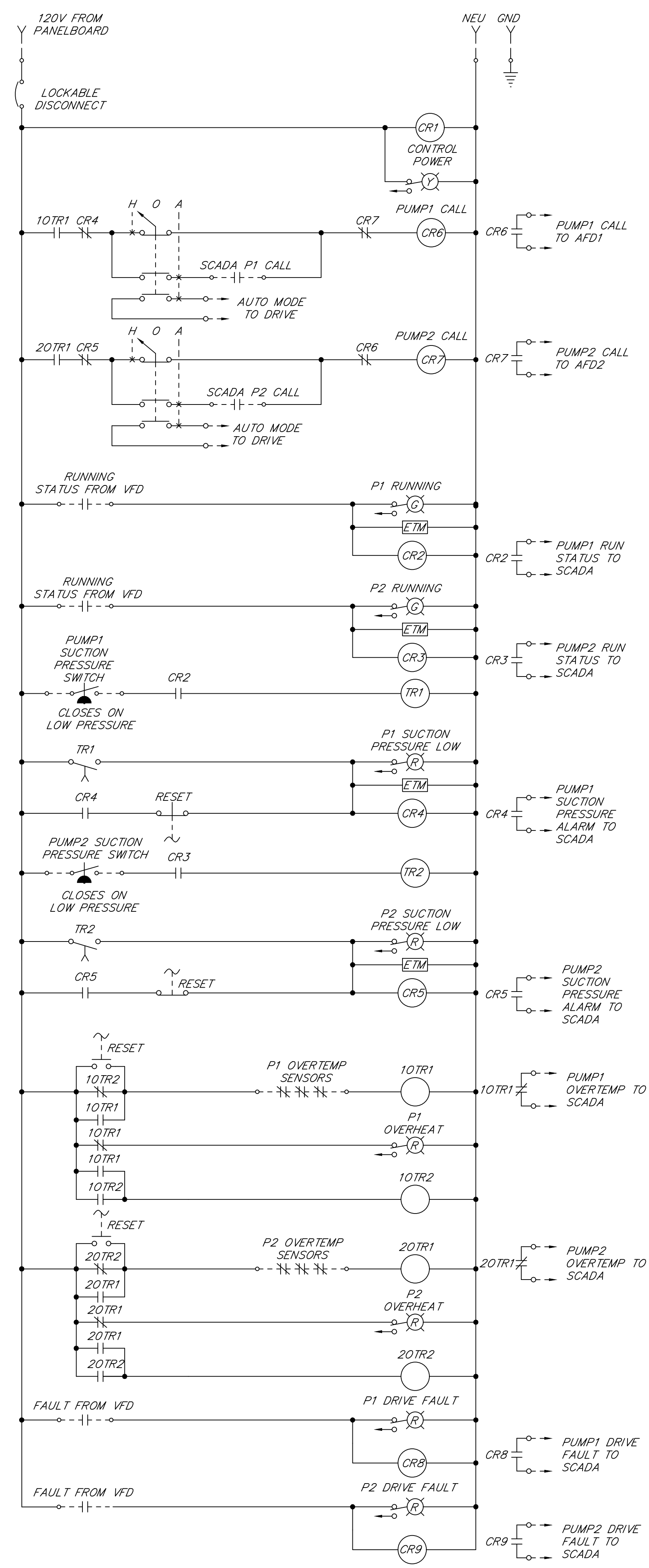
KNOX COUNTY UTILITY COMMISSION
BARBOURVILLE CONNECTION - KY 225
KNOX COUNTY, KENTUCKY



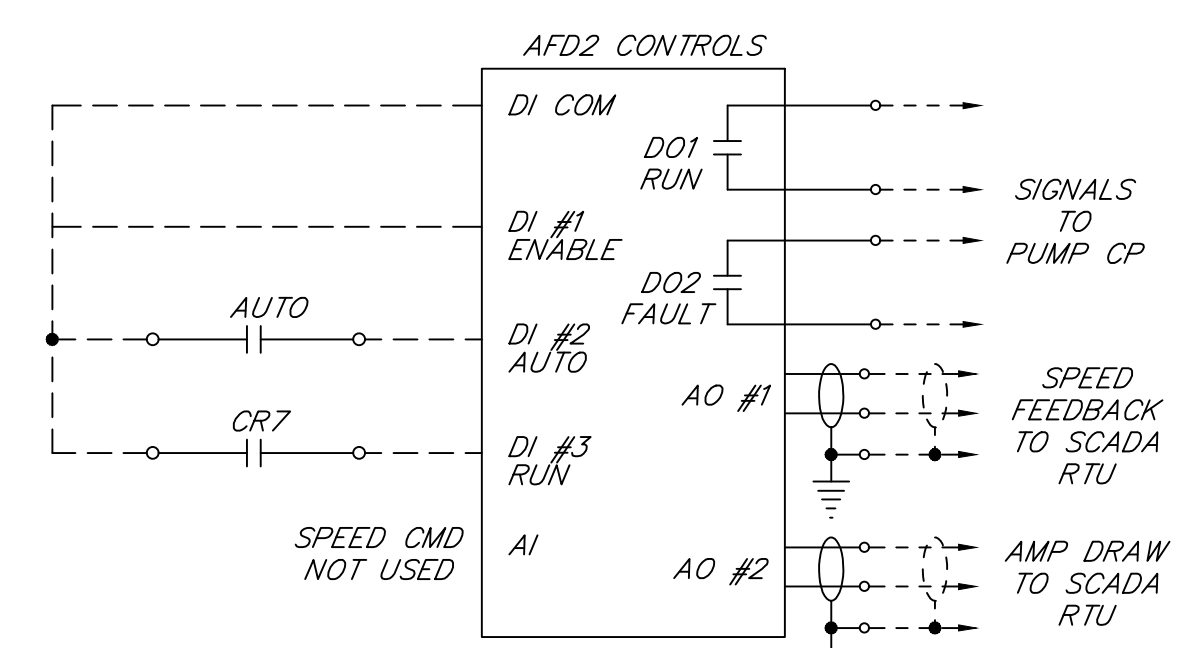
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SCALE:	



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SHEET NO.
E-3

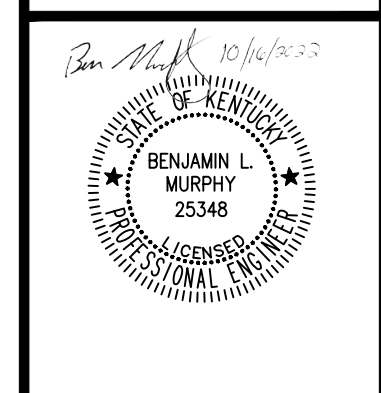


NOTES:
 1. AFD TO BE REMOTE-MTD FROM PILOT CP
 2. SPEED TO BE SET FROM AFD HIM MODULE

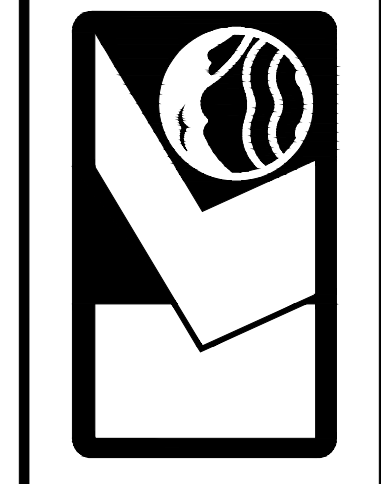


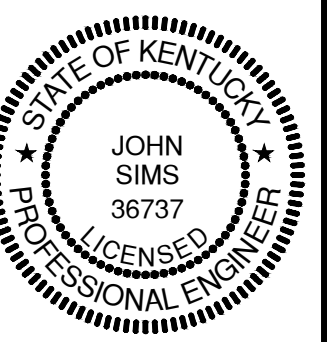
NOTES:
 1. AFD TO BE REMOTE-MTD FROM PILOT CP
 2. SPEED TO BE SET FROM AFD HIM MODULE

BOOSTER PUMP PILOT CONTROL PANEL
 NOT TO SCALE

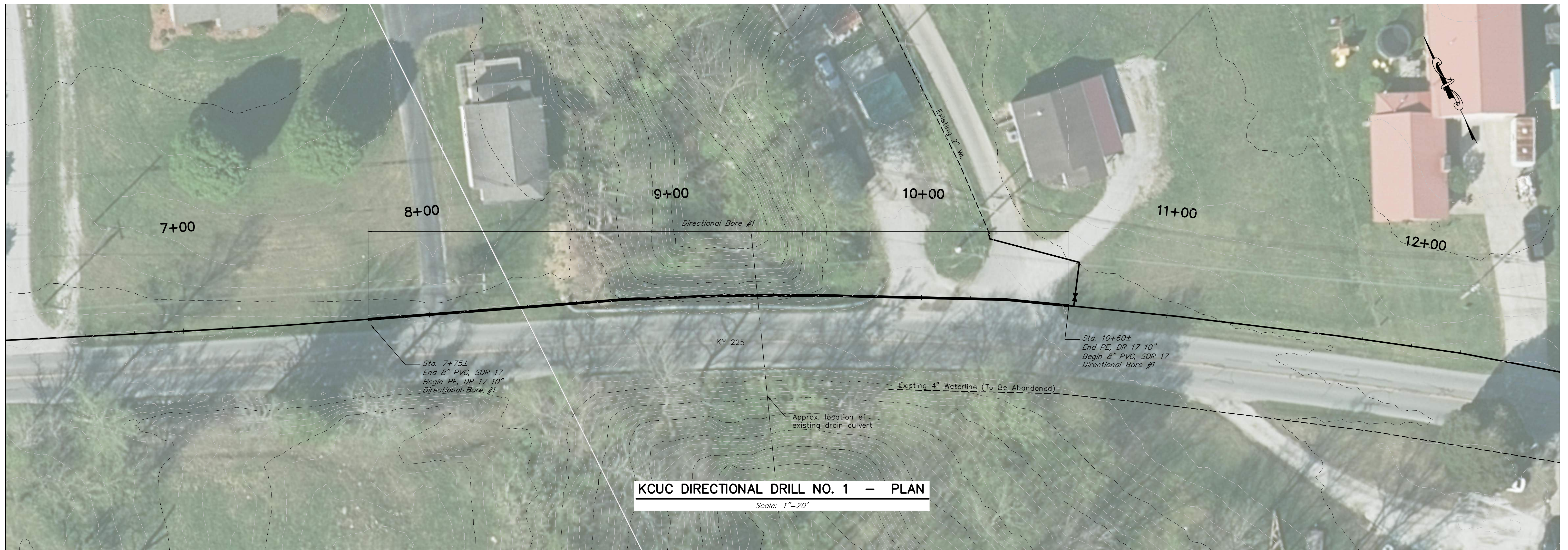


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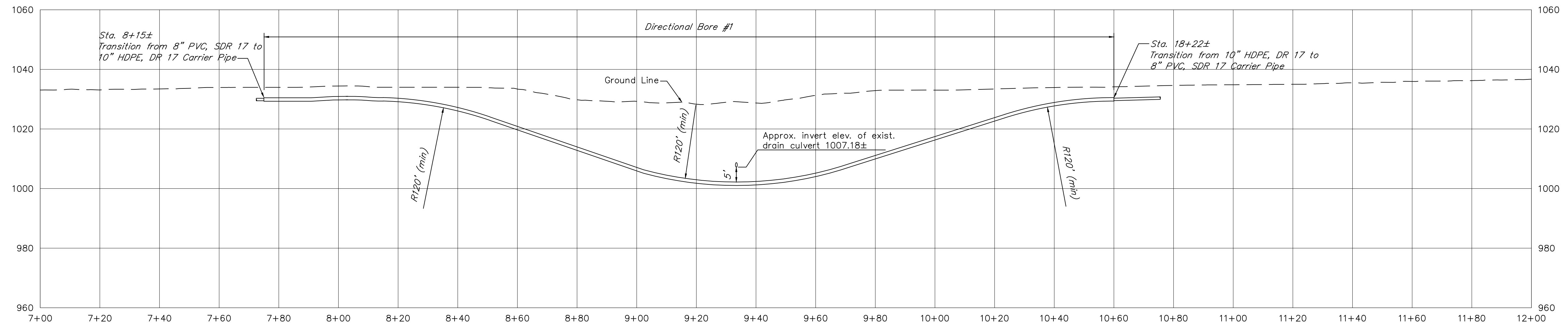




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DATE: July 2021
SCALE: As Noted
REVISIONS

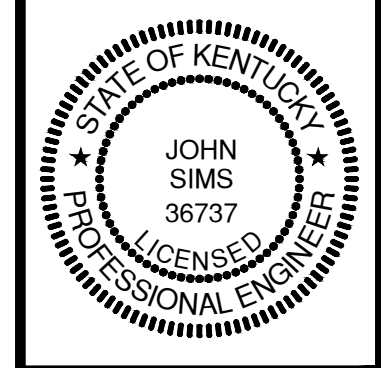


KCUC DIRECTIONAL DRILL NO. 1 - PLAN
 Scale: 1"=20'



KCUC DIRECTIONAL BORE NO. 1
 Scale: 1"=20'

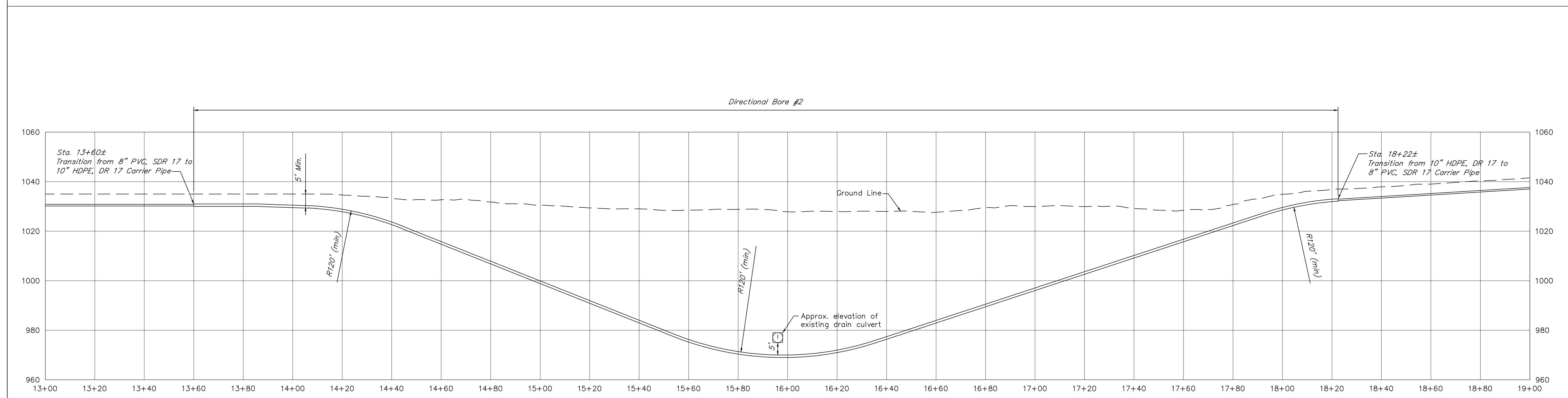
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CHECKED BY: JDT
CHECKED BY: JDS
DATE: July 2021
SCALE: As Noted
REVISIONS



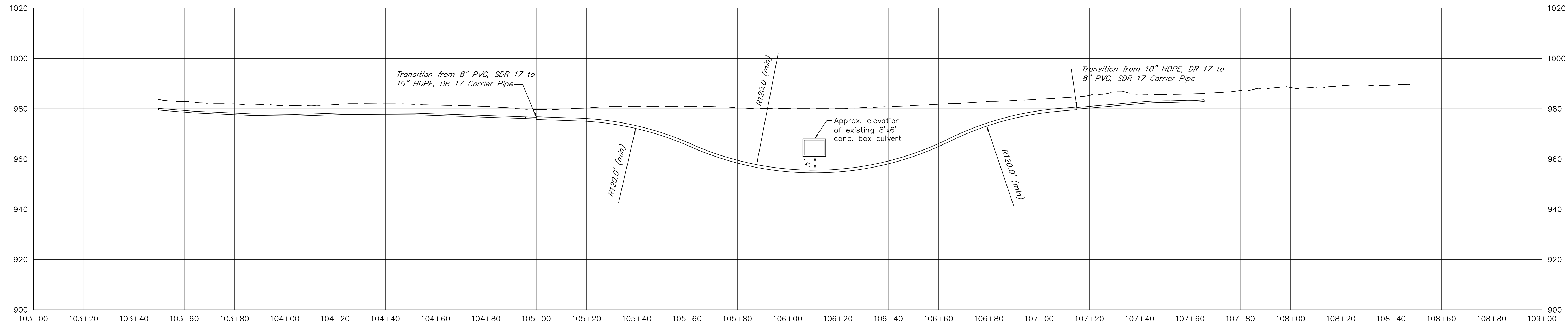
KCUC DIRECTIONAL DRILL NO. 2 -- PLAN
 Scale: 1"=20'



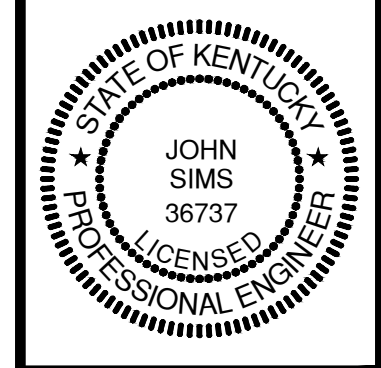
KCUC DIRECTIONAL BORE NO. 2
 Scale: 1"=20'



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KNOX COUNTY UTILITY COMMISSION
BARBOURVILLE CONNECTION - KY 225
 KNOX COUNTY, KENTUCKY



DRAWN BY: PTH
CHECKED BY: JDT
DATE: July 2021
SCALE: As Noted
REVISIONS

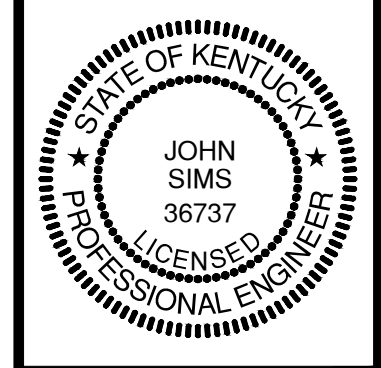


PROJECT NO.
2020132

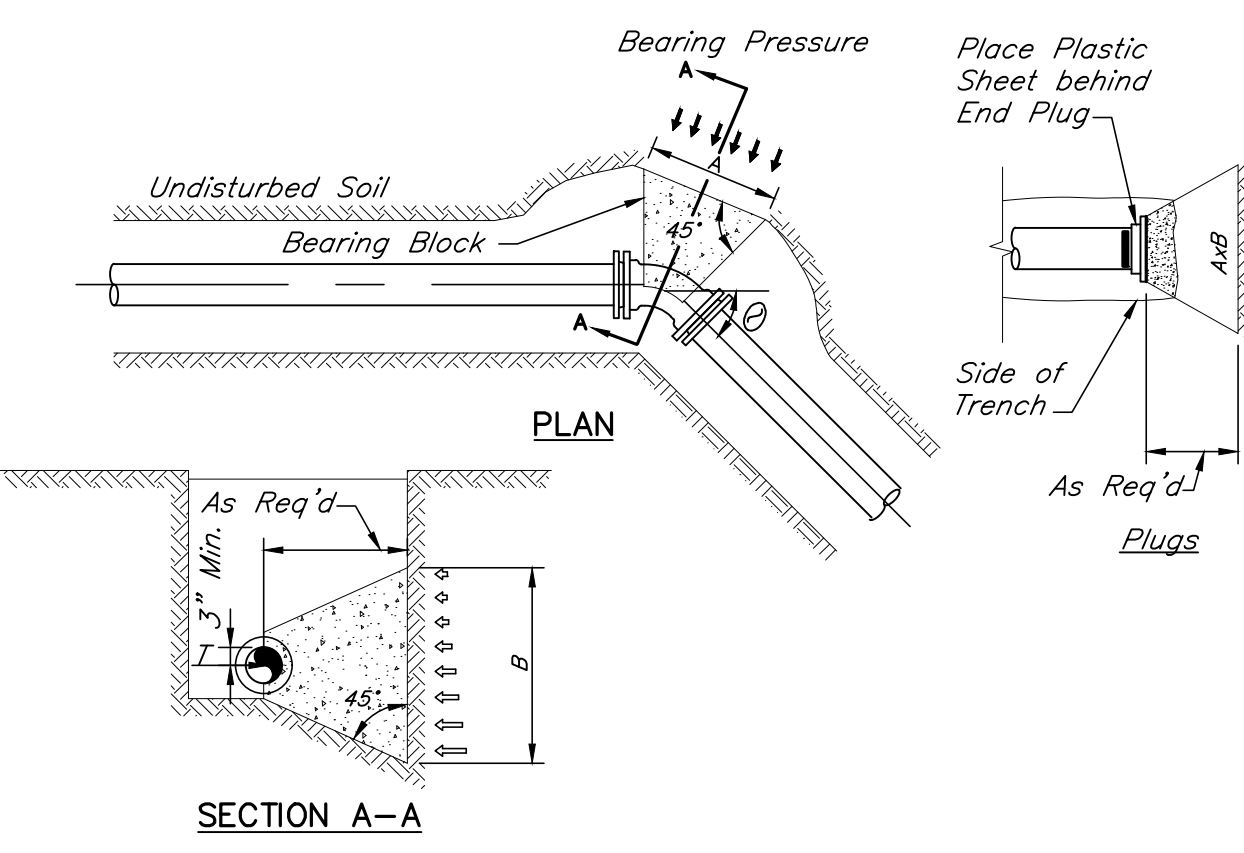
SHEET NO.
B-3

DIRECTIONAL BORE NO. 3

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DRAWN BY: ESM
CHECKED BY: JDS
DATE: July 2021
SCALE: As Noted
REVISIONS:

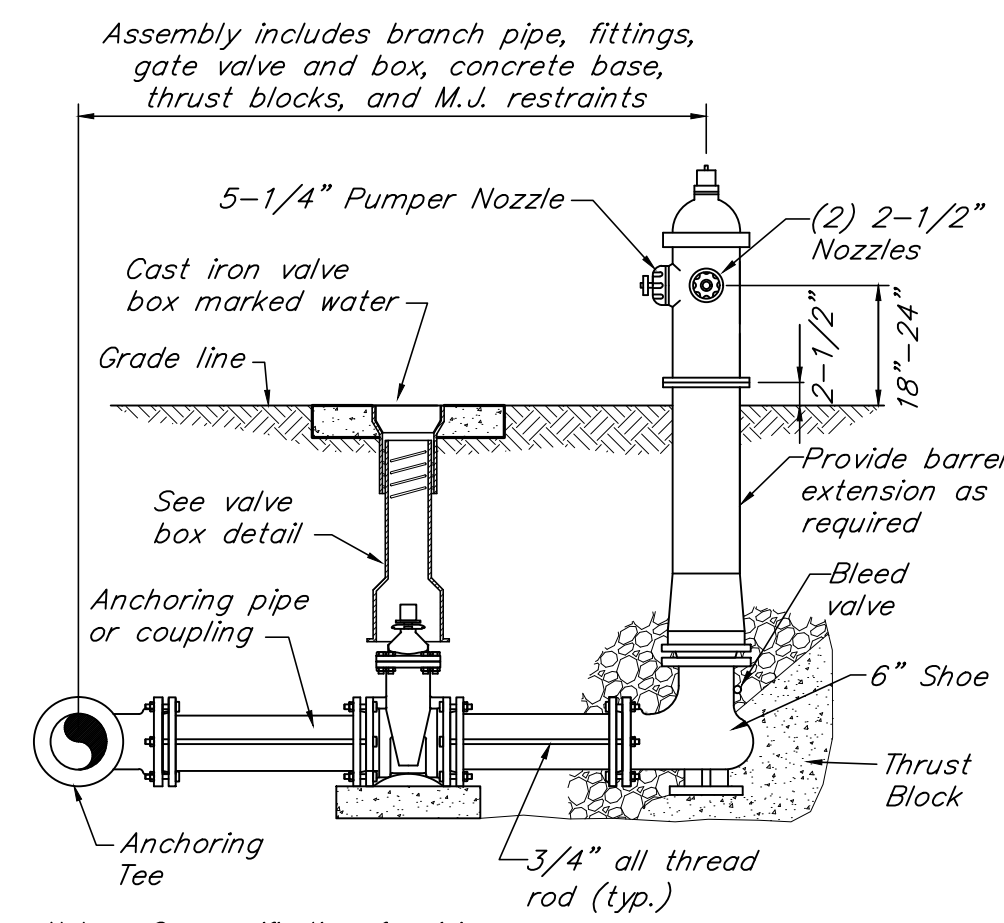


- NOTES:**
1. Thrust restraint table is based on pipeline pressure of 200 psi and earth bearing capacity of 1500 psf. During construction, the specific soil type may be evaluated and concrete thrust block size revised at the discretion of the engineer.
 2. On large diameter pipes where space limitations or construction difficulties render concrete thrust blocks not feasible or impractical, joint 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

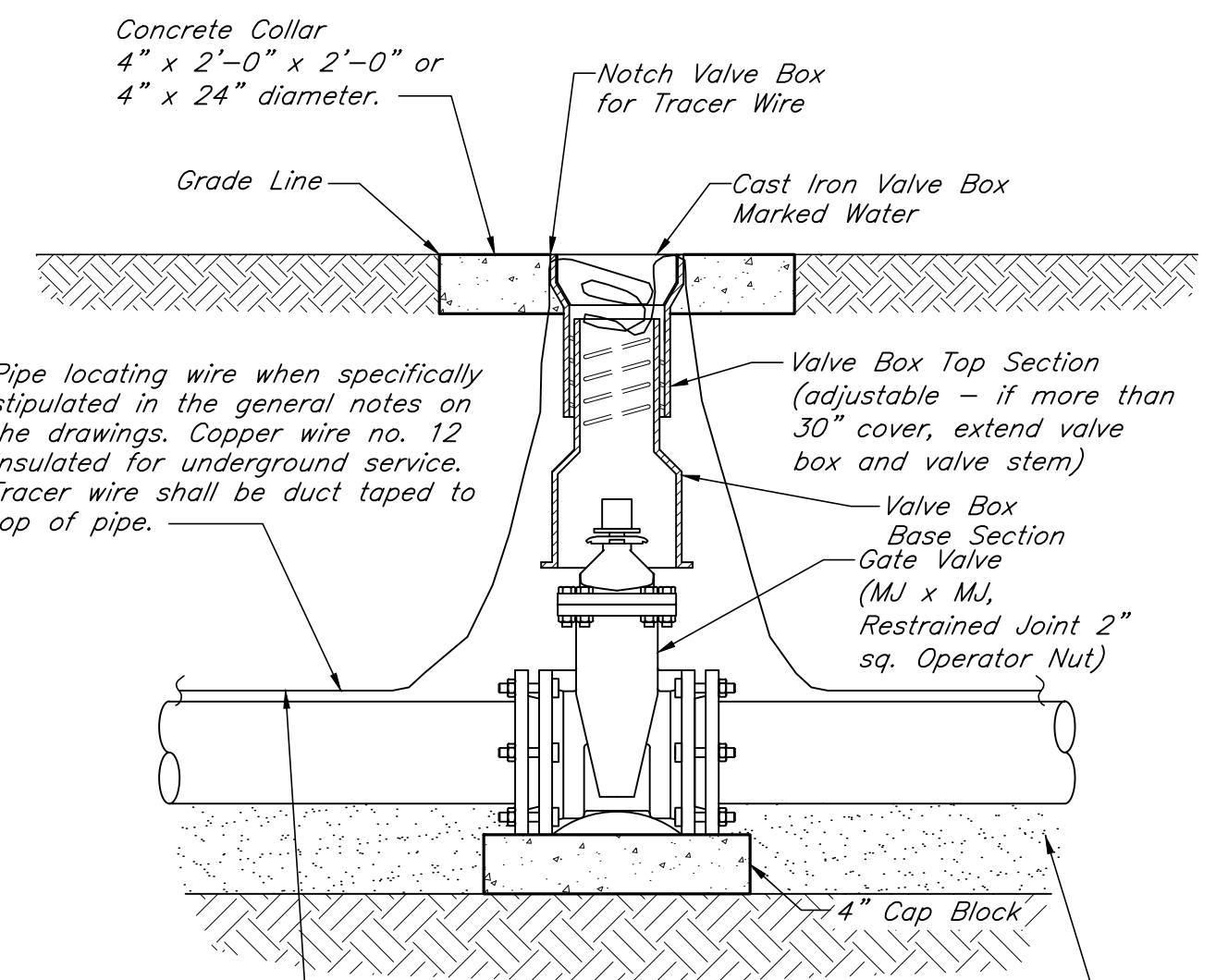
PIPE SIZE (INCHES)	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEE, DEAD END	
	A	B	A	B	A	B	A	B	A	B
3 & 4	3'-3"	1'-8"	2'-4"	1'-2"	1'-8"	1'-0"	1'-0"	1'-0"	2'-8"	1'-4"
6	4'-8"	2'-4"	3'-5"	1'-8"	2'-6"	1'-3"	1'-6"	1'-0"	3'-10"	2'-0"
8	6'-0"	3'-0"	4'-5"	2'-3"	3'-2"	1'-7"	2'-3"	1'-2"	5'-0"	2'-6"
10	7'-6"	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, 2011 Scale: 3/8"=1'-0"



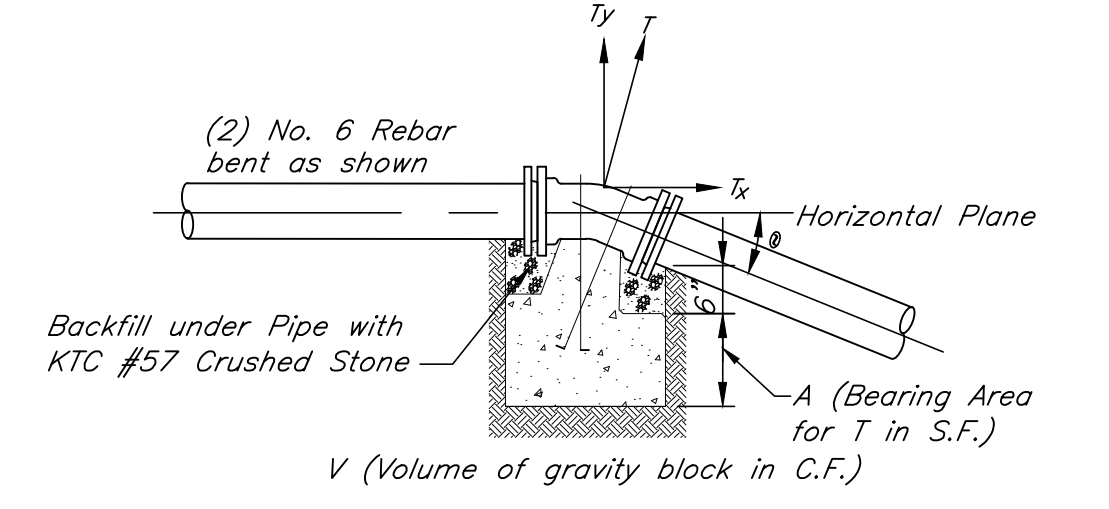
Notes: See specifications for piping materials and piping joints. Bleed valve not to be encased in concrete.

FIRE HYDRANT
Scale: 1/2"=1'-0"
Dec., 2010



Notes:
1. Concrete to be Class B (KTC Spec. 601)
2. See Specifications For Piping Materials And Piping Joints

VALVE BOX INSTALLATION
Mar., 2011 Scale: 1"=1'-0"

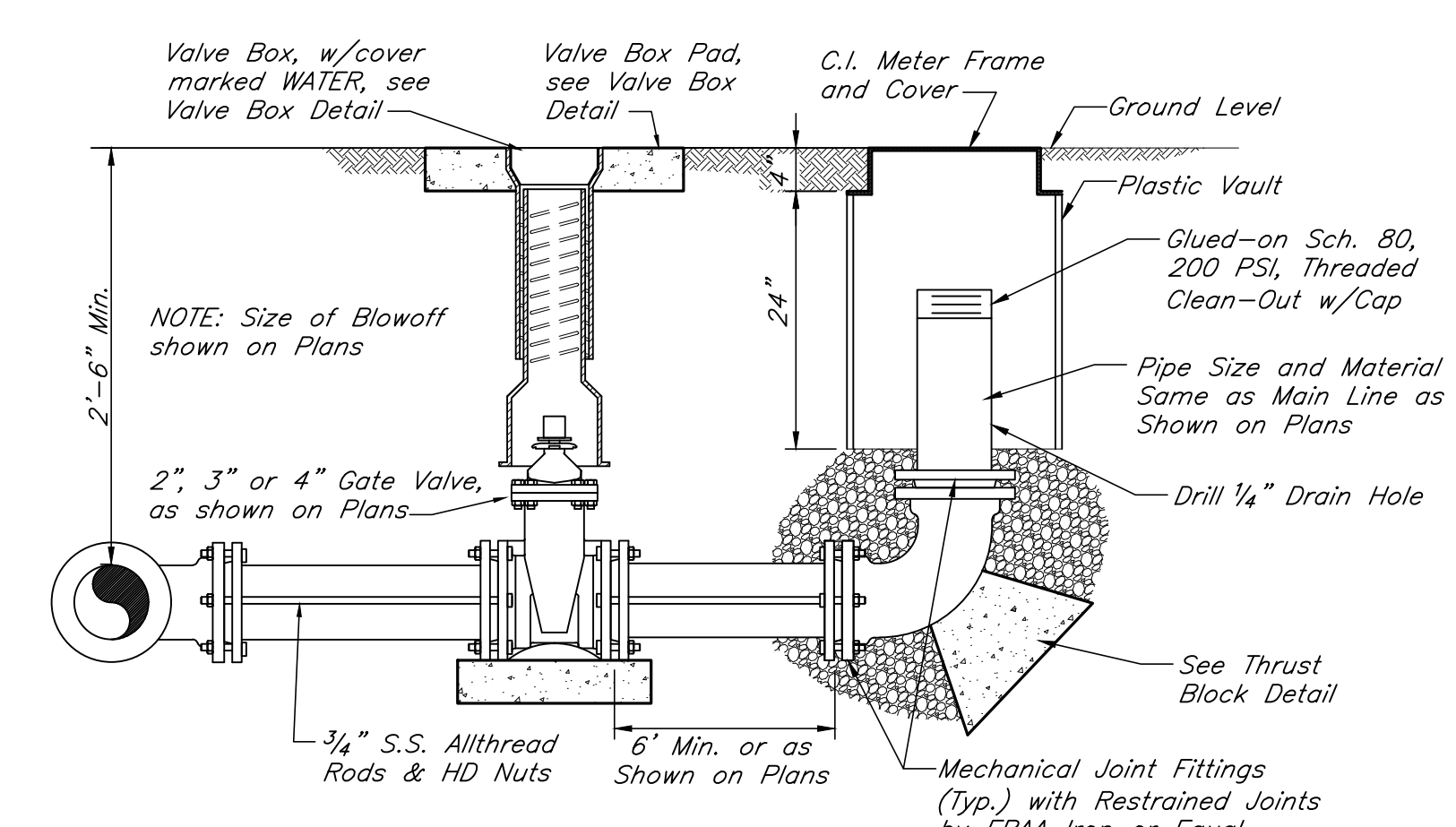


- NOTES:**
1. Thrust restraint table is based on pipeline pressure of 200 psi and earth bearing capacity of 1500psf. During construction, the specific soil type may be evaluated and concrete thrust block size revised at the discretion of the engineer.
 2. On large diameter pipes where space limitations or construction difficulties render concrete thrust blocks not feasible or impractical, joint 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

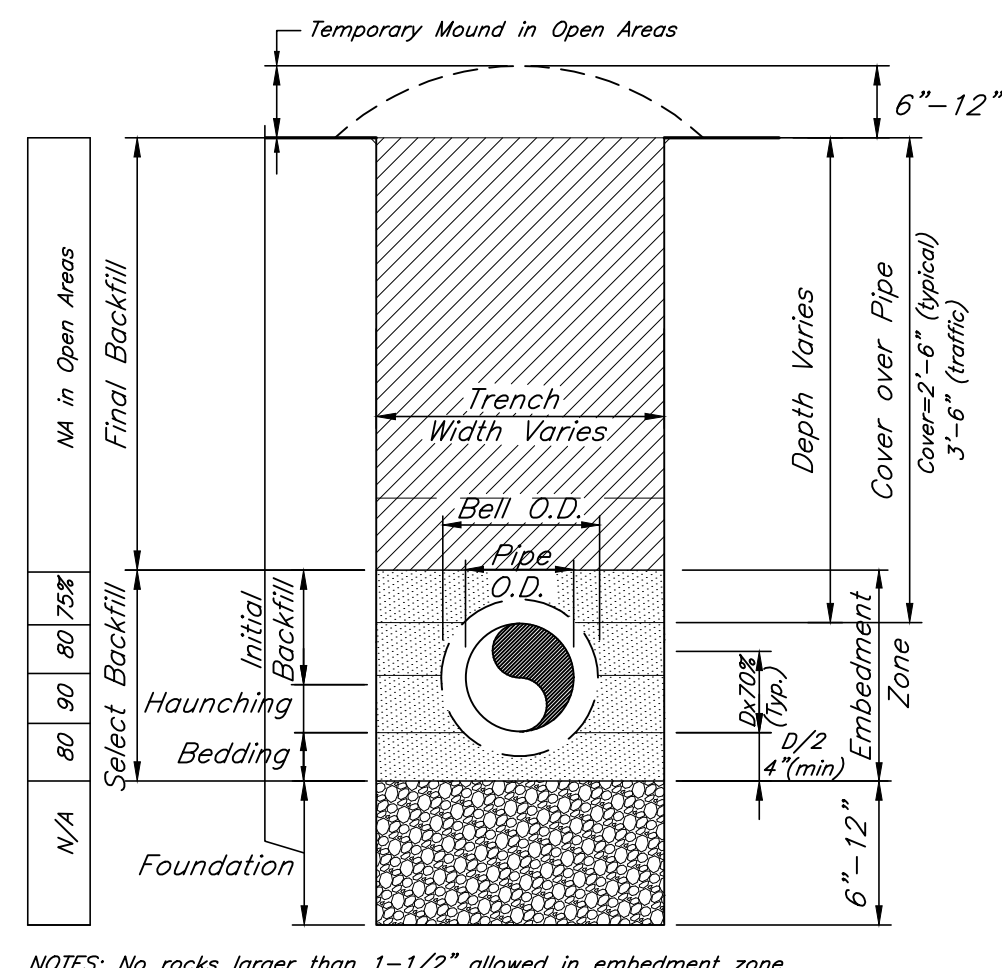
PIPE SIZE (INCHES)	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND	
	V	A	V	A	V	A	V	A
3 & 4	29	2	20	1	11	1	6	1
6	64	5	46	2	25	1	13	1
8	114	8	81	4	43	1	23	1
10	174	12	123	5	66	2	35	1
12	248	17	176	8	95	2	50	1
14	337	23	238	10	128	3	67	1
16	439	29	311	13	167	4	88	1
18	555	37	393	16	211	5	111	1
20	685	46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

VERTICAL THRUST BLOCK
July, 2011 Scale: 1/2"=1'-0"



Note: If the Blowoff Assembly is in-line, the assembly shall have all-thread rods threaded to the M.J. Tee and Retainer Glads.

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



NOTES: No rocks larger than 1-1/2" allowed in embedment zone. Typical desired densities in open areas are depicted above in the boxes to the left of the figure. In other laying situations, more stringent selection, placement and compaction will be required.

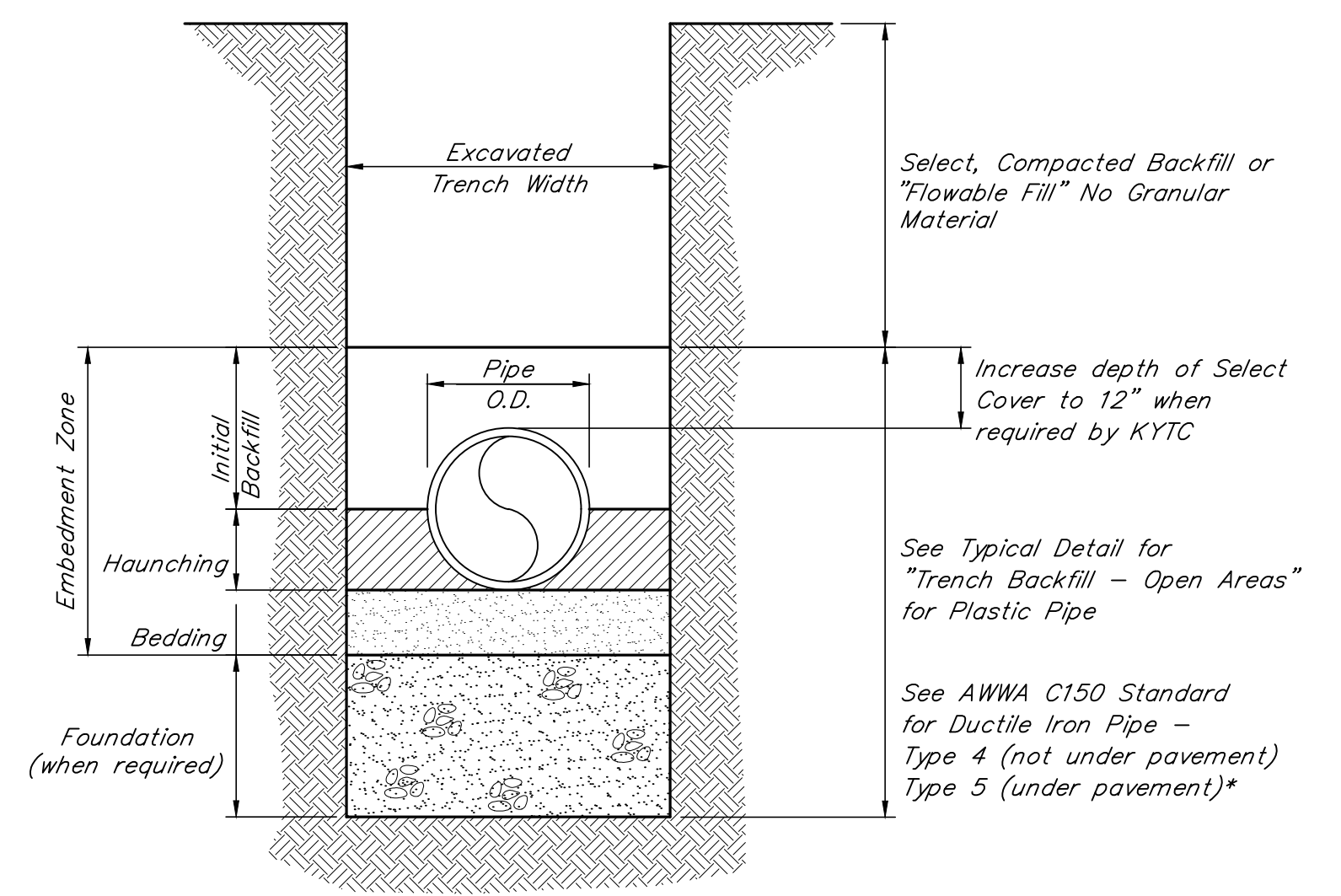
Trench width should be no wider than necessary for adequate work room and to assure safe working conditions. Nominal outside diameter (O.D.) pipe plus 6" on each side is typically considered minimal, with 8" minimum on each side for gravity sewer installation. For gravity sewer, pipe to be bedded on No. 9 stone and remainder of embedment zone to be backfilled with sand.

TRENCH BACKFILL OPEN AREAS - PLASTIC PIPE
Mar., 2011 Scale: 3/4"=1'-0"

Typically, open areas are final graded, dressed and seeded following two soaking rains...excluding KYTC road ROW's

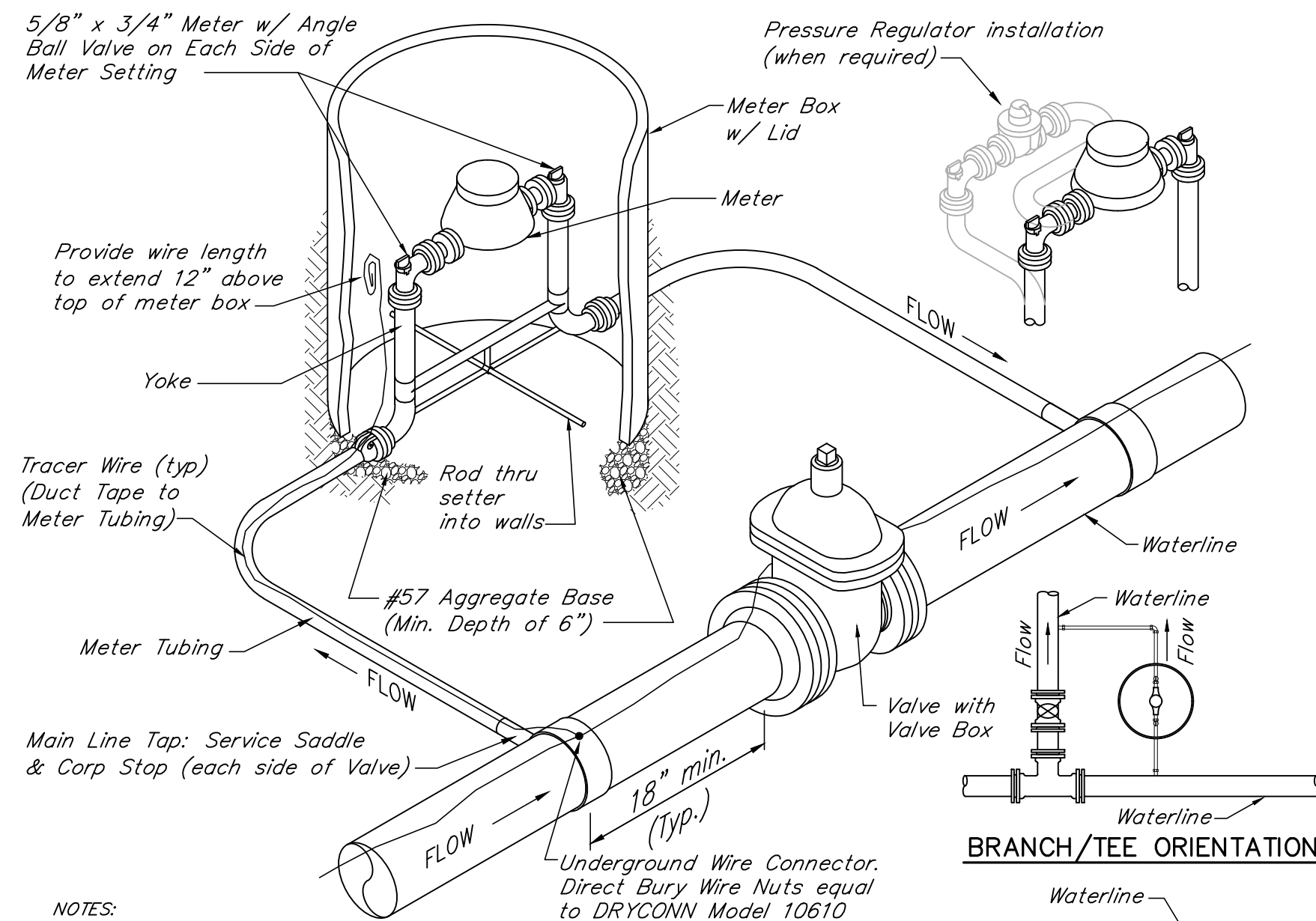
Unless otherwise specified, material excavated from trench may be used for final backfill provided it is relatively free of large rock (>8"), or mixed with sufficient dirt to minimize voids and settlement, and free of other unsuitable materials... as approved by the Engineer

The Engineer may require selective placement of an extra buffer layer for extremely rocky backfill to prevent migration. Select backfill, lightly compacted (bucket shaping) using suitable on-site material, or dumped sand. Sand or very select material, hand tamped. Haunching to be carefully placed - Sand or sandy/clay soil. No. 9's may be required if weak foundation is encountered. Bedding to be sand or approved equivalent, (except No. 57's may be required if weak foundation encountered) hand placed and smoothed to uniform grade for support of pipe. In soft, wet, muddy or otherwise yielding foundation conditions, undercutting and replacement with No. 2 Stone and/or Class II channel lining, or equivalent, will be required. Objective is to provide a trench bottom free of large stones, clods, frozen material, etc. which is unyielding.



* When \"Open-cutting\" of State Highway is permitted, pipe laying, encasement requirements, backfill placement, pavement replacement, etc. shall be as required by the encroachment permit issued by the Kentucky Transportation Cabinet (KYTC). By reference, such permit(s) shall become part of the contract. It shall be the CONTRACTOR'S responsibility to maintain a copy of KYTC permit(s) on the job site at all times.

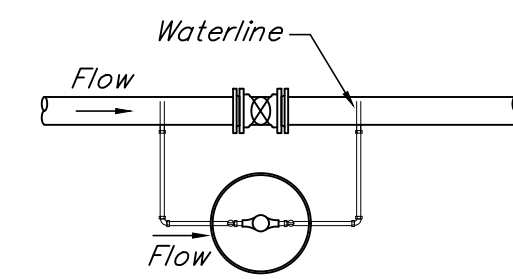
TRENCH BACKFILL ON HIGHWAY ROW
Dec., 2010 N.T.S.



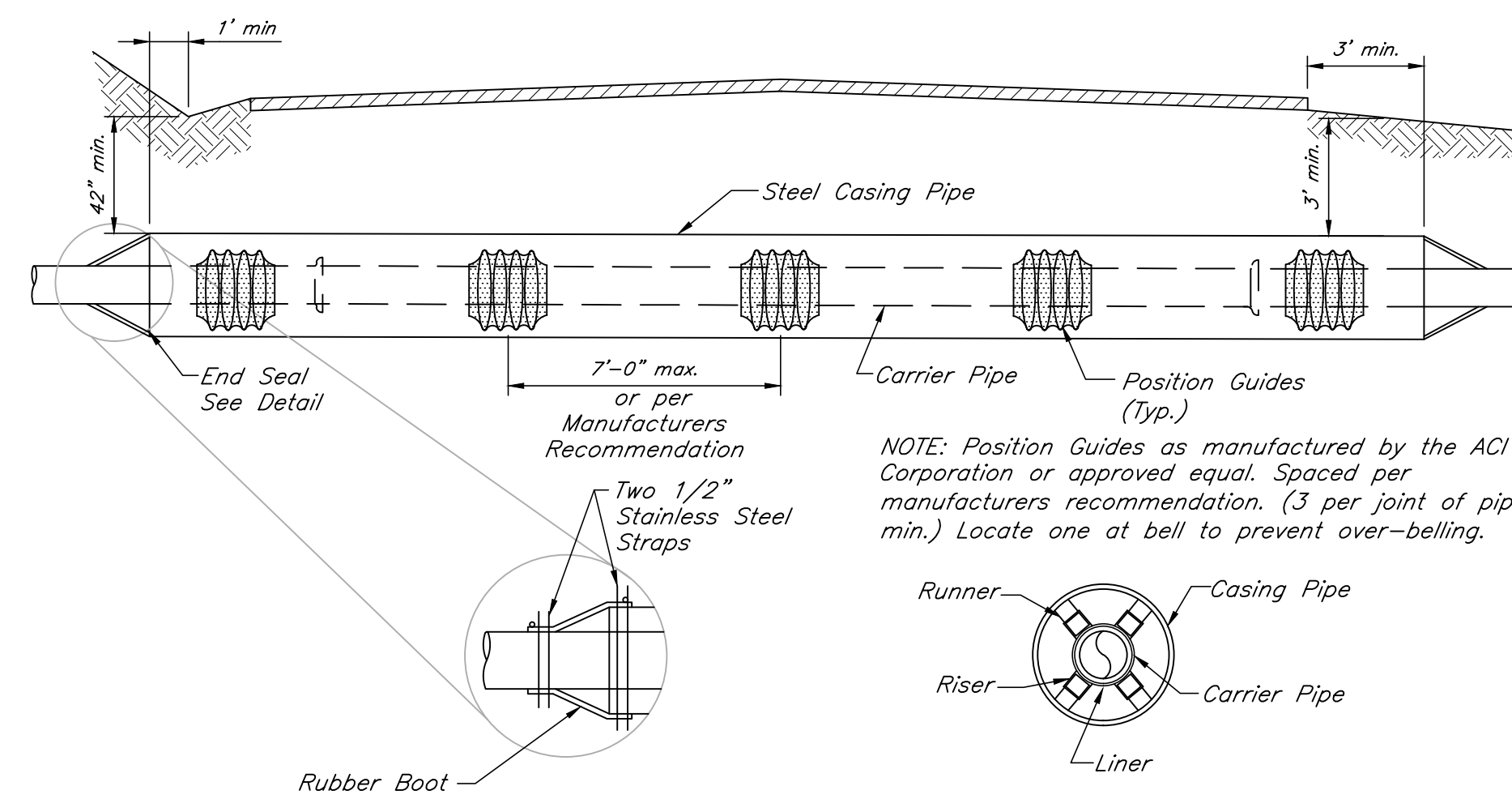
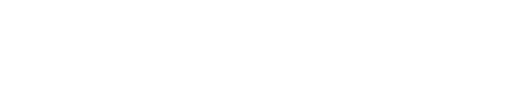
- NOTES:**
1. Leak detection Meters shall be installed where indicated on the Plans.
 2. Gate Valves are a Separate Pay Item. Bid Item for Leak Detection Meters shall include the Main Line Taps, Piping, Meter Box, Setters, Ball Valves, and Meter in accordance with the Detail Shown on this drawing.
 3. When installed for Creek Crossings, a second Gate Valve shall be installed on the water main a minimum of 500 feet from the Leak Detection Meter.

LEAK DETECTION METER
December 2016 N.T.S.

BRANCH/TEE ORIENTATION

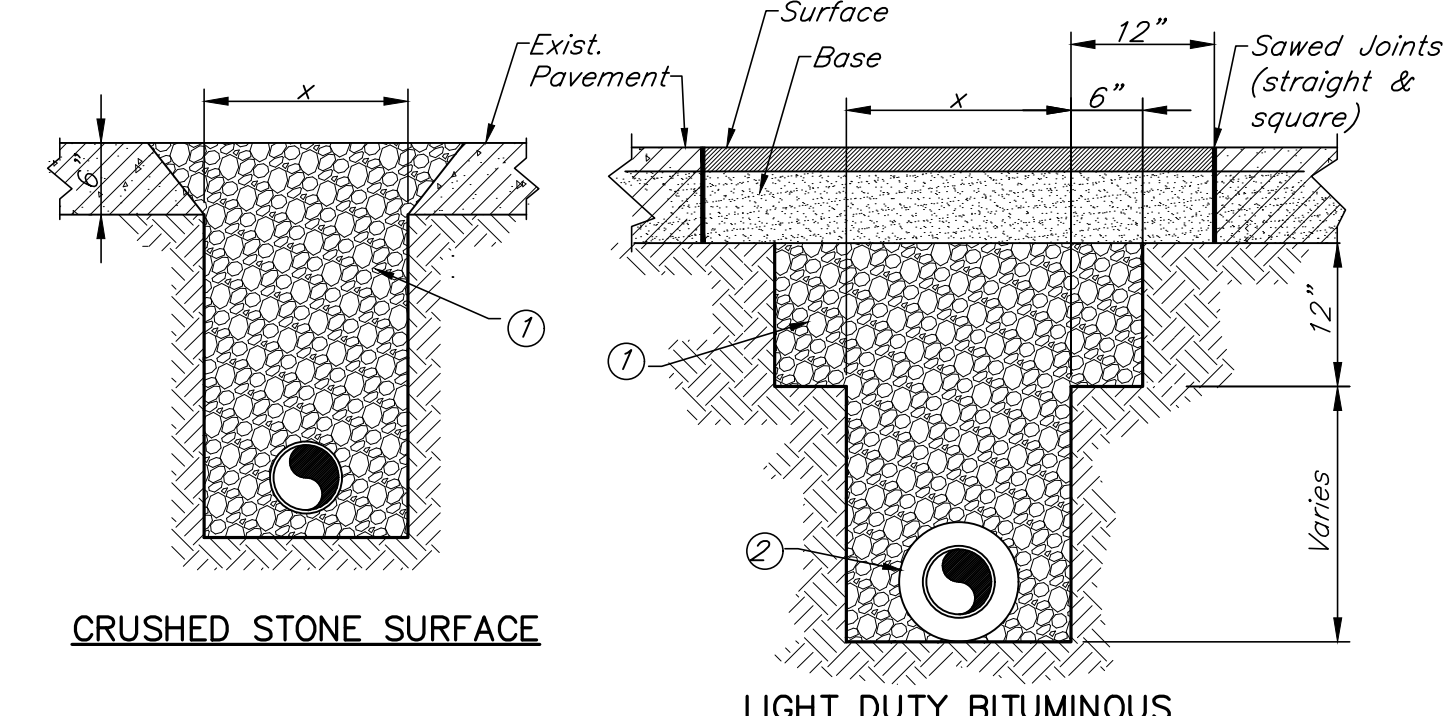
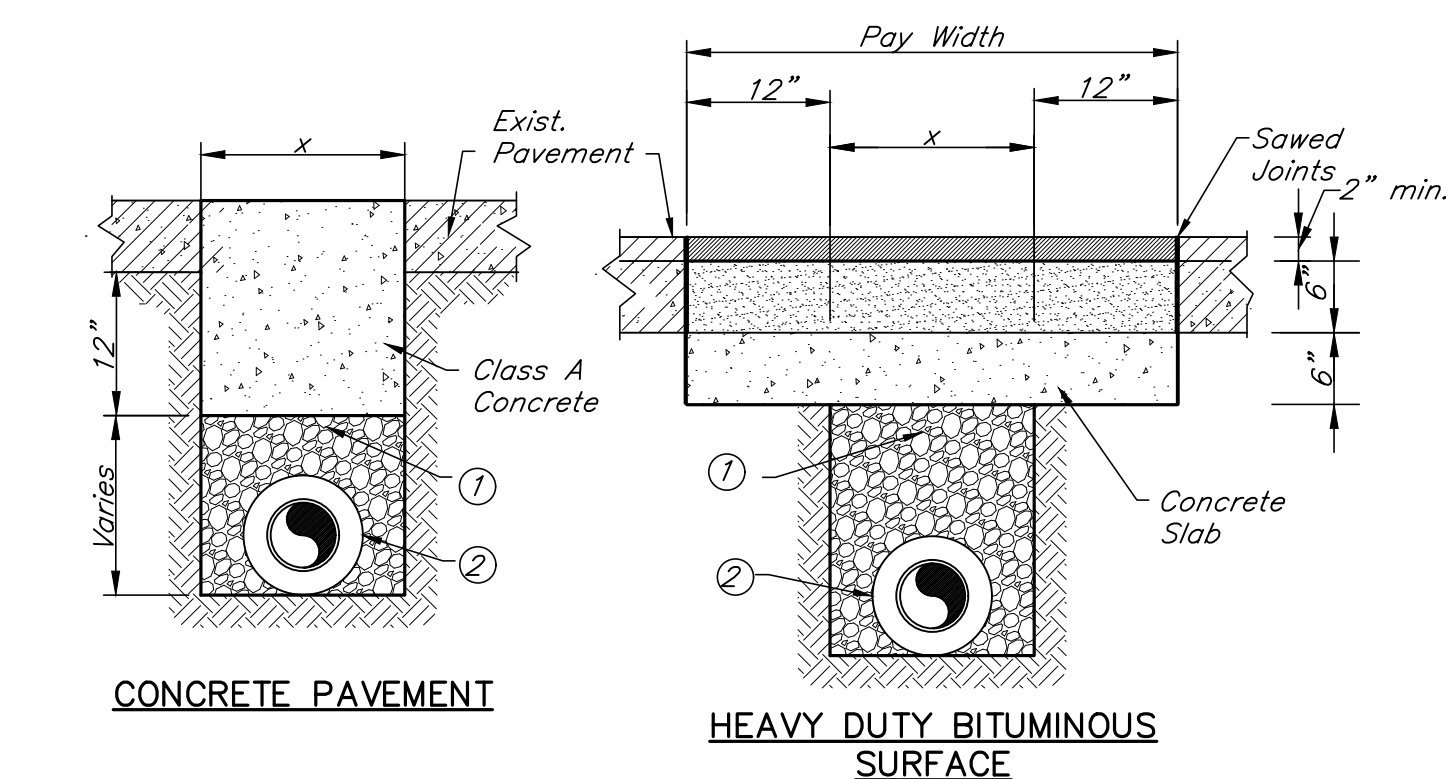
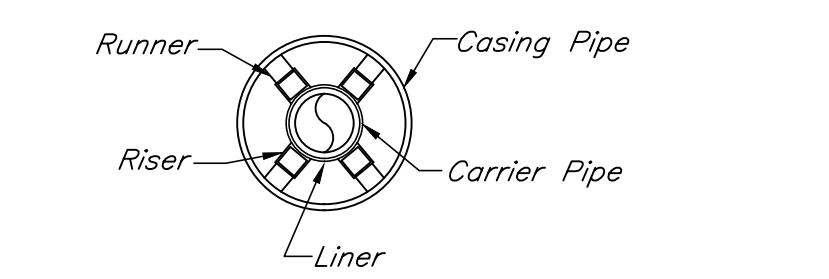


STRAIGHT RUN ORIENTATION



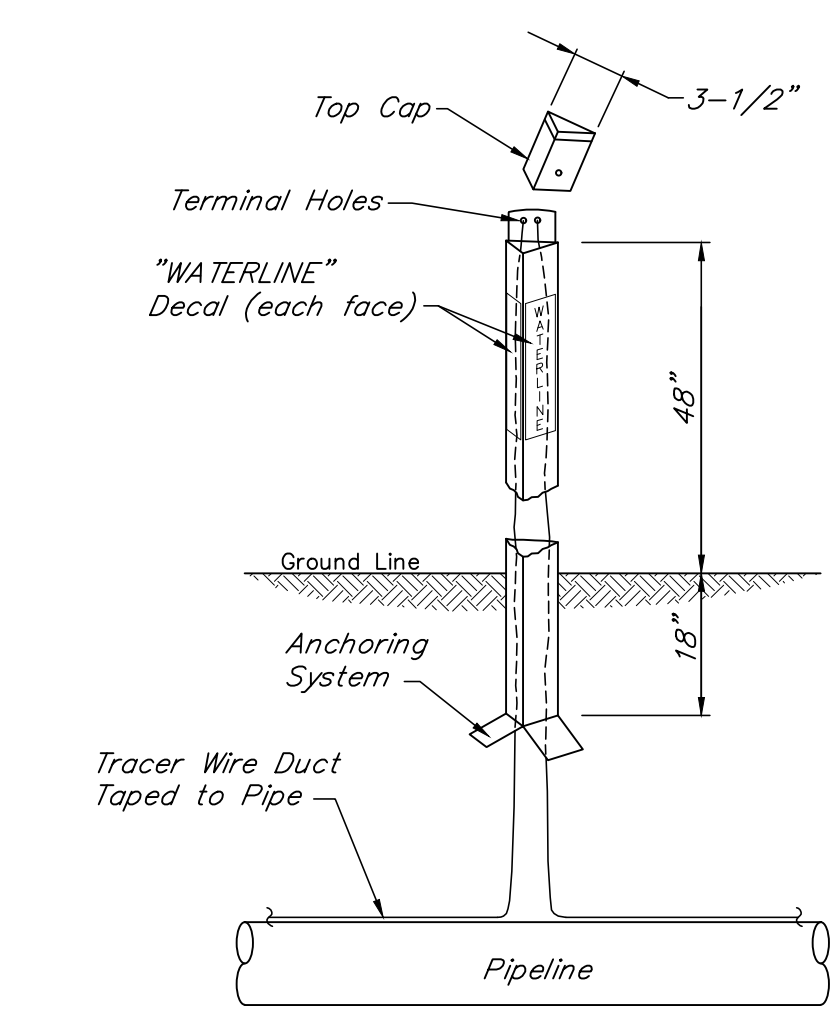
ROADWAY CROSSING INSTALLATION
Dec., 2010 Scale: 1/4" = 1'-0"

NOTE: Position Guides as manufactured by the ACI Corporation or approved equal. Spaced per manufacturers recommendation. (3 per joint of pipe min.) Locate one at bell to prevent over-belling.

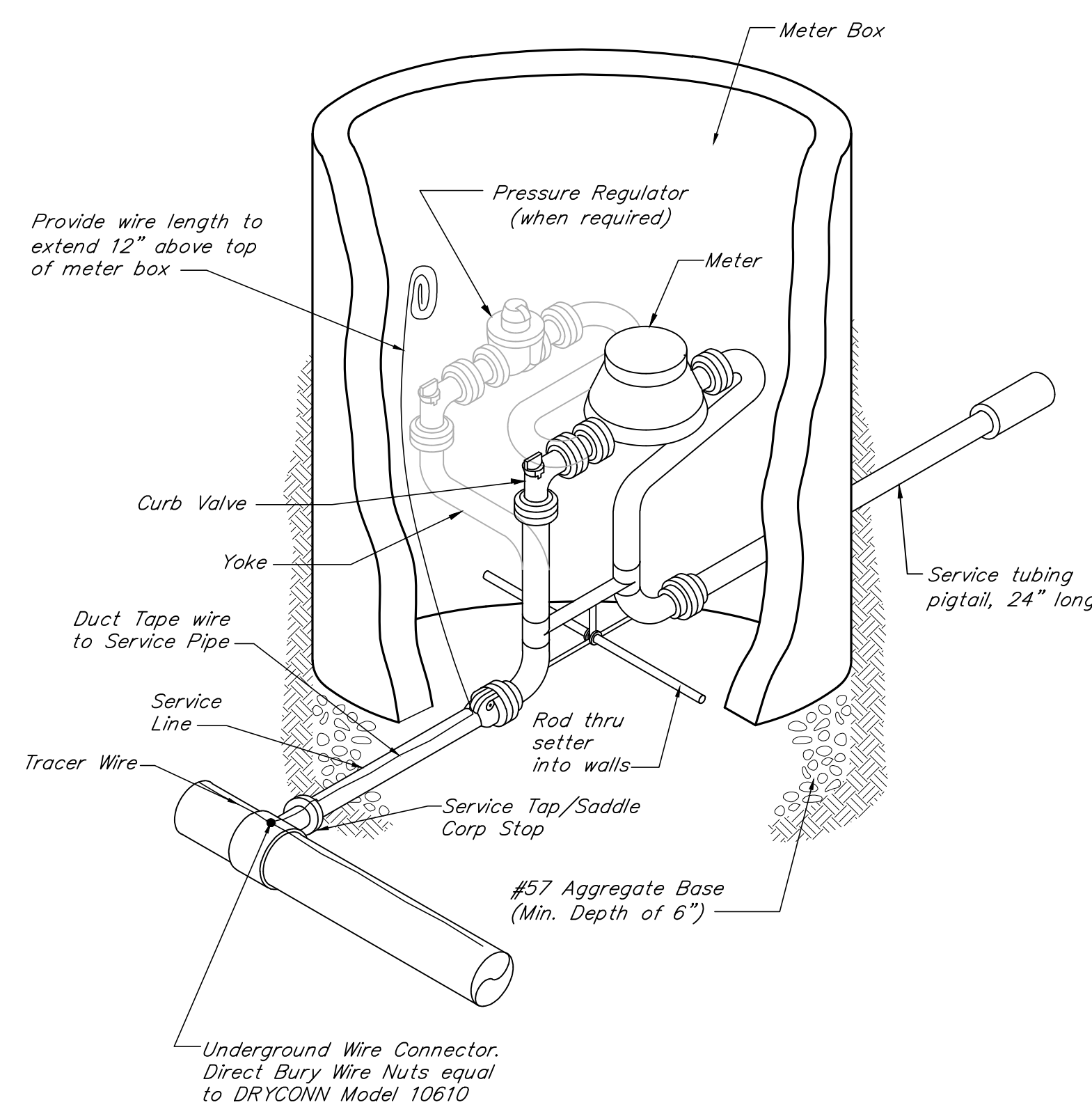


- NOTES:**
1. The max. allowable distance for dimension "X" shall be calculated as follows: $X = 24" + \text{Pipe Dia.}$
 2. Concrete slab under Bituminous surface to extend 12-inches on each side to trench
 3. Replace Concrete or Bit. Pavement with new pavement same thickness as existing pavement.
 4. Casing Pipe is not required under private driveways.
- ① Mechanically tamped #57 crushed stone aggregate in layers not to exceed 6".
② Casing pipe to be 4" in diameter greater than the greatest dimension of the carrier pipe.

PAVEMENT REPLACEMENT
Mar., 2011 Scale: 1/4" = 1'-0"

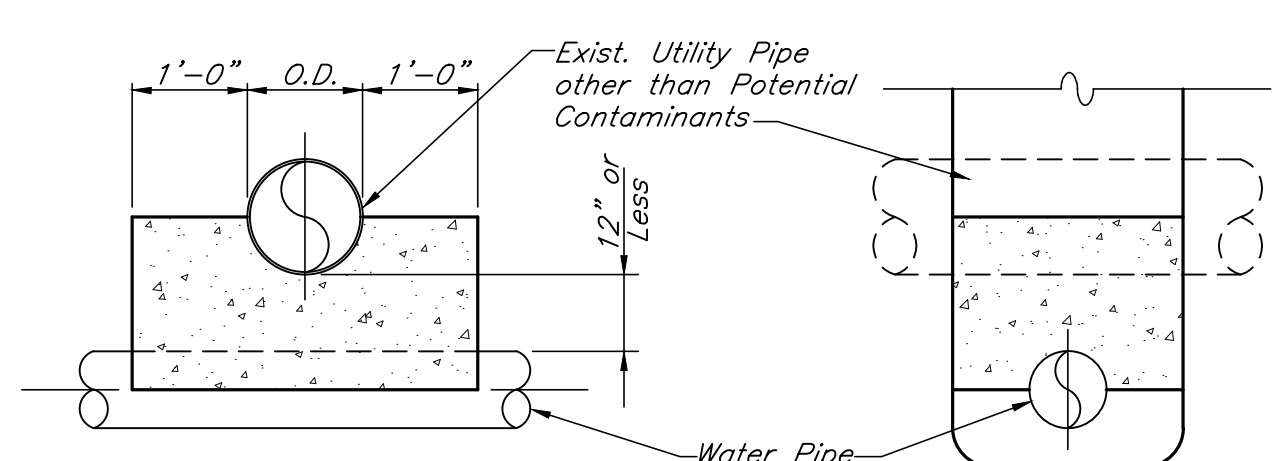


WATERLINE MARKER - TEST STATION
June, 2014 N.T.S.

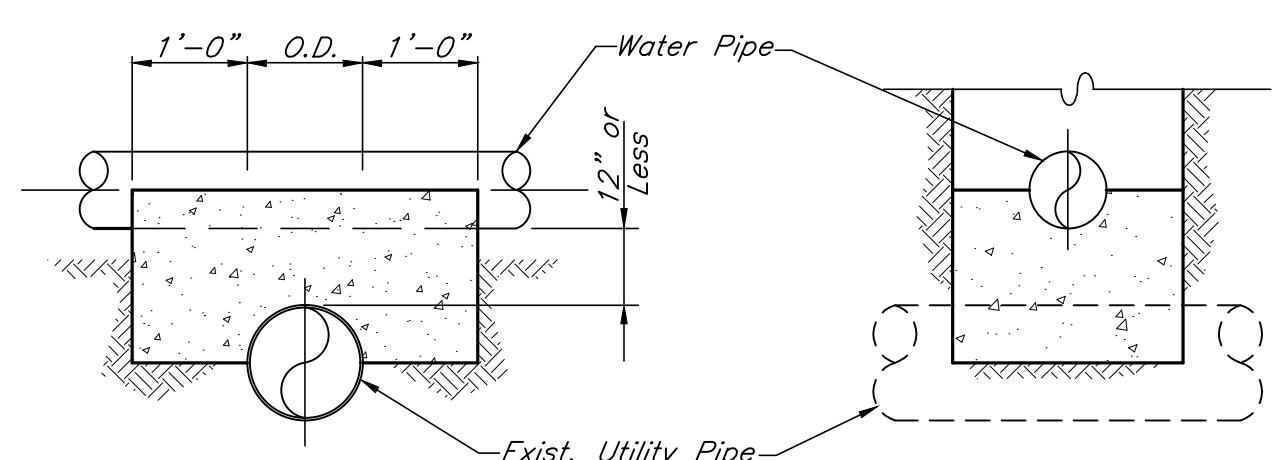


- NOTES:**
1. This drawing typical for meters 1" and smaller (w/std. press. req.)
 2. Meter setting shall be placed inside properly line as directed by the Engineer.
 3. Tracer Wire not required on Meter Settings less than 10 feet from water main.
 4. Pigtail Service Tubing to be incidental to Meter Setting.

METER SETTING
Mar., 2011 N.T.S.



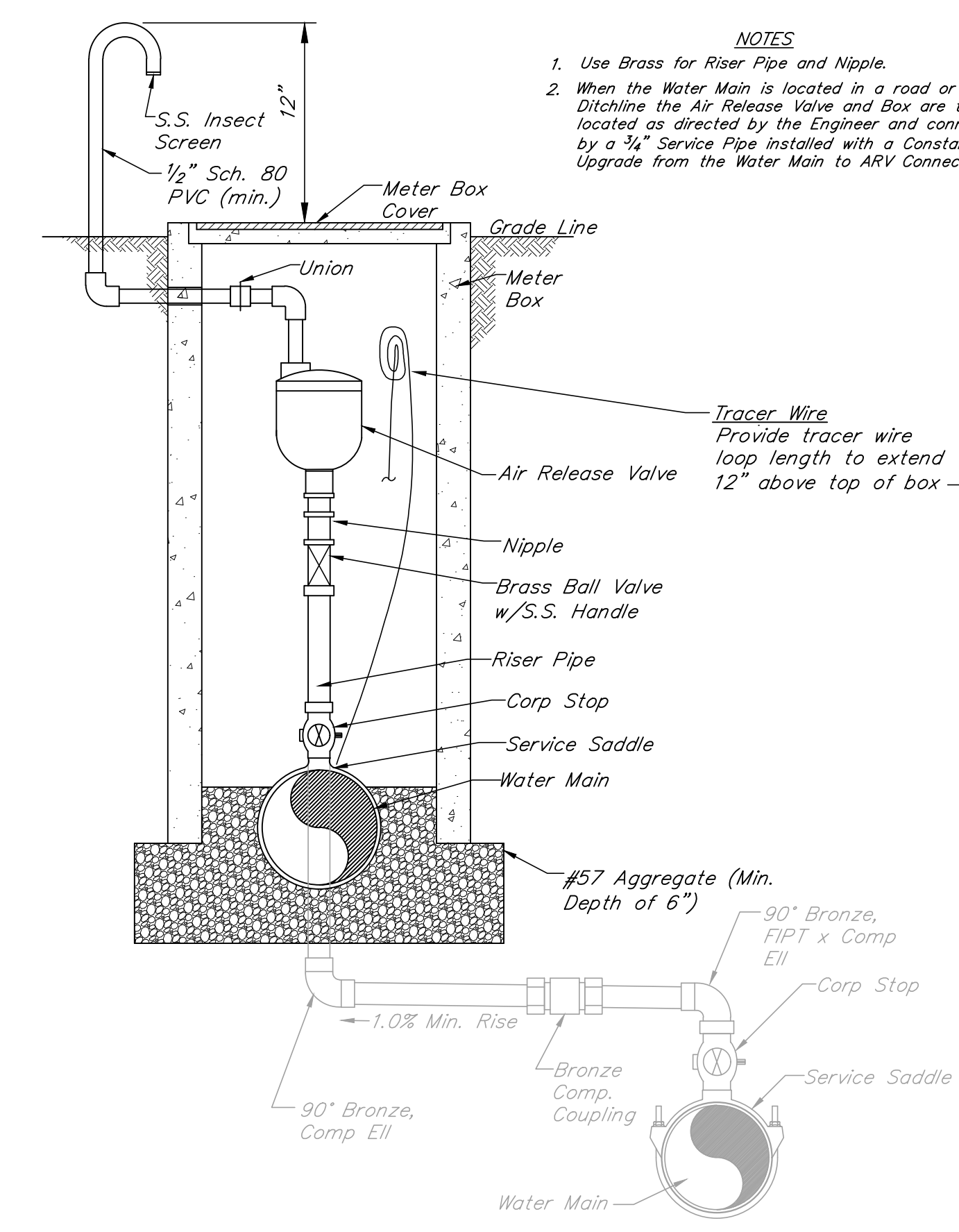
SIDE VIEW (BELOW) END VIEW (BELOW)



SIDE VIEW (ABOVE) END VIEW (ABOVE)

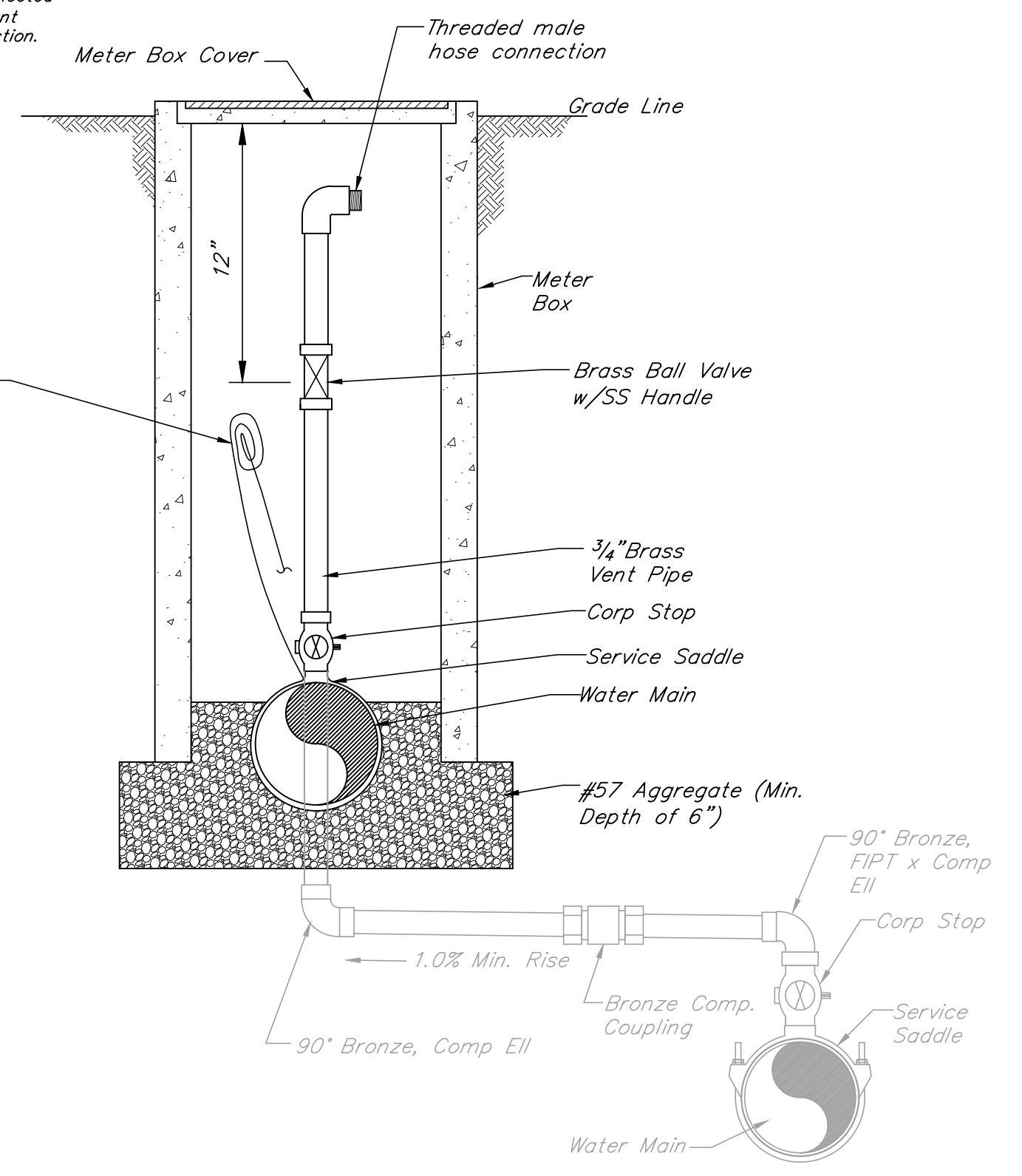
- NOTES:**
1. Concrete Separator shall be used when clearance between Water Line and Utility Pipe is 12" or Less.
 2. "Utility Pipe" includes underground Water, Natural Gas, Telephone, Electrical Conduits, Storm Sewer, or Typically Non-Contaminating Facilities. When crossing Sanitary Sewer or Potential Contaminants, See Detail "WATER/SANITARY SEWER CROSSING".

UTILITY CROSSING
Dec., 2010 N.T.S.



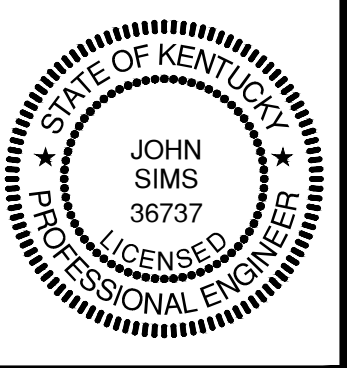
- NOTES:**
1. Use Brass for Riser Pipe and Nipple.
 2. When the Water Main is located in a road or Ditchline the Air Release Valve and Box are to be located as directed by the Engineer and connected by a 1/4" Service Pipe installed with a Constant Upgrade from the Water Main to ARV Connection.

AUTOMATIC AIR VALVE INSTALLATION
Dec., 2010 N.T.S.



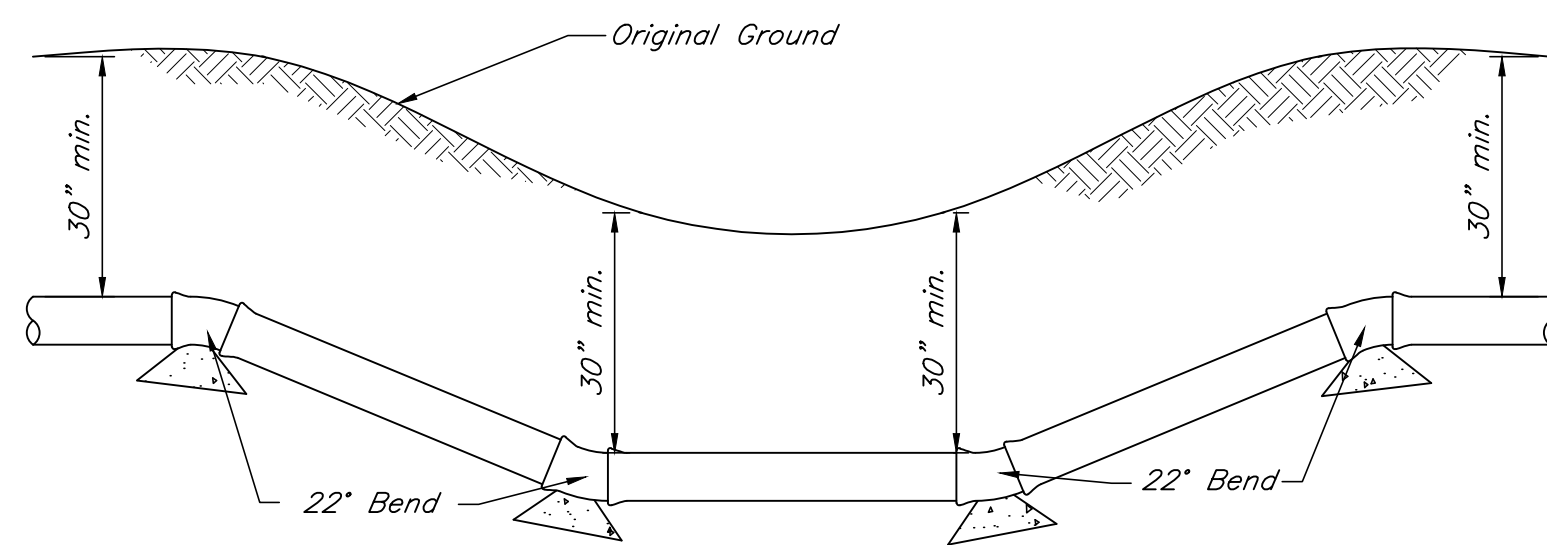
MANUAL AIR VALVE INSTALLATION
Dec., 2010 N.T.S.

MISCELLANEOUS DETAILS



DRAWN BY: ESM
CHECKED BY: JDT
CHECKED BY: JDS
DATE: JULY 2021
SCALE: As Noted
REVISIONS

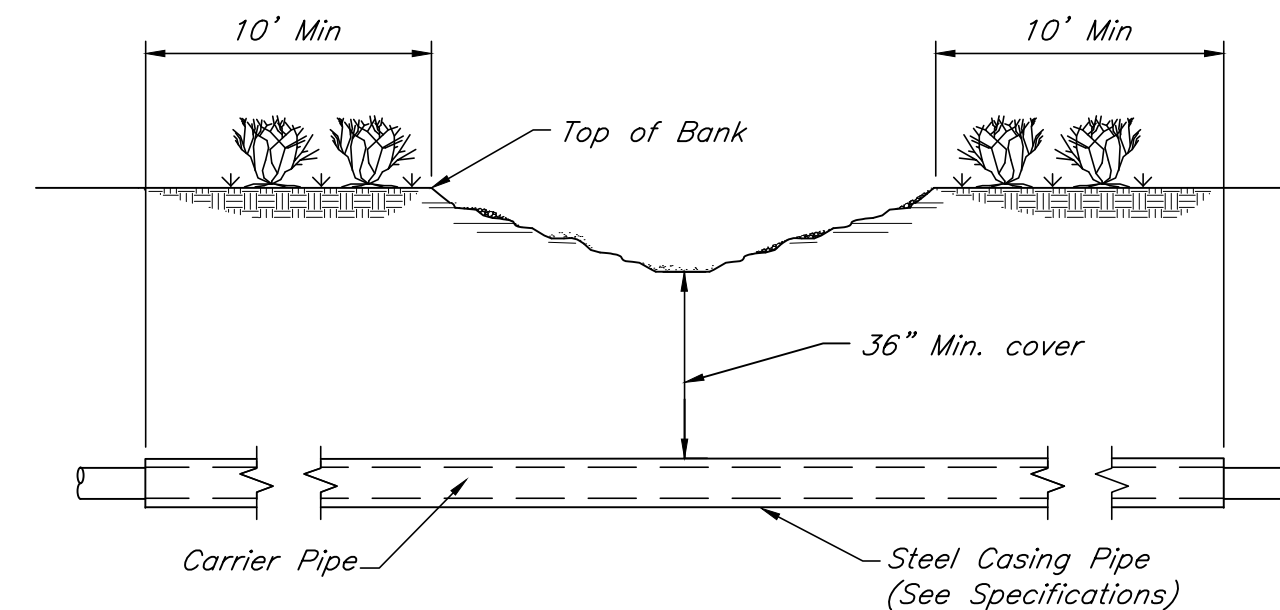
N:\P\2020132\Plan\01-D3 MISC Details.dwg, 10/10/2022 10:07:47 AM ESM



NOTES: This crossing shall be made with appropriate fittings to prevent excess joint deflection. Normally four (4) fittings will be required. The Contractor, at his option, may provide extra approach trench depth to avoid use of bends and thrust blocks. Allowable deflection of pipe may not be exceeded under any situation.

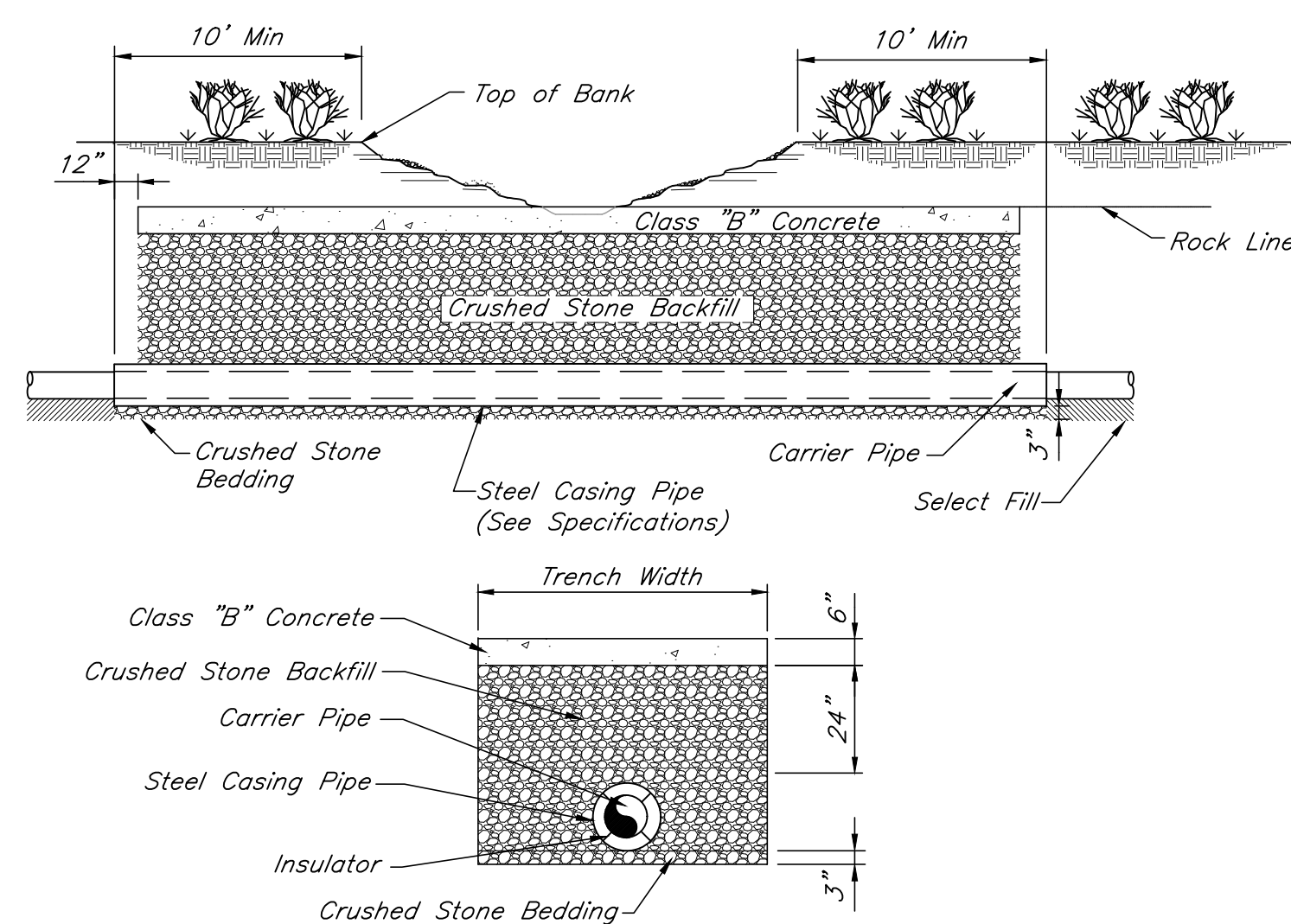
Thrust blocking for vertical bends shall be anchored to pipe in accordance with the Detail for Vertical Thrust Blocks.

NORMAL DITCH CROSSING WITHOUT ENCASEMENT
Dec., 2010 N.T.S.



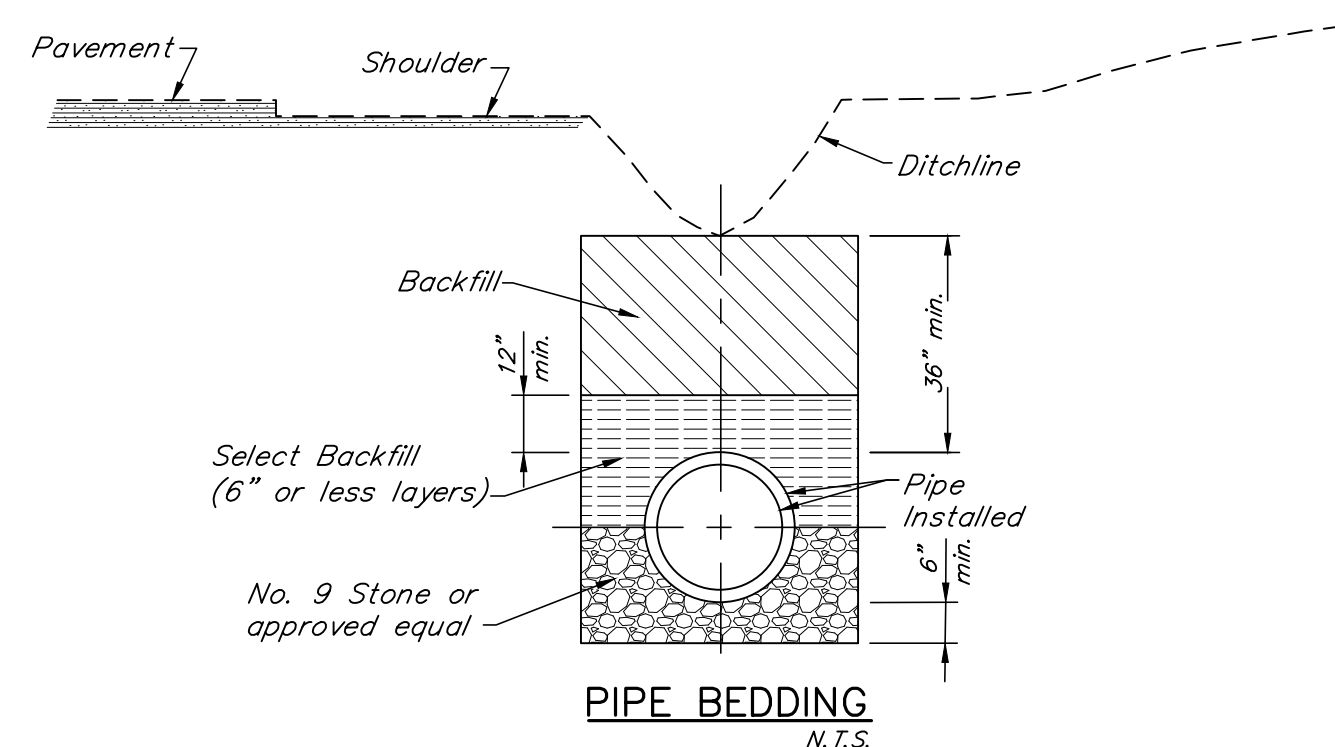
Note: This Crossing Shall Be Made With Appropriate fittings to prevent Excess Joint Deflection. Normally Four (4) Fittings will be required. The Contractor, at his option, may provide extra approach Trench Depth to avoid use of Bends. Allowable Deflection of Pipe may not be exceeded under any situation. See Typ. Roadway Crossing Installation Detail for Insulator placement.

SPECIAL STREAM CROSSING IN EARTH (TYPE A)
Dec., 2010 N.T.S.

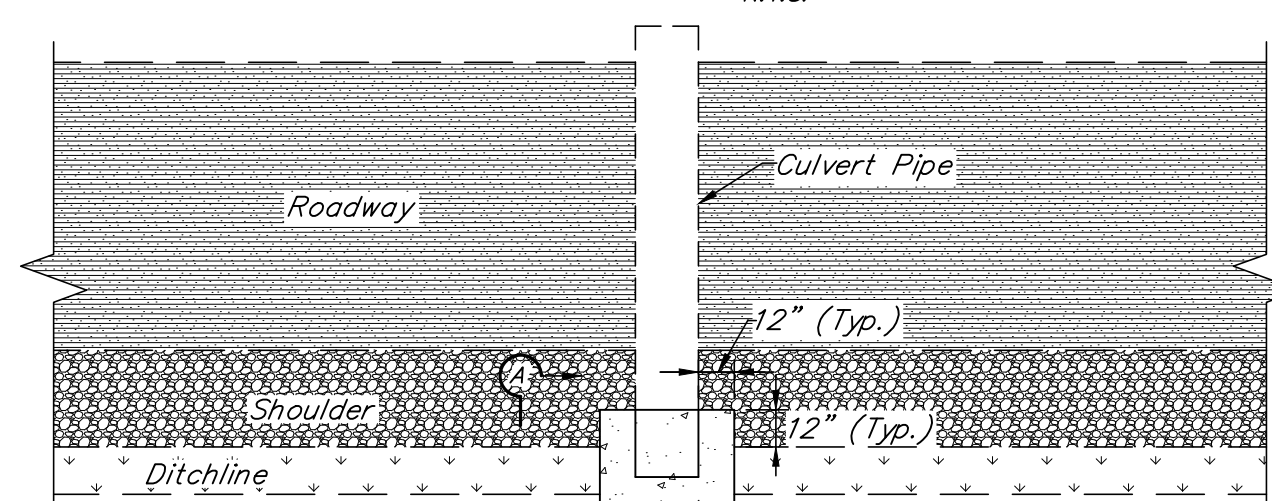


NOTE: This Crossing shall be made with Appropriate Fittings to prevent Excess Joint Deflection. Normally Four (4) Fittings will be Required. The Contractor, at his option, may provide extra Approach Trench Depth to avoid use of Bends. Allowable Deflection of Pipe may not be exceeded under any situation. See Typ. Roadway Crossing Installation Detail for Insulator Placement

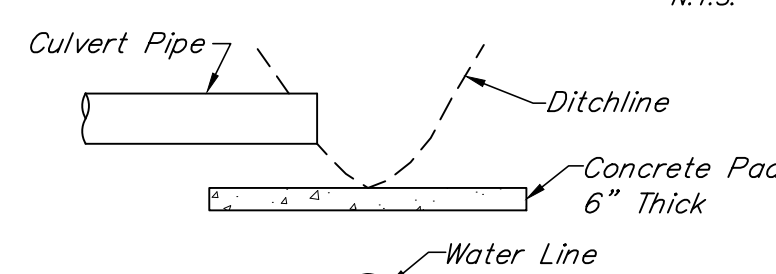
STREAM CROSSING IN SOLID ROCK (TYPE B)
Dec., 2010 N.T.S.



PIPE BEDDING
N.T.S.



CONCRETE PAD AT CULVERT OPENING
N.T.S.

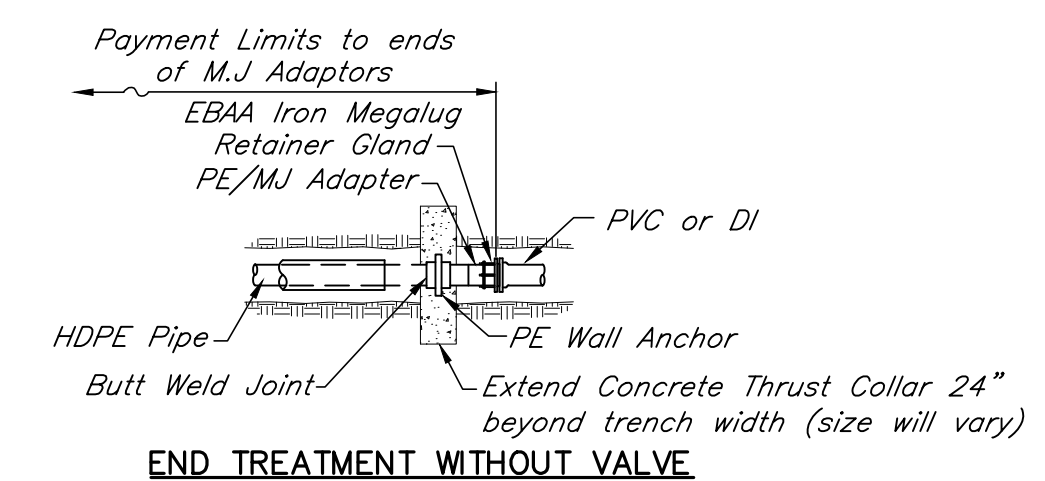


SECTION A-A
N.T.S.

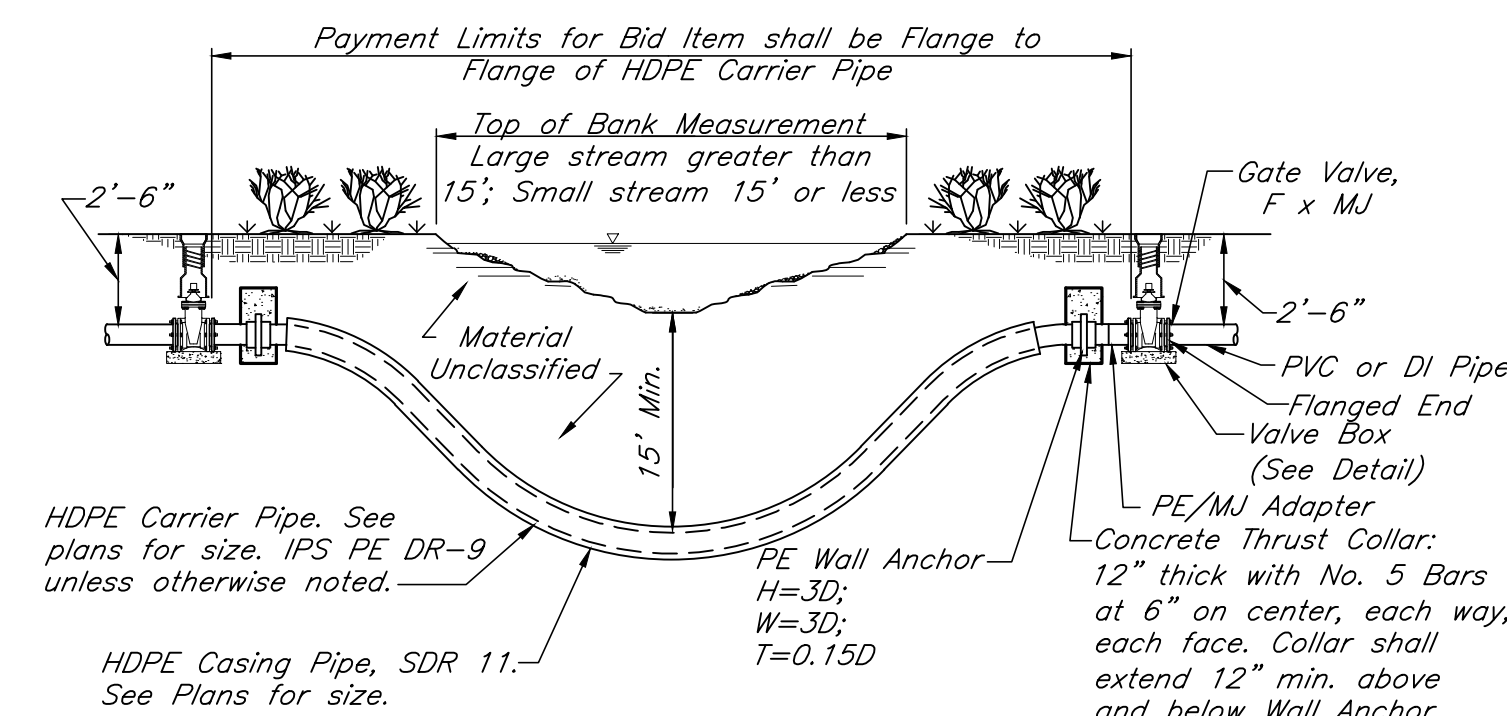
DITCHLINE DETAIL
Dec., 2010 N.T.S.

CASING PIPE SIZE	
HDPE, DR 9+ CARRIER PIPE	HDPE, DR 11 CASING PIPE
3"	8"
4"	10"
6"	12"
8"	16"
10"	18"
12"	20"
16"	24"

* unless otherwise noted on Dwg.



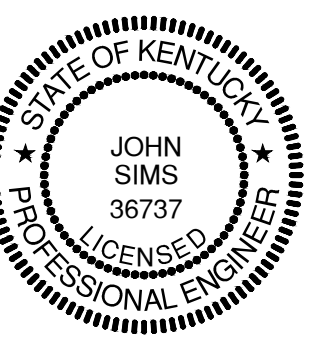
END TREATMENT WITHOUT VALVE



NOTE: Payment shall be "Lump Sum" for specific individual Bid Items for Directional Bores of large stream crossings and for some classified small streams where the physical crossing characteristics differ significantly from the other small streams in the project. Determination of required length is responsibility of Contractor. When a creek crossing test meter is shown on the drawings and it is necessary to tap the HDPE pipe for the meter connection, the tapping saddle specifically manufactured for HDPE pipe shall be used.

Payment shall be "each" for directional bores of small stream crossings unless contained in an individual specific bid item. All small stream crossings in the project shall be considered the same regardless of width (up to 18 LF) or depth. It is the responsibility of the Contractor to determine an average unit price that will be used for payment for each instance a blue line stream is crossed. Stream crossings may be added, for extended lines beyond those shown on the plans, at the same unit price providing the crossings are reasonably similar to those in the initial project. Stream crossings may be deleted, without affecting the unit price, if a line is deleted or shortened.

DIRECTIONAL BORE FOR STREAM CROSSINGS
Feb., 2013 Scale: 3/16" = 1'-0"



DRAWN BY: ESM	CHECKED BY: JDS
CHECKED BY: JDS	DATE: JULY 2021
SCALE: As Noted	REVISIONS

