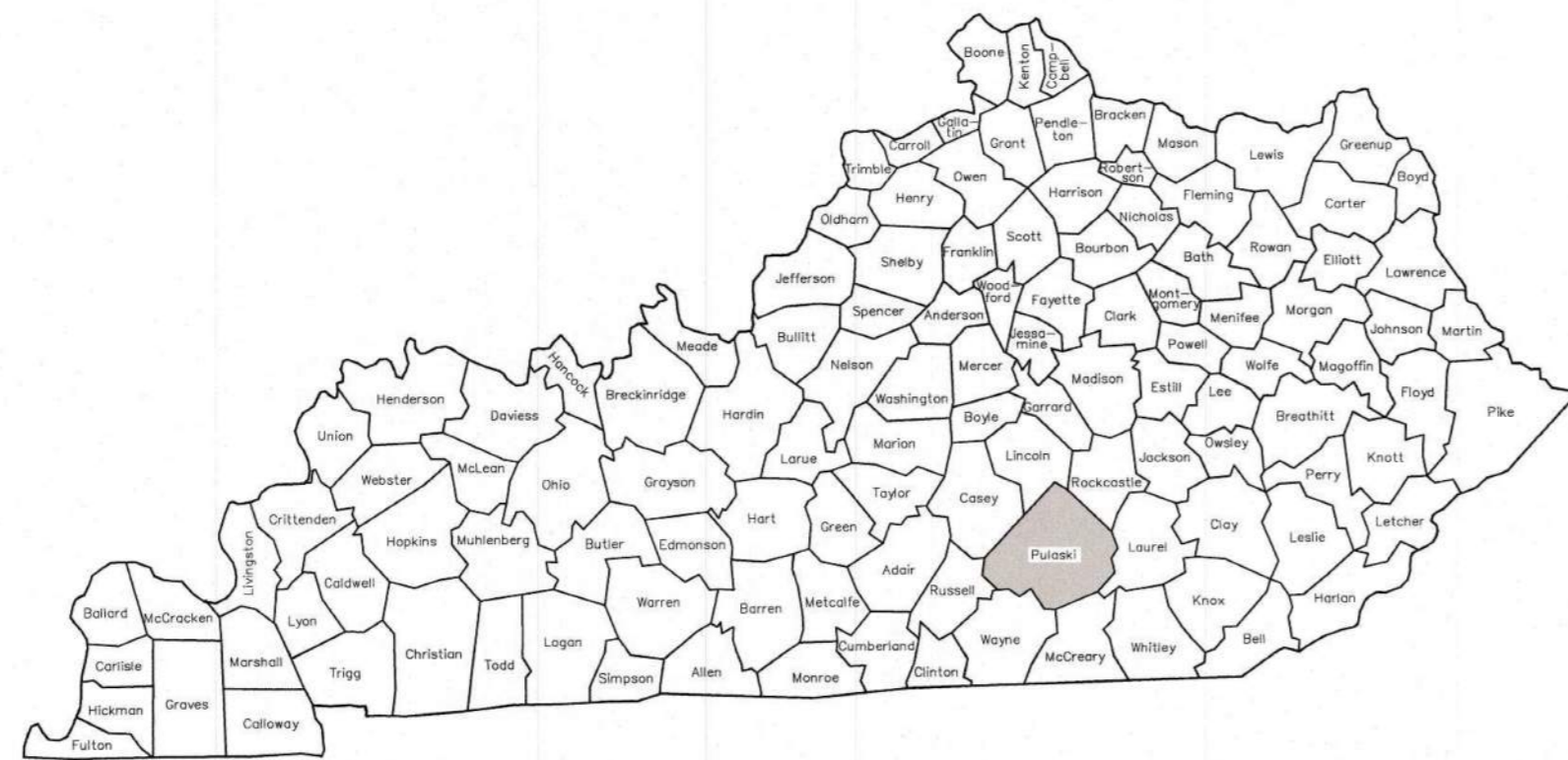


SOUTHEASTERN WATER ASSOCIATION

KY 192 / KY 1003 IMPROVEMENTS & VARIOUS PUMP STATION REPLACEMENTS

PULASKI COUNTY, KENTUCKY



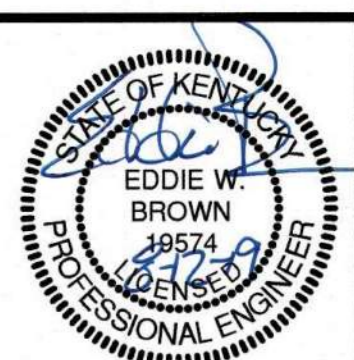
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Prepared By:



KENVIRONS, INC.
FRANKFORT, KENTUCKY



QA/QC: BKW DATE: 11/12/11

GENERAL NOTES

- Stations shown on the water line are for reference only and do not reflect the actual linear lengths of pipe required for construction.
- The Contractor shall be responsible for coordinating all construction work with local utility companies and other concerned parties.
- Existing buried utilities are shown on the drawings in their general location utilizing 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 to proceed with construction. The Contractor shall contact BUD at telephone no. 1-800-752-6007 or 811.
- Before construction begins through any property, the Contractor shall make himself aware of the exact location of construction through the property and the bounds of the permanent and temporary construction easements.
- The Contractor shall have on hand at the job site 11 1/4", 22 1/2", 45" and 90" bends for use where necessary for proper installation. All fittings are incidental to project construction. Contractor will NOT be compensated for any fitting necessary to complete the project.
- Pipe joint deflection shall not exceed 2". Bending of PVC pipe will not be allowed.
- At some locations, the Contractor may be required to provide extra cover over line. Cost of extra cover is to be included in unit price bid for line installation and no separate payment will be made for such extra cover.
- Connecting new lines to existing lines or to work in other contracts is subsidiary to the contract unless specifically itemized in the Bid Schedule. It includes fittings, sleeves, etc., but does not include gate valves, which are an extra pay item.
- All fittings, thrust restraints and appurtenances to construct the pipelines as shown shall be included in the unit cost for the pipe and are not separate pay items.
- The pipe lengths have been estimated as close as possible. The Contractor shall be responsible for ordering pipe quantities necessary for installation to the limits as shown on the Drawings unless otherwise instructed. Any left-over pipe quantities shall be the property of the Contractor unless other arrangements are made. The Owner shall not be responsible for re-stocking or other charges associated with the left over pipe.
- Ductile iron pipe shall be installed in accordance with Standard AWWA C150/ANSI A21.50 Laying Condition Type 3 unless otherwise noted.
- All driveways that are cut shall be backfilled with KYTC #8 or 9-M and shall be included in the unit price for pavement replacement.
- All open cut streets and roads and trenches cut in existing pavements shall be backfilled with compacted crushed stone or DGA in accordance with the miscellaneous details drawings.
- Paved driveways shall be free-bored. Free bore unit prices are contained in Bid Schedule. The material in which the free bore is made is unclassified.
- It is the responsibility of the Contractor to comply with all regulations regarding the effect on the environment from the discharge of chlorinated water. See Technical Specification 15103 Subsection 2 for methods of sterilization and for disposing of heavily chlorinated water.
- The time period for pressure testing in this project shall be 6 hours.
- Marking tape and tracer wire shall be installed with all pipe and all service tubing. See Technical Specification 15100, and the miscellaneous details drawings.
- During the process of tapping asbestos cement mains, the contractor shall conform to OSHA regulations governing the handling of hazardous waste. Pieces of asbestos cement resulting from the tap shall be double bagged, placed in a rigid container and disposed of in an approved landfill.
- Locations where pipeline is to be installed on state road right of way are approximately delineated on the drawings. The Contractor shall determine the field locations for transitions between private easements, and state and county road rights of way.
- All pipelines installed in the ditchline on state or county rights of way shall have 42" minimum cover over top of pipe.
- The pipeline trench width will be strictly enforced. See Technical Specification 15100 for trench width requirements.
- Rough cleanup must be performed as the pipe is laid or as soon thereafter as possible. Failure to keep rough cleanup current with the pipe laying may be grounds for additional retainage.
- Do not cut fences except where specifically shown and noted.
- The Contractor shall obtain and pay for all grading, storm water, etc. permits, if any are 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. All work shall be provided in compliance with all applicable local, state and national building codes.
- All work shall be executed in compliance with the current workplace safety regulations of the U.S. Department of Labor, Occupational Safety and Health Administration (O.S.H.A.).
- The Contractor shall restrict all construction activities to within the limits of the public right of way and the private easements and fee parcels unless otherwise approved by the Owner in writing. The Contractor shall be solely liable for any and all Work he performs outside of the boundaries of the public road right of way and the private easements and fee parcels provided by the Owner.
- The Contractor is solely responsible for determination of the existence and location of any and all other buried utilities in the vicinity of his Work. Utilities shown on the Project Drawings are purported to be approximate only and not warranted to be complete nor accurately located. Additional buried utility lines, other than as shown on the Project Drawings, may exist in the vicinity of the Project work. The Contractor shall contact local utilities and/or locating service at least 48 hours prior to commencing work on the Project.
- The Contractor shall be responsible for all traffic control measures necessary for the safe execution of his work, including but not limited to flaggers, traffic signage, barricades, construction fencing and nighttime warning lights. Traffic safety provisions shall be employed by the Contractor in accordance with the Standards of the appropriate State and local public highway authorities.
- All excavation and all boring shall be considered unclassified excavation and unclassified boring. No additional payment shall be due and payable to the Contractor for dewatering of pipe trenches/excavations or for excavation and removal of rock or for boring casing through rock.
- All water main fittings shall be ductile iron, restrained 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.

GENERAL NOTES (CONT.)

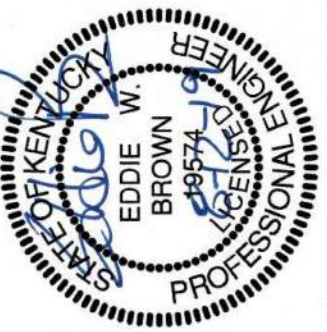
- All water main fittings in addition to joint restraints shall be anchored with poured concrete thrust blocks as shown in the miscellaneous details drawings. Wrap fittings in minimum 5-mil plastic (PVC) wrap prior to forming and pouring the block.
- Prior to cutting existing driveways, the Contractor shall notify the property owner/occupant at least 24 hours in advance and shall schedule his Work such to restrict access to not more than 2 hours in one (1) day.
- The Contractor shall repair/replace any and all existing utility lines and equipment damaged by the Contractor's Work, to the satisfaction of the damaged utility and at no additional cost to the Owner.
- The Contractor shall protect all drainage culverts in the vicinity of his work and shall repair or replace all culverts damaged by his Work and at no additional cost to the Owner. All existing culverts may not be shown/noted on the Project Drawings.
- Existing utility lines may be cathodically protected. The installation of all ductile iron pipe, fittings and appurtenances within 100' of cathodically protected utility lines shall comply with AWWA Standard C105 (Polyethylene Encasement), latest revision, and at no additional cost to the Owner.
- If sewer or other sanitary facilities are encountered, the Engineer shall direct the relocation of the water main to provide separation and/or other protection of the water main in accordance with terms of the Kentucky Department for Environmental Protection, Division of Water Construction Permit. The Contractor shall provide relocation of the water main as directed by the Engineer and the Contract Price adjusted only by/to the number of Bid Item units actually provided.
- No water service shall be activated until the new work has been completed, sterilized, and tested in accordance with the Contract Documents and accepted in writing by the Owner.

ENVIRONMENTAL NOTES

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

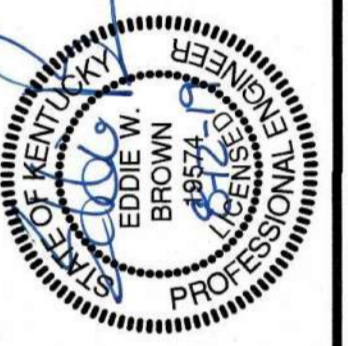
HIGHWAY DEPARTMENT NOTES

- Underground utilities installed inside state right of way shall be located within 3-5 feet from the edge of the right of way unless otherwise shown on the plans.
- Underground utilities on state right of way shall be installed at a minimum depth of 42" (under roadways, ramps, ditch lines and in all other areas within state right of way), as mandated by KYTC District 8.
- Underground utilities crossing any paved driveway inside state right of way shall be installed by boring unless written permission to open cut is obtained from the property owner.
- Underground utilities shall not be installed in embankment fills or between edge of pavement and ditchline unless specifically noted on permitted plans.
- Fire Hydrants or utility service boxes should be located within 2 feet from the edge of right of way line, or off right of way.
- Contact KYTC-DOH District Office prior to beginning work.
- All affected KYTC ditchlines shall remain free of excess silt or erosion and constructed to the normal typical section of the roadway with a minimum depth of 18 inches from the shoulder break point.
- All necessary steps shall be taken to prevent erosion or siltation of the public right of way, adjoining property and waterways.
- All traffic control for construction and maintenance operations will conform to the *Manual on Uniform Traffic Control Devices*. All construction and maintenance operations must be planned with full regard to safety to keep traffic interference to an absolute minimum. Closure of intersecting streets, road approaches or other access points is to be held to a minimum.
- All areas disturbed by utility installation should be kept to a minimum and restoration methods should be in accordance with Kentucky Transportation Cabinet's *2012 Standard Specifications for Road and Bridge Construction*.
- All machinery shall use steel plates to protect the existing pavement of state highways while installing utilities parallel to said state highways.
- When installing utilities around existing drainage structures, the utility shall be cased along the entire length of the drainage structure to protect the utility and drainage structure.

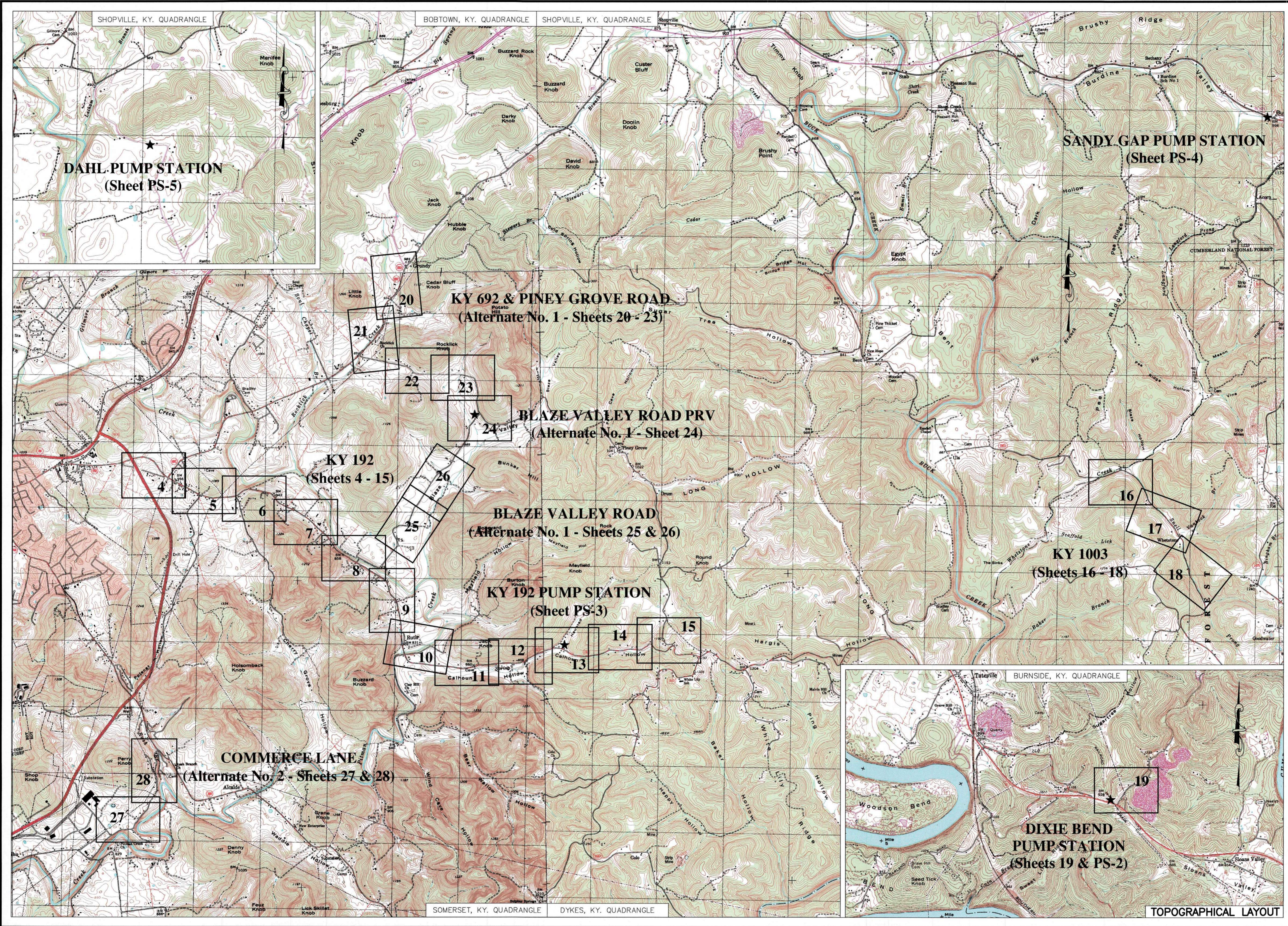


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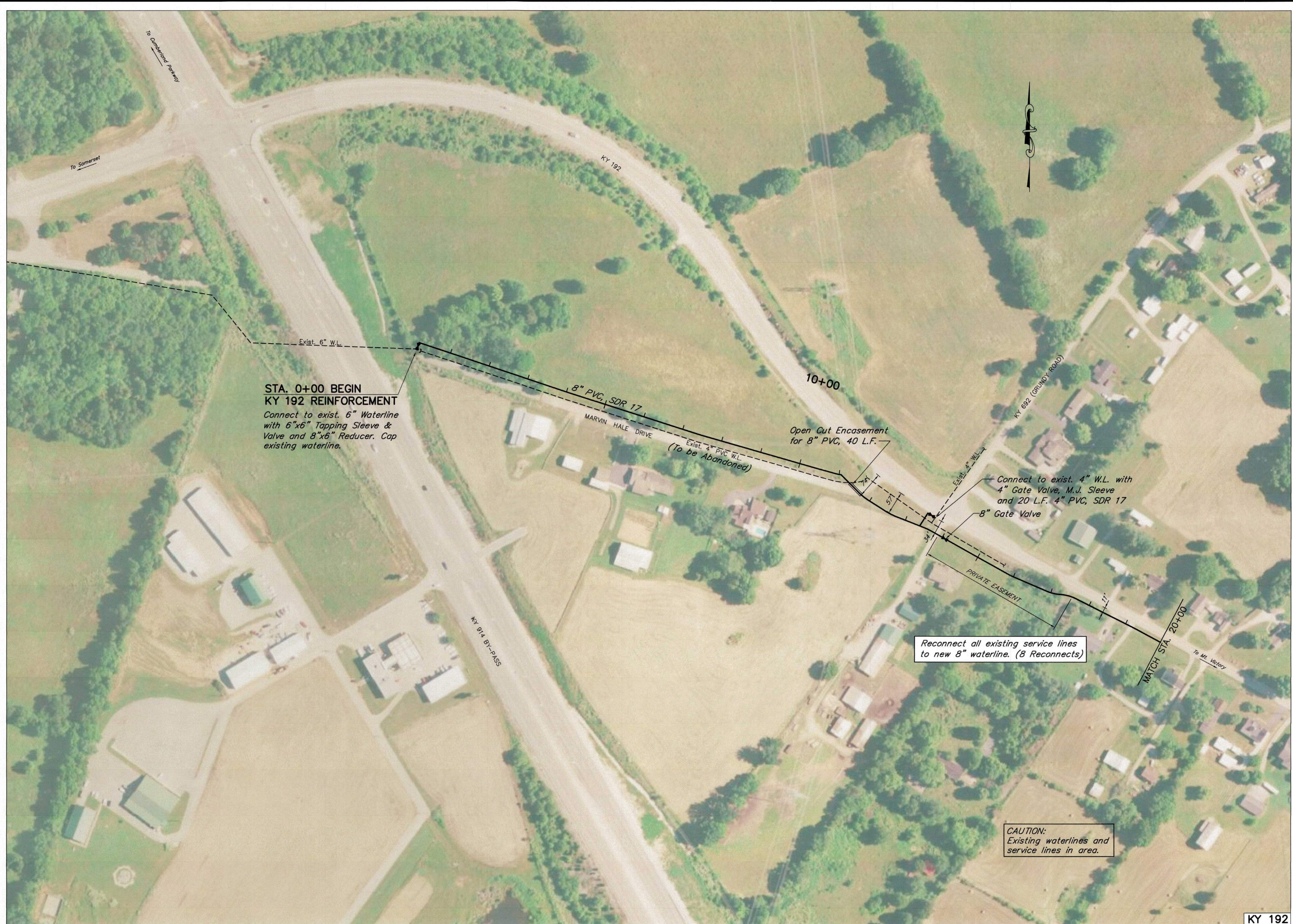


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**STA. 0+00 BEGIN
KY 192 REINFORCEMENT**
Connect to exist. 6" Waterline
with 6"x6" Tapping Sleeve &
Valve and 8"x6" Reducer. Cap
existing waterline.

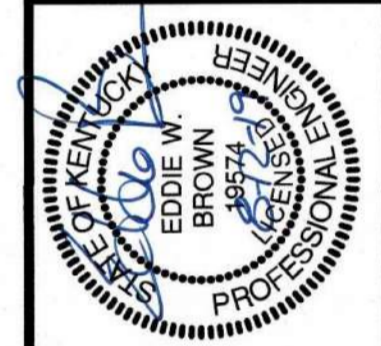
Open Cut Encasement
for 8" PVC, 40 L.F.

Connect to exist. 4" W.L. with
4" Gate Valve, M.J. Sleeve
and 20 L.F. 4" PVC, SDR 17
8" Gate Valve

Reconnect all existing service lines
to new 8" waterline. (8 Reconnects)

CAUTION:
Existing waterlines and
service lines in area.

**SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS**

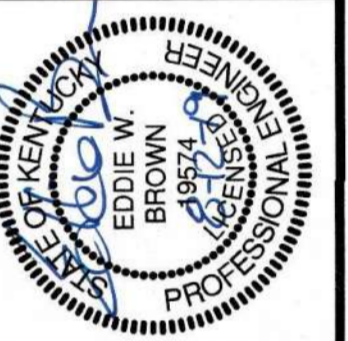


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FRANKFORT, KENTUCKY



**SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS**



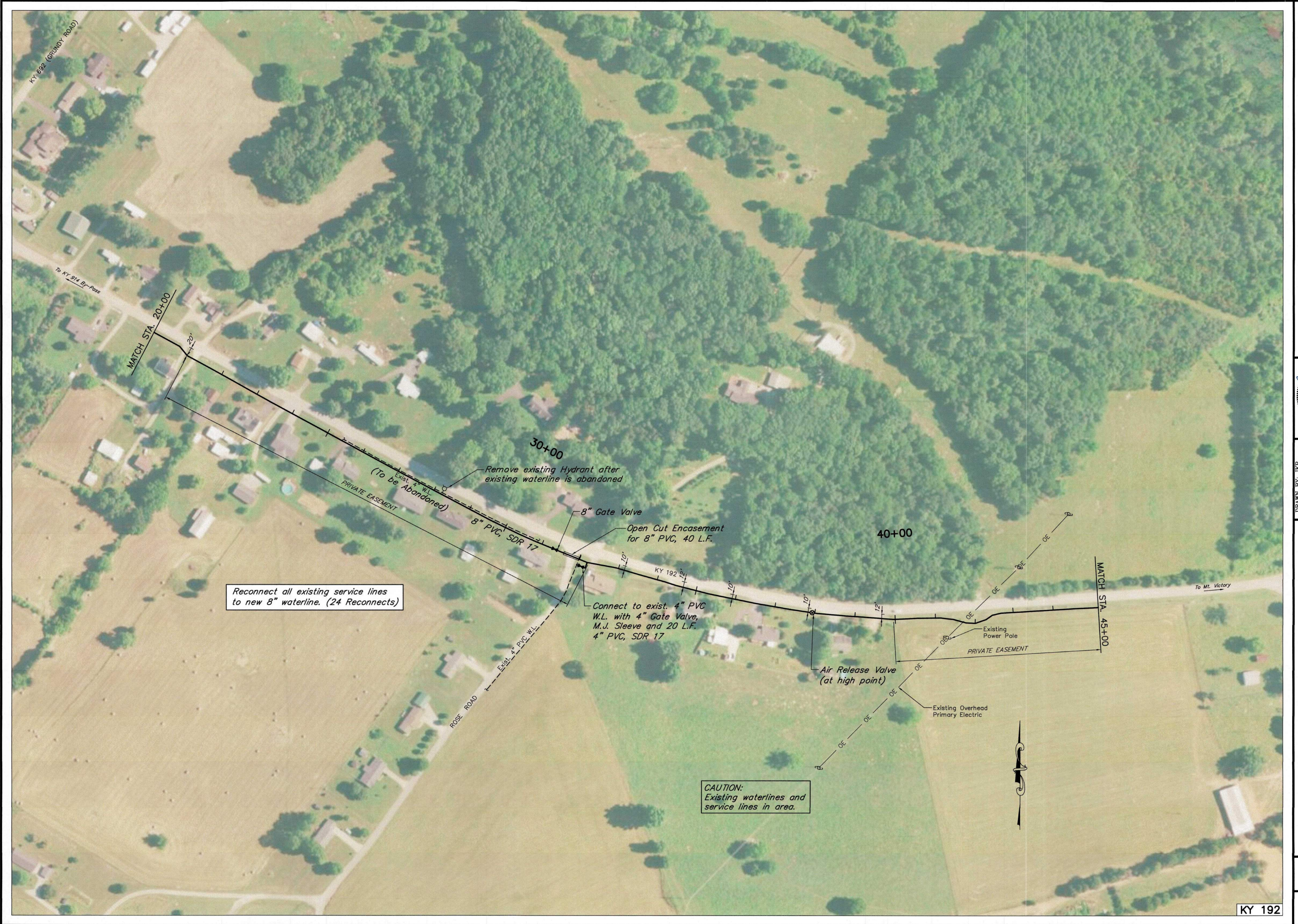
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REVISIONS

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FRANKFORT, KENTUCKY



PROJECT NO.
2016173

SHEET NO.
5



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KY 192

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CAUTION:
Existing waterlines and
service lines in area.

Reconnect all existing service lines
to new 8" waterline. (9 Reconnects)

CAUTION:
Existing waterlines and
service lines in area.



SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS



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FRANKFORT, KENTUCKY

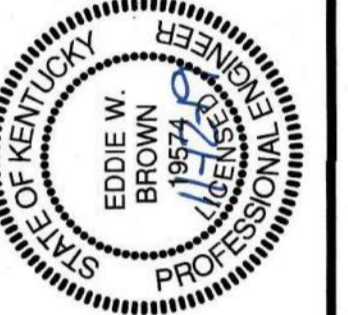


PROJECT NO.
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KY 192

**SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS**



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REVISIONS

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FRANKFORT, KENTUCKY



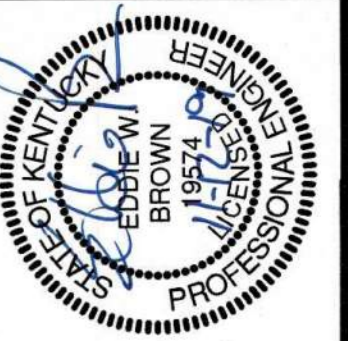
PROJECT NO.
2016173

SHEET NO.
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**SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS**

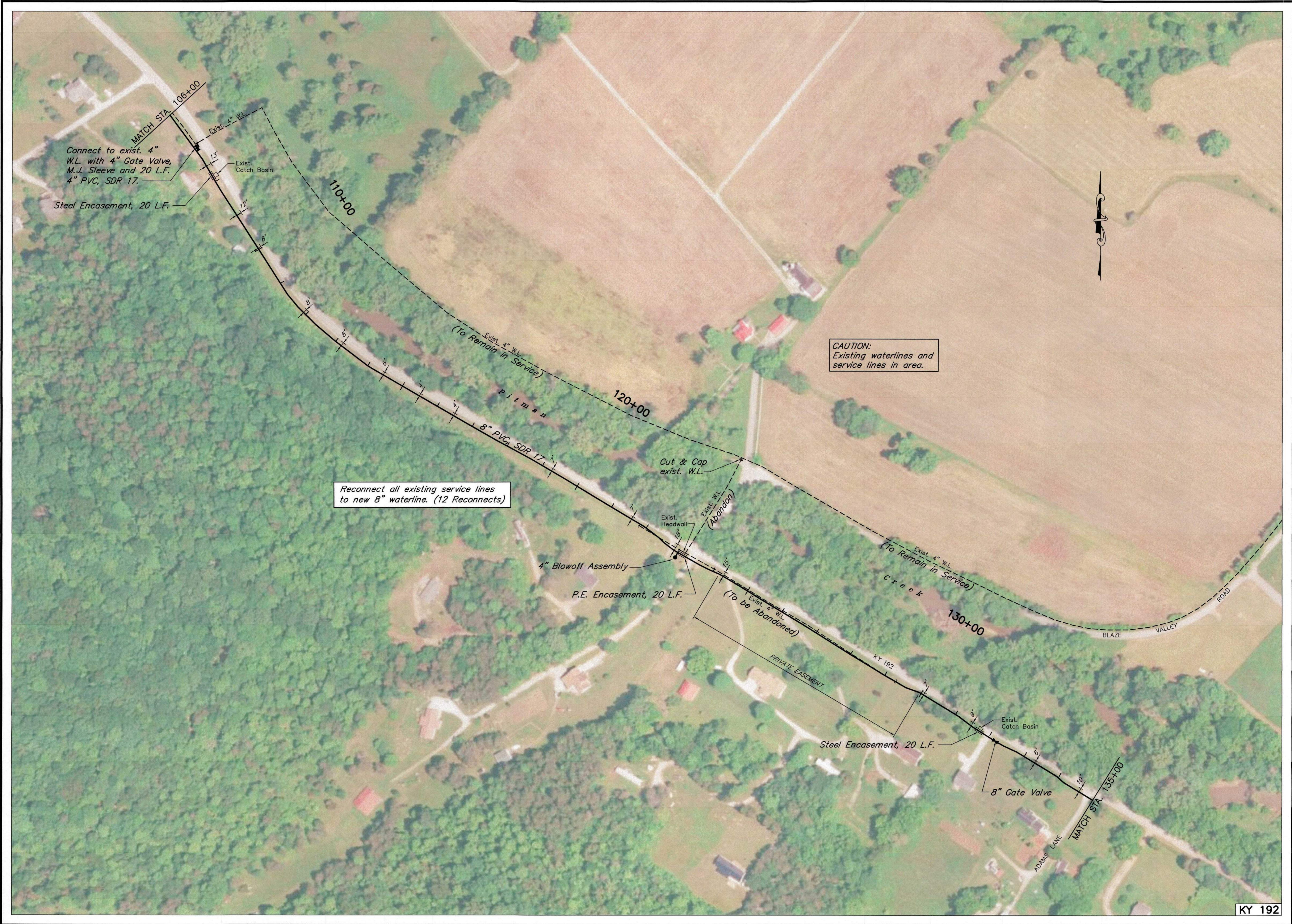


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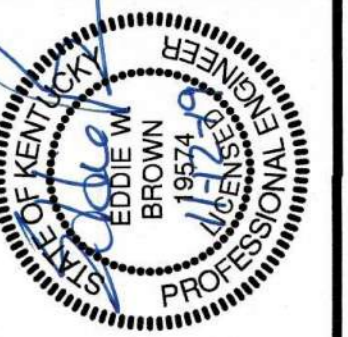


PROJECT NO.
2016173
SHEET NO.
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**SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS**



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FRANKFORT, KENTUCKY



PROJECT NO.
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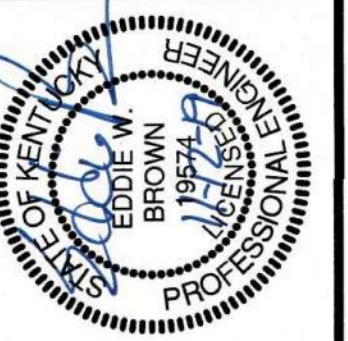
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KY 192

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**SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS**



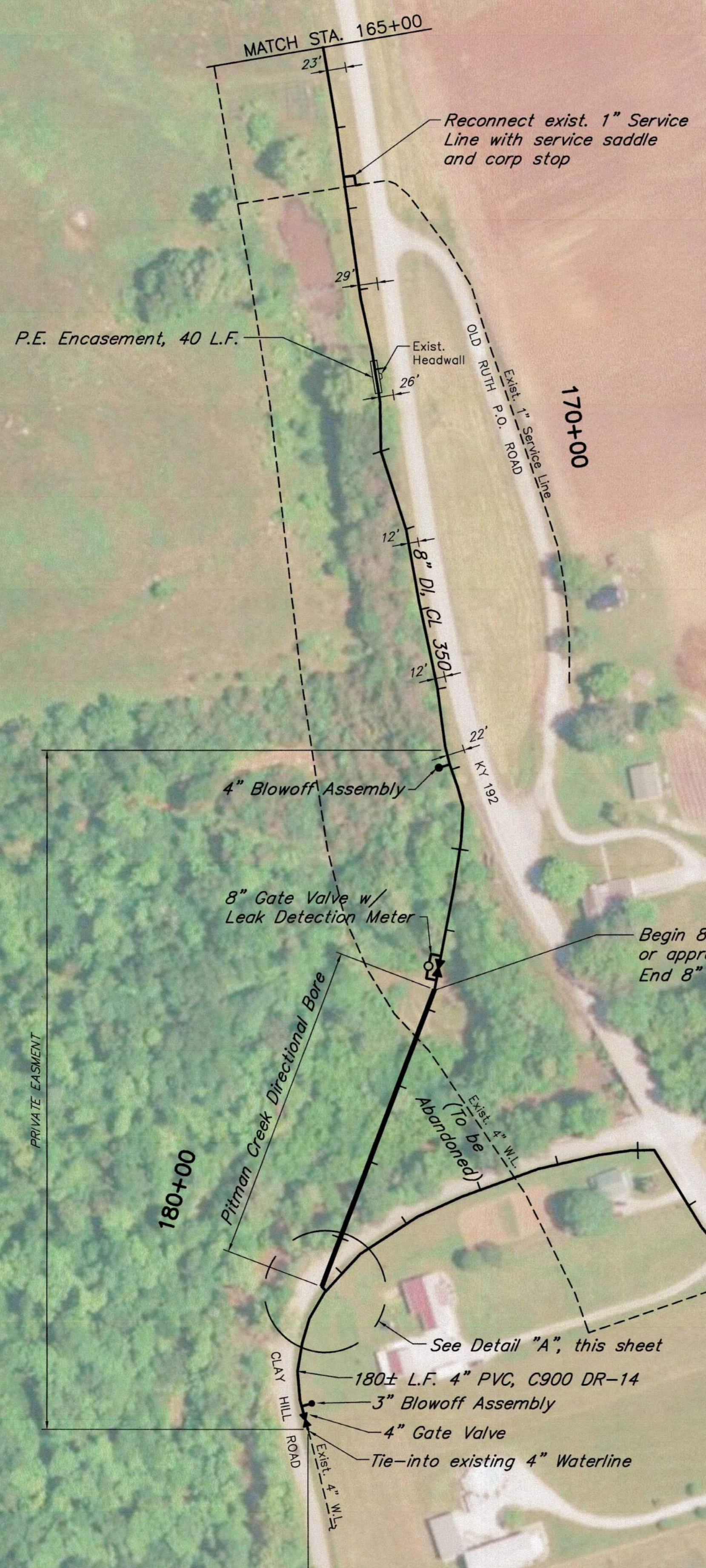
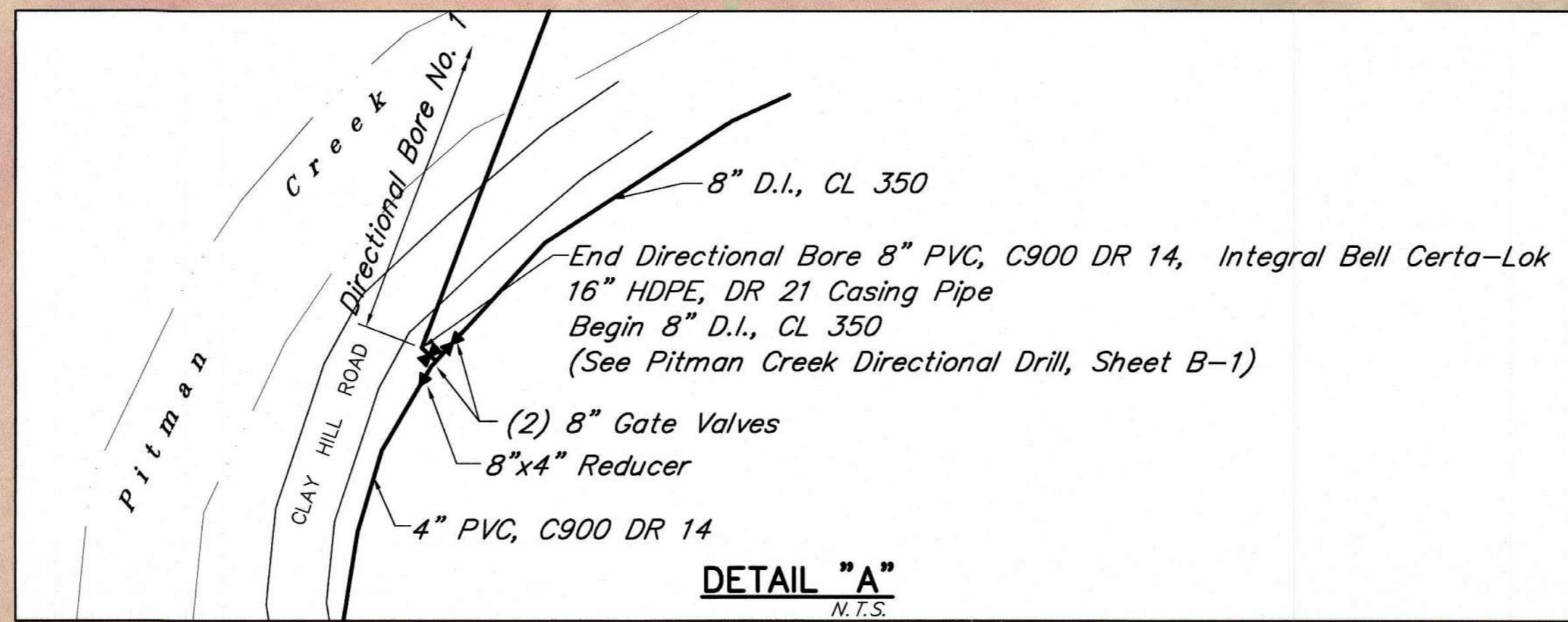
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REVISIONS	

KENVIRONS, INC.
FRANKFORT, KENTUCKY



PROJECT NO.
2016173

SHEET NO.
10



CAUTION:
Existing waterlines and
service lines in area.

Reconnect all existing service lines
to new 8" waterline. (6 Reconnects)

Reconnect exist.
2" Service Line
w/ Service Saddle
& 2" Gate Valve

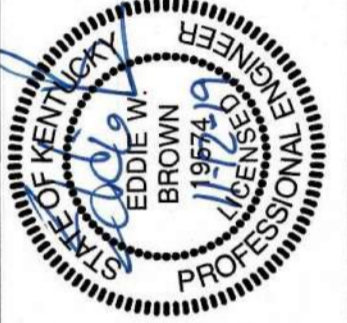
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KY 192



KY 192

SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS



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FRANKFORT, KENTUCKY



PROJECT NO.
2016173

SHEET NO.
11

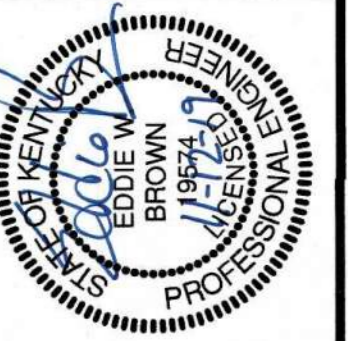
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Reconnect all existing service lines to new 8" waterline. (6 Reconnects)

CAUTION: Existing waterlines and service lines in area.

**SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS**



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FRANKFORT, KENTUCKY



PROJECT NO.
2016173

SHEET NO.
12

KY 192

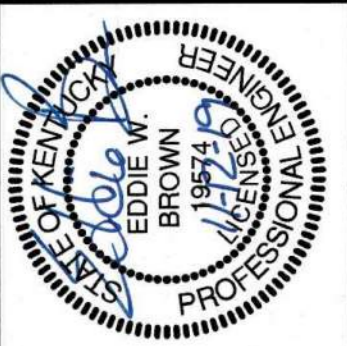
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Reconnect all existing service lines to new 8" waterline. (3 Reconnects)

CAUTION:
Existing waterlines and service lines in area.

SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS



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 FRANKFORT, KENTUCKY



PROJECT NO.
2016173

SHEET NO.
13

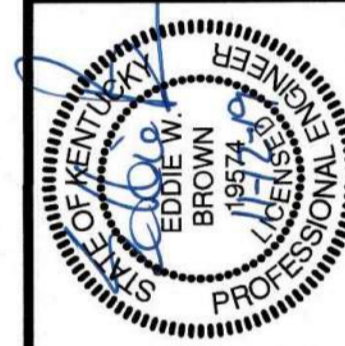
KY 192

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Reconnect all existing service lines to new 8" waterline. (8 Reconnects)

SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS



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 FRANKFORT, KENTUCKY



PROJECT NO.
2016173

SHEET NO.
14

KY 192

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**SOUTHEASTERN WATER ASSOCIATION
 KY 192/KY 1003 IMPROVEMENTS & VARIOUS
 PUMP STATION REPLACEMENTS**



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DATE: JAN. 2017
SCALE: 1"=100'
REVISIONS

KENVIRONS, INC.
 FRANKFORT, KENTUCKY

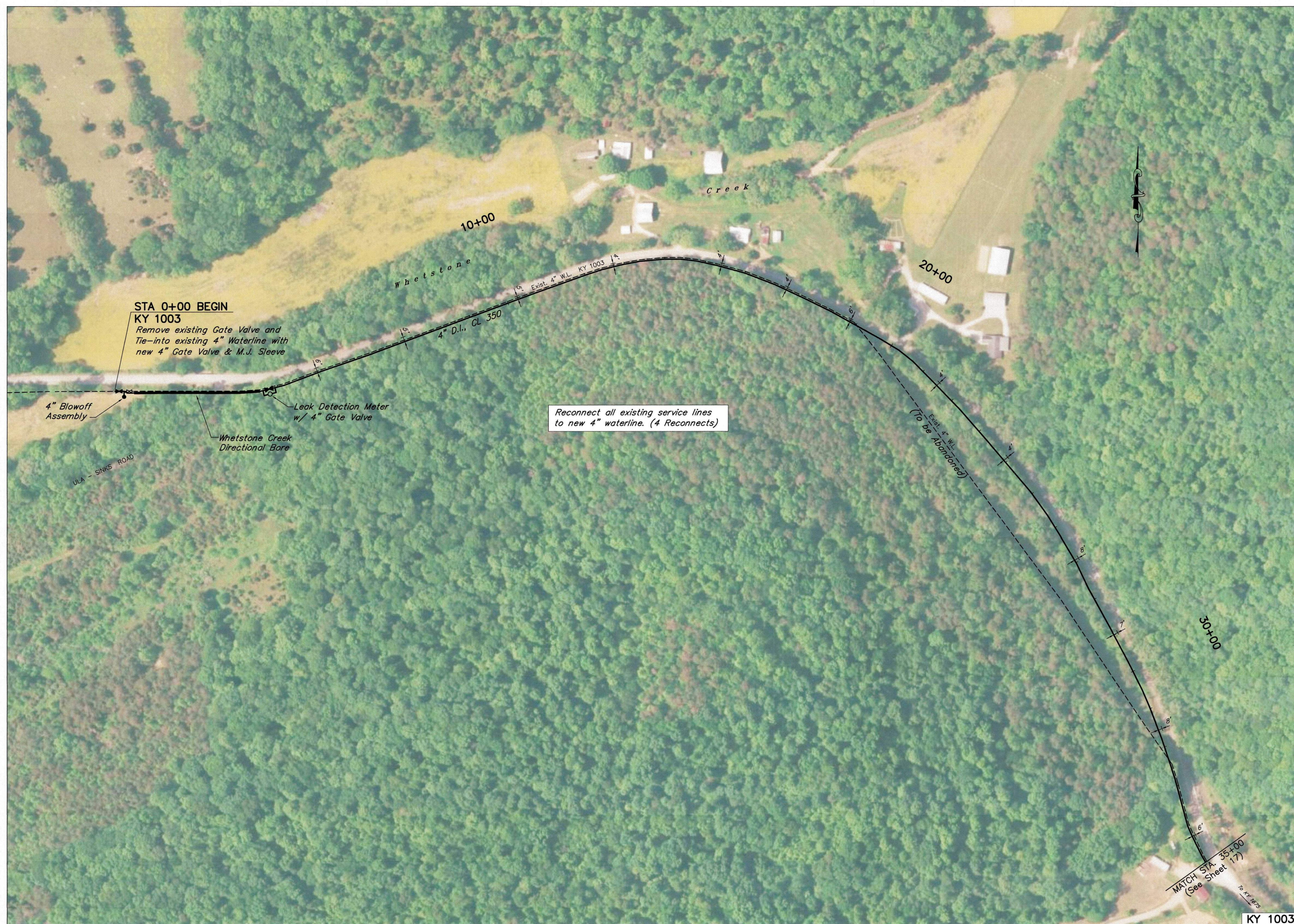


PROJECT NO.
2016173

SHEET NO.
15

KY 192

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**STA 0+00 BEGIN
KY 1003**
Remove existing Gate Valve and
Tie-into existing 4" Waterline with
new 4" Gate Valve & M.J. Sleeve

Reconnect all existing service lines
to new 4" waterline. (4 Reconnects)

MATCH STA. 35+00
(See Sheet 17)

KY 1003

**SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS**



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DATE: APR. 2016	SCALE: 1"=100'
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FRANKFORT, KENTUCKY



PROJECT NO.
2016173

SHEET NO.
16

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Remove existing Hydrant after existing waterline is abandoned

(See Sheet 16)
MATCH STA. 35+00

4" Gate Valve
Exist. Gate Valve

40+00

4" D.I. CI 350

50+00

Exist. 4" WL
(To be Abandoned)

Reconnect all existing service lines to new 4" waterline. (6 Reconnects)

PRIVATE EASEMENT

Whetstone

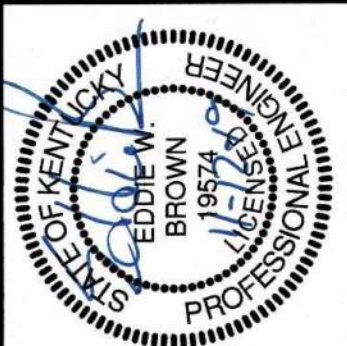
Vanhook Branch

60+00

MATCH STA. 62+00
(See Sheet 18)

KY 1003

SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS



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DATE: APR. 2016	SCALE: 1"=100'
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KENVIRONS, INC.
FRANKFORT, KENTUCKY



PROJECT NO.
2016173
 SHEET NO.
17

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(See Sheet 17)
MATCH STA. 62+00

4" Gate Valve

PRIVATE EASEMENT

70+00

Exist. 4" W.L.
4" D.I. CL 350

(To be Abandoned)

Reconnect all existing service lines to new 4" waterline. (7 Reconnects)

STA. 80+03 END
KY 1003

Tie-into exist. 4" Waterline with 4"x4" Tapping Sleeve and Valve.
Cut & Cap exist. 4" Waterline

Exist. 4" W.L.

KY 1003

SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS



DRAWN BY: KCP
CHECKED BY: EWB
DATE: APR. 2016
SCALE: 1"=100'
REVISIONS

KENVIRONS, INC.
FRANKFORT, KENTUCKY



PROJECT NO.
2016173

SHEET NO.
18

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**SOUTHEASTERN WATER ASSOCIATION
 KY 192/KY 1003 IMPROVEMENTS & VARIOUS
 PUMP STATION REPLACEMENTS**



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CHECKED BY: EWB	
DATE: May 2018	
SCALE: 1"=100'	

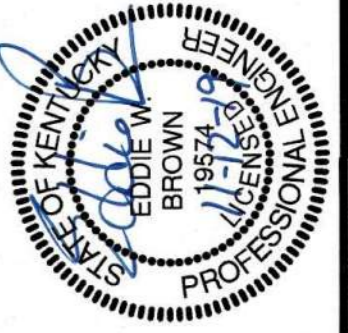
KENVIRONS, INC.
 FRANKFORT, KENTUCKY



PROJECT NO.
2016173
 SHEET NO.
19

DIXIE BEND

**SOUTHEASTERN WATER ASSOCIATION
 KY 192/KY 1003 IMPROVEMENTS & VARIOUS
 PUMP STATION REPLACEMENTS**

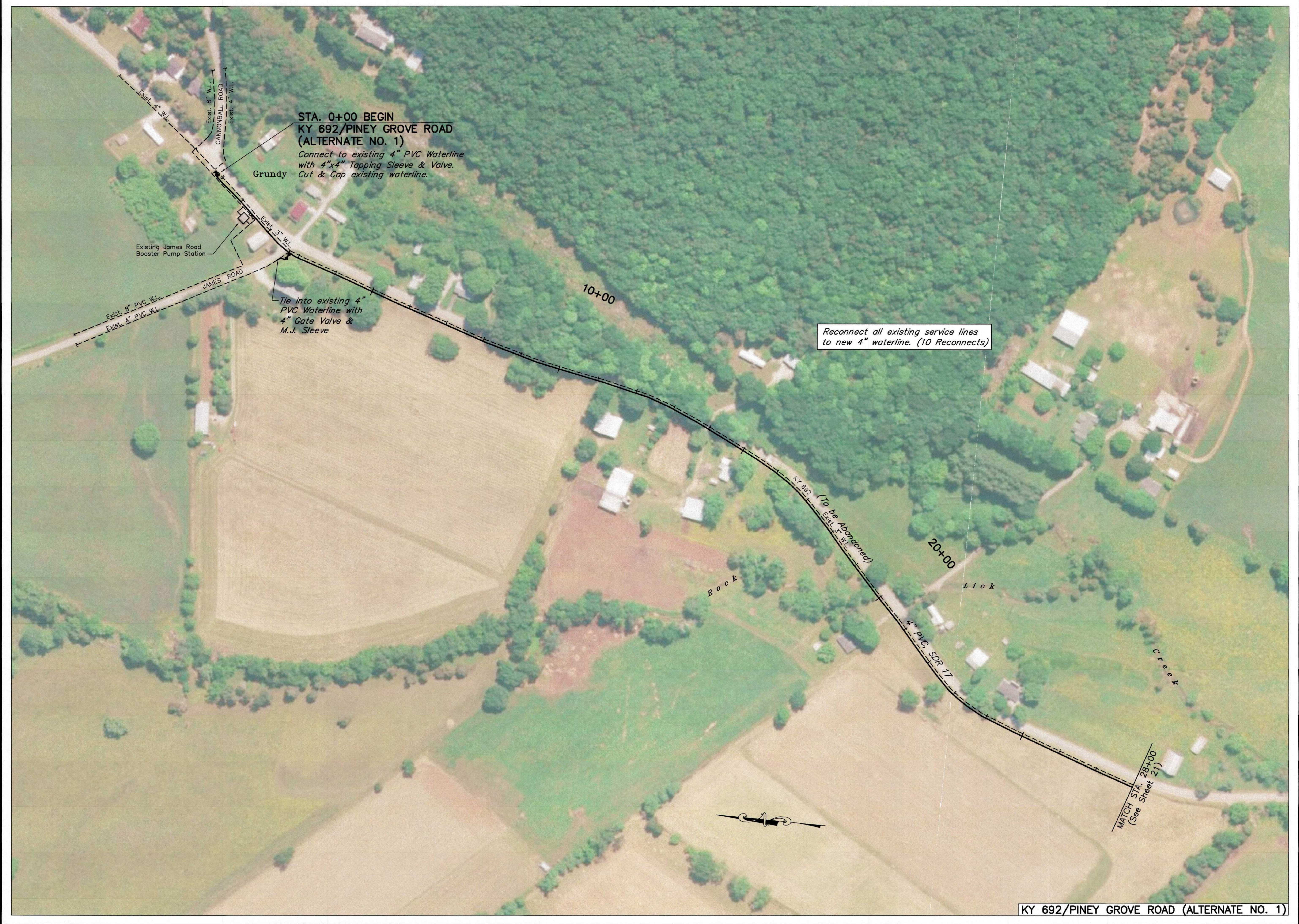


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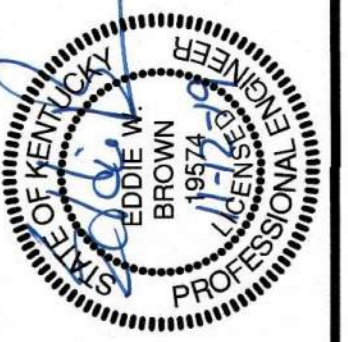
PROJECT NO.
2016173
 SHEET NO.
20



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KY 692/PINEY GROVE ROAD (ALTERNATE NO. 1)

**SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS**



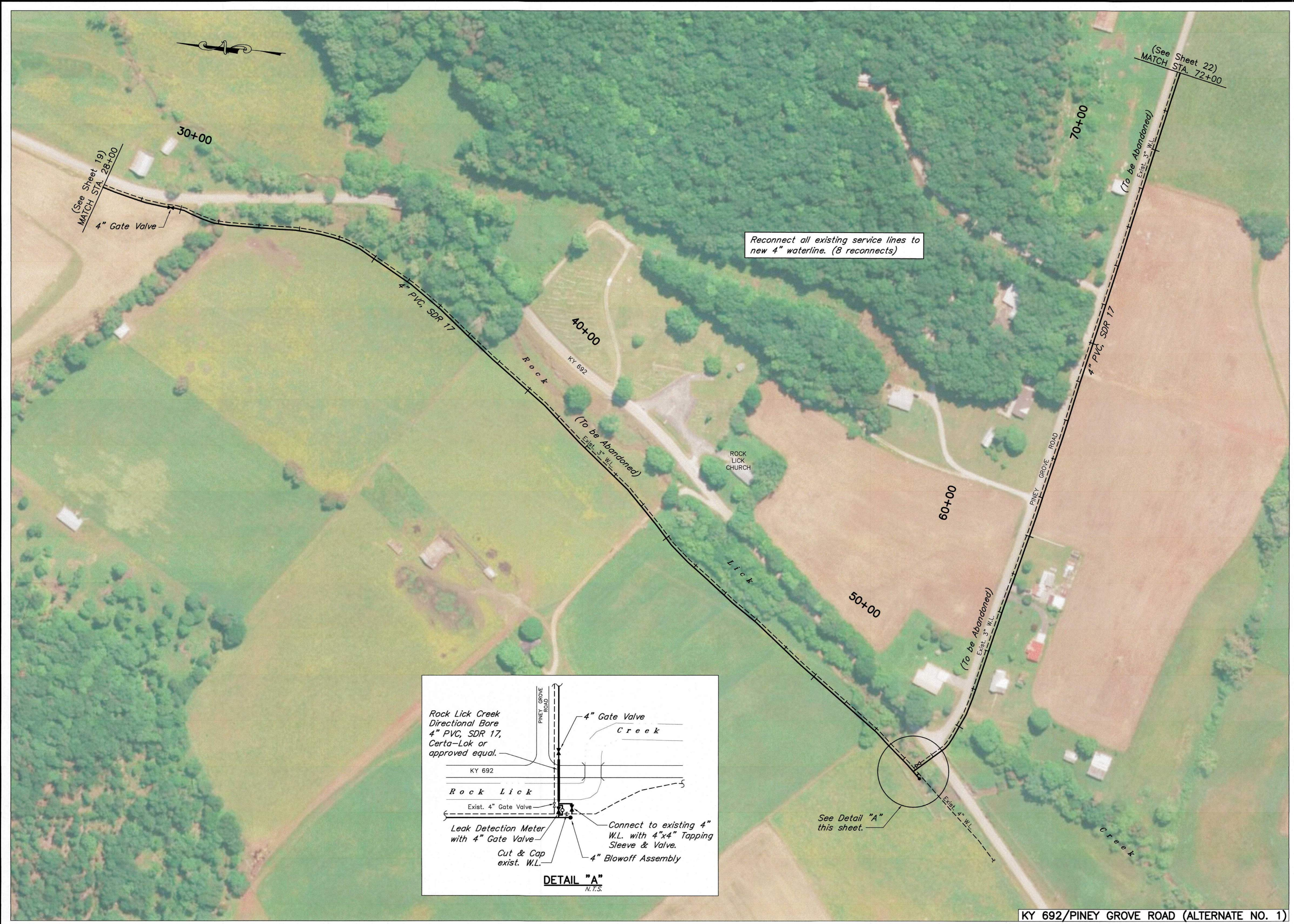
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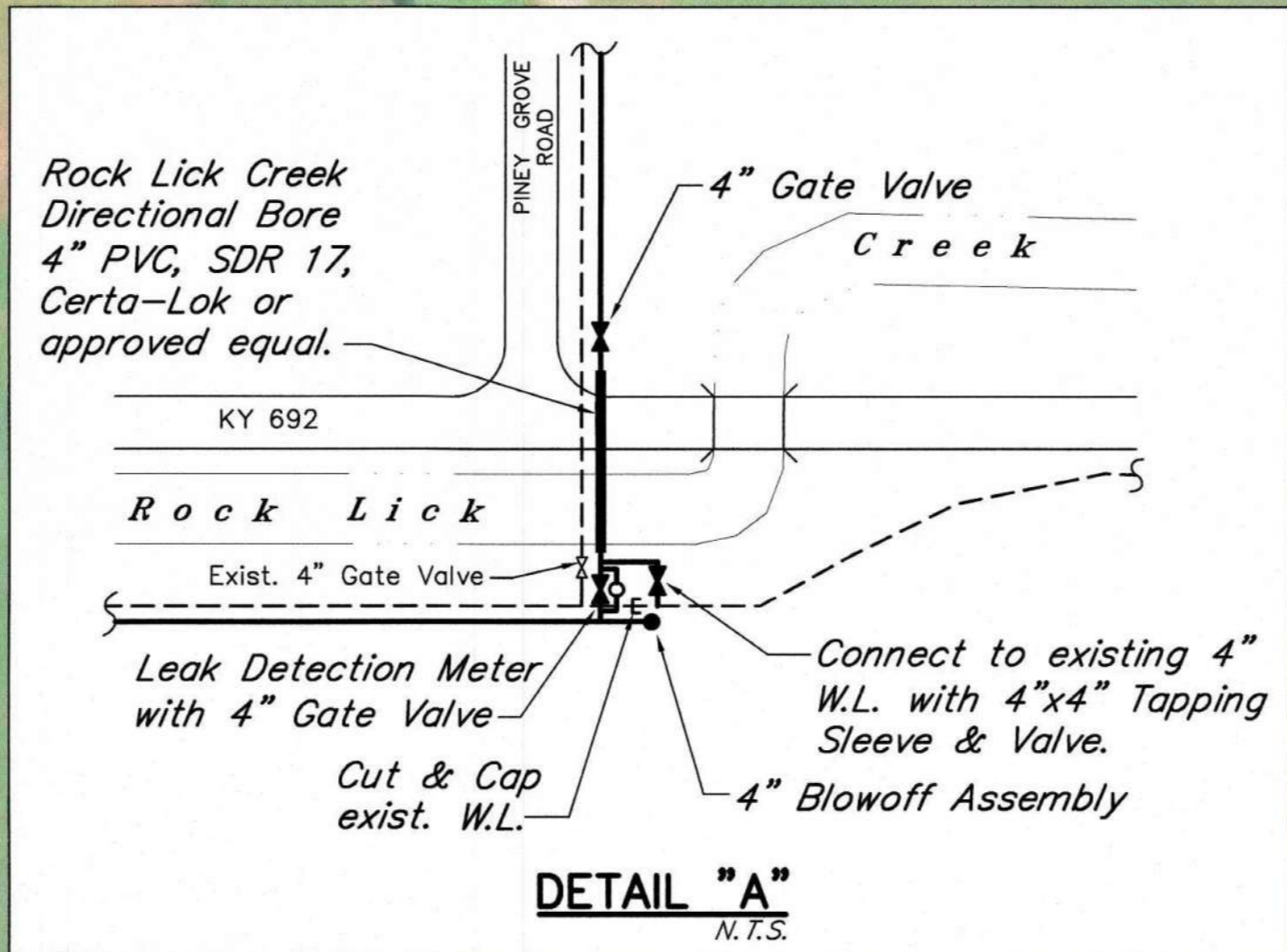


PROJECT NO.
2016173

SHEET NO.
21



Reconnect all existing service lines to new 4" waterline. (8 reconnects)



KY 692/PINEY GROVE ROAD (ALTERNATE NO. 1)

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SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 WATERLINES & SANDY GAP/
DIXIE BEND PUMP STATION REPLACEMENTS



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DATE: Feb. 2017
SCALE: 1"=100'
REVISIONS

KENVIRONS, INC.
 FRANKFORT, KENTUCKY



PROJECT NO.
2016173

SHEET NO.
22

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(See Sheet 22)
MATCH STA. 97+00

100+00

(To be Abandoned)
Exist. 3" W.L.

Reconnect all existing service lines
to new 4" waterline. (3 reconnects)

4" PVC, SDR 17

PINEY GROVE ROAD

STA. 112+87 END
KY 692/PINEY GROVE ROAD
(ALTERNATE NO. 1)
Connect to existing 4" Waterline
with 4"x4" Tapping Sleeve &
Valve

Cut & Cap
exist. W.L.

4" Blowoff Assembly



SOUTHEASTERN WATER ASSOCIATION
**KY 192/KY 1003 WATERLINES & SANDY GAP/
 DIXIE BEND PUMP STATION REPLACEMENTS**



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REVISIONS

KENVIRONS, INC.
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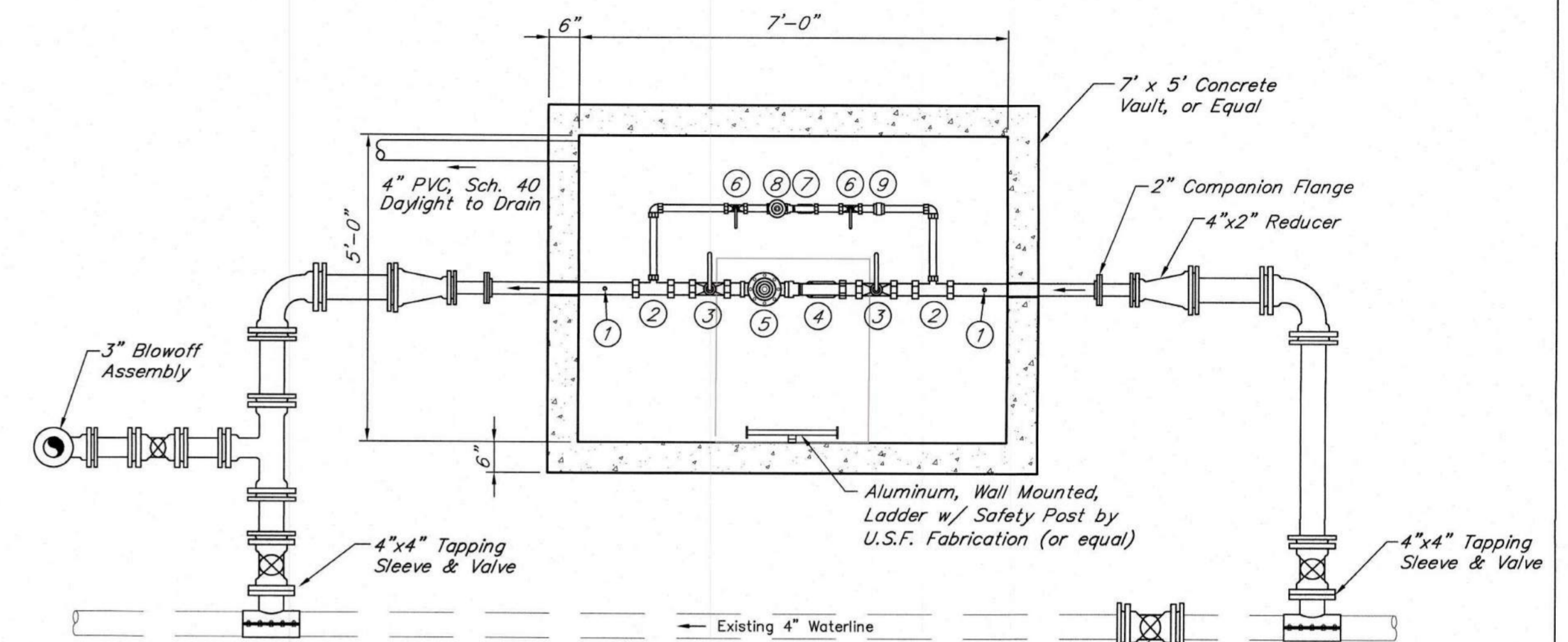
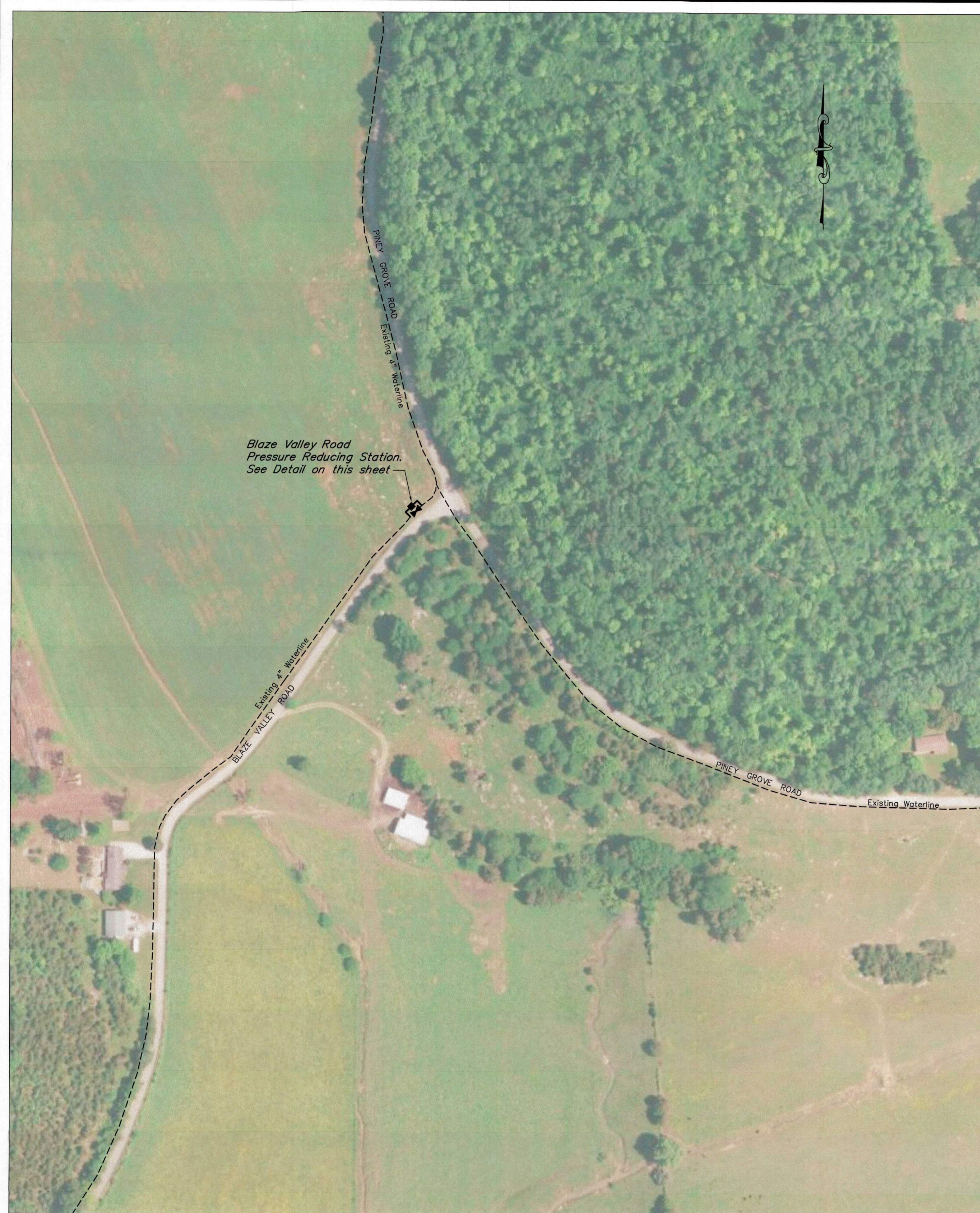


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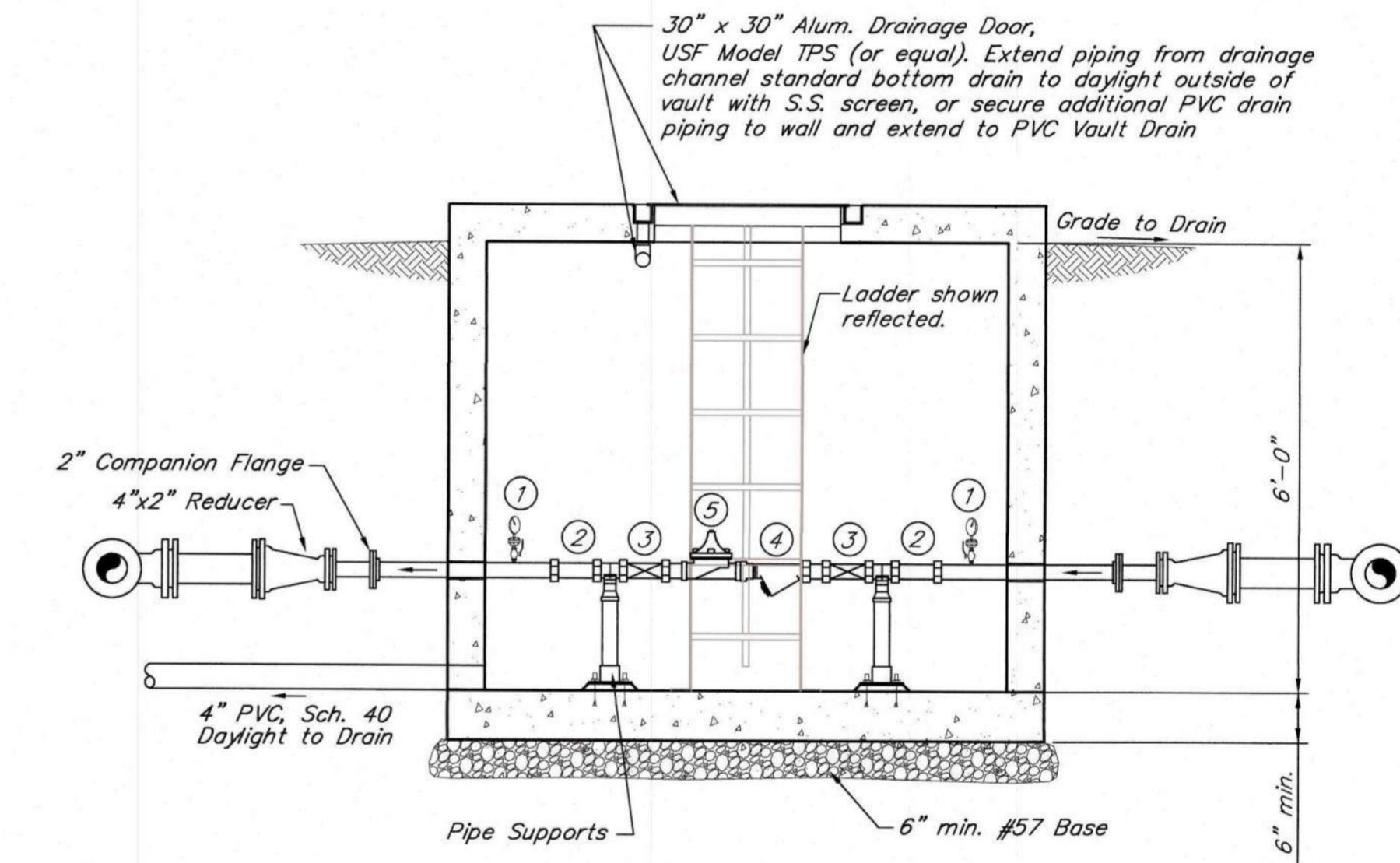
SHEET NO.
23

KY 692/PINEY GROVE ROAD (ALTERNATE NO. 1)

N:\P\2016173\Plans\24A BLAZE VALLEY-PRV.dwg, 11/8/2019 3:12:04 PM, JKP



PLAN



ELEVATION

Equipment:

1. Pressure Gauge Connection w/ Ball Valve
2. 2" x 1 1/2" Tee
3. 2" Ball Valve
4. 2" Strainer
5. 2" Direct Acting Pressure Reducer
6. 1 1/2" Ball Valve
7. 1 1/2" Strainer
8. 1 1/2" Direct Acting Pressure Reducer
9. 1 1/2" Union

- Note:
1. 2" PRV shall be 50 psi
 2. 1 1/2" PRV shall be 55 psi
 3. All interior piping shall be brass.

**BLAZE VALLEY ROAD
2" PRESSURE REDUCING STATION**
Scale: 1/2"=1'-0"

**SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS**



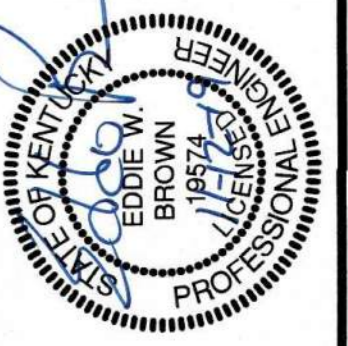
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KENVIRONS, INC.
FRANKFORT, KENTUCKY



PROJECT NO.
2016173
SHEET NO.
24

**SOUTHEASTERN WATER ASSOCIATION
 KY 192/KY 1003 IMPROVEMENTS & VARIOUS
 PUMP STATION REPLACEMENTS**



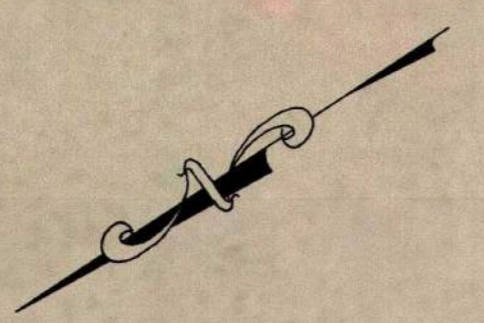
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REVISIONS

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 FRANKFORT, KENTUCKY



PROJECT NO.
2016173

SHEET NO.
25



Exist. 4" WL
 BLAZE VALLEY ROAD

4" PVC, SDR 17

(See Sheet 26)
 MATCH STA. 10+00

**STA. 0+00 BEGIN
 BLAZE VALLEY ROAD**
 Remove exist. 4" Blowoff Assembly
 and tie-into exist. 4" gate valve.

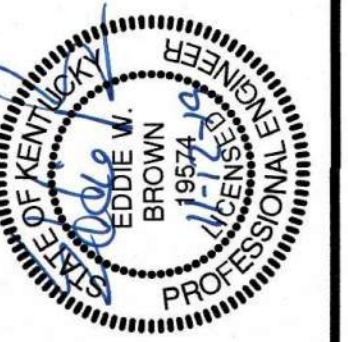
BLAZE VALLEY ROAD — ALTERNATE NO. 1

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**SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS**



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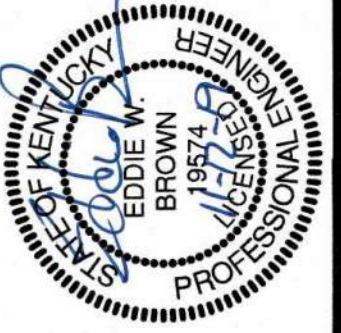
KENVIRONS, INC.
FRANKFORT, KENTUCKY



PROJECT NO.
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SHEET NO.
26

**SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS**



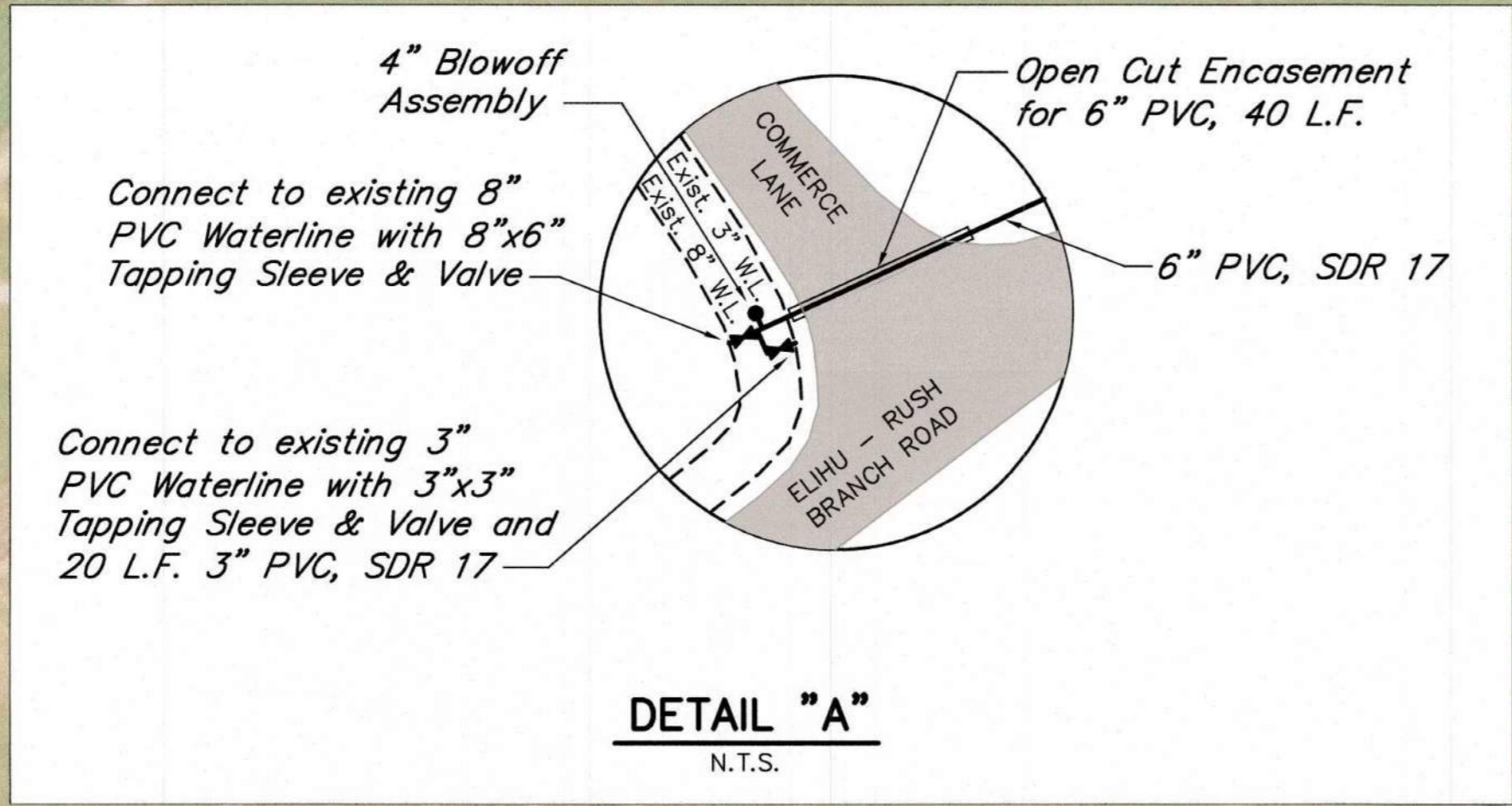
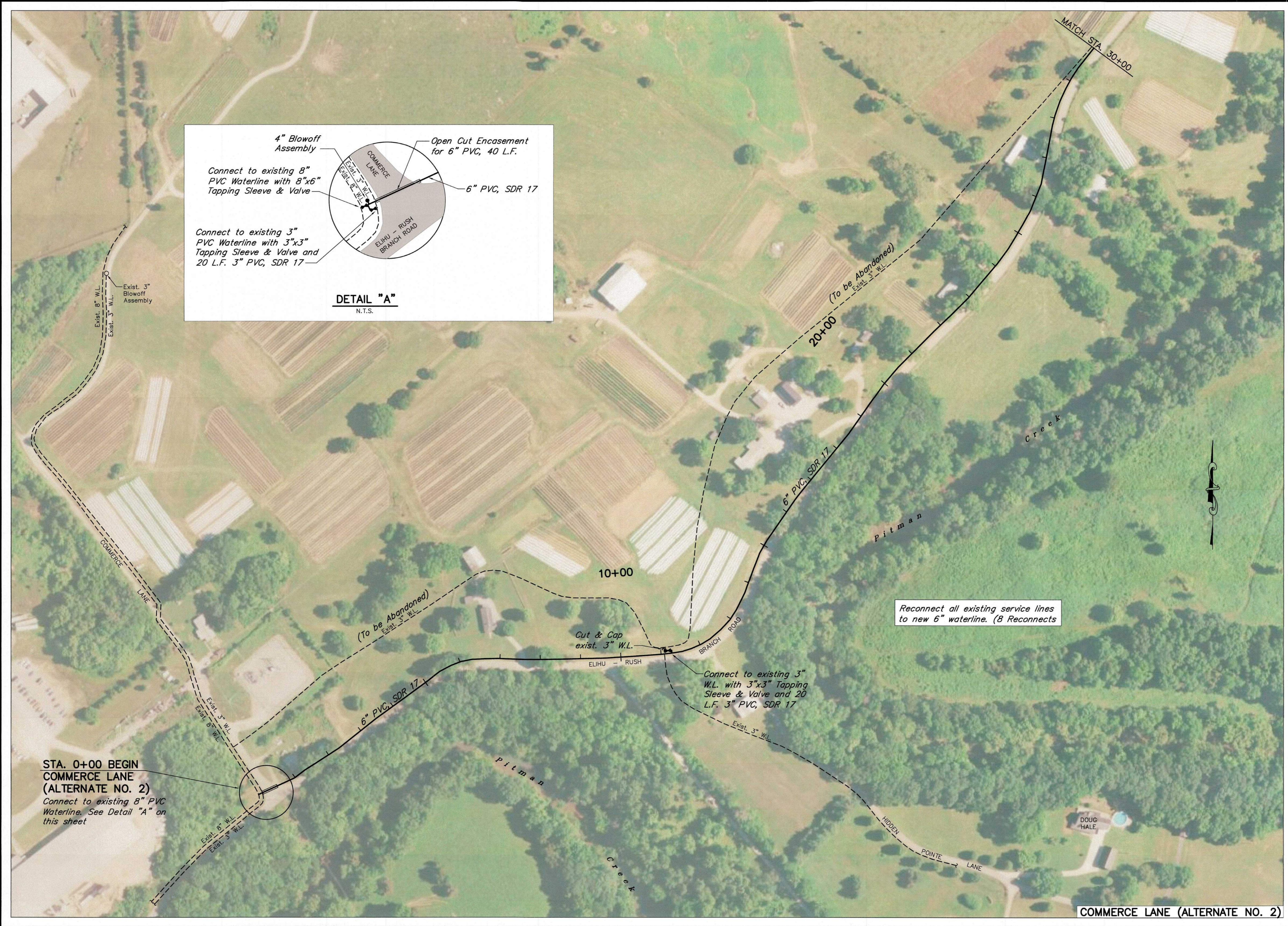
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FRANKFORT, KENTUCKY



PROJECT NO.
2016173

SHEET NO.
27



**STA. 0+00 BEGIN
COMMERCE LANE
(ALTERNATE NO. 2)**
Connect to existing 8" PVC
Waterline. See Detail "A" on
this sheet

Reconnect all existing service lines
to new 6" waterline. (8 Reconnects)

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Reconnect all existing service lines to new 6" waterline.

STA. 59+00 END
COMMERCE LANE
(ALTERNATE NO. 2)
Connect to existing 6" PVC
Waterline with 6"x6" Tapping
Sleeve & Valve

Connect to existing 4"
PVC Waterline with 4"
Gate Valve and M.J.
Sleeve

Connect to existing 3" PVC
W.L. with 30 L.F. 3" PVC,
SDR 17, 3" Gate Valve &
M.J. Sleeve

(To Remain)
Exist. 3" W.L.
Cut & Cap exist. W.L.
(past last meter setting)

(To Remain)
Exist. 3" W.L.
(To be Abandoned)

4" Blowoff Assembly
6" Creek Crossing,
60 L.F.

Cut & Cap
exist. W.L.

6" Gate Valve w/ Leak
Detection Meter
Connect to existing 4"
PVC Waterline with 4"x4"
Tapping Sleeve & Valve and
20 L.F. 4" PVC, SDR 17

Cut & Cap
exist. W.L.
Abandon existing
6" & 4" Waterlines

Connect to existing 6"
PVC Waterline with 6"x6"
Tapping Sleeve & Valve and
20 L.F. 6" PVC, SDR 17

SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS



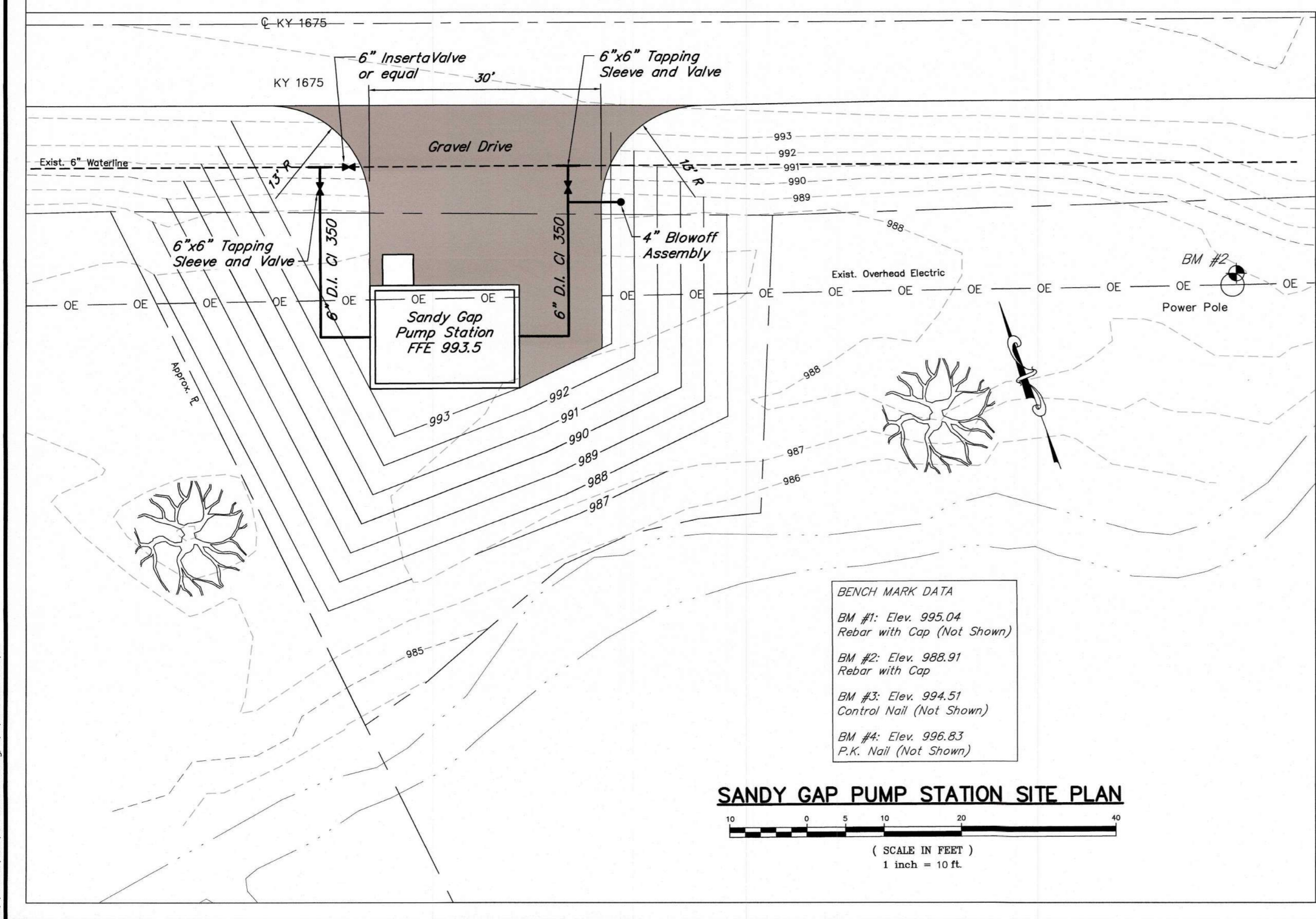
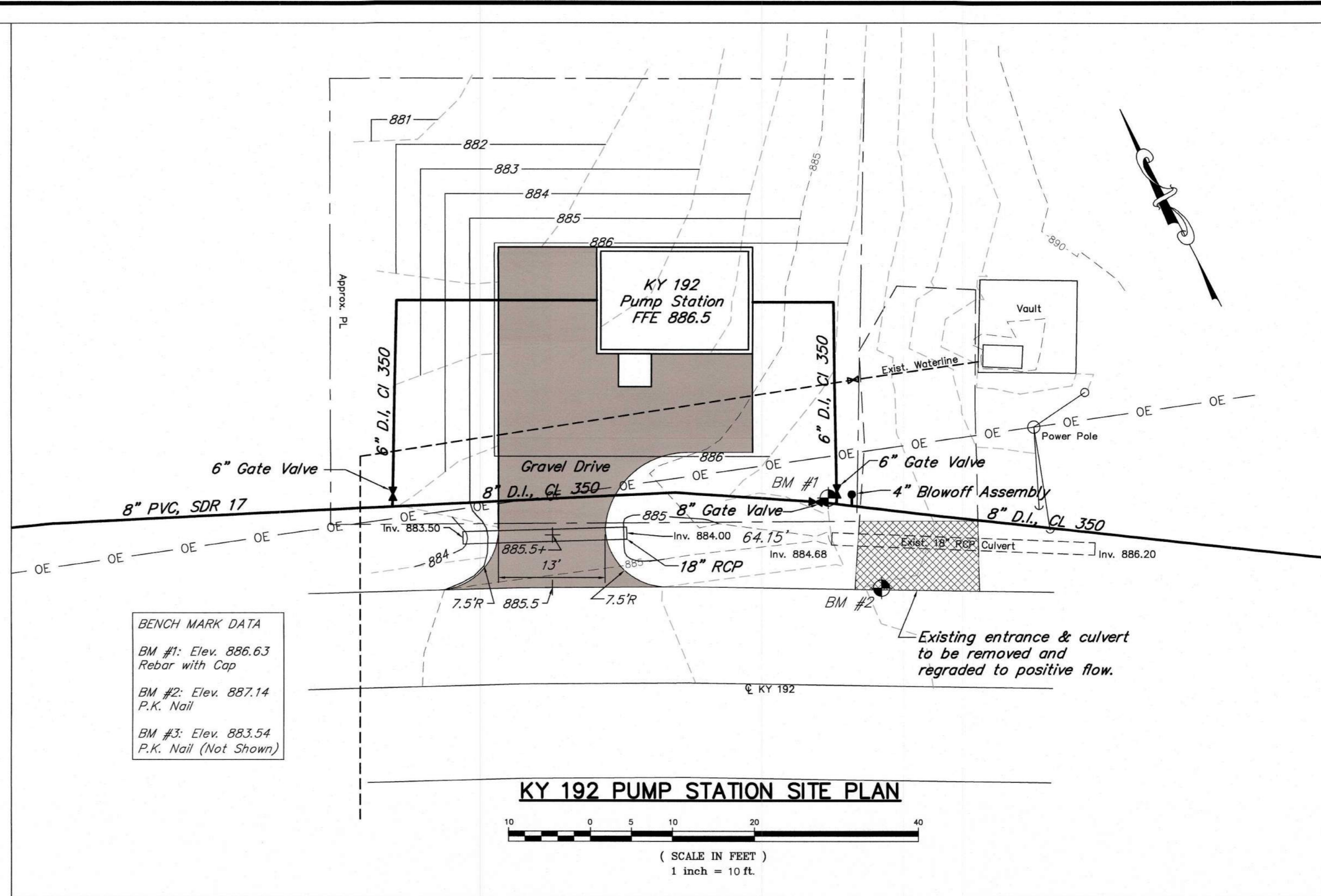
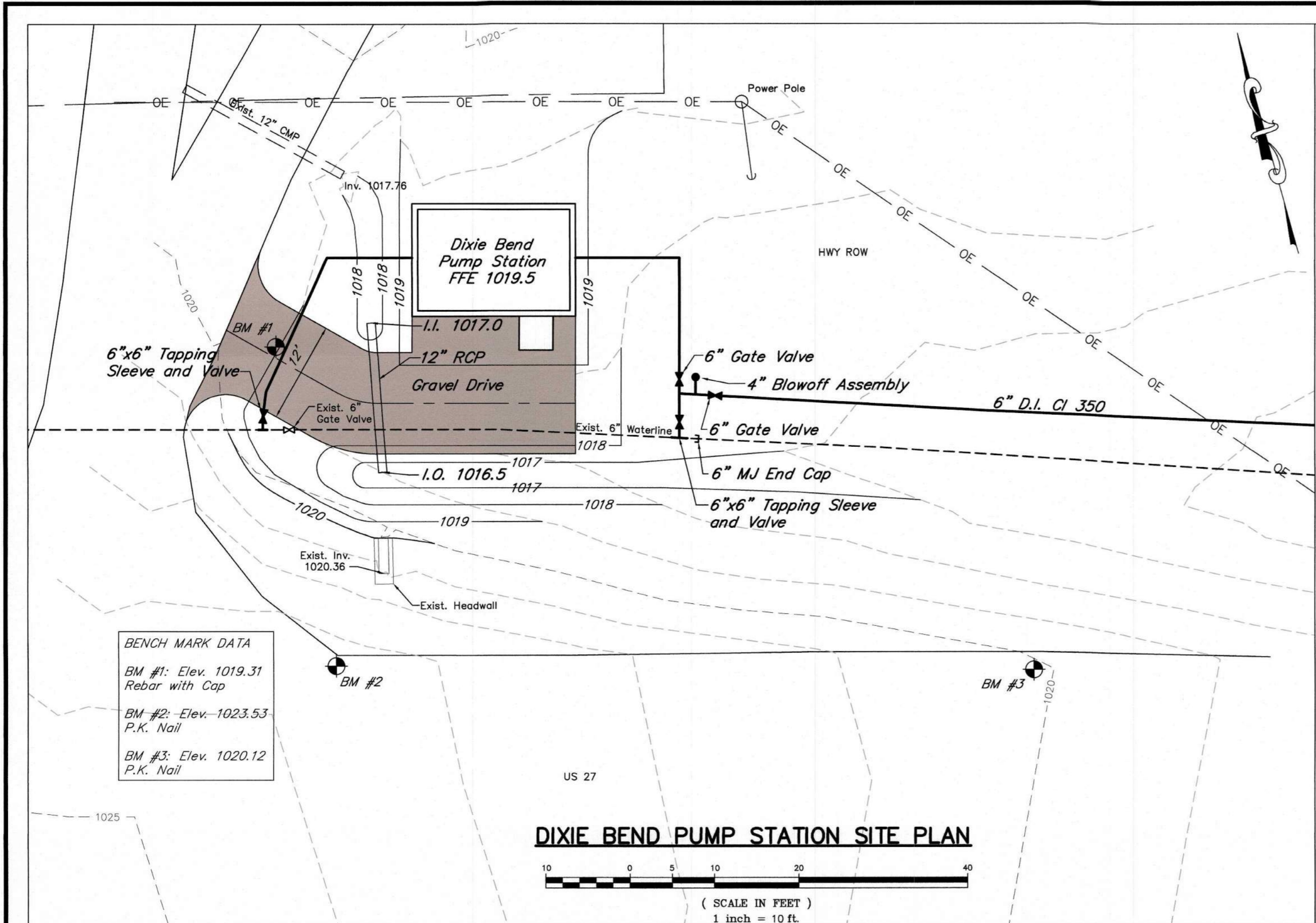
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KENVIRONS, INC.
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PROJECT NO.
2016173
SHEET NO.
28

COMMERCE LANE (ALTERNATE NO. 2)



SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS



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KENVIRONS, INC.
 FRANKFORT, KENTUCKY



PROJECT NO.
2016173
 SHEET NO.
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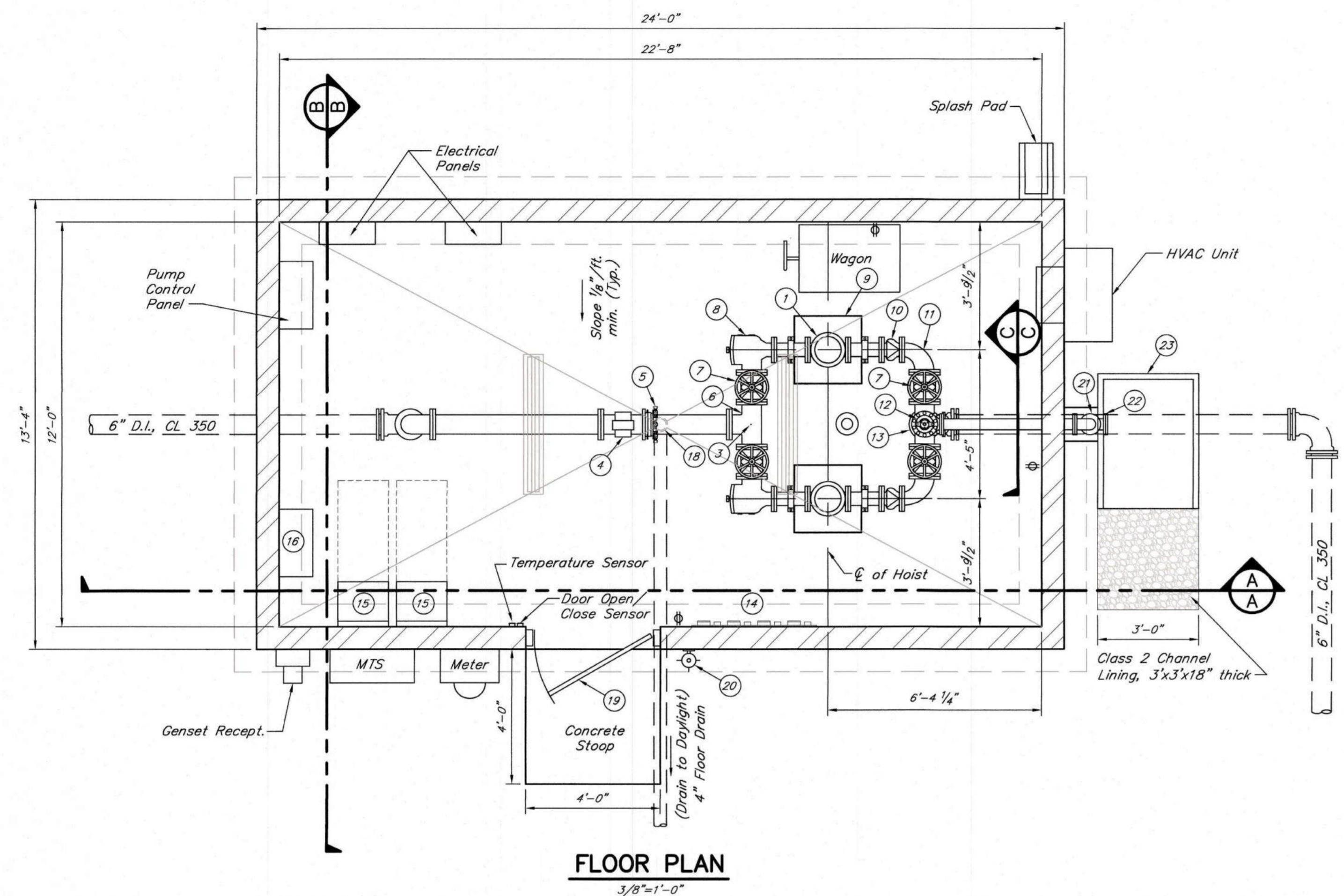


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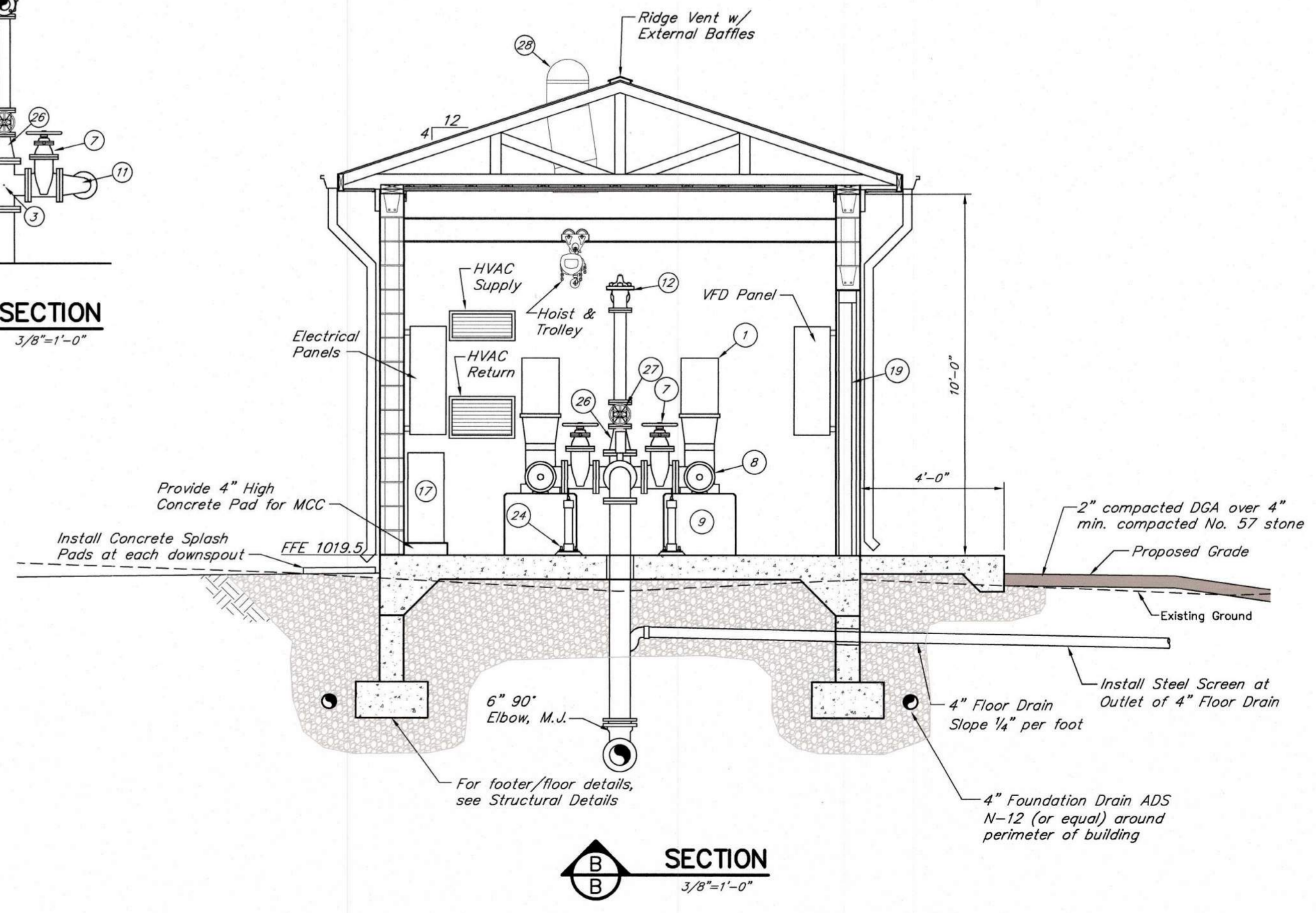
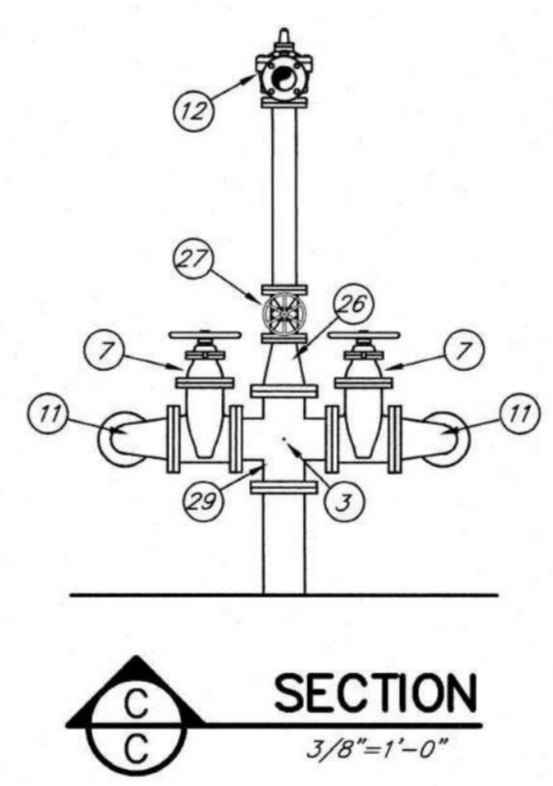
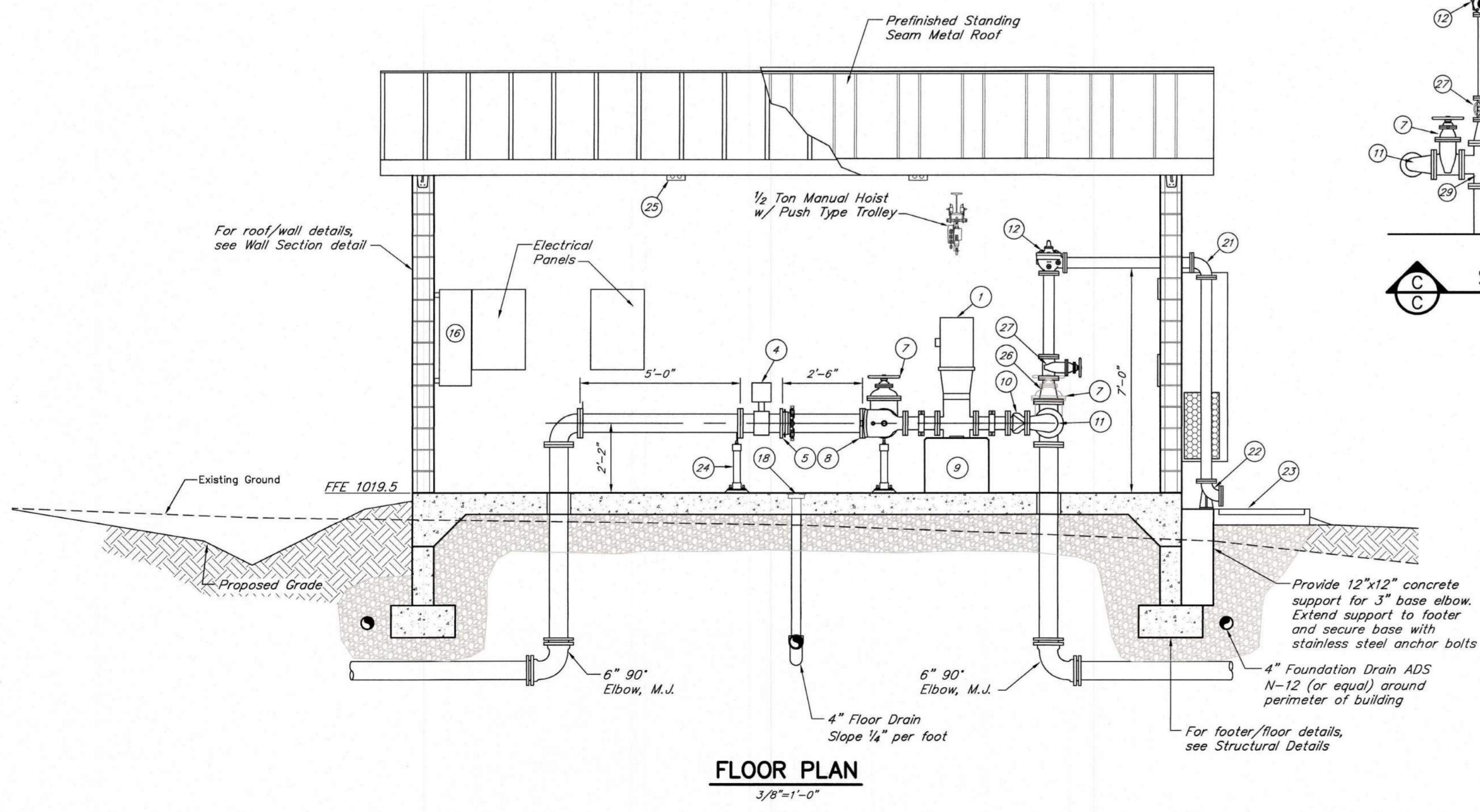
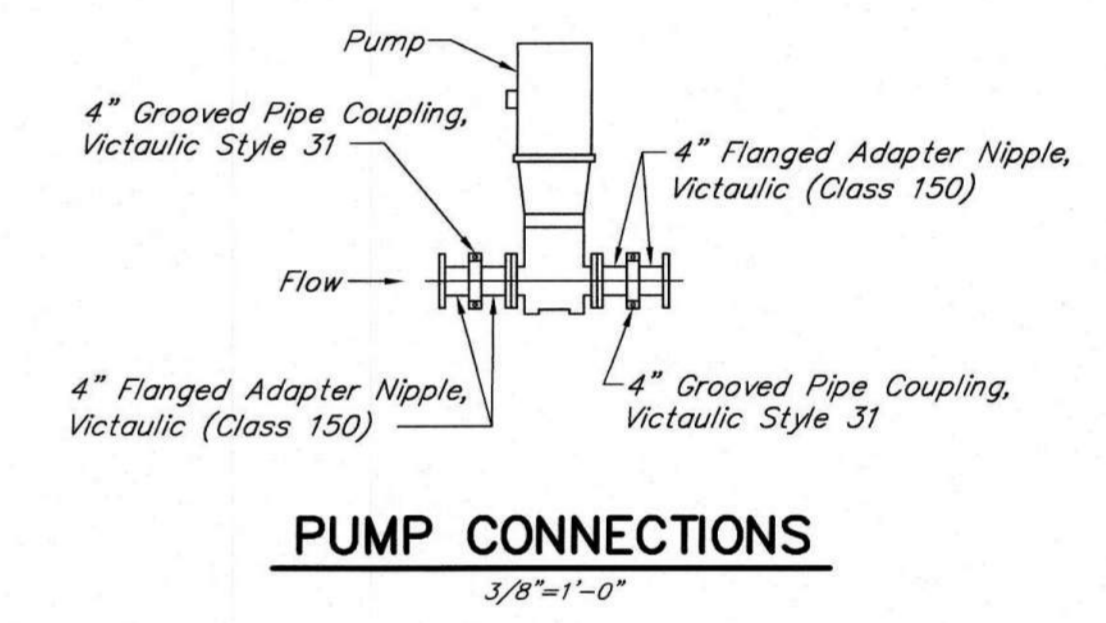


GENERAL NOTES

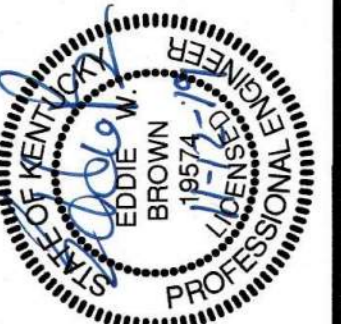
- All flanged piping shall be rated for 350 psi. Standard flat gaskets will not be allowed. Gaskets, such as American's Toruseal, rated for 350 psi will be required.
- All yard piping shall be ductile iron, CL 350 pipe. All Ductile Iron Piping shall have restrained gaskets. All M.J. fittings, valves, etc. shall be restrained with EBAA IRON MCGALLUG 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 rodred through the adjacent flanges and bolted securely.
- Pipe drainage from any pump, valve, or device within the pump station shall utilize PVC conduit through the floor slab to the floor drain piping below slab.
- Caulk all control joints, construction joints including slab to wall joint, and frame installations.
- All conduits shall be aluminum. Seal the tubing raceways.
- Use shark bite fittings with all tubing.
- Apply acrylic tinted floor sealer to concrete floor after all construction is complete inside pump station. Sherwin Williams HC 132, H and C silicized acrylic, gull grey (or equal).
- Construct a 3/4" chamfer at all construction joints and corners.
- All interior piping, valves, pumps and metal surfaces shall receive one (1) coat of Tremec 66 HB Epoxaline and one (1) finish coat of Tremec EnduraShield Polyurethane or approved equal.
- Floor shall be sloped to drain between 1/4" & 1/8" per foot.
- Tubular Skylight shall be 14" in diameter with a Tube Reflectivity of 98%. The short shaft installation shall include a severe weather roof dome, a formable leak-proof roof flashing, mirror finish adjustable tubes, a ceiling trim ring, and a standard diffuser lens assembly. The tubular skylight shall be as manufactured by ODL (or approved equal). The diffuser lens assembly shall be located as close to the center of the ceiling as possible.
- The Contractor shall provide a heavy duty wagon with a 24"x36" 12-gauge steel deck with a 1-1/2" retaining lip. The wagon shall have a deck capacity of 1,200 pounds. See specifications for a more detailed description.



ITEM	QTY.	DESCRIPTION
1	2	Pumps: 15 Hp, 208-230V/460V/3PH/315 GPM @ 100' TDH, 3,500 RPM Grundfos CR 64-1, 4" 125 lb. Flange (or equal)
2	-	2"x8" Reducing Elbow
3	2	1/4" Stop Cock (Top for Pressure Transducer)
4	1	6" Magnetic Flow Meter (4-20mA and pulse)
5	1	Flange Coupling Adapter (FCA)
6	1	6" Tee
7	4	6" Gate Valve
8	2	6"x4" Suction Diffuser w/ outlet end tap for Pressure Transducer
9	2	Concrete Pump Base (Cast in Place)
10	2	4" Silent Globe Check Valve
11	2	6"x4" Reducing Elbow
12	1	3" Surge Anticipating Valve (Angle Style)
13	-	8"x6" Reducer
14	4	Pressure Gauge w/ Pressure Transducer
15	2	Variable Frequency Drive Panel (VFD)
16	1	Telemetry Panel (RTU)
17	-	Transformer
18	1	Floor Drain and 4" PVC Sch. 80 Drain Pipe w/ Trap
19	1	42" Insulated Steel Doors
20	1	Outdoor Light Fixture w/ dusk to dawn sensor and light guard
21	1	3" 90° Elbow
22	1	3" 90° Base Elbow with aluminum screen
23	1	36"x48"x6" Concrete Splash Pad
24	3	Pipe Supports
25	2	Light Fixtures
26	1	6"x3" Reducer
27	1	3" Gate Valve
28	1	14" Tubular Skylight
29	1	6" Cross



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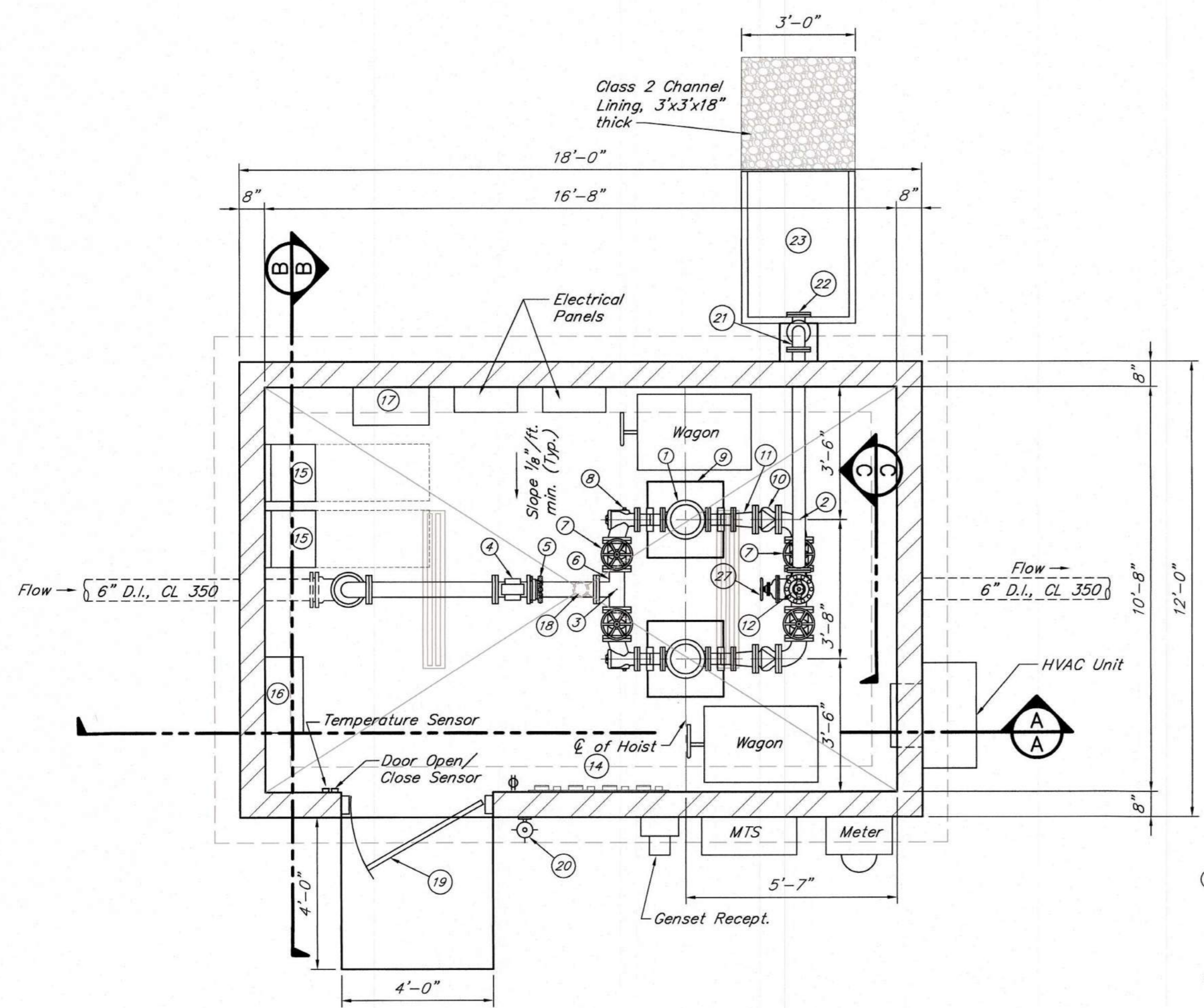
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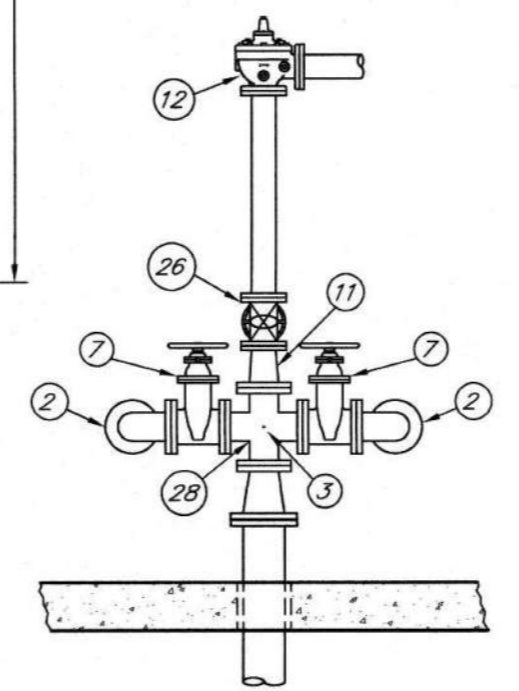
KY 192 PUMP STATION		
ITEM	QTY	DESCRIPTION
1	2	Pumps: 15 Hp, 208-230V/460V/3PH/200 GPM @ 170' TDH; 3,500 RPM Grundfos CR 45-2-1, 4" 125 lb. Flange (or equal)
2	2	4" 90° Elbow
3	2	1/4" Stop Cock (Tap for Pressure Transducer)
4	1	4" Magnetic Flow Meter (4-20mA and pulse)
5	1	Flange Coupling Adapter (FCA)
6	1	4" Tee
7	4	4" Gate Valve
8	2	4"x3" Suction Diffuser w/ outlet end tap for Pressure Transducer
9	2	Concrete Pump Base (Cast in Place)
10	2	4" Silent Gate Check Valve
11	2	4"x3" Reducer
12	1	3" Surge Anticipating Valve (Angle Style)
13	1	6"x4" Reducer
14	4	Pressure Gauge w/ Pressure Transducer
15	2	Variable Frequency Drive Panel (VFD)
16	1	Telemetry Panel (RTU)
17	1	Pump Control Panel
18	1	Floor Drain and 4" PVC Sch. 80 Drain Pipe w/ Trap
19	1	42" Insulated Steel Doors
20	1	Outdoor Light Fixture w/ dusk to dawn sensor and light guard
21	1	3" 90° Elbow
22	1	3" 90° Elbow with aluminum screen
23	1	36"x48"x6" Concrete Splash Pad
24	5	Pipe Supports
25	2	Light Fixtures
26	1	3" Gate Valve
27	1	14" Tubular Skylight
28	1	4" Cross

GENERAL NOTES

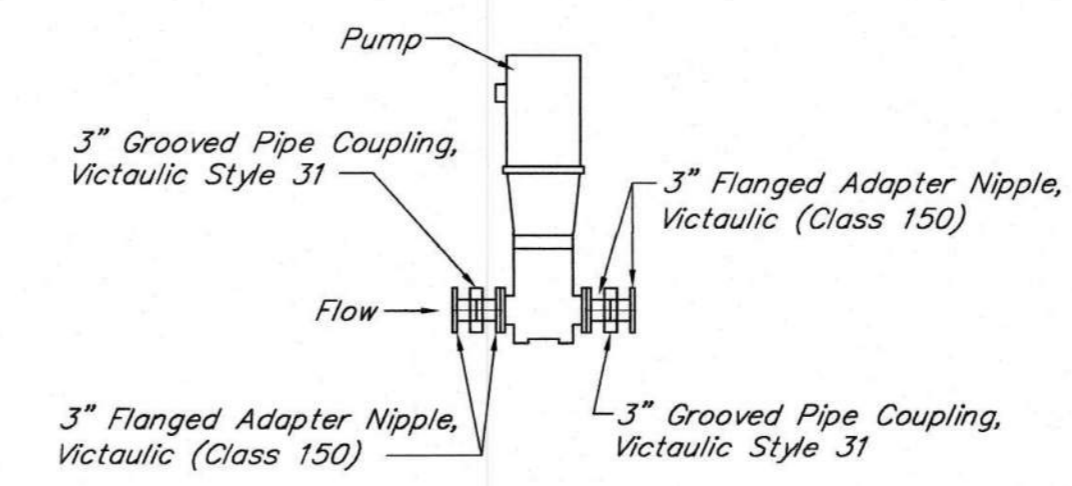
- All flanged piping be rated for 350 psi. Standard flat gaskets will not be allowed. Gaskets, such as American's Toruseal, rated for 350 psi will be required.
- All yard piping shall be ductile iron, CL 350 pipe. All Ductile Iron Piping shall have restrained gaskets. All M.J. fittings, valves, etc. shall be restrained with EBAA IRON MEGALUG Series 1100 or approved equal.
- The Contractor shall coordinate with the pump Supplier and Engineer regarding the base and other pump dimensions. This coordination is absolutely necessary to assure that the concrete pump pedestals are constructed to the desired dimensions.
- All couplings and flanged coupling adaptors shall be rodded through the adjacent flanges and bolted securely.
- Pipe drainage from any pump, valve, or device within the pump station shall utilize PVC conduit through the floor slab to the floor drain piping below slab.
- Caulk all control joints, construction joints including slab to wall joint, and frame installations.
- All conduits shall be aluminum. Seal the tubing raceways.
- Use shark bite fittings with all tubing.
- Apply acrylic tinted floor sealer to concrete floor after all construction is complete inside pump station. Sherwin Williams HC 132, H and C silicized acrylic, gull grey (or equal).
- Construct a 1/4" chamfer at all construction joints and corners.
- All interior piping, valves, pumps and metal surfaces shall receive one (1) coat of Themec 66 HB Epoxiline and one (1) finish coat of Themec EnduraShield Polyurethane or approved equal.
- Floor shall be sloped to drain between 1/4" & 1/8" per foot.
- Tubular Skylight shall be 14" in diameter with a Tube Reflectivity of 98%. The short shaft installation shall include a severe weather roof dome, a formable leak-proof roof flashing, mirror finish adjustable tubes, a ceiling trim ring, and a standard diffuser lens assembly. The tubular skylight shall be as manufactured by GDL (or approved equal). The diffuser lens assembly shall be located as close to the center of the ceiling as possible.
- The Contractor shall provide a heavy duty wagon with a 24"x36" 12-gauge steel deck with a 1-1/2" retaining lip. The wagon shall have a deck capacity of 1,200 pounds. See specifications for a more detailed description.



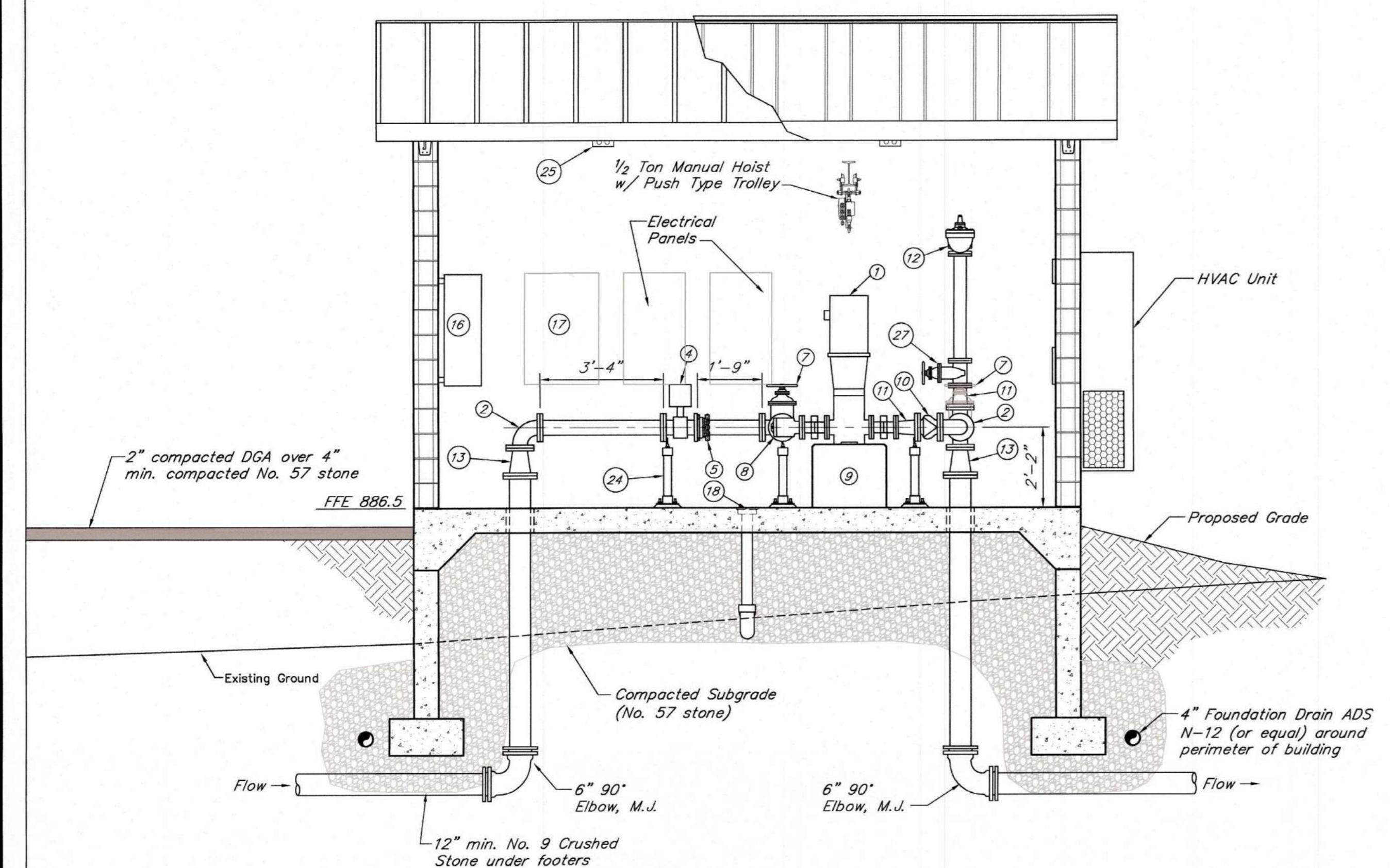
FLOOR PLAN
 3/8"=1'-0"



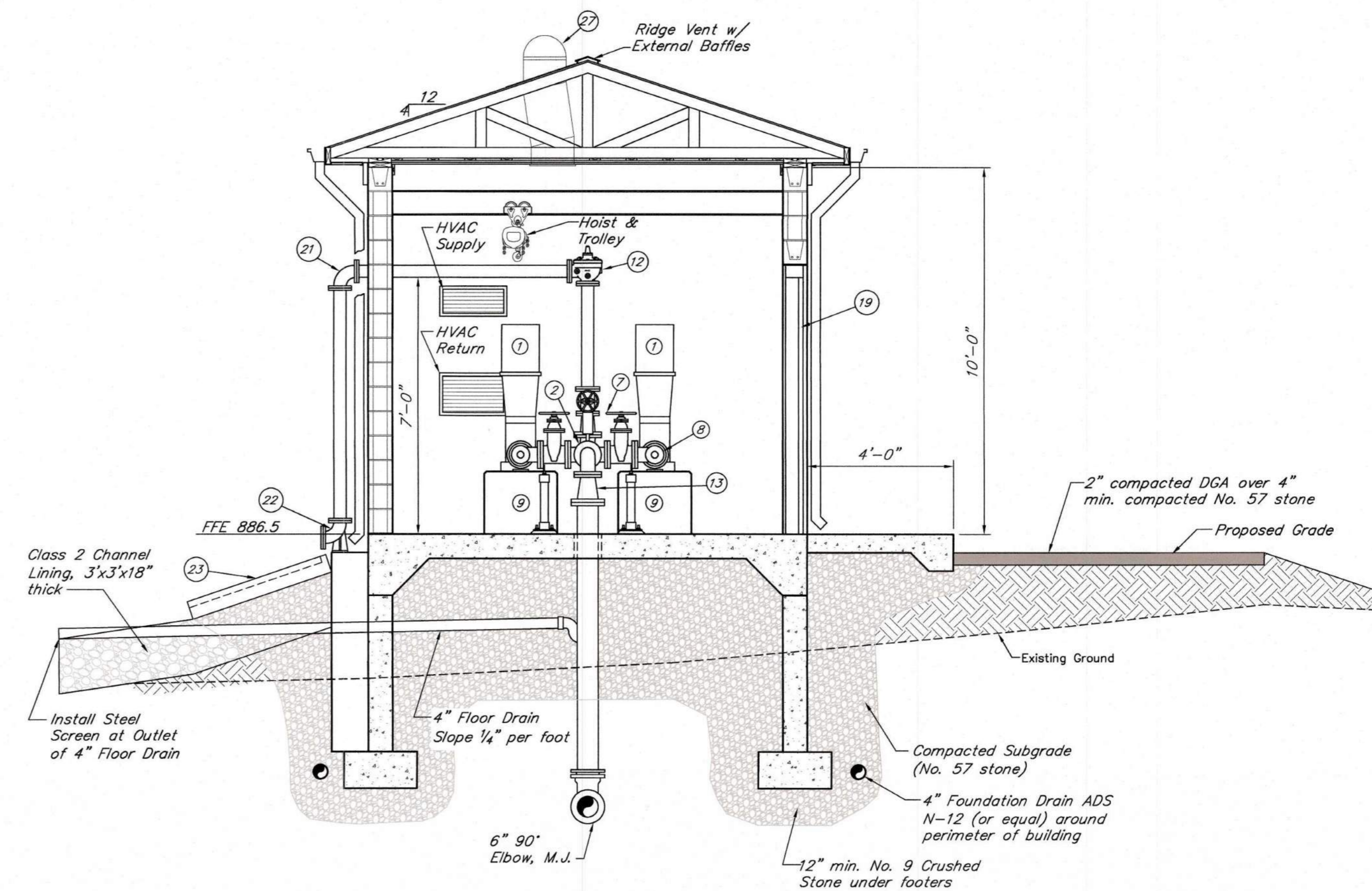
SECTION C-C
 3/8"=1'-0"



PUMP CONNECTIONS
 3/8"=1'-0"

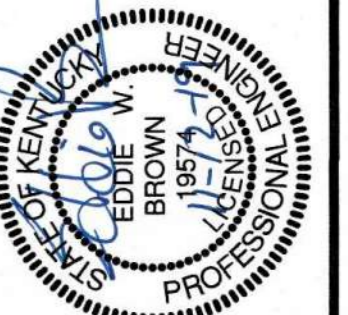


SECTION A-A
 3/8"=1'-0"



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

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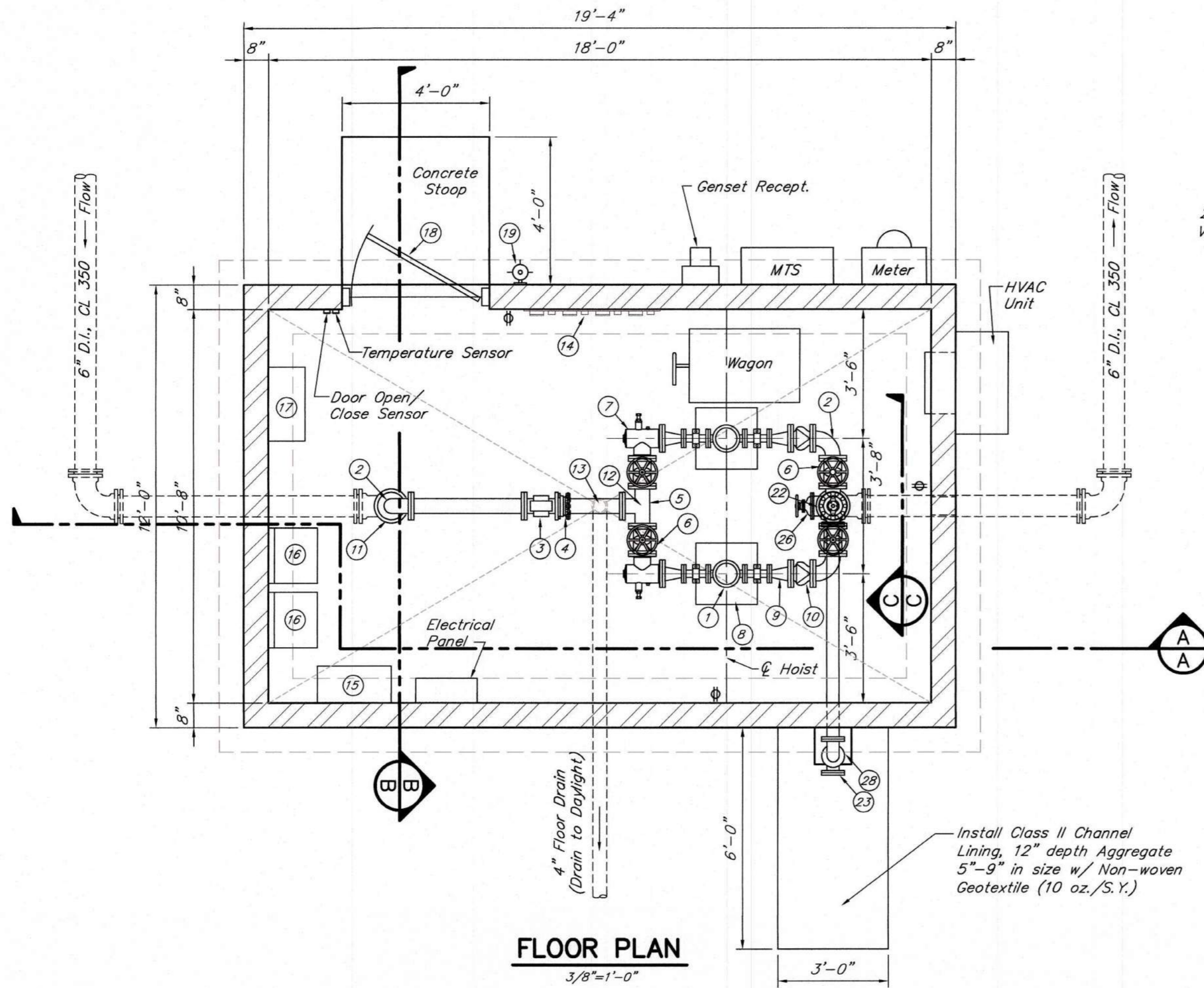
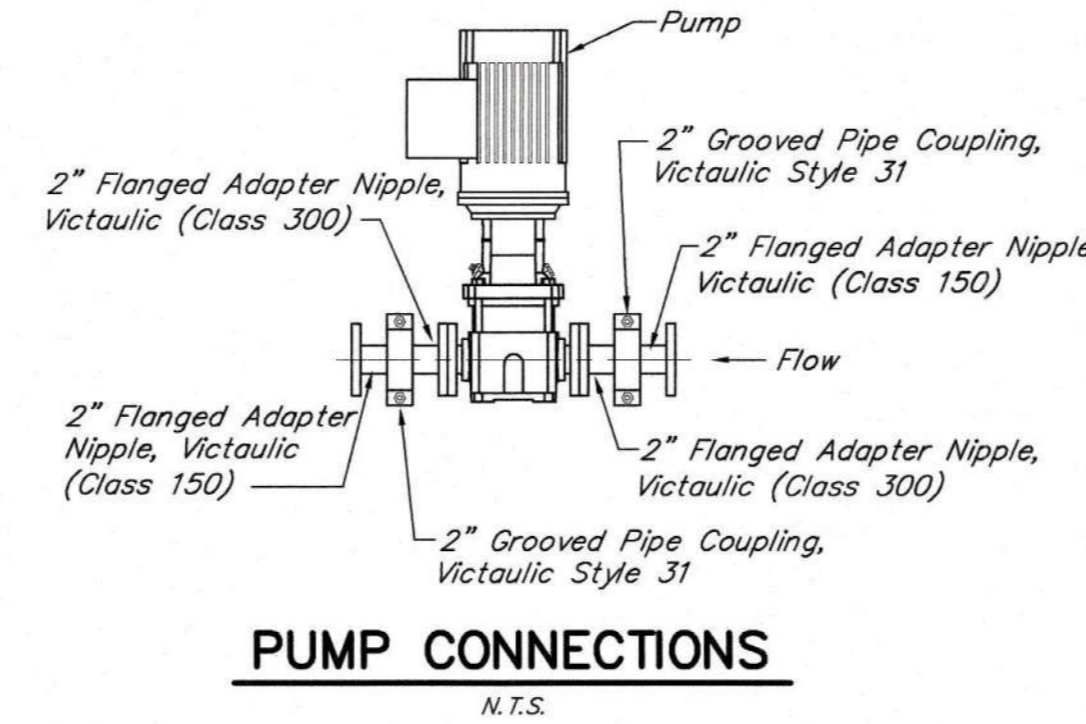


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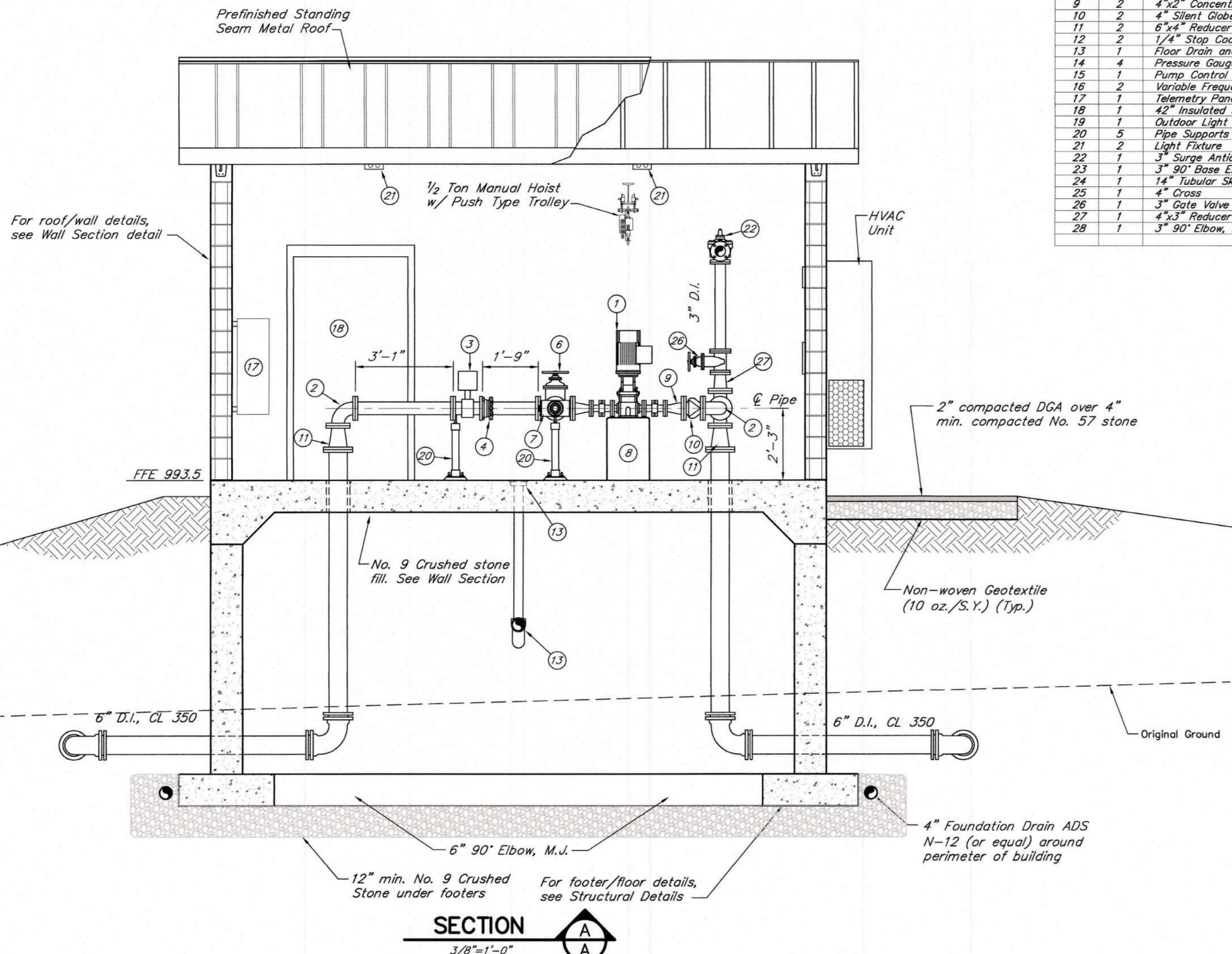
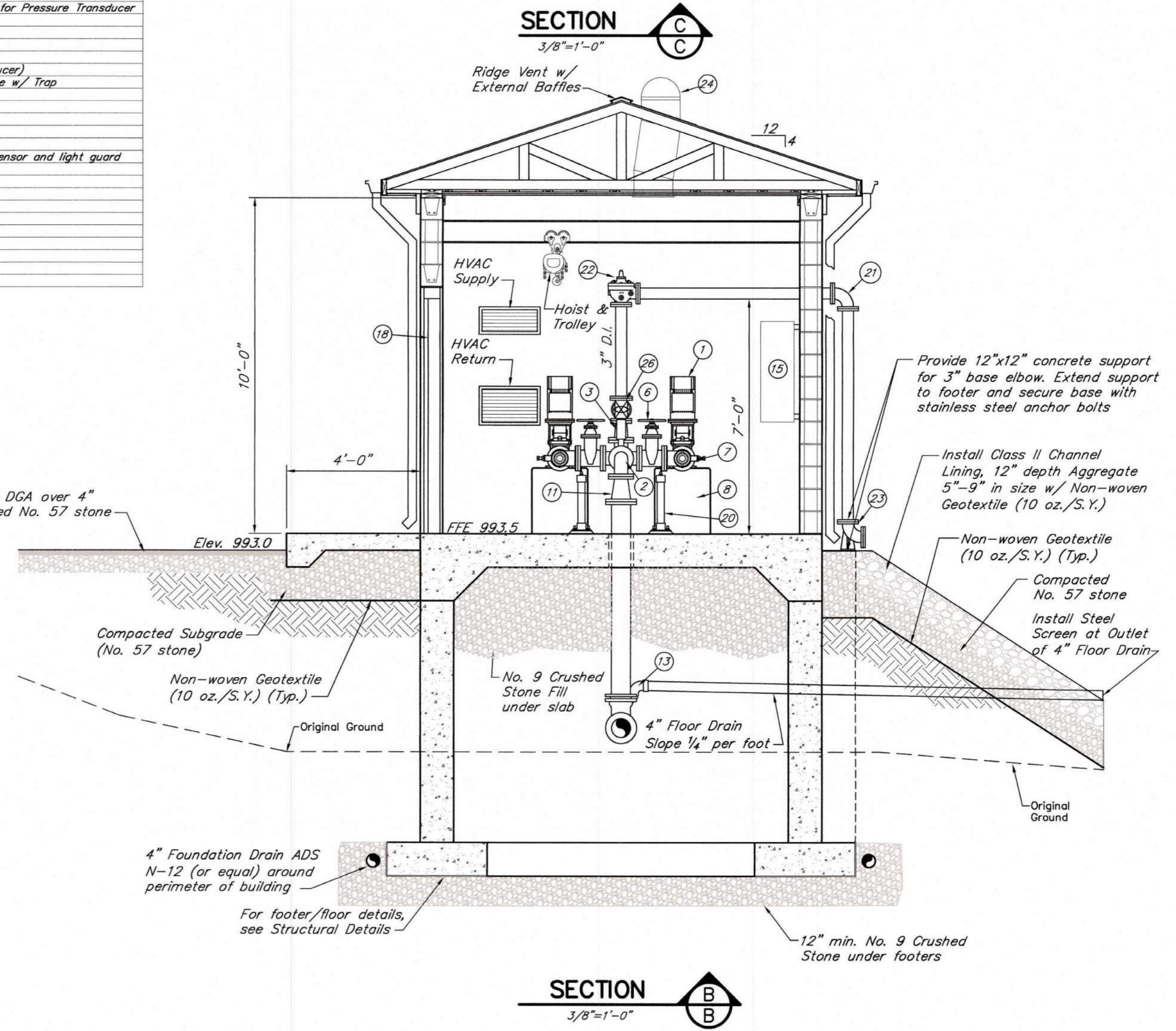
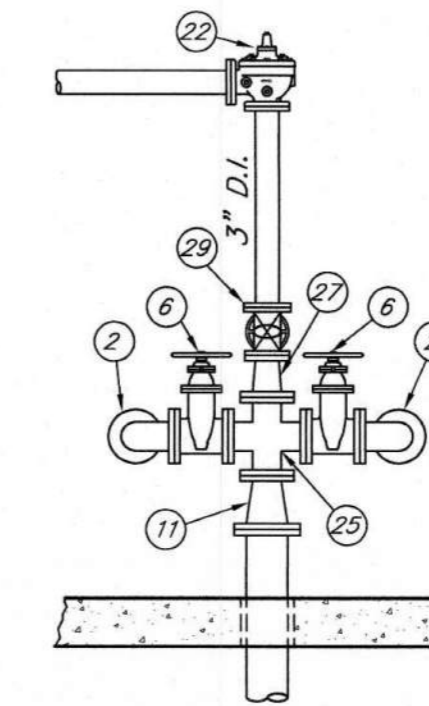


GENERAL NOTES

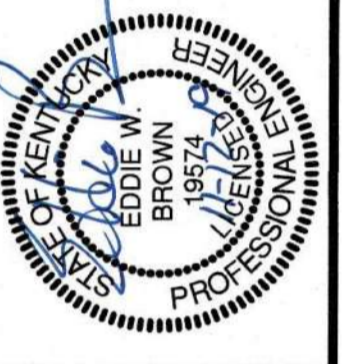
- All flanged piping be rated for 350 psi. Standard flat gaskets will not be allowed. Gaskets, such as American's Torulose, rated for 350 psi will be required.
- All yard piping shall be ductile iron, CL 350 pipe. All Ductile Iron Piping shall have restrained gaskets. All M.U. fittings, valves, etc. shall be restrained with EBAA IRON MEGALUG Series 1100 or approved equal.
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- All couplings and flanged coupling adaptors shall be rodded through the adjacent flanges and bolted securely.
- Pipe drainage from any pump, valve, or device within the pump station shall utilize PVC conduit through the floor slab to the floor drain piping below slab.
- Caulk all control joints, construction joints including slab to wall joint, and frame installations.
- All conduits shall be aluminum. Seal the tubing raceways.
- Use shark bite fittings with all tubing.
- Apply acrylic tinted floor sealer to concrete floor after all construction is complete inside pump station. Sherwin Williams HC 132, H and C silicized acrylic, gull grey (or equal).
- Construct a $\frac{3}{4}$ " chamfer at all construction joints and corners.
- All interior piping, valves, pumps and metal surfaces shall receive one (1) coat of Tnemec 66 HB Epoxalene and one (1) finish coat of Tnemec EnduraShield Polyurethane or approved equal.
- Floor shall be sloped to drain between $\frac{1}{4}$ " & $\frac{1}{8}$ " per foot.
- Tubular Skylight shall be 14" in diameter with a Tube Reflectivity of 98%. The short shaft installation shall include a severe weather roof dome, a formable leak-proof roof flashing, mirror finish adjustable tubes, a ceiling trim ring, and a standard diffuser lens assembly. The tubular skylight shall be as manufactured by ODL (or approved equal). The diffuser lens assembly shall be located as close to the center of the ceiling as possible.
- The Contractor shall provide a heavy duty wagon with a 24"x36" 12-gauge steel deck with a 1-1/2" retaining lip. The wagon shall have a deck capacity of 1,200 pounds. See specifications for a more detailed description.



ITEM	QTY.	DESCRIPTION
1	2	Pumps: 5 Hp, 208-230V/460V/3PH/120 GPM @ 75' TDH, 3,500 RPM Grundfos CR 20-2, 2" NPT (or equal)
2	3	4" 90° Elbow, FL
3	1	4" Magnetic Flow Meter (4-20mA and pulse)
4	1	4" Flange Coupling Adapter (FCA)
5	1	4" Tee
6	4	Gate Valve
7	2	4"x4" Suction Diffuser w/ outlet end tap for Pressure Transducer
8	2	Concrete Pump Base (Cast in Place)
9	2	4"x2" Concentric Reducer
10	2	4" Silent Globe Check Valve
11	2	6"x4" Reducer
12	2	1/4" Stop Cock (Tap for Pressure Transducer)
13	1	Floor Drain and 4" PVC Sch. 80 Drain Pipe w/ Trap
14	4	Pressure Gauge w/ Pressure Transducer
15	1	Pump Control Panel
16	2	Variable Frequency Drive Panel (VFD)
17	1	Telemetry Panel
18	1	42" Insulated Steel Door
19	1	Outdoor Light Fixture w/ Dusk to Dawn Sensor and light guard
20	5	Pipe Supports
21	2	Light Fixture
22	1	3" Surge Anticipating Valve
23	1	3" 90° Base Elbow w/ aluminum screen
24	1	14" Tubular Skylight
25	1	4" Cross
26	1	3" Gate Valve
27	1	4"x3" Reducer
28	1	3" 90° Elbow, FL



N:\P\2016173\Plus\PS-4 Sandy Gap PS PLAN SECTION.dwg, 11/06/2019 4:58:30 PM, KCP



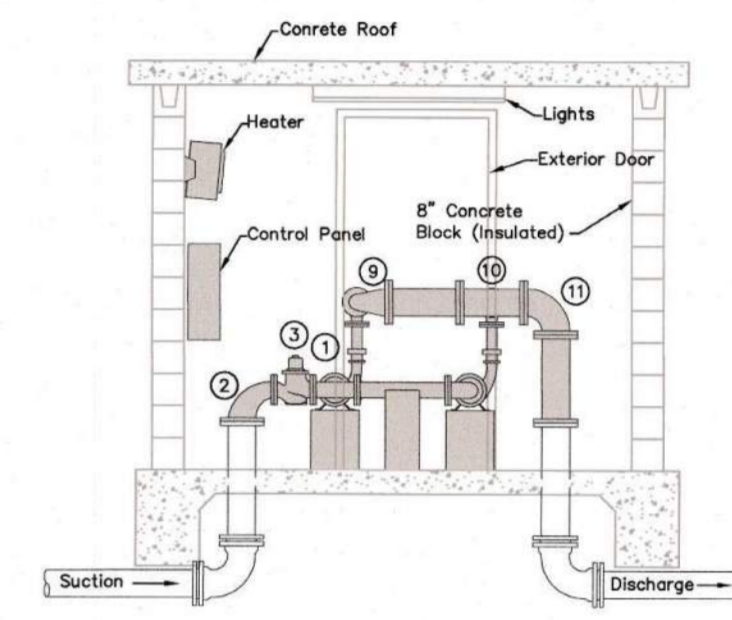
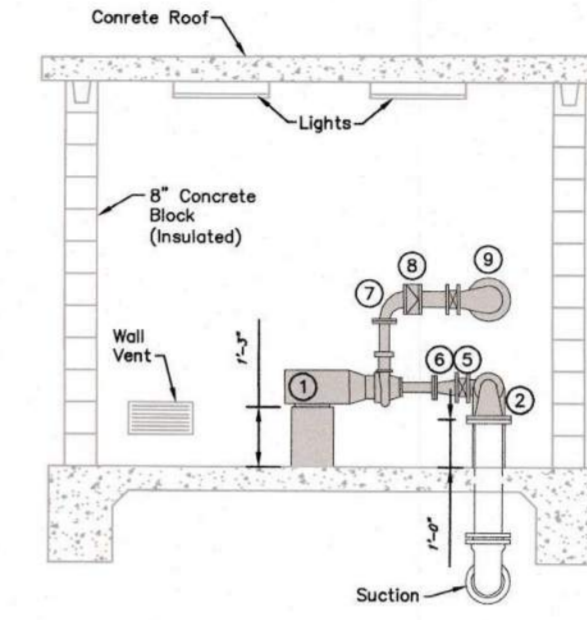
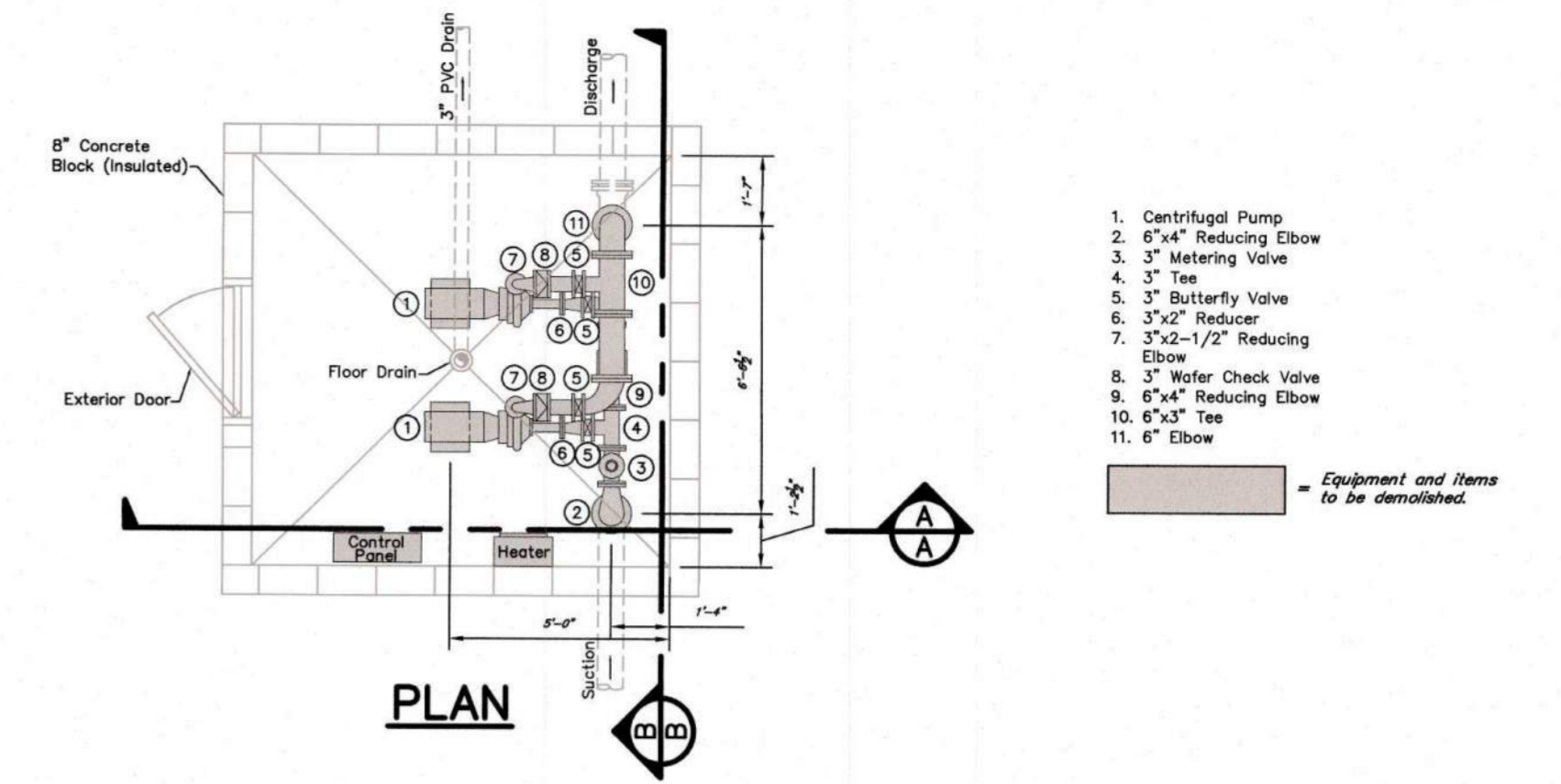
DRAWN BY:	
CHECKED BY:	
DATE:	
SCALE:	AS NOTED
REVISIONS:	



DAHL PUMP STATION REHAB		
ITEM	QTY.	DESCRIPTION
1	2	Pumps: 15 Hp, 208-230V/480V/3PH/250 GPM @ 145' TDH; 3,500 RPM Grundfos 20709 LF (or equal)
2	2	Concrete Pump Base (Cast in Place)
3	4	4" Gate Valve
4	4	4" Victaulic Flanged Nipple Adapter
5	2	4" x 2 1/2" Victaulic Eccentric Reducer
6	2	2 1/2" Victaulic Hose Nipple
7	2	2" Victaulic Hose Nipple
8	2	2" x 2" Victaulic Concentric Reducer
9	2	4" 90° Elbow
10	2	4" Flanged Coupling Adapter (FCA)
11	2	4" Silent Globe Check Valve
12	1	4" Plate Strainer
13	1	6"x4" Reducing El
14	2	Pipe Support
15	1	Flow meter remote display
16	2	4" Flange Filler

GENERAL NOTES

- All flanged piping be rated for 350 psi. Standard flat gaskets will not be allowed. Gaskets, such as American's Toruseal, rated for 350 psi will be required.
- 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 adapters shall be rodded through the adjacent flanges and bolted securely.
- Pipe drainage from any pump, valve, or device within the pump station shall utilize PVC conduit through the floor slab to the floor drain piping below slab.
- All conduits shall be aluminum. Seal the tubing raceways.
- Use shark bite fittings with all tubing.
- Apply acrylic tinted floor sealer to concrete floor after all construction is complete inside pump station. Sherwin Williams HC 132, H and C siliconized acrylic, gull gray (or equal).
- Construct a 1/4" chamfer at all construction joints and corners.
- All interior piping, valves, pumps and metal surfaces shall receive one (1) coat of Inmatec 66 HB Epoxaline and one (1) finish coat of Inmatec EnduraShield Polyurethane or approved equal.
- The Contractor shall install a new HVAC Unit as shown. Care shall be taken in locating the supply and return duct heights and penetration locations to minimize the number of block to be cut for a tight and secure fit. The Contractor shall minimize the amount of block to be removed for the installation of the new unit.

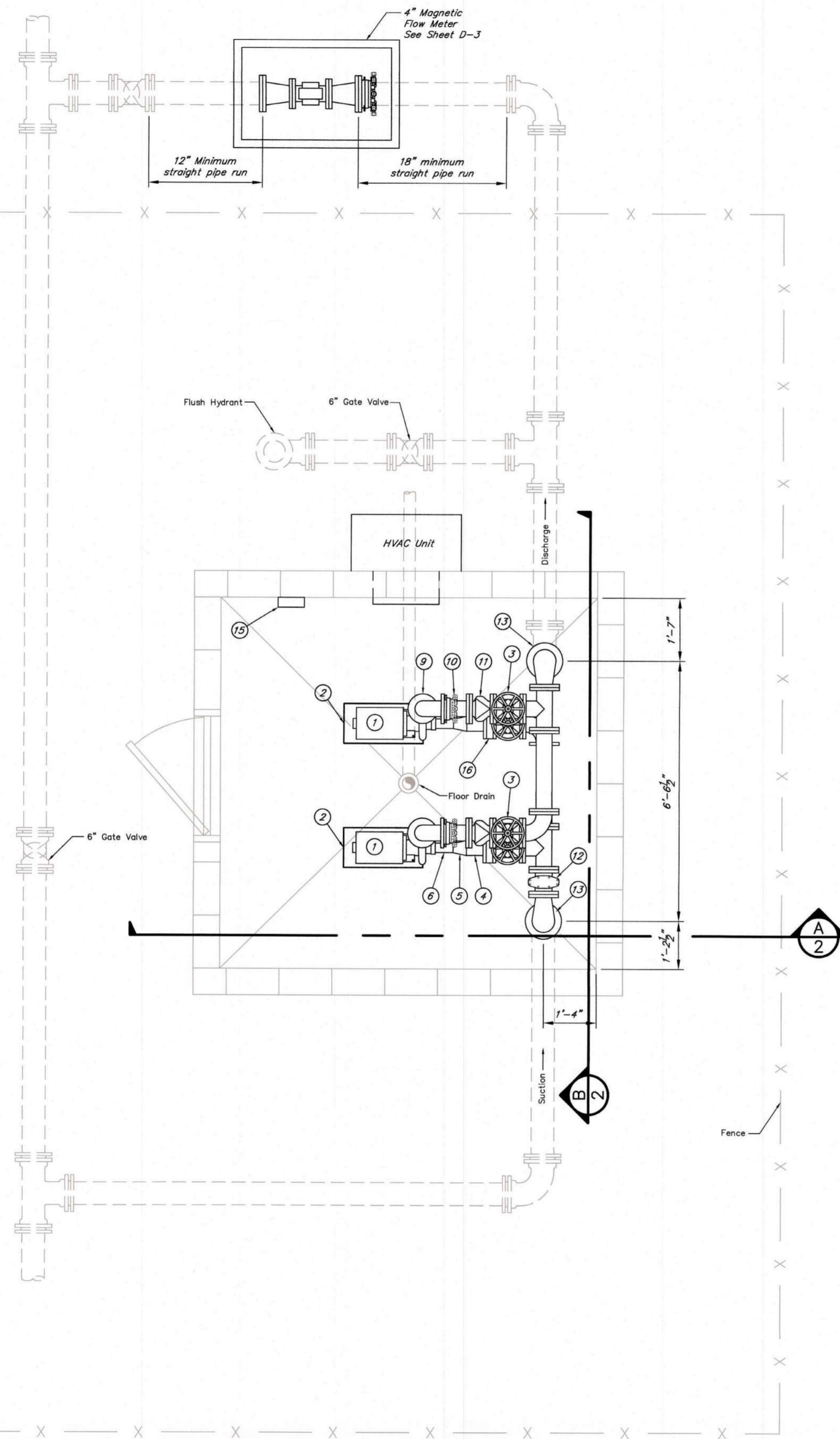


SECTION A-A

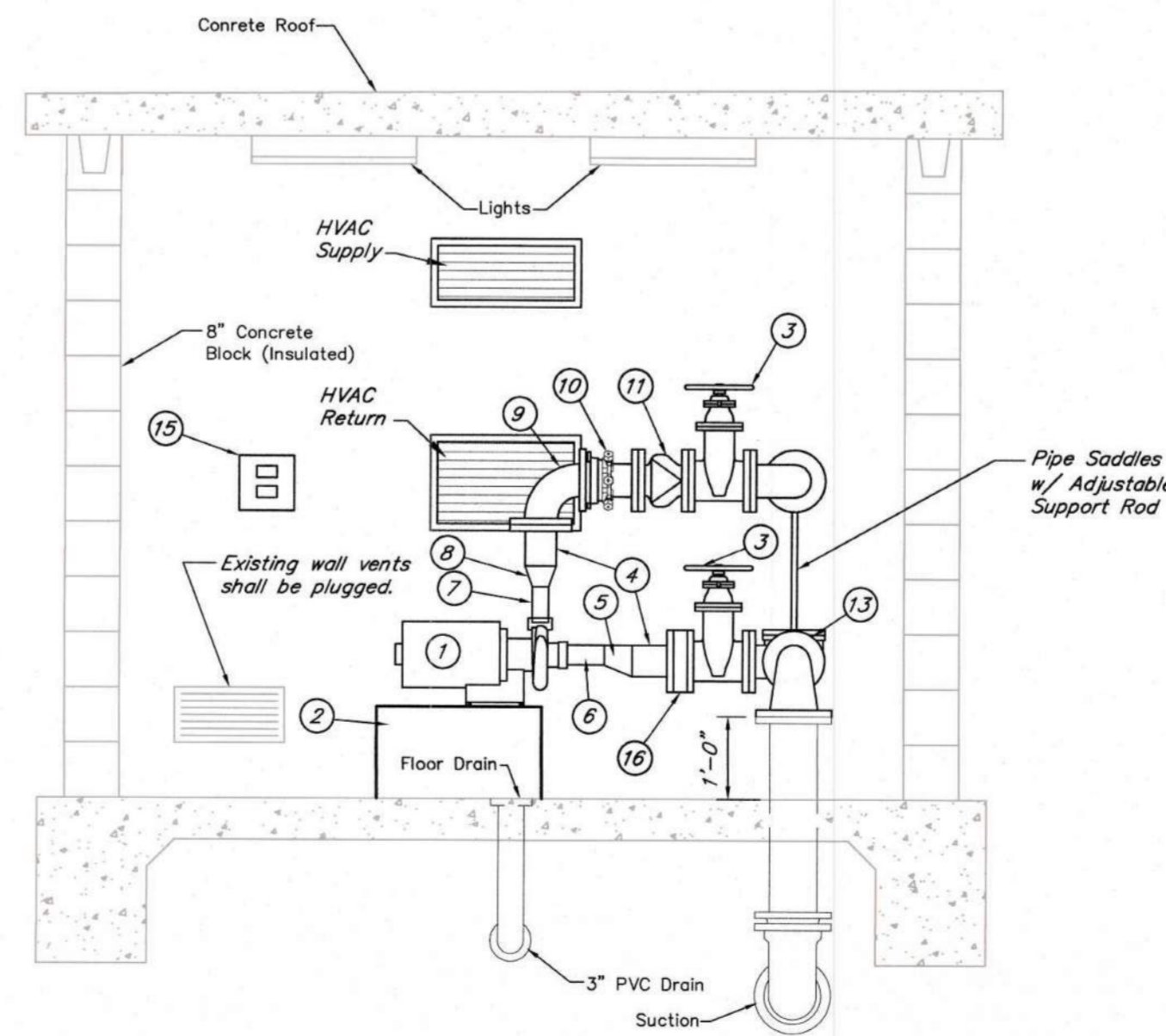
SECTION B-B

DAHL PUMP STATION DEMOLITION PLAN

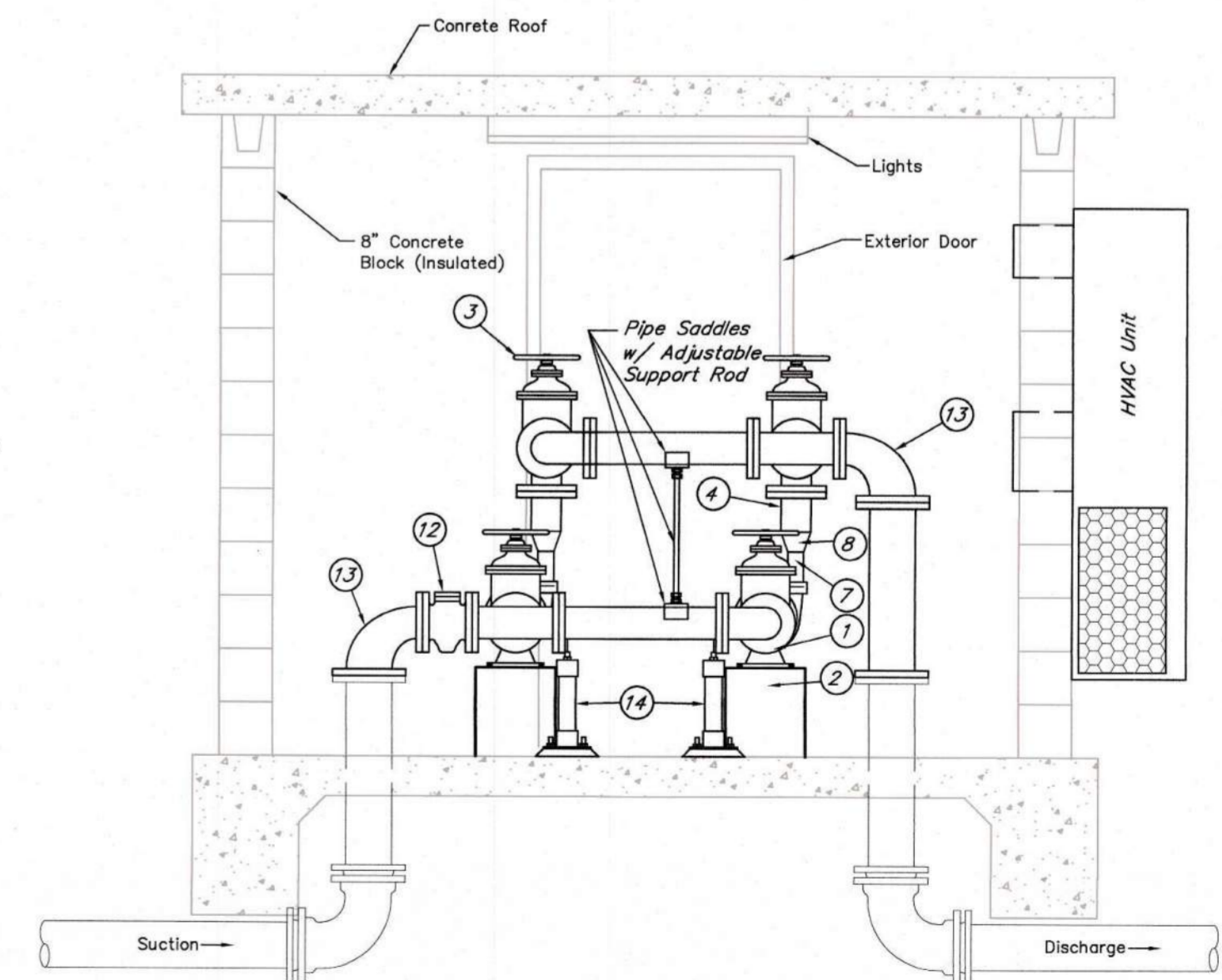
Scale: 1/4"=1'-0"



DAHL PUMP STATION RETROFIT-PLAN
 1/2"=1'-0"

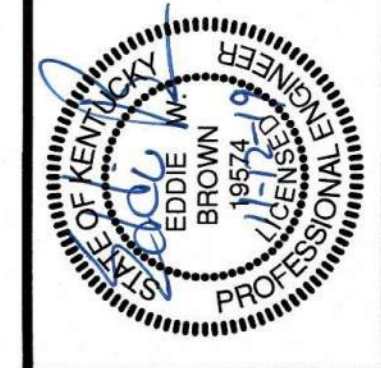


SECTION A-A
 1/2"=1'-0"

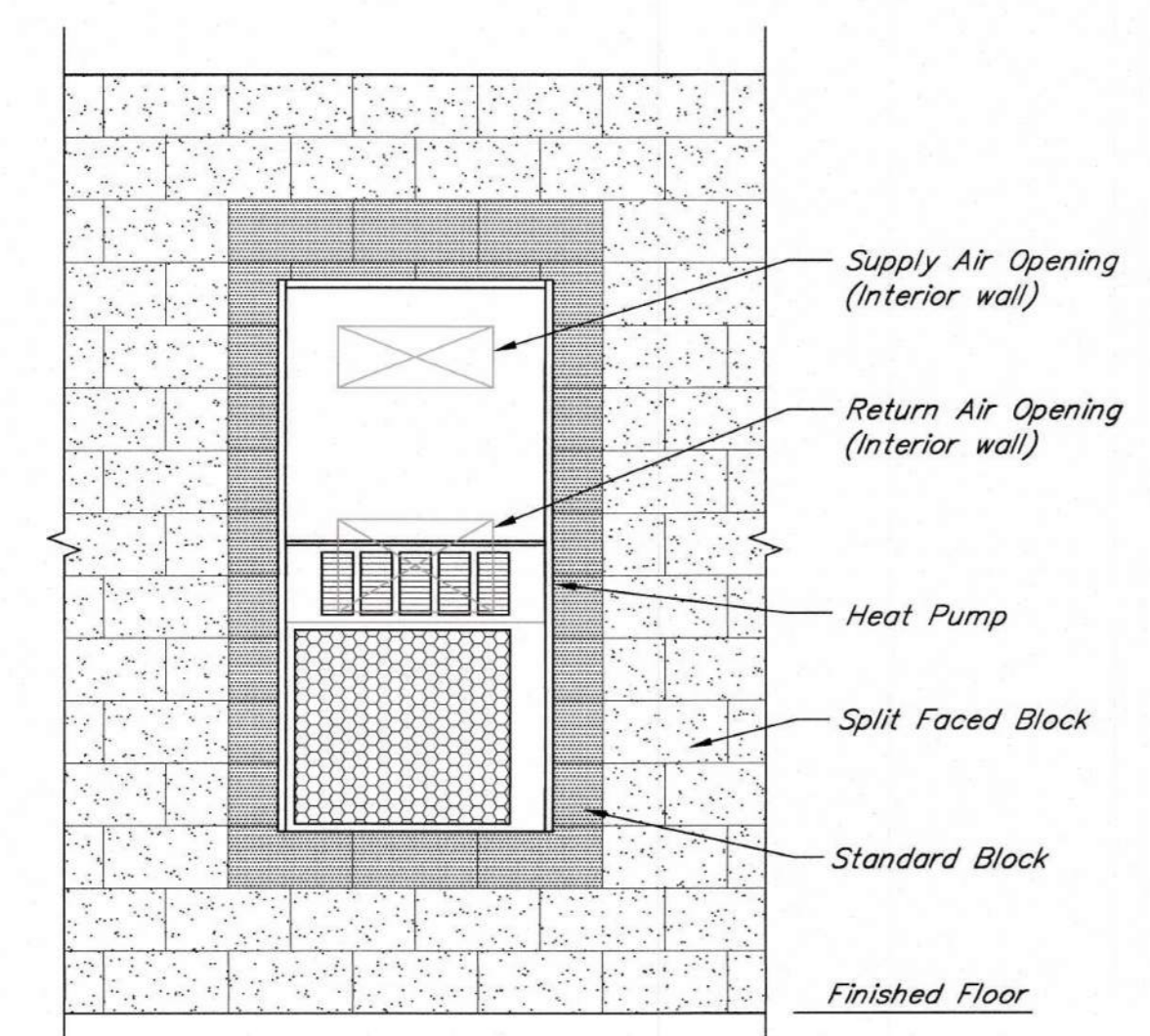
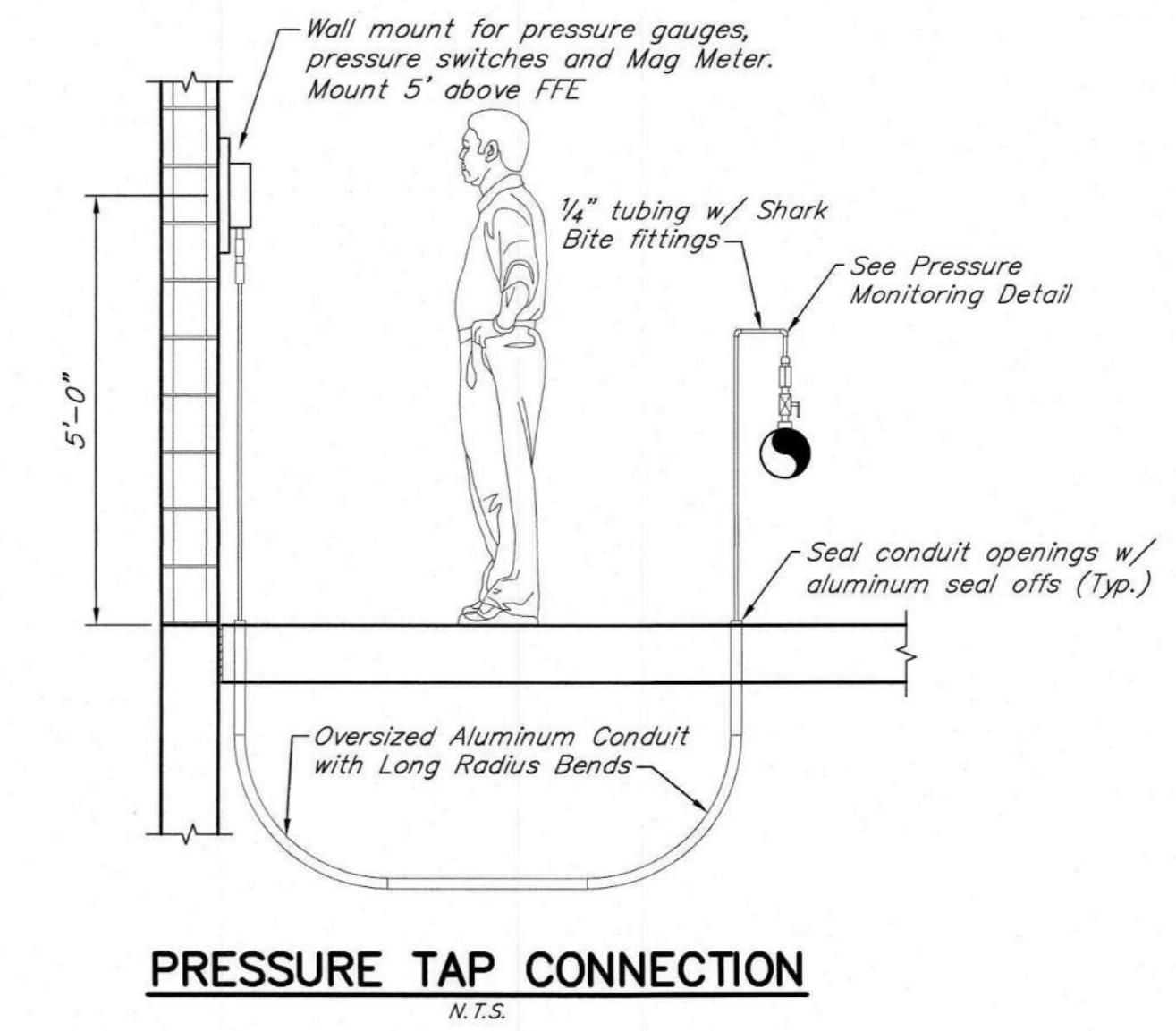
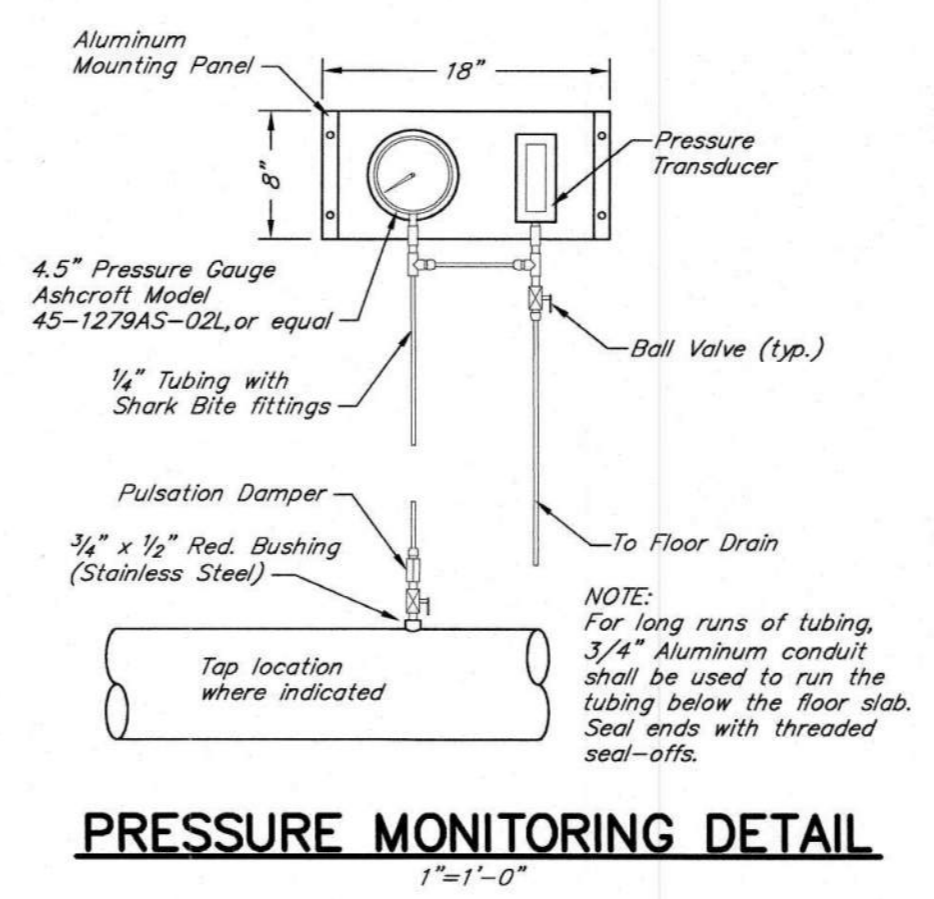
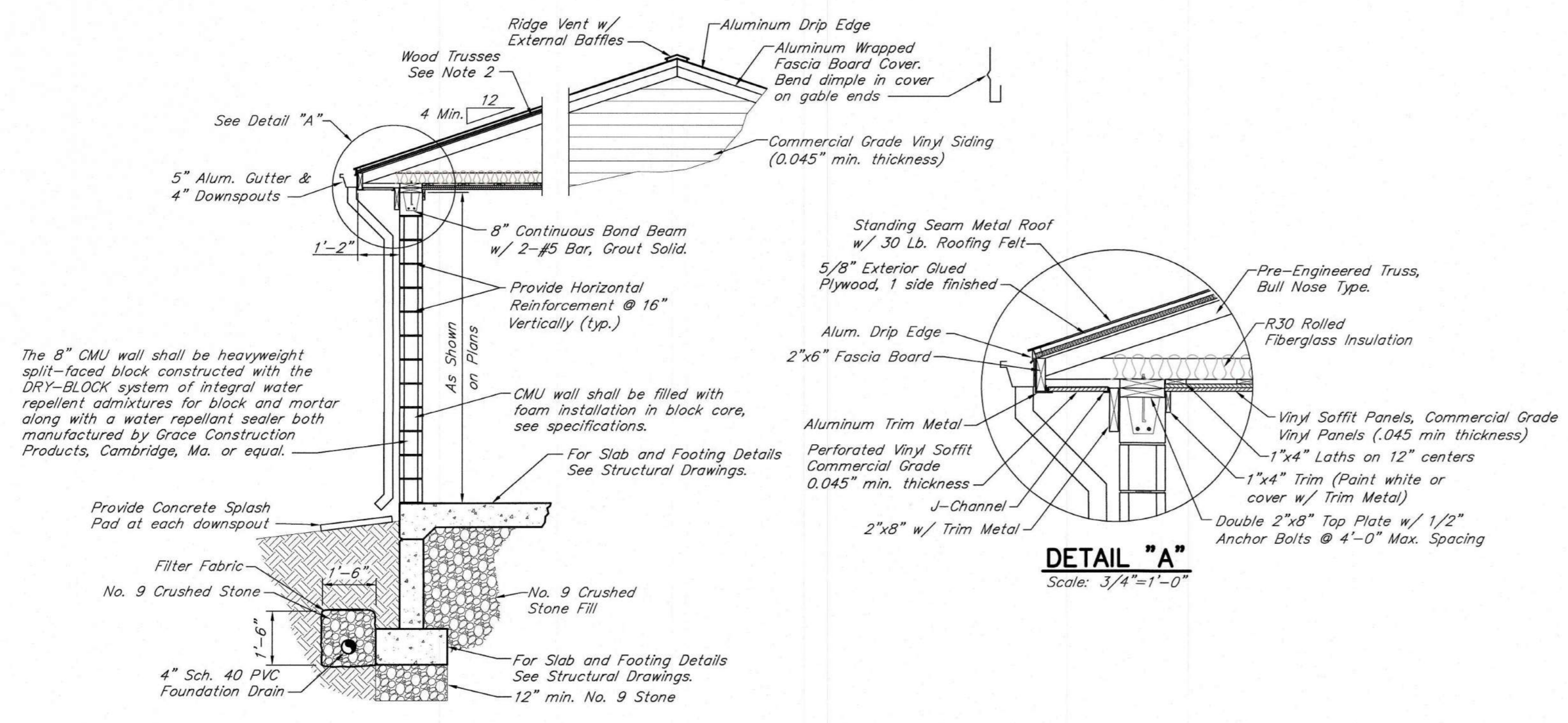


SECTION B-B
 1/2"=1'-0"

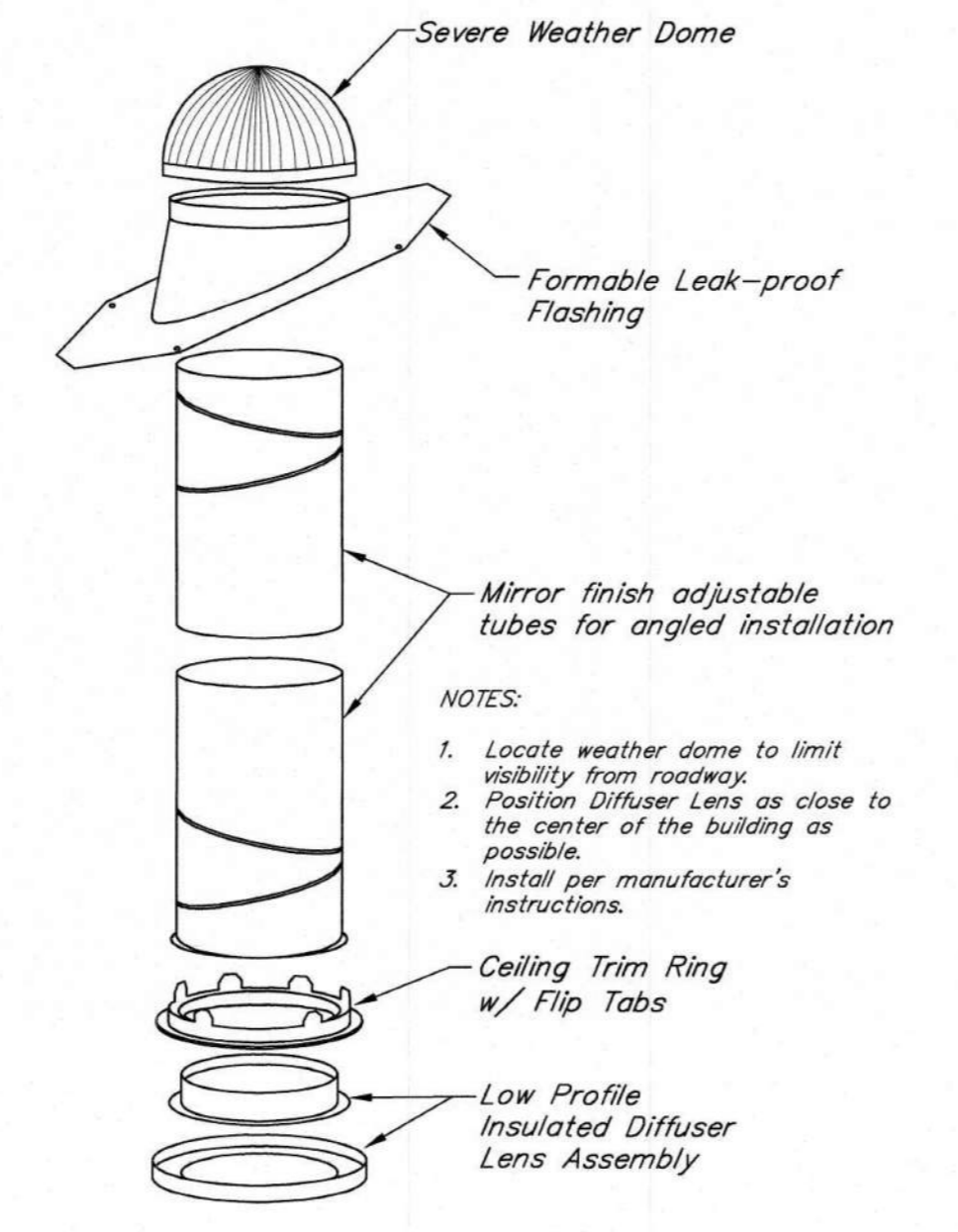
DAHL PUMP STATION REHABILITATION



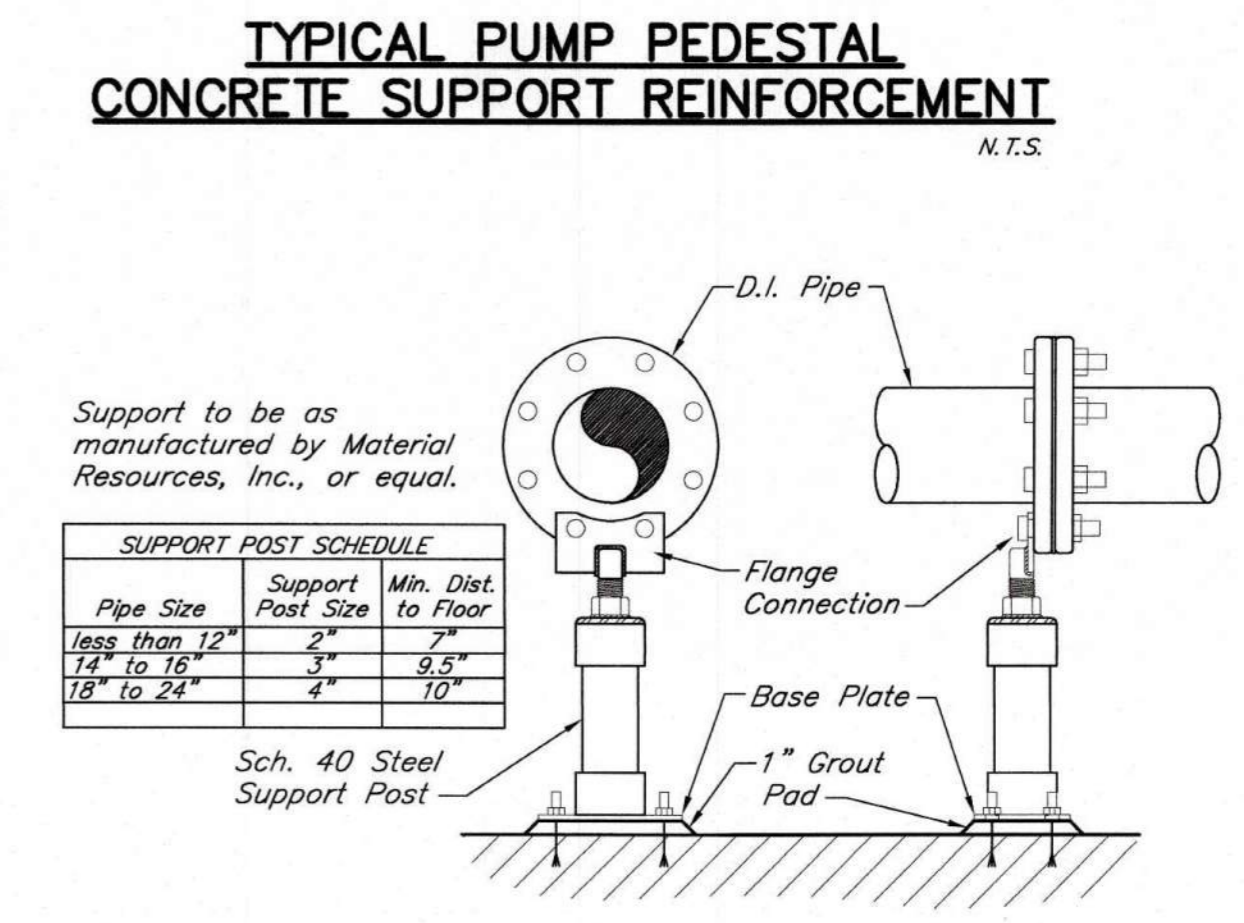
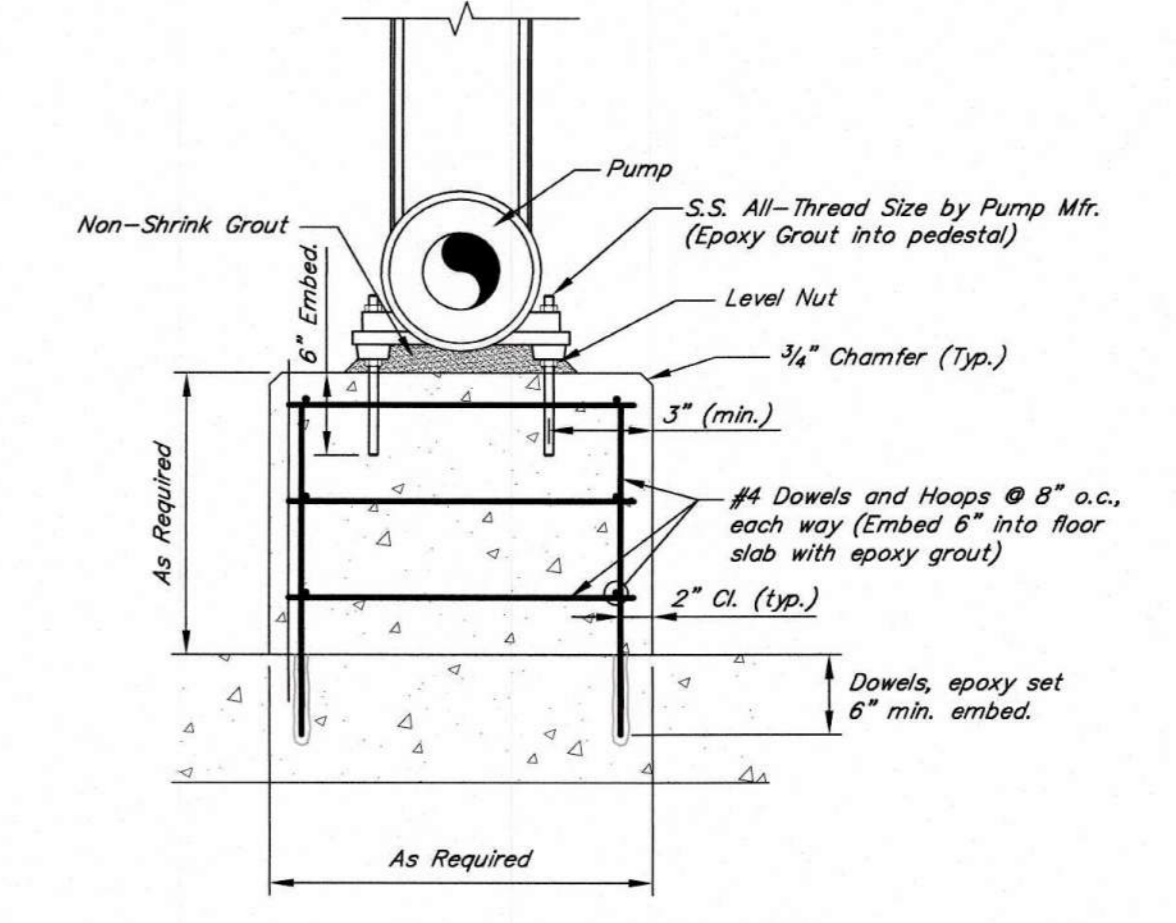
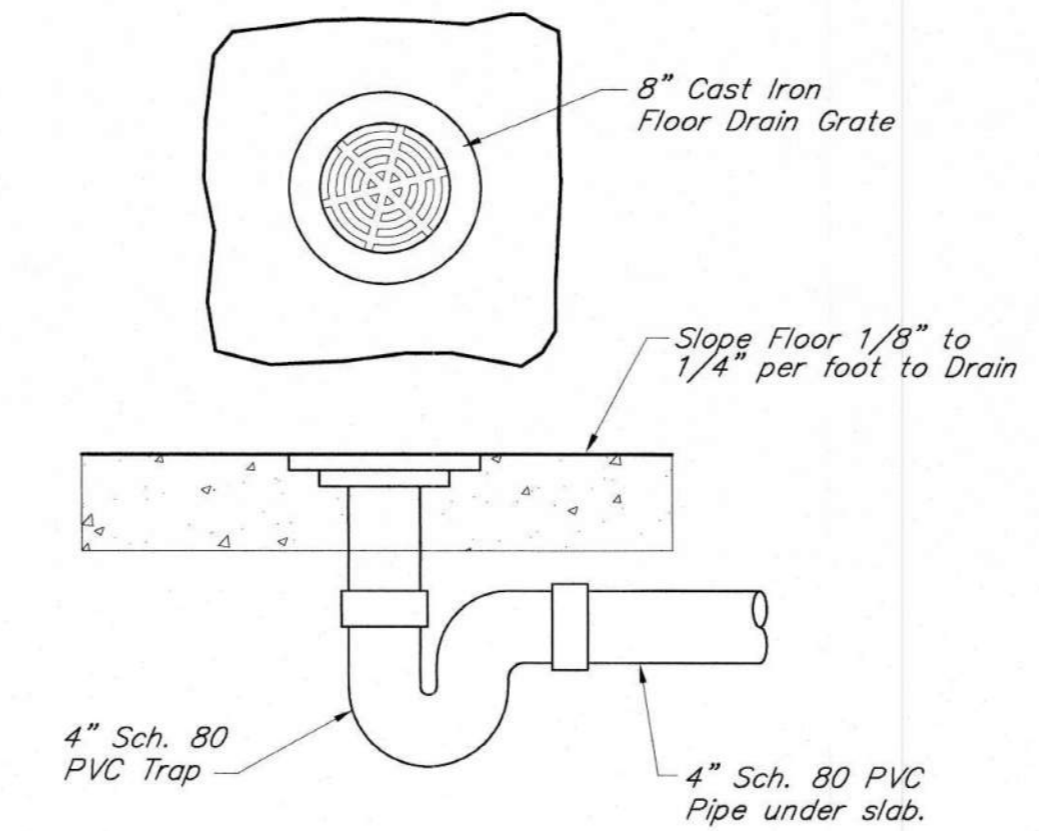
DRAWN BY: JRP/PTH
 CHECKED BY: ERW
 DATE: APRIL 2018
 SCALE: As Noted
 REVISIONS



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.



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



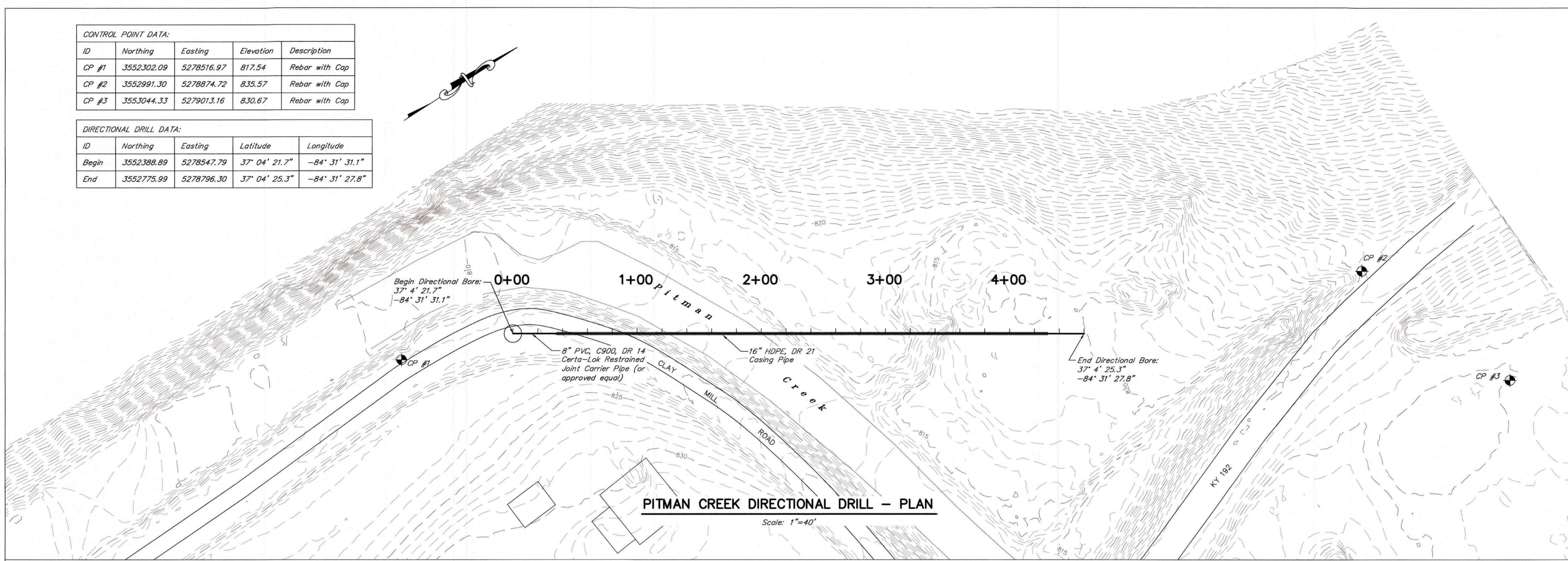
SUPPORT POST SCHEDULE

Pipe Size	Support Post Size	Min. Dist. to Floor
less than 12"	2"	7"
14" to 16"	3"	9.5"
18" to 24"	4"	10"

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

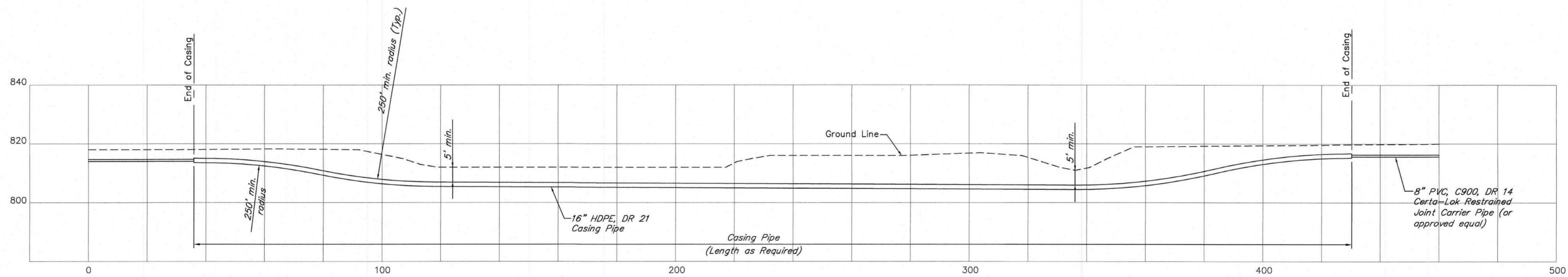
CONTROL POINT DATA:				
ID	Northing	Easting	Elevation	Description
CP #1	3552302.09	5278516.97	817.54	Rebar with Cap
CP #2	3552991.30	5278874.72	835.57	Rebar with Cap
CP #3	3553044.33	5279013.16	830.67	Rebar with Cap

DIRECTIONAL DRILL DATA:				
ID	Northing	Easting	Latitude	Longitude
Begin	3552388.89	5278547.79	37° 04' 21.7"	-84° 31' 31.1"
End	3552775.99	5278796.30	37° 04' 25.3"	-84° 31' 27.8"



PITMAN CREEK DIRECTIONAL DRILL - PLAN

Scale: 1"=40'



PITMAN CREEK DIRECTIONAL DRILL

Scale: 1"=20'

PITMAN CREEK DIRECTIONAL BORE

**SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS**



DRAWN BY: JKB	CHECKED BY: EWB
DATE: Feb. 2018	SCALE: 1"=20'
REVISIONS	

KENVIRONS, INC.
FRANKFORT, KENTUCKY

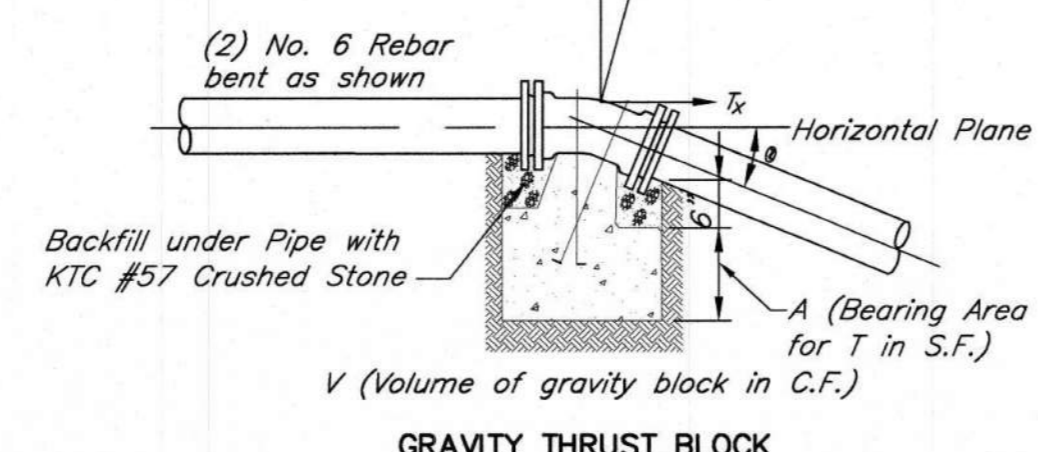
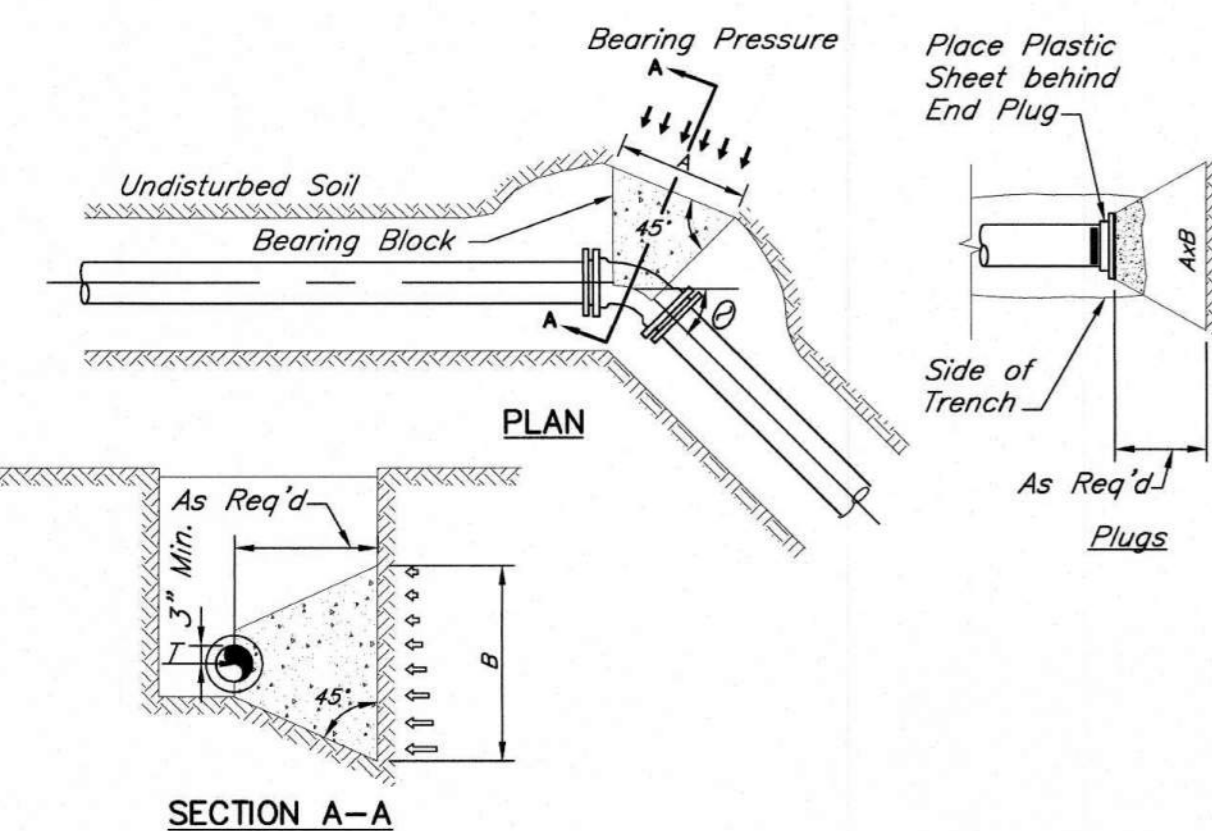


PROJECT NO.
2016173
SHEET NO.
B-1

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DRAWN BY: KCP
CHECKED BY: LEWB
CHECKED BY: KJG
DATE: AUG. 2016
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, a joint restraint system may be used. This restrained joint system must be approved by the Engineer.
 3. Concrete shall be 3000 psi minimum conforming to KTC Specifications 601.
 4. Accessibility to fittings and bolts must be maintained.
 5. Wrap fittings in plastic prior to placing concrete.

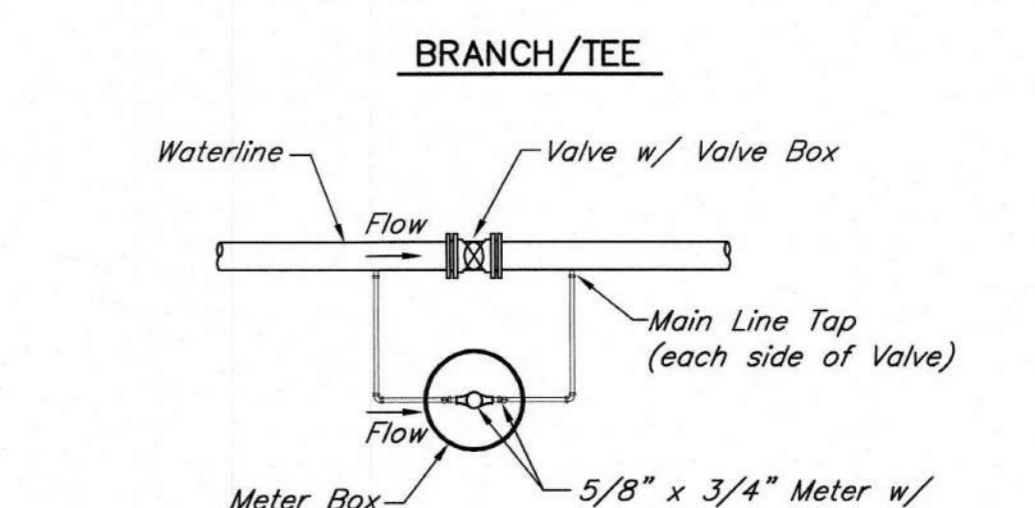
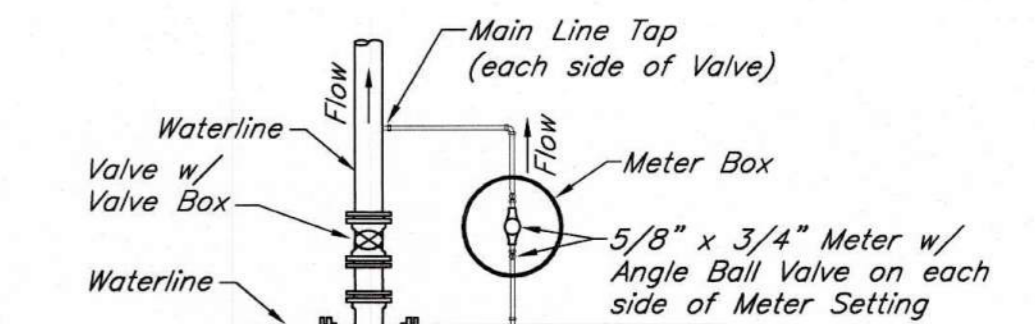
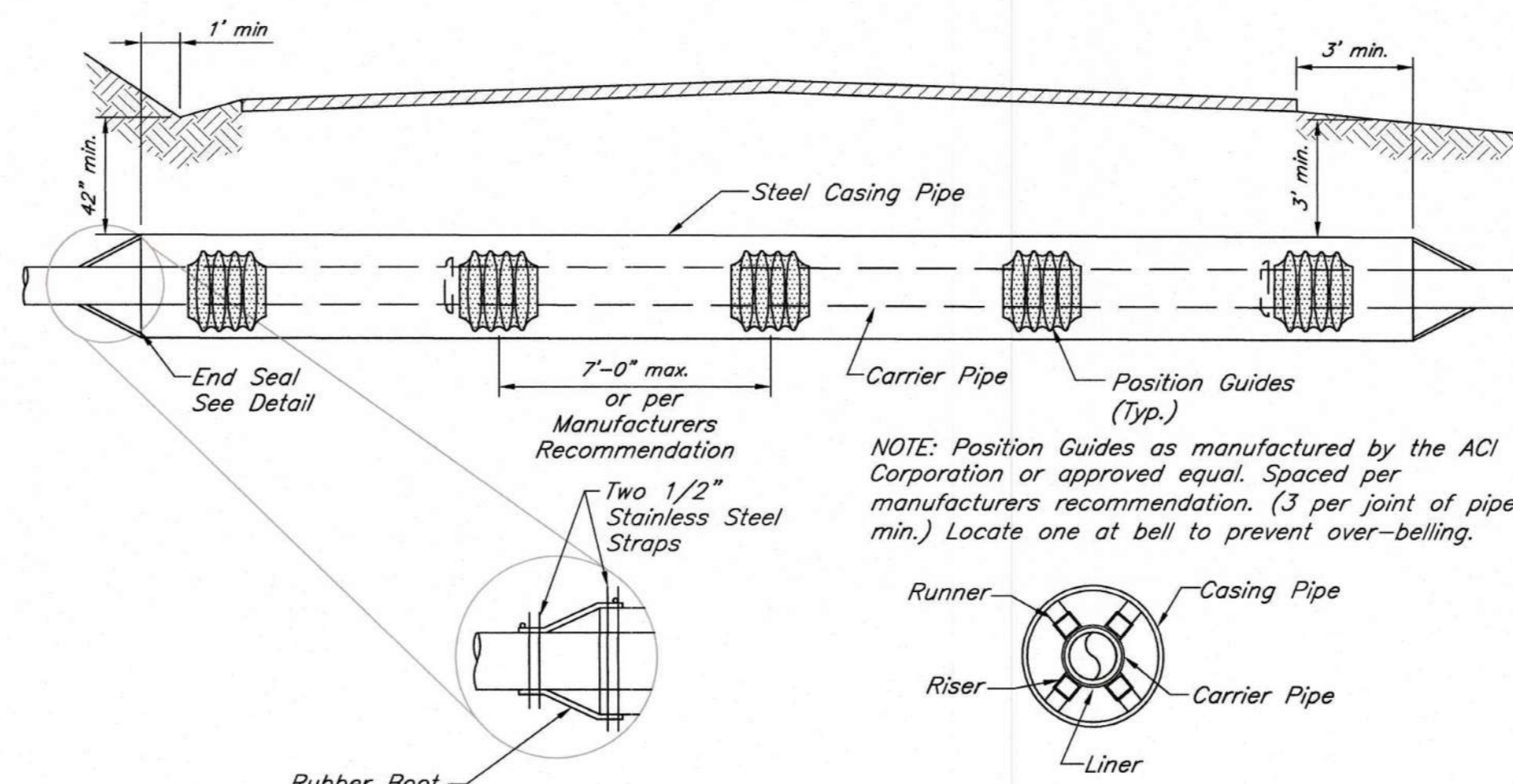
- NOTES:**
1. Thrust restraint table is based on pipeline pressure of 200 psi and earth bearing capacity of 1500 psf. During construction, the specific soil type may be evaluated and concrete thrust block size revised at the discretion of the Engineer.
 2. On large diameter pipes where space limitations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

HORIZONTAL THRUST BLOCK SCHEDULE

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

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



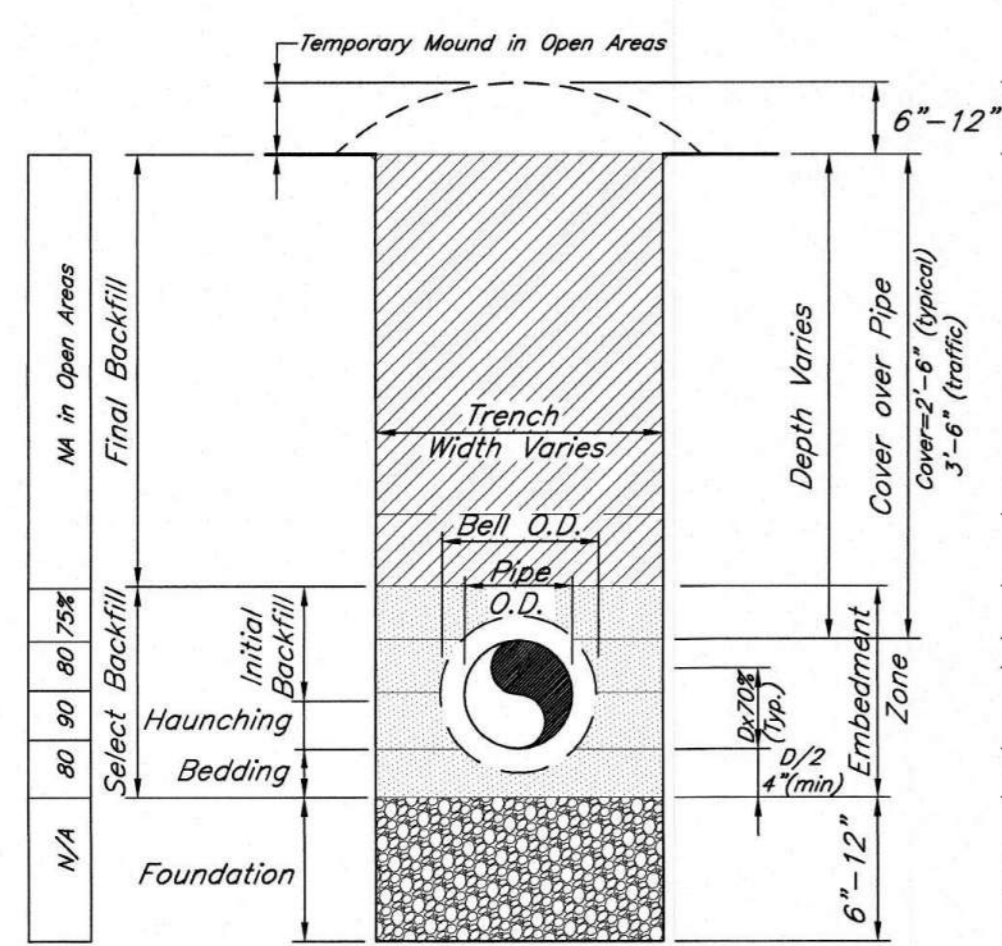
- NOTES:**
1. Leak detection Meters shall be installed where indicated on the Plans.
 2. Gate Valves are a Separate Pay Item. Bid Item for Leak Detection Meters shall include the Main Line Taps, Piping, Meter Box, Sitter, Ball Valves, and Meter in accordance with the Detail Shown on this drawing.
 3. 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.

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

VERTICAL THRUST BLOCK
 July, 2015 Scale: 1/2"=1'-0"

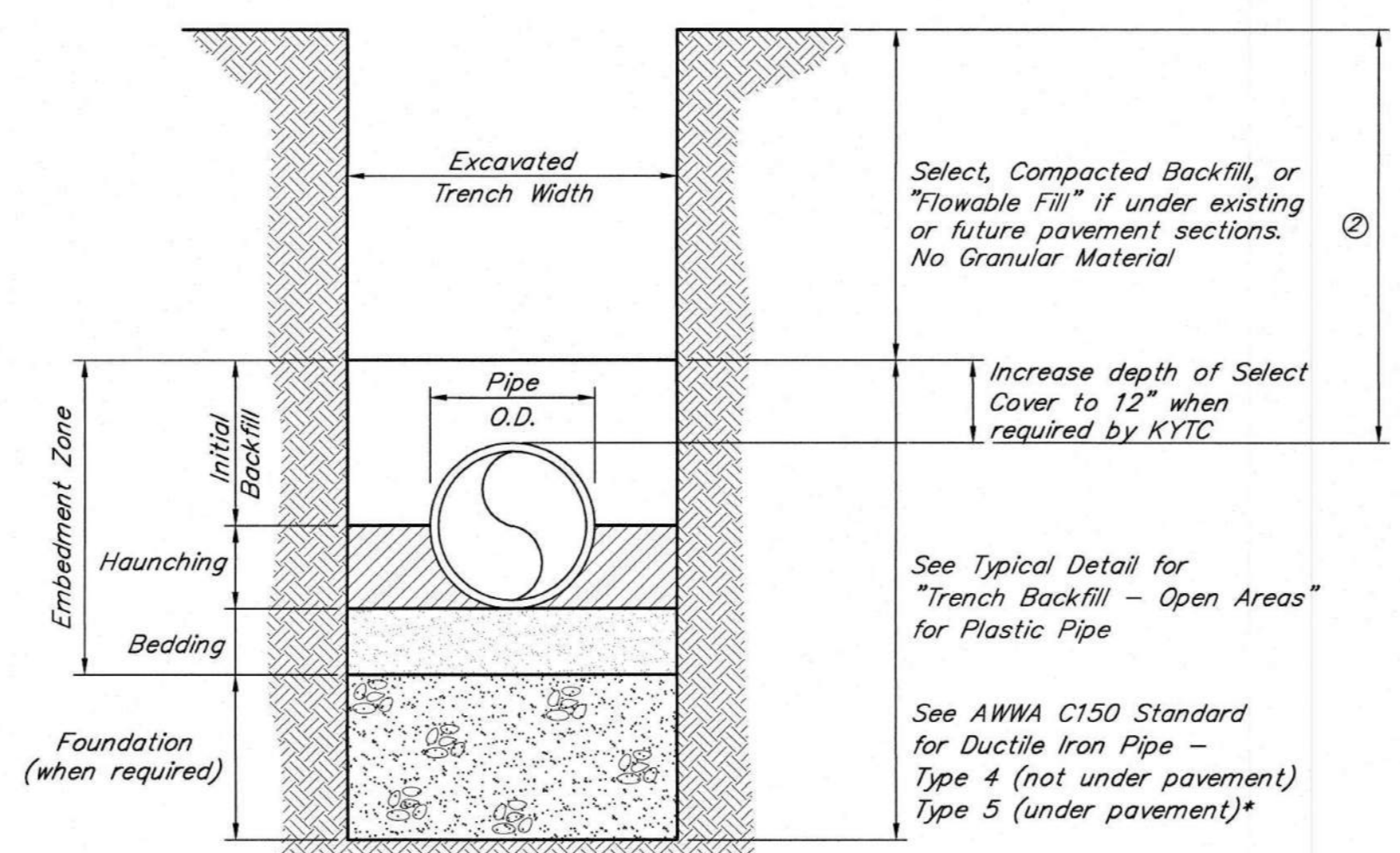
ROADWAY CROSSING INSTALLATION
 July 2015 Scale: 1/4"=1'-0"

LEAK DETECTION METER
 June 2016 N.T.S.



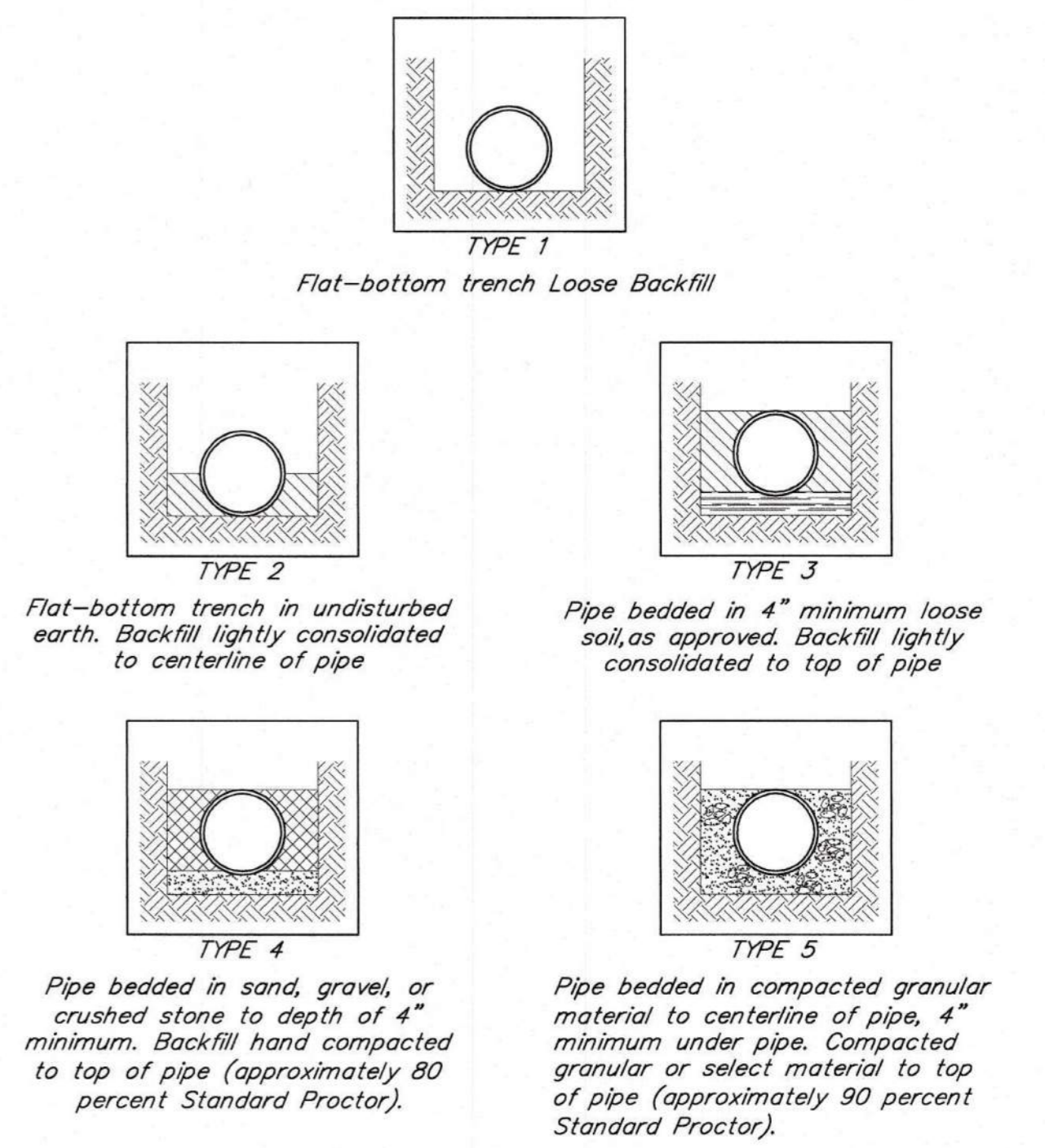
NOTES: No rocks larger than 1-1/2" allowed in embedment zone.
 Typical desired densities in open areas are depicted above in the boxes to the left of the figure. In other laying situations, more stringent selection, placement and compaction will be required.
 Trench width should be no wider than necessary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

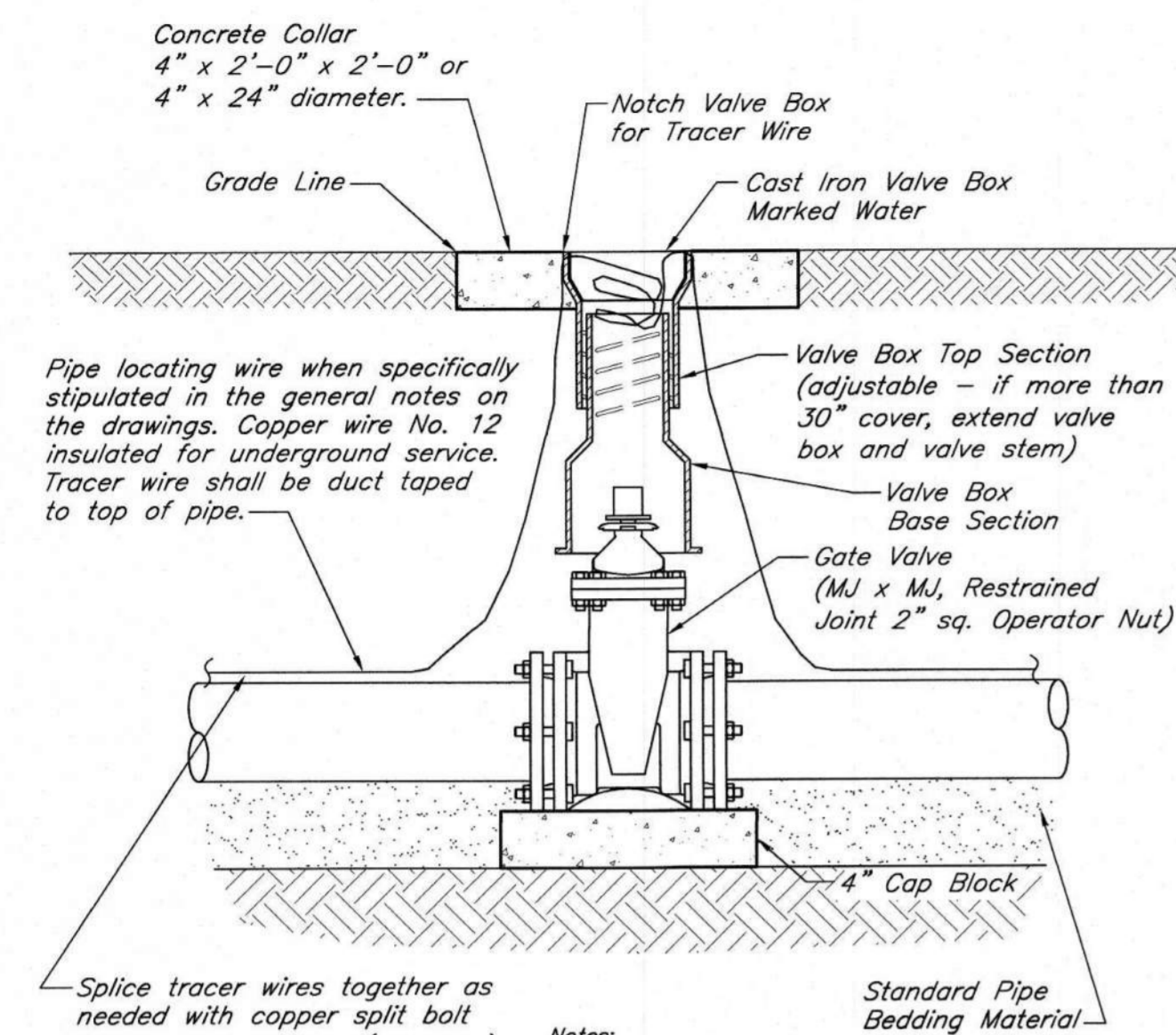


1. When "Open-cutting" of State Highway is permitted, pipe laying, encasement requirements, backfill placement, pavement replacement, etc. shall be as required by the encroachment permit issued by the Kentucky Transportation Cabinet (KYTC). By reference, such permit(s) shall become part of the contract. It shall be the CONTRACTOR'S responsibility to maintain a copy of KYTC permit(s) on the job site at all times.
2. Underground utilities on state right of way shall be installed at a minimum depth of 42" under roadways, ramps, and ditch lines and 30" in all other areas within state right of way.

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



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



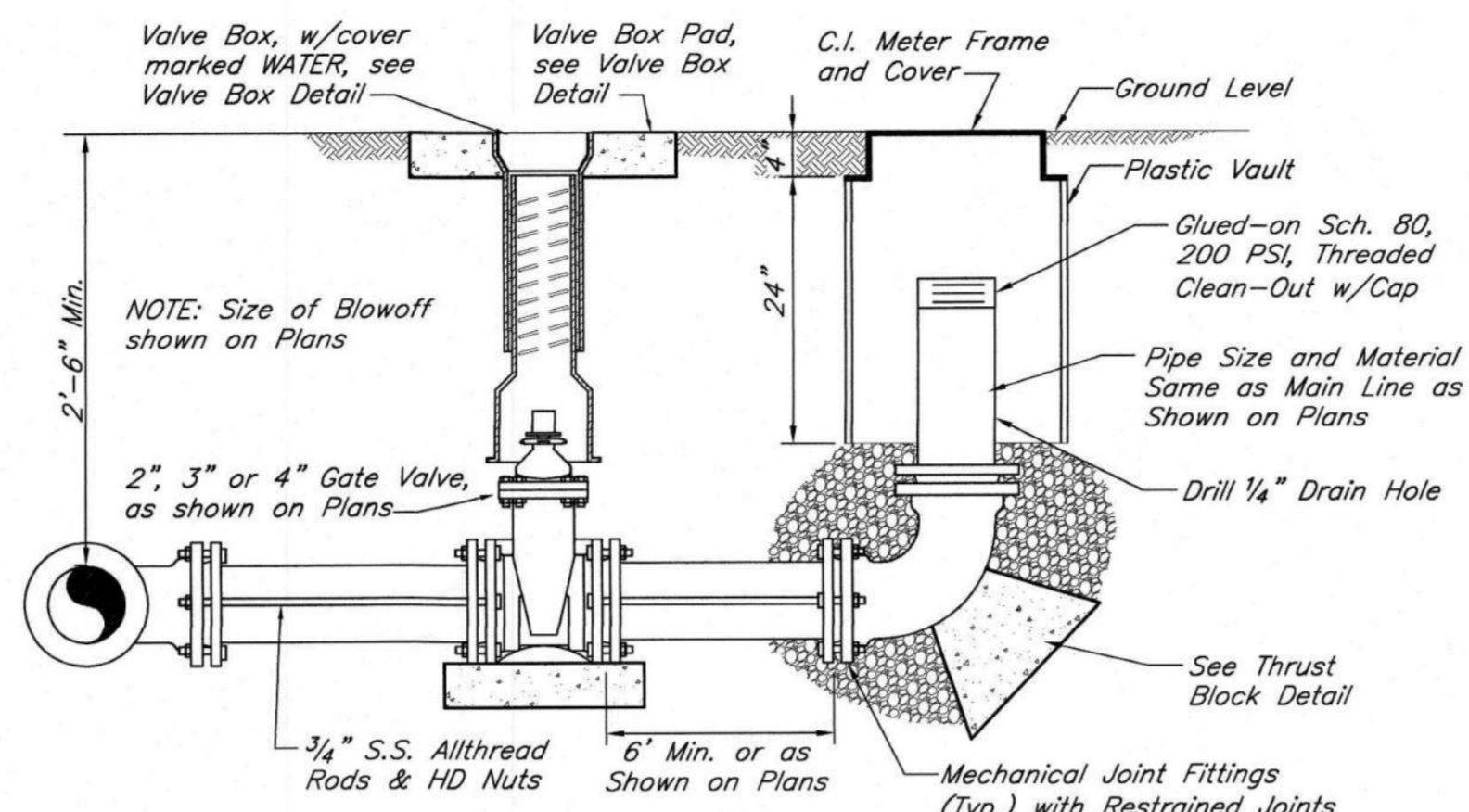
VALVE BOX INSTALLATION

July 2015 Scale: 1\"/>

- Notes:
- Concrete to be Class B (KTC Spec. 601)
 - See Specifications For Piping Materials And Piping Joints 2229 (or equal)

Pipe locating wire when specifically stipulated in the general notes on the drawings. Copper wire No. 12 insulated for underground service. Tracer wire shall be duct taped to top of pipe.

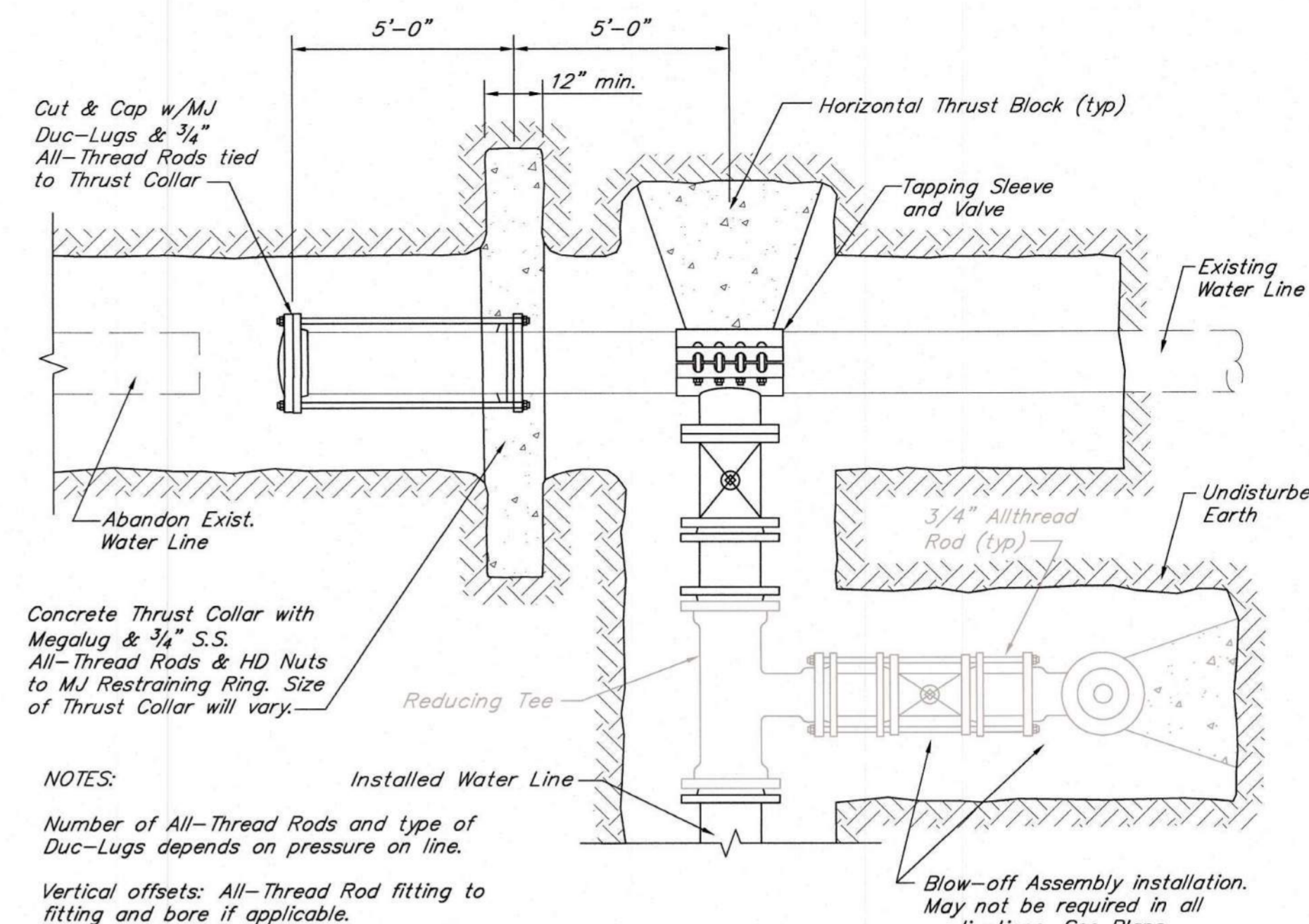
Splice tracer wires together as needed with copper split bolt screws. ILSCO LK-B (or equal). Tape splices with Mastic Tape and Pads. JM Scotch-Seal 2229 (or equal)



BLOWOFF ASSEMBLY DETAIL

Feb. 2015 Scale: 3/4\"/>

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



RELOCATION TIE-IN

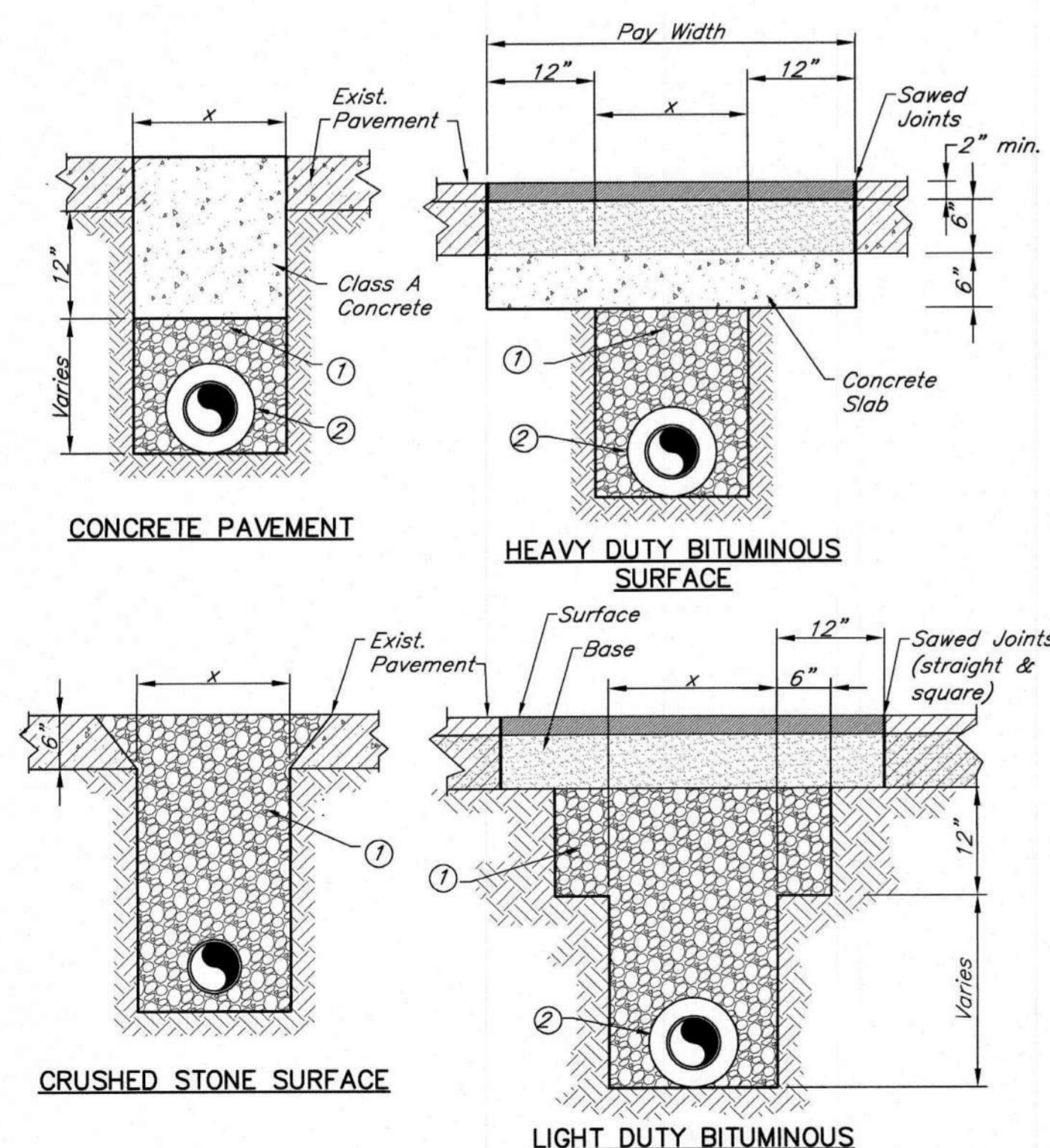
July 2015 N.T.S.

NOTES:

Number of All-Thread Rods and type of Duc-Lugs depends on pressure on line.

Vertical offsets: All-Thread Rod fitting to fitting and bore if applicable.

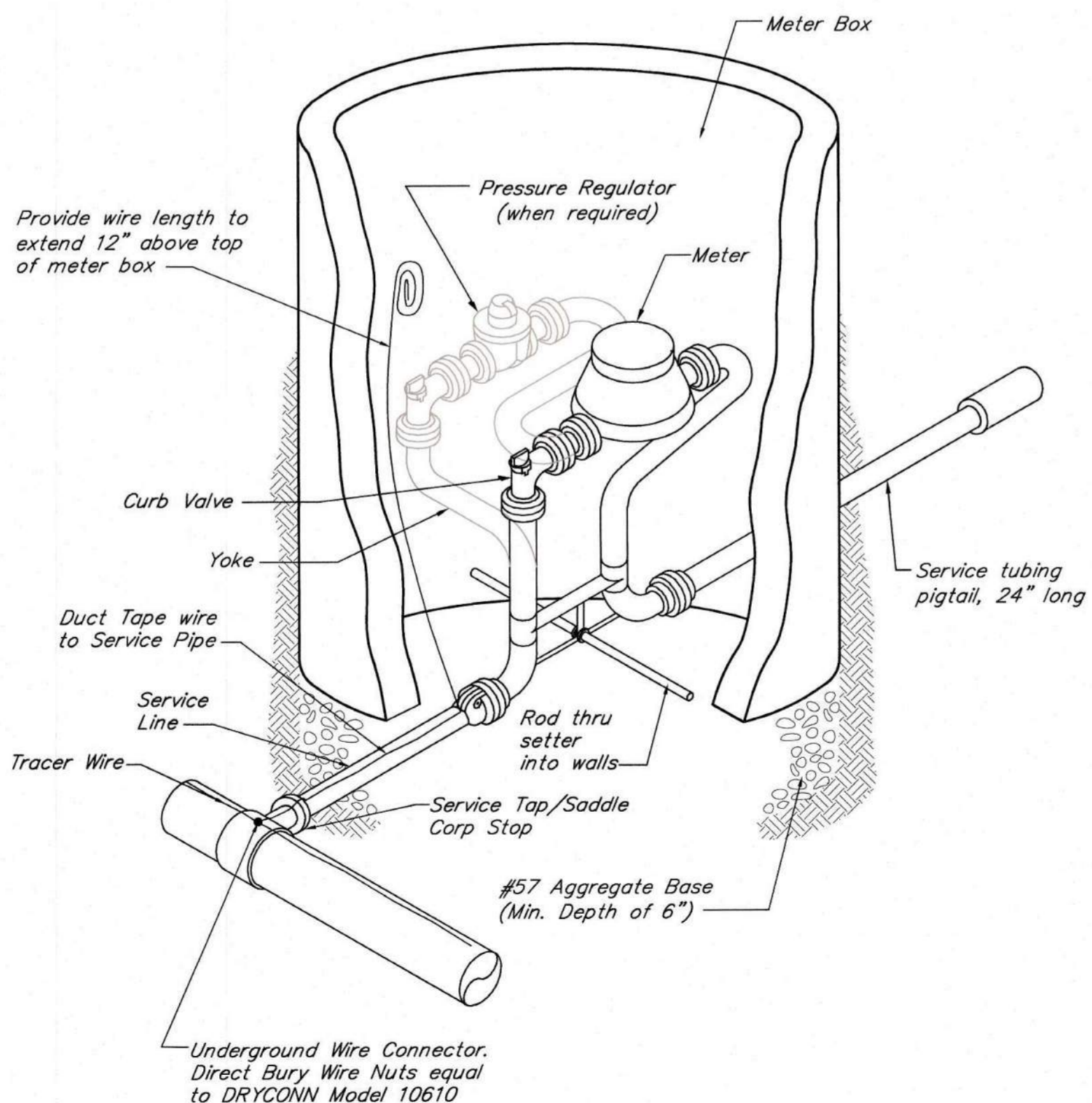
Blow-off Assembly installation. May not be required in all applications. See Plans.



PAVEMENT REPLACEMENT

Mar., 2011 Scale: 3/4\"/>

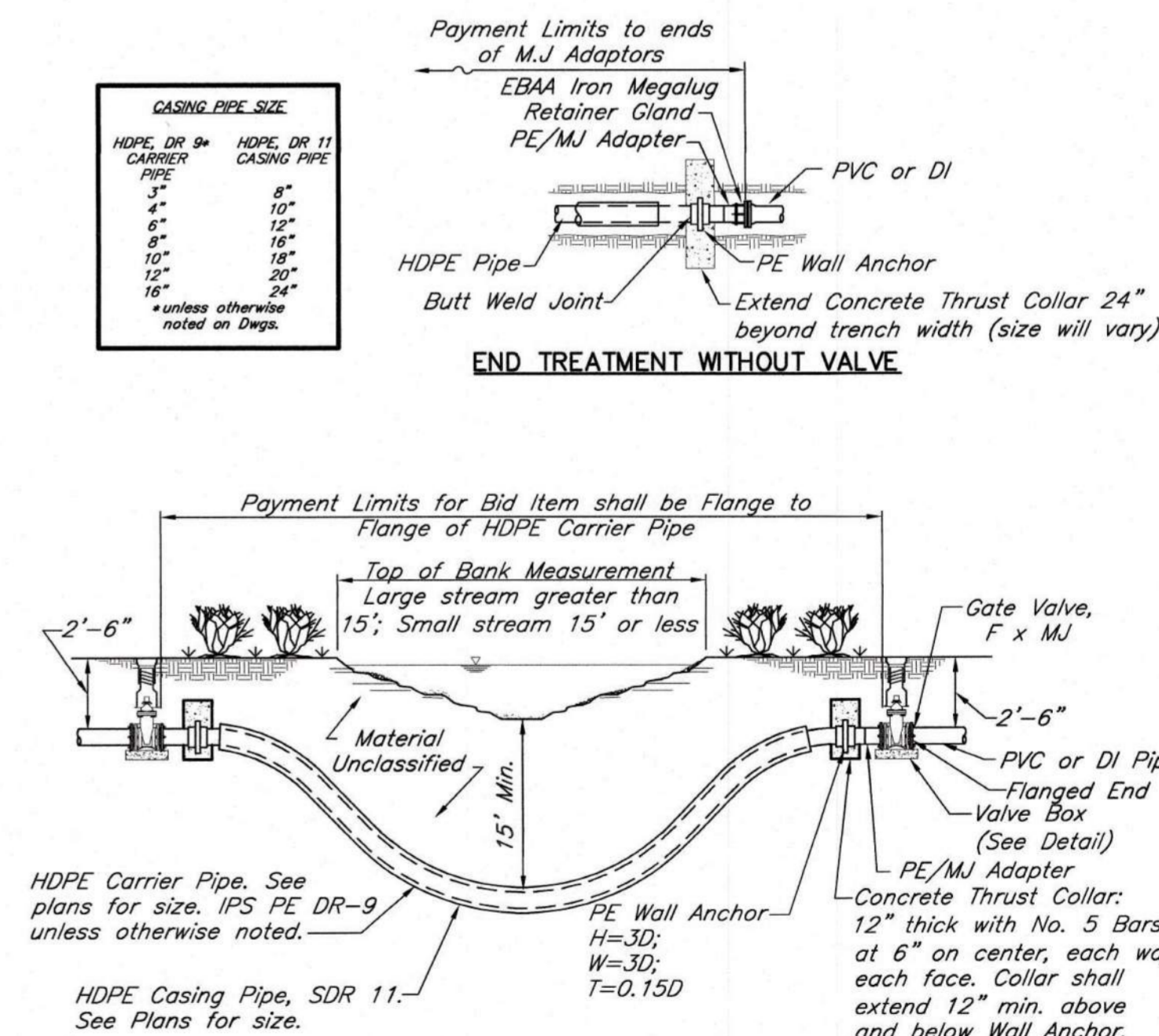
- NOTES:
- The max. allowable distance for dimension "X" shall be calculated as follows: X = 24" + Pipe Dia.
 - Concrete slab under Bituminous surface to extend 12-inches on each side to trench
 - Replace Concrete or Bit. Pavement with new pavement same thickness as existing pavement.
 - Casing Pipe 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.



METER SETTING

Mar., 2011 N.T.S.

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

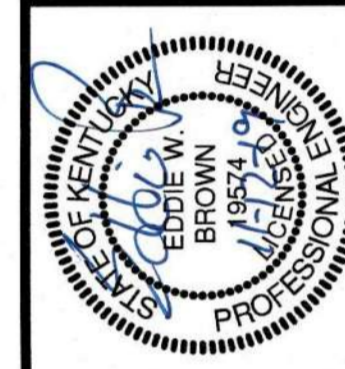


DIRECTIONAL BORE FOR STREAM CROSSINGS

Feb., 2013 Scale: 3/16\"/>

- NOTE: Payment shall be "Lump Sum" for specific individual Bid Items for Directional Bores of large stream crossings and/or 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 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 affecting the unit price, if a line is deleted or shortened.

**SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 IMPROVEMENTS & VARIOUS
PUMP STATION REPLACEMENTS**



DRAWN BY: IKP
CHECKED BY: EWB
DATE: AUG. 2016
SCALE: As Noted
REVISIONS

KENVIRONS, INC.
FRANKFORT, KENTUCKY

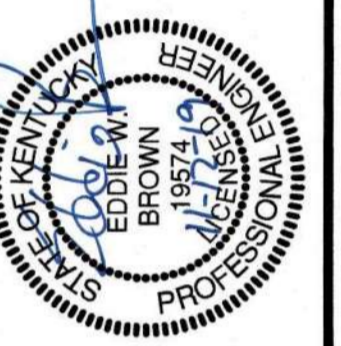


PROJECT NO.
2016173

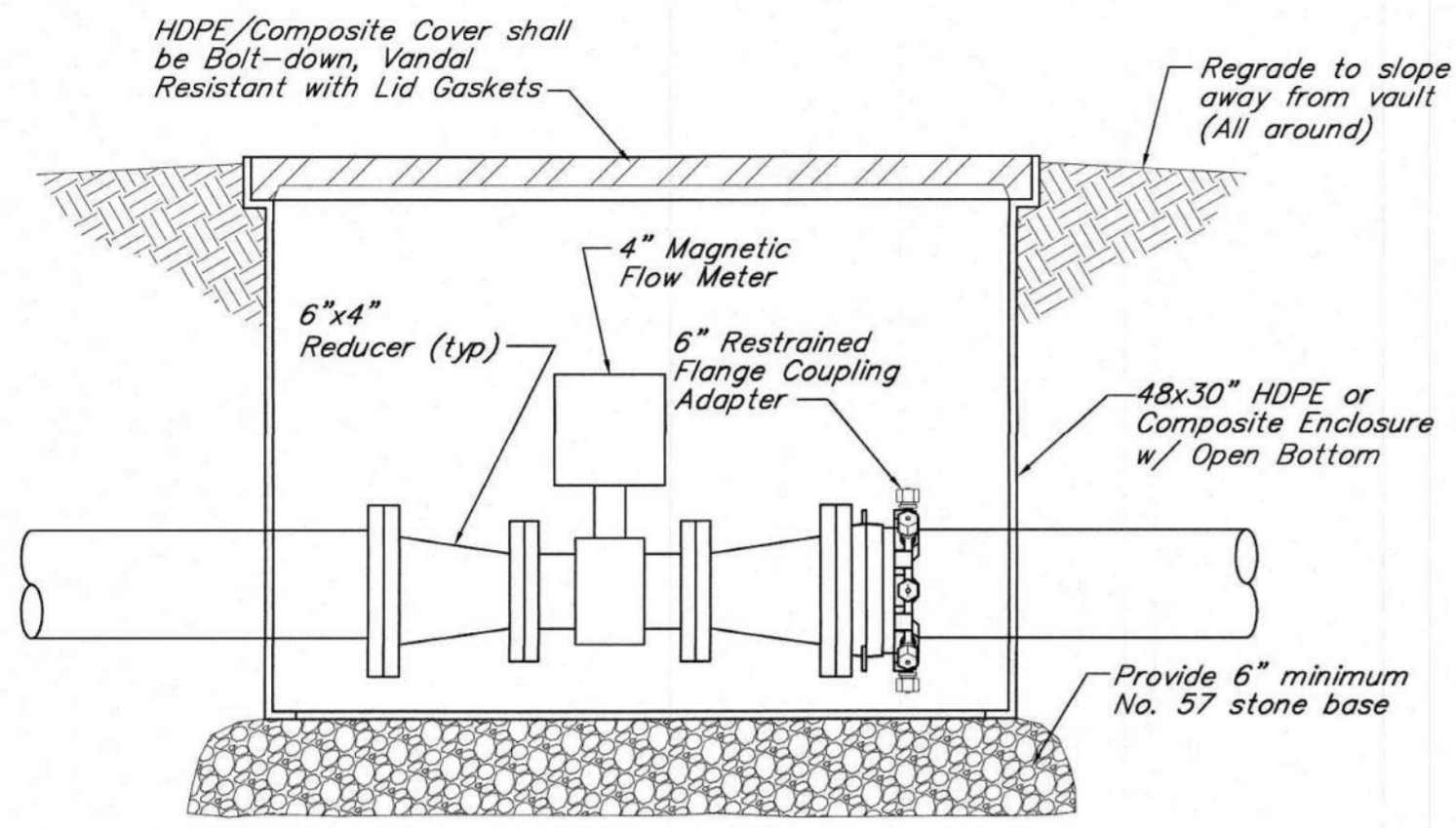
SHEET NO.
D-2

MISCELLANEOUS DETAILS

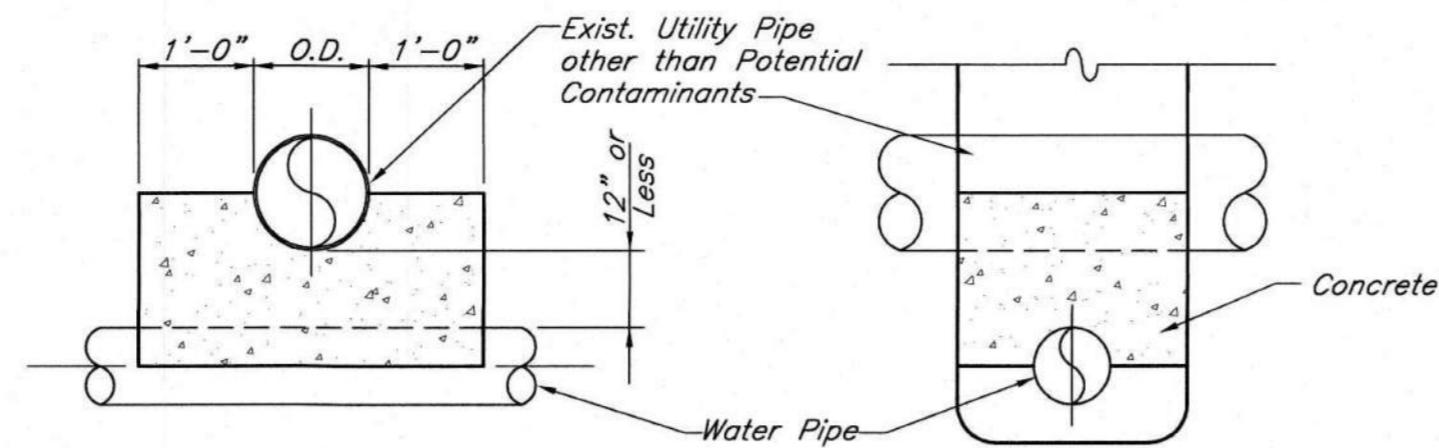
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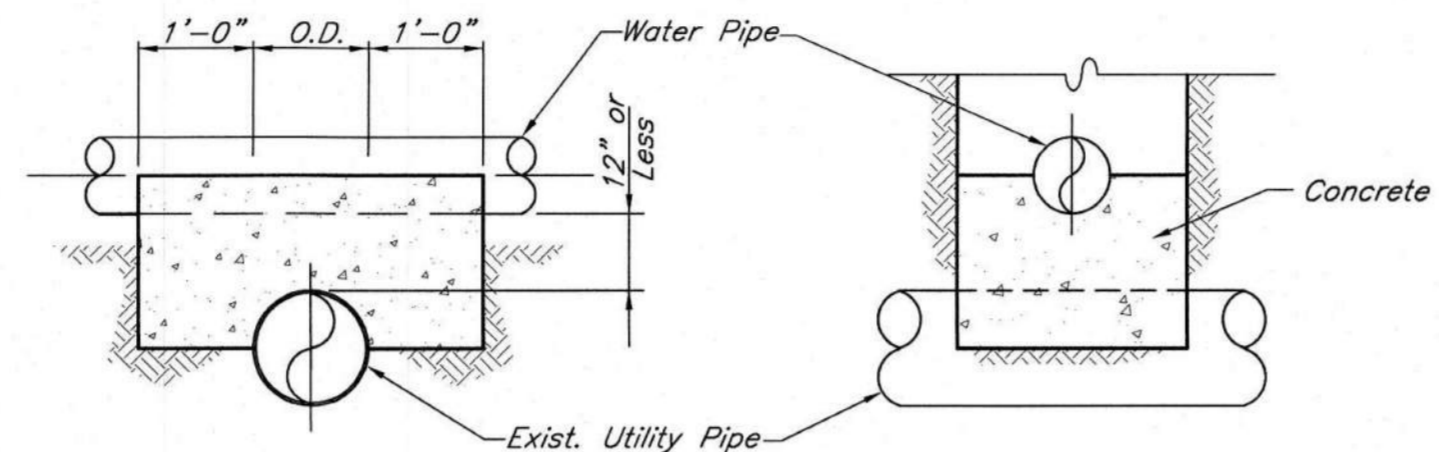
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CHECKED BY: EWB
DATE: AUG. 2016
SCALE: As Noted
REVISIONS



MAGNETIC FLOW METER
1"=1'-0"



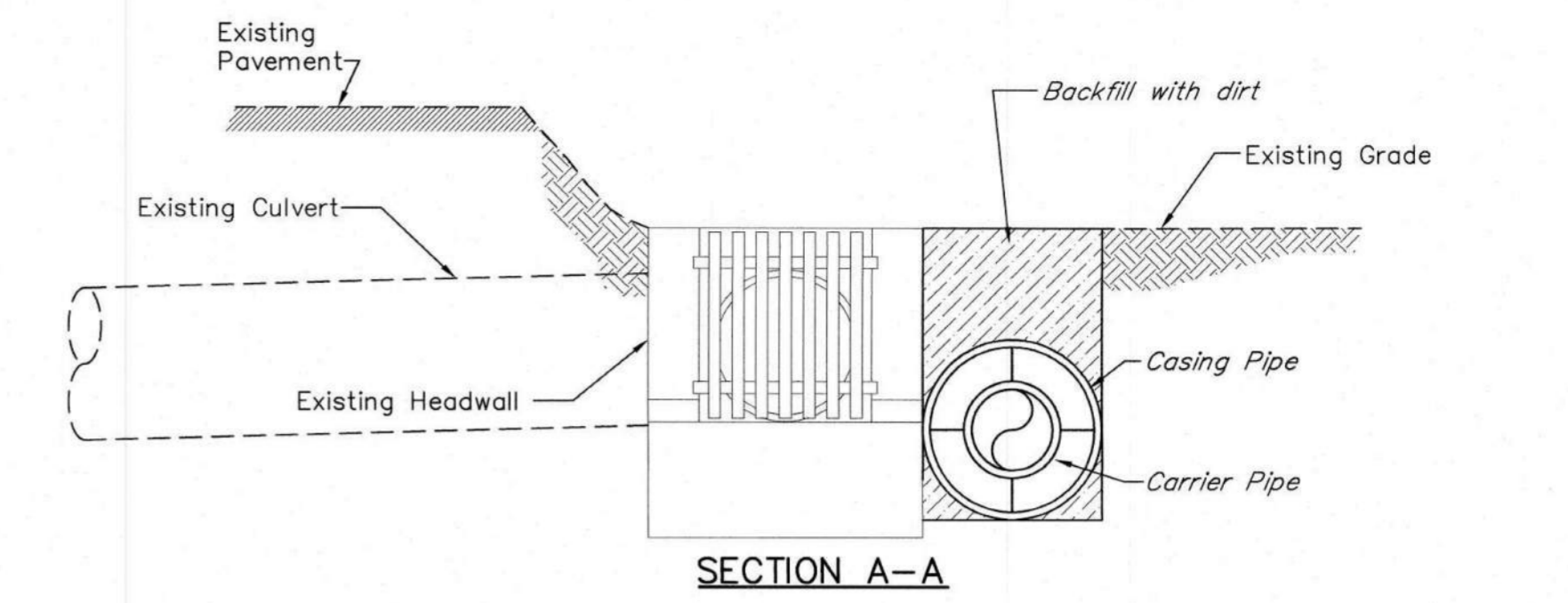
SIDE VIEW (BELOW) END VIEW (BELOW)



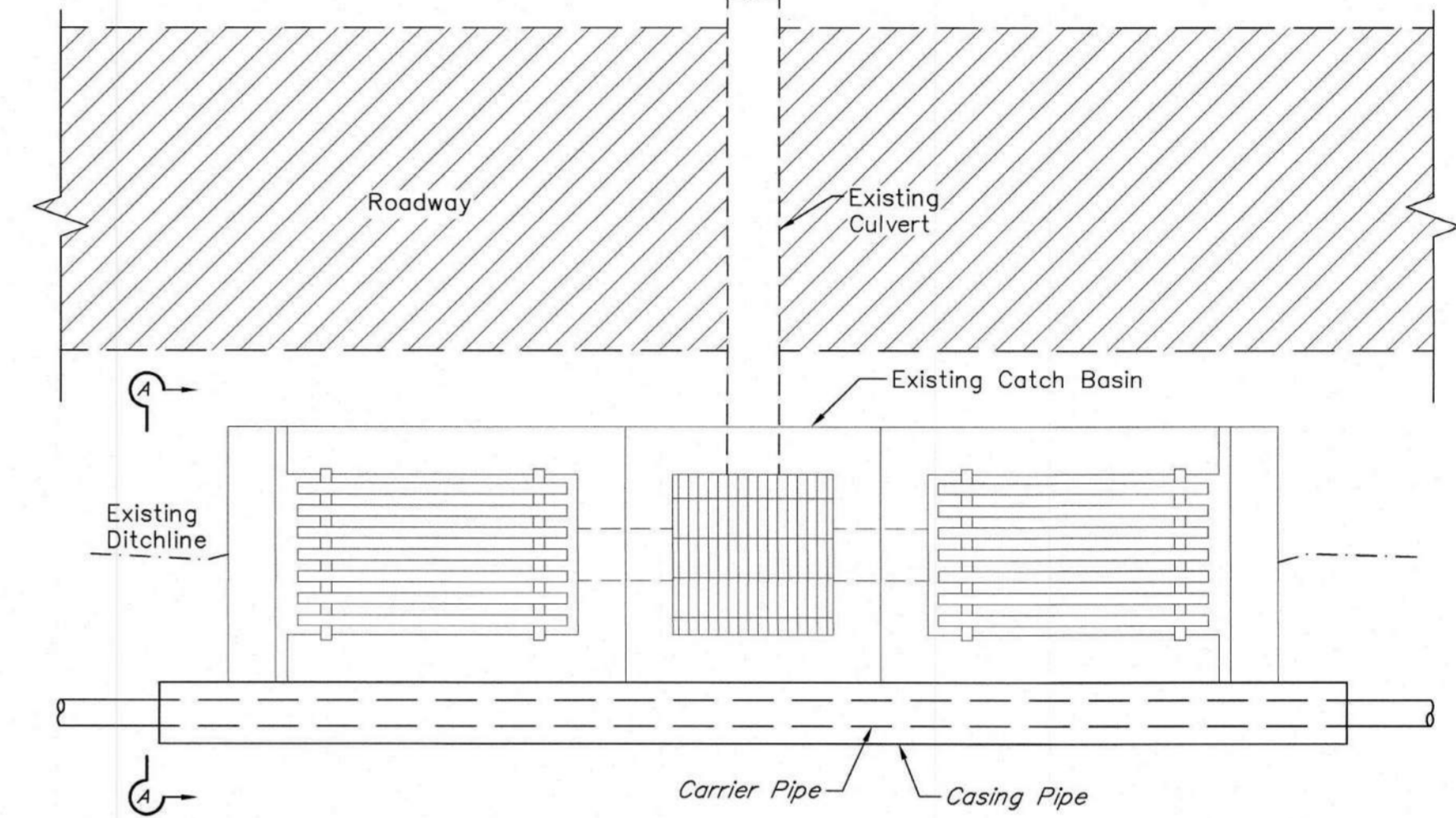
SIDE VIEW (ABOVE) END VIEW (ABOVE)

- NOTES:**
- Concrete shall be used when clearance between Water Line and Utility Pipe is 12" or less.
 - "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".

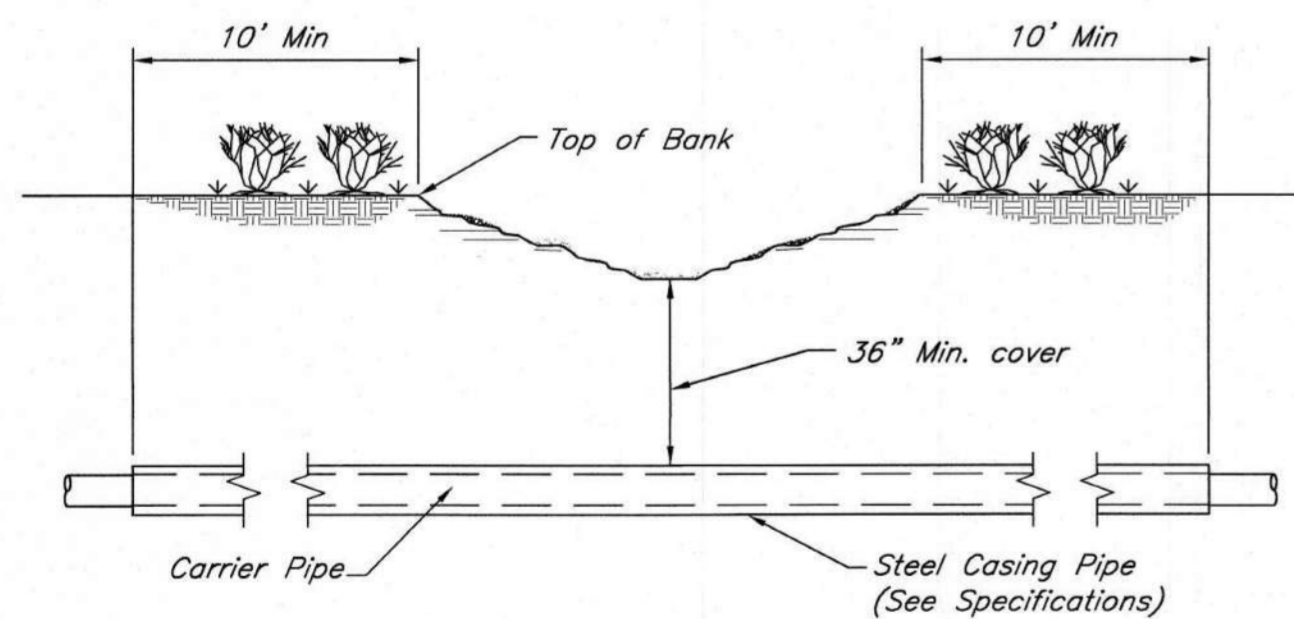
UTILITY CROSSING
July 2015 N.T.S.



SECTION A-A

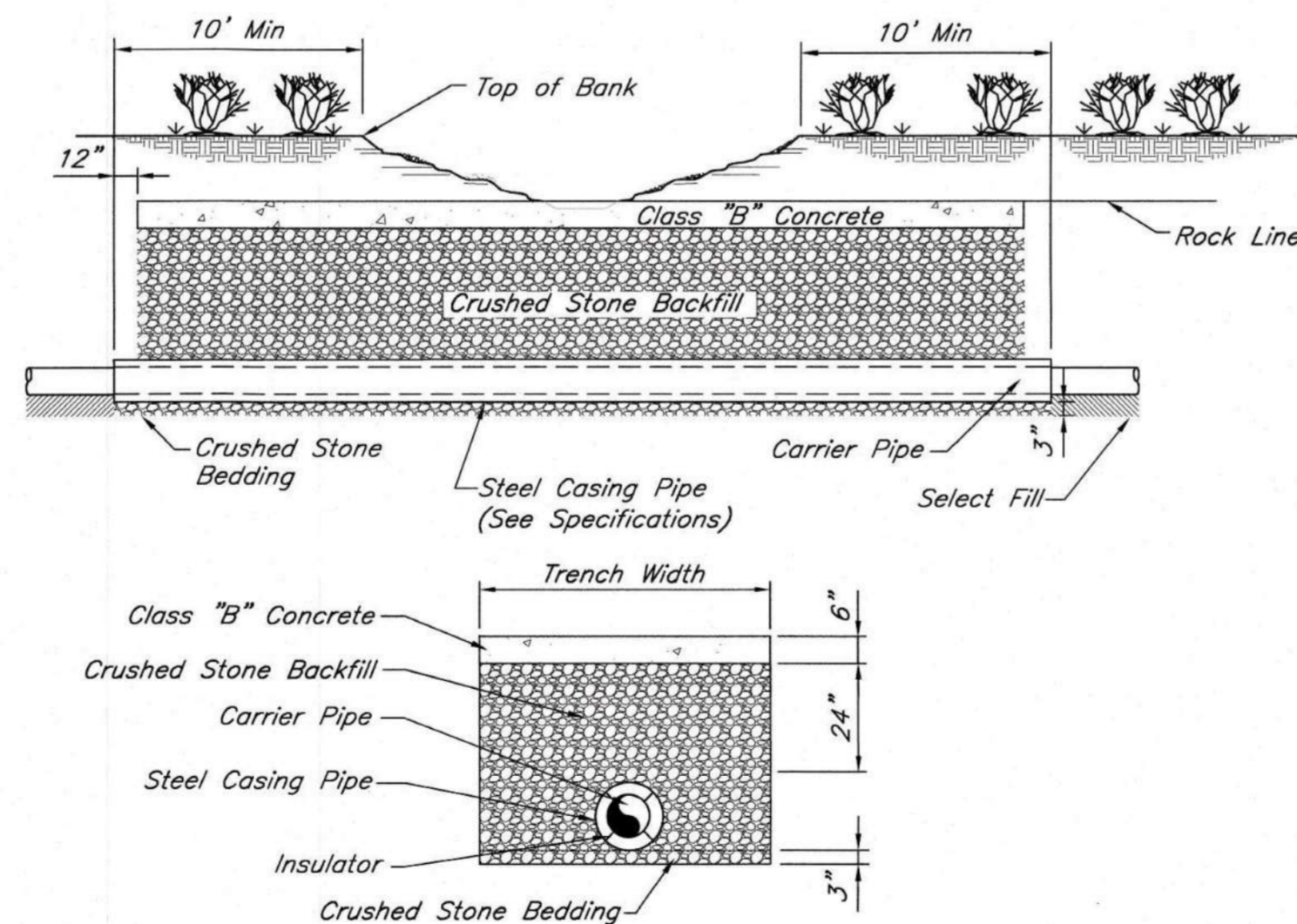


DITCHLINE AT HEADWALL DETAIL
July 2019 N.T.S.



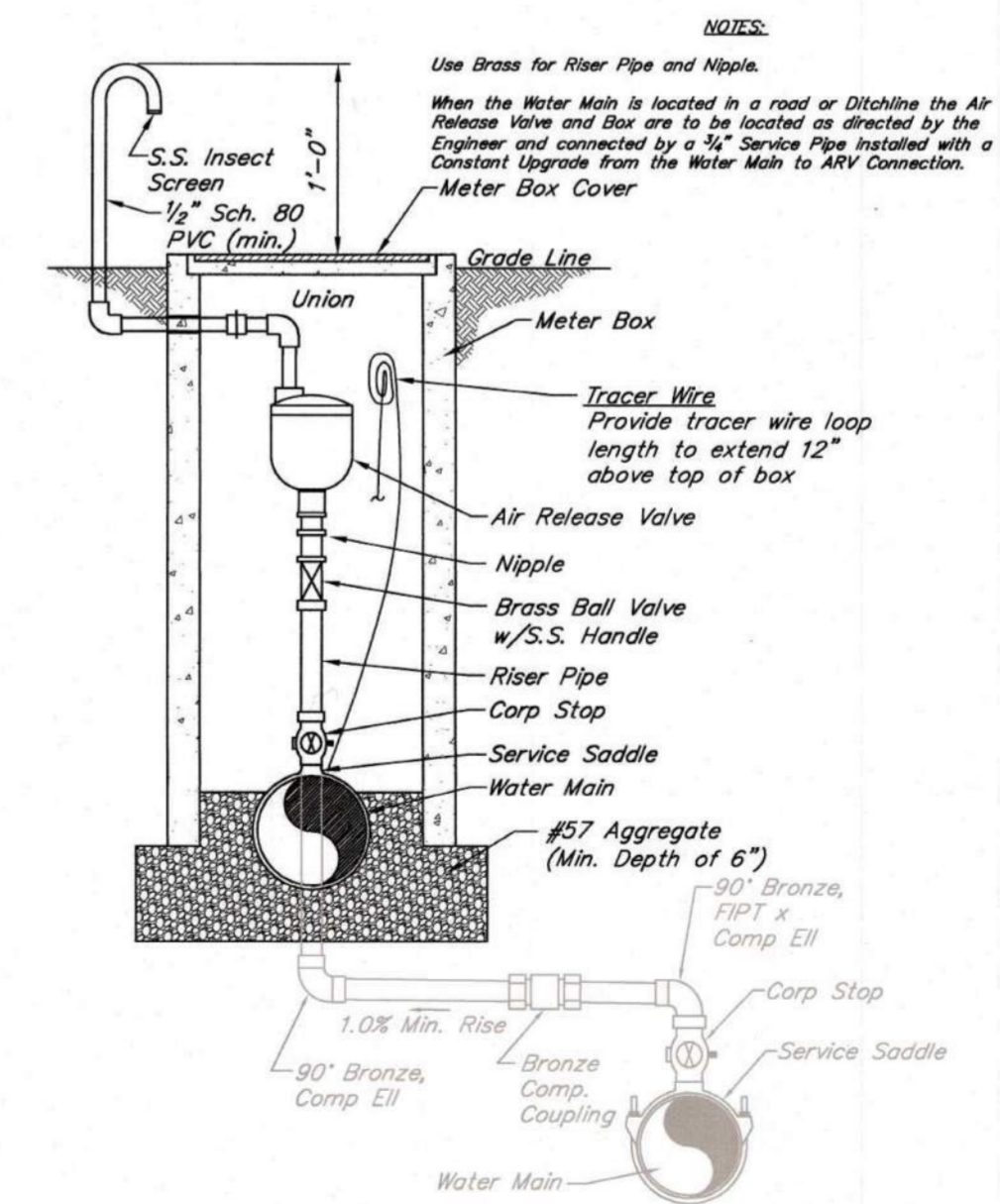
Note: This Crossing Shall Be Made With Appropriate Fittings to prevent Excess Joint Deflection. Normally Four (4) Fittings will be required. The Contractor, at his option, may provide extra approach Trench Depth to avoid use of Bends. Allowable Deflection of Pipe may not be exceeded under any situation.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



AUTOMATIC ARV INSTALLATION
March 2015 N.T.S.

DESIGN CRITERIA

Table with 2 columns: Design Criteria and Value. Includes Building Code (ASCE 7 / 2018 Kentucky Building Code), County (Pulaski), Occupancy Category (III), Floor Loads (Roof live load 100 psf), ROOF LOADS (Roof live load 20 psf), WIND LOAD DATA (Basic wind speed 120 mph), and EARTHQUAKE LOAD DATA (Seismic site class D).

MATERIAL STRENGTHS USED IN DESIGN

Table with 2 columns: Material and Strength. Lists materials like Class A concrete, Reinforcing bars, Welded wire fabric, etc., 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 4 columns: Bar size, 3,000 psi conc. lap length, 4,000 psi conc. lap length, and concrete strength. Lists bar sizes #3 through #9 and their corresponding lap lengths.

- 8. Concrete protection for reinforcement shall be in accordance with the following table:
9. The typical details on these drawings contain additional general concrete construction notes and information.
10. All concrete shall be reinforced unless noted otherwise.

CONCRETE MASONRY

- 1. Concrete masonry walls shown on the structural drawings are structural walls.
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".
2. Shop drawings shall be submitted for approval prior to fabrication of structural steel.
3. Structural steel members shall conform to the following specifications:

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

PREFABRICATED WOOD TRUSS CONSTRUCTION

- 1. Truss design and manufacture shall conform to the current building code authorized edition of ANS I TPI-1.
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.

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:

Table with 4 columns: Fb, Fv, Ft, FcPERP, E, Fc. Lists design stresses for structural wood.

SOUTHEASTERN WATER ASSOCIATION
KY 192 / KY 1003 WATERLINES & SANDY GAP /
DIXIE BEND PUMP STATION REPLACEMENTS



Table with 2 columns: Date and Scale. Includes fields for DATE: March, 2019 and SCALE: As Noted.

KENVIRONS, INC.
FRANKFORT, KENTUCKY



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

STRUCTURAL GENERAL NOTES

PROJECT NO. 2016173
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:

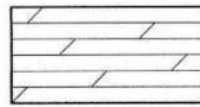
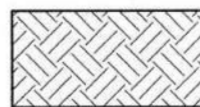
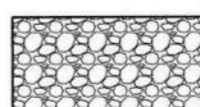
anchor dia	c to c distance	edge distance	embed distance	mat'l thickness
1/2"	3 1/2"	4"	3 1/2"	5 1/2"
5/8"	4"	5"	4"	6"
3/4"	6"	6"	5"	8"
6. If any of the following conditions are indicated or present then verify acceptability of expansion anchor type, material or finish with the structural engineer prior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

-  CONCRETE
-  LEAN CONCRETE FLOWABLE FILL GROUT

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

STRUCTURAL GENERAL NOTES

SOUTHEASTERN WATER ASSOCIATION
KY 192 / KY 1003 WATERLINES & SANDY GAP /
DIXIE BEND PUMP STATION REPLACEMENTS



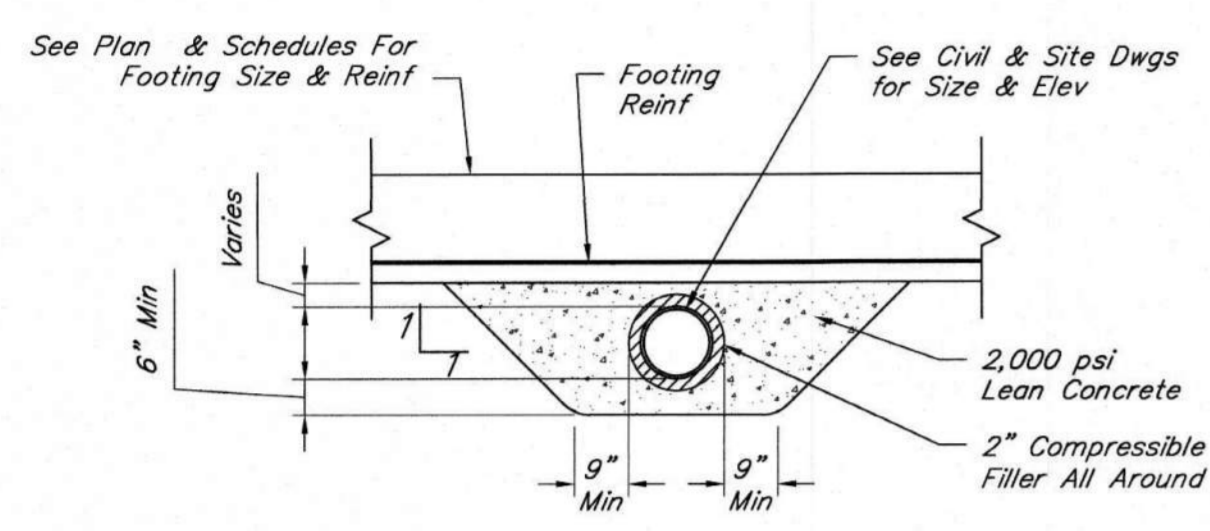
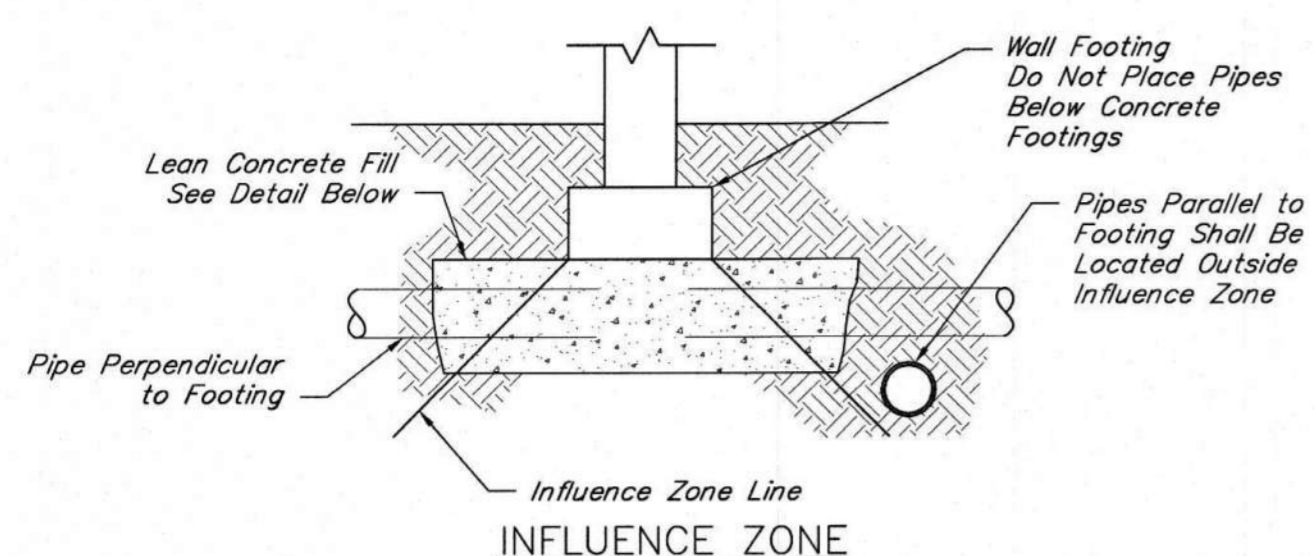
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DATE: March 2019	SCALE: As Noted
REVISIONS	

KENVIRONS, INC.
FRANKFORT, KENTUCKY



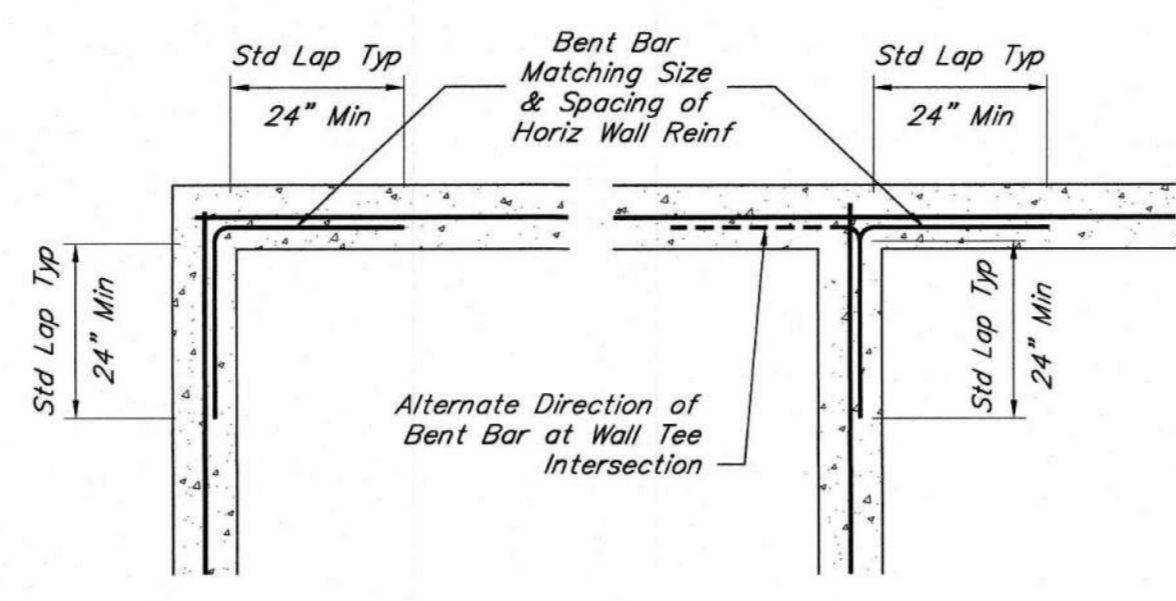
PROJECT NO.
2016173

SHEET NO.
S1



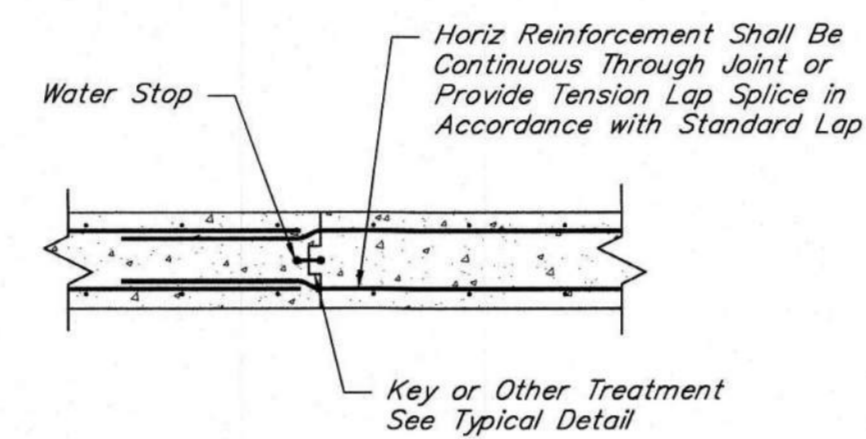
NOTE:
Provide concrete protection around utility line when line is within footing influence zone. See detail above for influence zone definition.

TYPICAL UTILITY LINE BELOW FOOTING
Not to Scale



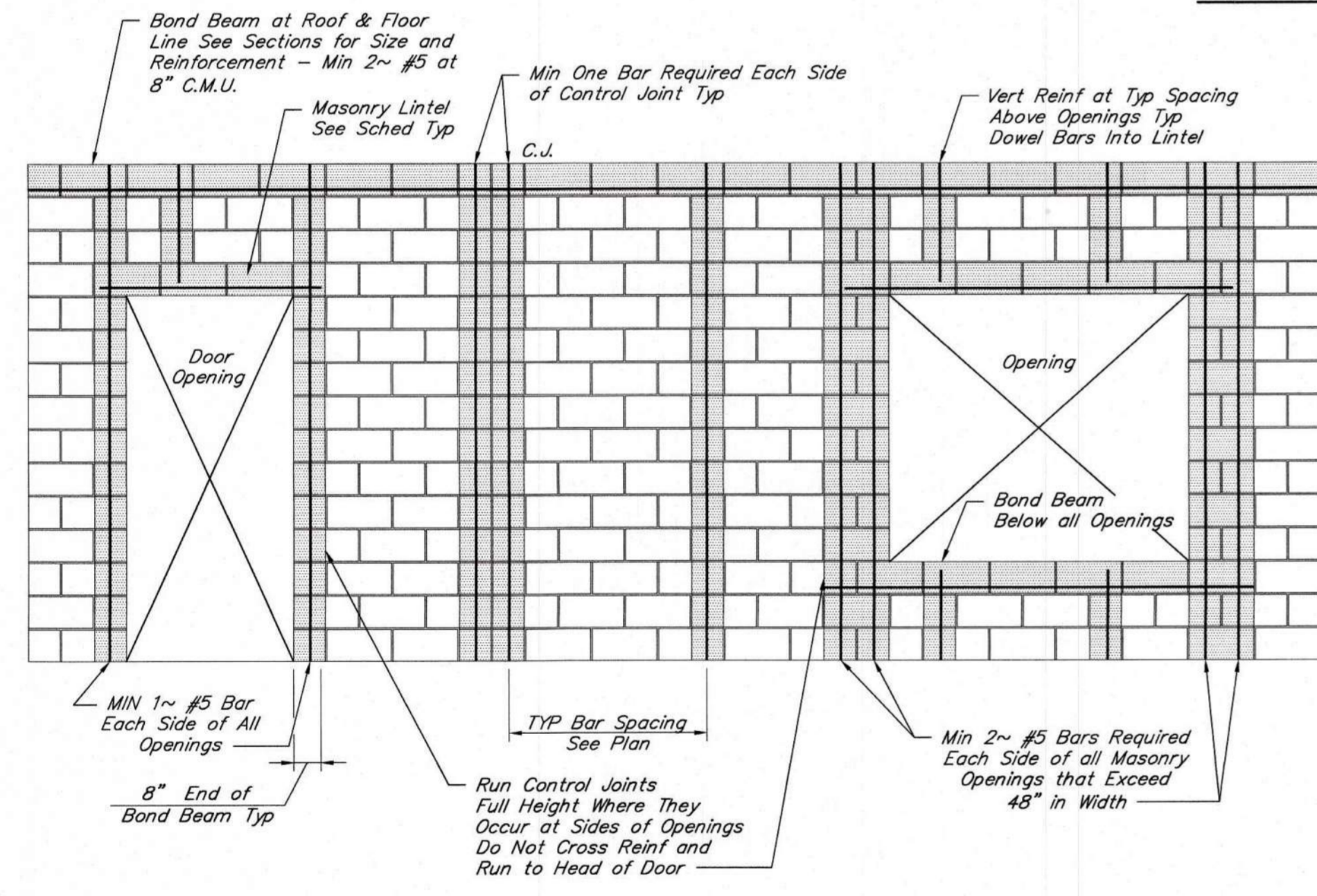
NOTES:
1. Where bar sizes differ, lap for larger size.
2. If bend radius creates problems fitting hairpins in wall, provide more smaller hairpins with equal total area to main bars.
3. Construction joints shall not occur within 5'-0" of a corner or tee unless indicated otherwise on the drawings.

TYPICAL WALL INTERSECTION REINF
Not to Scale



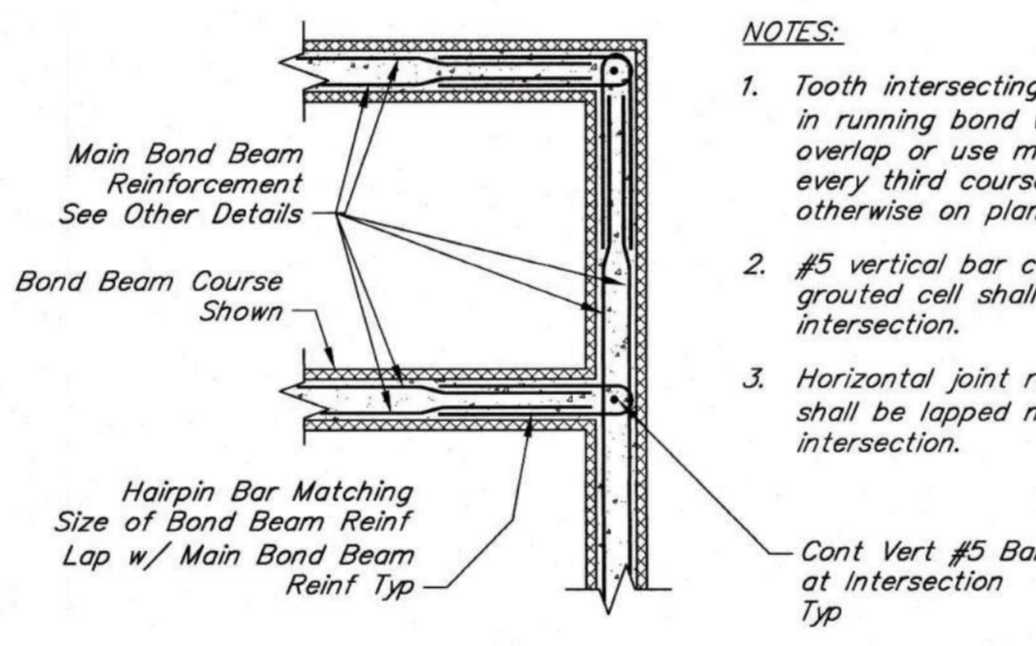
NOTES:
1. Maximum Length of Wall Pour = 40'-0".
2. Minimum 48 Hours Between Adjacent Pours.
3. See Plans for Additional Joint Locations.
4. Submit Construction Joint Location Plan For Approval Prior to Construction.
5. Do Not Form Joints Within 5'-0" of a Corner or Tee Intersection.

TYPICAL WALL CONSTRUCTION JOINT
Not to Scale



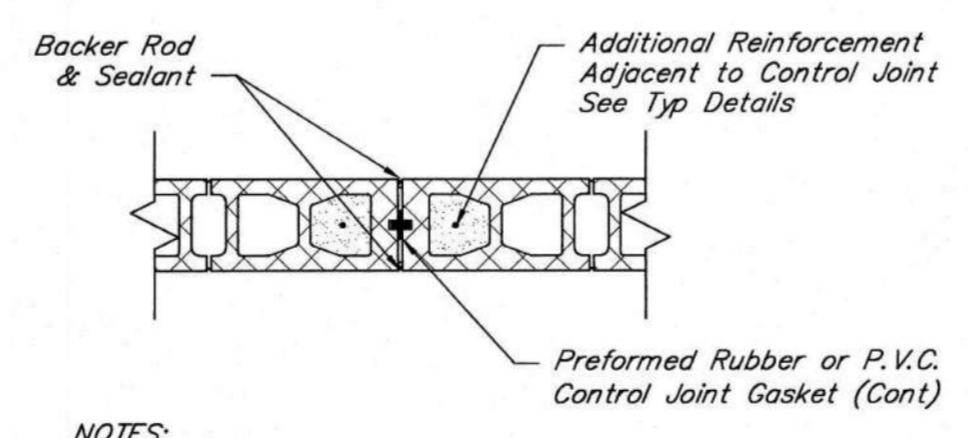
NOTES:
1. Minimum vertical wall reinforcing shall be #5 @ 2'-0" unless noted otherwise.
2. Vertical wall reinforcing shall be continuous.
3. See typical detail for dowels required at base of walls.
4. Center reinforcing bars in grouted cells unless noted otherwise.
5. Use bar positioners at minimum 4'-0"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

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



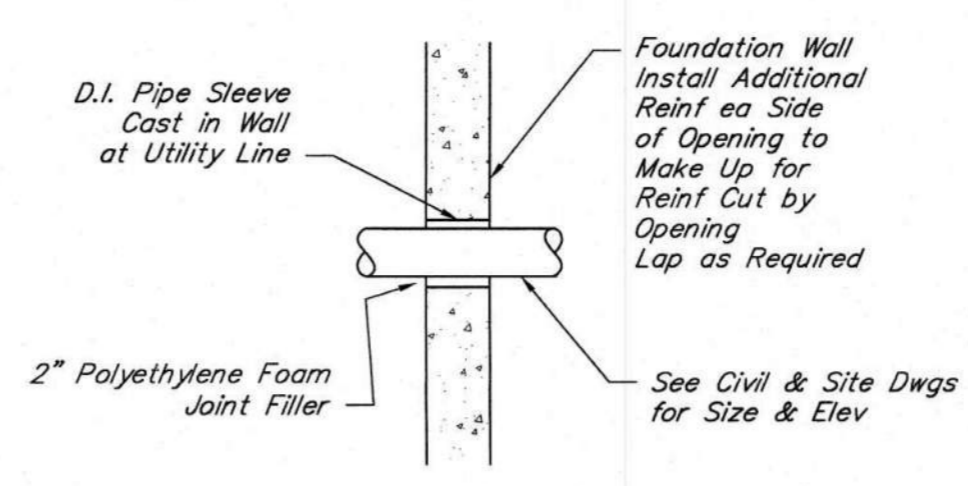
NOTES:
1. Tooth intersecting walls together in running bond with min 6" overlap or use masonry strap every third course unless noted otherwise on plans.
2. #5 vertical bar centered in grouted cell shall be installed at intersection.
3. Horizontal joint reinforcement shall be lapped min 6" at wall intersection.

TYPICAL MASY WALL INTERSECTION DETAIL
Not to Scale

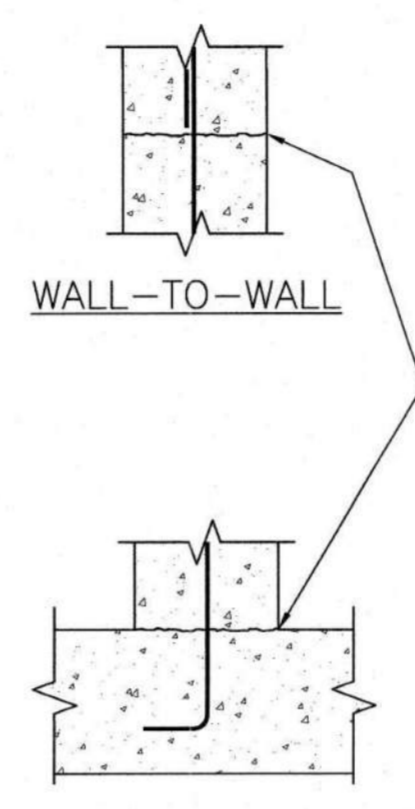


NOTES:
1. See architectural drawings for control joint locations.
2. Discontinue horizontal joint reinforcing at control joints.
3. Unless otherwise shown or noted, spacing of control joints shall not exceed 24 feet.

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



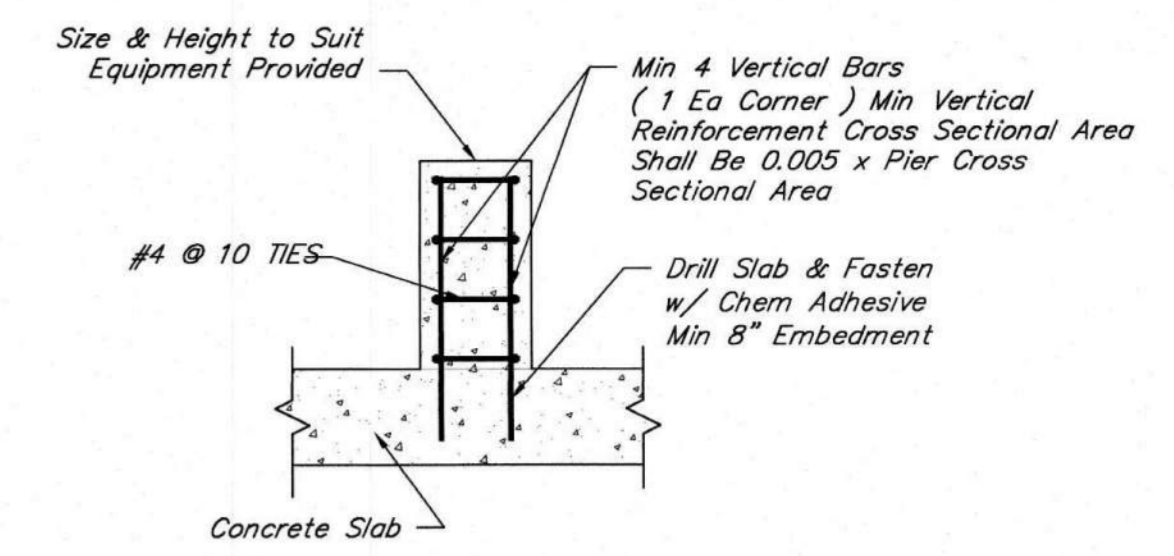
TYPICAL UTILITY LINE THRU FDN WALL
Not to Scale



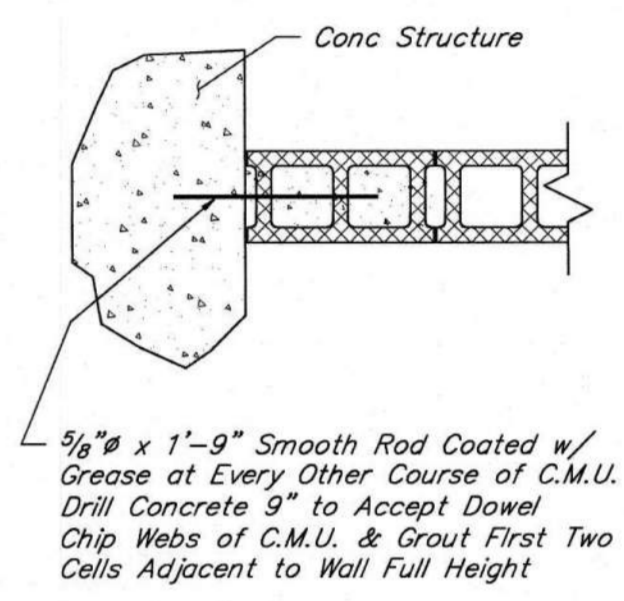
Either Provide a Keyway That is One-Third the Wall/Slab Thickness Wide By One-Sixth the Wall/Slab Thickness Deep or Remove Laitance and Roughen Joint to One Quarter Inch Average Amplitude and Apply Bonding Agent Prior to Placing Concrete

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

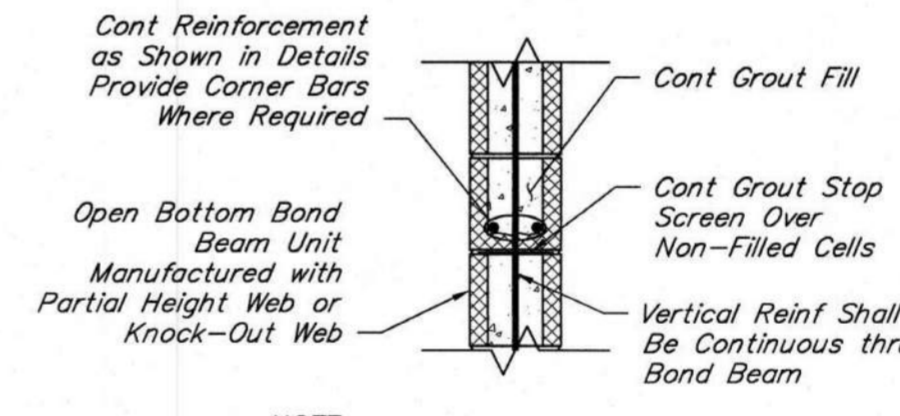
TYPICAL CONSTRUCTION JOINT CONCRETE PREPARATION
Not to Scale



TYPICAL CONCRETE EQUIPMENT PEDESTAL
Not to Scale

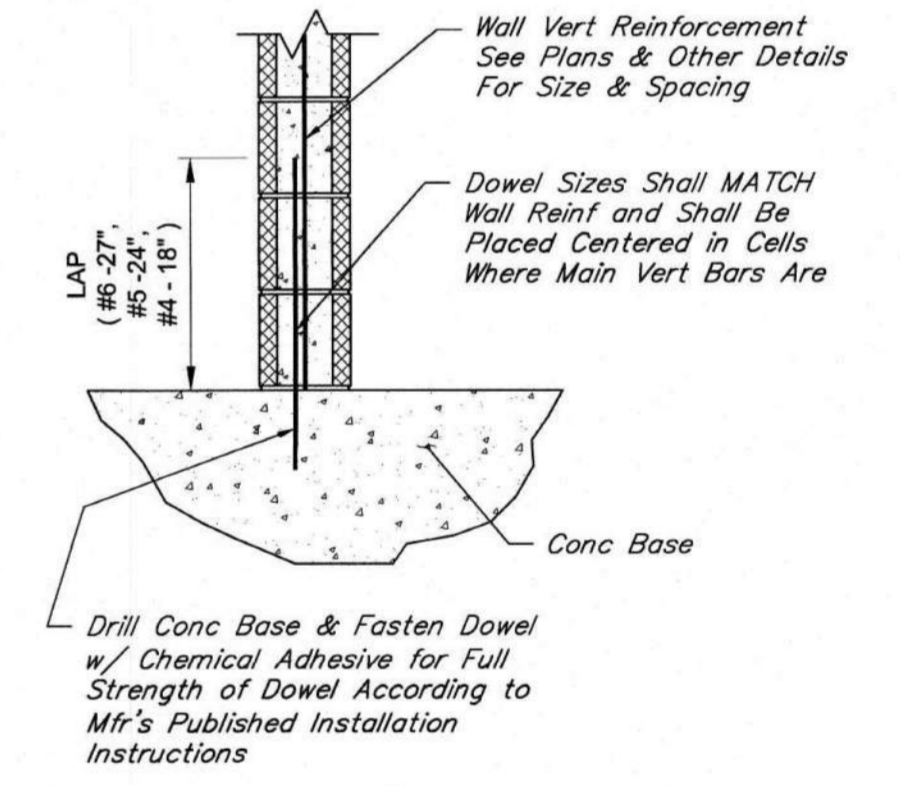


PLAN VIEW



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

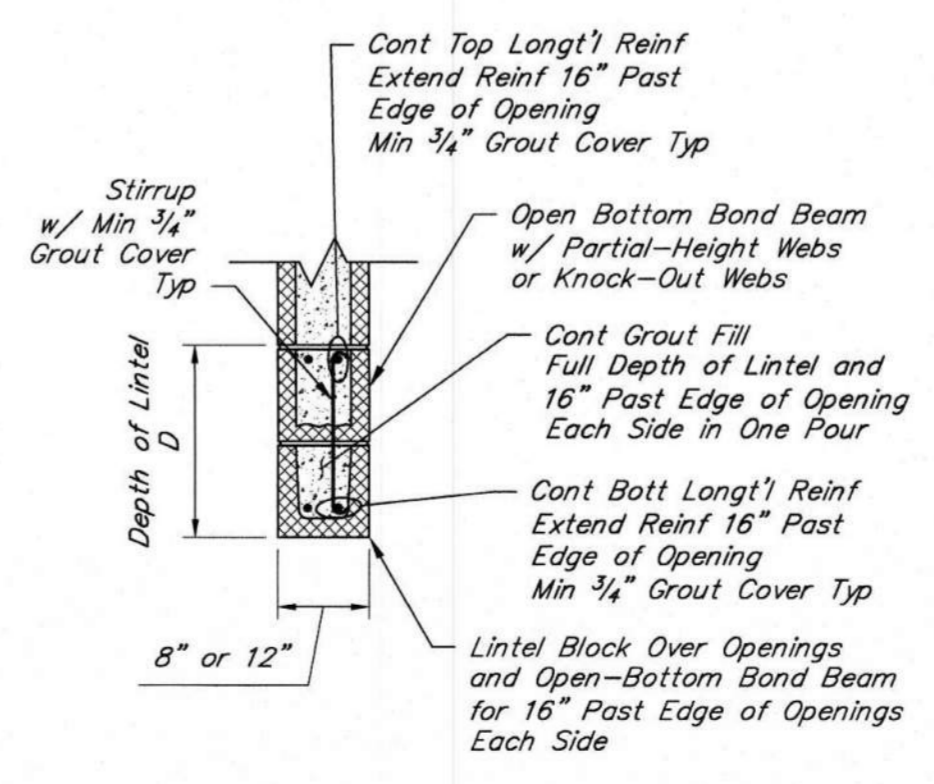


SECTION VIEW

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~#6 (12" C.M.U.)	None	None
ML-4	18'-0"	24"	2~#5 (8" C.M.U.) 2~#6 (12" C.M.U.)	2~#5	#308"

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

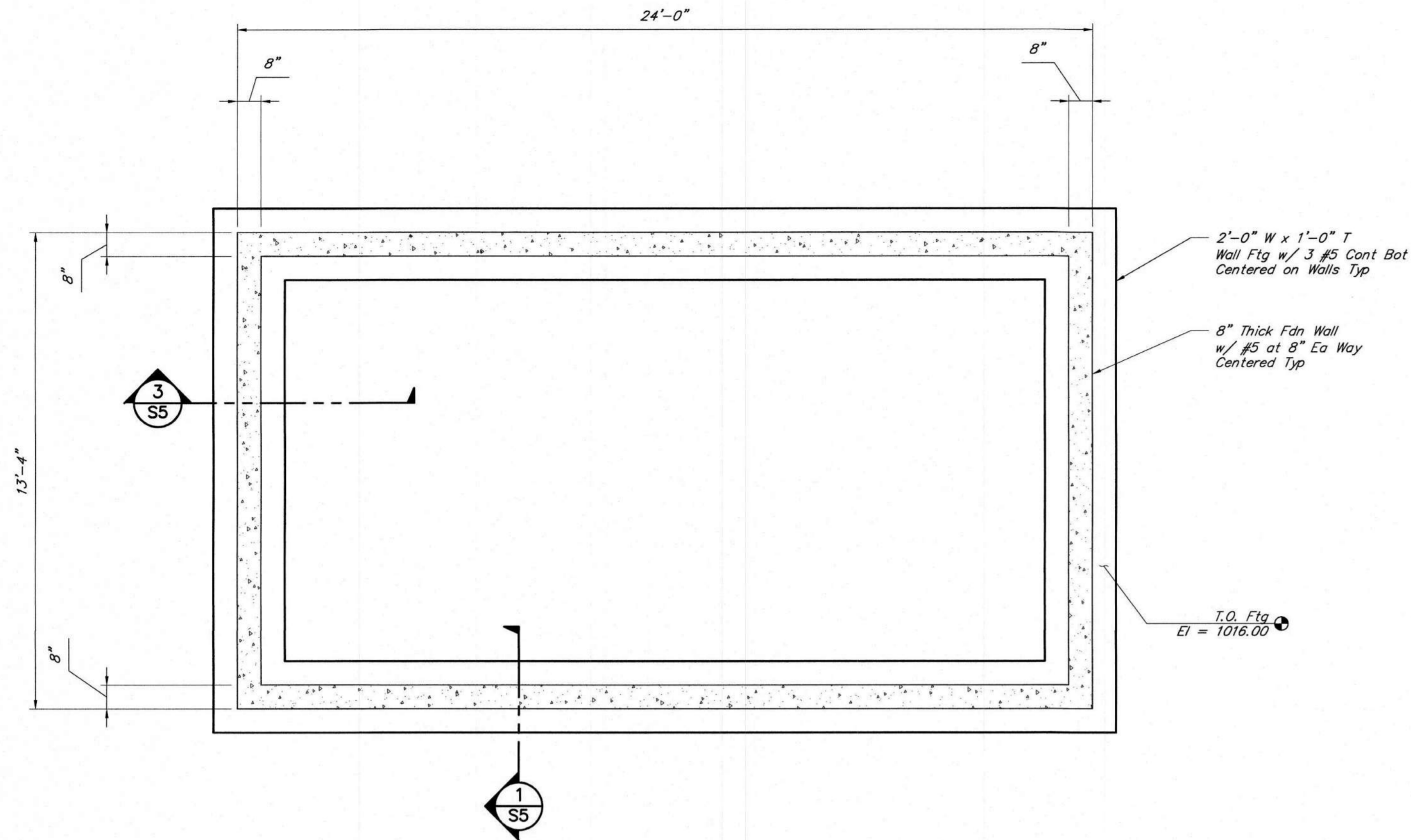


TYPICAL C.M.U. LINTEL DETAIL
Not to Scale



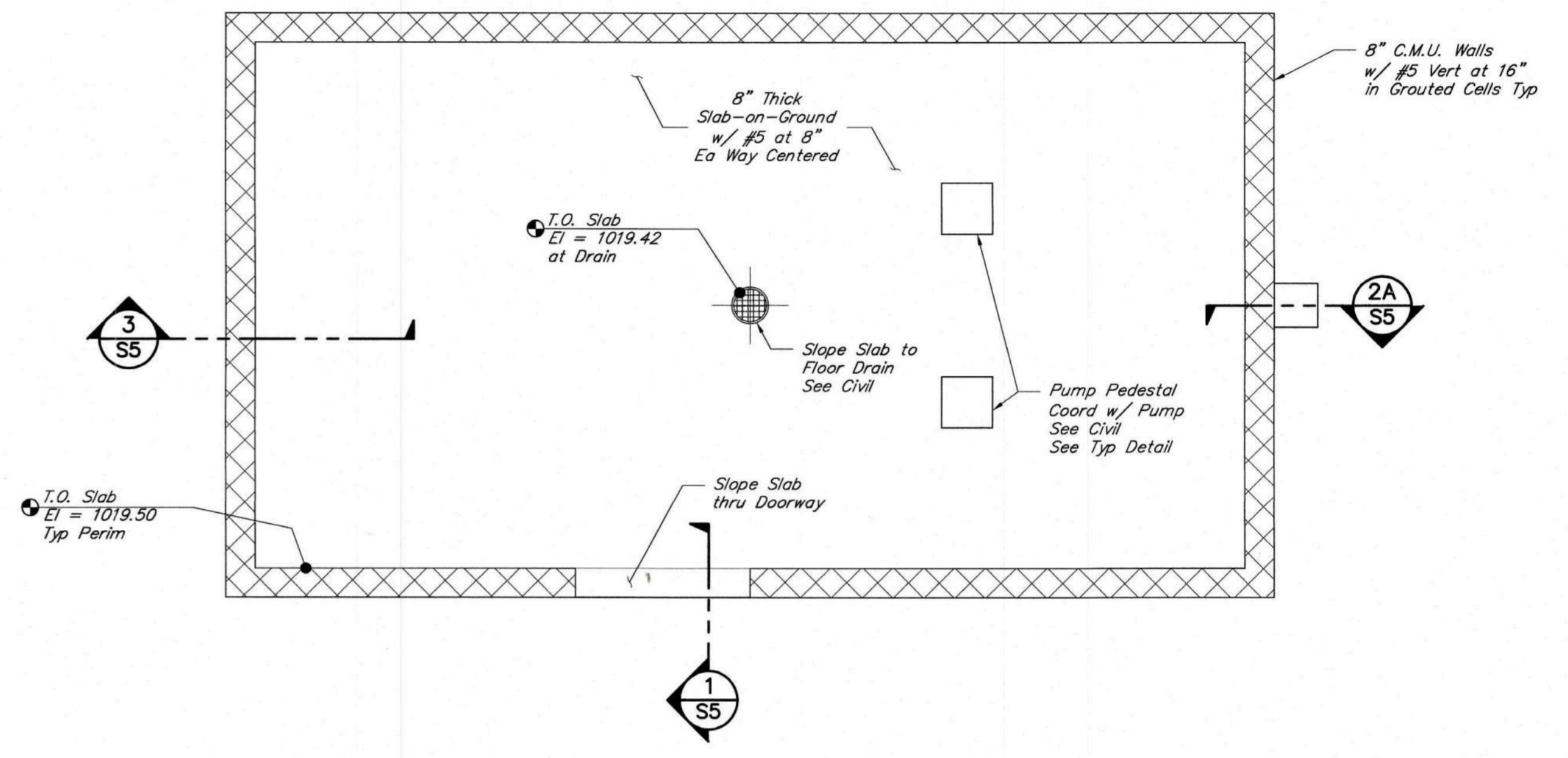
BROWN BY: MWC
CHECKED BY: EWB
CHECKED BY: DATE: March 2019
SCALE: As Noted
REVISIONS





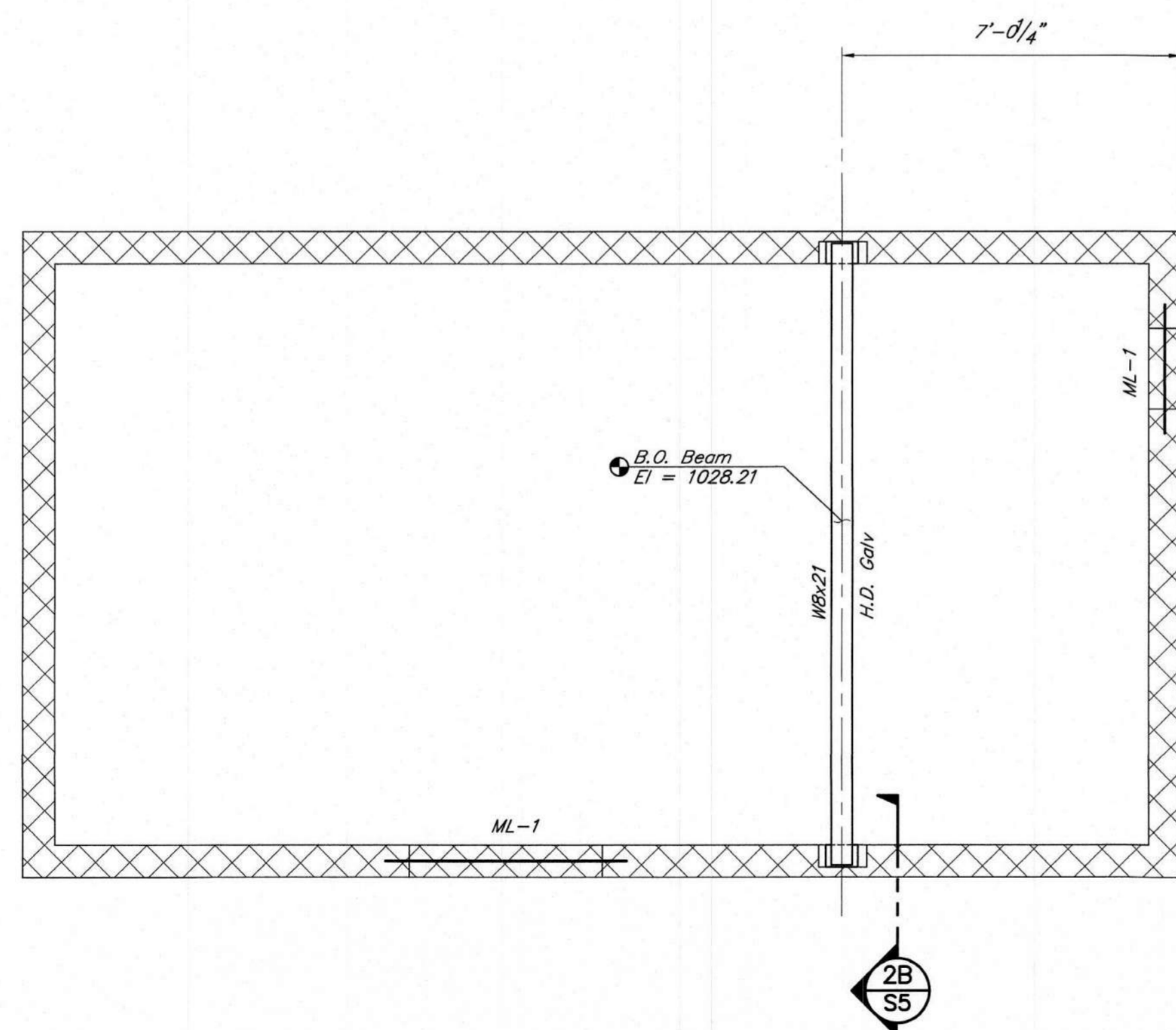
FOUNDATION PLAN
3/8"=1'-0"

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

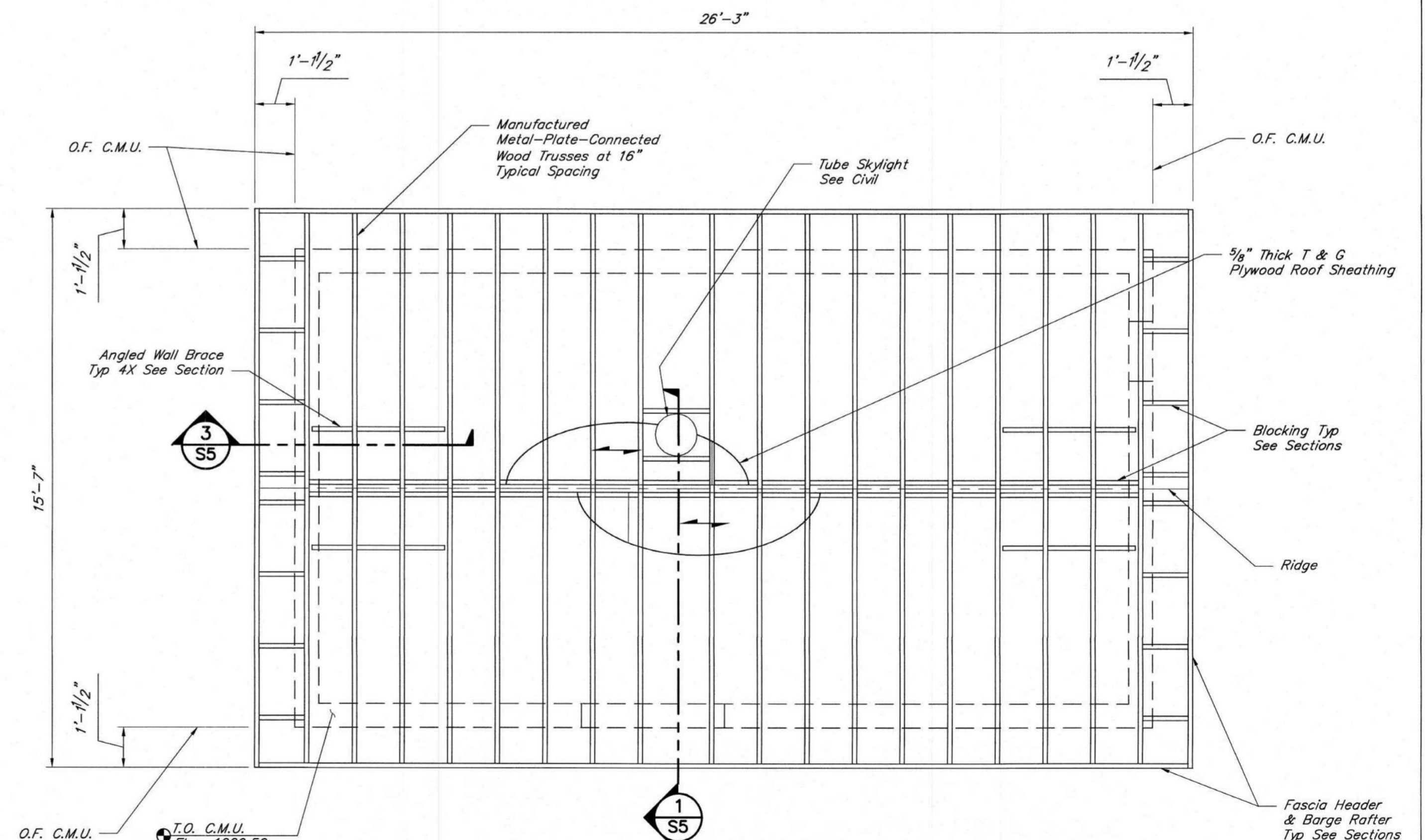


SLAB PLAN
3/8"=1'-0"

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



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



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

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

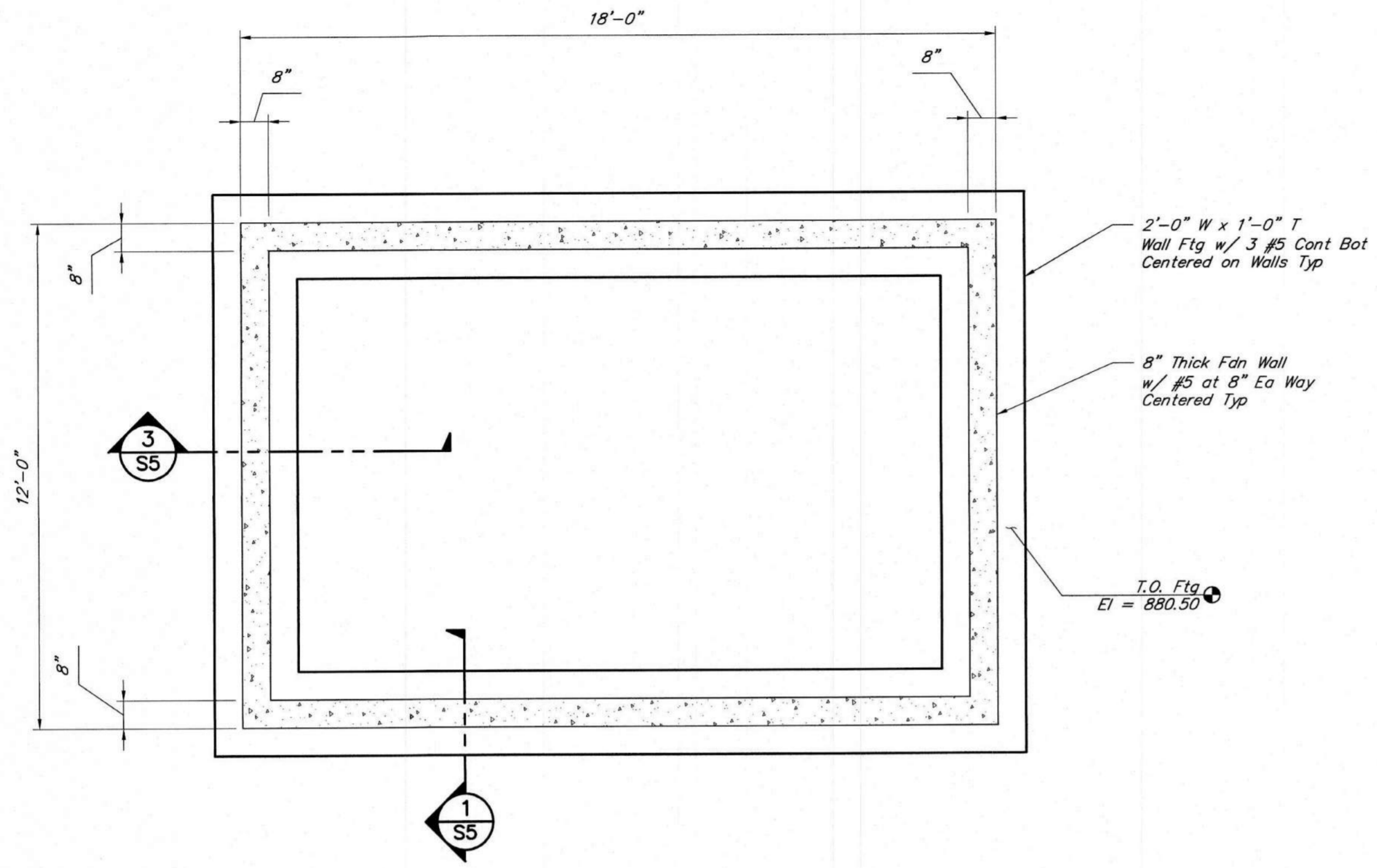


DRAWN BY: MWG	CHECKED BY: BWB
CHECKED BY: BWB	DATE: March 2019
SCALE: As Noted	REVISIONS:



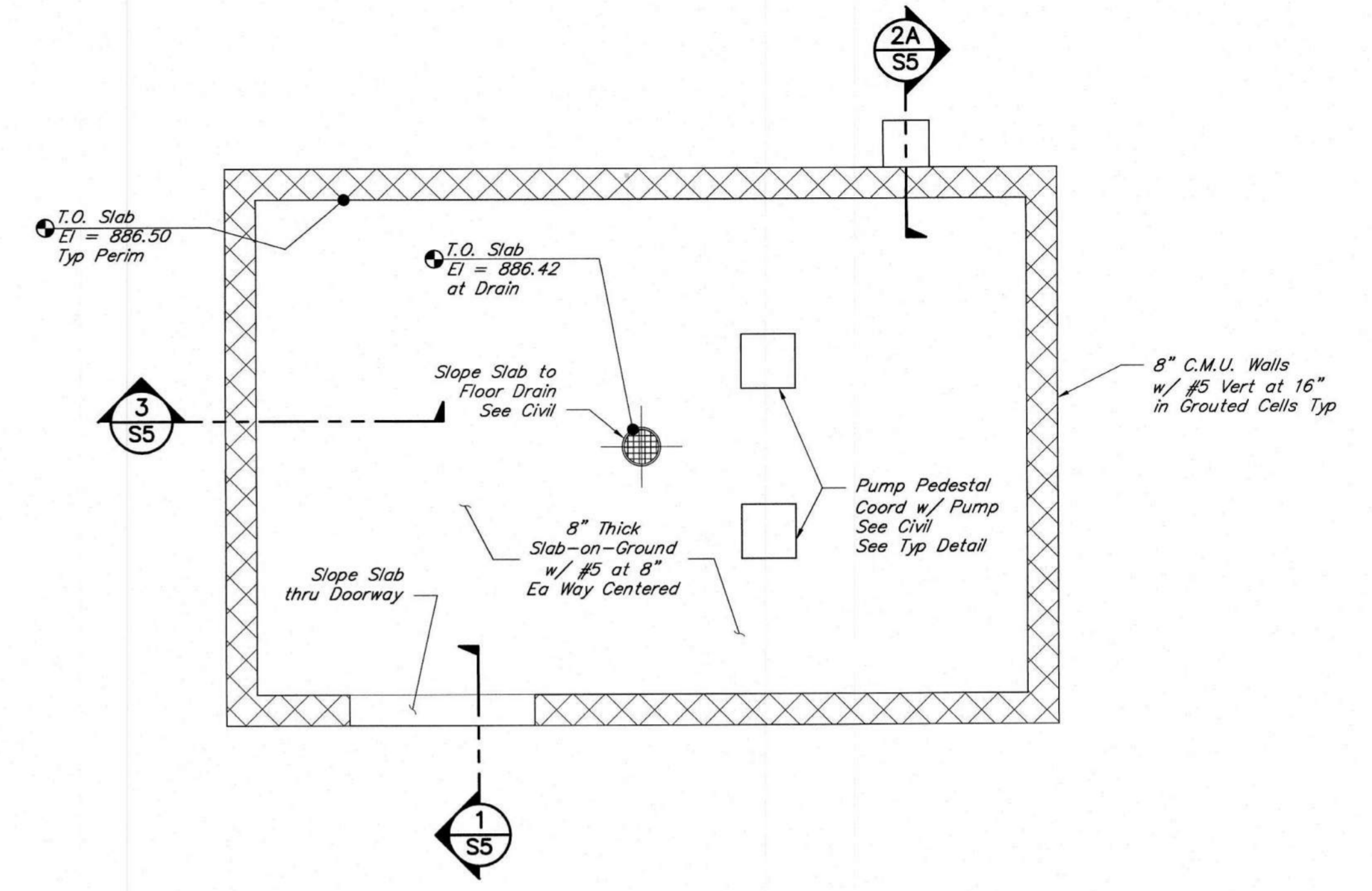


DRAWN BY: MWC	CHECKED BY: EWB
CHECKED BY: EWB	DATE: March 2019
DATE: March 2019	SCALE: As Noted
SCALE: As Noted	REVISIONS
REVISIONS	



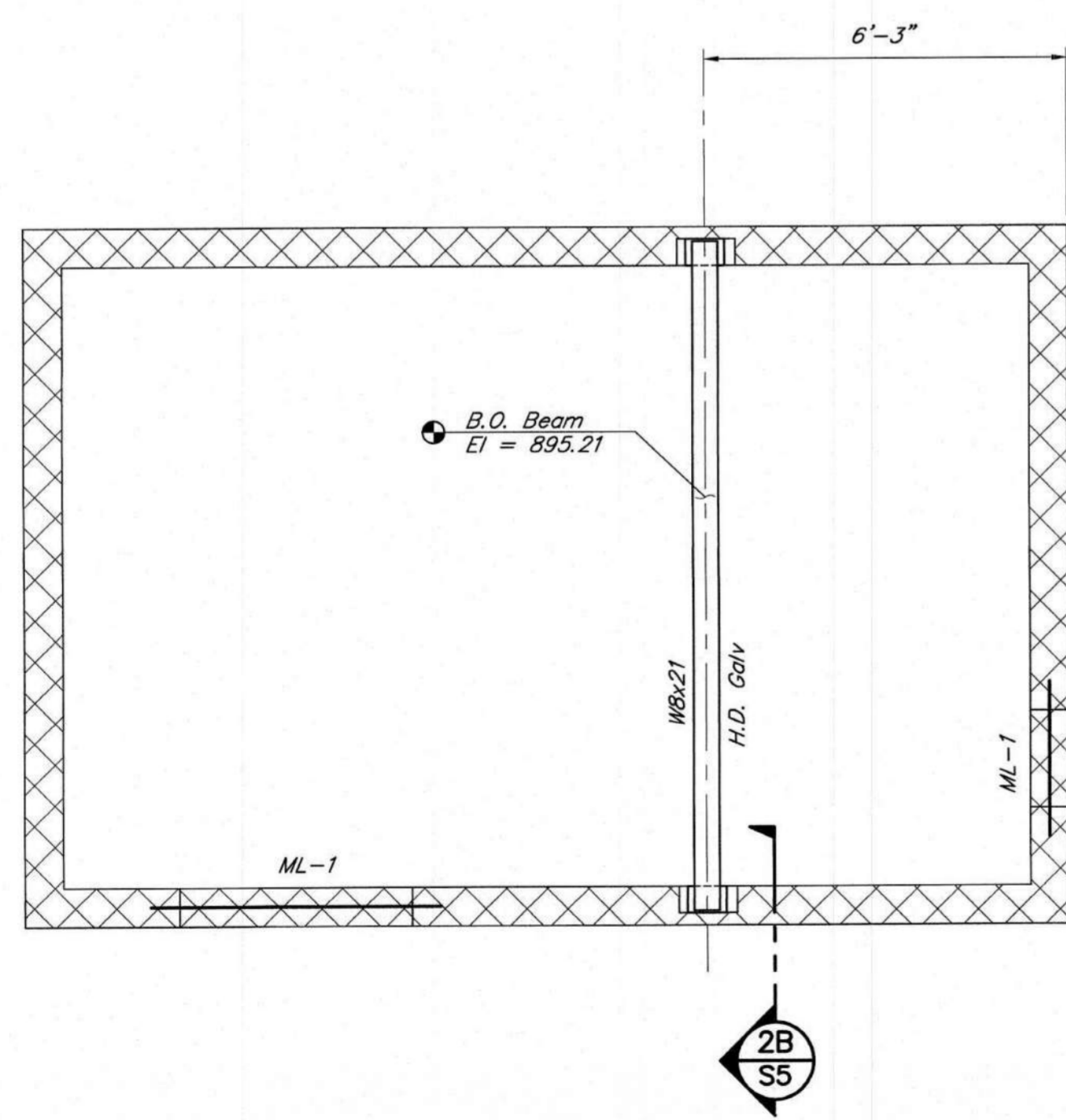
FOUNDATION PLAN
 3/8"=1'-0"

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

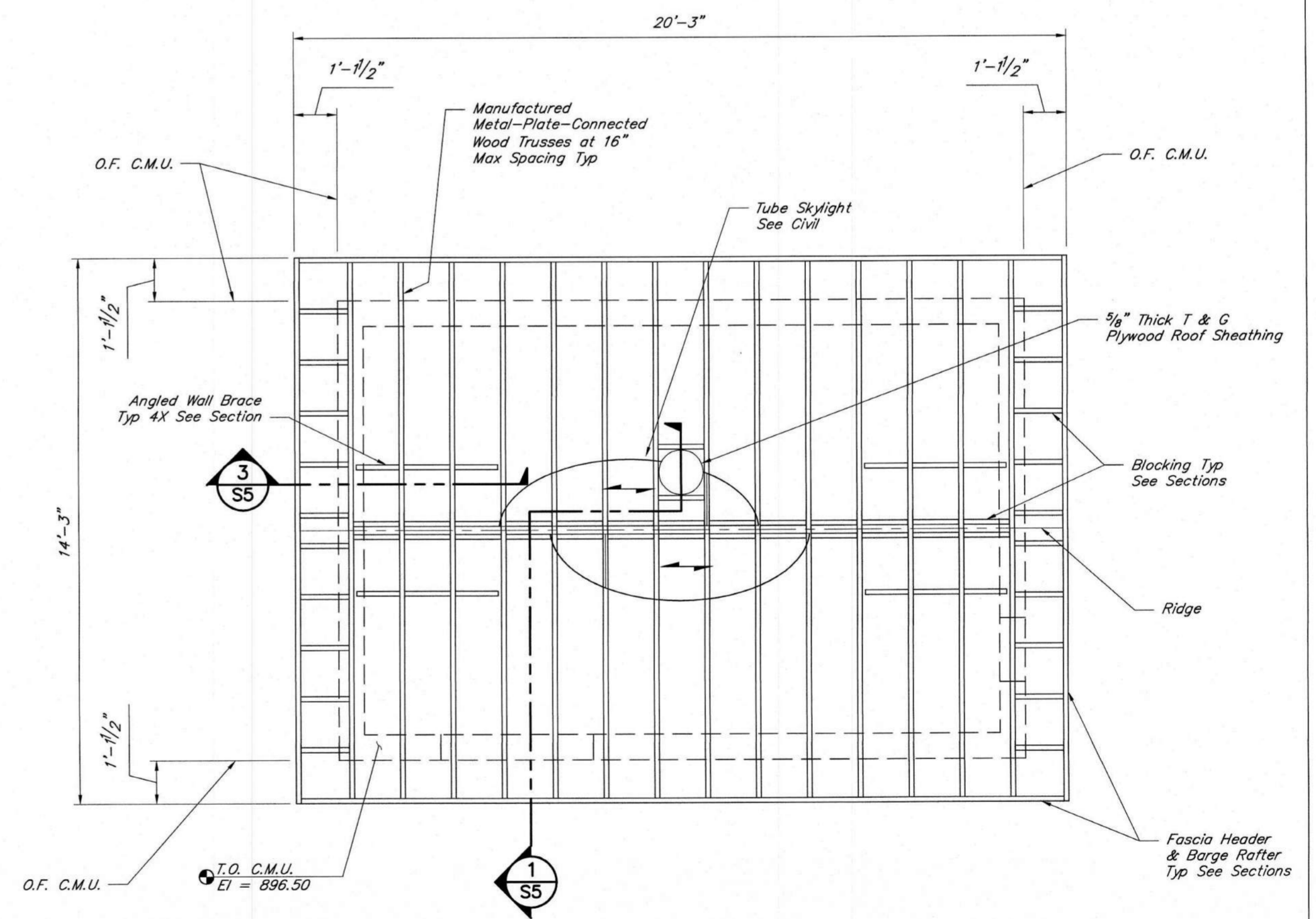


SLAB PLAN
 3/8"=1'-0"

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

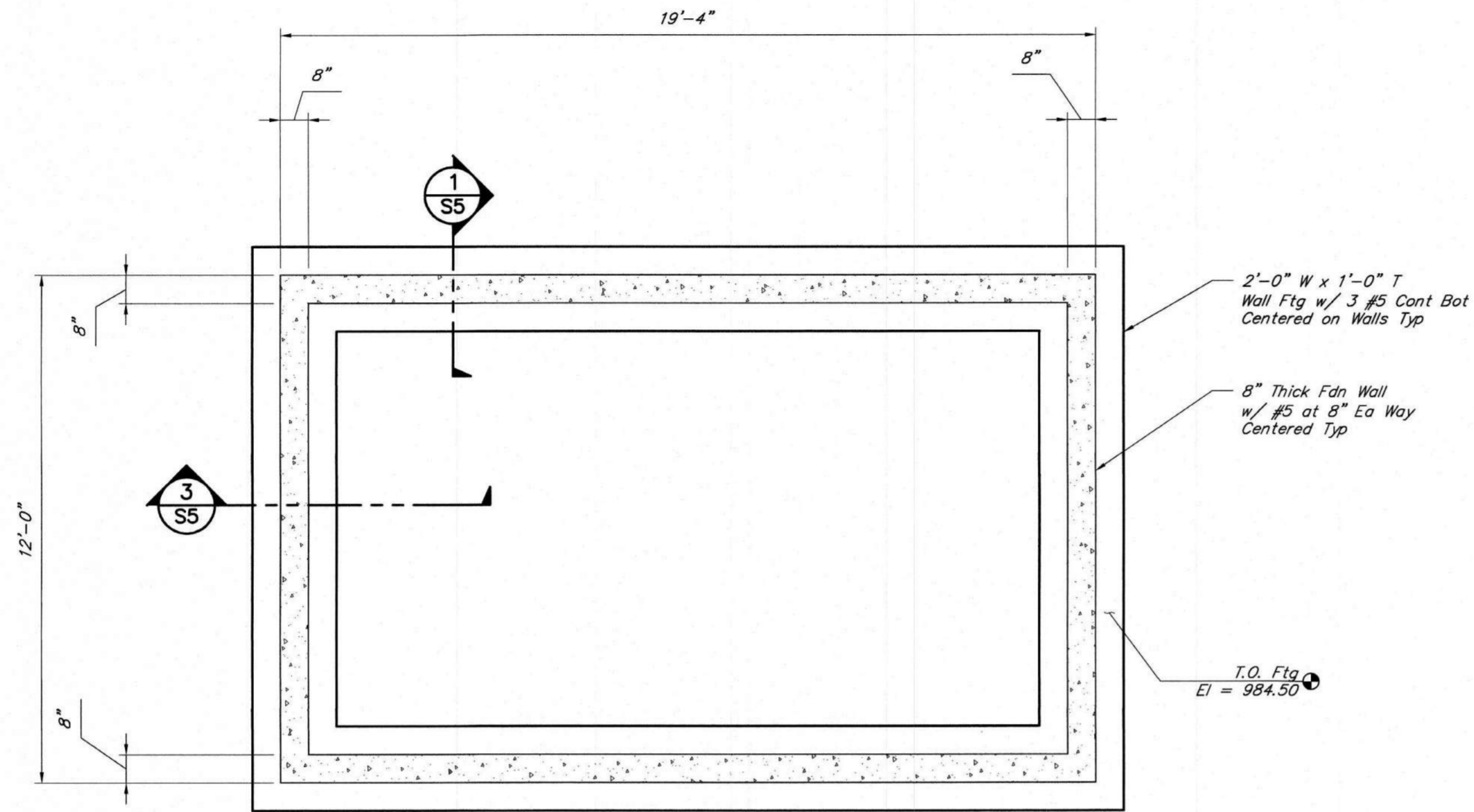


HOIST BEAM FRAMING PLAN
 3/8"=1'-0"



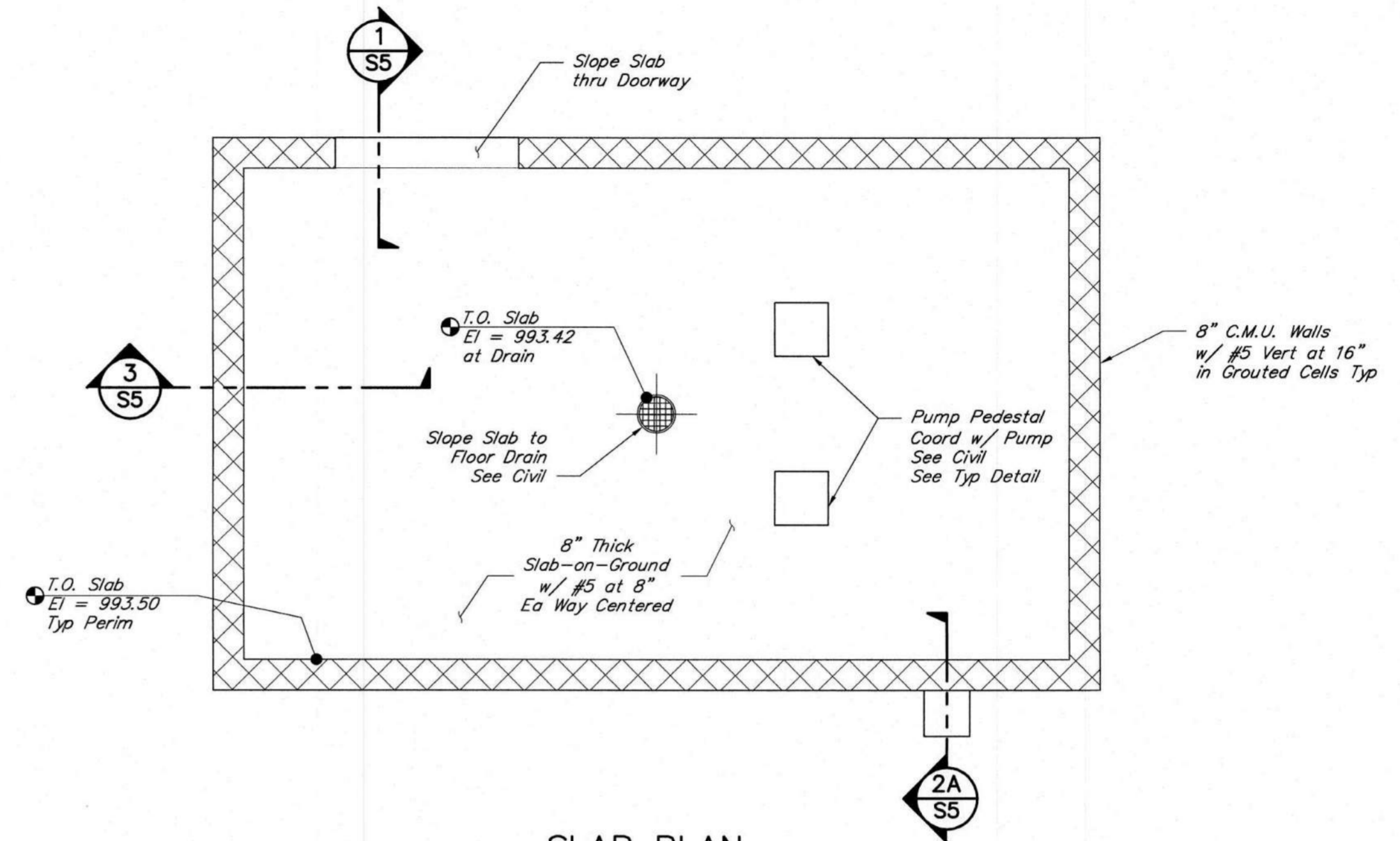
ROOF FRAMING PLAN
 3/8"=1'-0"

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



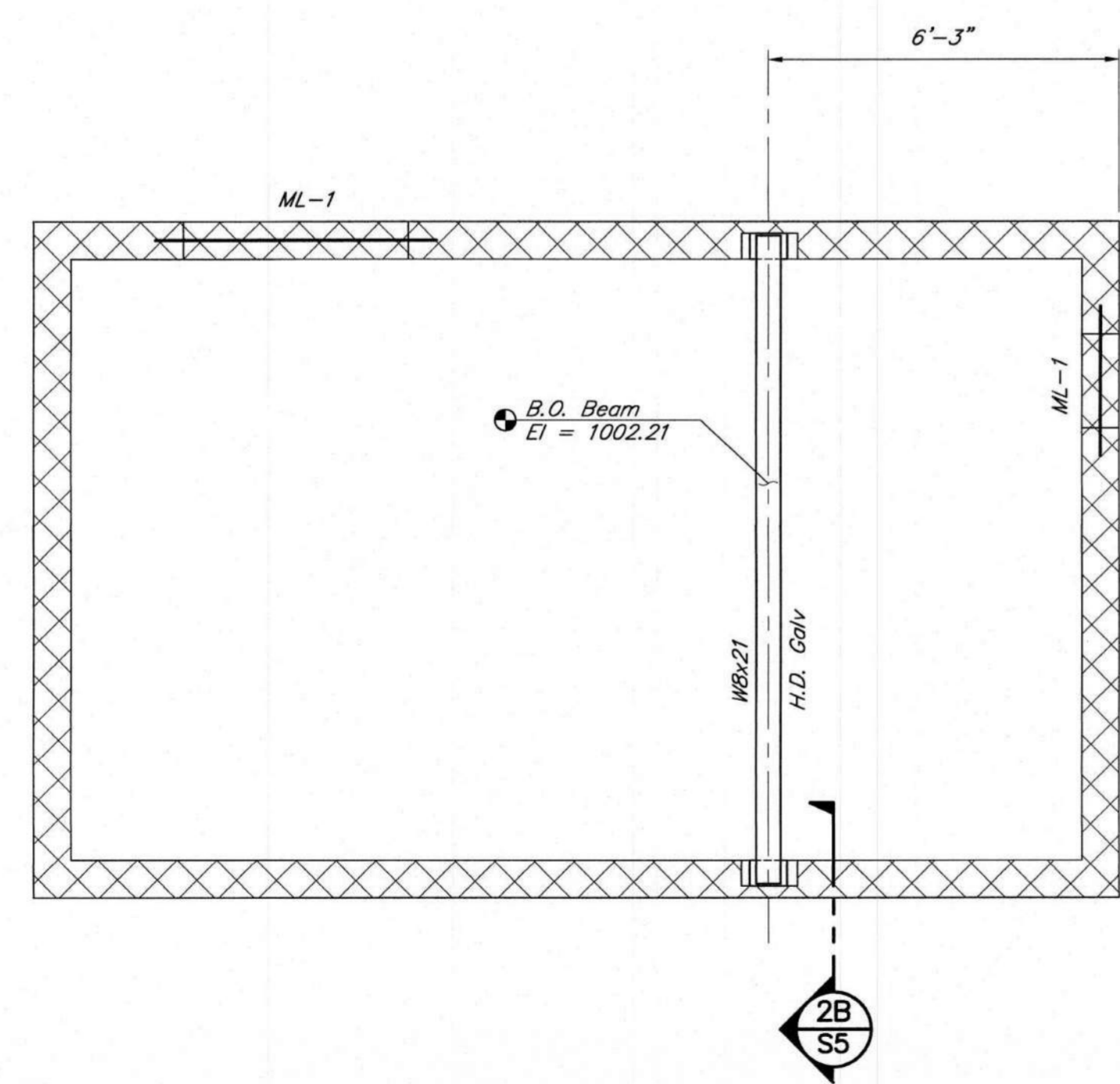
FOUNDATION PLAN
3/8"=1'-0"

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

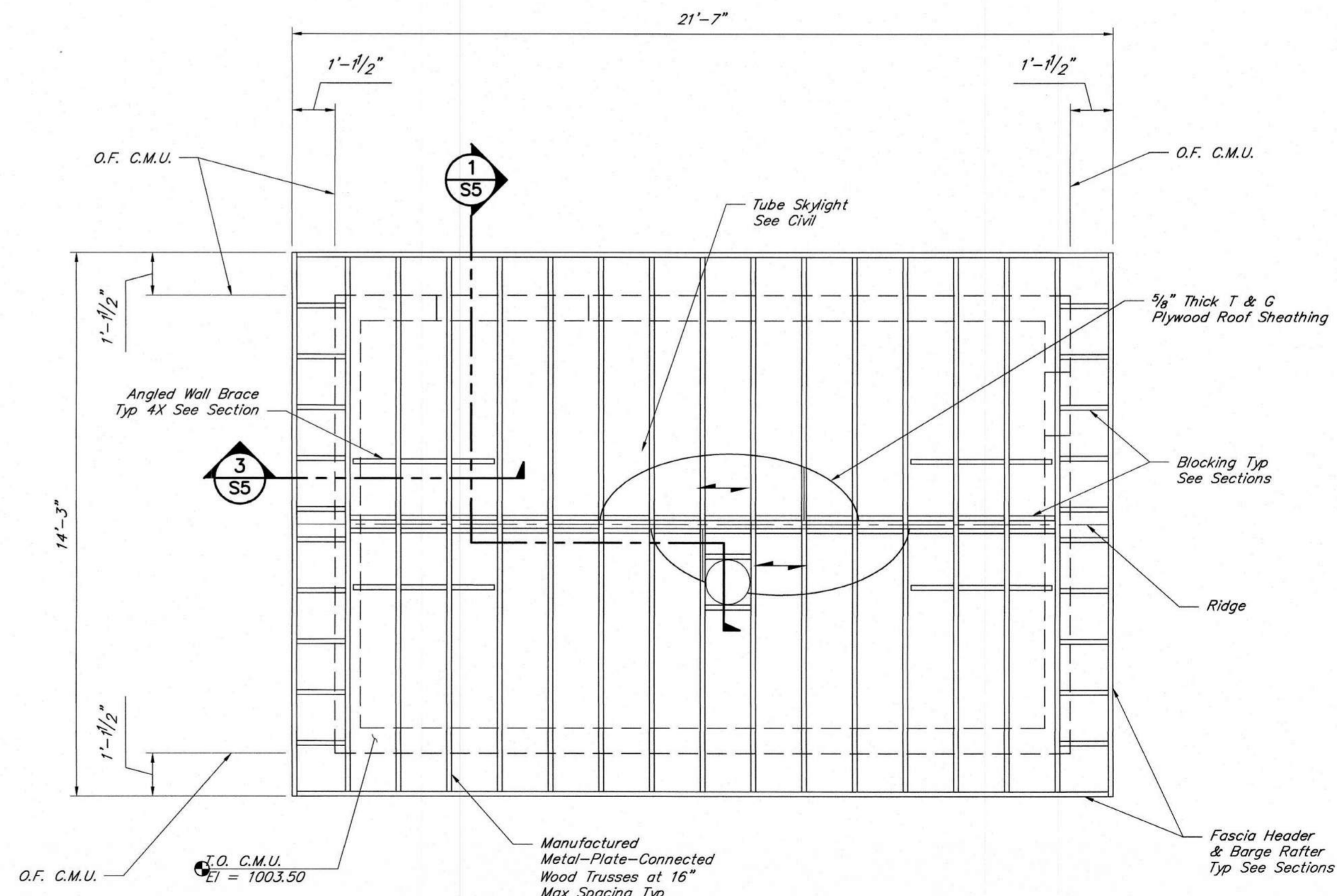


SLAB PLAN
3/8"=1'-0"

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



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



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

SOUTHEASTERN WATER ASSOCIATION
KY 192 / KY 1003 WATERLINES & SANDY GAP /
DIXIE BEND PUMP STATION REPLACEMENTS



DRAWN BY: MWC	CHECKED BY: EWB
DATE: March, 2019	SCALE: As Noted
REVISIONS	

KENVIRONS, INC.
FRANKFORT, KENTUCKY



PROJECT NO.
2016173
SHEET NO.
S4-3

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

SANDY GAP P.S. - STRUCTURAL PLANS

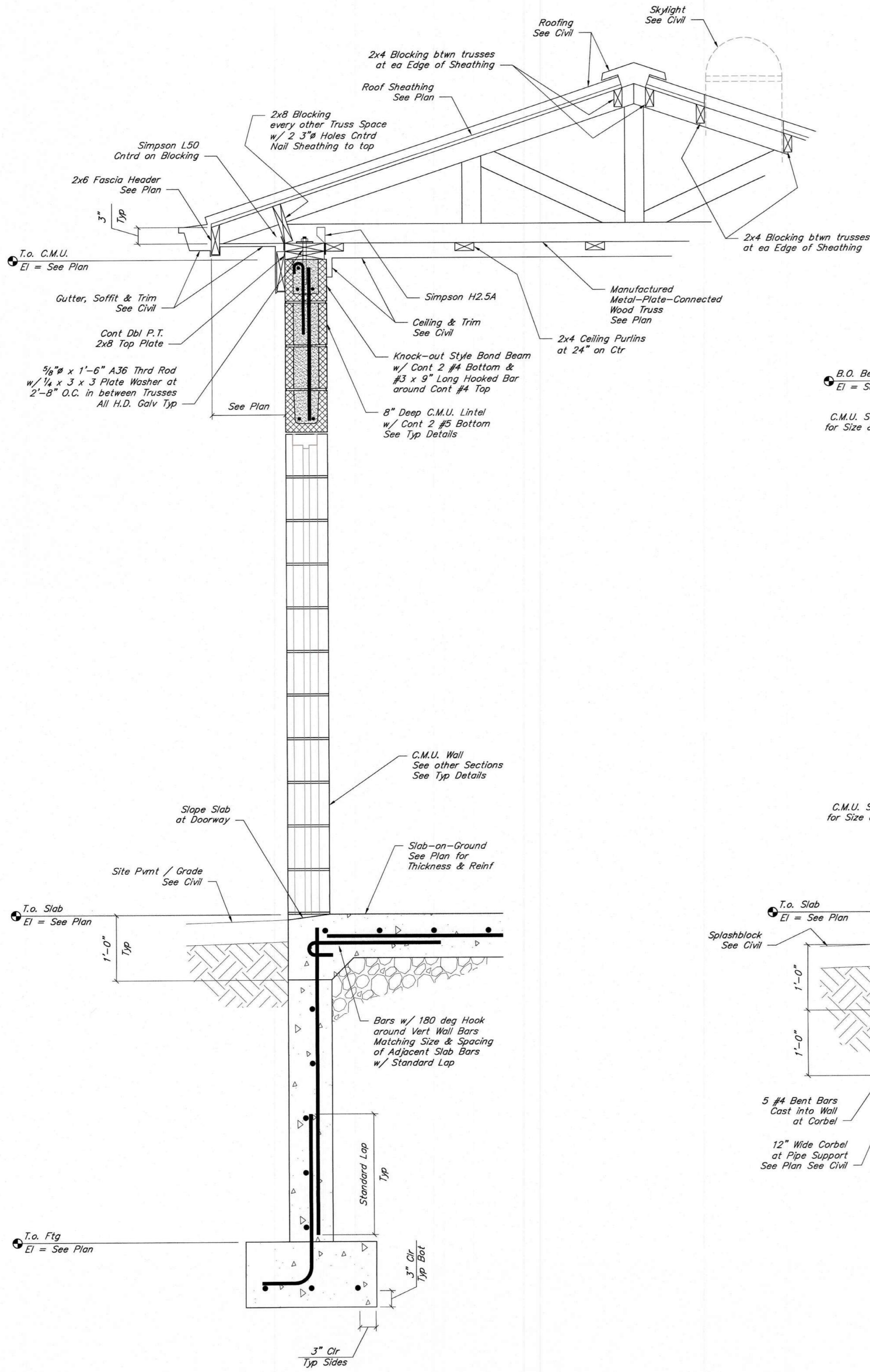


DRAWN BY: MWC	
CHECKED BY: EWB	
DATE: 2/20/19	
SCALE: AS SHOWN	
REVISIONS:	

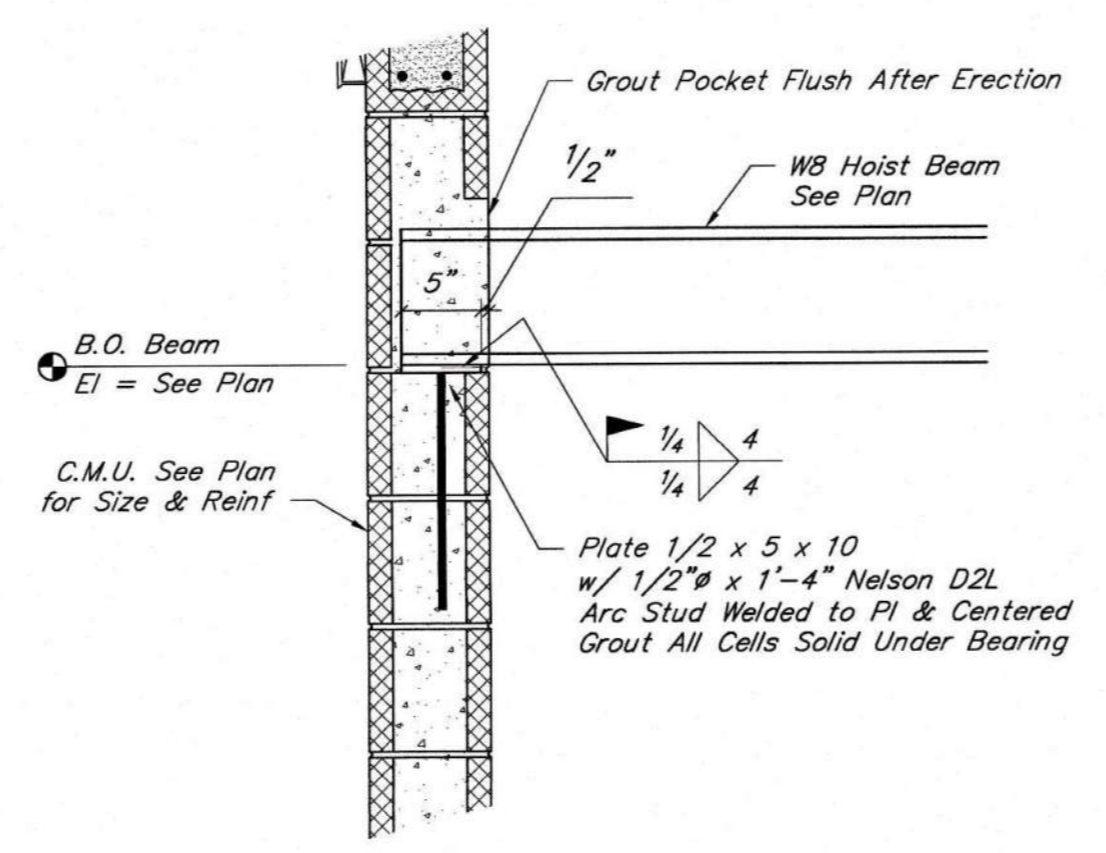
KENVIRONS, INC.
FRANKFORT, KENTUCKY



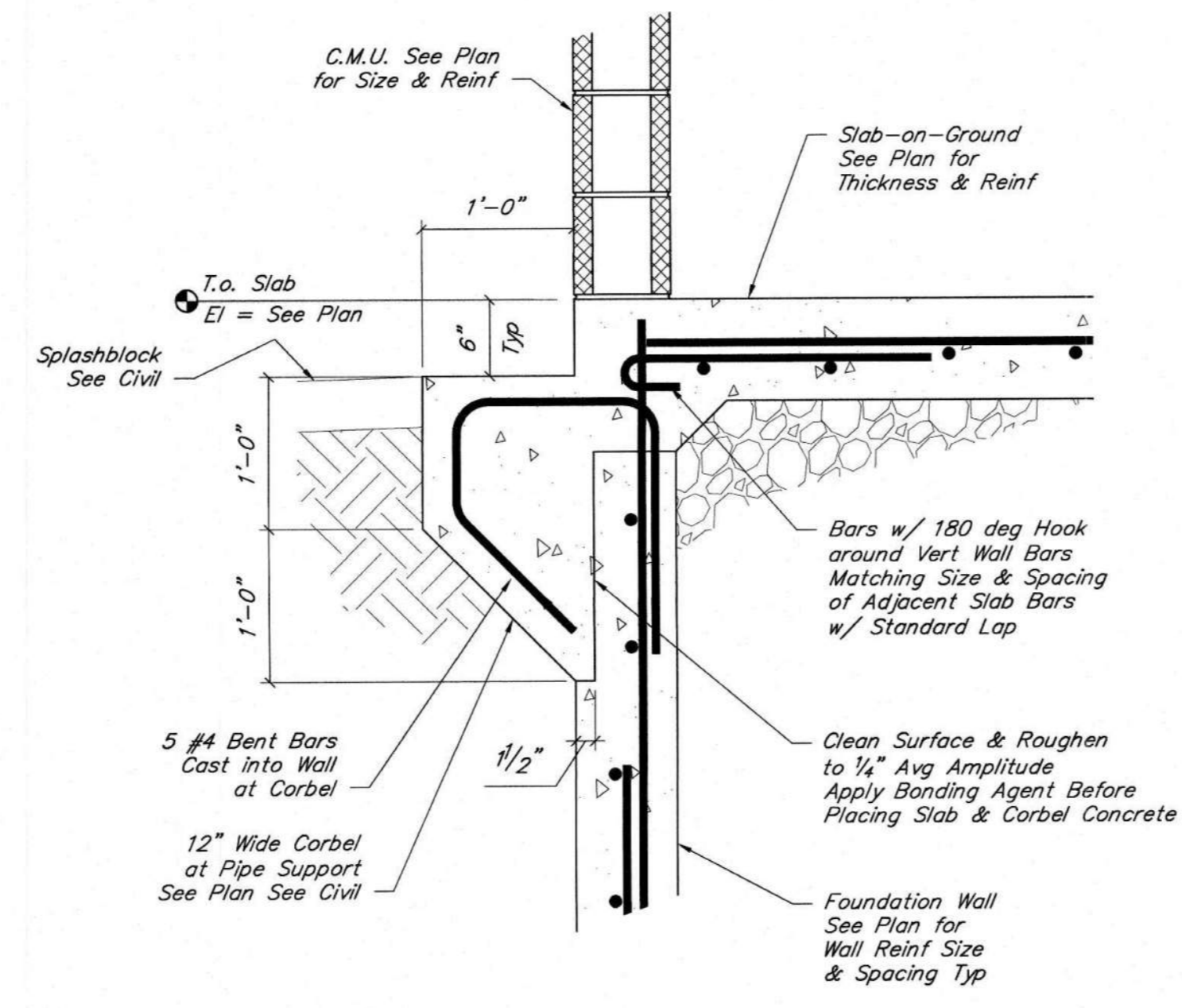
PROJECT NO.
2016173
 SHEET NO.
S5



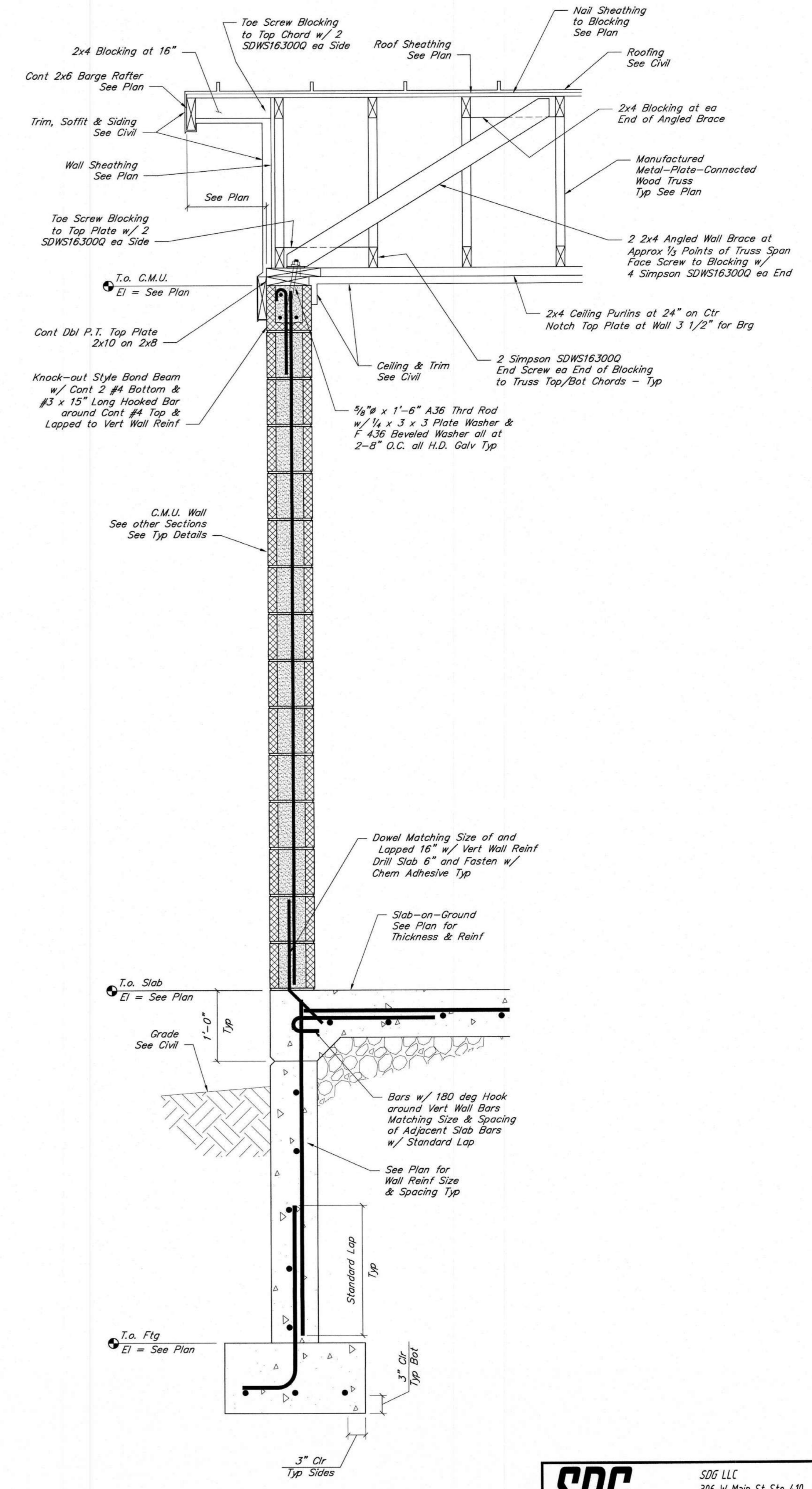
1 SECTION
 1"=1'-0"



2B SECTION
 1"=1'-0"



2A SECTION
 1"=1'-0"



3 SECTION
 1"=1'-0"

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

STRUCTURAL DETAILS

ELECTRICAL ABBREVIATIONS

Table with 2 columns: Abbreviation and Full Name. Includes terms like AMPERE, ABOVE FINISHED FLOOR, and TRANSFORMER.

ELECTRICAL PLAN SYMBOLS

Table with 2 columns: Symbol and Description. Includes symbols for electrical circuits, emergency circuits, receptacles, motors, and conduits.

ELECTRICAL DIAGRAM SYMBOLS

Table with 2 columns: Symbol and Description. Includes symbols for transformers, capacitors, grounds, current transformers, and various relays and switches.

ELECTRICAL DEVICE MOUNTING HEIGHT SCHEDULE

Table with 3 columns: Device, Height Off, and Remarks. Lists mounting heights for receptacles, switches, and control stations.

WALL MOUNT PACKAGED HEAT PUMP SCHEDULE

Table with columns: TAG, MODEL, COOLING (EAT, OAT), TOTAL COOLING, SENSIBLE COOLING, EER, HEATING, VOLTAGE / PHASE, COP, OA CFM, FAN (CFM, ESP, RPM), and ELEC HEAT KW.

- 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 THE COLOR DURING SUBMITTAL REVIEW.

LIGHT FIXTURE SCHEDULE

Table with columns: TYPE, MANUFACTURER, CATALOG SERIES, LAMPS, VOLTAGE, MOUNTING, DESCRIPTION, and SYMBOL. Lists various light fixture models and specifications.

SCADA I-O TABLE with columns for LOCATION, CONDUCTORS, I/O TAG, TYPE, UNIT, CONTROL, MONITOR, TREND, HISTORIZE, TOTALIZE, AVERAGE, ALARM, and REPORT. Includes various sensor and actuator tags.

SCADA I-O TABLE, TYPICAL

NOTE: THIS I-O IS REQUIRED FOR EACH OF THE (4) PUMP STATIONS

SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 WATERLINES & SANDY GAP/
DIXIE BEND PUMP STATION REPLACEMENTS



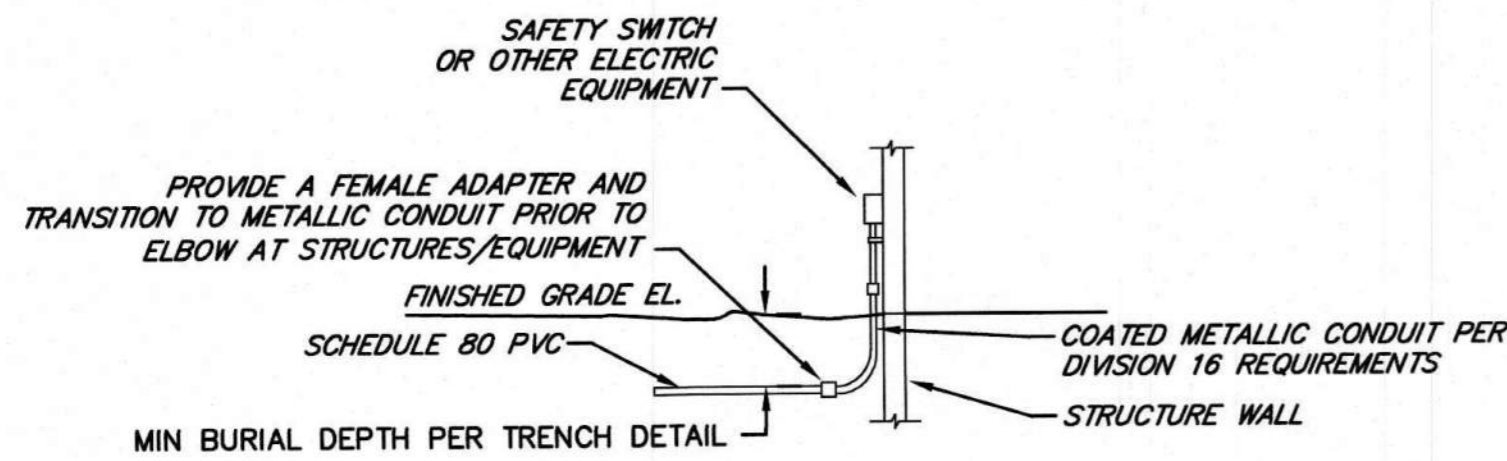
DRAWN BY: CA
CHECKED BY: BLM
DATE: Sept. 2017
SCALE: AS SHOWN
REVISIONS

KENVIRONS, INC.
FRANKFORT, KENTUCKY



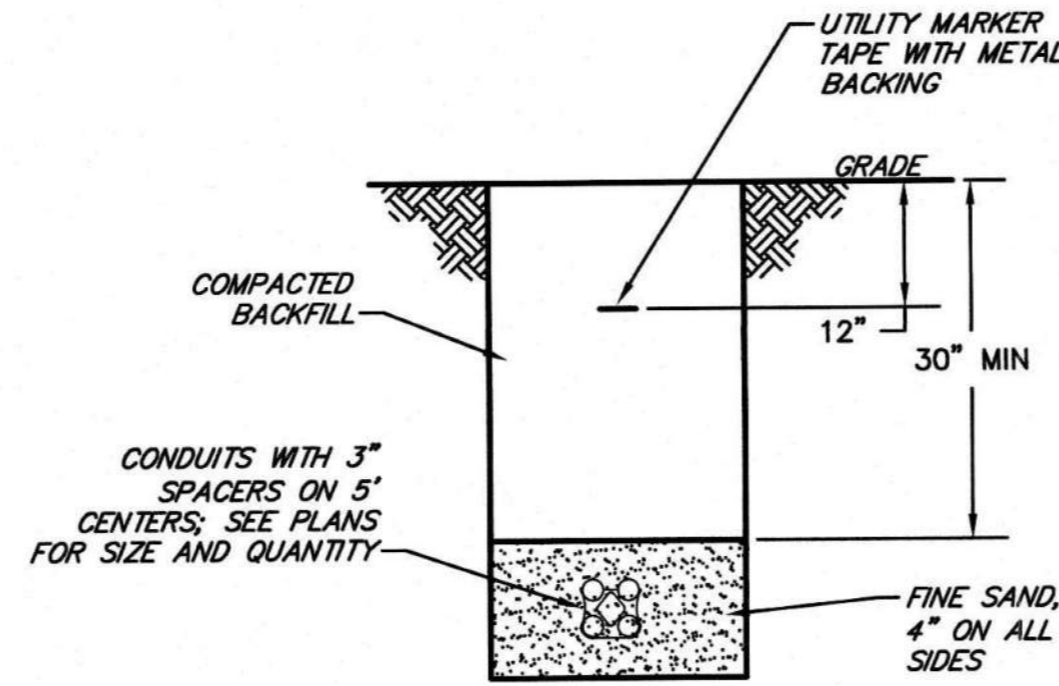
PROJECT NO.
2016173

SHEET NO.
E-1

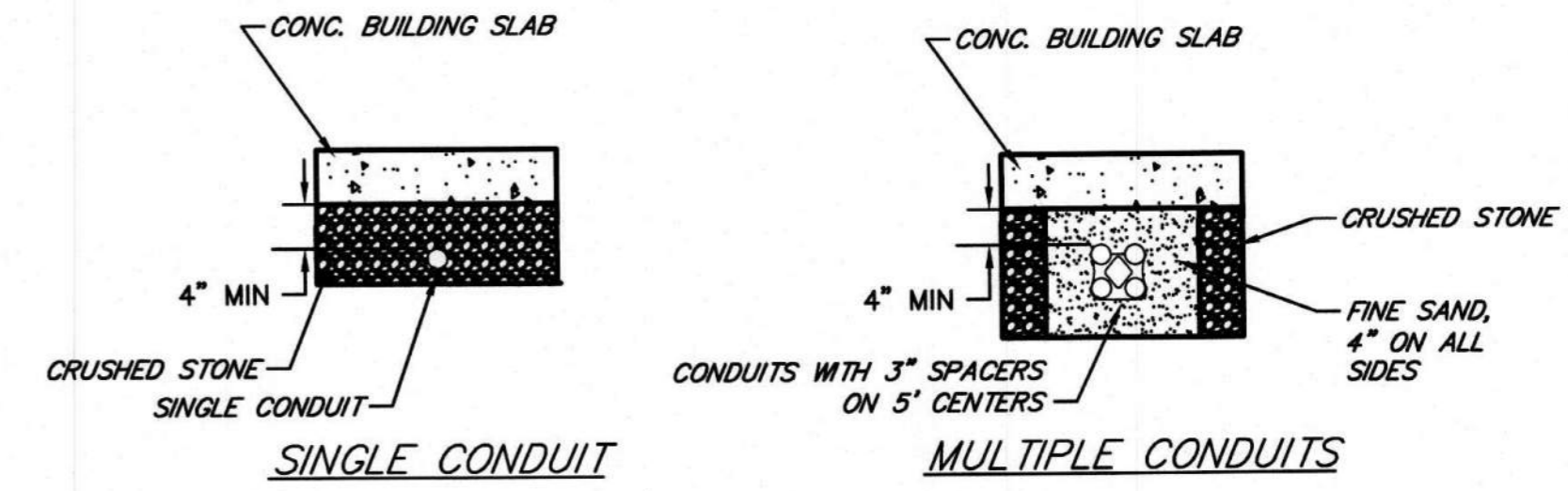


NOTE:
ALL UNDERGROUND PVC CONDUITS SHALL TRANSITION TO METALLIC PRIOR TO EMERGING FROM GRADE OR SLAB. SEE SECTION 16020 FOR ACCEPTABLE CONDUIT TYPES

TYPICAL UNDERGROUND PVC CONDUIT TRANSITION TO METALLIC CONDUIT
N.T.S.

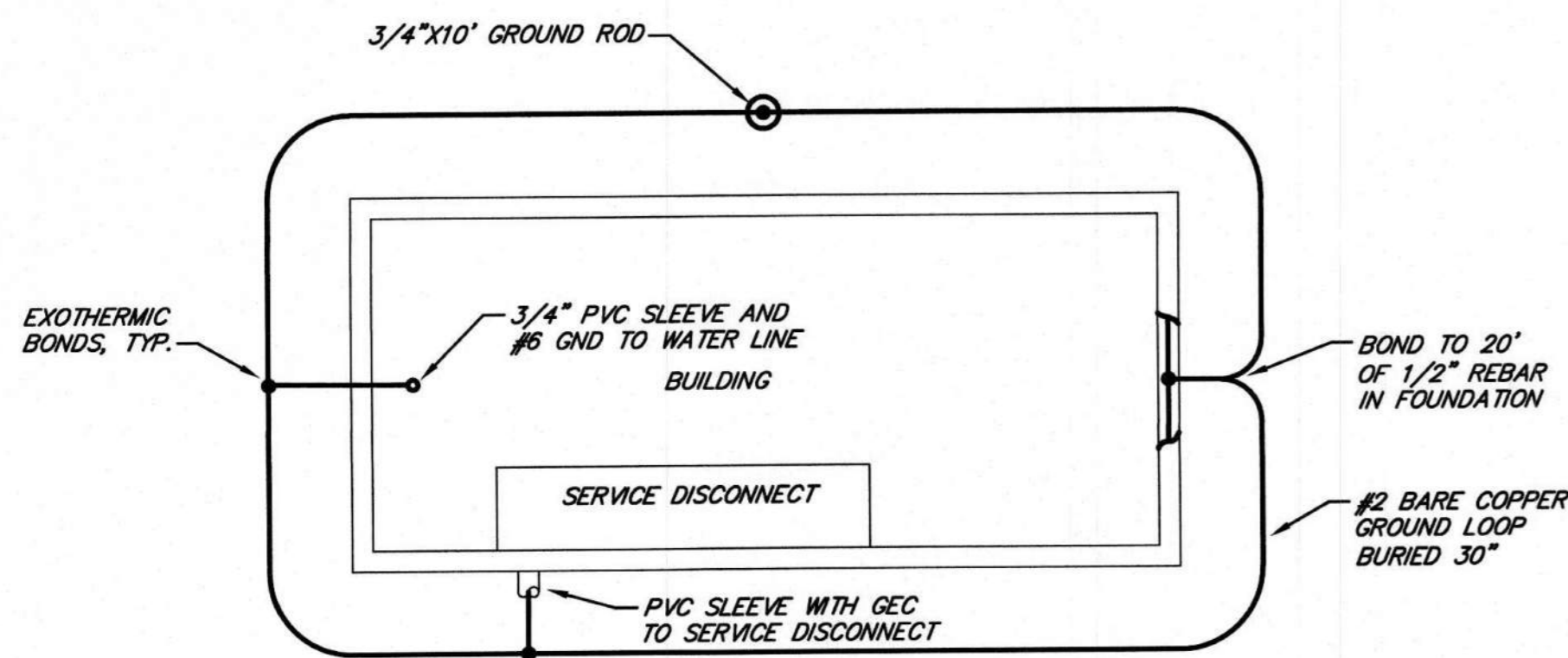


TYPICAL TRENCH DETAIL
N.T.S.



CONDUIT INSTALLATION UNDER BUILDING SLAB
N.T.S.

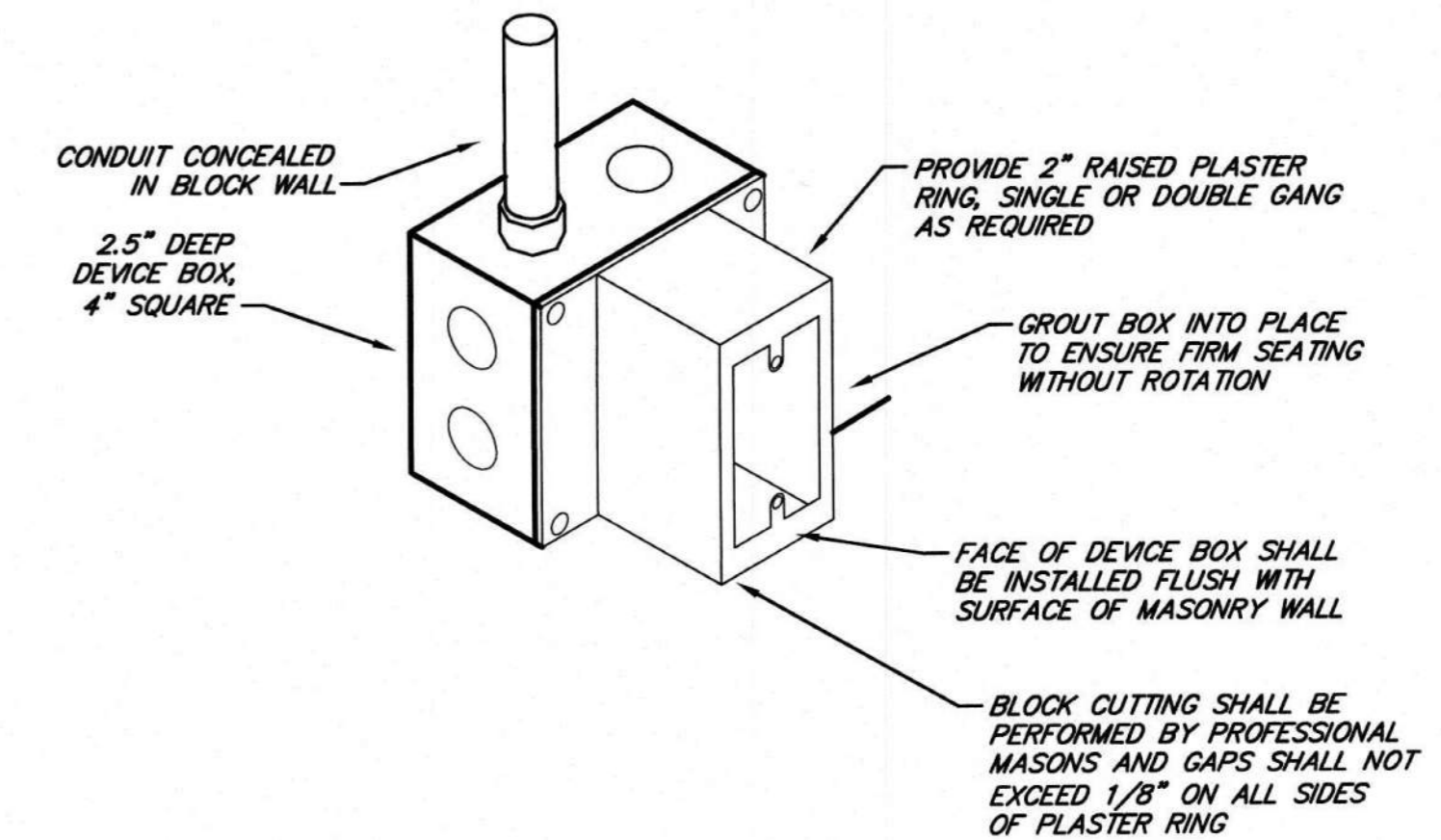
NOTE: CONDUITS SHALL BE INSTALLED DEEPER WHERE NECESSARY TO PREVENT CURVED PORTION OF ELBOW FROM BEING EXPOSED ABOVE GRADE



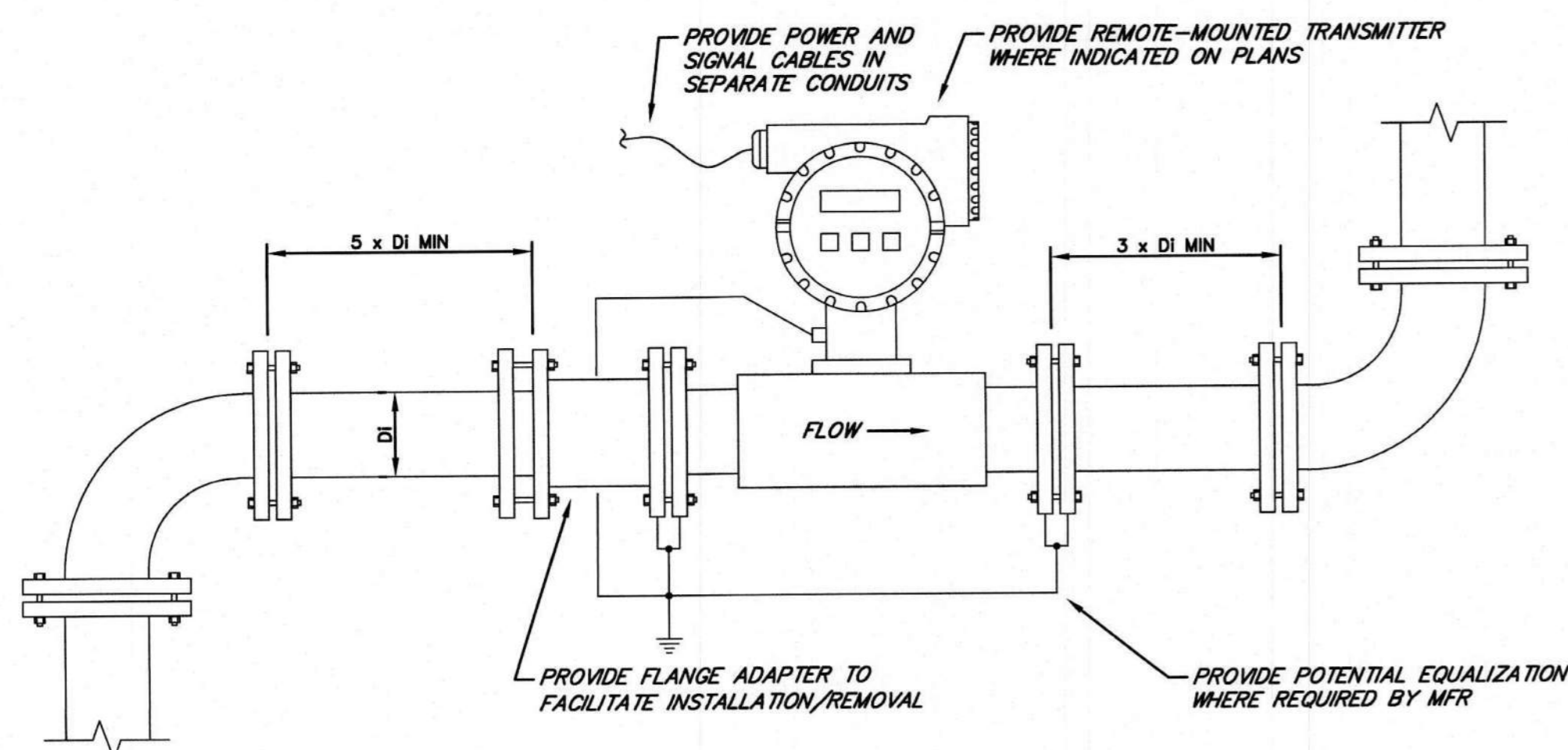
TYPICAL BUILDING GROUNDING DETAIL
N.T.S.

TRENCHING NOTES:

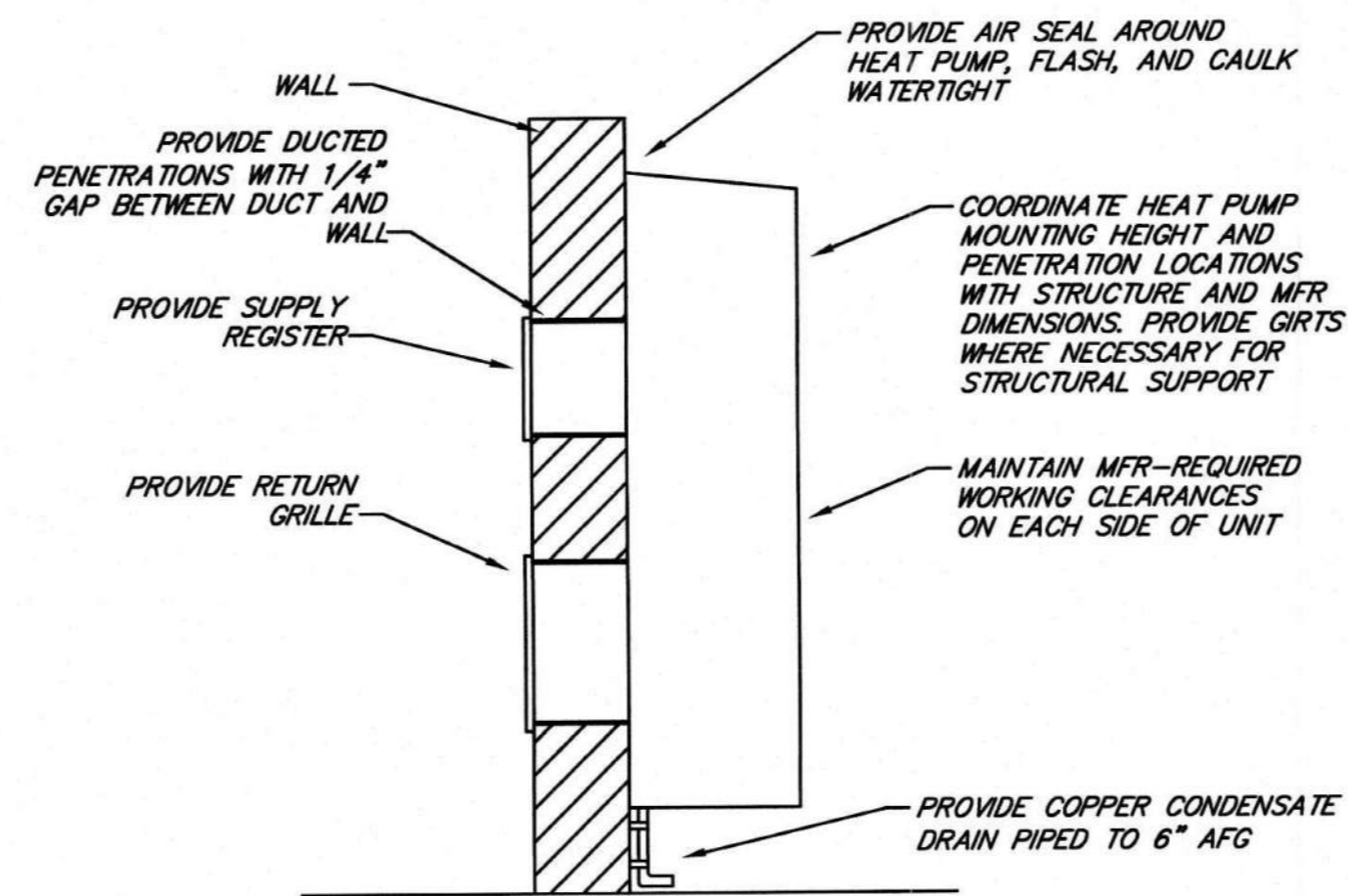
- PROVIDE PULL CORD IN ALL CONDUITS.
- UTILITY MARKER TAPE SHALL RUN THE ENTIRE LENGTH OF DUCT BANK.
- MAINTAIN MINIMUM 12" SPACING BETWEEN INSTRUMENTATION AND POWER.
- MAINTAIN MINIMUM 36" SPACING BETWEEN OTHER SITE PIPING, INCLUDING WATER, AND GAS.



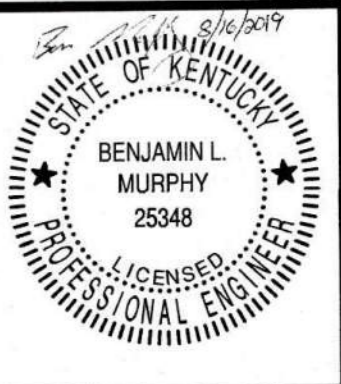
MASONRY DEVICE BOX DETAIL
N.T.S.



MAGMETER INSTALLATION DETAIL
N.T.S.



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

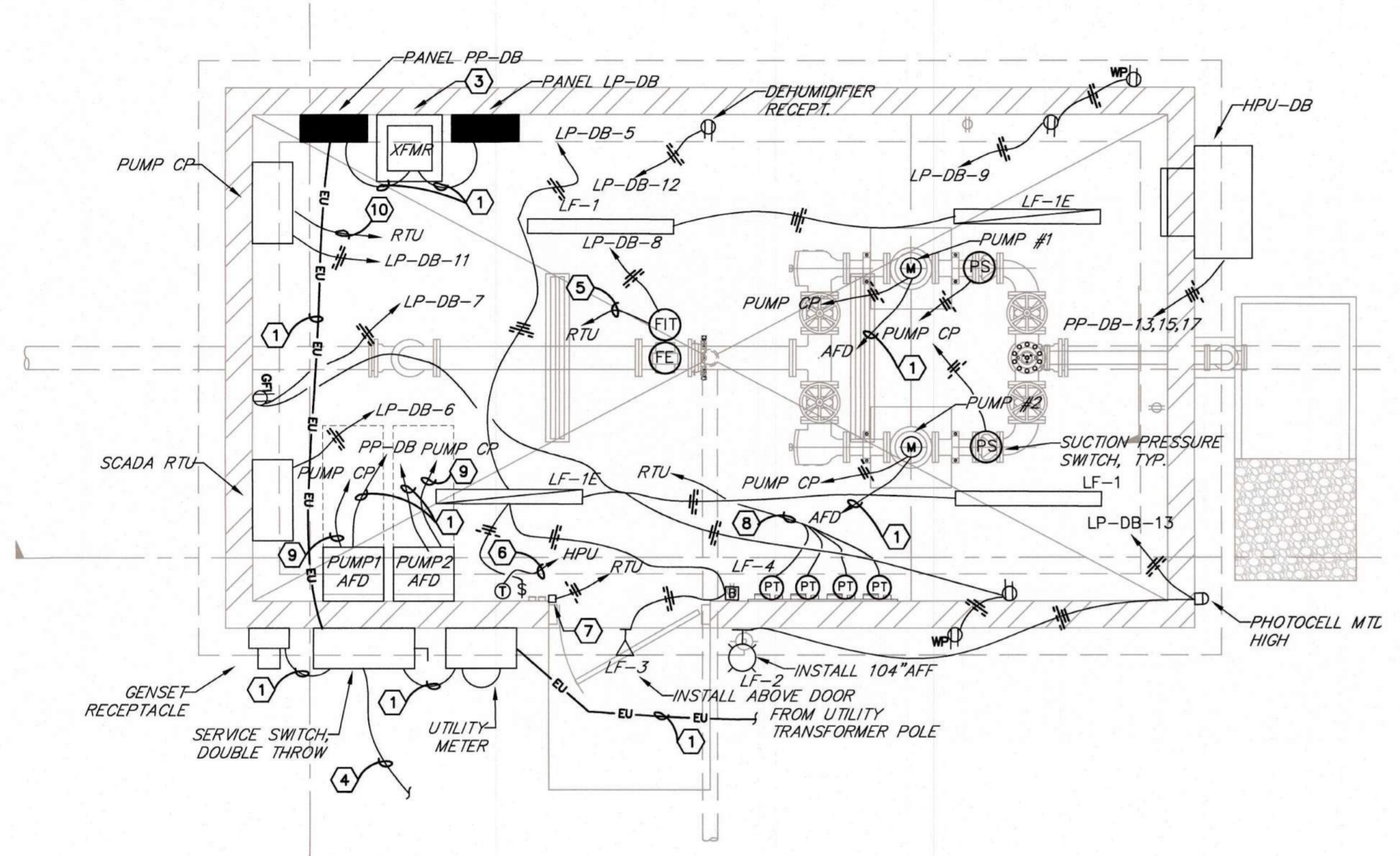


DRAWN BY: CA
CHECKED BY: BLM
CHECKED BY: 2017
SCALE: AS SHOWN
REVISIONS

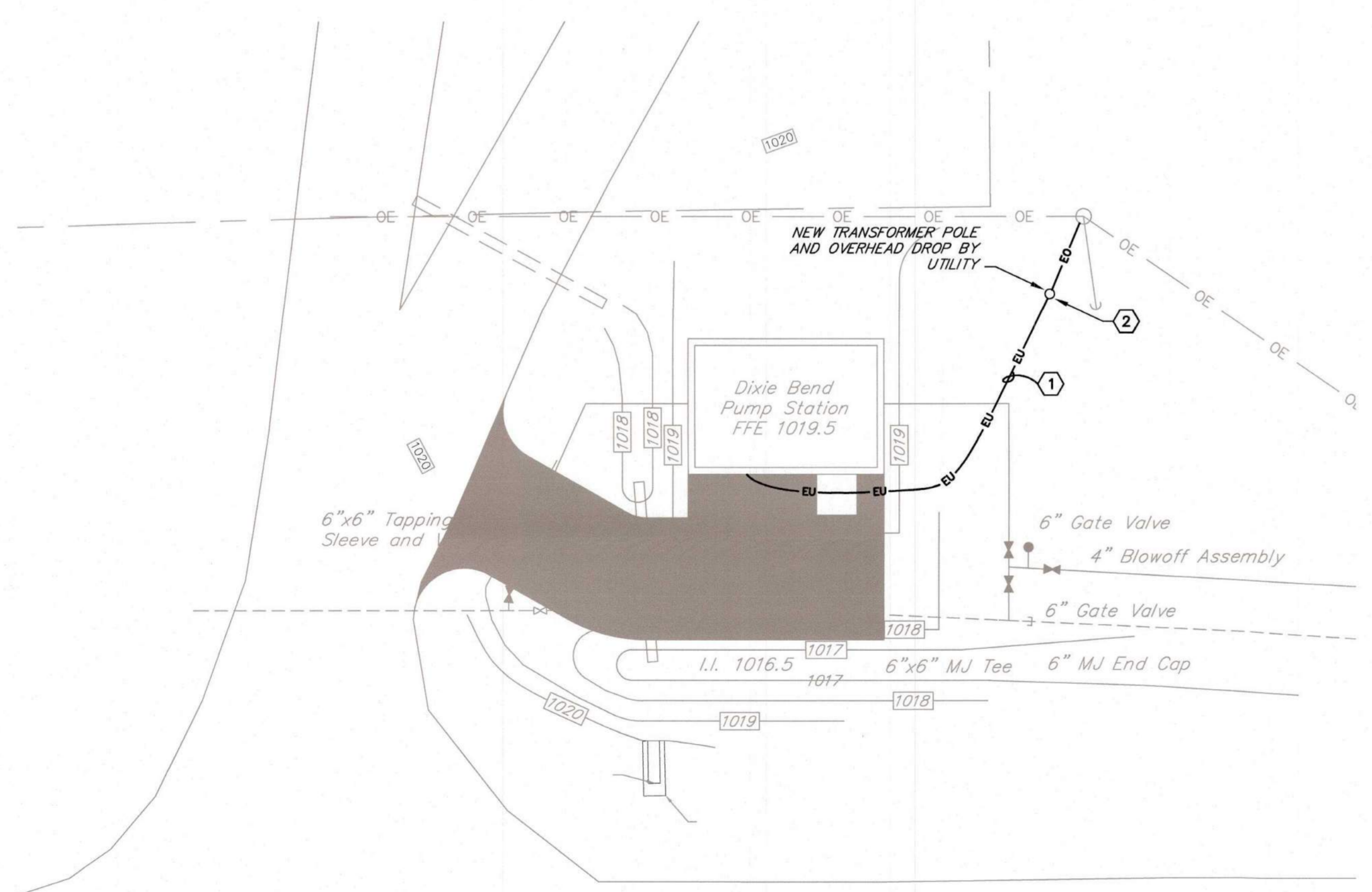




DRAWN BY: CA	CHECKED BY: BLM
CHECKED BY: BLM	DATE: Sept. 2017
SCALE: As Shown	REVISIONS



DIXIE BEND ELECTRICAL FLOOR PLAN
SCALE: 3/8"-1"0"



DIXIE BEND PUMP STATION ELECTRICAL SITE PLAN
SCALE: 1"-1"0"

PANEL:	PP-DB	VOLTAGE:	480, 3Ø, 3W
ENCLOSURE:	NEMA 1	MAINS AMPACITY:	100
MOUNTING:	WALL	MAIN C.B. SIZE:	100
LOCATION:	SANDY GAP	TOTAL SPACES:	30

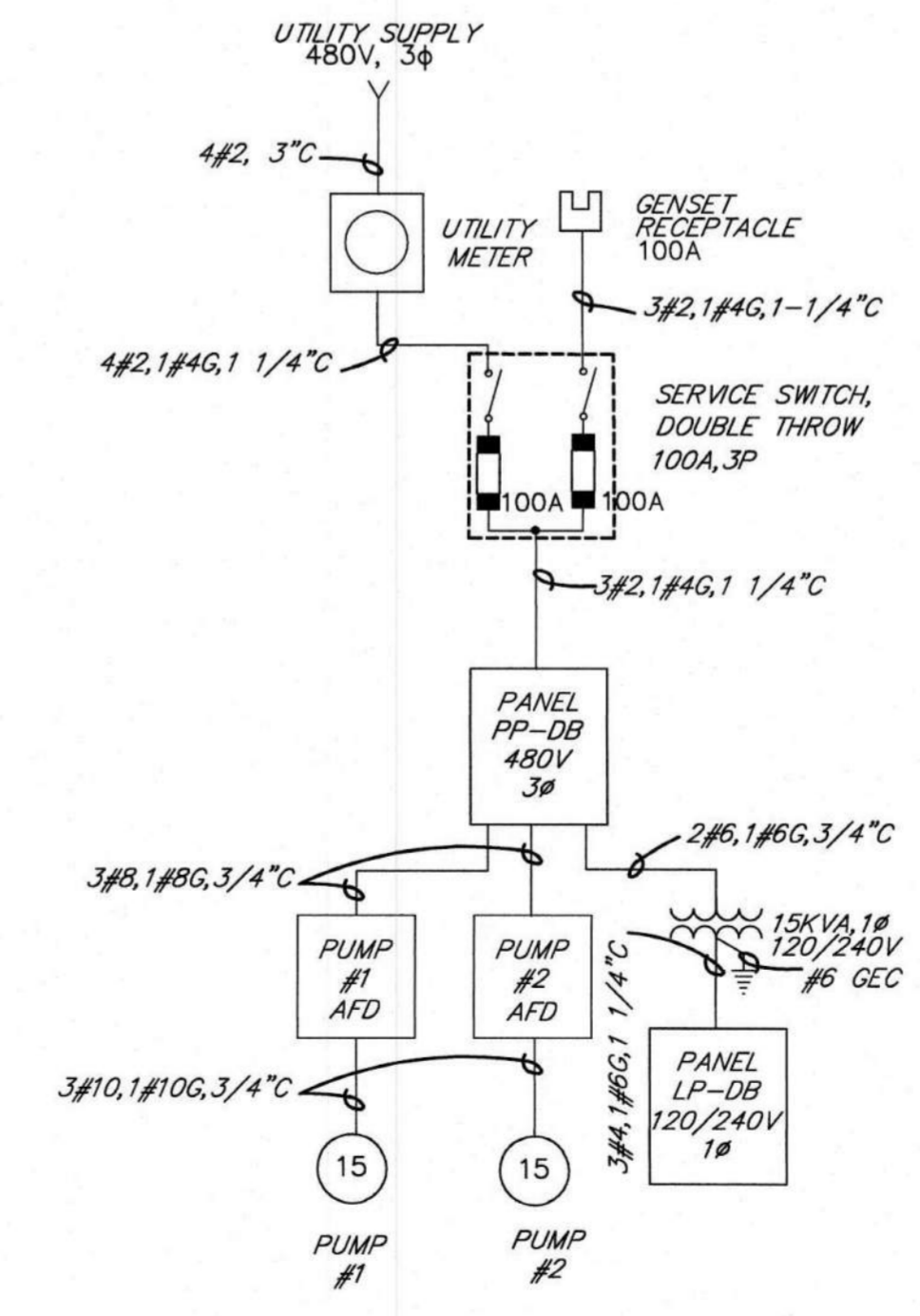
CIRCUIT DESCRIPTION	VA	POLES	BREAKER	NO	PHASE A	PHASE B	PHASE C	NO.	BREAKER	POLES	VA	CIRCUIT DESCRIPTION
					VA	VA	VA					
SPD		3	30A	1	7000			2	30A	3	7000	PUMP #1 AFD
				3		7000		4			7000	
				5			7000	6			7000	
PANEL LP-DB / TRANSFORMER	3000	2	60A	7	10000			8	30A	3	7000	PUMP #2 AFD
	3000			9		10000		10			7000	
				11			7000	12			7000	
HPU-DB	4700	3	20A	13	4700			14	30A	3		SPARE
	4700			15		4700		16				
	4700			17			4700	18				
				19	0			20				
				21		0		22				
				23			0	24				
				25	0			26				
				27			0	28				
				29			0	30				
TOTAL VA PER PHASE:					21700	21700	18700					
TOTAL AMPS PER PHASE:					78.3	78.3	67.5	TOTAL PANEL VA: 62100				

NOTES:
1. PROVIDE INTEGRAL SURGE SUPPRESSION SPD

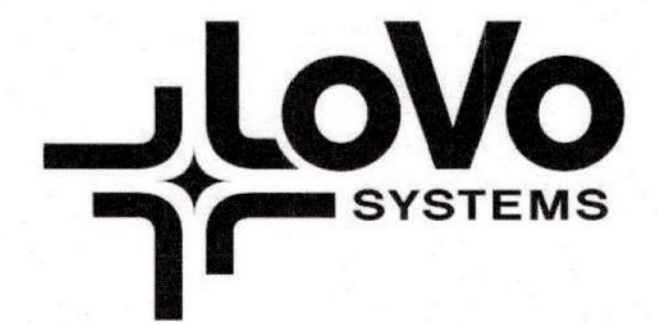
PANEL:	LP-DB	VOLTAGE:	120/240V, 1Ø, 3W
ENCLOSURE:	NEMA 1	MAINS AMPACITY:	100A
MOUNTING:	WALL	MAIN C.B. SIZE:	80A
LOCATION:	DIXIE BEND	TOTAL SPACES:	18

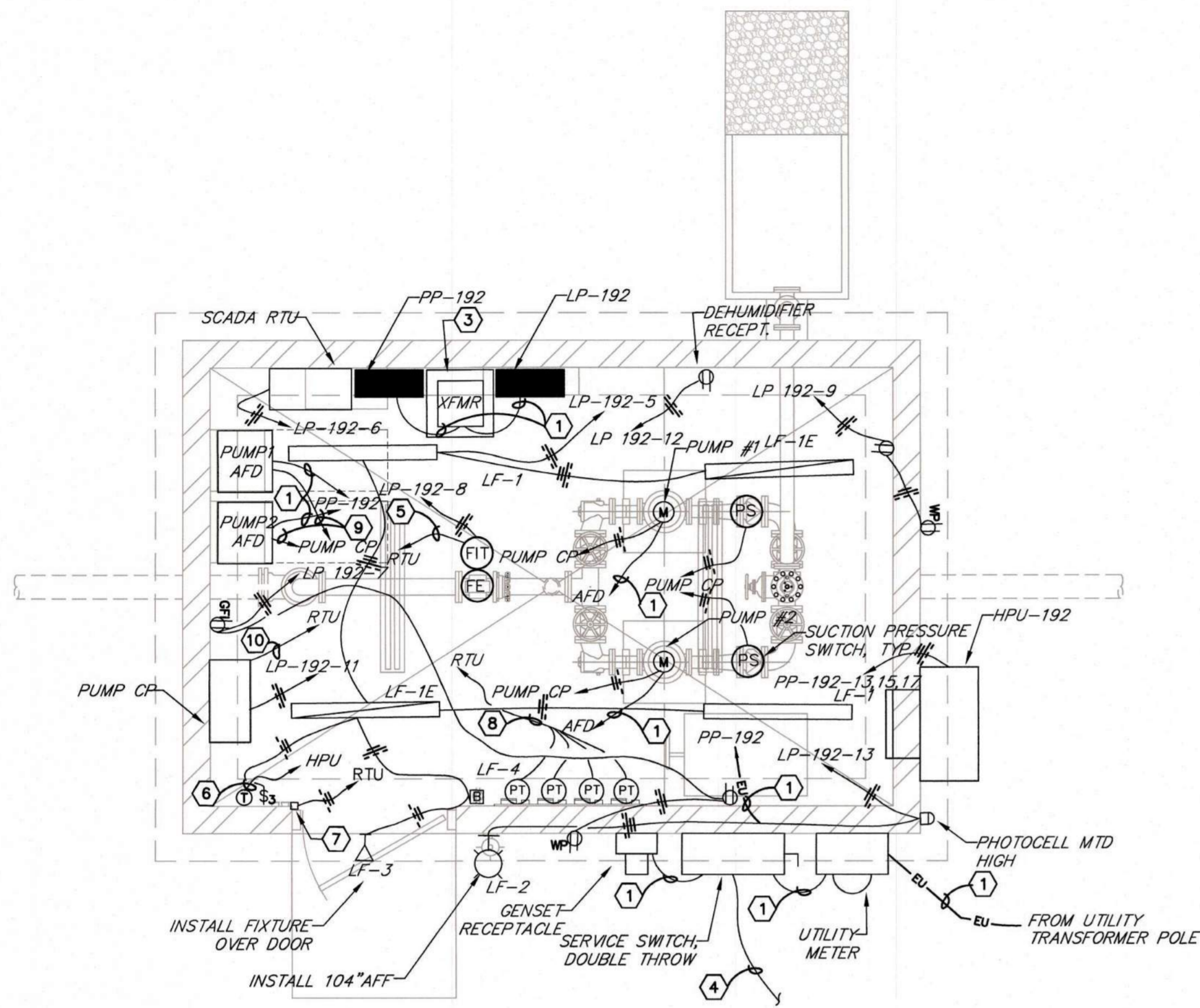
CIRCUIT DESCRIPTION	VA	POLES	BREAKER	NO	PHASE A	PHASE B	NO.	BREAKER	POLES	VA	CIRCUIT DESCRIPTION
					VA	VA					
SPD		2	30A	1	0		2	30A	2		SPARE
				3			4				
LIGHTING - INTERIOR	700	1	20A	5	1200		6	15A	1	500	SCADA RTU
RECEPTACLES	600	1	20A	7		700	8	15A	1	100	FLOW METER
RECEPTACLES	600	1	20A	9	600		10	15A	1		SPARE
PUMP CP	200	1	20A	11		1700	12	20A	1	1500	DEHUMIDIFIER
LIGHTING - EXTERIOR	100	1	20A	13	100		14	15A	1		SPARE
SPARE		1	20A	15			16	15A	1		SPARE
SPARE		1	20A	17			18	15A	1		SPARE
TOTAL VA PER PHASE:					1900	2400					
TOTAL AMPS PER PHASE:					15.8	20	TOTAL PANEL VA: 4300				

NOTES:
1. PROVIDE INTEGRAL SURGE SUPPRESSION SPD

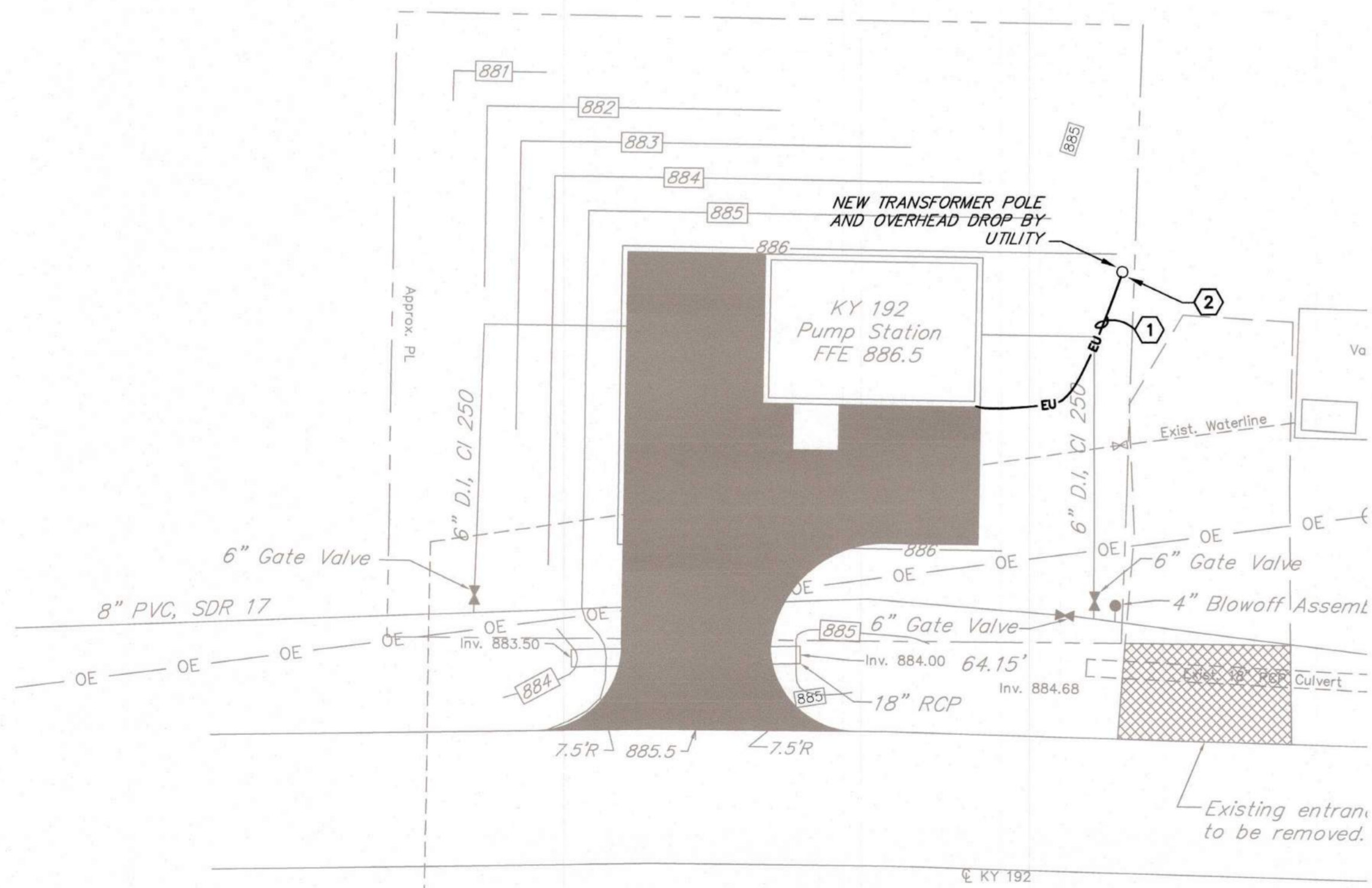


DIXIE BEND ONE-LINE DIAGRAM
N.T.S.





KY-192 ELECTRICAL FLOOR PLAN
SCALE: 3/8"-1"0"



KY192 ELECTRICAL SITE PLAN
SCALE: 1"-1"0"

PANEL:	PP-192	VOLTAGE:	480, 3Ø, 3W
ENCLOSURE:	NEMA 1	MAINS AMPACITY:	100
MOUNTING:	WALL	MAIN C.B. SIZE:	100
LOCATION:	KY-192	TOTAL SPACES:	30

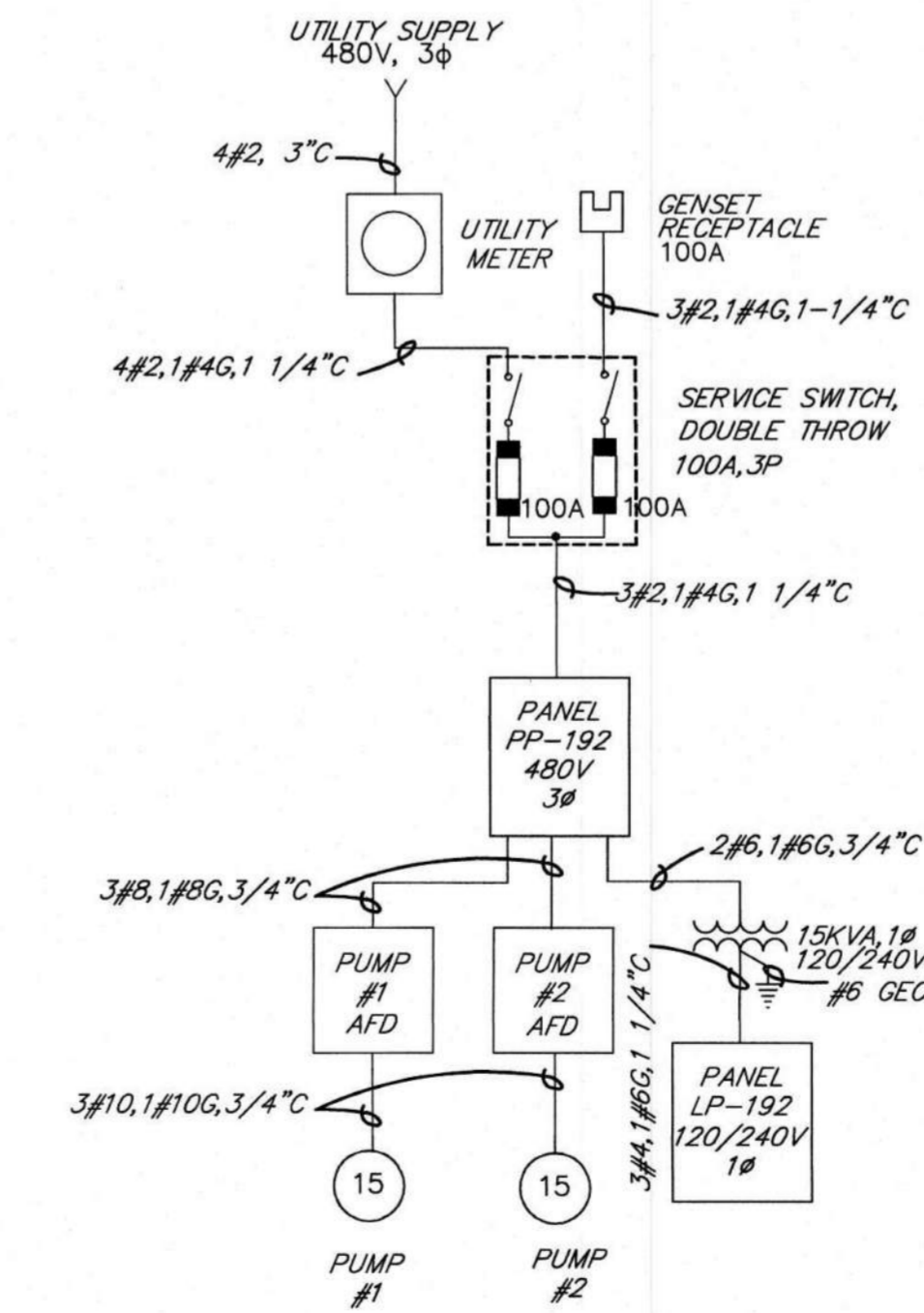
CIRCUIT DESCRIPTION	VA	POLES	BREAKER	NO	PHASE A			PHASE B			PHASE C			BREAKER	POLES	VA	CIRCUIT DESCRIPTION
					VA	VA	VA	NO	NO	NO	NO	NO					
SPD		3	30A	1	7000						2	30A	3	7000			PUMP #1 AFD
				3							4						
				5							6						
PANEL LP-192 / TRANSFORMER	7500	2	60A	7	14500						8	30A	3	7000			PUMP #2 AFD
	7500			9							10						
				11							12						
HPU-192	4700	3	20A	13	4700						14	30A	3				SPARE
	4700			15							16						
	4700			17							18						
				19	0						20						
				21							22						
				23							24						
				25	0						26						
				27							28						
				29							30						
TOTAL VA PER PHASE:					26200	26200	18700										
TOTAL AMPS PER PHASE:					94.6	94.6	67.5	TOTAL PANEL VA: 71100									

NOTES:
1. PROVIDE INTEGRAL SURGE SUPPRESSION SPD

PANEL:	LP-192	VOLTAGE:	120/240V, 1Ø, 3W
ENCLOSURE:	NEMA 1	MAINS AMPACITY:	100A
MOUNTING:	WALL	MAIN C.B. SIZE:	80A
LOCATION:	KY-192	TOTAL SPACES:	18

CIRCUIT DESCRIPTION	VA	POLES	BREAKER	NO	PHASE A			PHASE B			BREAKER	POLES	VA	CIRCUIT DESCRIPTION		
					VA	VA	VA	NO	NO	NO					NO	NO
SPD		2	30A	1	0					2	30A	2		SPARE		
				3						4						
LIGHTING - INTERIOR	700	1	20A	5	1200					6	15A	1	500	SCADA RTU		
RECEPTACLES	600	1	20A	7					7	700	8	15A	1	100	FLOW METER	
RECEPTACLES	600	1	20A	9	600					10	15A	1		SPARE		
PUMP CP	200	1	20A	11					11	1700	12	20A	1	1500	DEHUMIDIFIER	
LIGHTING - EXTERIOR	100	1	20A	13	100					14	15A	1		SPARE		
SPARE	1	20A	15						15	0	16	15A	1		SPARE	
SPARE	1	20A	17						17	0	18	15A	1		SPARE	
TOTAL VA PER PHASE:					1900	2400										
TOTAL AMPS PER PHASE:					15.8	20	TOTAL PANEL VA: 4300									

NOTES:
1. PROVIDE INTEGRAL SURGE SUPPRESSION SPD



KY-192 ONE-LINE DIAGRAM
N.T.S.

GENERAL NOTES:

• EXTERIOR ELECTRICAL EQUIPMENT SHALL BE NEMA 4X STAINLESS TYPE 316. INTERIOR ELECTRICAL EQUIPMENT SHALL BE NEMA1 OR NEMA 12

SHEET NOTES:

- SEE ONE-LINE DIAGRAM, THIS SHEET, FOR REQUIREMENTS
- COORDINATE WITH UTILITY FOR ACTUAL LOCATION OF TRANSFORMER POLE. PROVIDE RISER PER UTILITY REQUIREMENTS
- PROVIDE TRANSFORMER MOUNTED ON 4" CONCRETE PAD. SEE ONE-LINE DIAGRAM FOR REQUIREMENTS
- PROVIDE #4 GEC, 3/4" AND PROVIDE BUILDING GROUND LOOP PER DETAIL
- PROVIDE 2-2#18 STIC, 1#14G, 3/4"
- PROVIDE THERMOSTAT CABLE, 1#14G, 1"
- PROVIDE DOOR CONTACT SWITCH
- PROVIDE 4-2#18 STIC, 1#14G, 1"
- PROVIDE 10#14, 1#14G, 1/2"
- PROVIDE 20#14, 1#14G, 1"

SOUTHEASTERN WATER ASSOCIATION
KY 192/KY 1003 WATERLINES & SANDY GAP/
DIXIE BEND PUMP STATION REPLACEMENTS



DRAWN BY:	CA
CHECKED BY:	BLM
DATE:	SEPT. 2017
SCALE:	AS SHOWN
REVISIONS:	

KENVIRONS, INC.
FRANKFORT, KENTUCKY

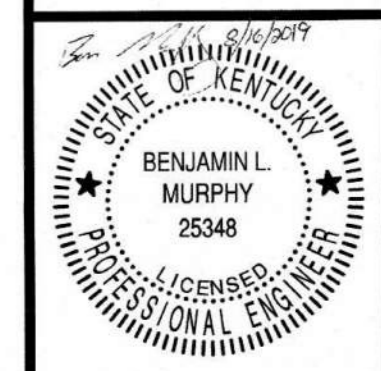


PROJECT NO.
2016173

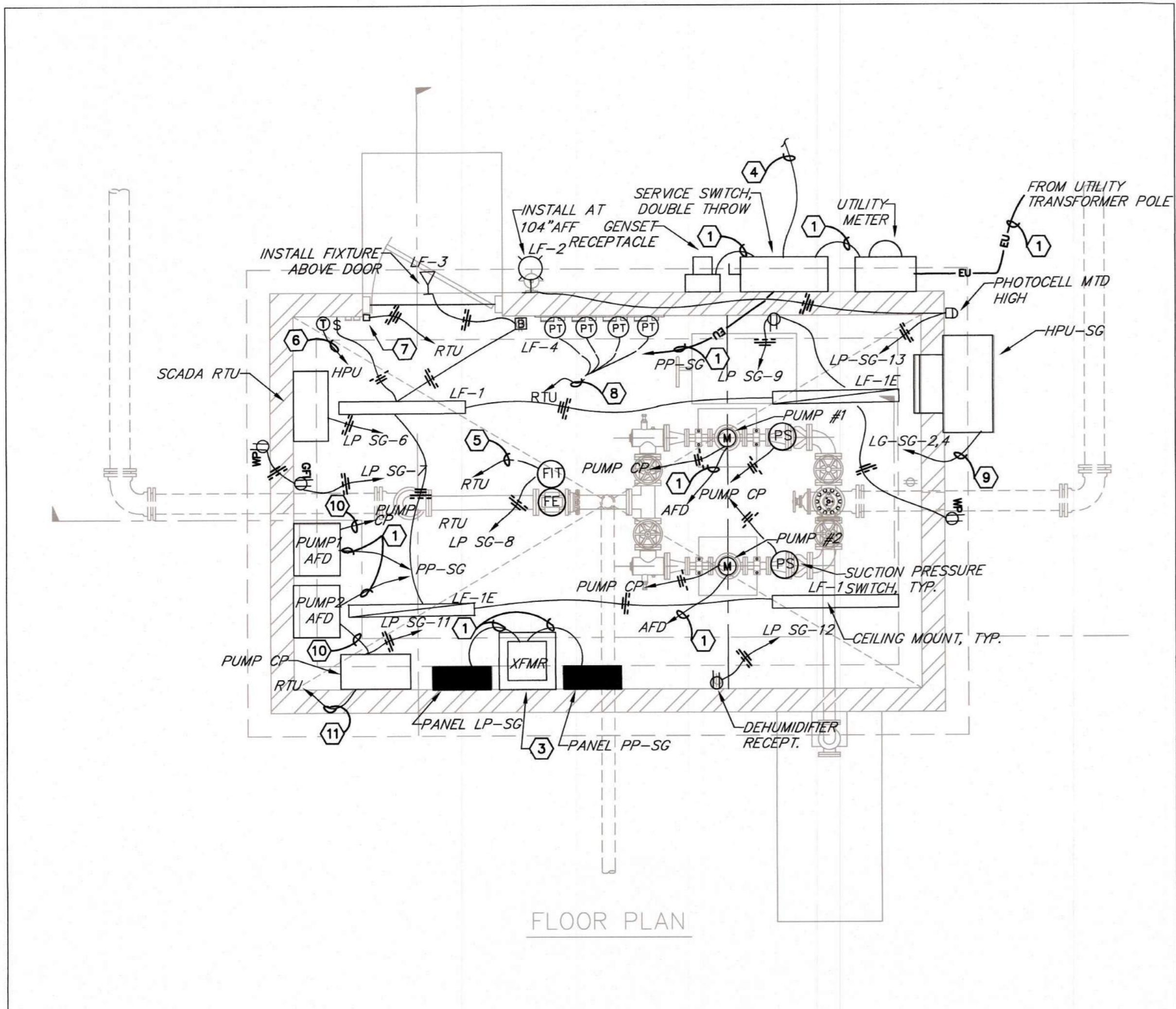
SHEET NO.
E-4



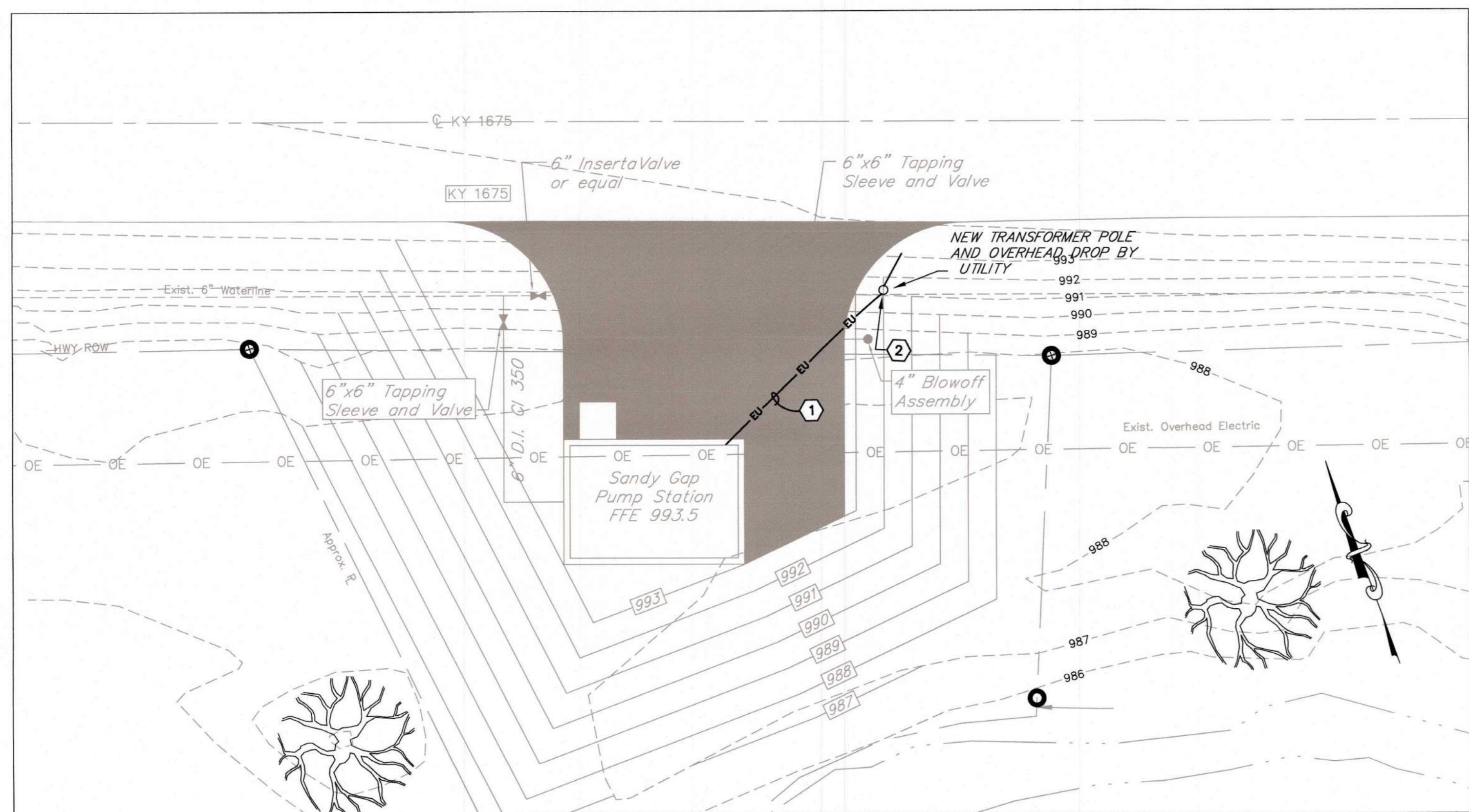
KY 192 PS ELECTRICAL



DRAWN BY: CA	
CHECKED BY: BLM	
DATE: Sept. 2017	
SCALE: As Shown	
REVISIONS	



SANDY GAP ELECTRICAL FLOOR PLAN
SCALE: 3/8"=1'0"



SANDY GAP ELECTRICAL SITE PLAN
SCALE: 1'0"=10'

PANEL:	PP-SG	VOLTAGE:	480, 3Ø, 3W
ENCLOSURE:	NEMA 1	MAINS AMPACITY:	100
MOUNTING:	WALL	MAIN C.B. SIZE:	100
LOCATION:	SANDY GAP	TOTAL SPACES:	30

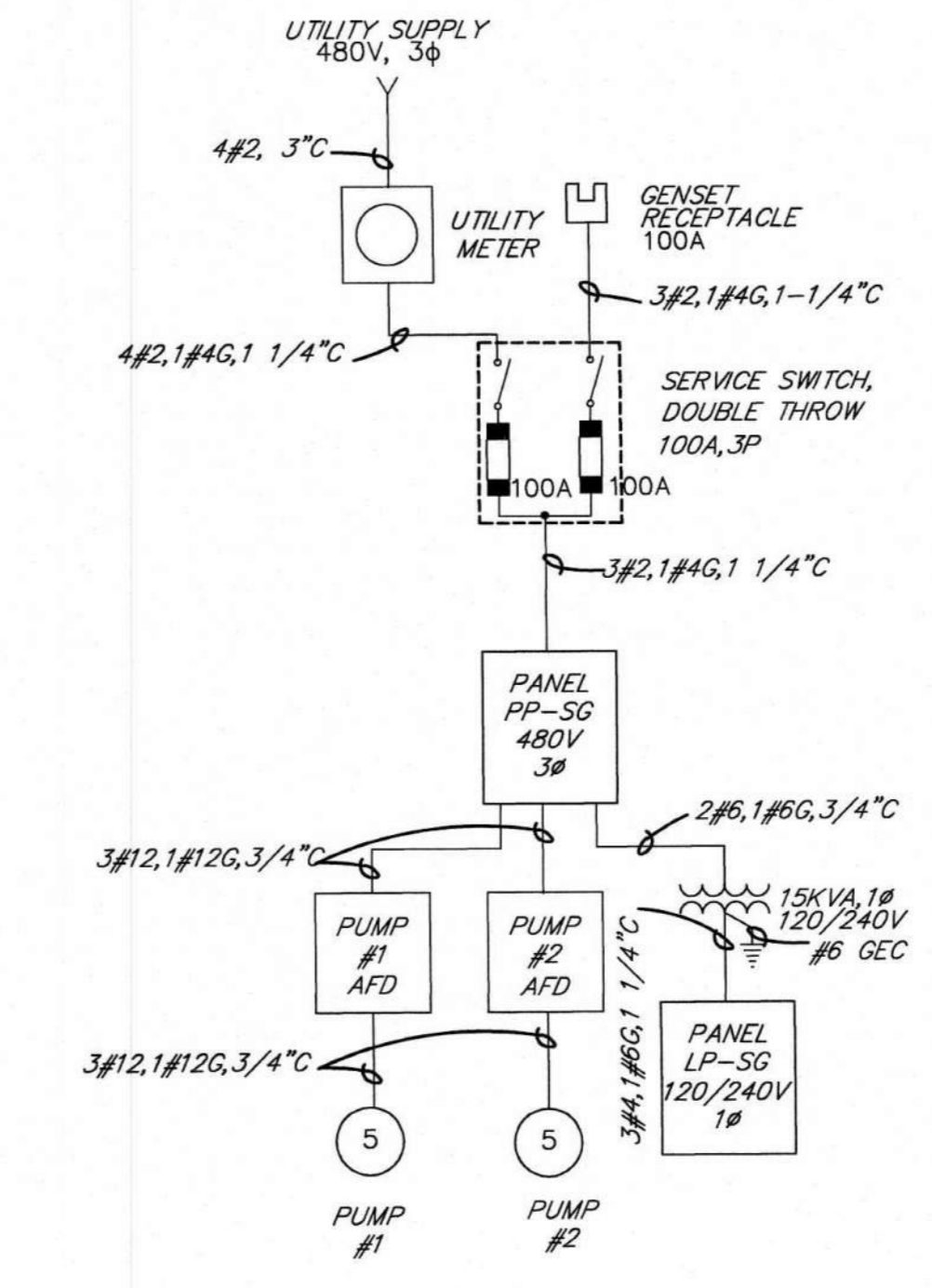
CIRCUIT DESCRIPTION	VA	POLES	BREAKER	NO	PHASE A VA	PHASE B VA	PHASE C VA	NO.	BREAKER	POLES	VA	CIRCUIT DESCRIPTION
SPD		3	30A	1	7000			2	15A	3	2100	PUMP #1 AFD
				3		7000		4			2100	
				5			7000	6			2100	
PANEL LP-SG / TRANSFORMER	7500	2	60A	7	14500			8	15A	3	2100	PUMP #2 AFD
	7500			9		14500		10			2100	
				11			7000	12			2100	
SPARE		3	30A	13	4700			14	15A	3	2100	SPARE
				15		4700		16				
				17			4700	18				
				19	0			20				
				21	0			22				
				23	0			24				
				25	0			26				
				27	0			28				
				29	0			30				
TOTAL VA PER PHASE:					26200	26200	18700					
TOTAL AMPS PER PHASE:					94.6	94.6	67.5	TOTAL PANEL VA: 71100				

NOTES:
1. PROVIDE INTEGRAL SURGE SUPPRESSION SPD

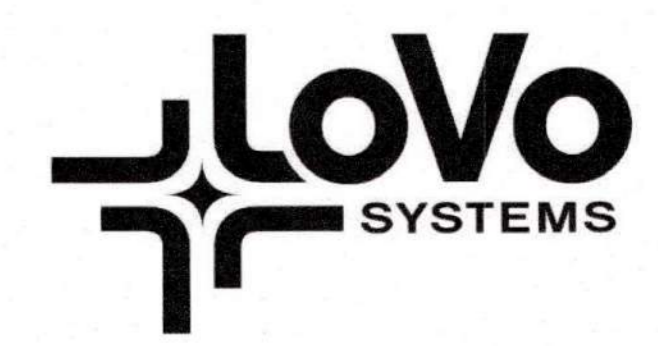
PANEL:	LP-DB	VOLTAGE:	120/240V, 1Ø, 3W
ENCLOSURE:	NEMA 1	MAINS AMPACITY:	100A
MOUNTING:	WALL	MAIN C.B. SIZE:	80A
LOCATION:	SANDY GAP	TOTAL SPACES:	18

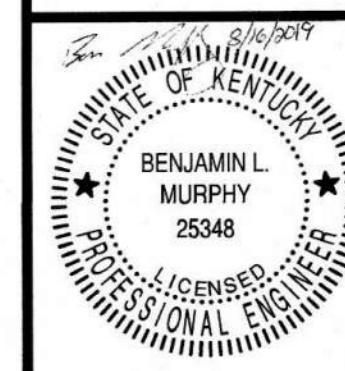
CIRCUIT DESCRIPTION	VA	POLES	BREAKER	NO	PHASE A VA	PHASE B VA	PHASE C VA	NO.	BREAKER	POLES	VA	CIRCUIT DESCRIPTION
SPD		2	30A	1	5000			2	60A	2	5000	SPARE
				3		5000		4			5000	
LIGHTING - INTERIOR	700	1	20A	5	1200			6	15A	1	500	SCADA RTU
RECEPTACLES	600	1	20A	7		700		8	15A	1	100	FLOW METER
RECEPTACLES	600	1	20A	9	600			10	15A	1		SPARE
PUMP CP	200	1	20A	11		1700		12	20A	1	1500	DEHUMIDIFIER
LIGHTING - EXTERIOR	100	1	20A	13	100			14	15A	1		SPARE
SPARE		1	20A	15		0		16	15A	1		SPARE
SPARE		1	20A	17		0		18	15A	1		SPARE
TOTAL VA PER PHASE:					6900	7400						
TOTAL AMPS PER PHASE:					57.5	61.7		TOTAL PANEL VA: 14300				

NOTES:
1. PROVIDE INTEGRAL SURGE SUPPRESSION SPD



SANDY GAP ONE-LINE DIAGRAM
N.T.S.





DRAWN BY: CA	CHECKED BY: BLM
DATE: Sept. 2017	SCALE: AS SHOWN
REVISIONS	



GENERAL NOTES:

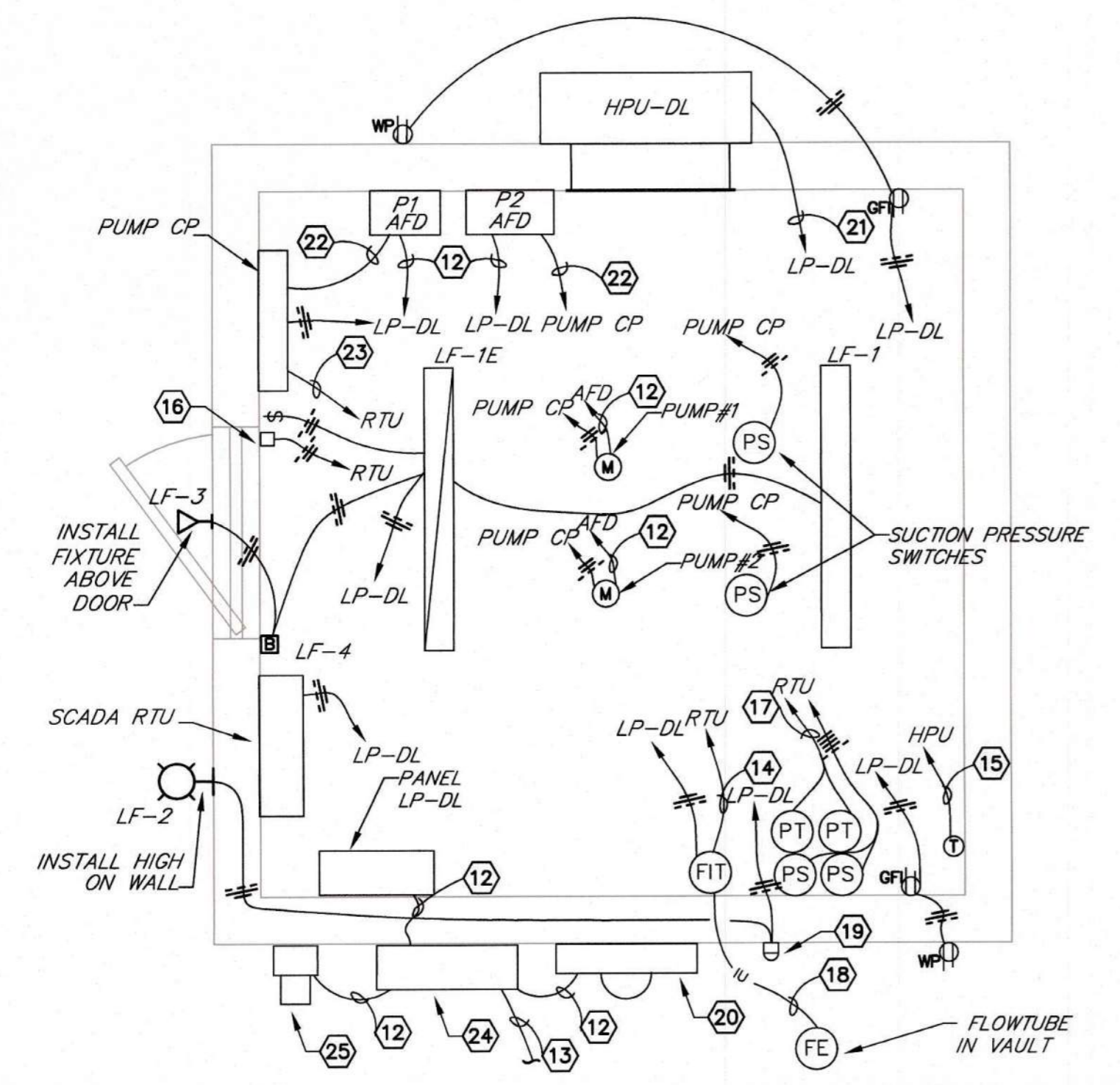
- * EXTERIOR ELECTRICAL EQUIPMENT SHALL BE NEMA 4X STAINLESS TYPE 316. INTERIOR ELECTRICAL EQUIPMENT SHALL BE NEMA1 OR NEMA 12

SHEET NOTES:

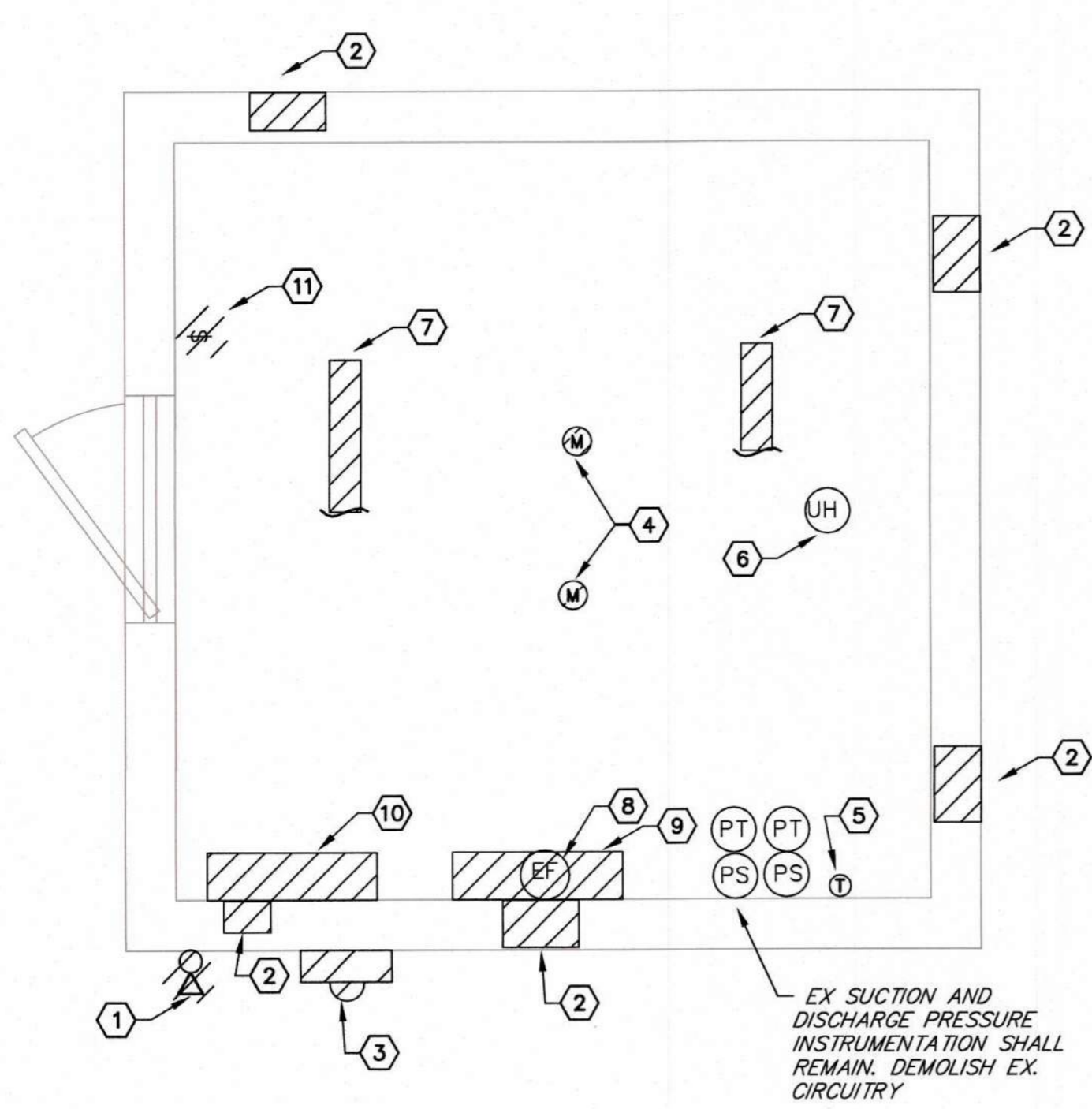
- 1 DEMO EX. ANTENNA MAST AND ANTENNAE
- 2 DEMO EX. BRICK VENT. REPLACE WITH NEW CMU BLOCK, AND PATCH TO MATCH EX. WALL
- 3 DEMO EX. METER AND SERVICE RISER
- 4 DEMO EX. PUMP MOTOR CIRCUITRY
- 5 DEMO EX. THERMOSTAT AND CIRCUITRY
- 6 DEMO EX. UNIT HEATER AND CIRCUITRY
- 7 DEMO EX. LIGHT FIXTURE AND CIRCUITRY
- 8 DEMO EX. EXHAUST FAN
- 9 DEMO EX. PUMP CP AND CIRCUITRY
- 10 DEMO EX. SCADA RTU AND CIRCUITRY
- 11 DEMO ALL EX. LIGHT SWITCHES AND RECEPTACLES
- 12 SEE ONE-LINE DIAGRAM, THIS SHEET, FOR REQUIREMENTS
- 13 PROVIDE #2 GEG, 1" C AND PROVIDE BUILDING GROUND LOOP PER DETAIL
- 14 PROVIDE 2-2#18 STG, 1#14G, 3/4" C
- 15 PROVIDE THERMOSTAT CABLE, 1#14G, 3/4" C
- 16 PROVIDE DOOR CONTACT SWITCH
- 17 PROVIDE 2-2#18 STG, 1#14G, 3/4" C
- 18 PROVIDE FLOWMETER PRIMARY CABLE, 1#14G, 1" C
- 19 PROVIDE PHOTOCELL MOUNTED HIGH ON WALL
- 20 PROVIDE UTILITY METER BASE AND OVERHEAD SERVICE RISER WITH WEATHERHEAD PER UTILITY REQUIREMENTS
- 21 PROVIDE 2#8, 1#10G, 3/4" C
- 22 PROVIDE 10#14, 1#14G, 3/4" C
- 23 PROVIDE 20#14, 1#14G, 1" C
- 24 PROVIDE DOUBLE-THROW SERVICE SWITCH PER ONE-LINE DIAGRAM
- 25 PROVIDE GENSET RECEPTACLE PER ONE-LINE DIAGRAM

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	48	48	48	2	60A	3	48	PUMP #1 AFD
			3				4			48	
			5				6			48	
HEAT PUMP HPU-DL	35	2	40A	7	83		8	60A	3	48	PUMP #2 AFD
	35			9			10			48	
SPARE	1	1	20A	11			12			48	
PUMP CP	2	1	20A	13	6		14	15A	1	4	SCADA RTU
				15			16				
LIGHTING EXTERIOR RECEPTACLES	1	1	20A	17			18	15A	1	1	FLOW METER
	5	1	20A	19	8		20	20A	1	3	LIGHTING INTERIOR
				21			22				
				23			24	15A	1		SPARE
				25	0		26	20A	1		SPARE
				27			28				SPARE
				29			30	20A	1		SPARE
TOTAL AMPS PER PHASE:				145	131	103					

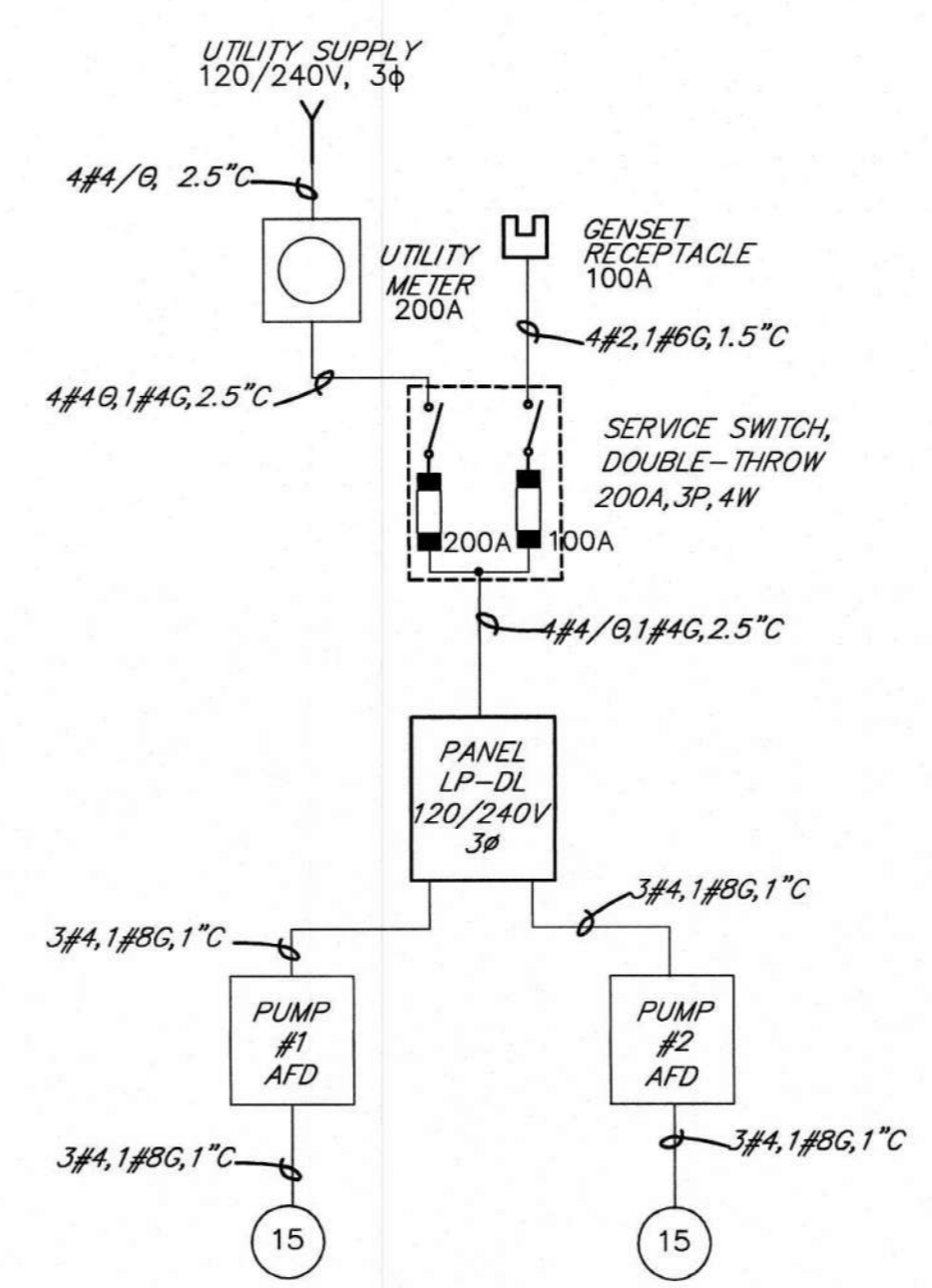
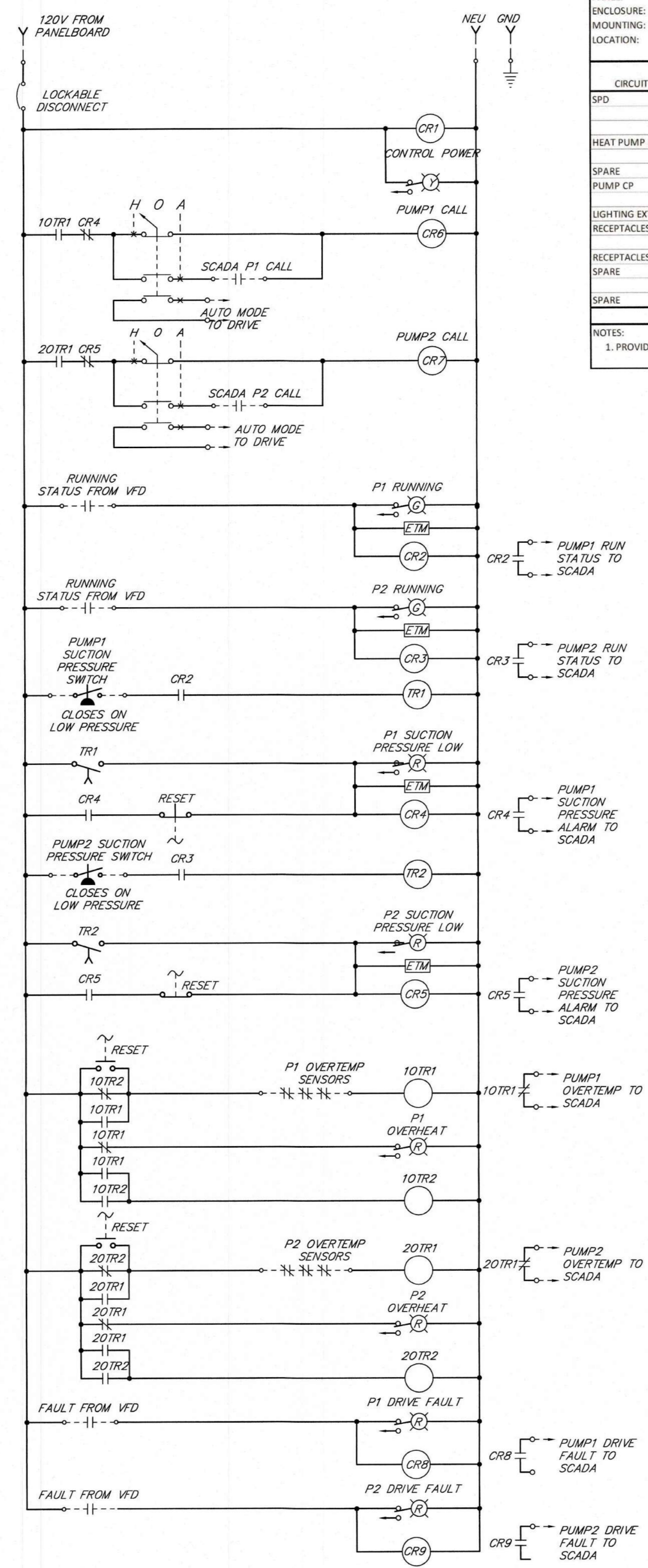
NOTES:
 1. PROVIDE INTEGRAL SURGE SUPPRESSION DEVICE (SPD)



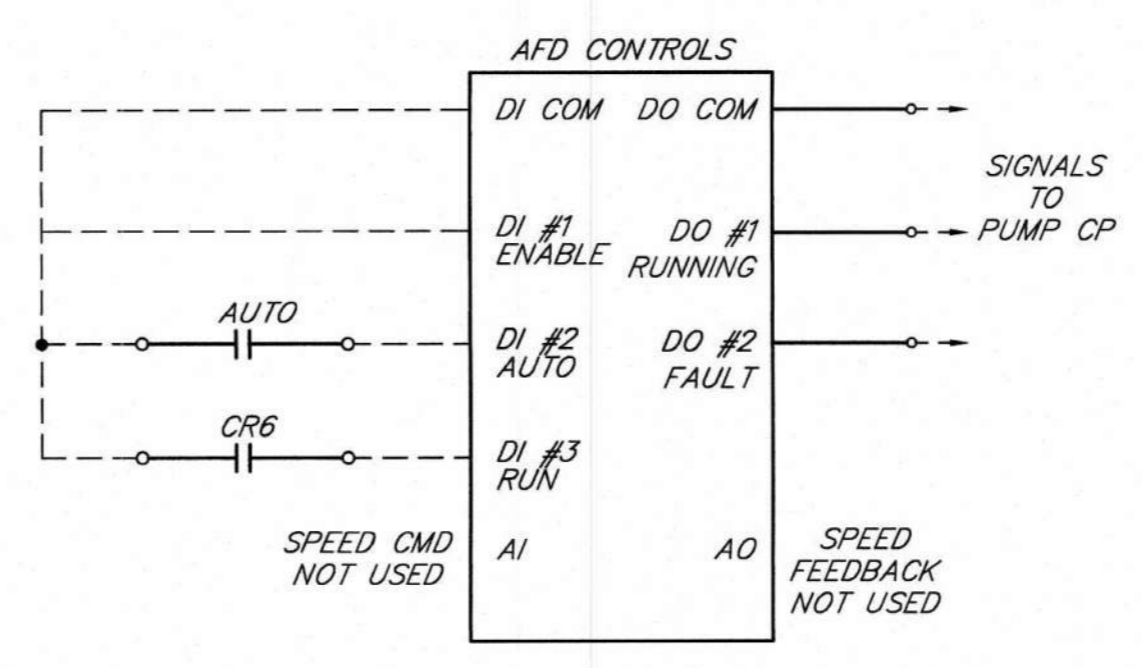
DAHL ELECTRICAL NEW WORK PLAN
 SCALE: 1/2" = 1'-0"



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



DAHL ONE-LINE DIAGRAM
 NOT TO SCALE



PUMP STATION CONTROL PANEL, TYP.
 NOT TO SCALE

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

