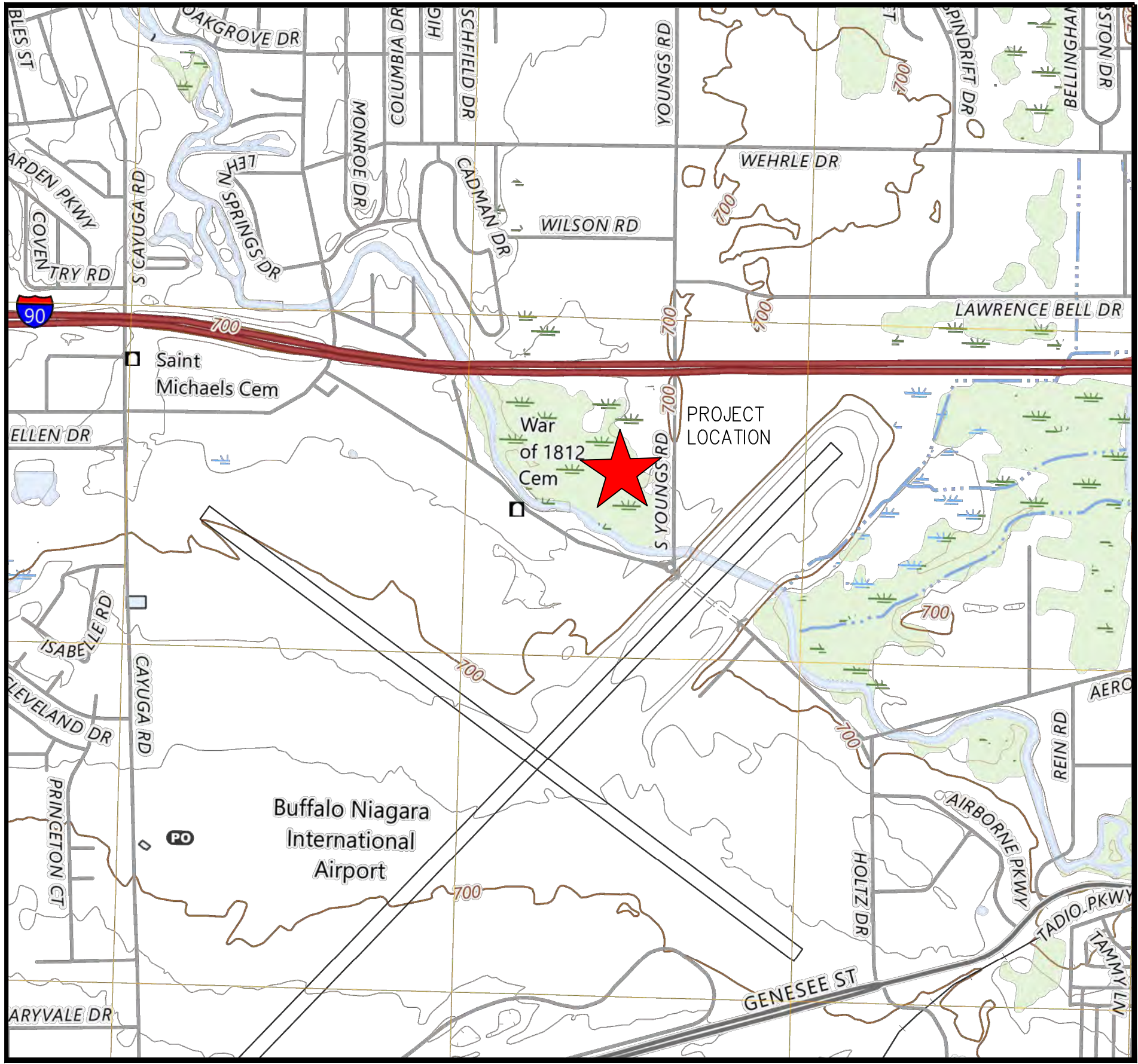


S. YOUNGS ROAD PRIVATE PUMP STATION REDESIGN

The Krog Group
669 S. Youngs Road
Amherst, New York



PROJECT LOCATION MAP
N.T.S.

Sheet List Table	
Sheet Number	Sheet Title
00	COVER SHEET
01	EXISTING CONDITIONS PLAN
02	KROG PUMP STATION SITE PLAN
03	KROG PUMP STATION DETAILS
04	PROPOSED PLAN & PROFILE 1
05	PROPOSED PLAN & PROFILE 2
06	PROPOSED PLAN & PROFILE 3
07	FORCEMAIN CROSSING DETAILS
08	FORCEMAIN DETAILS
EL-1	KROG PUMP STATION ELECTRICAL DETAILS

H:\2023\WNY-2300114.00 YOUNGS ROAD PRIVATE PS REDESIGN\CADD\Design Plans\00 COVER SHEET.dwg Wednesday, 24 April 2024, 3:31PM

PREPARED FOR
The Krog Group
 4 Centre Drive
 Orchard Park, NY 14127

THOMAS J. WOLANSKI, P.E. DATE: 4/24/24

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GPI Engineering
 Design
 Planning
 Construction Management

(716) 633-4844 GPINET.COM

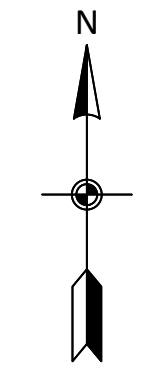
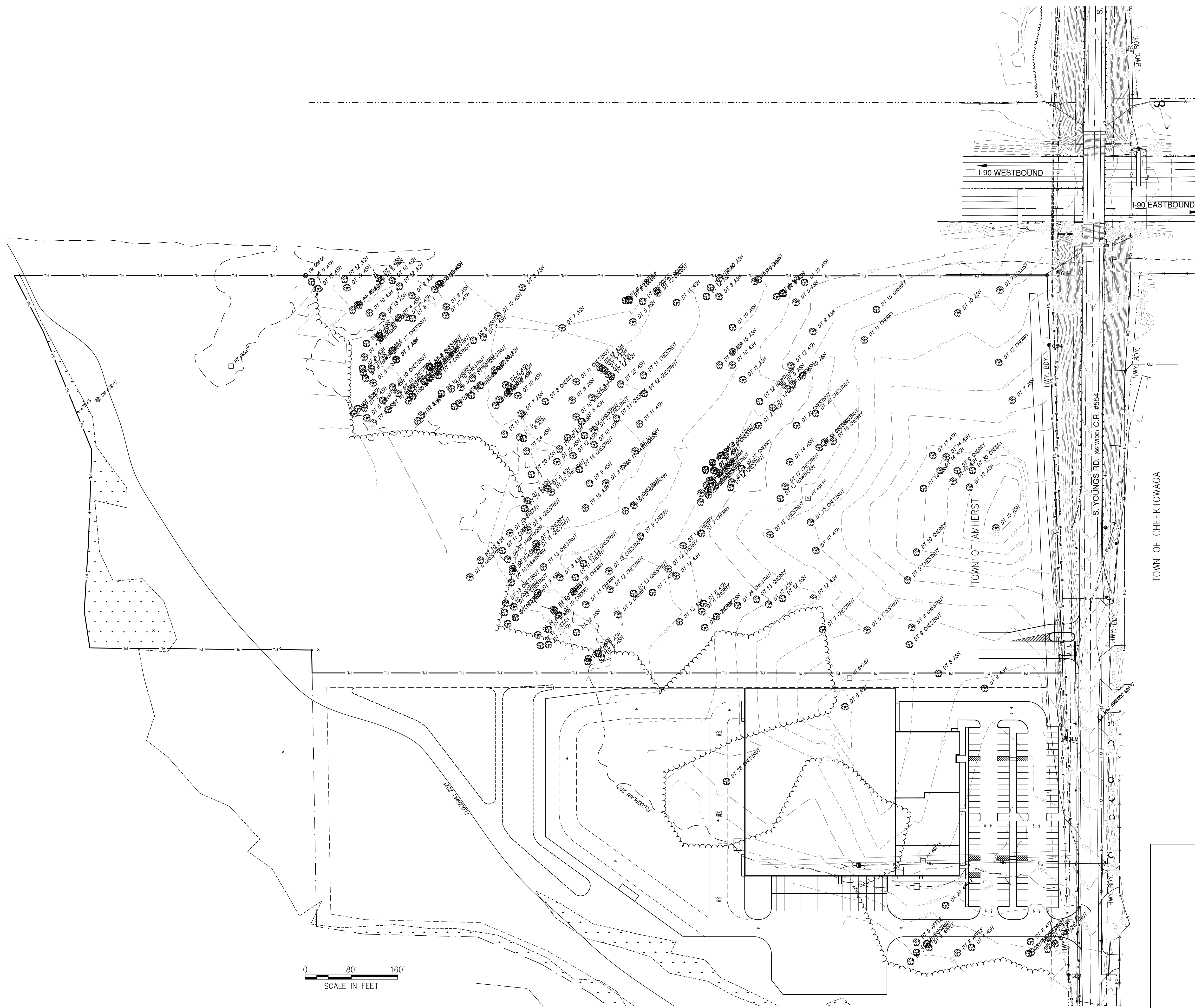
Greenman - Pedersen, Inc.
 4950 Genesee Street, Suite 100
 Buffalo, NY, 14225

WNY-2300114.00 February, 2024

FOR OFFICIAL TOWN USE

SHEET NO.
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GPI Engineering
Design
Planning
Construction Management
716) 633-4844
GPI.NET.COM
Greenman - Pedersen, Inc.
4950 Genesee Street, Suite 100
Buffalo, NY, 14225

PREPARED FOR
The Krog Group
4 Centre Drive
Orchard Park, NY 14127

**S. YOUNGS ROAD PRIVATE
PUMP STATION REDESIGN**
669 S. Youngs Road
Amherst, New York



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February, 2024
DRAWN/DESIGN BY: DV CHECKED BY: RC

**EXISTING
CONDITIONS PLAN**

SCALE: 1" = 80'

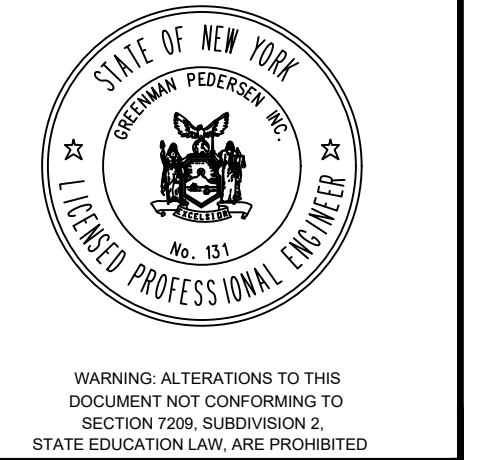
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PREPARED FOR
 The Krog Group
 4 Centre Drive
 Orchard Park, NY 14127

**S. YOUNGS ROAD PRIVATE
 PUMP STATION REDESIGN**
 669 S. Youngs Road
 Amherst, New York

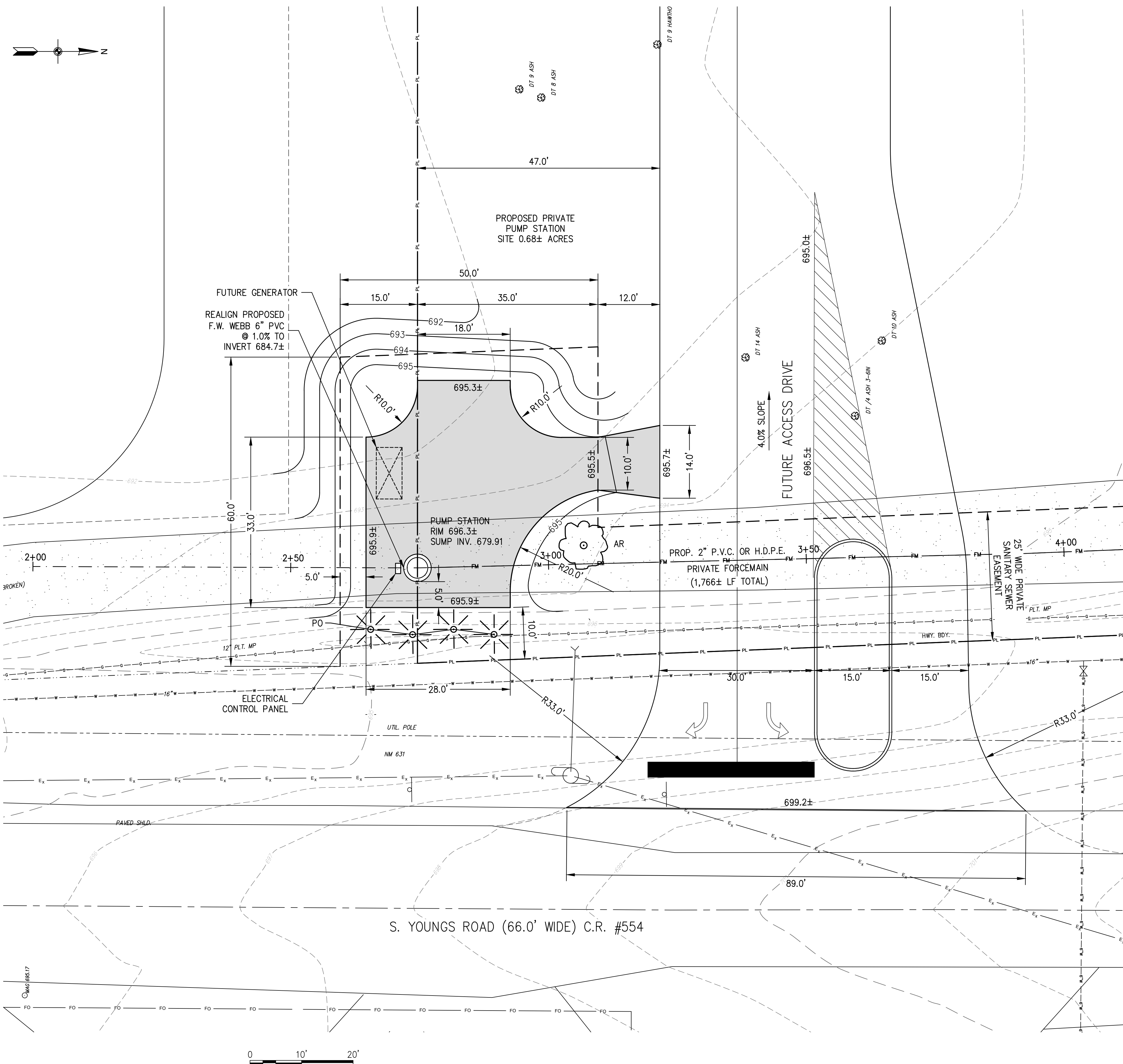


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NO.	REVISION	DATE

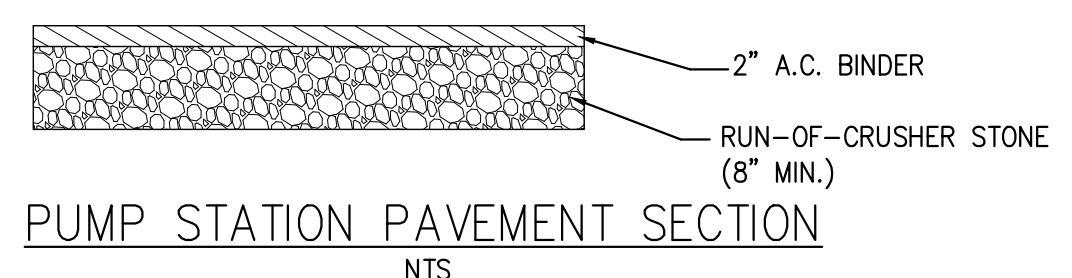
February, 2024
 DRAWN/DESIGN BY: DV
 CHECKED BY: RC

**KROG PUMP
 STATION SITE
 PLAN**
 SCALE: As Noted
 WNY-2300114.00
 02



PLANT SCHEDULE:

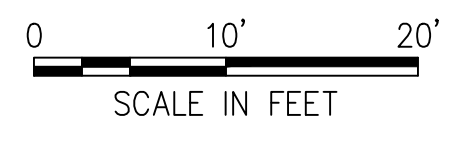
KEY	QTY.	BOTANICAL NAME	COMMON NAME	MIN. SIZE	ROOT	SPACING
AR	1	ACER RUBRUM "FRANKSRED"	RED SUNSET RED MAPLE	2 1/2" CAL.	B&B	---
PO	4	PINUS OMORIKA	SERBIAN SPRUCE	5'-6' HT.	B&B	8' O.C.



NOTE:
 ALL CONSTRUCTION WITHIN S. YOUNGS ROAD (C.H. #554) R.O.W. SHALL CONFORM TO ERIE COUNTY HIGHWAY WORK PERMIT SPECIFICATIONS AND DETAILS.
 CONTRACTOR IS TO OBTAIN AND CONFORM TO THE REQUIREMENTS OF A HIGHWAY WORK PERMIT FOR ALL WORK PERFORMED WITHIN THE R.O.W. OF S. YOUNGS ROAD (C.H. #554).
 CONTRACTOR WILL BE REQUIRED TO PREPARE A MAINTENANCE & PROTECTION OF TRAFFIC PLAN TO THE ERIE COUNTY HIGHWAY DEPARTMENT PRIOR TO THE SUBMITTAL OF THE WORK PERMIT WITHIN THE RIGHT-OF-WAY OF S. YOUNGS ROAD (C.H. #554).
 CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF AMHERST CONSTRUCTION SPECIFICATIONS AND DETAILS. CONTRACTOR TO VERIFY LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

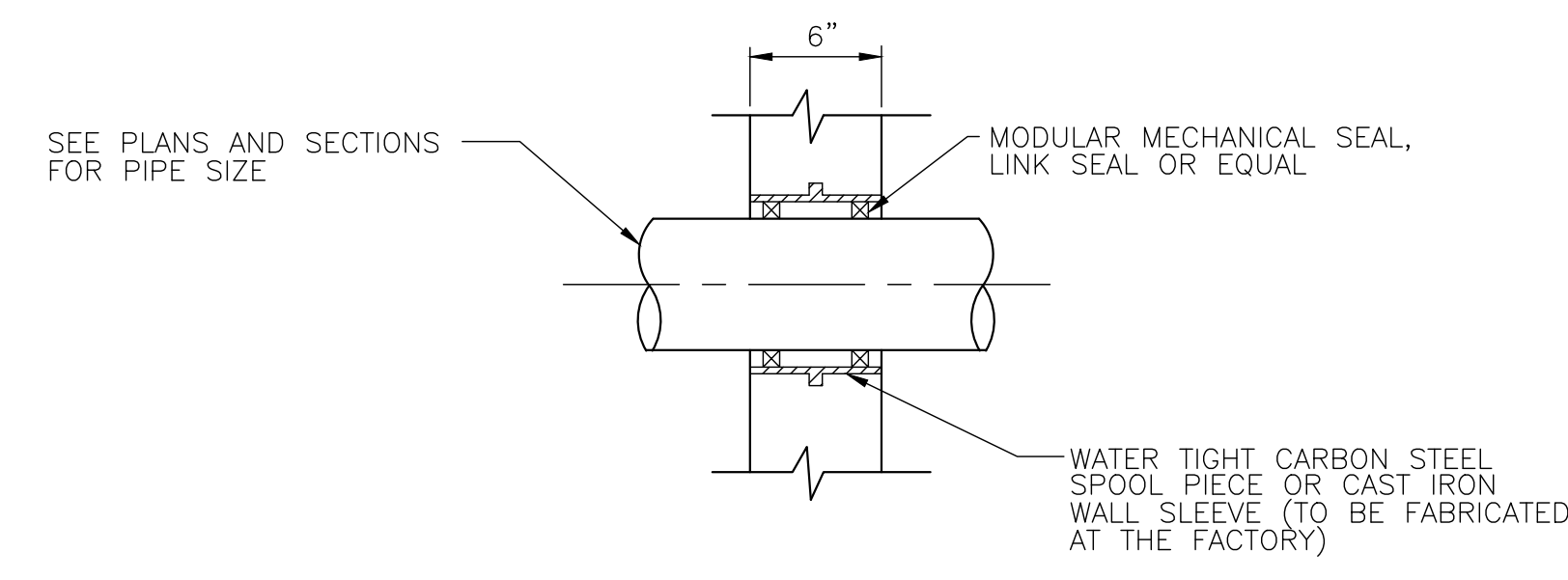
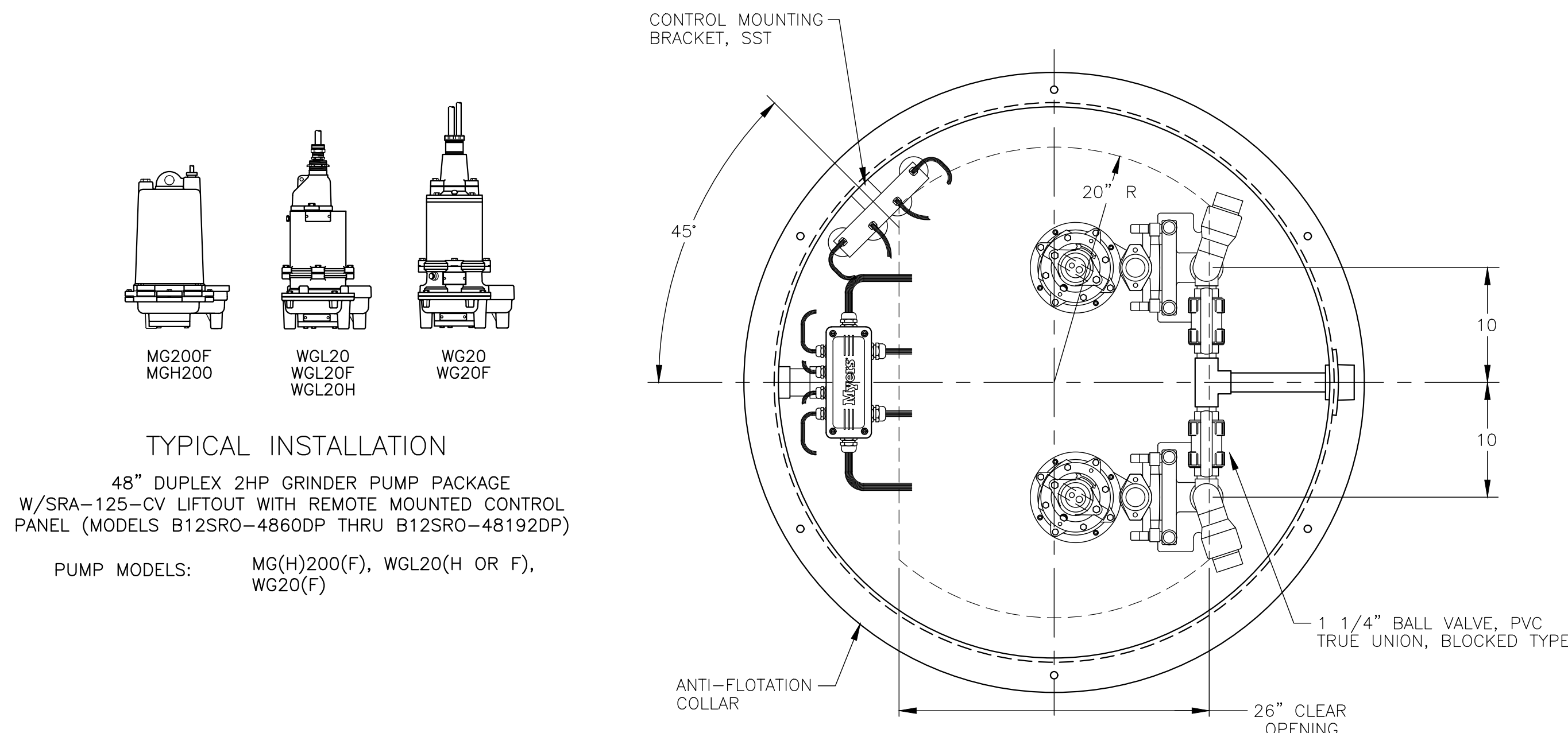
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NOTE:
 CONSTRUCTION OUTSIDE OF THE NYSTA R.O.W. SHALL BE IN ACCORDANCE WITH TOWN OF AMHERST CONSTRUCTION SPECIFICATIONS OR ERIE COUNTY SPECIFICATIONS WHERE APPLICABLE AND/OR SUBJECT TO LATEST REVISION.

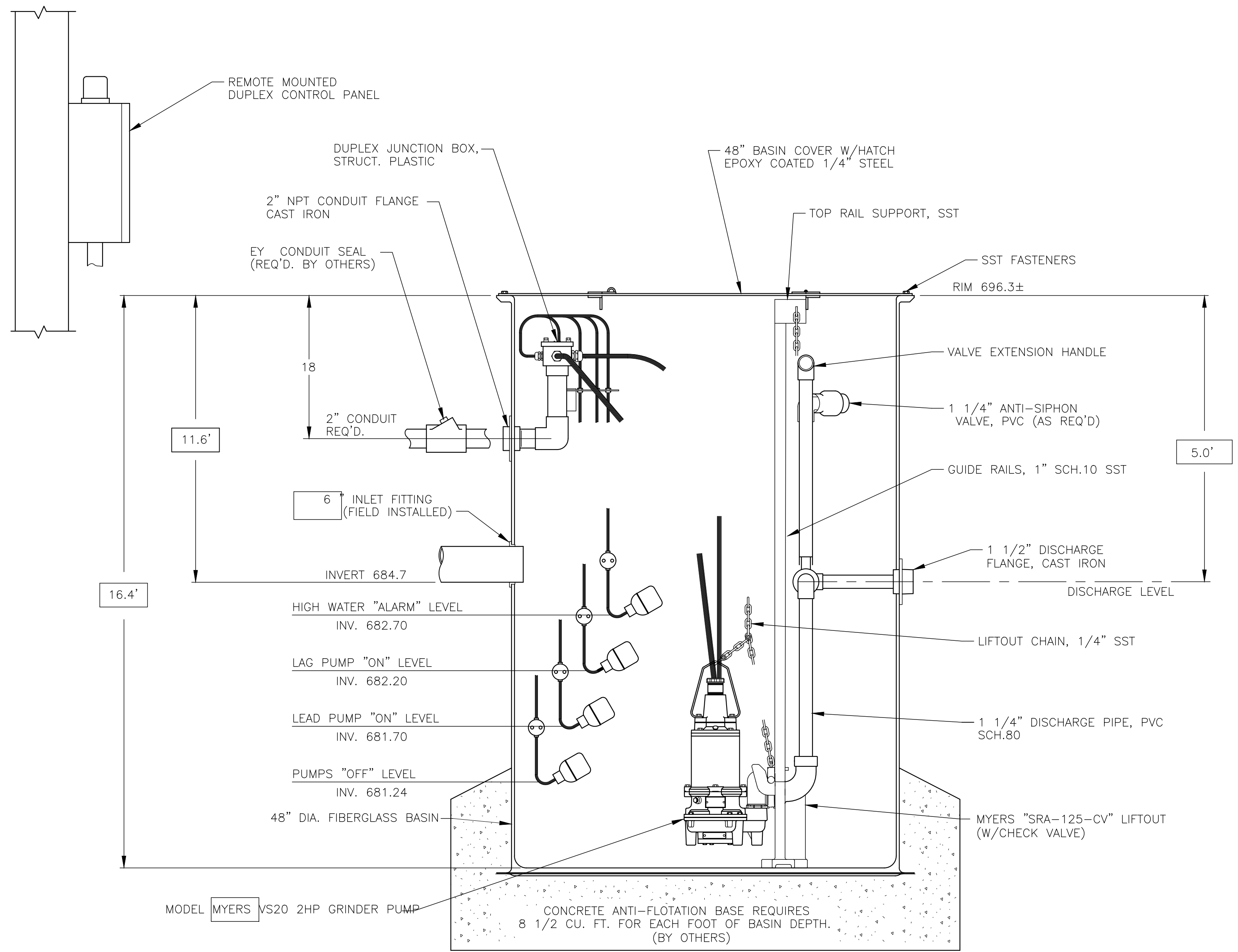
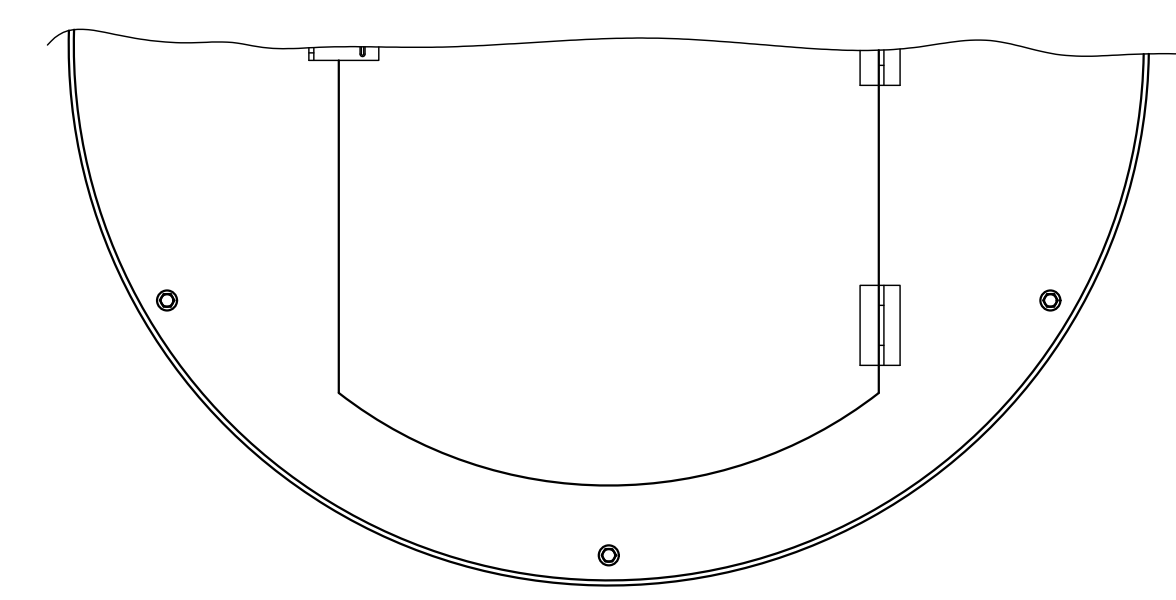


REVISIONS	
NO.	REVISION

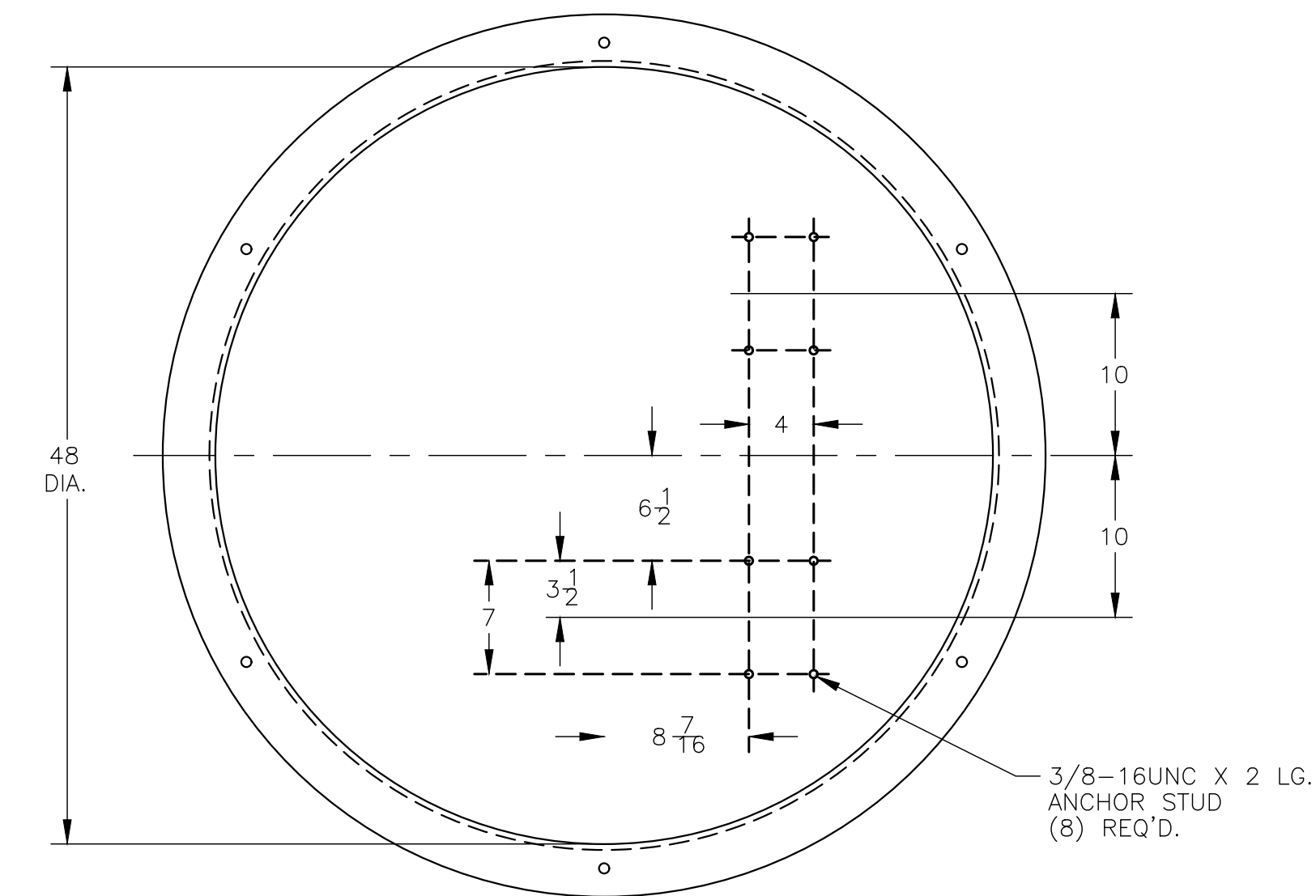
February, 2024
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**TYPICAL WALL PENETRATION
VALVE PIT AND PUMP STATION**
N.T.S.



WET WELL DETAIL
N.T.S.



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**S. YOUNGS ROAD PRIVATE
PUMP STATION REDESIGN**
669 S. Youngs Road
Amherst, New York



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NO.	DATE

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DRAWN/DESIGN BY: DV
CHECKED BY: RC

**PROPOSED PLAN
& PROFILE 1**

SCALE: As Noted
WNY-2300114.00

FM BORING INSTALLATION NOTES:

1. THERE WILL BE A CREW WORKING WITHIN R.O.W.
2. THE DIRECTIONAL BORING MACHINE WILL BE LOCATED NEAR THE RIGHT OF WAY ON THE SOUTH SIDE. MAINTAIN A CLEAR ZONE OF 30 FEET FROM EDGE OF PAVEMENT. BORING IS TO PROCEED NORTH UNDER THE MAINLINE ROUTE 90. EXCAVATE THE TERMINUS OF THE BORE AND ATTACH THE 2" FORCEMAIN & 6" CASING PIPE AND PULL BACK THROUGH THE HOLE.
3. USING THE BACKHOE, EXCAVATE AND BURY THE FORCEMAIN FROM THE BORE TERMINUS TO THE NYSTA RIGHT OF WAY.

FM OPEN CUT INSTALLATION NOTES:

1. ALL TRENCHING, EXCAVATION AND BACKFILL SHALL CONFORM TO THE REQUIREMENTS OF THE LOCAL GOVERNING AUTHORITY.
2. SLOPE AS REQUIRED TO MAINTAIN STABILITY OF TRENCH WALL, OR PROVIDE SHEETING AND SHORING TO INSURE SAFETY OF PERSONNEL AND PROTECTION OF ADJACENT FACILITIES.
3. TRENCH EXCAVATIONS GREATER THAN FIVE FEET IN DEPTH SHALL BE ADEQUATELY SHORED PER OSHA STANDARDS.
4. SANITARY SEWER FORCEMAIN MARKING TAPE SHALL BE PLACED OVER ALL DIRECT BURIED FORCEMAINS.
5. CONTRACTOR TO PATCH AND REPAIR DAMAGED SURFACES EQUAL TO OR GREATER THAN CONDITIONS PRIOR TO CONSTRUCTION ACTIVITIES. ALL REPAIRS SHALL BE CONSTRUCTED PER THE CURRENT STANDARD CONSTRUCTION SPECIFICATIONS.
6. CONTRACTOR IS RESPONSIBLE FOR VERIFYING AND CALCULATING THE EXCAVATION QUANTITIES.
7. ROCK IS VERY SHALLOW AND VERY HARD. NO BLASTING SHALL BE ALLOWED.
8. CONTRACTOR TO SUPPLY NYSTA WITH PROPOSED EXCAVATION PLANS PRIOR TO ISSUANCE OF WORK PERMIT.
9. CONTRACTOR TO PRODUCE AND SUBMIT RECORD DRAWINGS WITHIN 30 DAYS OF COMPLETION OF INSTALLATION.

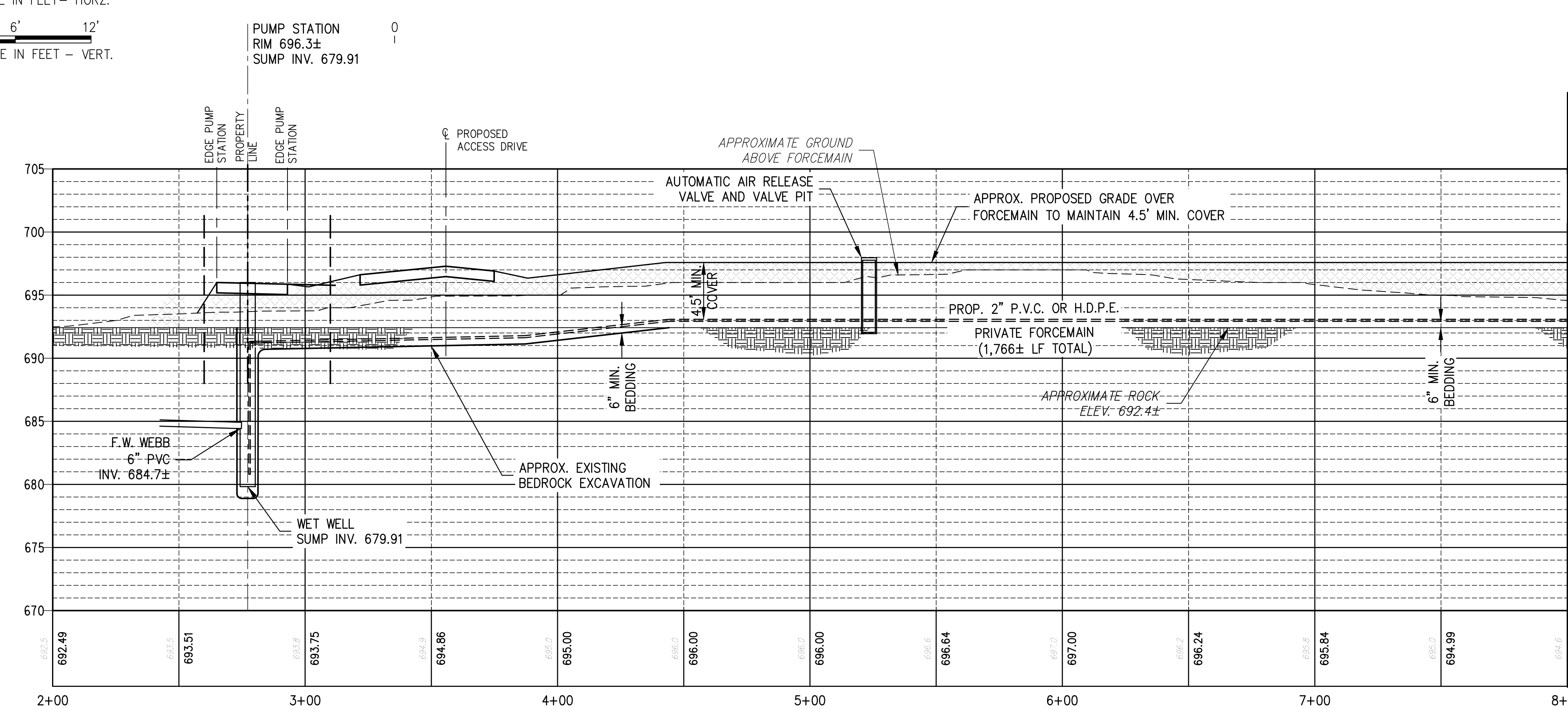
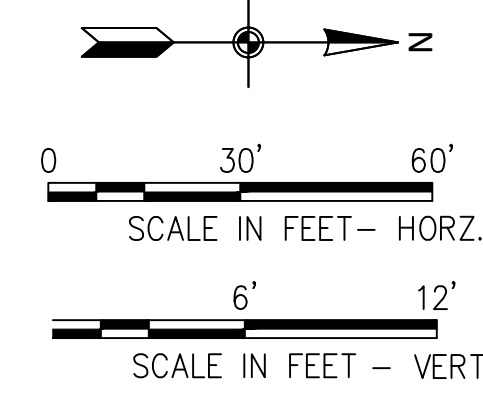
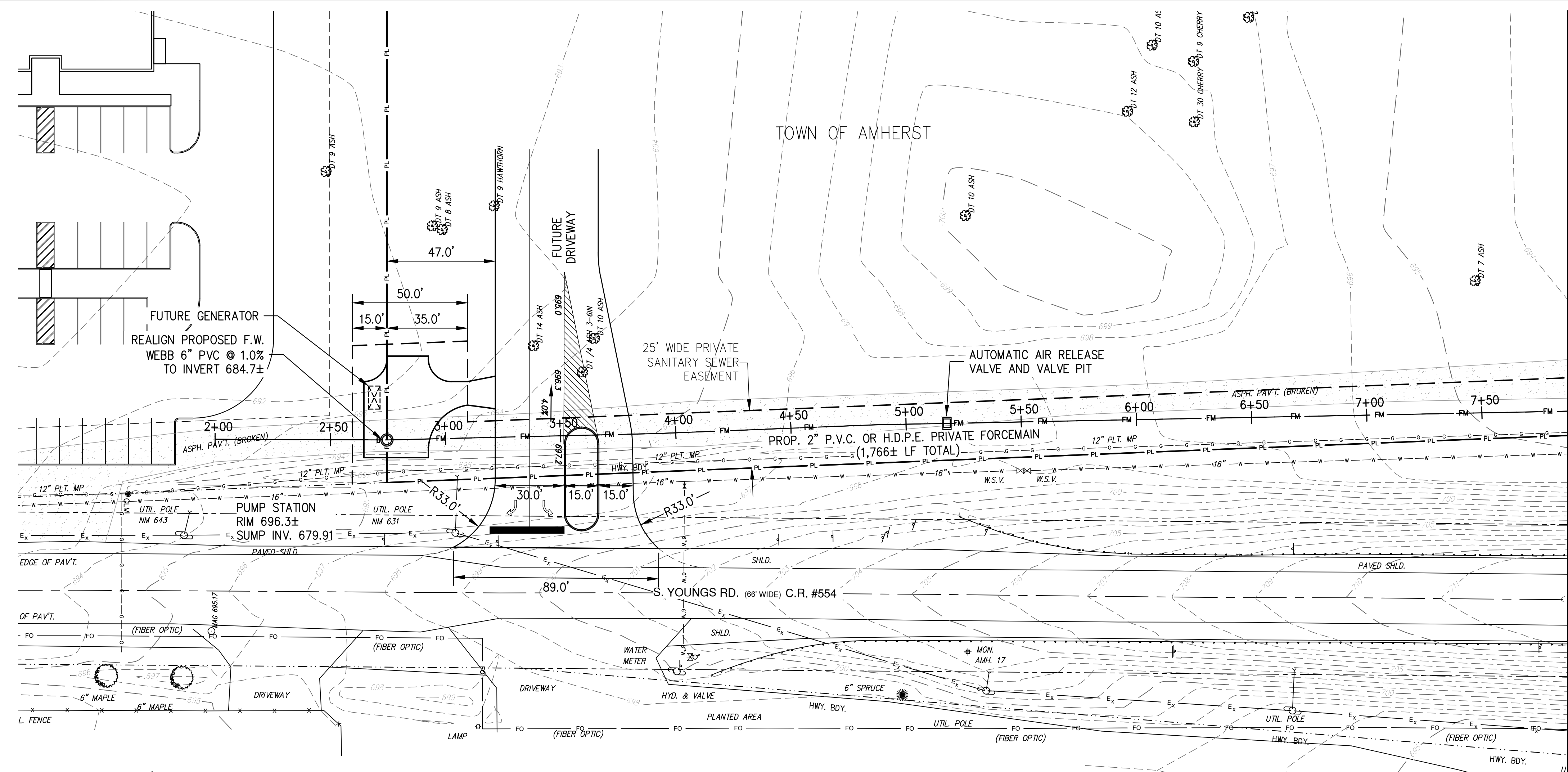
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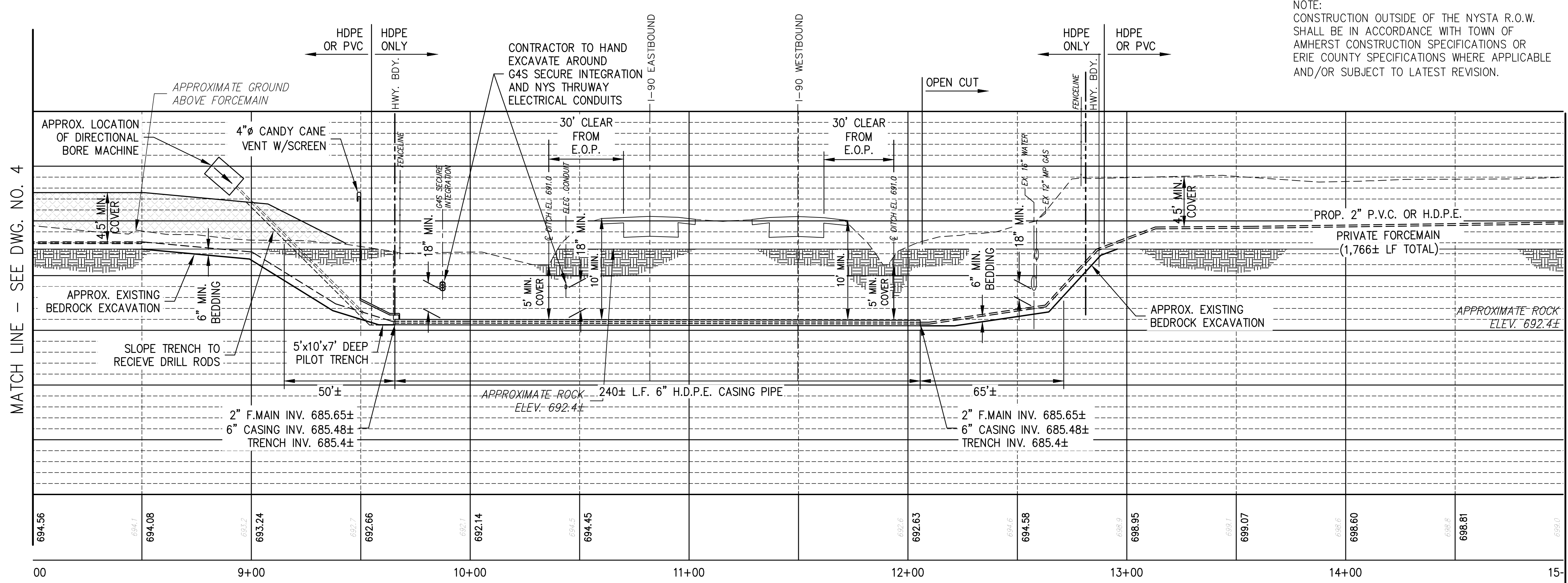
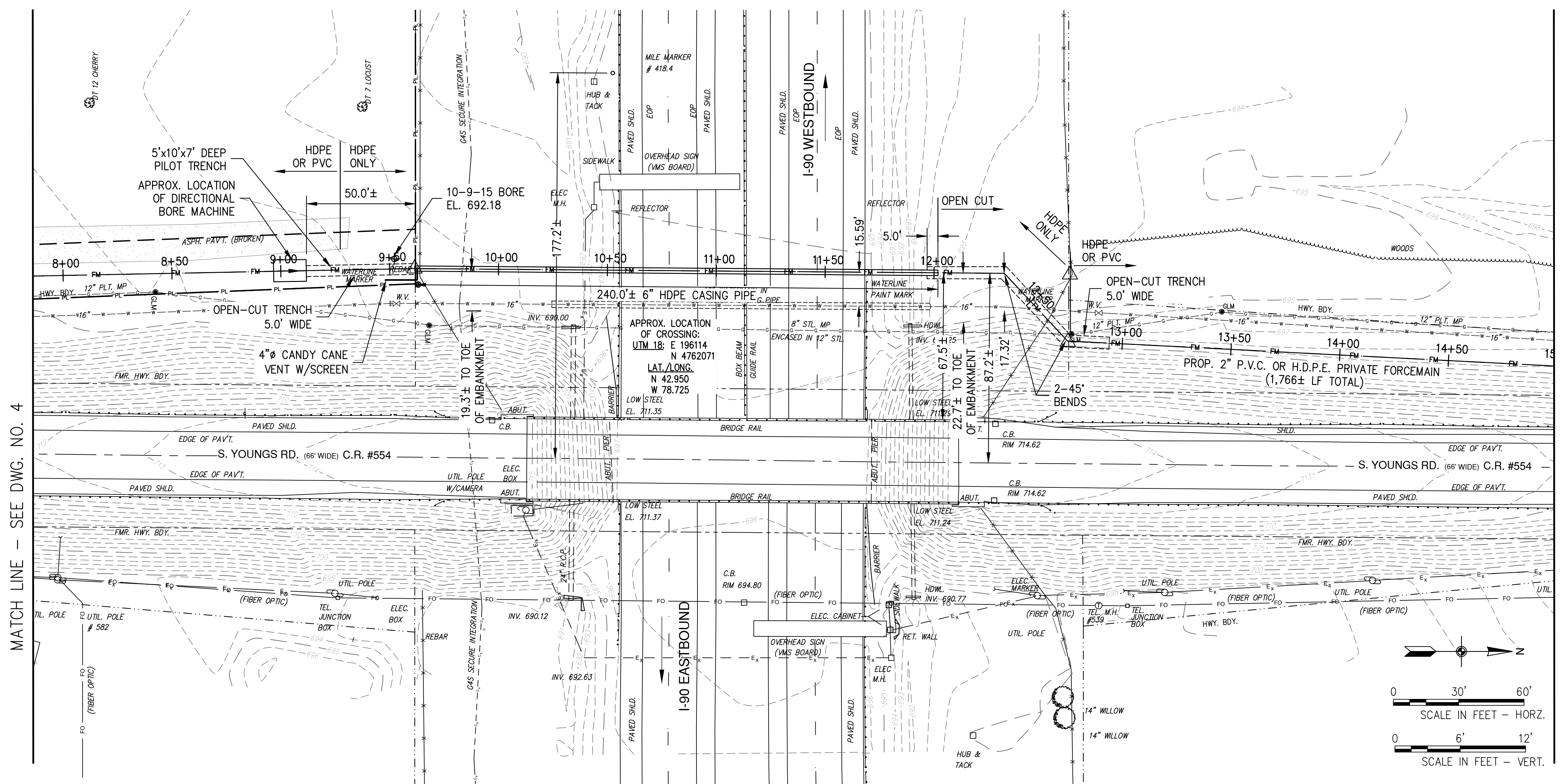
MATCH LINE - SEE DWG. NO. 5

MATCH LINE - SEE DWG. NO. 5



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I:\2023\WNY-2300114.00_YOUNGS ROAD PRIVATE PS REDESIGN\CAD\Design Plans\XX PROPOSED PLAN & PROFILE 3.dwg Wednesday, 24 April 2024 3:32PM



PROFILE: PROPOSED FORCEMAIN
 HORIZ: 1" = 30'
 VERT: 1" = 6'

△ UTILITY MARKER — 4 REQ'D 9
 (3 NYSTA, 1 YOUNGS RD. CROSSING)
 TWO ARE LOCATED WHERE FORCEMAIN CROSSES THE R.O.W. AND ONE ON ALIGNMENT AT THE R.O.W. OFFSET 31' FROM 45' BEND ON NORTH SIDE.
 UTILITY MARKER TO INDICATE: OWNER NAME, CONTACT TELEPHONE NUMBER, AND "SANITARY SEWAGE FORCEMAIN UNDER 40 PSI PRESSURE AT ___' DEPTH FROM EXISTING GROUND".

FM BORING INSTALLATION NOTES:

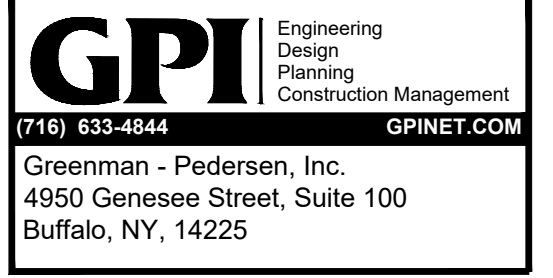
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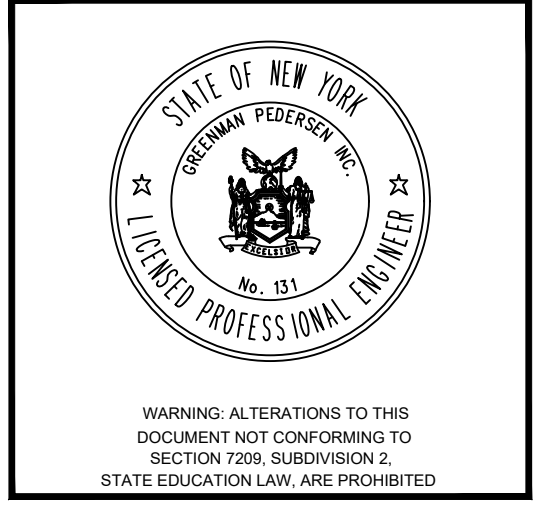
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PREPARED FOR
 The Krog Group
 4 Centre Drive
 Orchard Park, NY 14127

S. YOUNGS ROAD PRIVATE PUMP STATION REDESIGN
 669 S. Youngs Road
 Amherst, New York



REVISIONS	
NO.	DATE

February, 2024
 DRAWN/DESIGN BY: DV
 CHECKED BY: RC

PROPOSED PLAN & PROFILE 2
 SCALE: As Noted
 WNY-2300114.00
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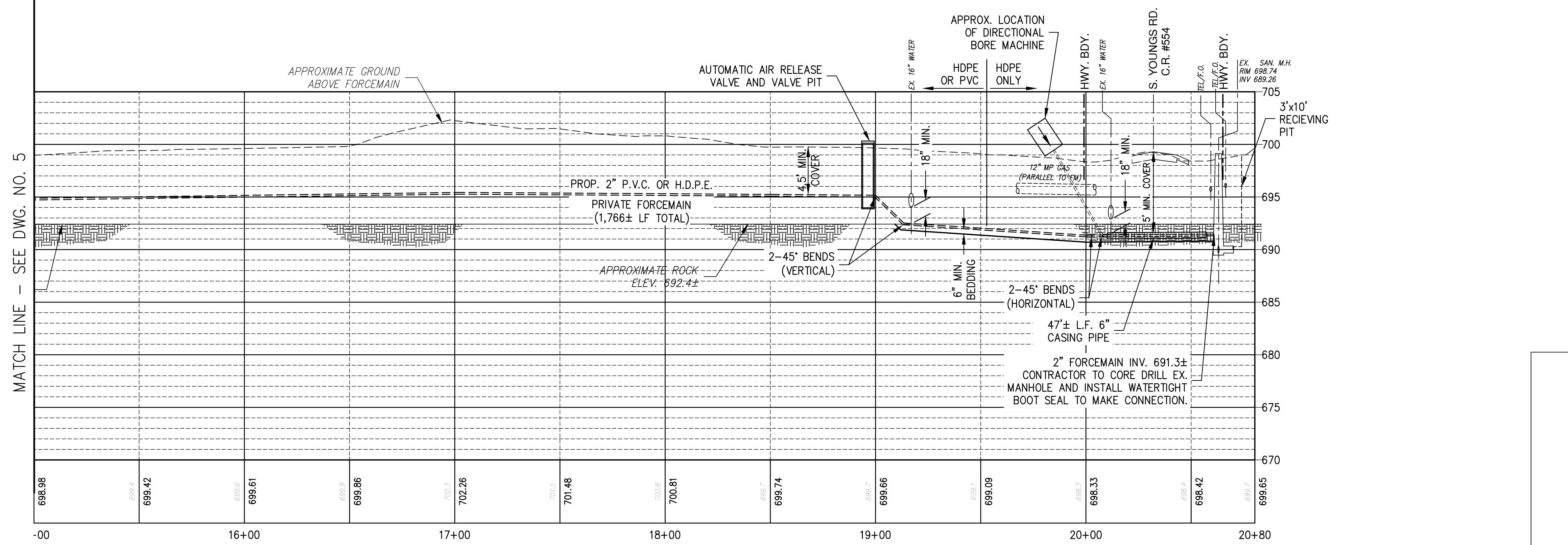
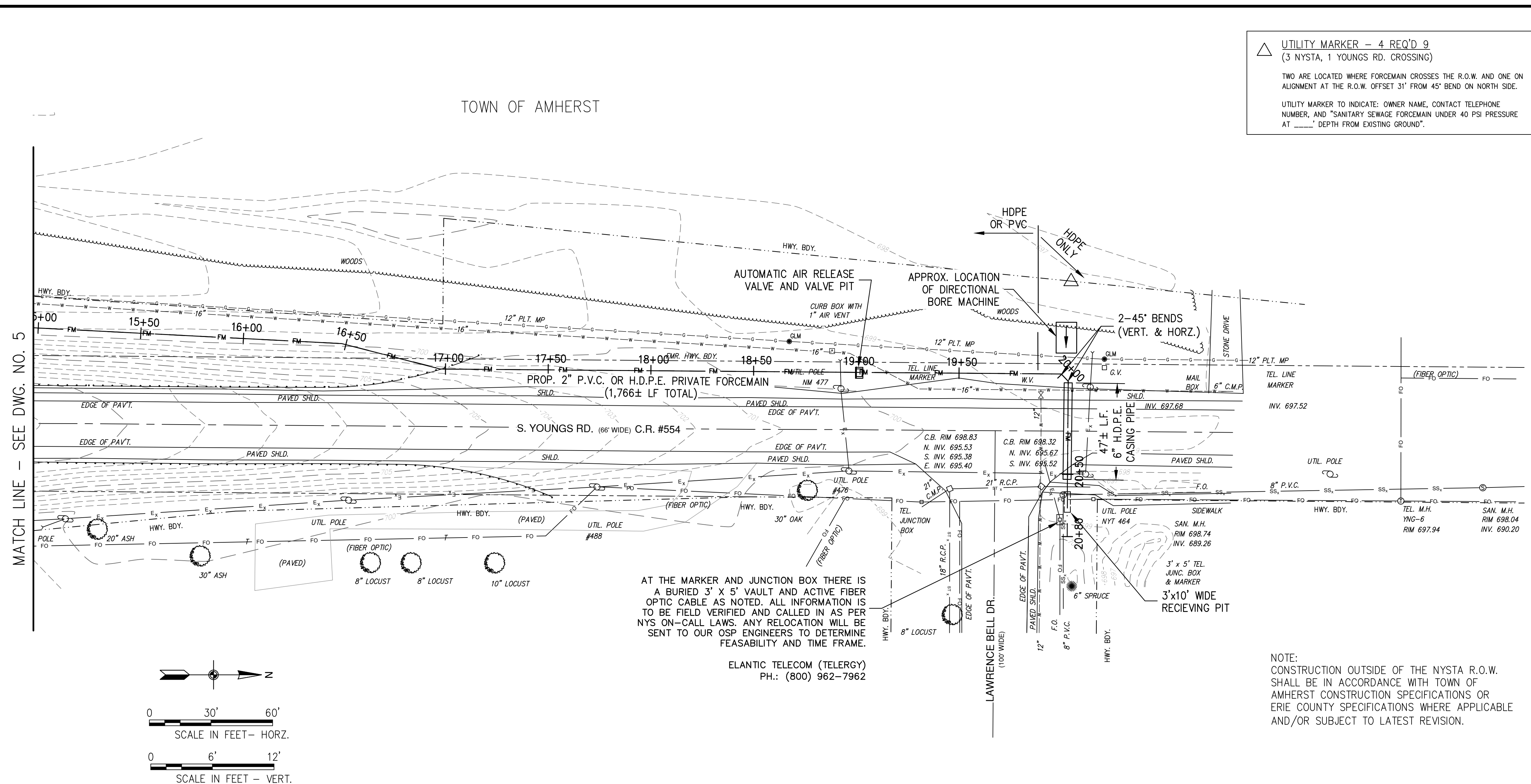
February, 2024
DRAWN/DESIGN BY: DV CHECKED BY: RC

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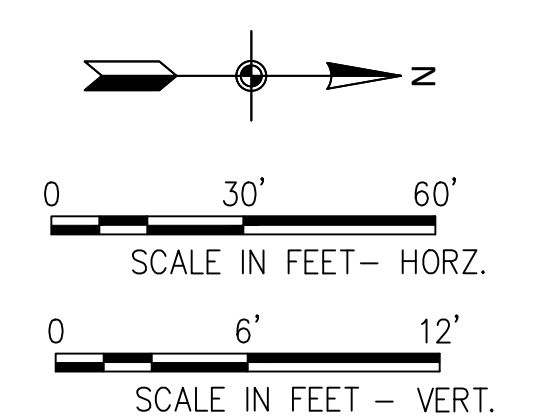
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MATCH LINE - SEE DWG. NO. 5

MATCH LINE - SEE DWG. NO. 5



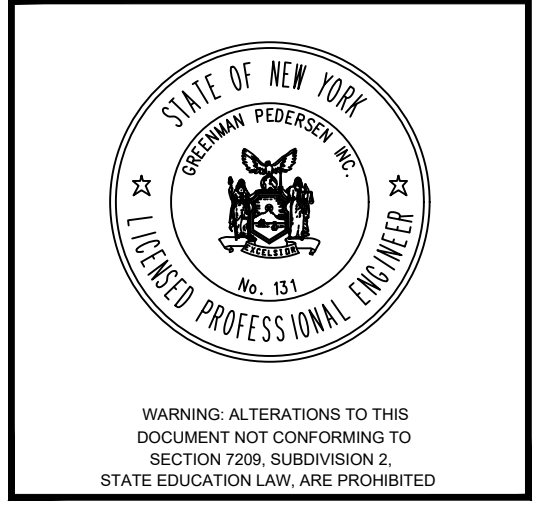
AT THE MARKER AND JUNCTION BOX THERE IS A BURIED 3' X 5' VAULT AND ACTIVE FIBER OPTIC CABLE AS NOTED. ALL INFORMATION IS TO BE FIELD VERIFIED AND CALLED IN AS PER NYS ON-CALL LAWS. ANY RELOCATION WILL BE SENT TO OUR OSP ENGINEERS TO DETERMINE FEASIBILITY AND TIME FRAME.

ELANTIC TELECOM (TELEGRY)
PH.: (800) 962-7962

NOTE:
CONSTRUCTION OUTSIDE OF THE NYSTA R.O.W. SHALL BE IN ACCORDANCE WITH TOWN OF AMHERST CONSTRUCTION SPECIFICATIONS OR ERIE COUNTY SPECIFICATIONS WHERE APPLICABLE AND/OR SUBJECT TO LATEST REVISION.

PREPARED FOR
The Krog Group
 4 Centre Drive
 Orchard Park, NY 14127

**S. YOUNGS ROAD PRIVATE
 PUMP STATION REDESIGN**
 669 S. Youngs Road
 Amherst, New York



REVISIONS	
NO.	DATE

DV

DRAWN/DESIGN BY: DV CHECKED BY: RC

FORCEMAIN CROSSING DETAILS

SCALE: As Noted

WNY-2300114.00

07

SOUTH YOUNGS ROAD PIPE CROSSING DATA SHEET

PIPE DATA

Contents To Be Handled	Carrier Pipe	Casing Pipe
	Sewage	Carrier Pipe
Normal Operating Pressure	200 p.s.i.	0 p.s.i.
Normal Size of Pipe	2"	6"
O.S. Diameter	2.375"	6.90"
I.S. Diameter	1.917"	5.570"
Wall Thickness	0.216"	0.627"
Weight Per Foot	0.64 lbs.	3.340 lbs.
Material	HDPE	HDPE
Process of Manufacturer	Extrusion Molded	Extrusion Molded
Specification	ASTM D-3035 (LABELED PE 36081 ISCO)	ASTM D-3035 (LABELED PE 36081 ISCO)
Grade or Class	DR 11 PR160	DR 11 PR160
Test Pressure	160 p.s.i.	160 p.s.i.
Type of Joint	Butt-Fusion Welded	Butt-Fusion Welded
Type of Coating	NONE	NONE
Details of Cathodic Protection	N/A	N/A
Details of Seal or Protection at Ends of Casing	N/A	Mortar Bulkhead
Method of Installation	BACK DRAG	Directional Bore
Character of Subsurface Material at the Crossing Location	N/A	*
Approximate Ground Water Level	N/A	Water Table (6.0 Ft.)
Source of Information on Subsurface Conditions Borings, Test Pits or Other	N/A	NYSTA Ontario Section Sub-Div.13 Sheet No. 71 (Dated 10-12-52) Soil Survey of Erie County

NOTE: Any soil investigation made on Thruway Authority property or adjacent to pavements shall be carried on under the supervision of New York State Thruway Authority Regional Traffic Engineer.

* FAA - Farmington cherty loam, limestone bedrock is at a depth of 10 to 20 inches.

THRUWAY (I-90) PIPE CROSSING DATA SHEET

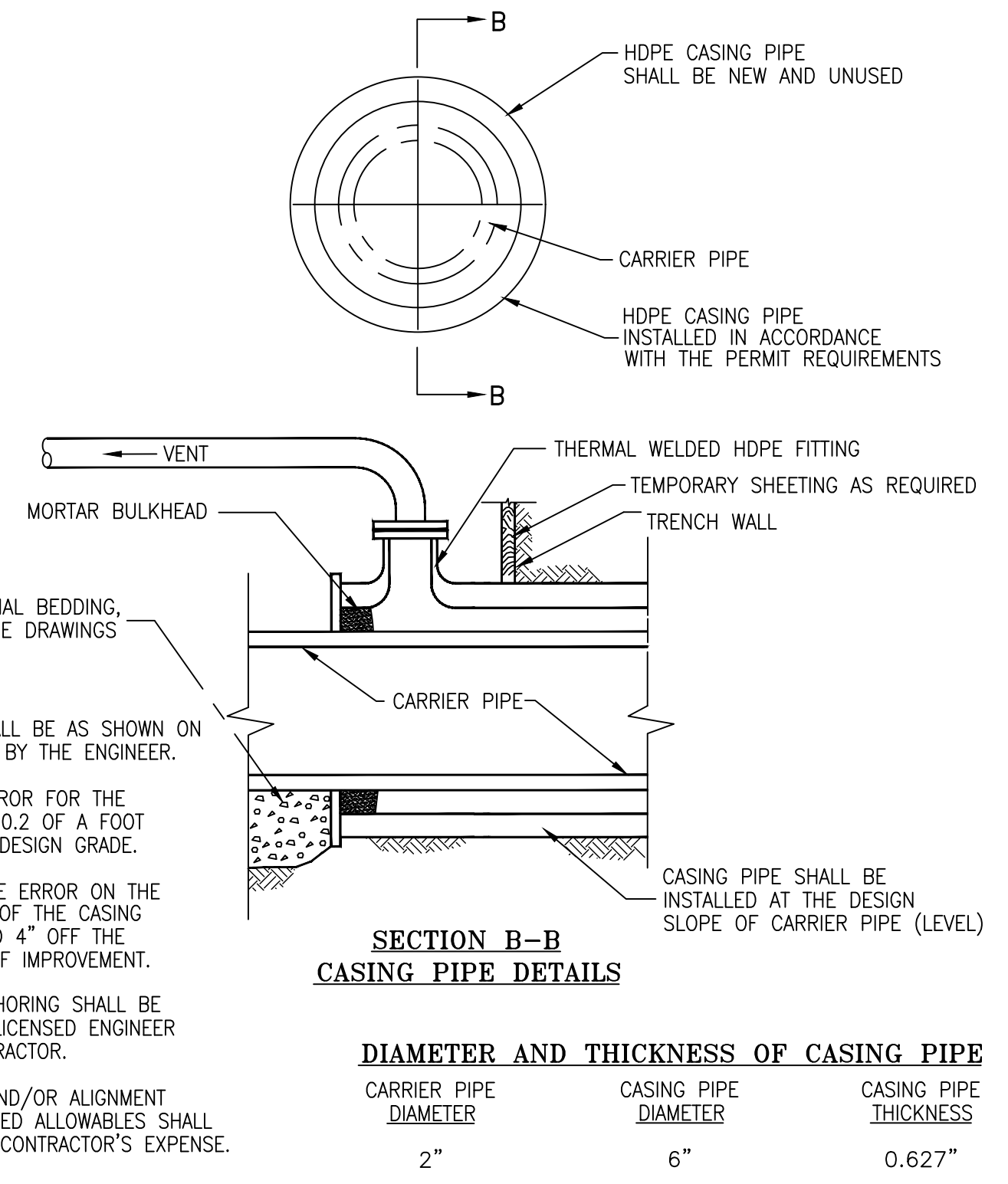
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Grade or Class	DR 11 PR160	DR 11 PR160
Test Pressure	160 p.s.i.	160 p.s.i.
Type of Joint	Butt-Fusion Welded	Butt-Fusion Welded
Type of Coating	NONE	NONE
Details of Cathodic Protection	N/A	N/A
Details of Seal or Protection at Ends of Casing	N/A	Mortar Bulkhead
Method of Installation	BACK DRAG	Directional Bore
Character of Subsurface Material at the Crossing Location	N/A	*
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NEW YORK STATE THRUWAY (MILE MARKER 418.36)

* FAA - Farmington cherty loam, limestone bedrock is at a depth of 10 to 20 inches.



- CASING PIPE GRADE SHALL BE AS SHOWN ON PLANS OR AS ORDERED BY THE ENGINEER.
- MAXIMUM ALLOWABLE ERROR FOR THE CASING PIPE SHALL BE 0.2 OF A FOOT ABOVE OR BELOW THE DESIGN GRADE.
- THE MAXIMUM ALLOWABLE ERROR ON THE HORIZONTAL ALIGNMENT OF THE CASING PIPE SHALL NOT EXCEED 4" OFF THE DESIGN CENTERLINE OF IMPROVEMENT.
- TEMP. SHEETING AND SHORING SHALL BE DESIGNED BY A N.Y.S. LICENSED ENGINEER RETAINED BY THE CONTRACTOR.
- ANY ERROR IN GRADE AND/OR ALIGNMENT WHICH EXCEED THE NOTED ALLOWABLES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

DIAMETER AND THICKNESS OF CASING PIPE

CARRIER PIPE DIAMETER	CASING PIPE DIAMETER	CASING PIPE THICKNESS
2"	6"	0.627"

**ROAD CROSSING BY DIRECTIONAL BORING METHOD
6" DIA. CARRIER PIPE**
N.T.S.

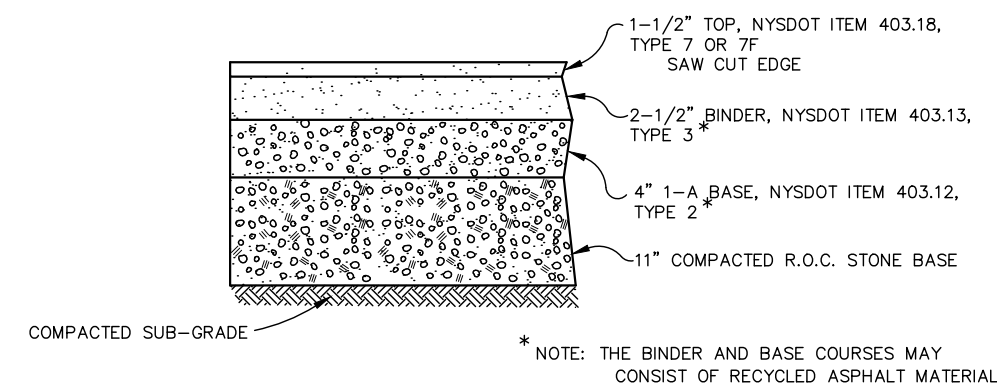
GENERAL NOTES:

- THE CONTRACTOR SHALL COMPLY WITH THE TOWN OF AMHERST STANDARD DRAWINGS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER AND THE TOWN OF AMHERST ENGR. DEPT. OF ANY HAZARDOUS SUBSTANCE ENCOUNTERED DURING THE CONSTRUCTION OF THE WORK. HE SHALL AT HIS EXPENSE, CONFORM TO ALL LAWS, RULES, REGULATIONS AND DIRECTIONS AS PROMULGATED BY THE UNITED STATES DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, THE NEW YORK STATE DEPARTMENT OF HEALTH AND ANY SUCH LOCAL RULES, ORDINANCES AND LAWS WHEN ENCOUNTERING OR WORKING WITH ANY SUCH HAZARDOUS SUBSTANCE.
- THE CONTRACTOR SHALL COMPLY IN ALL RESPECTS TO THE INDUSTRIAL CODE PART (RULE NO.) 53 RELATING TO CONSTRUCTION, EXCAVATION AND DEMOLITION OPERATIONS AT OR NEAR UNDERGROUND FACILITIES, AS ISSUED BY THE STATE OF NEW YORK DEPARTMENT OF LABOR, BOARD OF STANDARD AND APPEALS.
- SINCE THE ERIE COUNTY WATER AUTHORITY OPERATES AND MAINTAINS THE EXISTING WATER LINES, THEY ARE TO BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF THE START OF CONSTRUCTION. ALL EXISTING VALVES ARE TO BE OPERATED BY THE ERIE COUNTY WATER AUTHORITY PERSONNEL.
- THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AHEAD OF THE PIPE LAYING OPERATION, SO THAT, IF MINOR ADJUSTMENTS MUST BE MADE IN ELEVATION AND/OR ALIGNMENT DUE TO INTERFERENCE FROM THESE UTILITIES, SAID CHANGES CAN BE MADE IN ADVANCE OF THE WORK.
- WHERE SUCH FACILITIES ARE UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER, HE SHALL CERTIFY TO THE ENGINEERING DEPARTMENT OF THE TOWN OF AMHERST THAT SAID FACILITIES AS CONSTRUCTED WERE SUPERVISED BY HIMSELF (HERSELF) AND THAT THE WORKS HAVE BEEN FULLY COMPLETED IN ACCORDANCE WITH THE APPROVED ENGINEERING REPORTS, PLANS, SPECIFICATIONS, CONTRACT DOCUMENTS AND ANY AND ALL ADDENDA TO SAME.
- THE CONSTRUCTION OF THE FACILITIES SHALL BE UNDER THE SUPERVISION OF A PERSON OR FIRM QUALIFIED TO PRACTICE PROFESSIONAL ENGINEERING IN NEW YORK STATE UNDER THE EDUCATION LAW OF THE STATE, WHENEVER ENGINEERING SERVICES ARE REQUIRED BY SUCH LAW FOR SUCH PURPOSES.
- A WRITTEN CERTIFICATE OF CONSTRUCTION COMPLIANCE, INCLUDING THE RESULTS OF HYDROSTATIC LEAKAGE TESTS, MADE BY THE PROFESSIONAL ENGINEER SUPERVISING THE CONSTRUCTION, SHALL BE SUBMITTED TO THE ERIE COUNTY DEPT. OF ENVIRONMENTAL PLANNING AND NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION WITHIN THIRTY (30) DAYS AFTER CONSTRUCTION COMPLETION.
- UNSATURABLE MATERIALS SUCH AS FROZEN ORGANIC AND/OR VEGETABLE MATERIAL, DEBRIS, TREES, LUMBER, LARGE STONES OR CLODS (6" OR LARGER), MUCK, PEAT, ORGANIC SILT WILL NOT BE ACCEPTABLE FILL AND CERTAIN MAN-MADE DEPOSITS OF INDUSTRIAL WASTE, SLUDGE OR LANDFILL MAY ALSO BE DETERMINED AS UNSATURABLE HAZARDOUS MATERIAL.
- THE COMPACTION OF ALL MATERIALS WILL OCCUR AT 6" INCREMENTS.
- VERIFICATION OF ALL EXISTING EASEMENTS IS THE RESPONSIBILITY OF THE DESIGN ENGINEER AND THEY MUST BE SHOWN ALONG WITH ALL PROPOSED EASEMENTS ON PLAN DRAWINGS.
- SHOULD A FLUID CONDITION BE ENCOUNTERED AT THE TRENCH BOTTOM, THE CONTRACTOR IS TO INSTALL ADDITIONAL STONE CRADLE AS ORDERED BY THE ENGINEER.
- ALL PIPE CROSSING UNDER PAVED AREAS ARE TO BE BACKFILLED TO SUBGRADE WITH COMPACTED SELECT MATERIAL TO FIVE (5) FEET OUTSIDE THE PAVEMENT EDGES.
- THE CONTRACTOR SHALL RETAIN THE SERVICES OF A QUALIFIED TREE EXPERT TO REMOVE, WHERE NECESSARY, BRANCHES WHICH INTERFERE WITH THE CONSTRUCTION OPERATION, OR REPAIR TREES HAVING SUFFERED DAMAGE BY CONSTRUCTION ACTIVITIES. THE COST INVOLVED IN THE ABOVE IS TO BE INCLUDED IN THE VARIOUS ITEMS OF THE CONTRACT.
- SEWERS SHALL BE LAID AT LEAST TEN (10) FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATERMAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IN CASES WHERE IT IS NOT PRACTICAL TO MAINTAIN A TEN FOOT SEPARATION, THE APPROPRIATE REVIEWING AGENCY MAY ALLOW DEVIATION ON A CASE-BY-CASE BASIS, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER. SUCH DEVIATION MAY ALLOW INSTALLATION OF THE SEWER CLOSER TO A WATERMAIN PROVIDED THAT THE WATERMAIN IS IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER AND AT AN ELEVATION SO THE BOTTOM OF THE WATERMAIN IS AT LEAST 18" (46CM) ABOVE THE TOP OF THE SEWER.
- SEWERS CROSSING WATERMANS SHALL BE LAID TO PROVIDE MINIMUM VERTICAL DISTANCE OF 18" (46CM) BETWEEN THE OUTSIDE OF A WATERMAIN AND THE OUTSIDE OF THE SEWER. THIS SHALL BE THE CASE WHERE THE WATERMAIN IS EITHER ABOVE OR BELOW THE SEWER. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATERMAIN JOINTS. WHERE A WATERMAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER, TO PREVENT DAMAGE TO THE WATERMAIN.
- WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS STIPULATED ABOVE, THE SEWER SHALL BE DESIGNED AND CONSTRUCTED EQUAL TO WATER PIPE AND SHALL BE PRESSURE TESTED AS TO ASSURE WATERTIGHTNESS PRIOR TO BACKFILLING.
- THE PIPE SHALL BE P.V.C. SEWER PIPE CONFORMING TO THE LATEST REVISIONS OF ASTM DESIGNATION D-3034, SDR-35, INSTALLED IN ACCORDANCE WITH ASTM.
- THE MANHOLE COVERS ARE TO BEAR THE INSCRIPTION "AMHERST SANITARY".

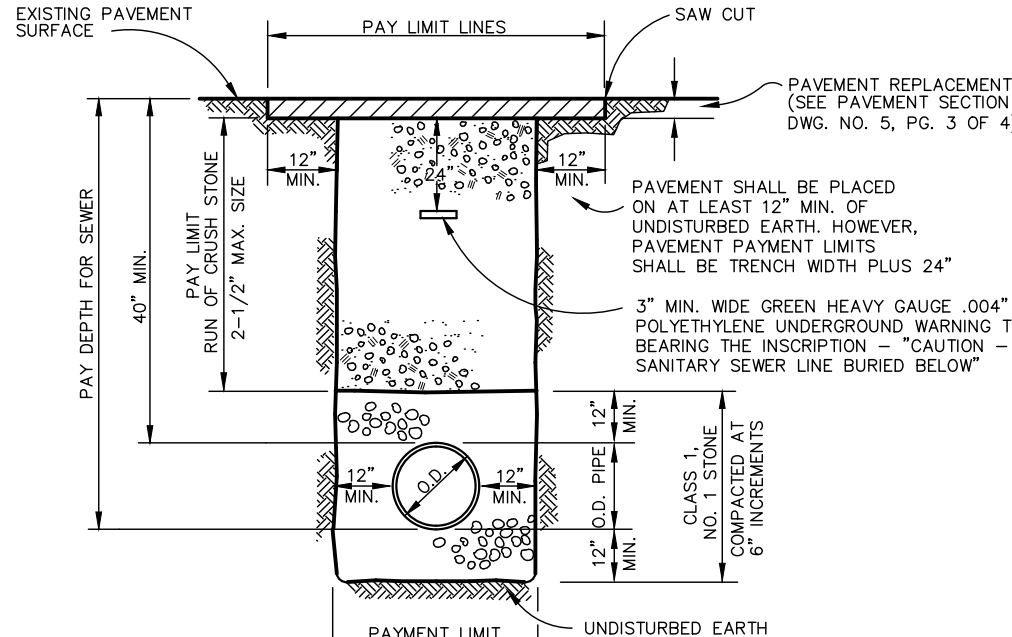
SANITARY SEWER TESTING METHODS
GENERAL NOTES

- (A) LEAKAGE TESTS
- THE TEST PERIOD WHEREIN THE MEASUREMENTS ARE TAKEN SHALL NOT BE LESS THAN 24 HOURS, REGARDLESS OF THE TEST METHOD USED.
 - THE TOTAL LEAKAGE OF ANY SECTION TESTED BY ANY TEST METHOD SHALL NOT EXCEED THE RATE OF 200 GALLONS PER MILE OF PIPE PER 24 HOURS PER INCH OF NOMINAL PIPE DIAMETER.
 - MANHOLES SHALL BE CONSIDERED AS SECTIONS OF 48" DIAMETER PIPE AND THE EQUIVALENT LEAKAGE ALLOWANCE SHALL BE COMPUTED PER NOTE 02 USING THE SUBMERGED HEIGHT OF MANHOLE AS THE LENGTH.
 - WHEN MANHOLES ARE TESTED SEPARATELY, ALL PIPE OPENINGS SHALL BE PLUGGED AND THE TEST PROCEDURES AND CRITERIA SHALL BE APPLIED IN THE SAME MANNER AS FOR TESTS INVOLVING ONLY THE PIPE OR A COMBINATION OF PIPE AND MANHOLES.
- (B) INFILTRATION TEST CRITERIA FOR USE
- THIS TEST METHOD MAY ONLY BE USED WHEN GROUND WATER LEVELS ARE AT LEAST TWO (2) FEET ABOVE THE TOP OF THE PIPE FOR THE ENTIRE LENGTH OF THE SECTION TO BE TESTED DURING THE ENTIRE PERIOD OF THE TESTS.
 - GROUND WATER LEVELS MAY BE MEASURED IN AN OPEN TRENCH OR IN STANDPIPES PREVIOUSLY PLACED IN BACKFILLED TRENCHES DURING BACKFILLING.
 - THE NUMBER OF STANDPIPES REQUIRED AND LOCATION OF THE SAME ARE TO BE AS ORDERED BY THE ENGINEER. STANDPIPES MAY BE OF ANY PIPE MATERIAL BUT MUST BE OF SUCH DIAMETER (2-1/2" MINIMUM) AS TO PERMIT THE INSERTION OF A RULE OR LEVEL ROD. CRUSHED STONE SHALL BE PLACED AROUND THE LOWER OPEN ENDS OF THE STANDPIPES.
 - STANDPIPES ARE TO BE REMOVED AT THE SATISFACTORY COMPLETION OF THE TESTS.
 - IF IN LIEU OF STANDPIPES, THE TRENCH IS TO BE LEFT OPEN FOR GROUND WATER OBSERVATION, THE LENGTH OF UNBACKFILLED TRENCH AT ANY ONE TIME MAY HAVE TO BE LIMITED FOR REASONS OF SAFETY.
- (C) EXFILTRATION TEST CRITERIA FOR USE
- THIS TEST CONSISTS OF FILLING THE PIPE WITH WATER TO PROVIDE A HEAD OF AT LEAST TWO (2) FEET ABOVE THE TOP OF THE PIPE OR ABOVE GROUND WATER WHICHEVER IS HIGHER AT THE HIGHEST POINT OF THE PIPE LINE UNDER TEST, AND THEN MEASURING THE LOSS OF WATER TO MAINTAIN THE ORIGINAL LEVEL.
 - IN THIS TEST THE PIPE LINE MUST BE FILLED WITH WATER AND ALLOWED TO REMAIN SO FILLED FOR AT LEAST 24 HOURS PRIOR TO TAKING MEASUREMENTS.
 - REGARDING GROUND WATER MEASUREMENTS: SEE NOTES 02 THROUGH 05 ABOVE.
 - REGARDING THE TEST STANDPIPE: THERE MUST BE SOME POSITIVE METHOD OF RELEASING ENTRAPPED AIR IN THE SEWER PRIOR TO TAKING MEASUREMENTS.
- (D) DEFLECTION TEST FOR PVC SEWER PIPE
- DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE GRAVITY SEWER PIPE. TESTS SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS.
 - NO PIPE SHALL EXCEED DEFLECTION OF 5% DEFLECTION GAGE MAY BE BORROWED FROM THE TOWN ENGINEER FOR 8" AND 10" PIPE. THE DEFLECTION TEST MUST BE EXECUTED AFTER 30 DAYS OF PLACEMENT OF FINAL BACKFILL. THE TEST WILL ALSO BE DONE WITHOUT MECHANICAL PULLING DEVICES.

TYPICAL PAVEMENT SECTION

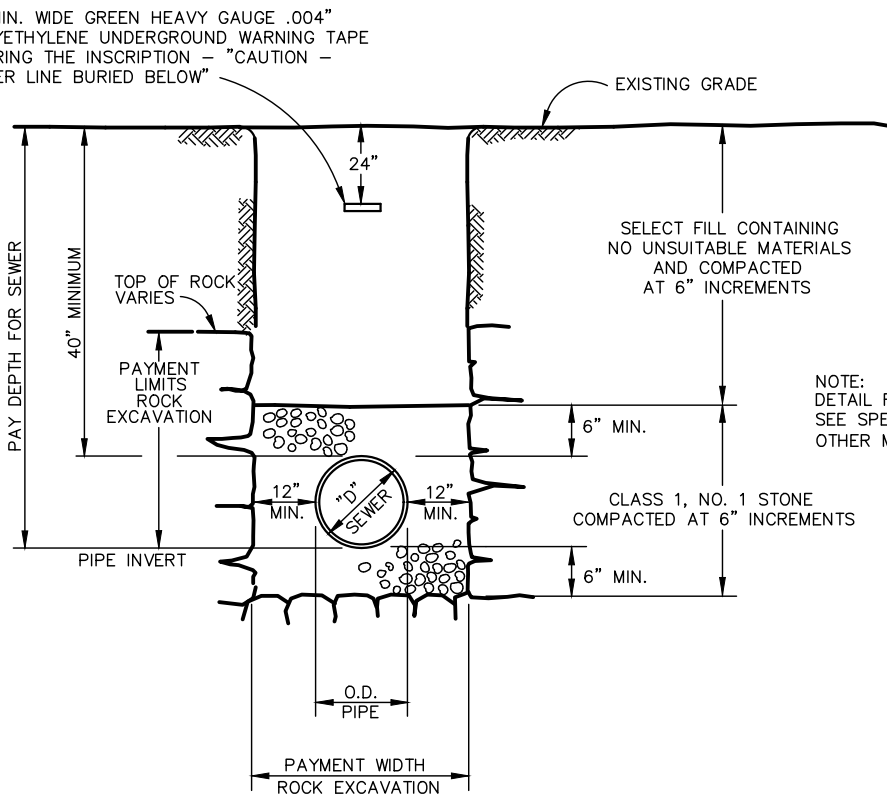


TYPICAL TRENCH DETAIL - PAVEMENT CROSSING
FOR MAIN SEWERS
& HOUSE AND BUILDING CONNECTIONS

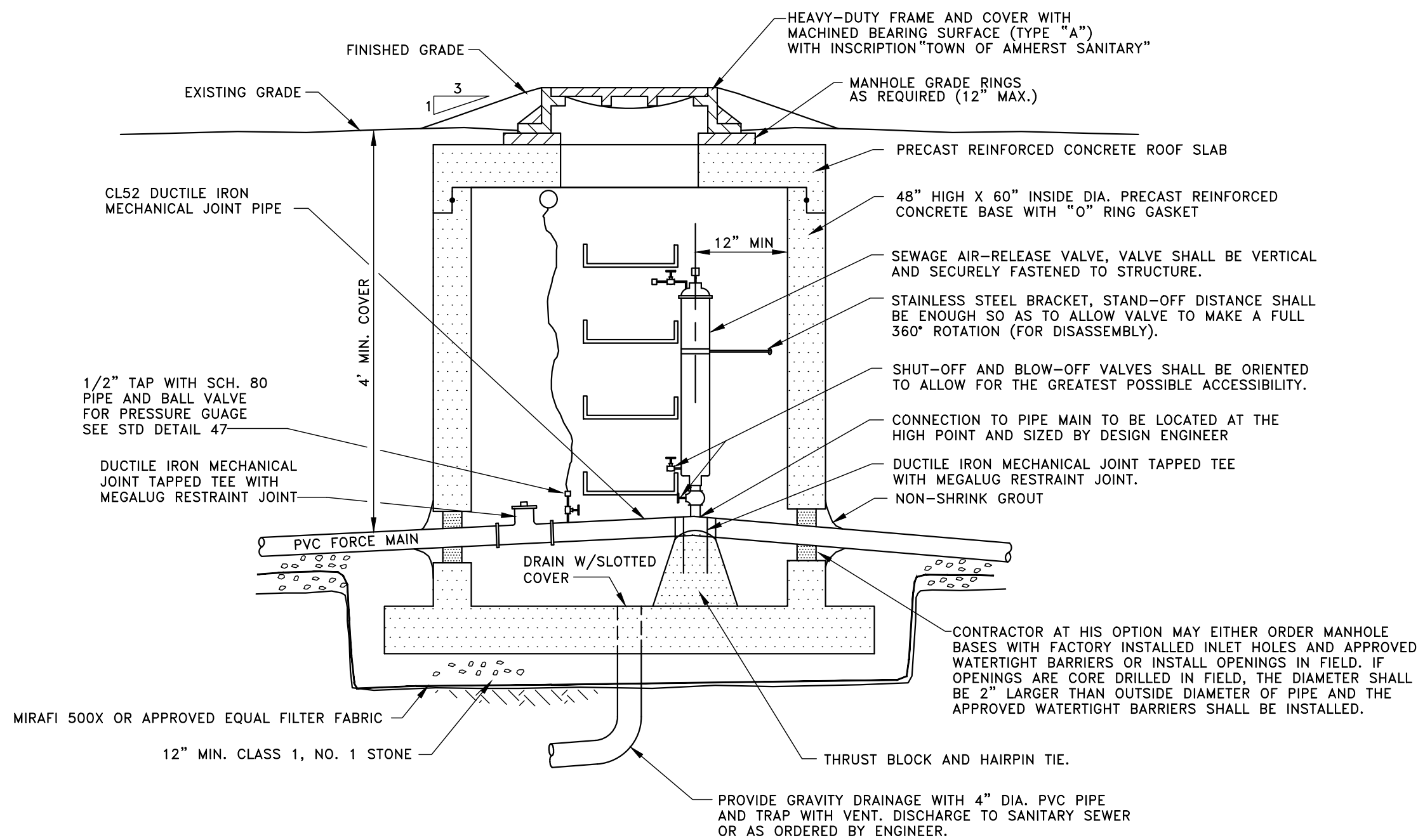


NOTES:
IF CONCRETE ENCASING IS REQUIRED, IT SHALL BE INSTALLED IN PLACE OF (AND TO THE DIMENSIONS OF) THE PIPE BEDDING AND COVER TO 12" MIN. ABOVE AND BELOW THE PIPE (SEE WATER CROSSING DETAIL).
NOTE:
WHERE THE CONTRACTOR EXCAVATES BEYOND THE PAY LIMITS SHOWN; SELECT FILL AND PAVEMENT, SIDEWALK & DRIVEWAY REPLACEMENT OUTSIDE THE PAY LIMITS SHALL BE FURNISHED AND PLACED AT THE CONTRACTOR'S EXPENSE. (TYP.)

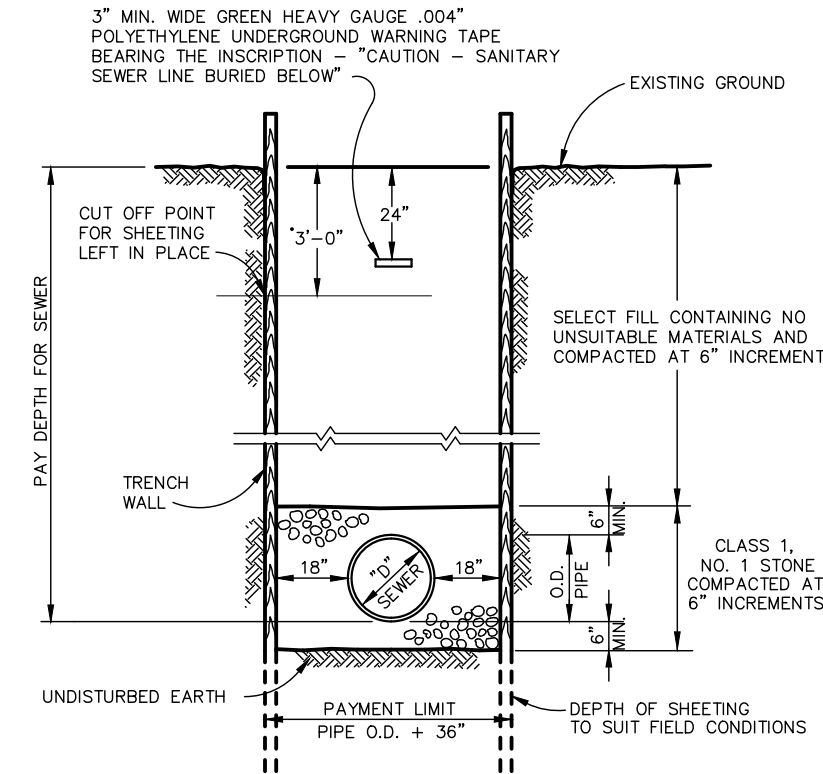
TYPICAL ROCK TRENCH DETAIL
(UNPAVED AND UNTRAVELED WAYS AND AREAS)



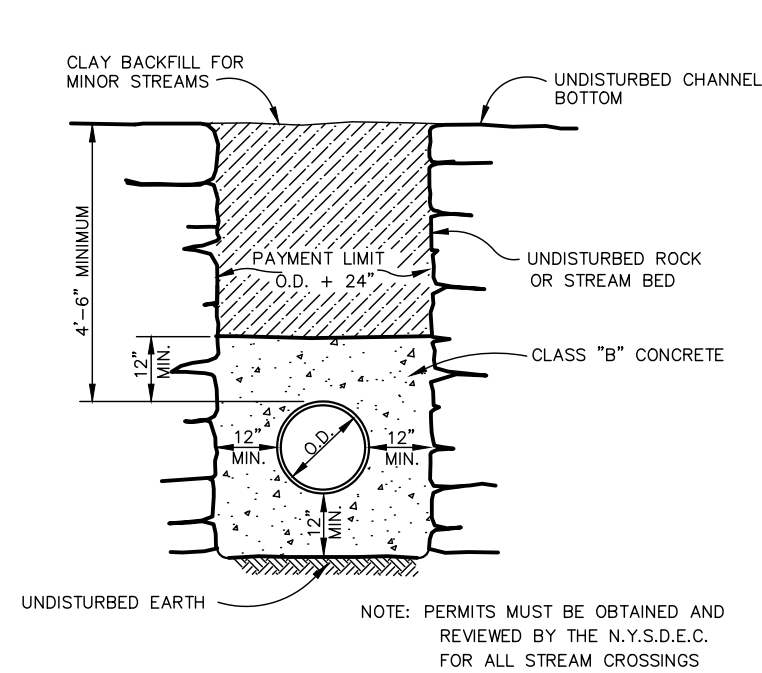
SEWER AIR RELEASE VALVE AND MANHOLE



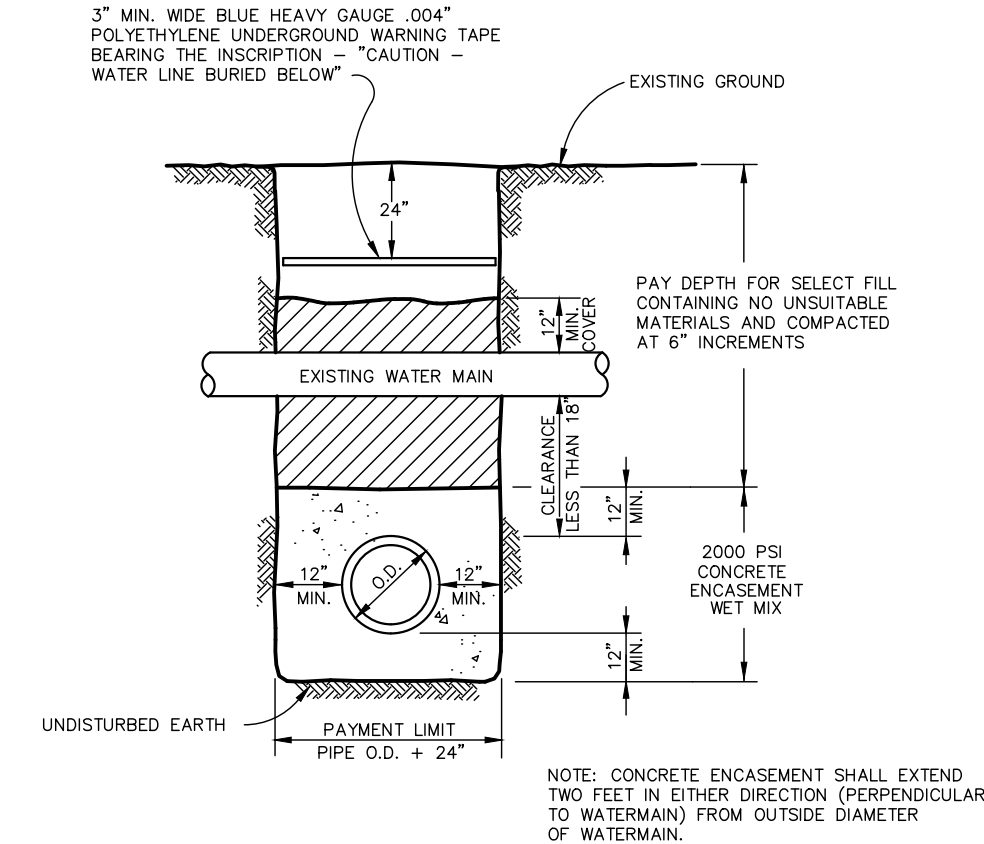
SHEETED TRENCH DETAIL



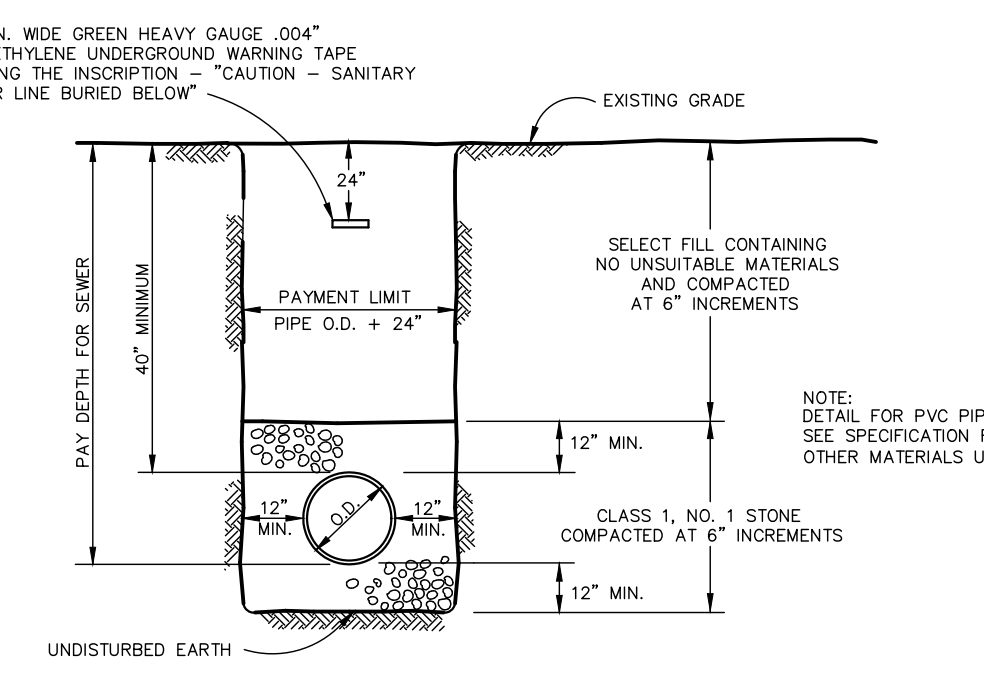
CONCRETE ENCASED STREAM CASING



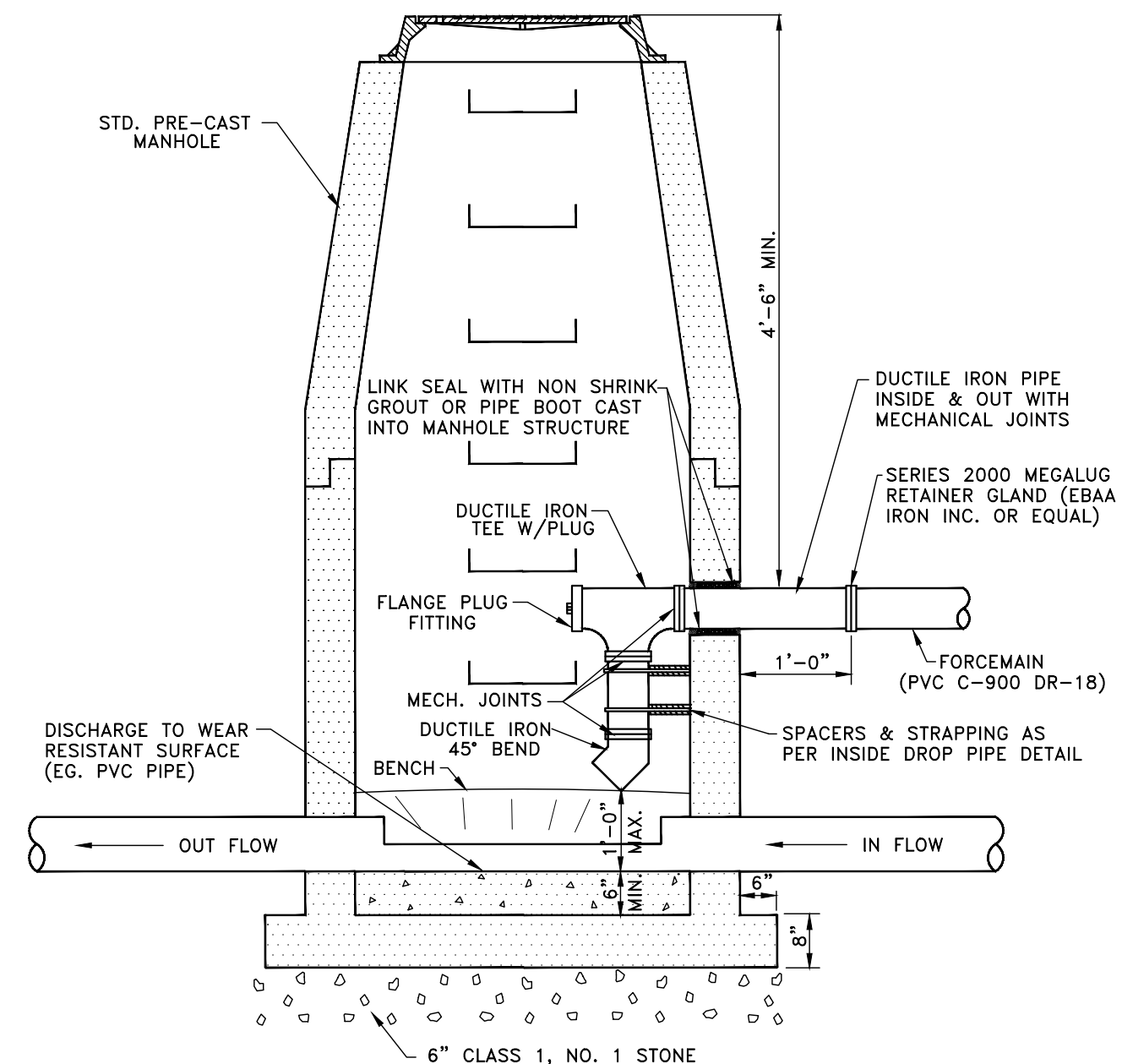
WATER CROSSING DETAIL
CLEARANCE LESS THAN 18"



TYPICAL EARTH TRENCH DETAIL
UNPAVED AND UNTRAVELED AREAS



TYPICAL FORCEMAIN MANHOLE
(NOVEMBER 2007)



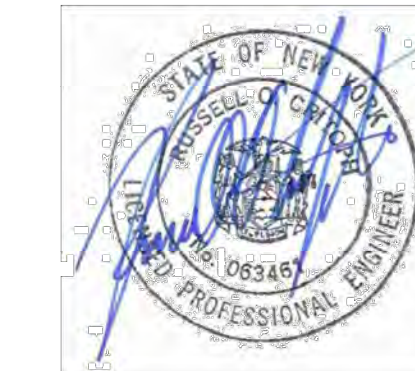
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DATE	REVISION

DV
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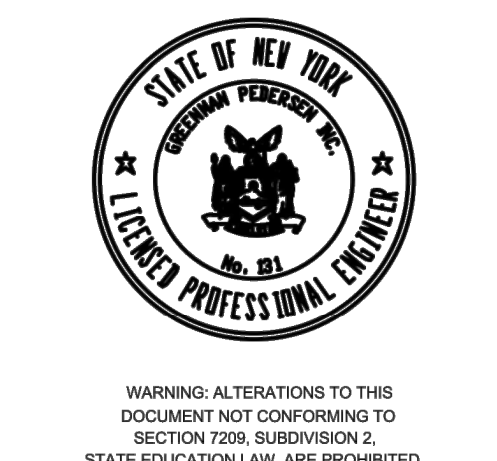
FORCEMAIN
DETAILS

SCALE: As Noted
WNY-2300114.00



PREPARED FOR
The Krog Group
5 Centre Drive
Orchard Park, NY 14127

**YOUNGS ROAD PRIVATE
PUMP STATION REDESIGN**
South Youngs Road
Amherst, New York



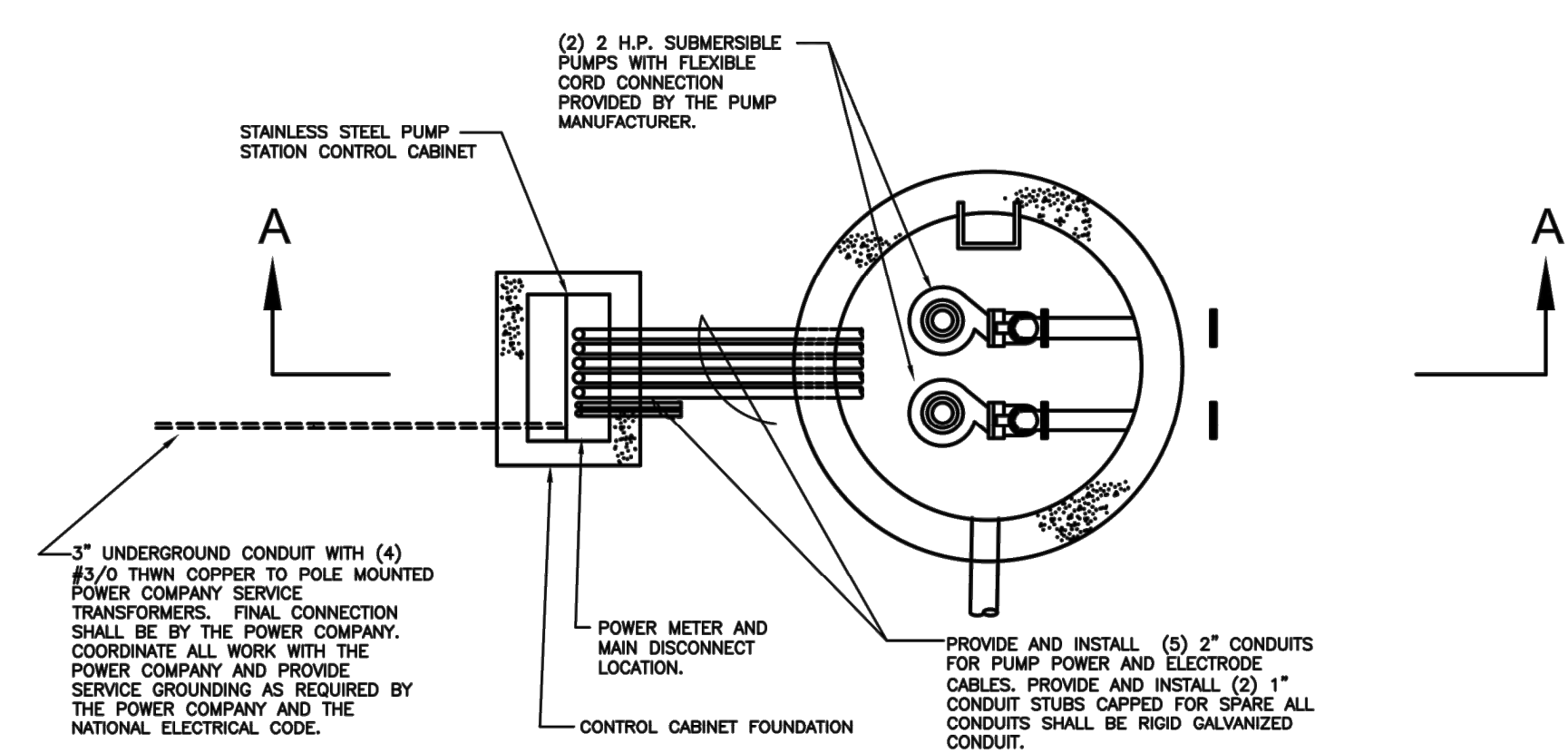
REVISIONS

NO.	REVISION	DATE

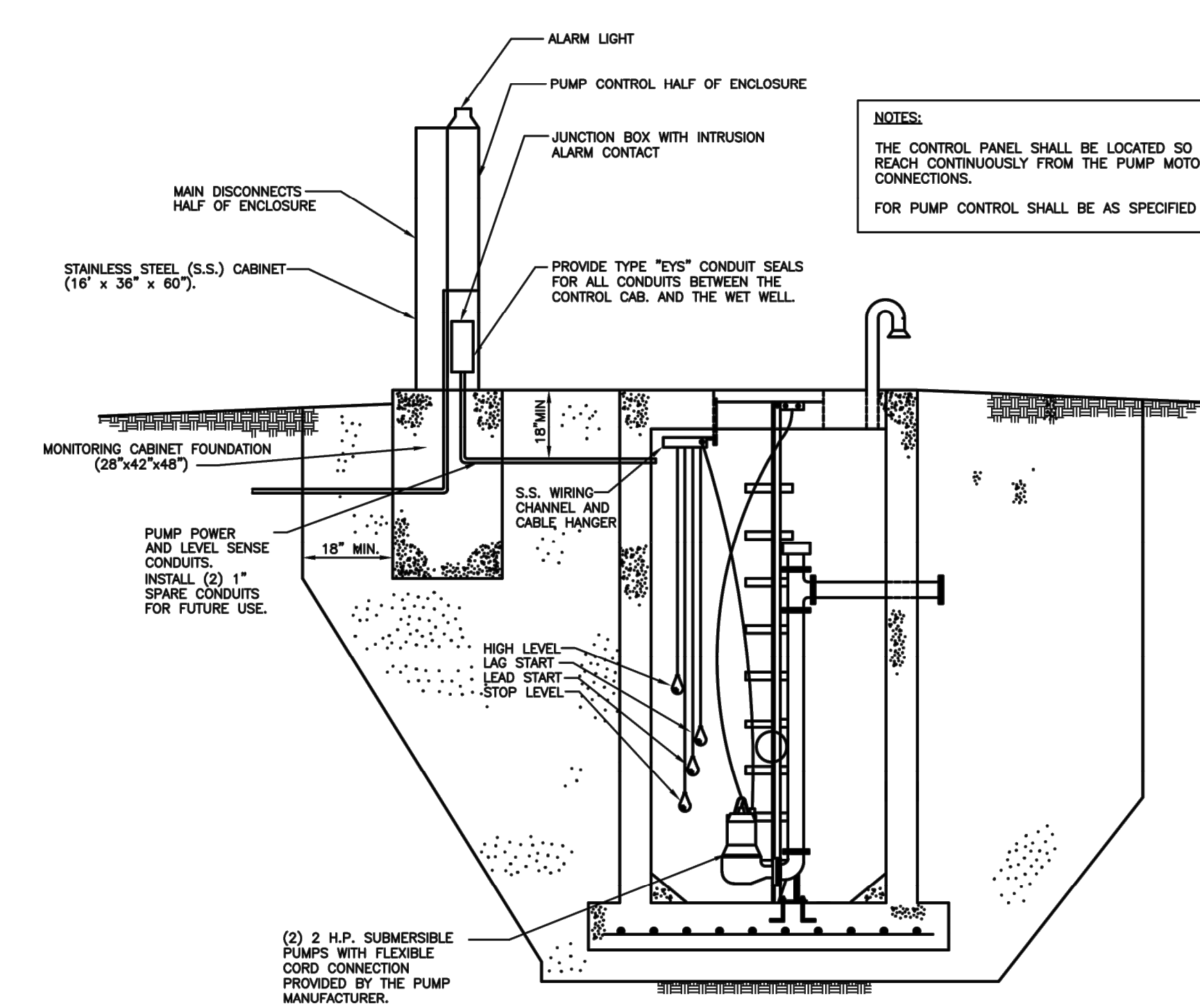
April, 2024
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**KROG PUMP
STATION
ELECTRICAL
DETAILS**

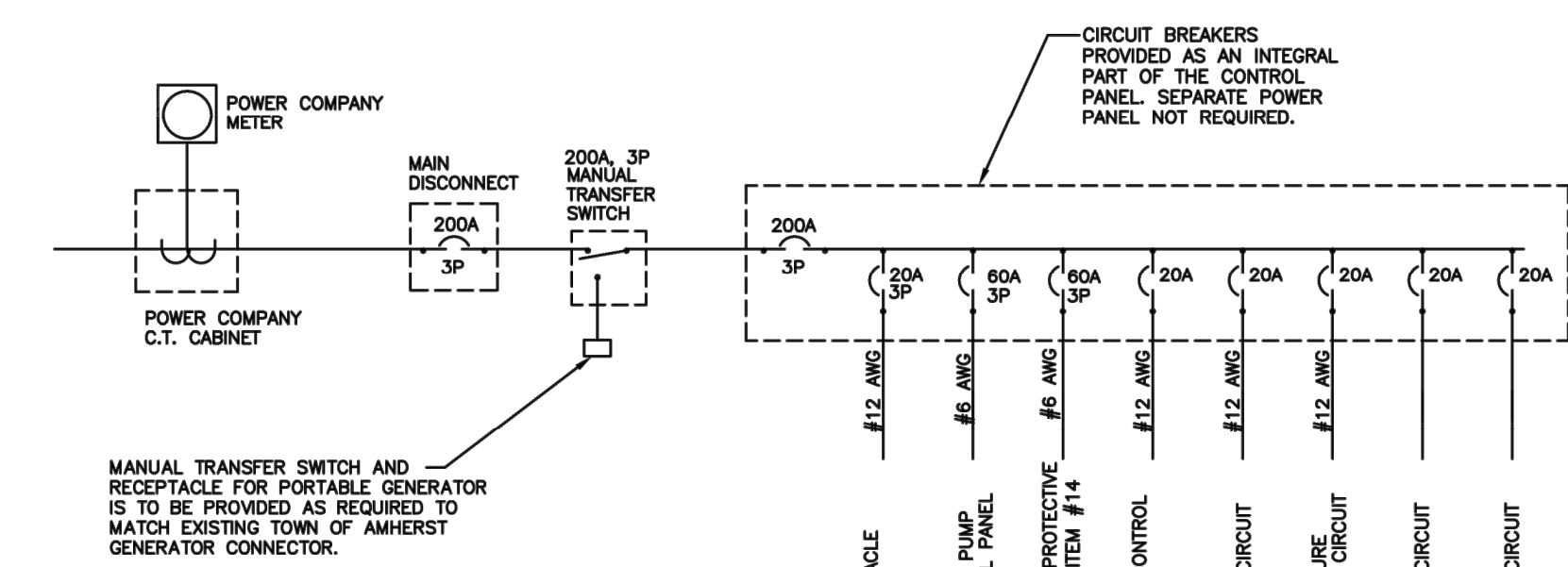
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WNY-2300114.00
EL-1



**FORCE MAIN PUMP STATION
TOP VIEW**



**SECTION A-A
FORCE MAIN PUMP STATION
FRONT VIEW**



POWER RISER DIAGRAM

- ELECTRICAL SERVICE REQUIREMENTS**
- ELECTRIC SERVICE SHALL BE PROVIDED COMPLETE AS NOTED ON THE DRAWINGS. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH THE POWER COMPANY AND FOR PAYING ALL ASSOCIATED POWER COMPANY CHARGES TO PROVIDE SERVICE TO THE PUMP STATION.
 - THE UNDERGROUND SERVICE CONDUIT SHALL BE INSTALLED A MINIMUM OF 24" BELOW GRADE, AND SHALL BE PVC SCHEDULE 80 ELECTRICAL CONDUIT.
 - ELECTRIC SERVICE DISCONNECTS AND METERING CONNECTIONS SHALL BE AS APPROVED BY THE POWER COMPANY AND SHALL BE SUBMITTED AND REVIEWED WITH THE POWER COMPANY PRIOR TO INSTALLATION WORK.
 - SERVICE EQUIPMENT INTERRUPTING RATING SHALL BE AS APPROVED BY THE POWER COMPANY.
 - THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION BETWEEN THE PUMP EQUIPMENT SUPPLIER AND THE ELECTRICAL CONTRACTOR TO ASSURE THAT THE EQUIPMENT MATCHES THE ELECTRICAL SERVICE CHARACTERISTICS.
 - ALL ELECTRICAL EQUIPMENT AND INSTALLATION LOCATED IN THE WET WELL SHALL BE RATED FOR CLASS I, DIVISION II, GROUP C AND D LOCATIONS AS REQUIRED BY THE NFPA, NATIONAL ELECTRICAL CODE.

- PUMP CONTROLS SHALL HAVE THE FOLLOWING FEATURES:**
- IEC HOURSEPOWER RATED MOTOR STARTERS WITH 3-POLE AMBIENT COMPENSATED BI-METALIC OVERLOAD RELAY RATED AT OVER 1 MILLION CYCLES.
 - PUMP CONTROL SYSTEM SHALL BE DESIGNED FOR USE WITH INTRINSICALLY SAFE SYSTEM.
 - SOLID STATE ALTERNATOR RELAY TO EQUALIZE PUMP WEAR. PROVIDE WITH A HAND-OFF-AUTO CONTROL FOR BOTH PUMPS. ALL INDICATOR LIGHTS SHALL BE L.E.D. LIGHT SOURCE.
 - VERRIDE RELAY STARTS SECOND PUMP IF THE FIRST PUMP FAILS FOR ANY REASON.
 - FULL INNER DOOR WITH TAMPER-PROOF DEAD FRONT. PROVIDE ENGRAVED TAGS FOR ALL SWITCHES AND INDICATOR LIGHTS.
 - OUTDOOR NEMA 4X ENCLOSURES OF STAINLESS STEEL.
 - UL-APPROVED DESIGNS WITH THE UNIT SO LABELED.
 - INDIVIDUAL PUMP CIRCUIT BREAKERS.
 - CONTROL CIRCUIT TRANSFORMER WITH PRIMARY FUSING.
 - SEPARATE CONTROL AND ALARM CIRCUIT FUSES.
 - ELAPSED RUN TIME METERS FOR EACH PUMP.
 - THERMOSTATICALLY CONTROLLED CONDENSATION CONTROL HEATER MOUNTED WITHIN THE CONTROL PANEL.
 - ONE CONVENIENCE G.F.I. TYPE DUPLEX OUTLET MOUNTED WITHIN THE CONTROL PANEL.
 - SURGE PROTECTIVE DEVICE SHALL BE AS MANUFACTURED BY GAYON/CUTLER-HAMMER TYPE "AEGIS" OR APPROVED EQUAL. MODEL #SP0800-240H-3-P WITH SURGE COUNTER TO BE MOUNTED INSIDE CONTROL ENCLOSURE.
 - HIGH LEVEL ALARM LIGHT.
 - SEAL FAILURE DETECTION CIRCUIT AND ALARM LIGHT.

- ELECTRICAL SPECIFICATIONS**
- GENERAL
 - ALL ELECTRICAL WORK IS SUBJECT TO THE GENERAL REQUIREMENTS OF THE CONTRACT.
 - INTENT
 - IT IS THE INTENT OF THESE SPECIFICATIONS THAT THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL NECESSARY LABOR, MATERIALS, SUPPLIES, EQUIPMENT, TRANSPORTATION, ETC., REQUIRED TO PLACE INTO SATISFACTORY OPERATION THE SYSTEMS DESCRIBED. THE ACCOMPANYING DRAWINGS AND THESE SPECIFICATIONS ARE SCHEMATIC ONLY. THE ELECTRICAL CONTRACTOR SHALL BE REQUIRED TO INSTALL SYSTEMS IN THE BEST WORKMANSHIP MANNER, AND EQUAL TO ACCEPTED STATE OF THE ART PROCEDURES.
 - LAWS, CODES, PERMITS AND INSPECTIONS
 - ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND ORDINANCES, AS WELL AS THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE INCLUDING SUBSEQUENT AMENDMENTS.
 - AT THE COMPLETION OF THE WORK, THE ELECTRICAL CONTRACTOR SHALL DELIVER TO THE OWNER A CERTIFICATE OF INSPECTION AND ACCEPTANCE OF THE WORK BY THE LOCAL INSPECTION AUTHORITY. A COPY OF THIS DOCUMENT SHALL BE FORWARDED TO THE ARCHITECT AND ENGINEER.
 - EXAMINATION OF PREMISES AND SITE
 - IN SUBMITTING PROPOSALS FOR THIS WORK, EACH BIDDER WILL BE HELD RESPONSIBLE FOR HAVING PREVIOUSLY EXAMINED THE SITE AND/OR PREMISES AND SATISFIED HIMSELF AS TO THE CONDITIONS UNDER WHICH HE WILL BE OBLIGED TO OPERATE, SHOULD HE BE AWARDED THE CONTRACT TO PERFORM THE WORK. NO EXTRA COMPENSATION WILL BE ALLOWED WHERE NEW WORK IS EFFECTED BY EXISTING JOB SITE CONDITIONS.
 - ELECTRICAL SERVICE REQUIREMENTS
 - ELECTRICAL SERVICE SHALL BE PROVIDED AS NOTED ON THE DRAWINGS. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH THE POWER COMPANY AND FOR PAYING ALL ASSOCIATED POWER COMPANY FEES. ELECTRIC SERVICE DISCONNECT AND METERING EQUIPMENT SHALL BE AS APPROVED BY THE POWER COMPANY PRIOR TO INSTALLATION.
 - ELECTRIC SERVICE CHARACTERISTICS SHALL BE 208Y/120 VOLTS, THREE PHASE, 4-WIRE, 200 AMP MIN. SERVICE RATED FUSED DISCONNECT SHALL BE MOUNTED ON THE SIDE OF THE BRAN. THE DISCONNECT SWITCH SHALL BE NEMA 4X STAINLESS STEEL ENCLOSED.
 - TRANSIENT VOLTAGE SURGE SUPPRESSION - GENERAL
 - CRITICAL LOAD FILTER SHALL BE CUTLER-HAMMER TYPE AEGIS OR APPROVED EQUAL MEETING ALL RATINGS AND FEATURES SPECIFIED HEREIN.
 - ELECTRICAL REQUIREMENTS
 - UNIT OPERATING VOLTAGE: REFER TO DRAWINGS FOR OPERATING VOLTAGE AND UNIT CONFIGURATION.
 - MAXIMUM CONTINUOUS OPERATING VOLTAGE (MCOV): THE MCOV SHALL BE GREATER THAN 125% OF THE NOMINAL SYSTEM OPERATING VOLTAGE.
 - PROTECTION MODES: FOR THREE-PHASE HIGH LEG DELTA CONFIGURED SYSTEMS, THE DEVICE MUST HAVE DIRECTLY CONNECTED SUPPRESSION ELEMENTS BETWEEN LINE-NEUTRAL (L-N), LINE-GROUND (L-G), AND NEUTRAL-GROUND (N-G).
 - UL 1449 2ND EDITION SVRS. THE MANUFACTURER MUST PROVIDE CERTIFIED DOCUMENTATION ON ALL PROTECTED MODES. THE MAXIMUM UL 1449 2ND EDITION SVR FOR THE DEVICE MUST NOT EXCEED THE 330 V FOR EACH LINE TO NEUTRAL, LINE TO GROUND AND NEUTRAL TO GROUND MODES.
 - FILTER DESIGN
 - EACH UNIT SHALL UTILIZE A TUNED, SERIES-HYBRID CLC FILTERING CIRCUIT COUPLED WITH METAL OXIDE VARISTOR ARRAY BETWEEN EACH AVAILABLE MODE. IN ADDITION TO SERIES INDUCTOR ELEMENTS, THE UNIT SHALL BE MOUNTED IN SERIES WITH THE DOWNSTREAM LOAD. DEVICES WITHOUT SERIES INDUCTOR ELEMENTS DESIGNED TO MEET THE REQUIRED NOISE ATTENUATION SPECIFICATIONS SHALL NOT BE ACCEPTED.
 - THE SUPPRESSION SYSTEM SHALL NOT UTILIZE SILICON AVALANCHE DIODES, AIR GAPS OR OTHER COMPONENTS THAT MAY CROWBAR THE SYSTEM VOLTAGE LEADING TO SYSTEM UPSET.
 - SAFETY AND DIAGNOSTIC MONITORING
 - AN INDICATOR LIGHT SHALL BE PROVIDED ON EACH UNIT. THE EXTINGUISHING OF THIS LIGHT, SHALL INDICATE THE PROTECTION SYSTEM HAS BEEN DAMAGED.
 - ALARMS
 - PROVIDE THE FOLLOWING TERMINAL STRIP ALARMS FOR CONNECTION TO FUTURE RADIO TELEMETRY EQUIPMENT.
 - POWER FAILURE
 - PUMP #1 FAILURE
 - PUMP #2 FAILURE
 - PUMP #1 SEAL FAILURE
 - PUMP #2 SEAL FAILURE
 - HIGH WET WELL
 - HIGH WET WELL
 - GUARANTEE
 - THE CONTRACTOR SHALL GIVE A WRITTEN GUARANTEE UPON FINAL ACCEPTANCE OF THE WORK AGAINST DEFECTIVE WORKMANSHIP, MATERIALS, OR OPERATION THAT MAY APPEAR WITHIN ONE (1) YEAR OF FINAL ACCEPTANCE BY THE OWNER. THE CONTRACTOR AGREES TO PROMPTLY CORRECT SUCH DEFECTS WITHOUT COST TO THE OWNER, ARCHITECT, OR ENGINEER.
 - SCHEDULE OF OPERATIONS
 - THE CONTRACTOR SHALL DO ALL WORK ON AN APPROVED SCHEDULE AND IN A MANNER THAT WILL AVOID UNDUE INTERFERENCE WITH OTHER CONTRACTORS ON THIS PROJECT.
 - SUPERVISION
 - THE CONTRACTOR SHALL PERSONALLY SUPERVISE THE WORK OR DELEGATE THE RESPONSIBILITY TO A COMPETENT SUPERINTENDENT WHOSE QUALIFICATIONS ARE ACCEPTABLE TO THE OWNER, ARCHITECT, AND ENGINEER.
 - EQUIPMENT AND MATERIALS
 - ALL EQUIPMENT AND MATERIALS FURNISHED UNDER THIS CONTRACT SHALL BE NEW (UNLESS OTHERWISE SPECIFIED), LISTED BY THE UNDERWRITERS LABORATORIES, AND SHALL BE OF THE SAME MAKE WHERE USED FOR SIMILAR PURPOSES.
 - CONDUIT AND RACEWAYS
 - ALL STATION CONDUIT, ABOVE AND BELOW GRADE, SHALL BE PVC COATED RIGID STEEL CONDUIT. UNDERGROUND SERVICE CONDUIT SHALL BE PVC SCHEDULE 80 CONDUIT MINIMUM 24 INCHES BELOW GRADE IN A SAND BED WITH FOLK WARNING TAPE INSTALLED THE ENTIRE LENGTH AT 6 INCHES BELOW GRADE.
 - CONDUCTORS
 - ALL WIRE AND CABLE SHALL BE NEW, WITHIN ONE (1) YEAR OF MANUFACTURE WHEN DELIVERED TO THE JOB SITE AND BEAR THE U.L. LABEL. INSULATION TYPE, VOLTAGE RATING, AND MANUFACTURER'S NAME AT REGULAR INTERVALS ON THE INSULATION JACKET. ALL SINGLE CONDUCTOR WIRING IN RACEWAYS SHALL BE STRANDED COPPER, 600 VOLT RATED, TYPE THHN/THWN, 90°C.
 - SHOP DRAWINGS AND MANUFACTURER'S DATA
 - THE CONTRACTOR SHALL SUBMIT WITH SUCH PROMPTNESS AS TO CAUSE NO DELAY IN HIS WORK OR THAT OF OTHER CONTRACTORS. PROVIDE EIGHT (8) COPIES OF ALL SHOP DRAWINGS OR DESCRIPTIVE LITERATURE ON ALL EQUIPMENT TO BE SUPPLIED AND THE ENGINEER SHALL REVIEW THEM WITH REASONABLE PROMPTNESS.