

CITY OF PORTSMOUTH, NEW HAMPSHIRE

CONTRACT DRAWINGS FOR

MARJORIE STREET PUMP STATION

MAY 2023

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--- COVER SHEET

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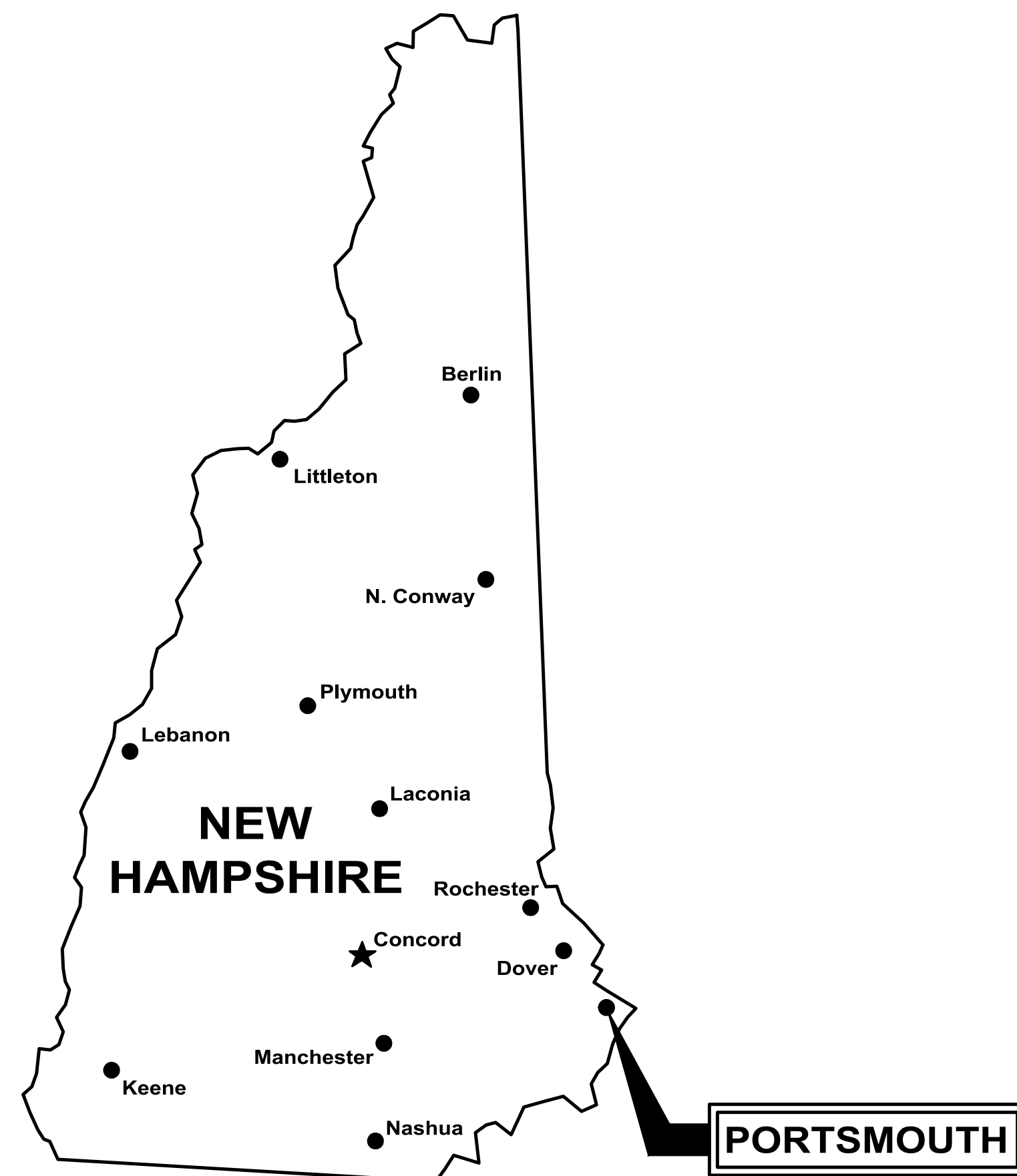
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LOCATION PLAN
SCALE: 1"=2,000'

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GENERAL NOTES

- 1. THE OWNER WILL BE RESPONSIBLE FOR OBTAINING THE PERMITS LISTED IN THE SUPPLEMENTARY OR SPECIAL CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE APPLICABLE PROVISIONS OF EACH PERMIT AS THEY APPLY TO THE WORK PRIOR TO BIDDING AND ABIDE BY THOSE PROVISIONS DURING CONSTRUCTION. COPIES OF ALL OBTAINED PERMITS ARE AVAILABLE FOR REVIEW FROM THE OWNER. ALL OTHER PERMITS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
2. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY RIGHTS OF WAY AND EASEMENTS. THE CONTRACTOR SHALL VERIFY THAT THE NECESSARY EASEMENTS HAVE BEEN SECURED BY THE OWNER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE APPLICABLE PROVISIONS OF EACH EASEMENT AS THEY APPLY TO THE WORK PRIOR TO BIDDING AND ABIDE BY THOSE PROVISIONS DURING CONSTRUCTION. COPIES OF ALL RIGHTS-OF-WAY AND EASEMENTS ARE AVAILABLE FOR REVIEW FROM THE OWNER.
3. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRAFFIC FLOW AT ALL TIMES. CONTRACTOR SHALL INSTALL AND MAINTAIN TRAFFIC CONTROL SIGNS IN ACCORDANCE WITH THE MUTCD AND ALL STATE AND LOCAL REGULATIONS. THE CONTRACTOR IS REQUIRED TO SUBMIT A TRAFFIC CONTROL PLAN TO THE OWNER PRIOR TO COMMENCING CONSTRUCTION. THE POLICE DEPARTMENT AND FIRE DEPARTMENT ARE TO BE NOTIFIED AT LEAST 24-HOURS IN ADVANCE OF ANY STREET CLOSING OR DETOUR. REFER TO SPECIFICATION SECTION 01570.
4. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
5. CONTRACTOR SHALL COMPLY WITH THE COORDINATION REQUIREMENTS AND RELATED COSTS, IF ANY, AS SPECIFIED IN SPECIFICATION SECTION 01050.
6. CONTRACTOR SHALL NOTE THAT, IN GENERAL, ALL EXISTING CONDITION INFORMATION ON THE DRAWINGS ARE SHOWN WITH A LIGHTER LINE WEIGHT AND WITH A SLANTED TYPE TEXT.
7. ALL EXISTING SEWER AND STORM DRAIN LINES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE. ANY EXISTING SEWERS, STORM DRAIN LINES OR CULVERTS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER, EXCEPT WHEN IN DIRECT CONFLICT WITH THE NEW SEWER OR WHEN NOT SHOWN OR INDICATED.
8. ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO TRENCH EXCAVATION SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. INJURY TO ANY SUCH STRUCTURES CAUSED BY OR RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. ALL UTILITIES REQUIRING REPAIR, RELOCATION OR ADJUSTMENT AS A RESULT OF THE PROJECT SHALL BE COORDINATED THROUGH THE RESPECTIVE UTILITY.
9. IN THOSE INSTANCES WHERE POWER OR TELEPHONE POLE SUPPORT IS REQUIRED, THE CONTRACTOR SHALL PROVIDE A MINIMUM 48-HOUR NOTICE TO THE RESPECTIVE UTILITY POLE OWNER. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR TEMPORARY BRACING OF UTILITIES.
10. ALL TEST PITS SHALL BE EXCAVATED PRIOR TO CONSTRUCTION LAYOUT AND RESULTS REPORTED TO THE ENGINEER FOR REVIEW FOR CONFORMANCE WITH THE PLANS. TESTS PITS ARE REQUIRED WHERE SHOWN ON THE DRAWINGS AND AS DIRECTED BY THE ENGINEER. TEST PITS WILL BE DUG PRIOR TO CONNECTING PROPOSED SEWERS TO EXISTING SEWERS. THE RESULTS OF TEST PITS DUG TO DETERMINE EXISTING SEWER ELEVATIONS AND LOCATIONS WILL BE REPORTED TO THE ENGINEER. ADJUSTMENTS TO INVERTS, LENGTHS, AND SLOPES OF PROPOSED SEWER MAY BE REQUIRED AS DIRECTED BY THE ENGINEER. THE HORIZONTAL ALIGNMENT OF THE NEW SEWERS AND FORCE MAINS MAY BE ADJUSTED IN THE FIELD SUBJECT TO PRIOR APPROVAL OF THE ENGINEER.
11. GRAVITY SEWER AND FORCE MAIN PIPE SCHEDULE (UNLESS OTHERWISE INDICATED):
GRAVITY SEWER MAINS AND HOUSE SERVICES - PVC SDR 35 AS SPECIFIED IN SPECIFICATION SECTION 02622
FORCE MAIN (PUMP STATIONS) - HDPE (SDR 17) AS SPECIFIED IN SPECIFICATION SECTION 02628
12. INSULATE OVER ANY GRAVITY SEWER OR FORCE MAIN PIPE WHEN COVER IS LESS THAN 5-FEET, OR THERE IS LESS THAN 2- FEET BETWEEN THE SEWER OR FORCE MAIN AND A CULVERT.
13. INITIAL PAVING SHALL BE CONDUCTED WITHIN TWO WEEKS OF COMPLETION OF PLACEMENT OF FINAL BACKFILL UNLESS OTHERWISE AUTHORIZED BY ENGINEER. FINAL PAVEMENT MAY BE PLACED OVER THE INITIAL PAVING PROVIDED INITIAL PAVING COURSE IS IN GOOD REPAIR. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING AND SHIMMING THE INITIAL PAVEMENT AS NECESSARY TO ACCEPT THE FINAL PAVING COURSE. IF CONDITION WARRANT, THE CONTRACTOR MAY BE REQUIRED TO REMOVE AND REPLACE INITIAL PAVING PRIOR TO FINAL PAVING.
14. FORCE MAINS SHALL SLOPE UNIFORMLY BETWEEN ELEVATIONS INDICATED ON THE DRAWINGS. NO CRESTS IN NEW PIPING WILL BE PERMITTED UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALL BENDS SHALL BE SUITABLY RESTRAINED BY CAST-IN-PLACE CONCRETE THRUST BLOCKS. DUCTILE IRON RETAINER GLANDS MAY BE USED IN LIEU OF THRUST BLOCKS ON DUCTILE IRON FORCE MAINS ONLY. THE NUMBER OF JOINTS ON EACH SIDE OF THE BENDS REQUIRING RETAINER GLANDS SHALL BE DETERMINED BY STANDARDS SET FORTH BY THE DUCTILE IRON PIPE RESEARCH ASSOCIATION. TEST PRESSURE FOR THE PRESSURE AND LEAKAGE TEST SHALL BE 100-PSI OR GREATER AS OUTLINED IN SPECIFICATION SECTION 02755.

EXISTING SITE CONDITIONS

- 1. THE LOCATIONS OF UNDERGROUND UTILITIES AND STRUCTURES, AS SHOWN ON THE DRAWINGS, ARE APPROXIMATE AND MAY NOT BE COMPLETE. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE BASED ON PREVIOUS CONSTRUCTION DESIGN PLANS, WHICH ARE AVAILABLE FOR INSPECTION AT THE ENGINEER'S OFFICE. NO GUARANTEE IS MADE THAT UTILITIES OR STRUCTURES WILL BE ENCOUNTERED WHERE SHOWN, OR THAT ALL UNDERGROUND UTILITIES AND STRUCTURES ARE SHOWN. ALL LOCATIONS AND SIZES OF EXISTING UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD WITH TEST PITS AS REQUIRED PRIOR TO BEGINNING CONSTRUCTION OF NEW FACILITIES OR PIPING THAT MAY BE AFFECTED. THE CONTRACTOR WILL REALIGN NEW PIPE LOCATIONS AS REQUIRED TO CONFORM TO EXISTING LINES AND AS APPROVED BY THE ENGINEER.
2. BELOW GRADE UTILITY INFORMATION IS BASED ON INFORMATION PROVIDED BY EACH UTILITY. LOCATION OF PUBLIC UTILITIES SHOWN IS ONLY APPROXIMATE AND MAY NOT BE COMPLETE. PRIVATE UNDERGROUND UTILITIES SUCH AS, BUT NOT LIMITED TO, SEWER LINES, WATER LINES AND BURIED ELECTRICAL SERVICE ENTRANCES ARE NOT SHOWN. THE CONTRACTOR SHALL ASCERTAIN THE LOCATION AND SIZE OF EXISTING UTILITIES IN THE FIELD WITH THE RESPECTIVE UTILITY COMPANY REPRESENTATIVE PRIOR TO COMMENCING WORK. REFER TO SPECIFICATION SECTION 01050. ADDITIONAL TEST PITS, BEYOND THOSE SHOWN, MAY BE REQUIRED. UTILITY CONTACTS ARE AS FOLLOWS:

ELECTRIC: EVERSOURCE PO BOX 330 MANCHESTER, NH 03105-0330 TEL. (800) 362-7764
TELEPHONE/CABLE: FAIRPOINT COMMUNICATIONS 521 E. MOREHEAD STREET SUITE 230, BOX 29 CHARLOTTE, NH 28202 TEL. (800) 430-2222
GAS: UNTIL-GAS 325 WEST ROAD PORTSMOUTH, NH 03801 TEL. (603) 294-5035

WATER/SEWER/DRAIN: CITY OF PORTSMOUTH 680 PEVERLY HILL ROAD PORTSMOUTH, NH 03801 TEL. (606) 427-1530

DIG SAFE: TEL. (800) DIG-SAFE

- 3. HAZARDOUS ENVIRONMENTAL CONDITIONS HAVE BEEN IDENTIFIED WITHIN THE AREA OF WORK. REFER TO SPECIFICATION SECTION 02076 ASBESTOS CEMENT TRANSITE PIPE REMOVAL AND DISPOSAL. IF THE PRESENCE OF ADDITIONAL HAZARDOUS ENVIRONMENTAL CONDITIONS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER IMMEDIATELY. ALL ACTIVITIES, HANDLING AND DISPOSAL OF HAZARDOUS ENVIRONMENTAL CONDITIONS AND MATERIALS SHALL BE IN ACCORDANCE WITH OSHA, FEDERAL, STATE, AND LOCAL REGULATIONS.

SITE DEMOLITION

- 1. REFER TO THE EXISTING SITE PLAN FOR ADDITIONAL INFORMATION REGARDING EXISTING FACILITIES. REFER TO THE SITE PLAN FOR LIMITS OF WORK.
2. REFER TO SPECIFICATION SECTION 01010A, WHICH CONTAINS INFORMATION ON CONSTRAINTS OF CONSTRUCTION SEQUENCING.
3. DEMOLISH/REMOVE EXISTING PIPING AS REQUIRED FOR CONSTRUCTION OF NEW FACILITIES. ALL PIPING, EQUIPMENT AND MATERIALS TO BE DEMOLISHED AND/OR REMOVED FROM SERVICE SHALL BE COORDINATED WITH THE OWNER AND ENGINEER BEFORE COMMENCING THAT WORK. EXISTING PIPING THAT NEEDS TO BE REMOVED TO CONSTRUCT THE NEW FACILITIES, BUT IS TO REMAIN, SHALL BE REINSTALLED/REPLACED AS NEEDED. EXISTING PIPES AND CONDUIT DESIGNATED AS "ABANDONED" MAY BE REMOVED IF THE CONTRACTOR SO CHOOSES. IF ABANDONED PIPE CONFLICTS WITH NEW SITE PIPING OR FACILITIES, THEN A PORTION OF THE ABANDONED PIPE SHALL BE REMOVED, AND THE NEW ENDS OF ABANDONED PIPE CAPPED OR PLUGGED WITH CONCRETE.
4. SEVERING OF EXISTING UTILITIES FOR ABANDONMENT, OR REMOVAL OF A SEGMENT FROM SERVICE, SHALL BE PERFORMED IN SUCH A MANNER AS TO ALLOW THE REMAINING ACTIVE SEGMENT TO CONTINUE IN ITS INTENDED SERVICE. CAP ACTIVE SEGMENTS WITH APPROPRIATE FITTINGS, JOINT RESTRAINT, ETC. TO ENSURE THEIR INTEGRITY. PLUG ENDS OF ABANDONED PIPE SEGMENTS WITH CONCRETE UNLESS SPECIAL CIRCUMSTANCES DICTATE PLUGGING ABANDONED PIPES WITH BLIND FLANGES, RESTRAINED MECHANICAL JOINT PLUGS, ETC. AS APPROPRIATE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND DISPOSING OF ALL DEMOLISHED PIPING, EQUIPMENT AND MATERIALS. DISPOSAL SHALL BE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS.
6. THE CONTRACTOR SHALL KEEP A RECORD OF DEMOLITION AS PART OF THE PROJECT RECORD DOCUMENTS IN ACCORDANCE WITH SPECIFICATION SECTION 01720.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF FLOWS RESULTING FROM PRECIPITATION AND GROUNDWATER DEWATERING OPERATIONS.

SITE CLEARING, GRUBBING AND GRADING

- 1. STRIPPING OF TOPSOIL (LOAM) SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02115. REFER TO THE LAYOUT AND GRADING DRAWINGS FOR LIMIT OF WORK AND STRIPPING.
2. CONTRACTOR SHALL MINIMIZE CLEARING OPERATIONS. CLEARING AND GRUBBING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02110. CLEARING LIMITS SHALL BE AS INDICATED ON THE DRAWINGS. ALL CLEARING AND GRUBBING MATERIAL SHALL BE THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF AT A SITE PROVIDED BY THE CONTRACTOR IN COMPLIANCE WITH ALL STATE AND LOCAL LAWS.
3. THE CONTRACTOR SHALL FOLLOW ALL ENDANGERED SPECIES ACT (4(D) RULES REGARDING THE NORTHERN LONG EARED BAT. THIS INCLUDES AVOIDANCE OF TREE REMOVAL DURING THE MONTHS OF JUNE AND JULY. CONTRACTOR SHALL PLAN ACCORDINGLY.
4. CONTRACTOR SHALL PROVIDE PROPER EROSION CONTROL AND DRAINAGE MEASURES IN ALL AREAS OF WORK, AND CONFINE SOIL SEDIMENT TO WITHIN THE LIMITS OF EXCAVATION AND GRADING. PRIOR TO BEGINNING EXCAVATION WORK, EROSION CONTROL FENCE SHALL BE INSTALLED AT THE DOWN GRADIENT PERIMETER OF THE ACTUAL LIMITS OF GRUBBING AND/OR GRADING, AND AS SHOWN ON THE DRAWINGS. EROSION CONTROL MEASURES SHOWN ON THE DRAWINGS ARE A MINIMUM. CONTRACTOR SHALL TAKE ALL OTHER NECESSARY MEASURES. EROSION CONTROL FENCE SHALL ALSO BE INSTALLED AT THE DOWN GRADIENT PERIMETER OF THE TOPSOIL STOCKPILES. ALL DISTURBED EARTH SURFACES SHALL BE STABILIZED IN THE SHORTEST PRACTICAL TIME AND TEMPORARY EROSION CONTROL DEVICES SHALL BE EMPLOYED UNTIL SUCH TIME AS ADEQUATE SOIL STABILIZATION HAS BEEN ACHIEVED. TEMPORARY STORAGE OF EXCAVATED MATERIAL SHALL BE STABILIZED IN A MANNER THAT WILL MINIMIZE EROSION. ALL INSTALLED EROSION CONTROL FACILITIES SHALL BE REMOVED AT THE END OF THE PROJECT. REFER TO SPECIFICATION SECTION 02270.
5. ALL STORM DRAINAGE INLETS SHALL BE PROTECTED BY HAY BALE FILTERS TO PREVENT ENTRY OF SEDIMENT FROM RUNOFF WATERS DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL COLLECTED SEDIMENT, AND THAT WHICH COLLECTS IN THE STORM DRAIN SYSTEM. REFER TO THE CIVIL DETAIL DRAWINGS.
6. THE GEOTECHNICAL DATA REPORT FOR THE PROJECT SITE IS INCLUDED IN APPENDIX A AND IS DESCRIBED IN SPECIFICATION DIVISION 0.
7. CONTRACTOR SHALL CONTROL DUST ON THE CONSTRUCTION SITE TO A REASONABLE LIMIT, AS DETERMINED BY THE ENGINEER, AND AS OUTLINED IN SPECIFICATION SECTION 01562.
8. CONTRACTOR SHALL NOT TRACK OR SPILL EARTH, DEBRIS OR OTHER CONSTRUCTION MATERIAL ON PUBLIC OR PRIVATE STREETS AND PLANT DRIVES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE ASSOCIATED CLEAN UP.
9. ALL CATCH BASINS, MANHOLES, VALVE PITS, VALVE BOXES AND OTHER BURIED FACILITIES WITH SURFACE ACCESS SHALL BE ADJUSTED TO MATCH FINAL GRADES, UNLESS OTHERWISE INDICATED.
10. THE CONTRACTOR SHALL NOT HAVE ANY RIGHT OF PROPERTY IN ANY MATERIALS TAKEN FROM ANY EXCAVATION. SUITABLE EXCAVATED MATERIAL MAY BE INCORPORATED IN THE PROJECT, WITH EXCESS MATERIAL DISPOSED OF AT A LOCATION PROVIDED BY THE CONTRACTOR. THESE PROVISIONS SHALL IN NO WAY RELIEVE THE CONTRACTOR OF OBLIGATIONS TO PROPERLY DISPOSE OF AND REPLACE ANY MATERIAL DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING. THE CONTRACTOR SHALL DISPOSE OF UNSUITABLE AND EXCESS MATERIAL IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE CONTRACT DOCUMENTS.
11. CONTRACTOR SHALL REMOVE AND REPLACE, OR REPAIR, ALL CURBS, SIDEWALKS, PAVEMENT AND OTHER ITEMS DAMAGED BY CONSTRUCTION ACTIVITIES TO AT LEAST THEIR ORIGINAL CONDITION, TO THE SATISFACTION OF THE OWNER AND ENGINEER.
12. WHERE EXISTING PAVEMENT IS REMOVED AND REPLACED, MATCH EXISTING GRADES TO THE EXTENT POSSIBLE. COORDINATE FINE GRADING WITH THE ENGINEER.
13. ALL ROAD AND DRIVE CROSS SLOPES SHALL PITCH 1/4-INCH PER FOOT MINIMUM. ALL PAVED SURFACES SHALL PITCH 1% UNLESS OTHERWISE NOTED. REFER TO THE CIVIL DETAIL DRAWINGS.
14. ALL NON-ROADWAY AREAS THAT ARE EXCAVATED, FILLED, OR OTHERWISE DISTURBED BY THE CONTRACTOR SHALL BE LOAMED, GRADED, LIMED, FERTILIZED, SEEDED AND MULCHED, UNLESS OTHERWISE NOTED. THE TOP 4-INCHES OF SOIL SHALL BE LOAM. REFER TO SPECIFICATION SECTION 02485, LANDSCAPING/LOAM AND SEED.

CIVIL SITE LAYOUT

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THIS PROVIDED LAYOUT INFORMATION THROUGHOUT THE COURSE OF CONSTRUCTION. REPORT ANY LAYOUT DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
2. CONTRACTOR SHALL EXCAVATE TEST PITS, WHERE NECESSARY, PRIOR TO CONSTRUCTION LAYOUT AND RESULTS REPORTED TO THE ENGINEER FOR REVIEW FOR CONFORMANCE TO THE PLANS. TEST PITS ARE REQUIRED WHERE SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER.
3. THE LOCATIONS AND LIMITS OF ALL ON-SITE WORK AND STORAGE AREAS SHALL BE REVIEWED/COORDINATED WITH, AND ACCEPTABLE TO, THE OWNER AND ENGINEER. THE CONTRACTOR SHALL LIMIT ACTIVITIES TO THESE AREAS.
4. WRITTEN DIMENSIONS SHALL PREVAIL. DO NOT SCALE DISTANCES FROM THE DRAWINGS. REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
5. BOLLARD LOCATIONS SHOWN ARE APPROXIMATE. COORDINATE BOLLARD LOCATIONS WITH THE ENGINEER. REFER TO THE CIVIL DETAIL DRAWINGS.
6. ALL ELEVATIONS REFER TO THE NAVD88 DATUM. ORIENTATION IS GRID NORTH ON THE NEW HAMPSHIRE STATE PLANE (2800) NAD83 (2011) COORDINATE SYSTEM. PROJECT BENCH MARK IS SHOWN ON THE DRAWINGS AND IS DERIVED FROM ON-THE-GROUND INSTRUMENT SURVEY. CONTRACTOR SHALL VERIFY BENCHMARK ELEVATIONS PRIOR TO USING IN CONSTRUCTION.
7. EXISTING CONDITIONS SITE PLAN DEVELOPED FROM SURVEY DRAWING PREPARED BY DOUCET SURVEYING, DATED JULY 2020, AND EXISTING RECORD DRAWING INFORMATION.
8. WETLAND BOUNDARIES DELINEATED BY MARC E. JACOBS IN JULY 2020.

CIVIL SITE PIPING

- 1. TRENCH INSULATION SHALL BE USED WHERE DEPTH OF COVER IS LESS THAN 5- FEET. REFER TO THE CIVIL DETAIL DRAWINGS FOR THE TRENCH INSULATION DETAIL.
2. MANHOLES ARE 4- FEET IN DIAMETER UNLESS OTHERWISE NOTED. THE TOP OF MANHOLE FRAMES SHALL BE SET FLUSH WITH FINISH GRADE, UNLESS OTHERWISE NOTED ON DRAWINGS. SEWER MANHOLE INVERTS SHOWN ON THE DRAWINGS ARE TO THE INSIDE FACE OF THE MANHOLE.
3. PIPES WITHIN VALVE PITS (MANHOLES) SHALL BE SUPPORTED 12-INCHES ABOVE BOTTOM OF MANHOLE ON ADJUSTABLE PIPE SADDLE SUPPORTS, IN ACCORDANCE WITH SPECIFICATION SECTION 15094, UNLESS OTHERWISE INDICATED.
4. CONTRACTOR SHALL RE-SHAPE INVERTS AS REQUIRED WHEN CONNECTING INTO EXISTING MANHOLES.
5. REFER TO SPECIFICATION SECTION 02200 FOR PIPE AND STRUCTURE BEDDING AND BACKFILL REQUIREMENTS.
6. COMPACTION TESTS WILL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 02200. ANY SETTLEMENT OCCURRING WITHIN ONE-YEAR OF FINAL COMPLETION OF THE WORK SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST.
7. OPEN TRENCHES IN THE ROADWAY MUST BE BACKFILLED AT THE END OF THE WORKDAY. OPEN TRENCHES OUTSIDE OF THE WAY MAY BE LEFT OPEN IF THE CONTRACTOR PROVIDES ADEQUATELY SAFE BARRICAADING AND LIGHTS.
8. WHENEVER POWER OR TELEPHONE POLE SUPPORT IS REQUIRED, THE CONTRACTOR SHALL PROVIDE A MINIMUM 48-HOUR NOTICE TO THE RESPECTIVE UTILITY POLE OWNER.
9. WHERE NEW PIPING IS TO BE CONNECTED TO EXISTING PIPING, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ADAPTERS, FITTINGS, AND ADDITIONAL PIPE AS REQUIRED TO COMPLETE THE CONNECTION. CONTRACTOR SHALL VERIFY LOCATION, ELEVATION, ORIENTATION AND MATERIAL OF CONSTRUCTION. TEST PITS SHALL BE USED AS REQUIRED.
10. ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE UNLESS OTHERWISE NOTED ON THE CIVIL EXISTING CONDITIONS AND DEMOLITION PLAN. ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL DEMOLITION MATERIALS IN ACCORDANCE WITH SPECIFICATION SECTION 02050.
12. WHENEVER SEWERS AND WATER MAINS MUST CROSS, SEWER LINES SHOULD BE INSTALLED UNDER WATER LINES. A MINIMUM SEPARATION OF 18-INCHES BETWEEN THE BOTTOM OF THE WATER LINE AND THE TOP OF THE SEWER LINE SHALL BE MAINTAINED. WHERE A WATER LINE CROSSES UNDER A SEWER LINE, A FULL LENGTH OF PIPE SHALL BE CENTERED ABOVE THE WATER LINE SO THAT BOTH JOINTS WILL BE AS FAR FROM THE WATER LINE AS POSSIBLE. WHERE 18-INCHES OF VERTICAL SEPARATION IS NOT POSSIBLE, THE CONTRACTOR SHALL OBTAIN A SEPARATION REQUIREMENT FROM NHDES.
13. ELECTRICAL CONDUIT RUNS ARE INDICATED ON THE ELECTRICAL DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION, EXCAVATION AND BACKFILLING REQUIRED FOR THE ELECTRICAL CONDUITS, AND SHALL FURNISH AND INSTALL ELECTRICAL MANHOLES AND HANDHOLES. COORDINATE THE LOCATION OF THE ELECTRICAL MANHOLES AND HANDHOLES, AND THE REQUIRED OPENING SIZES, WITH THE ELECTRICAL CONTRACTOR.
14. WHENEVER PROPOSED STRUCTURES ARE LOCATED PARTLY WITHIN A PAVED AREA AND PARTLY IN A NON-PAVED AREA, A BITUMINOUS CONCRETE PAVED APRON 2- FEET WIDE SHALL BE SUPPLIED AROUND THE PROPOSED COVER.

CIVIL ABBREVIATIONS

Table listing abbreviations and their full names: & AND, Ø, DIA DIAMETER, #, NO NUMBER, APP'D APPROVED, BLDG BUILDING, CB CATCH BASIN, CEN CENTER, CFS CUBIC FEET PER SECOND, CI CAST IRON, CL CENTERLINE, CMP CORRUGATED METAL PIPE, CO CLEANOUT, CONC CONCRETE, COR CORNER, CY CUBIC YARD, DEMO DEMOLITION, DMH DRAIN MANHOLE, DI DUCTILE IRON, DR DRAIN, DWG DRAWING, EL ELEVATION, EMH ELECTRIC MANHOLE, FM FORCE MAIN, FT FEET, G GAS, HYD HYDRANT, IN INCH, INF INFLEUENT, INV INVERT, LBS POUNDS, MAX MAXIMUM, MH MANHOLE, MIN MINIMUM, MW MONITORING WELL, N NORTH, NGVD NATIONAL GEODETIC VERTICAL DATUM, N/A NOT AVAILABLE/APPLICABLE, NTS NOT TO SCALE, OD OUTSIDE DIAMETER, PC PERFORATED CLAY, PSF POUNDS PER SQUARE FOOT, PSI POUNDS PER SQUARE INCH, PS PRIMARY SLUDGE, PT POINT OF TANGENCY, PVC POLYVINYL CHLORIDE, RCP REINFORCED CONCRETE PIPE, RD ROOF DRAIN, REQ'D REQUIRED, S SLOPE, SEWER, SD STORM DRAIN, SF SQUARE FEET, SMH SANITARY SEWER MANHOLE, SQ SQUARE, STA STATION, T, XFMR TRANSFORMER, TBM TEMPORARY BENCH MARK, THK THICKNESS, TOS TOP OF STRUCTURE, TYP TYPICAL, UD UNDERDRAIN, UG UNDERGROUND, UGE UNDERGROUND ELECTRIC, VC VITRIFIED CLAY, W WITH, W POTABLE WATER

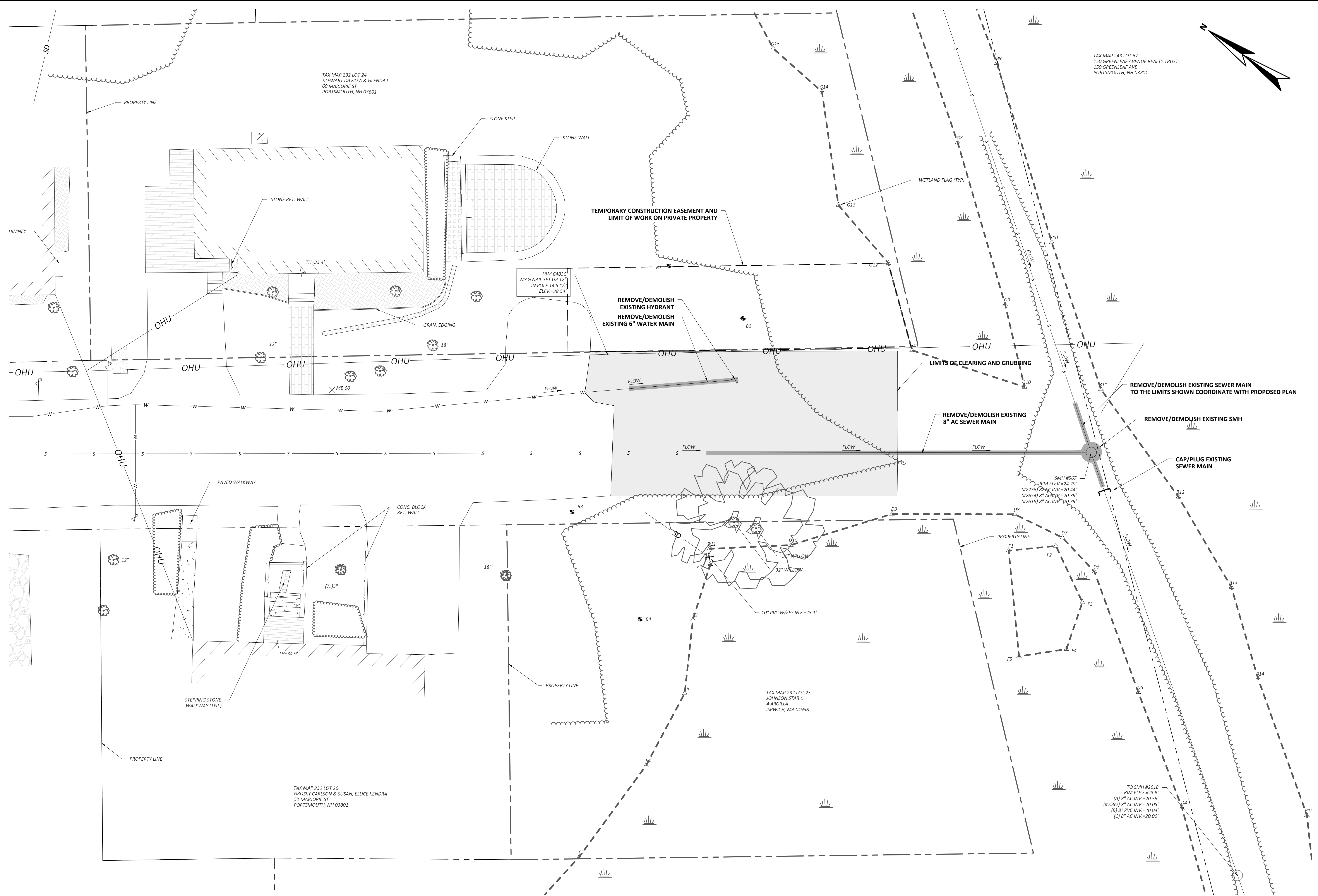
LEGEND

Legend table with columns for EXISTING and PROPOSED. Rows include PROPERTY/ROW LINE, SETBACK LINE, EASEMENT LINE, CENTERLINE, EDGE OF PAVEMENT, CURBING, EDGE OF GRAVEL, EDGE OF CONCRETE, CONTOUR BUILDING, STONEWALL, TREETLINE, CHAIN LINK FENCE, STOCKADE FENCE, BARB WIRE FENCE, RETAINING WALL, GUARDRAIL, SEWER, SEWER FORCE MAIN, GAS, WATER, STORM DRAIN, UNDERDRAIN, CULVERT, UNDERGROUND ELECTRIC, OVERHEAD ELECTRIC, UNDERGROUND TELEPHONE, UNDERGROUND CABLE TV, IRON PIPE/REBAR, DRILLHOLE, MONUMENT, SURVEY CONTROL POINT, SPOT ELEVATION, SEWER MANHOLE, DRAINAGE MANHOLE, CATCH BASIN, ELECTRIC MANHOLE, TELEPHONE MANHOLE, SHUTOFF VALVE, WATER SERVICE SHUTOFF, YARD HYDRANT, HYDRANT, GAS SERVICE SHUTOFF, GAS GATE VALVE, UTILITY POLE, UTILITY POLE W/ GUY, UTILITY POLE W/ LIGHT, LIGHT POLE, BOLLARD, FLAGPOLE, CONIFEROUS TREE, DECIDUOUS TREE, SHRUB, WETLAND FLAG, EDGE OF WATER, STREAM, EDGE OF WETLANDS, FLOODPLAIN, WETLANDS, DRAINAGE FLOW, DRAINAGE SWALE, PAVEMENT MARKINGS, SIGN, MAILBOX, TEMPORARY BENCH MARK, TEST PIT, TEST BORING, TEST PROBE, MONITORING WELL, LIMIT OF WORK, SILT FENCE, RIPRAP, RAILROAD, MATCHLINE, ROCK OUTCROP

Table with columns for NO, DATE, and rows for REVISIONS and PROJECT INFORMATION (PROJECT NO. 20374, DESIGNED BY, CAD COORD, CADD, CHECKED, DATE, APPROVED, DATE, SUBMISSIONS, CONTRACT DOCUMENTS).

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CITY OF PORTSMOUTH, NEW HAMPSHIRE MARJORIE STREET PUMP STATION GENERAL NOTES, LEGEND AND ABBREVIATIONS DRAWING C-1



NO	REVISIONS	APPD	DATE

PROJECT NO: 20374	DESIGNED: C.MARANTO	CAD COORD: D.SAVAGE	CHECKED: M.THERIAULT	DATE: 01/09/23	APPROVED: B.ECKSTROM	DATE: 05/11/23	SUBMISSION: CONTRACT DOCUMENTS
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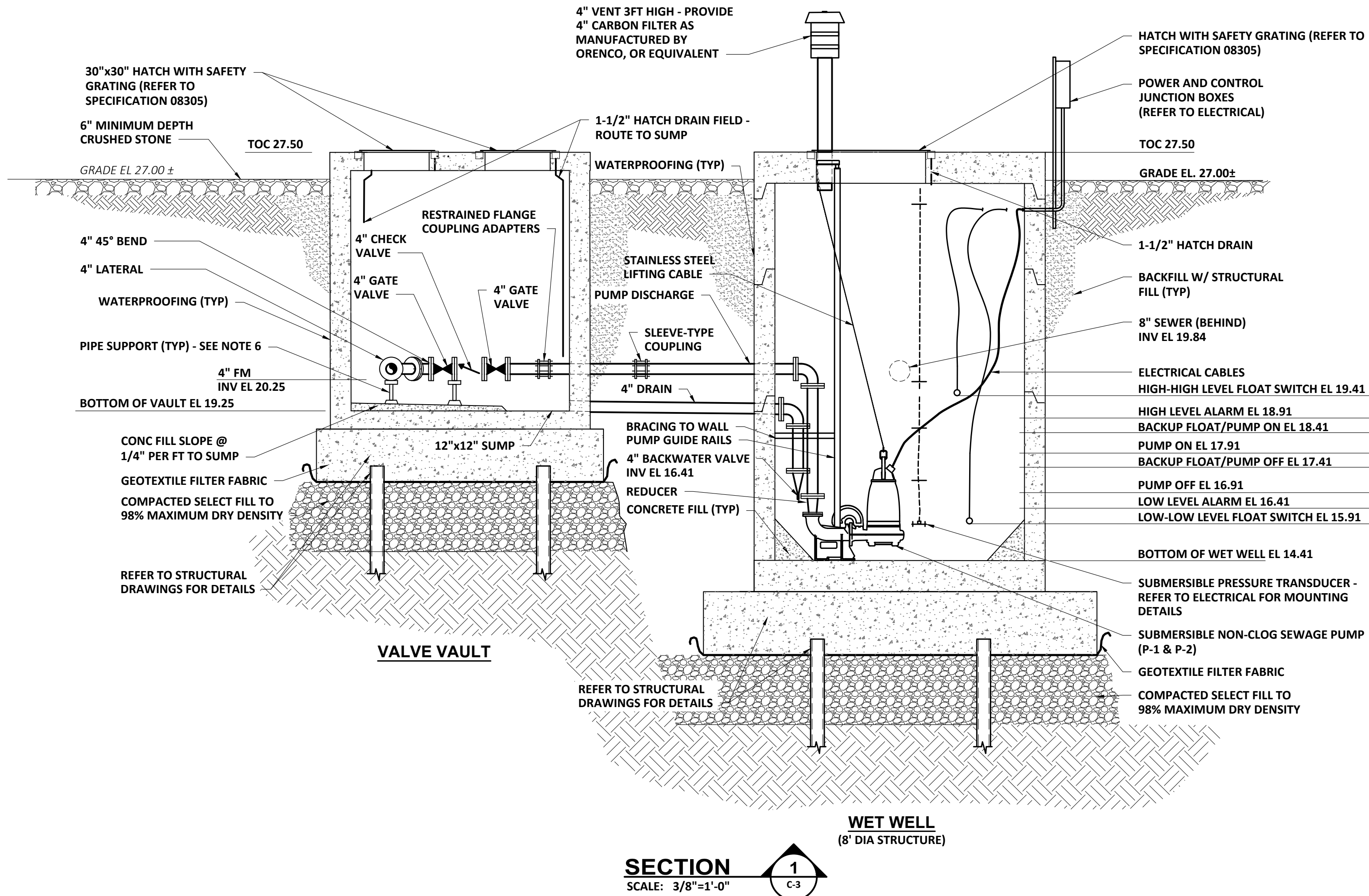
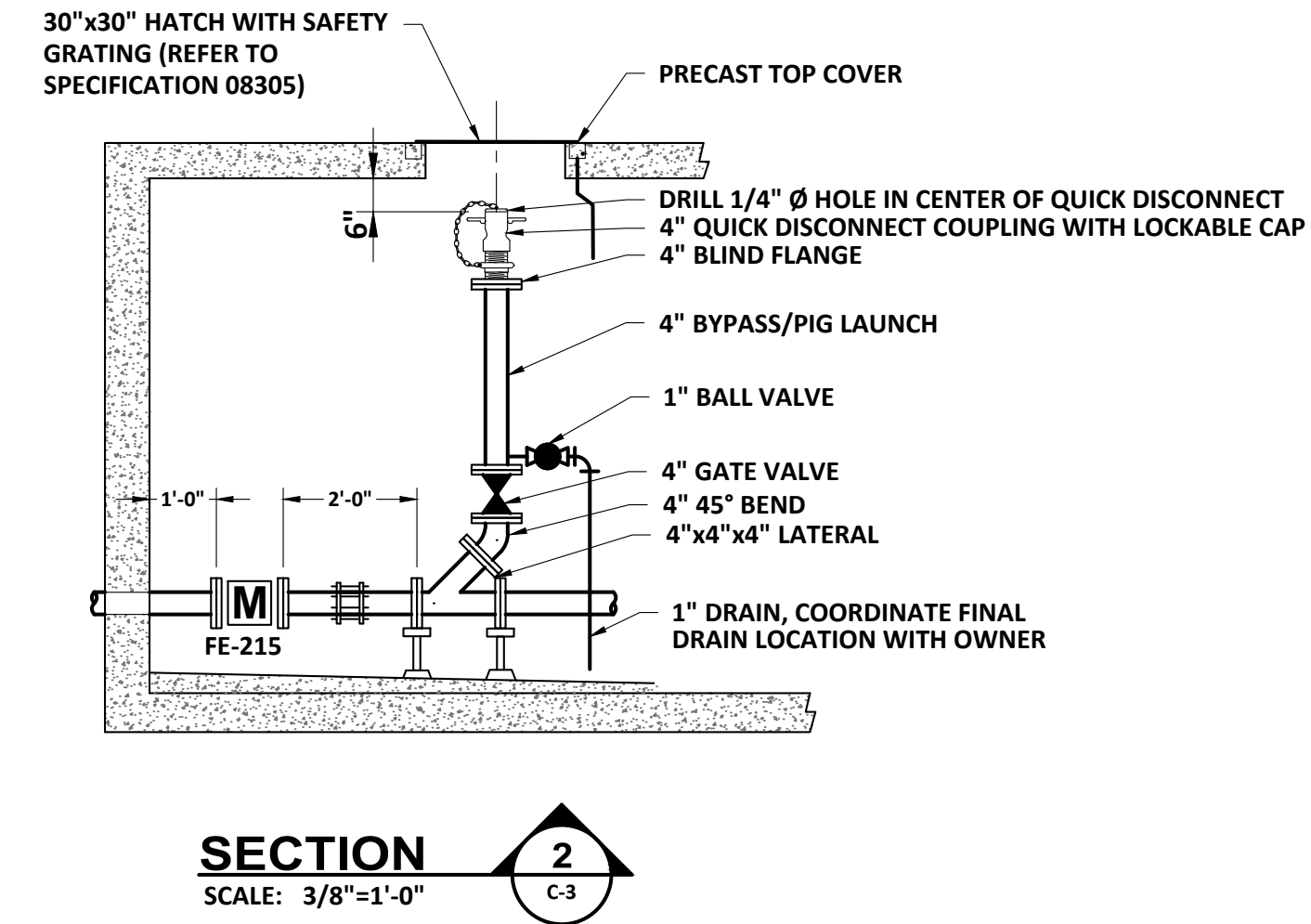
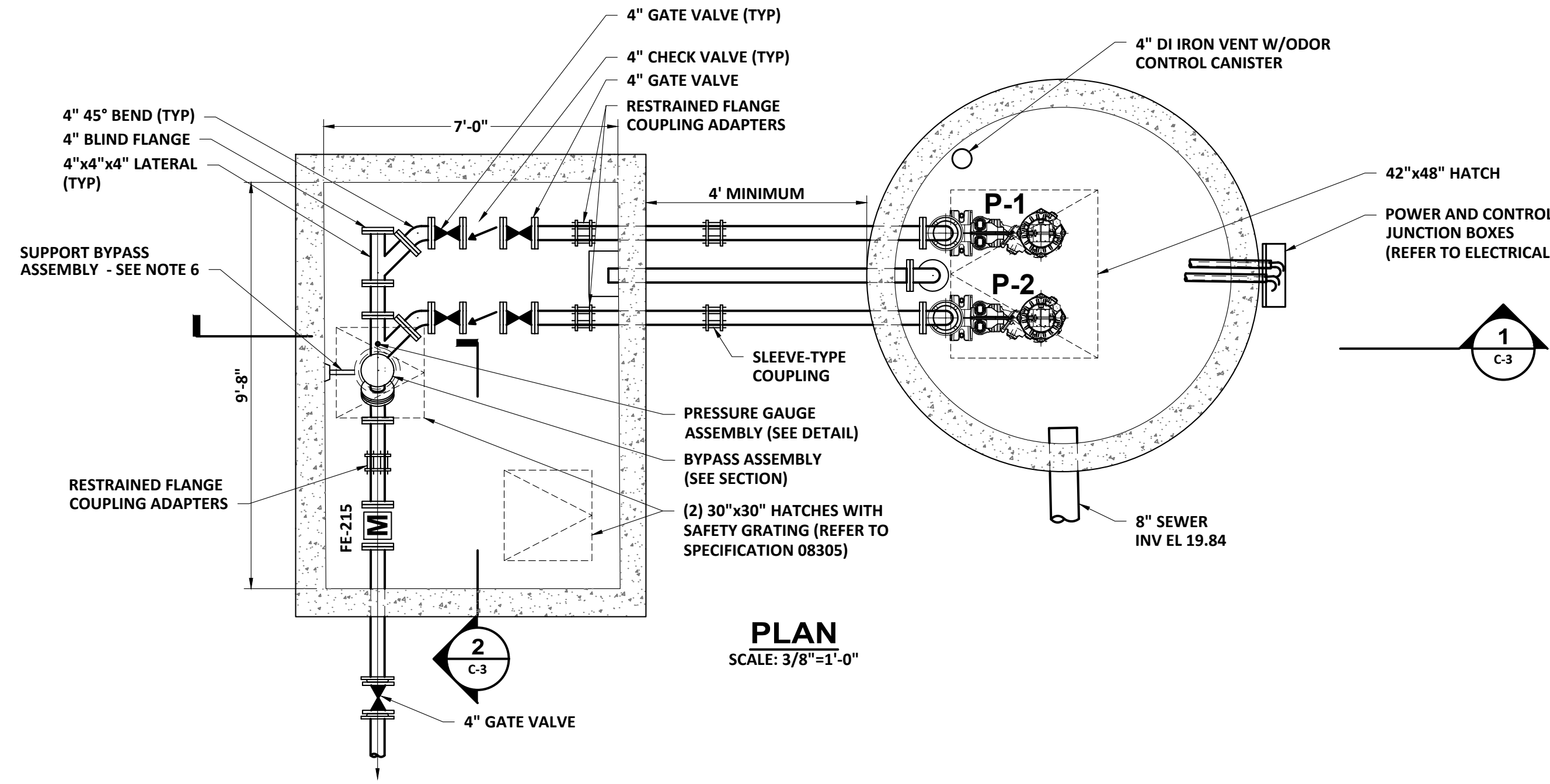
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CITY OF PORTSMOUTH, NEW HAMPSHIRE
MARJORIE STREET PUMP STATION
 EXISTING CONDITIONS AND DEMOLITION PLAN

EXISTING CONDITIONS AND DEMOLITION PLAN
 SCALE: 1"=10'

LAST SAVED BY: DON.SAVAGE 9/19/2023 2:15 PM

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NOTES:

1. FOR CIVIL GENERAL NOTES, REFER TO THE CIVIL DRAWINGS.
2. THE ELEVATION DIFFERENCE FROM THE LOW-LOW LEVEL FLOAT SWITCH TO THE BOTTOM OF THE WET WELL IS SET TO PROVIDE THE MINIMUM WATER LEVEL REQUIRED BY SPECIFIED PUMP MANUFACTURER.
3. LOCATION OF PUMPS, HATCHES, VENT, AND WINCH BASE SHALL BE ADJUSTED TO SUIT PUMP PROVIDED AND ENSURE EASY/NON-BINDING REMOVAL OF PUMPS WITHOUT CONFLICT WITH HATCH. LOCATION SHALL BE SUBJECT TO PRIOR REVIEW AND ACCEPTANCE BY THE ENGINEER.
4. RESTRAIN PIPING TO PREVENT LATERAL MOVEMENT IN WET WELL AND VALVE PIT.
5. SEE CIVIL DRAWINGS FOR FINISH GRADE, LOCATION AND ORIENTATION OF WET WELL AND VALVE PIT.
6. CONTRACTOR TO PROVIDE ADEQUATE PIPE SUPPORT IN THE VALVE PITS. ALL PIPE SUPPORTS SHALL BE CONSTRUCTED OF 304 STAINLESS STEEL WITH STAINLESS STEEL HARDWARE.
7. TERMINAL BOXES SHALL BE INSTALLED OUTSIDE OF THE WET WELL. ALL ELECTRICAL EQUIPMENT SHALL BE A MINIMUM 5-FEET AWAY FROM WET WELL. REFER TO AND COORDINATE WITH ELECTRICAL DRAWINGS FOR LOCATIONS AND LOCATION OF CONTROL PANEL.
8. ON THE UNDERSIDE OF THE HATCH, SPRAY PAINT, USING A STENCIL AND SAFETY YELLOW PAINT, THE FOLLOWING: "WARNING HAZARDOUS AREA, ENTER ONLY WITH PROPER EQUIPMENT"
9. BACKWATER VALVE ARE TO BE THE FLOW OPERATED CHECK TYPE. THE PORT AREA SHALL CONTOUR DOWN TO A DUCKBILL WHICH SHALL ALLOW PASSAGE OF FLOW IN ONE DIRECTION WHILE PREVENTING REVERSE FLOW. THE FLEXIBLE DUCKBILL SLEEVE SHALL BE ONE-PIECE EPDM CONSTRUCTION WITH NYLON REINFORCEMENT. THE BILL PORTION SHALL BE THINNER AND MORE FLEXIBLE THAN THE VALVE BODY, AND FORMED INTO A CURVE OF 180°. THE CLIFF OF THE VALVE SHALL FIT OVER THE PLAIN END OF THE PIPE AND HELD IN PLACE WITH 316 STAINLESS STEEL BAND CLAMP. DUCKBILL CHECK VALVES SHALL BE SERIES TF-2 AS MANUFACTURED BY TIDEFLUX TECHNOLOGIES INC, OF CARNEGIE, PA, OR EQUIVALENT.
10. FOR PRESSURE GAGE ASSEMBLY REFER TO DETAILS.
11. PRESSURE TANSUCERS AND FLOATS TO BE ACCESSIBLE FROM HATCH OPENING.

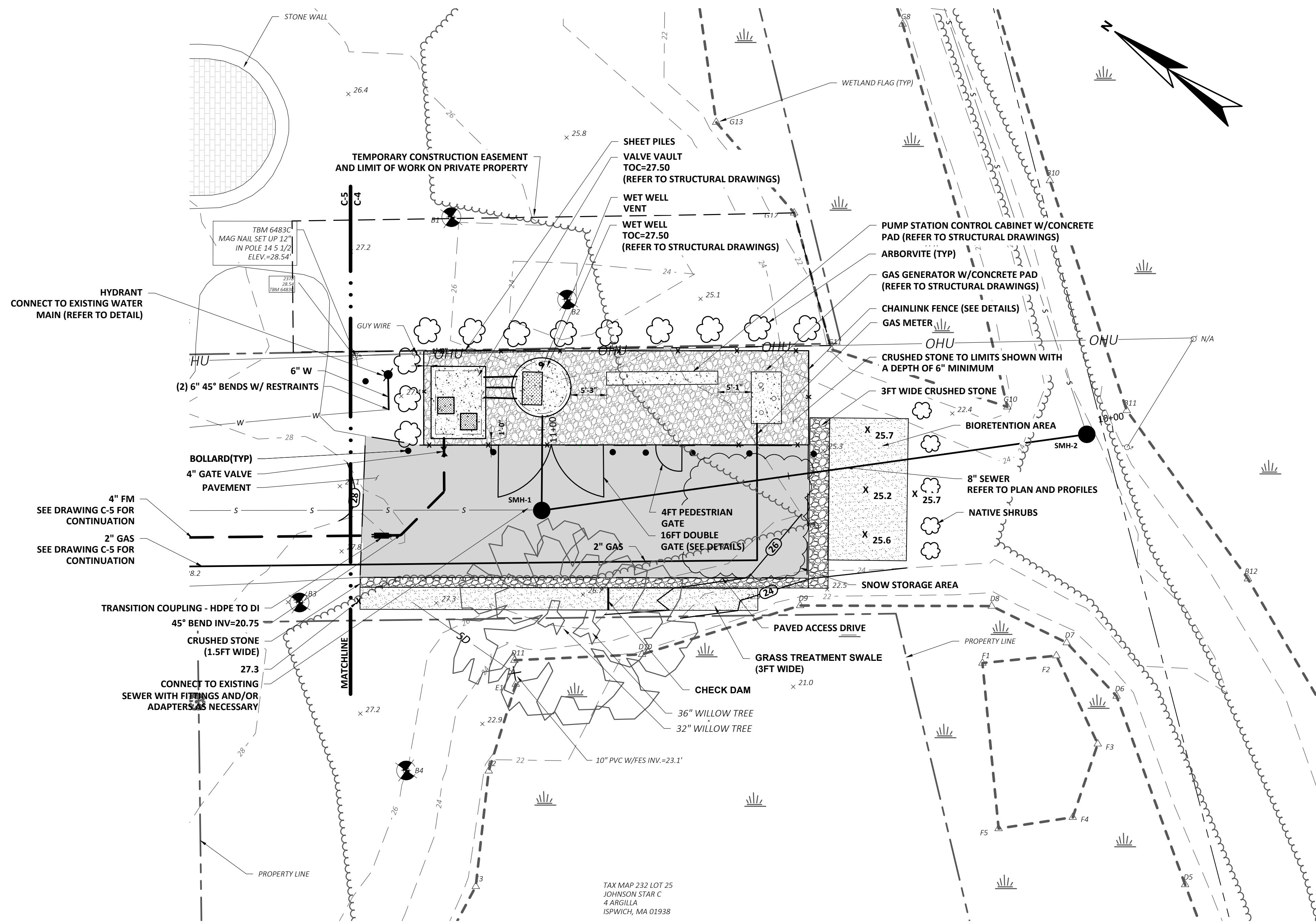
NO	REVISIONS	APPD	DATE

PROJECT NO. 20374	DESIGNED: C.MARANTO	CAD COORD: D.SAVAGE	CAD: D.SAVAGE	CHECKED: M.THERIAULT	DATE: 01/09/23	APPROVED: A.MORRILL	DATE: 05/11/23	SUBMISSION: CONTRACT DOCUMENTS
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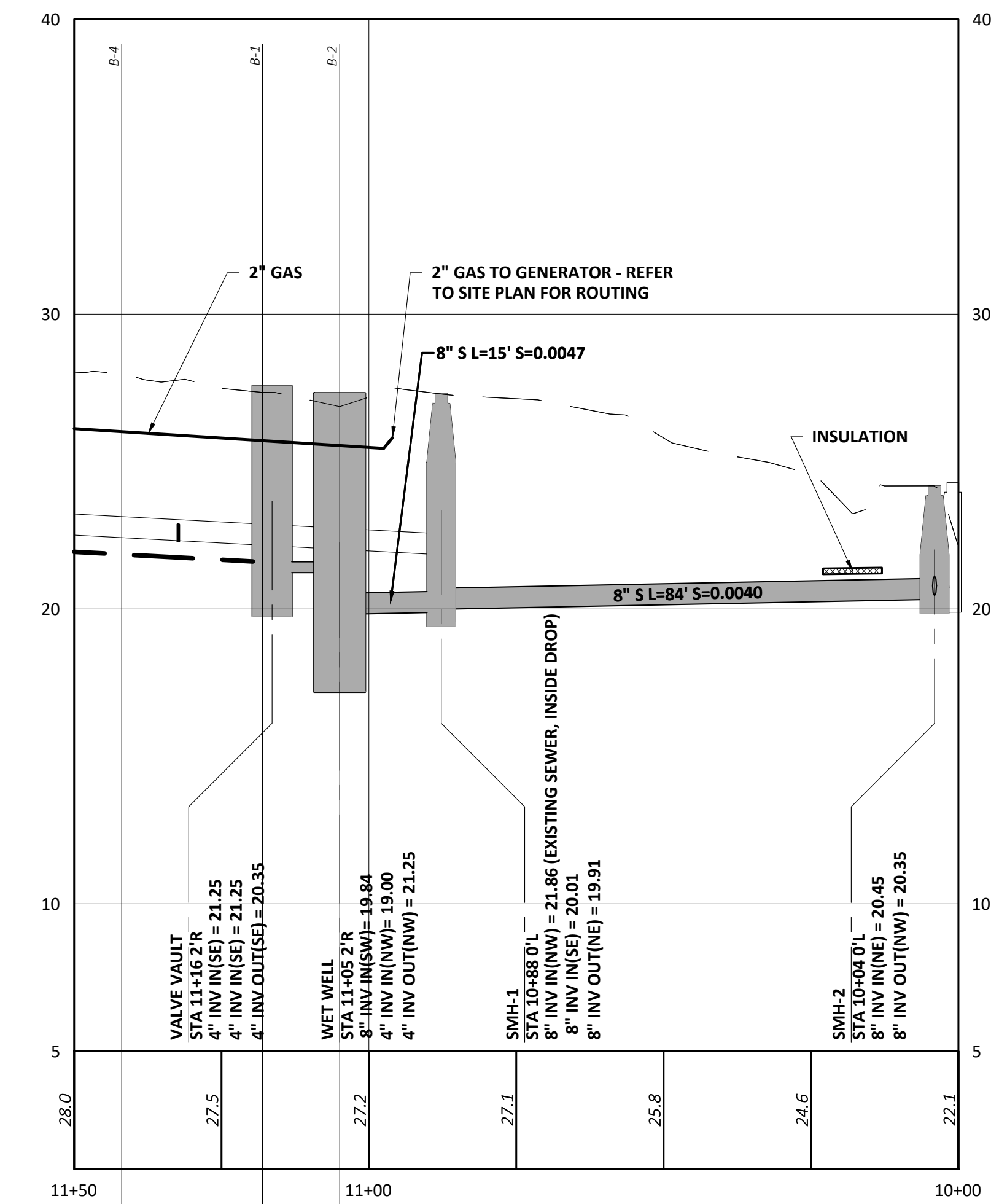
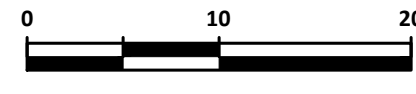
CITY OF PORTSMOUTH, NEW HAMPSHIRE
MARJORIE STREET PUMP STATION

PUMP STATION PLAN
AND SECTION



PUMP STATION GRADING PLAN

SCALE: 1"=10'

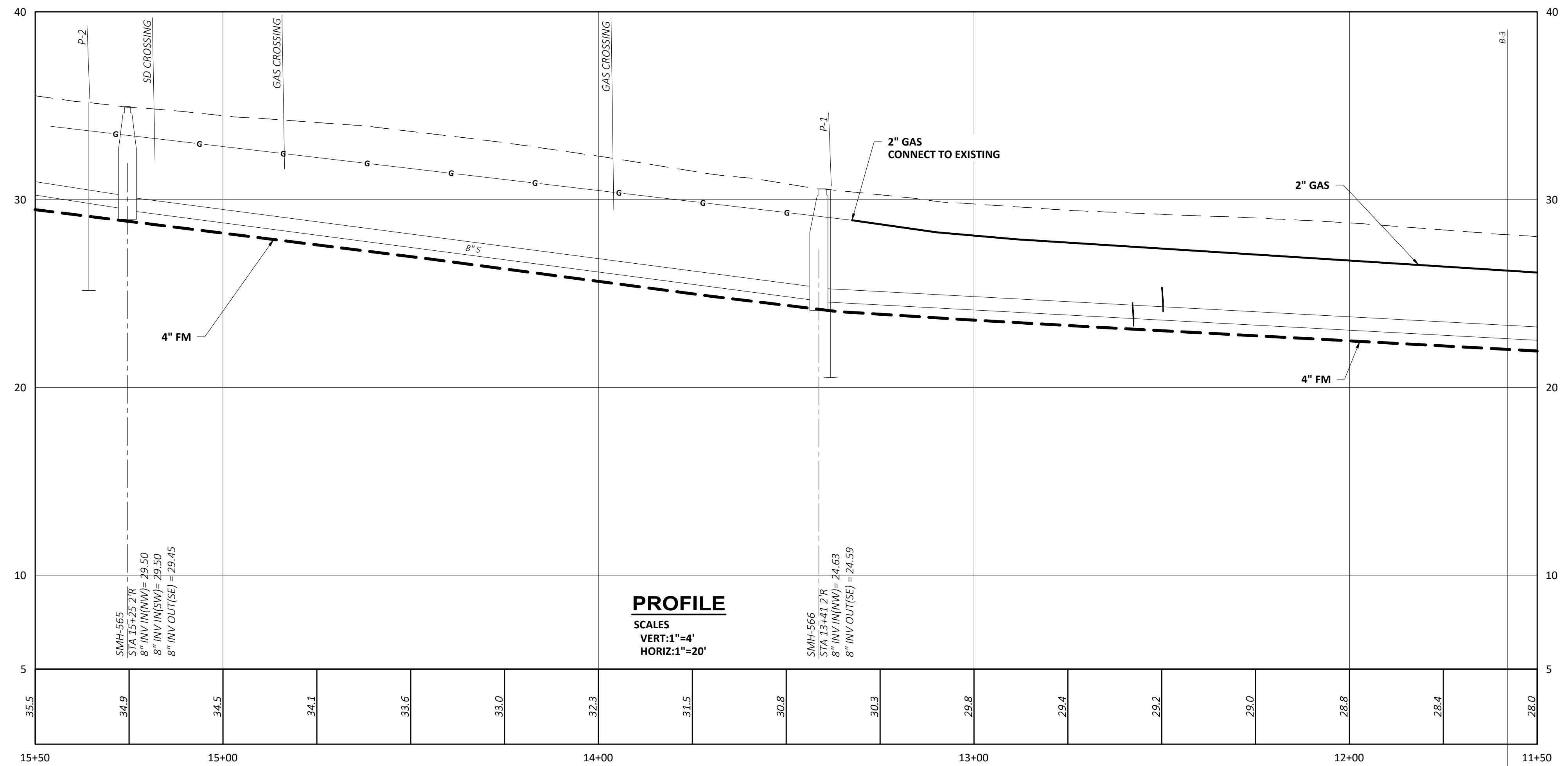
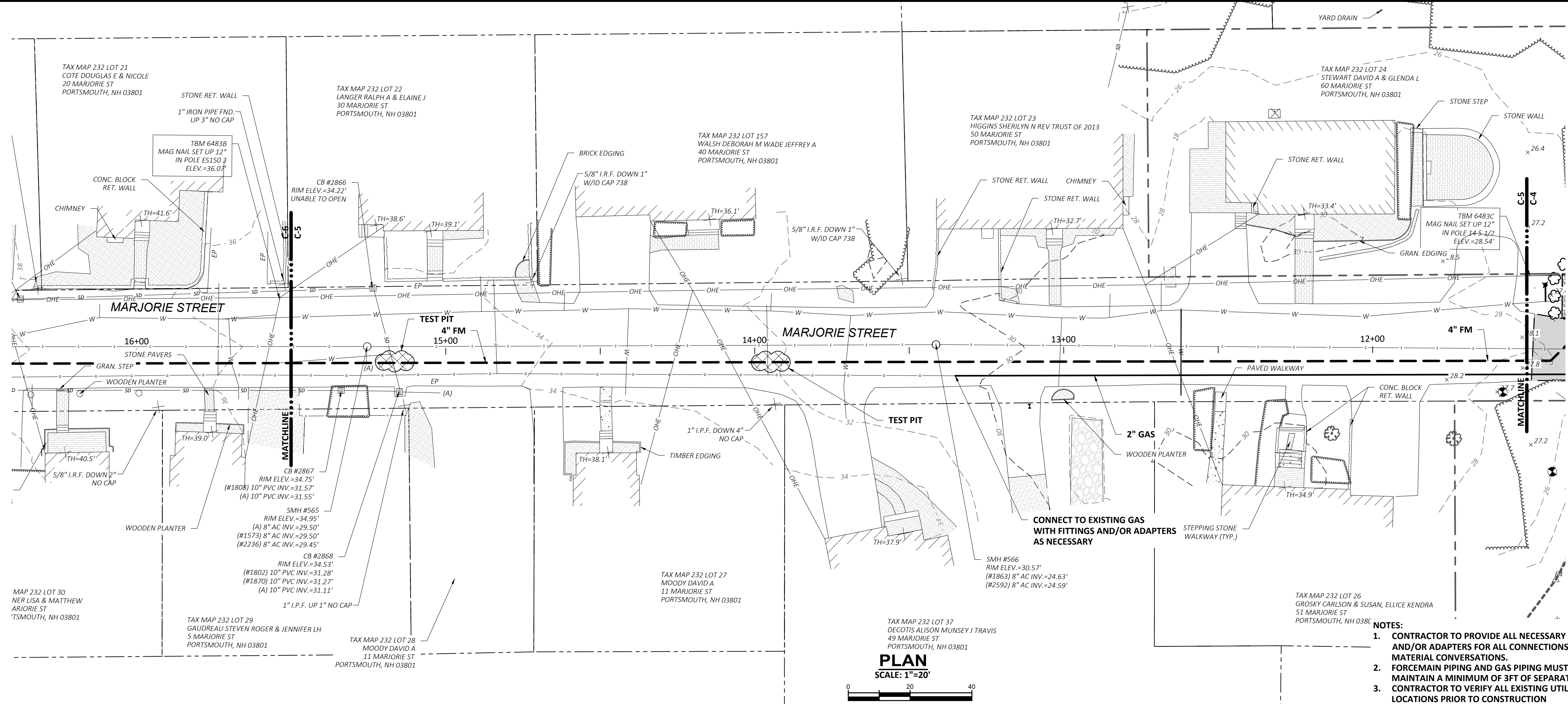


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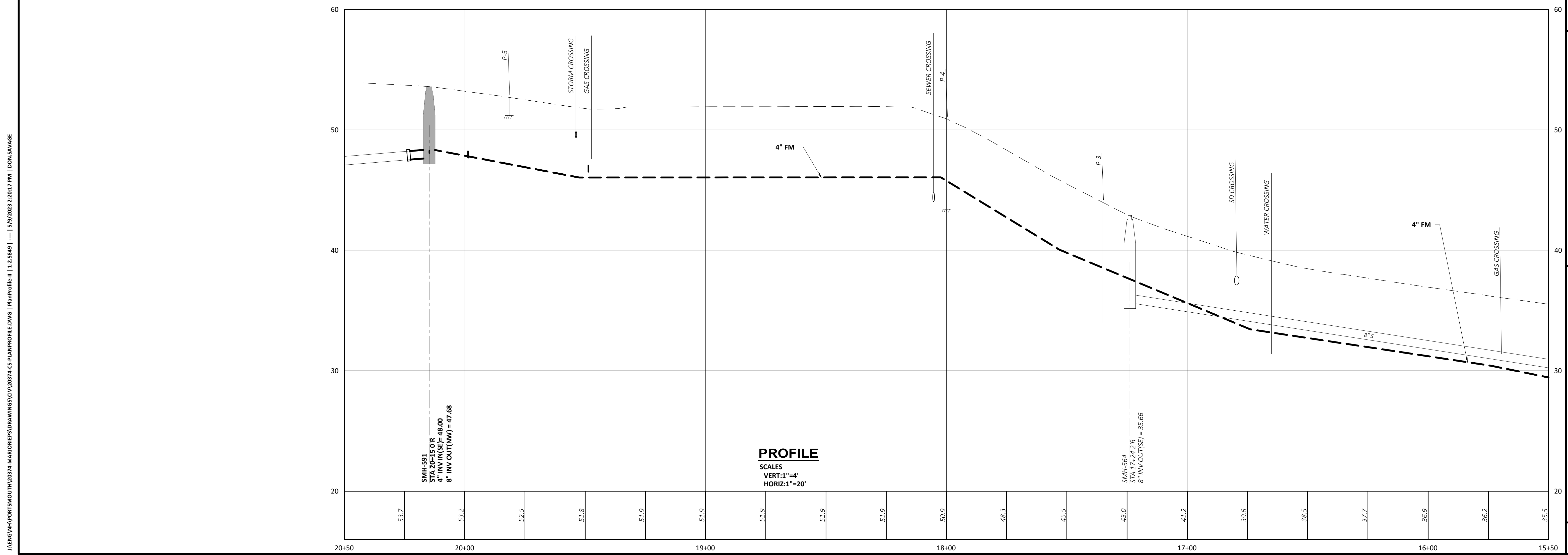
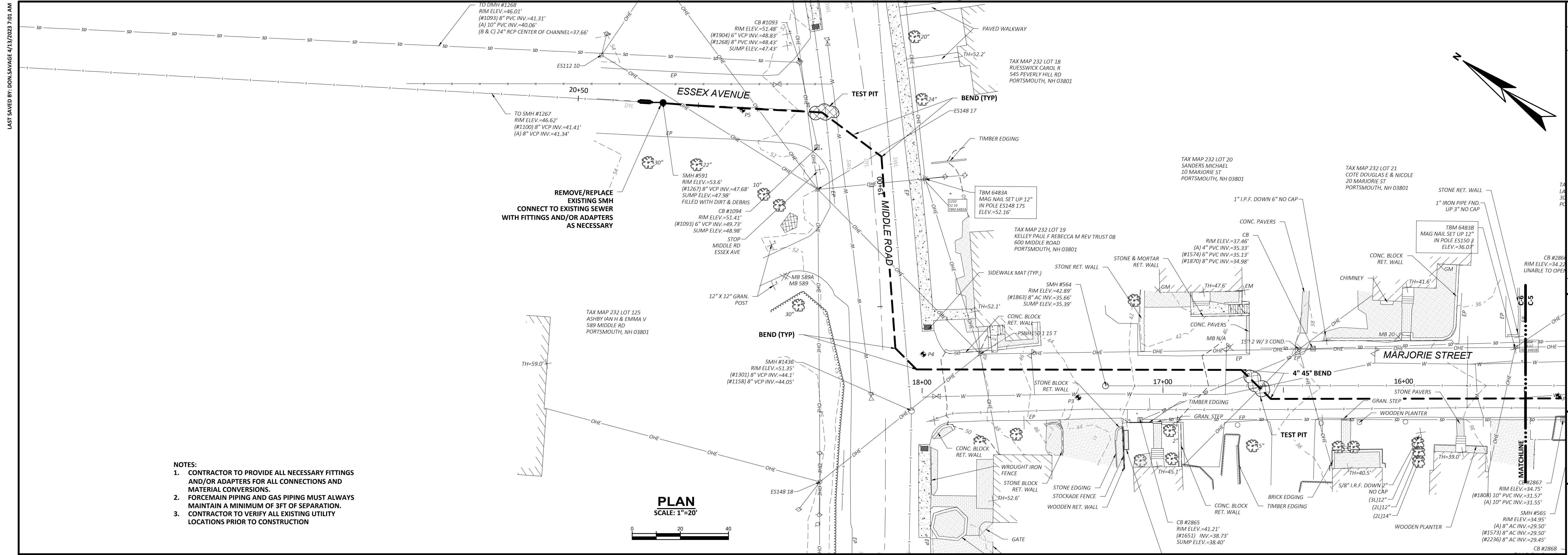
PROJECT NO:	20374
DESIGNED:	CMARANTO
CAD COORD:	D.SAVAGE
CAD:	D.SAVAGE
CHECKED:	M. THERIAULT
DATE:	01/05/23
APPROVED:	A. MORRILL
DATE:	05/11/23
SUBMISSION:	CONTRACT DOCUMENTS

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CITY OF PORTSMOUTH, NEW HAMPSHIRE
MARJORIE STREET PUMP STATION
 PUMP STATION GRADING PLAN AND
 PROFILE STA 10+00 TO 11+50



PROJECT NO: 20374	DESIGNED: C. MARANTO	CAD COORD: D. SAVAGE	CHECKED: M. THERIAULT	DATE: 01/09/23	APPROVED: A. MORRILL	DATE: 05/11/23	SUBMISSION: CONTRACT DOCUMENTS
NO	REVISIONS	APPD	DATE				
<p>CITY OF PORTSMOUTH, NEW HAMPSHIRE MARJORIE STREET PUMP STATION</p> <p>MARJORIE STREET PLAN AND PROFILE STATION 11+50 TO 15+50</p>							
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DRAWING C-5							



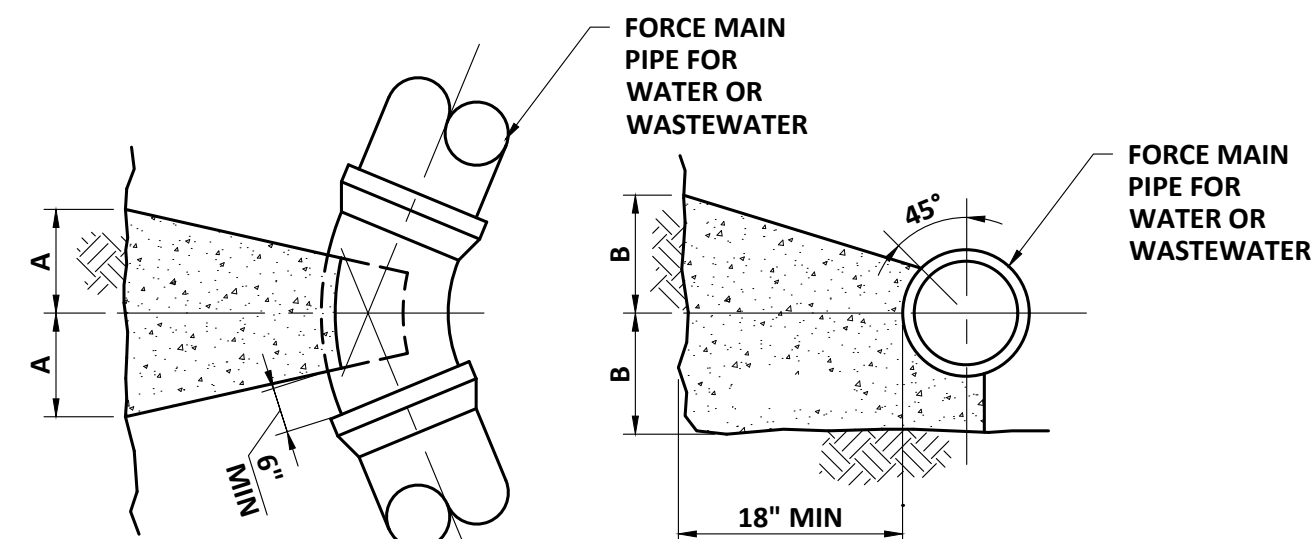
NO	REVISIONS	DATE

PROJECT NO: 20374
 DESIGNED: C. MARANTO
 CAD COORD: D. SAVAGE
 CAD: D. SAVAGE
 CHECKED: M. TREHAULT
 DATE: 01/09/23
 APPROVED: A. MORRILL
 DATE: 05/11/23
 SUBMISSION: CONTRACT DOCUMENTS

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CITY OF PORTSMOUTH, NEW HAMPSHIRE
MARJORIE STREET PUMP STATION
 PLAN AND PROFILE STA 15+50 TO 20+50

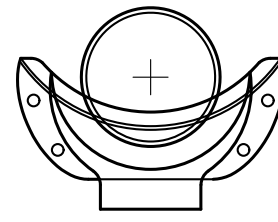
DRAWING
C-6



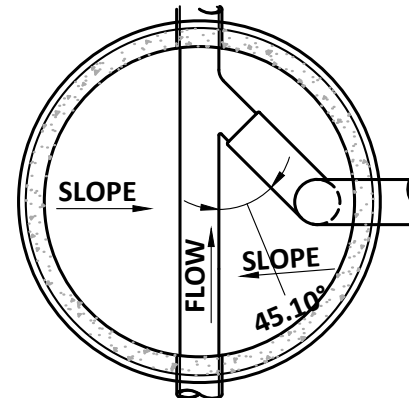
PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND	
	A	B	A	B	A	B
2"	9"	9"	9"	9"	6"	6"
4"	18"	12"	12"	9"	9"	9"
6"	18"	12"	12"	9"	9"	9"
8"	24"	15"	15"	12"	12"	12"
10"	24"	20"	15"	15"	12"	12"
12"	24"	24"	18"	18"	15"	12"
14"	27"	27"	21"	21"	15"	15"
16"	30"	30"	24"	24"	18"	18"

- NOTES:
 1. THRUST BLOCK SIZES ABOVE ARE BASED ON A SOIL BEARING CAPACITY OF 1000 PSF AND TEST PRESSURES OF 100 PSI. CONTRACTOR SHALL NOTIFY THE ENGINEER IF LOW BEARING STRENGTH SOILS ARE ENCOUNTERED.
 2. RETAINER GLANDS MAY BE USED IN LIEU OF THRUST BLOCKS ON DUCTILE IRON FORCE MAINS ONLY. INSTALL IN COMPLIANCE WITH DUCTILE IRON & PIPE MANUFACTURERS STANDARDS.

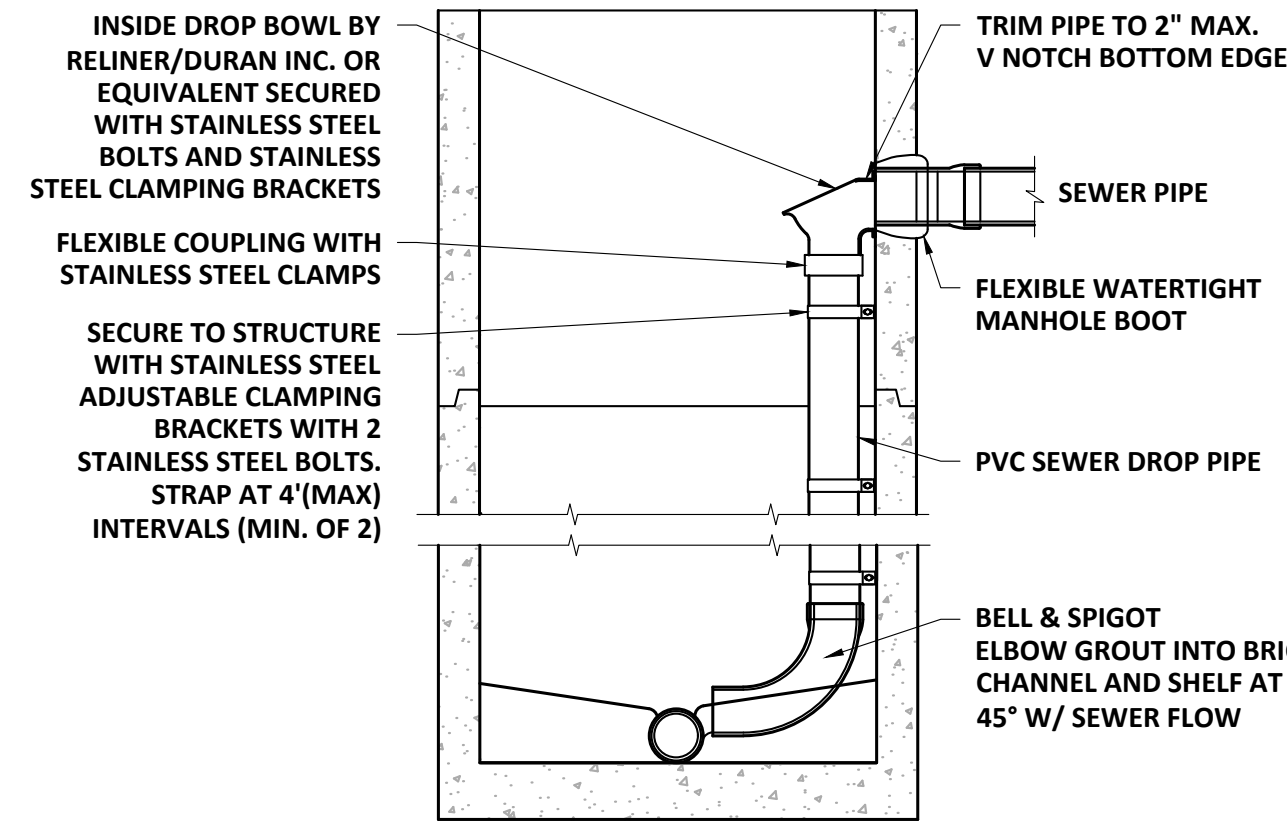
THRUST BLOCK



DROP BOWL MOUNTING POSITION



INSIDE DROP - PLAN



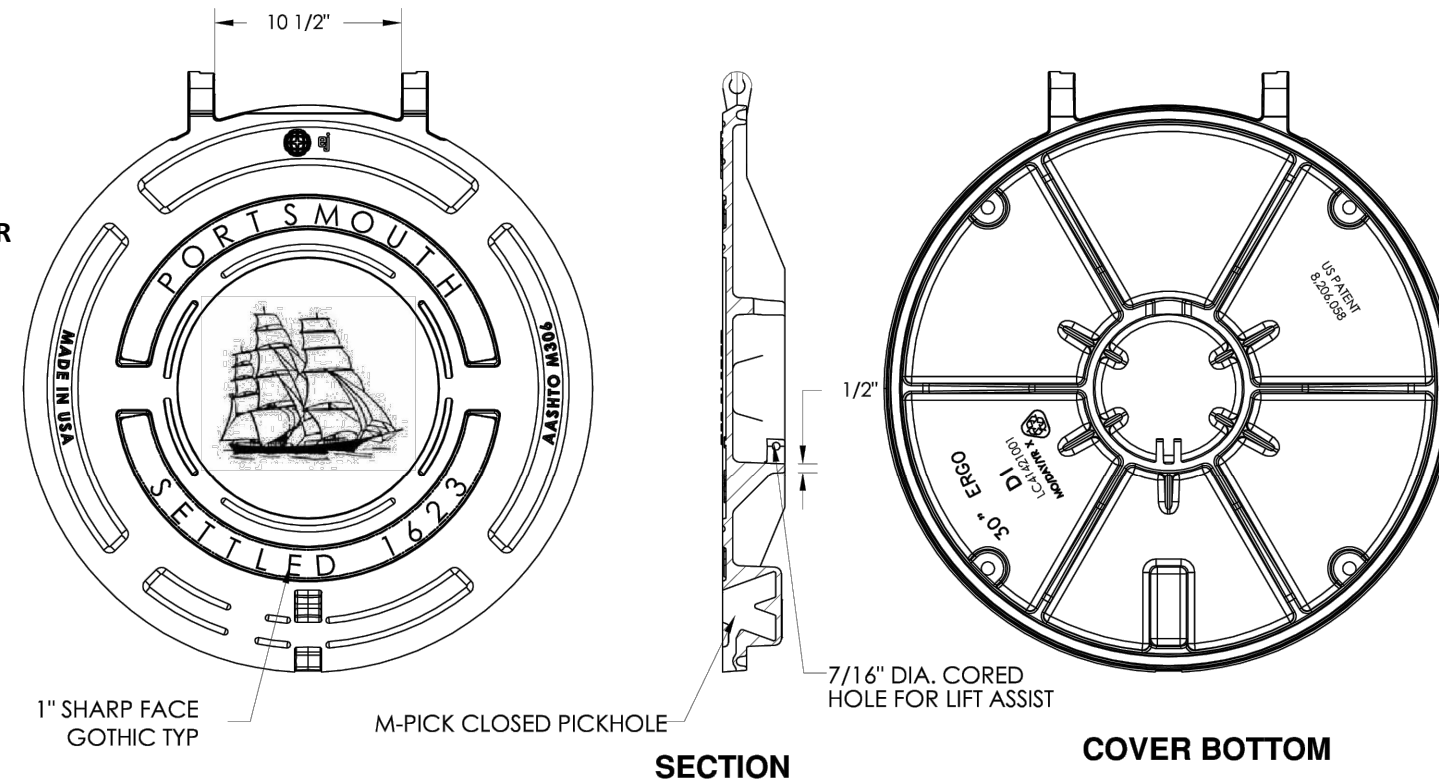
INSIDE DROP CONNECTION

- NOTE:
 1. ALL INSIDE DROP CONNECTIONS FOR SERVICES AND COLLECTOR SEWERS SHALL USE THE DROP BOWL AS SHOWN.

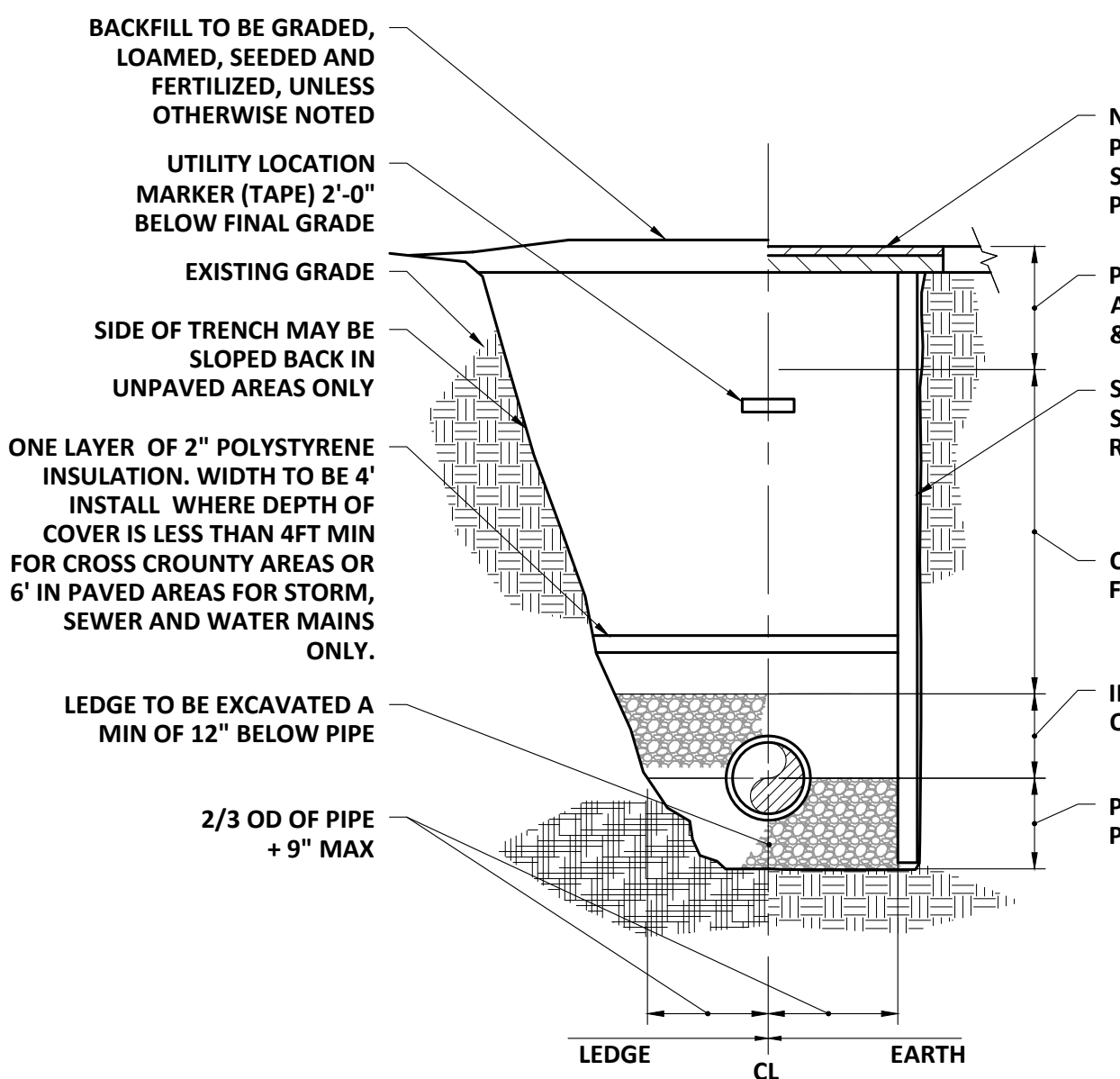
INSIDE DROP MANHOLE DETAIL WITH DROP BOWL

SCALE: NTS

SEWER MANHOLE COVER AND FRAME



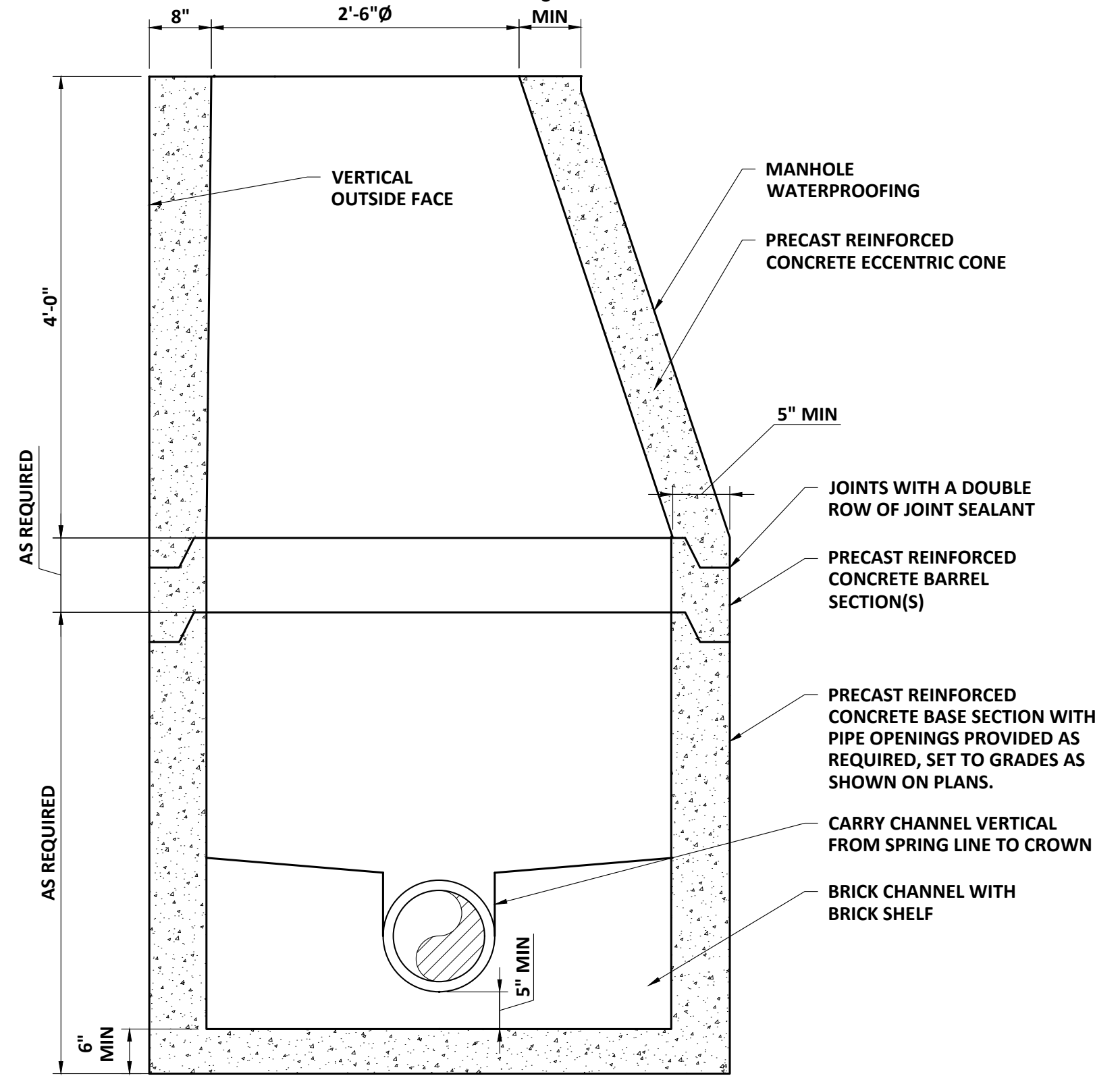
- NOTE:
 1. SEWER MANHOLE COVER TO INCLUDE "SEWER" IN 3-INCH LETTERS.



- NOTES:
 1. ALL EXCAVATION MUST MEET OSHA STANDARDS.
 2. INSTALL 3 FOOT LONG IMPERVIOUS MATERIAL DAM IN BEDDING/INITIAL BACKFILL MATERIAL EVERY 100' AND WHERE SHOWN ON PLANS TO PREVENT TRENCH GROUNDWATER FROM BEING CHANNLED ALONG BEDDING/INITIAL BACKFILL.
 3. SEE SPECIFICATIONS FOR BEDDING AND BACKFILL REQUIREMENTS.

PIPE TRENCH

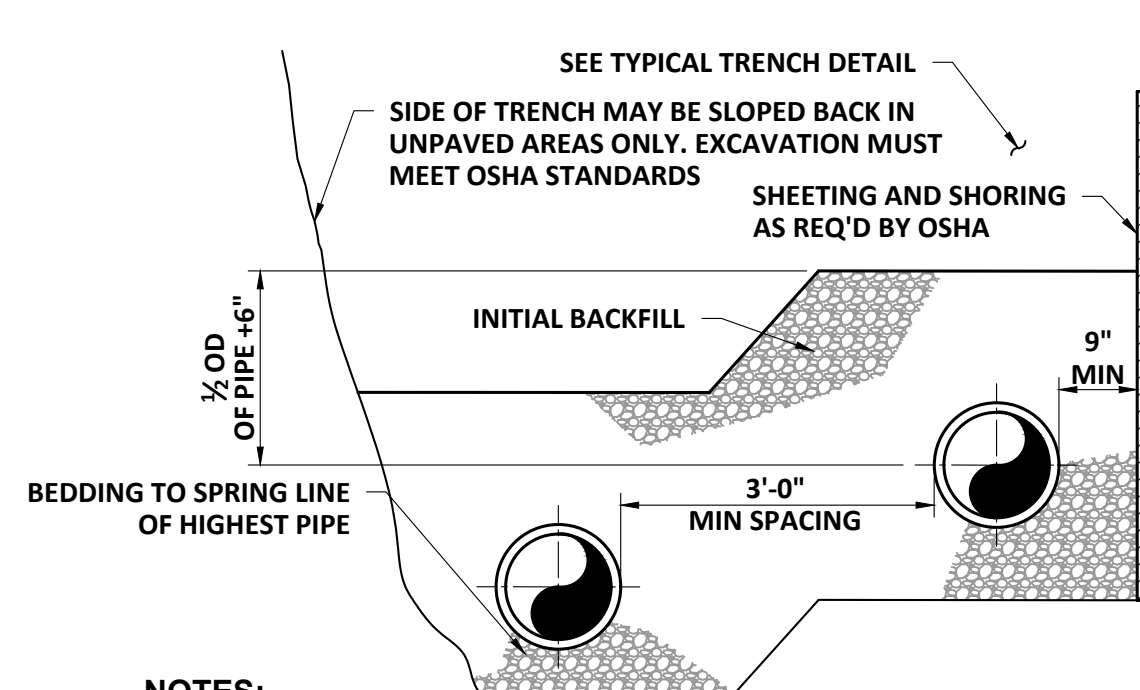
NTS



- NOTES:
 1. MANHOLE CHANNELS REQUIRING A CHANGE IN DIRECTION ARE TO BE BUILT ON A SMOOTH CURVE OF THE LONGEST POSSIBLE RADIUS. IF SIDE PIPES ENTER CHANNEL, SHAPE TO RECEIVE ADDED SIDE FLOW.
 2. USE A FLAT SLAB TOP MANHOLE WHEN THE HEIGHT DIFFERENCE BETWEEN THE HIGHEST INVERT AND RIM IS LESS THAN 6'-0" AND WHEN MANHOLE DIAMETER IS GREATER THAN 4'-0".

TYPICAL 4-FT MANHOLE

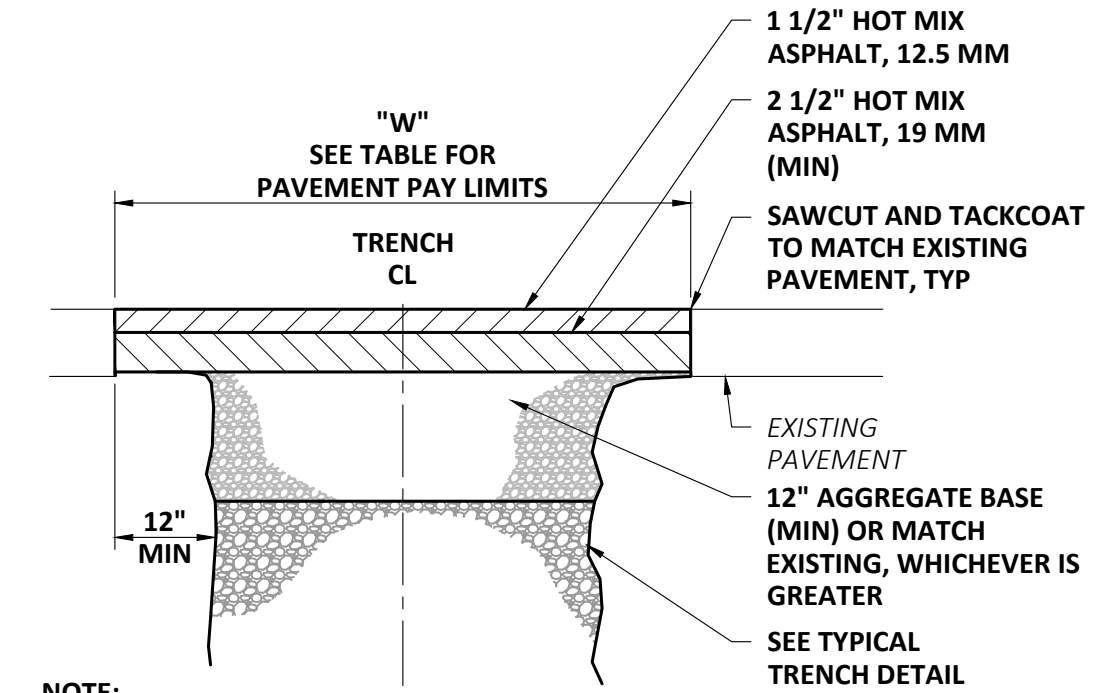
NTS



- NOTES:
 1. THIS SECTION IS SHOWN FOR TWO PIPES. IT IS TO BE USED FOR ANY NUMBER OF PIPES.
 2. SEE SPECIFICATIONS FOR BEDDING AND BACKFILL MATERIALS AND COMPACTED BACKFILL REQUIREMENTS.
 3. PIPE SPACING SHOWN IS TYPICAL UNLESS OTHERWISE NOTED.
 4. SEE SPECIFICATIONS SECTION 01150 - MEASUREMENT AND PAYMENT FOR PAY WIDTH REQUIREMENTS.
 5. MINIMUM HORIZONTAL SEPARATION BETWEEN WATER AND SEWER PIPES IS 10'-0".

MULTIPLE PIPE TRENCH

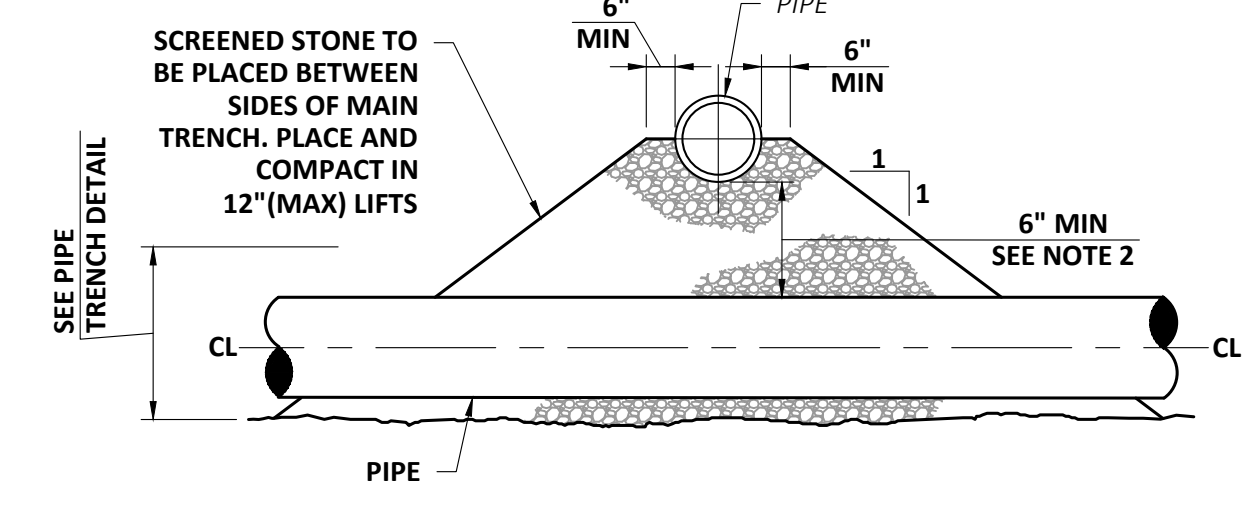
SCALE: NTS



- NOTE:
 1. INITIAL TRENCH PAVING MAY BE USED AS THE BASE COURSE FOR FINAL PAVING IF IN GOOD REPAIR.
 2. THIS DETAIL TO BE USED FOR PAVED ACCESS AREA TO THE PUMP STATION.

FINAL TRENCH AND PAVED DRIVE (WITHOUT OVERLAY)

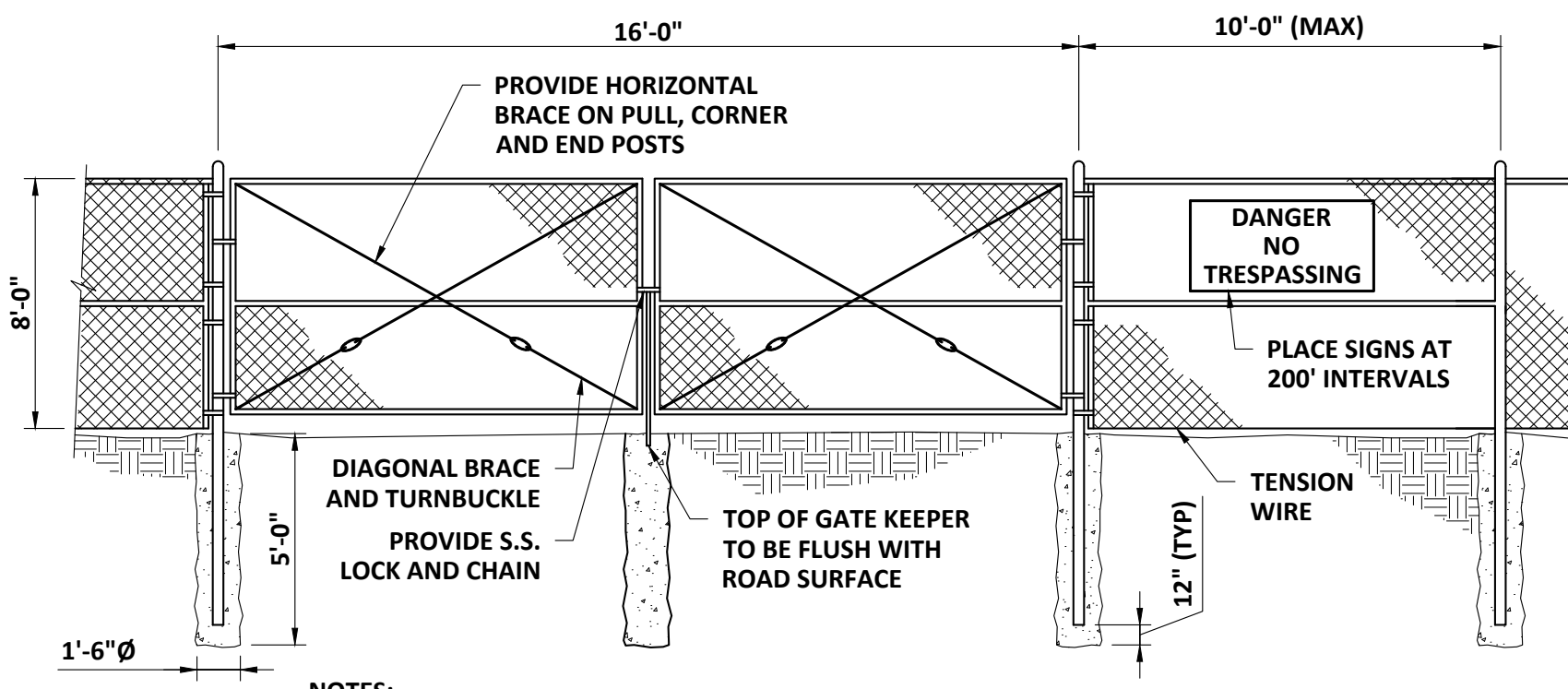
NTS



- NOTES:
 1. JOINTS ON EACH PIPE TO BE AS FAR FROM INTERSECTION AS POSSIBLE.
 2. IF LESS THAN 12" FLOWABLE FILL MAY BE REQUIRED RATHER THAN SCREENED STONE TO FACILITATE PROPER PIPE BEDDING AND COMPACTION AT ENGINEER'S DISCRETION. REFER TO SPECIFICATIONS SECTION 02225 FOR ADDITIONAL INFORMATION.
 3. SPACING SHALL BE A MINIMUM OF 18" BETWEEN SEWER AND WATER PIPES

PIPE CROSSING

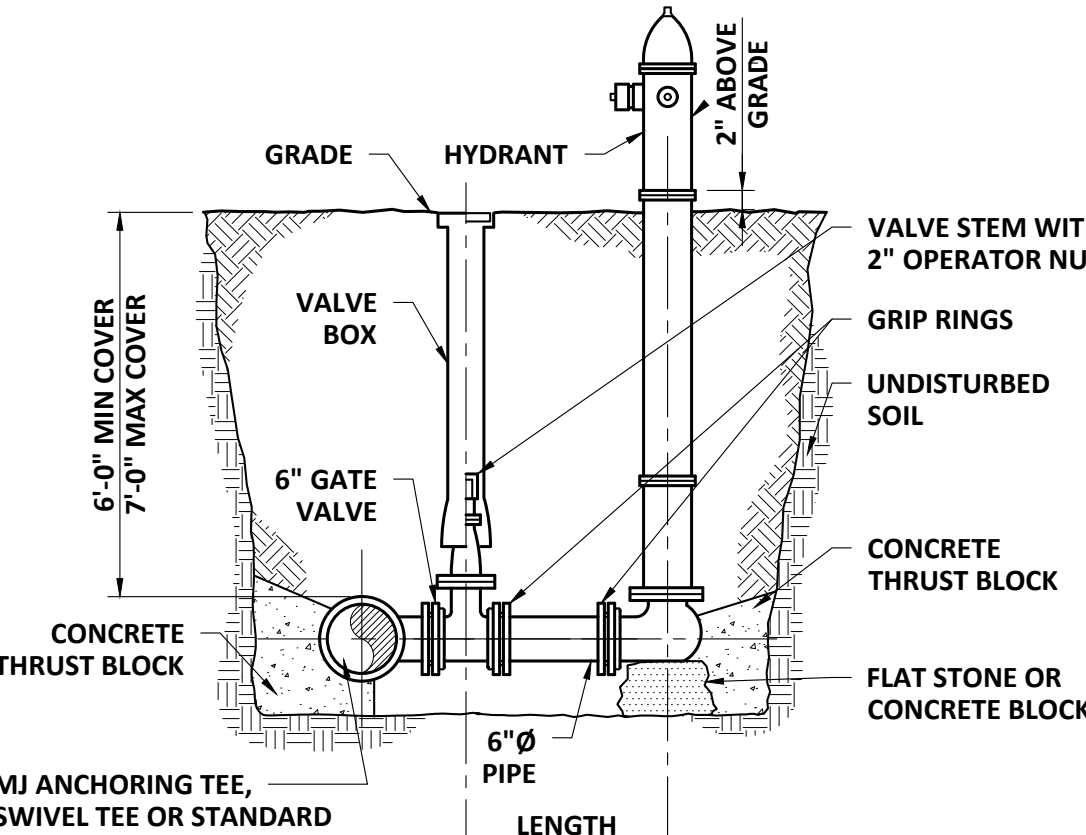
NTS



- NOTES:
 1. SECURE POSTS IN CONCRETE AS SHOWN AT PULL, CORNER AND END POSTS (INCLUDING GATE POSTS)
 2. IF CHAINLINK FENCE IS INSTALLED IN UNFRACTURED LEDGE, POST SHALL PENETRATE 2'-0" INTO THE LEDGE AND SHALL BE GROUTED INTO 6"Ø HOLE.

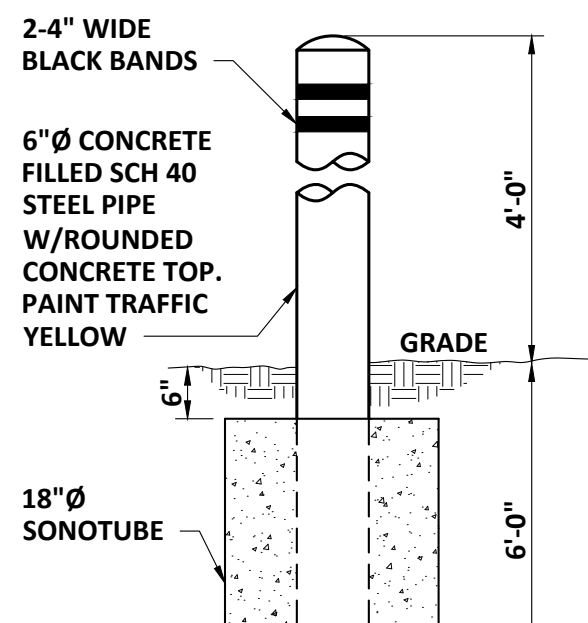
CHAINLINK FENCE AND LOCKING DOUBLE GATE

SCALE: NTS



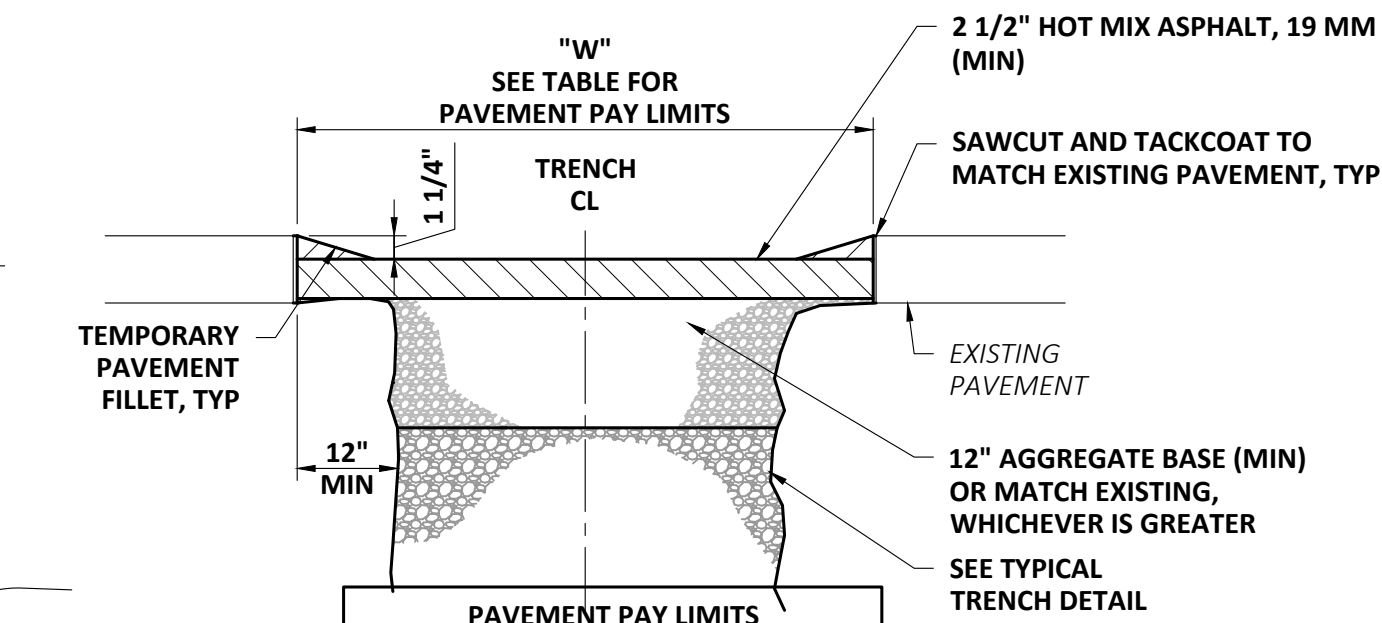
HYDRANT CONNECTION

SCALE: NTS



BOLLARD

NTS

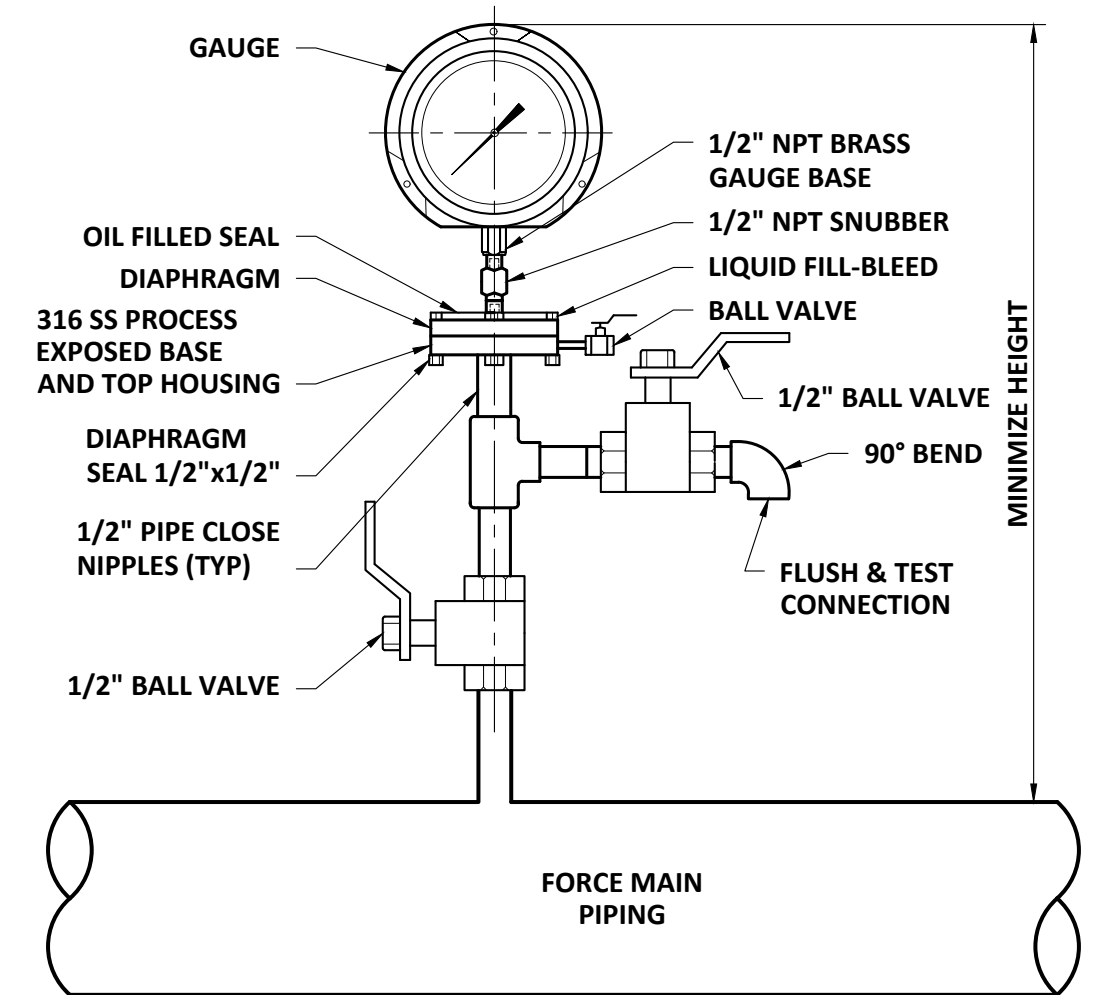


PIPE I.D.	"W" (FOR 0' - 10' DEEP)
1" - 6"	6'-6"
6" - 15"	7'-0"
MULTI PIPES	10'-0"

"W" SHALL BE INCREASED BY 1'-0" FOR TRENCHES 10' - 15', AND BY 2'-0" FOR TRENCHES 15' - 20' DEEP.

INITIAL TRENCH PAVING (WITHOUT OVERLAY)

NTS



- NOTE:
 1. REFER TO SPECIFICATION SECTION 11000 AND 11310.

GAUGE ASSEMBLY

SCALE: NTS

NO	REVISIONS	APPD	DATE

PROJECT NO: 20374
 DESIGNED: C. MARANTO
 CAD COORD: D.SA VAGE
 CAD: D.SA VAGE
 CHECKED: M. THERIAULT
 DATE: 01/09/23
 APPROVED: A. MORRILL
 DATE: 06/11/23
 SUBMISSION: CONTRACT DOCUMENTS

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CITY OF PORTSMOUTH, NEW HAMPSHIRE
MARJORIE STREET PUMP STATION

DETAILS

DRAWING **C-7**

EROSION AND SEDIMENTATION CONTROL NOTES

THIS PLAN HAS BEEN DEVELOPED AS A STRATEGY TO CONTROL SOIL EROSION AND SEDIMENTATION DURING AND AFTER CONSTRUCTION. THIS PLAN IS BASED ON THE NEW HAMPSHIRE STORMWATER MANUAL BY THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES, TERRAIN ALTERATION BUREAU, DATED DECEMBER 2008

THE PROPOSED LOCATIONS OF SILTATION AND EROSION CONTROL STRUCTURES REQUIRED ARE SHOWN ON THE DRAWINGS. PROVIDE SILT FENCE, STONE CHECK DAMS AND OTHER EROSION CONTROL MEASURES AS REQUIRED TO ADEQUATELY PREVENT SEDIMENT TRANSPORT AS NOTED IN THE BMP.

ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE DONE IN ACCORDANCE WITH THE NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL AND THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES, ENV-Vq 1500: ALTERATION OF TERRAIN, DECEMBER 2008

- THOSE AREAS UNDERGOING ACTUAL CONSTRUCTION, IN NO CASE AT MORE THAN 5 ACRES AT A TIME, WILL BE MAINTAINED IN AN UNTREATED OR UN-VEGETATED CONDITION FOR THE MINIMUM TIME REQUIRED. IN GENERAL, AREAS TO BE VEGETATED SHALL BE PERMANENTLY STABILIZED WITHIN 3 DAYS OF FINAL GRADING AND TEMPORARILY STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE OF THE SOIL.
- TEMPORARY STORAGE OF STOCKPILED MATERIAL SHALL BE STABILIZED IN A MANNER THAT WILL MINIMIZE EROSION.
- EROSION CONTROL MEASURES SUCH AS SEDIMENT BARRIERS (SILT FENCE, STONE CHECK DAMS, ETC.) AND OUTLET PROTECTION (WHERE APPLICABLE) SHOULD BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OR EARTH MOVING OPERATIONS OF UPGRADIENT DRAINAGE AREAS.
- FUGITIVE DUST MUST BE CONTROLLED IN ACCORDANCE WITH NEW HAMPSHIRE STANDARDS AND SPECIFICATION SECTION 01562 DUST CONTROL.
- ALL EROSION CONTROL STRUCTURES WILL BE INSPECTED, REPLACED AND/OR REPAIRED EVERY 7 DAYS AND IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL OR SNOW MELT OR WHEN NO LONGER SERVICEABLE DUE TO SEDIMENT ACCUMULATION OR DECOMPOSITION. SEDIMENT DEPOSITS MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE THIRD THE HEIGHT OF THE BARRIER. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS UPSLOPE ARE PERMANENTLY STABILIZED AND/OR WILL NOT ERODE UNDER THE CONDITIONS OF A 10-YEAR STORM. STABILIZATION SHALL BE DEFINED AS ONE OF THE FOLLOWING:
 - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
 - A MINIMUM OF 85% VEGETATIVE GROWTH HAS BEEN ESTABLISHED;
 - A MINIMUM OF 3" OF NON-EROSIVE MATERIALS SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR
 - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
- NO SLOPES, EITHER PERMANENT OR TEMPORARY, SHALL NOT BE STEEPER THAN THREE HORIZONTAL TO ONE VERTICAL (3 TO 1) UNLESS STABILIZED WITH PERMANENT EROSION CONTROL MEASURES. IF MOWING IS TO OCCUR, MAXIMUM SLOPE ANGLE SHALL BE THREE HORIZONTAL TO ONE VERTICAL (3 TO 1). ON SLOPES FOUR HORIZONTAL TO ONE VERTICAL (4 TO 1), FINAL PREPARATION SHOULD INCLUDE SURFACE ROUGHING.
- DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT WILL BE RETURNED TO THE SITE AND RE-GRADED ONTO OPEN AREAS. POST SEEDING SEDIMENT, IF ANY, WILL BE DISPOSED OF IN AN ACCEPTABLE MANNER. AT NO TIME SHALL THE INTEGRITY OF THE EROSION CONTROL FENCE BE IN DANGER DUE TO BUILD UP OF SEDIMENT.
- RE-VEGETATION MEASURES WILL COMMENCE UPON COMPLETION OF CONSTRUCTION. ALL DISTURBED AREAS NOT OTHERWISE STABILIZED WILL BE GRADED, SMOOTHED, AND RE-VEGETATED.
- AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR HAY AT A RATE OF 2 BALES (70-90 LBS) PER 1,000 SQUARE FEET OR 1.5 TO 2 TONS (90-100 BALES) PER ACRE TO COVER 75 TO 90% OF THE GROUND SURFACE.
- DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- SEED MIX SELECTION AND APPLICATION RATES WILL BE CONSISTENT WITH THE FOLLOWING TABLES AS REFERENCED FROM MINNICK, E.L. AND H.T. MARSHALL, STORMWATER MANAGEMENT AND EROSION CONTROL FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE, ROCKINGHAM COUNTY CONSERVATION DISTRICT, AUGUST 1992, AND TABLES 4-1 THROUGH 4-3 OF SECTION 3 IN THE NEW HAMPSHIRE STORMWATER MANUAL. NOTE: REED CANARY GRASS SHALL NOT BE USED.
- ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE WORK AREA IS STABILIZED.
- WETLANDS (EXCEPT THOSE WHICH ARE TO BE FILLED IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS) WILL BE PROTECTED WITH SILT FENCE INSTALLED AT THE EDGE OF THE WETLAND OR THE BOUNDARY OF WETLAND DISTURBANCE.
- IN GENERAL, AREAS WITHIN 100 FEET OF DELINEATED WETLANDS OR STREAMS SHALL HAVE A MAXIMUM PERIOD OF EXPOSURE OF NOT MORE THAN 15 DAYS.
- FOLLOW APPROPRIATE EROSION CONTROL MEASURES PRIOR TO EACH STORM IN ALL AREAS WITHIN 100 FEET OF DELINEATED WETLANDS OR STREAMS.

EROSION CONTROL DURING WINTER CONSTRUCTION

- WINTER CONSTRUCTION PERIOD DEFINED: NOVEMBER 1 THROUGH MAY 1
- WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
- EXPOSED AREAS SHOULD BE LIMITED TO WHICH CAN BE MULCHED IN ONE DAY PRIOR TO ANY PRECIPITATION EVENT.
- ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
- ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
- AFTER NOVEMBER 15, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3

LIME AND FERTILIZER SCHEDULE

SEEDING TYPE	SEED DATES	LIME RATE (TONE/ACRE)	FERTILIZER RATE/RATIO (TYPE) (LBS/1,000 SQ. FT.)
PERMANENT AND/OR TEMPORARY	MAY. 1 - SEPT. 15	3	600/ENGINEER APPROVED (N-P205-K20)

- NOTES:
- USE LOW PHOSPHATE FERTILIZER AT ALL TIMES AND SLOW RELEASE NITROGEN FERTILIZER WHEN BETWEEN 25 AND 250 FEET OF A SURFACE WATER BODY.
 - NO FERTILIZER EXCEPT LIMESTONE SHOULD BE APPLIED WITHIN 25 FEET OF THE SURFACE WATER.
 - APPLY LIMESTONE AT 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE.

TEMPORARY VEGETATION (TABLE 4-1)

ADDITIONAL TEMPORARY SEED MIXTURE (FOR PERIODS LESS THAN 12 MONTHS)

DATES	SEED	RATE
PRIOR TO MAY 15	OATS	80 LBS/ACRE
AUG. 15 - SEP. 15	ANNUAL RYE GRASS	40 LBS/ACRE
AUG. 15 - SEP. 15	WINTER RYE GRASS	112 LBS/ACRE
APR. 1 - JUN. 1 (AUG. 15 - SEP. 15)	PERENNIAL RYE GRASS	40 LBS/ACRE

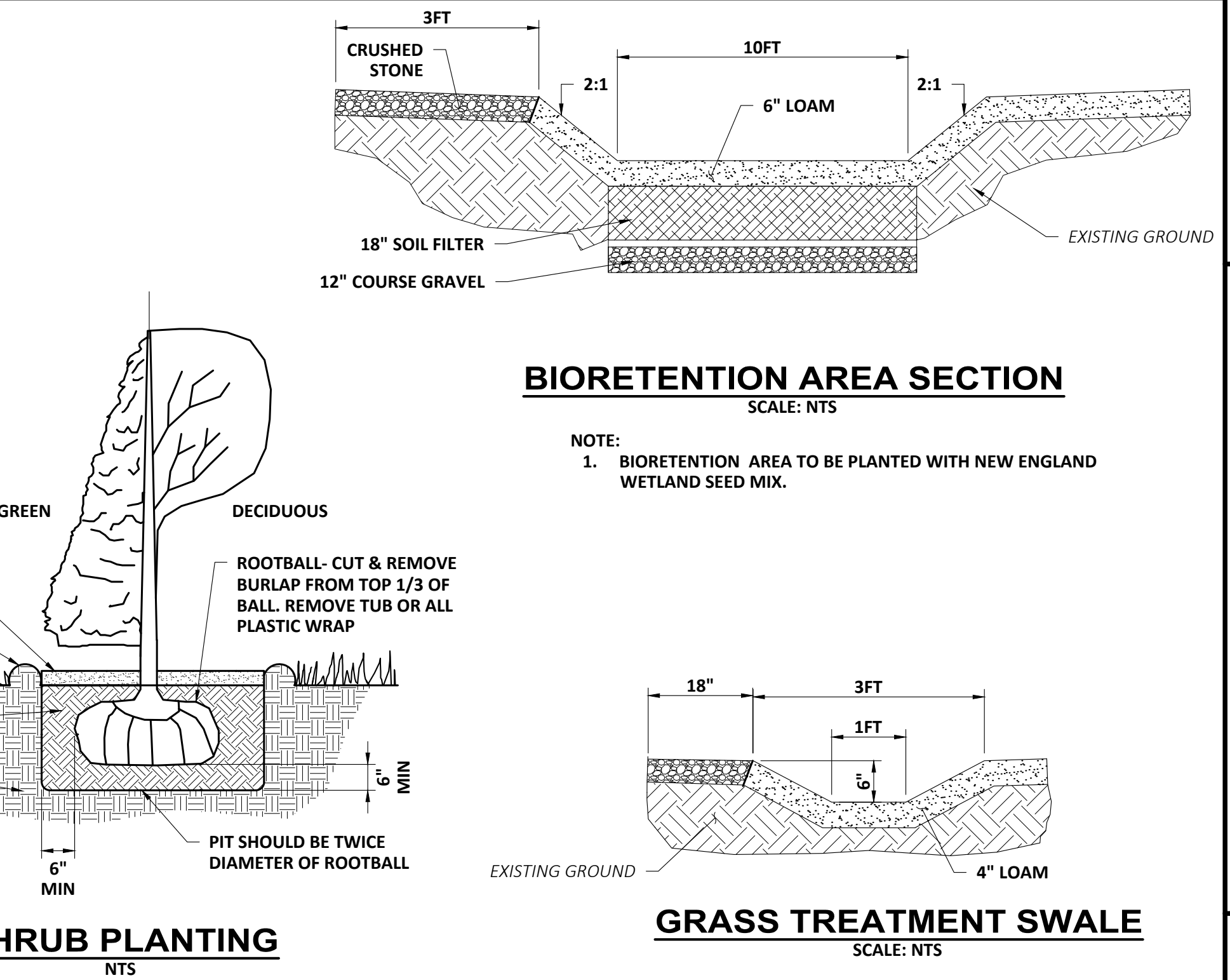
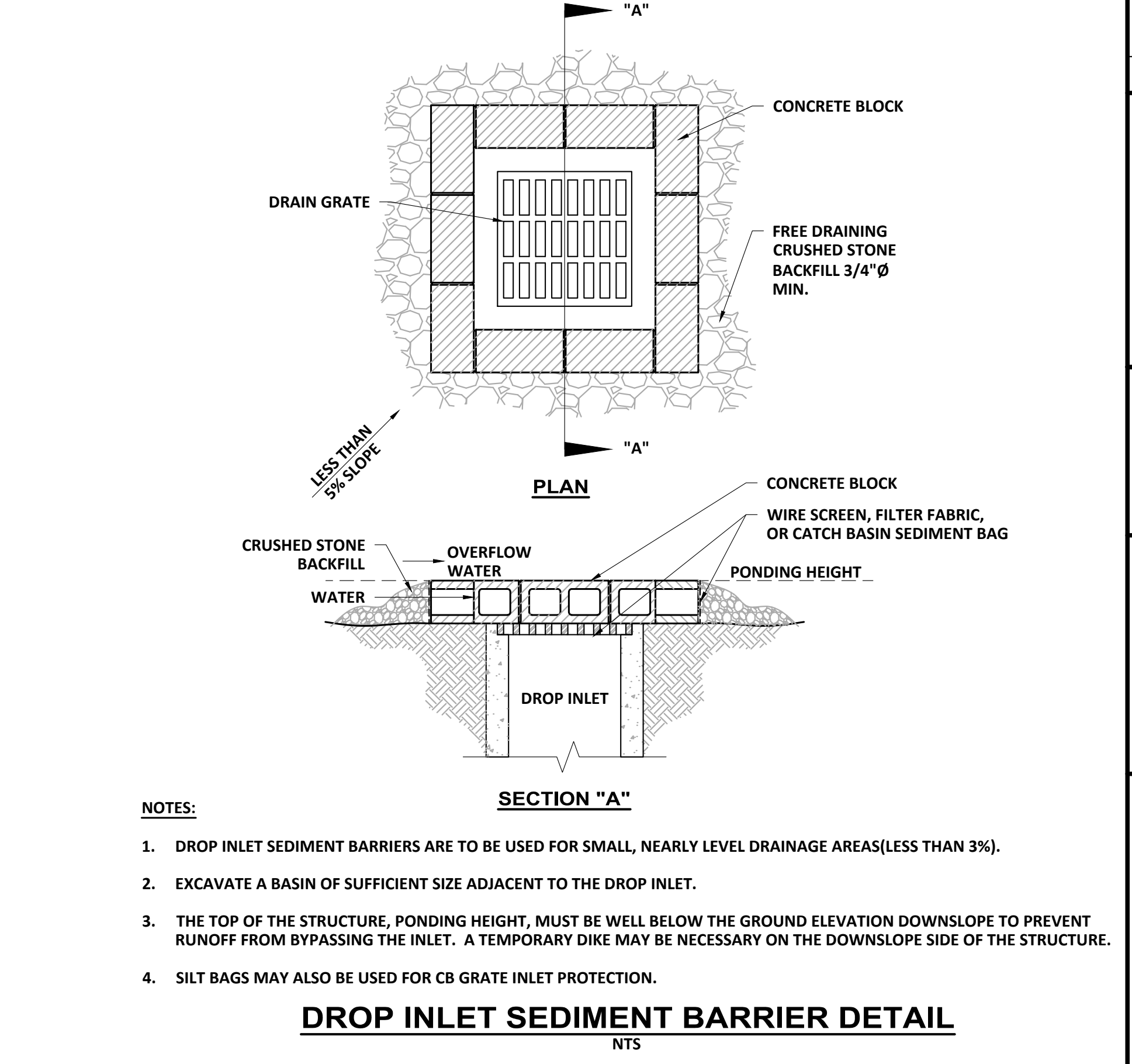
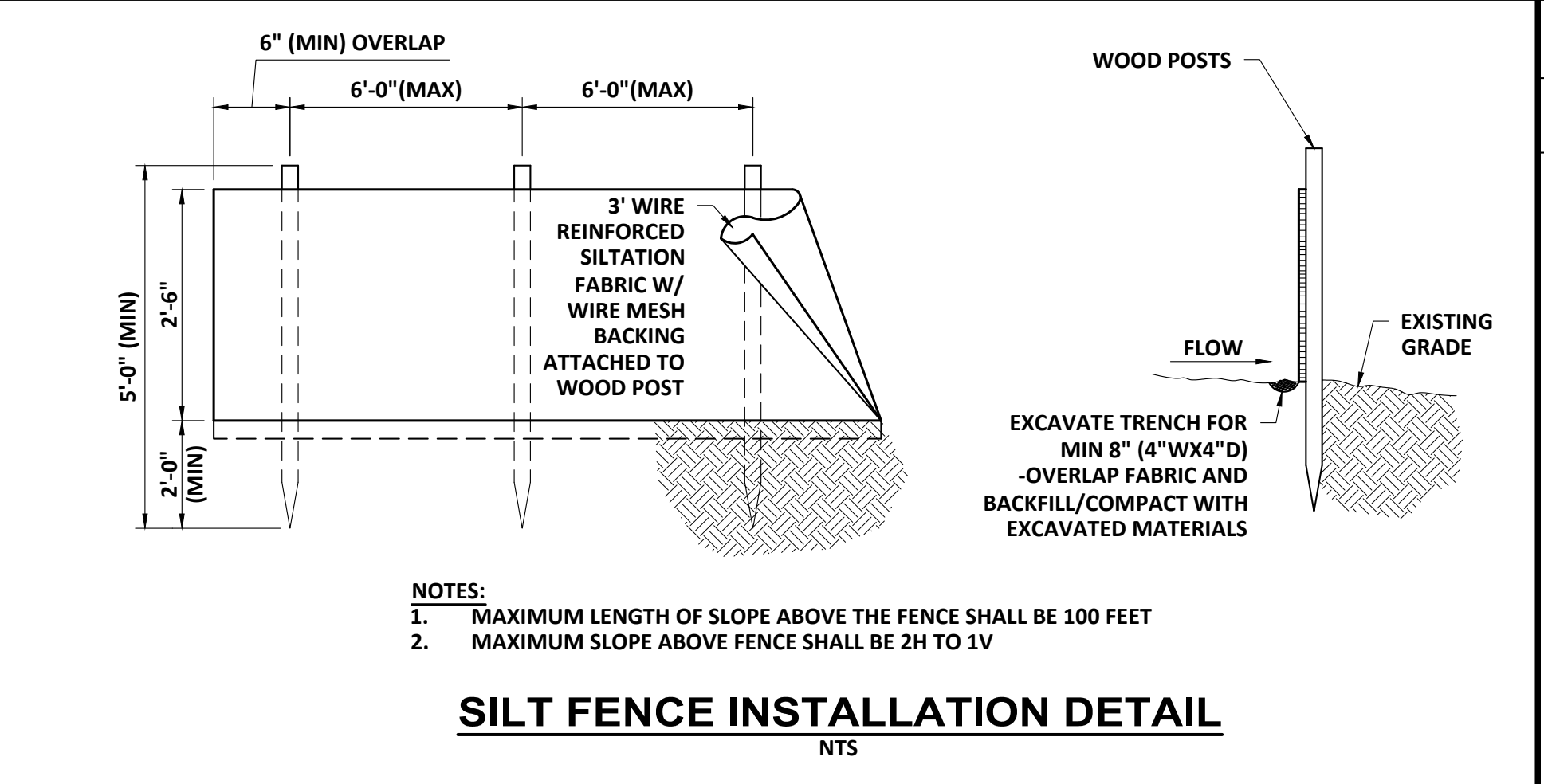
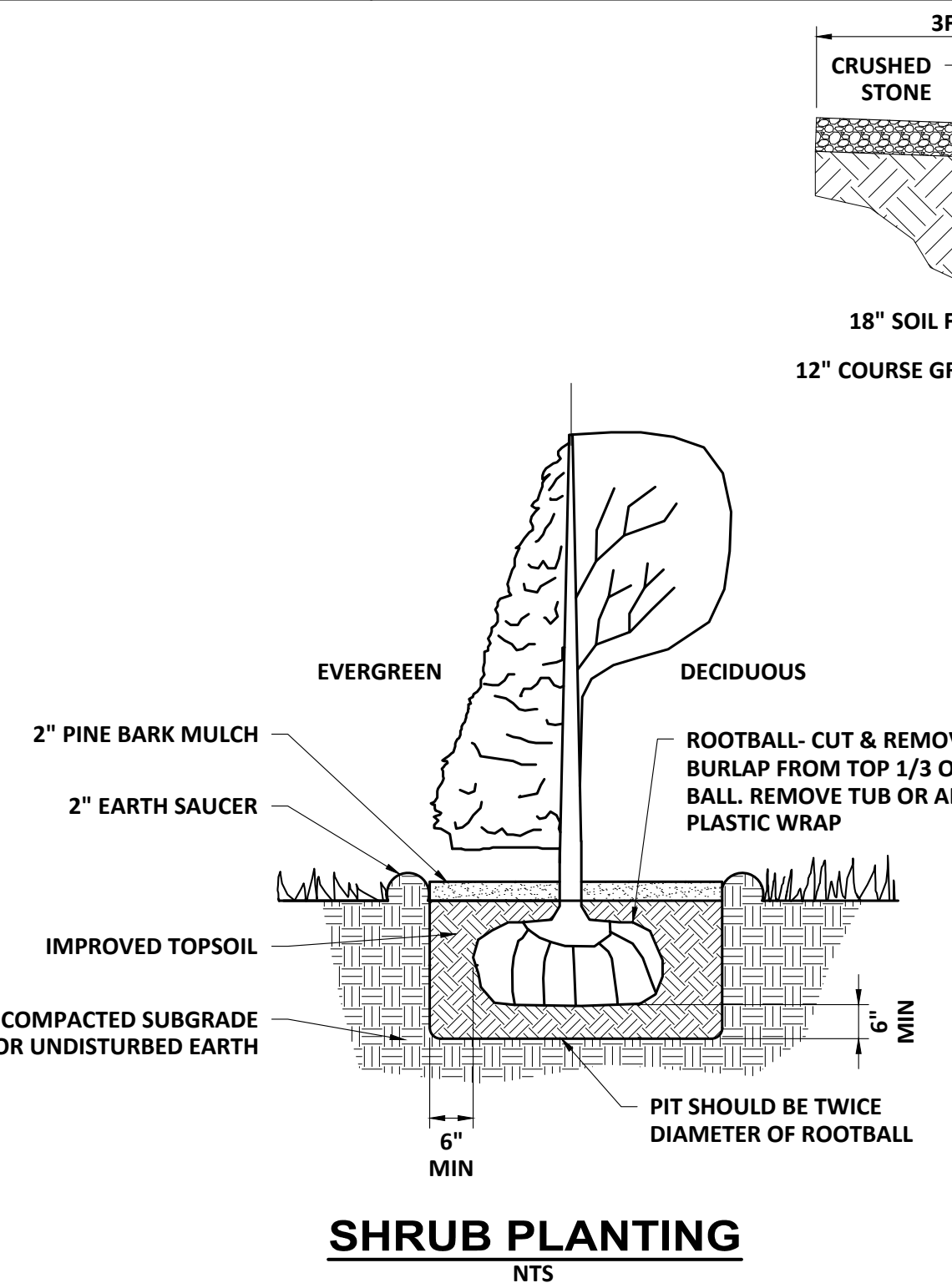
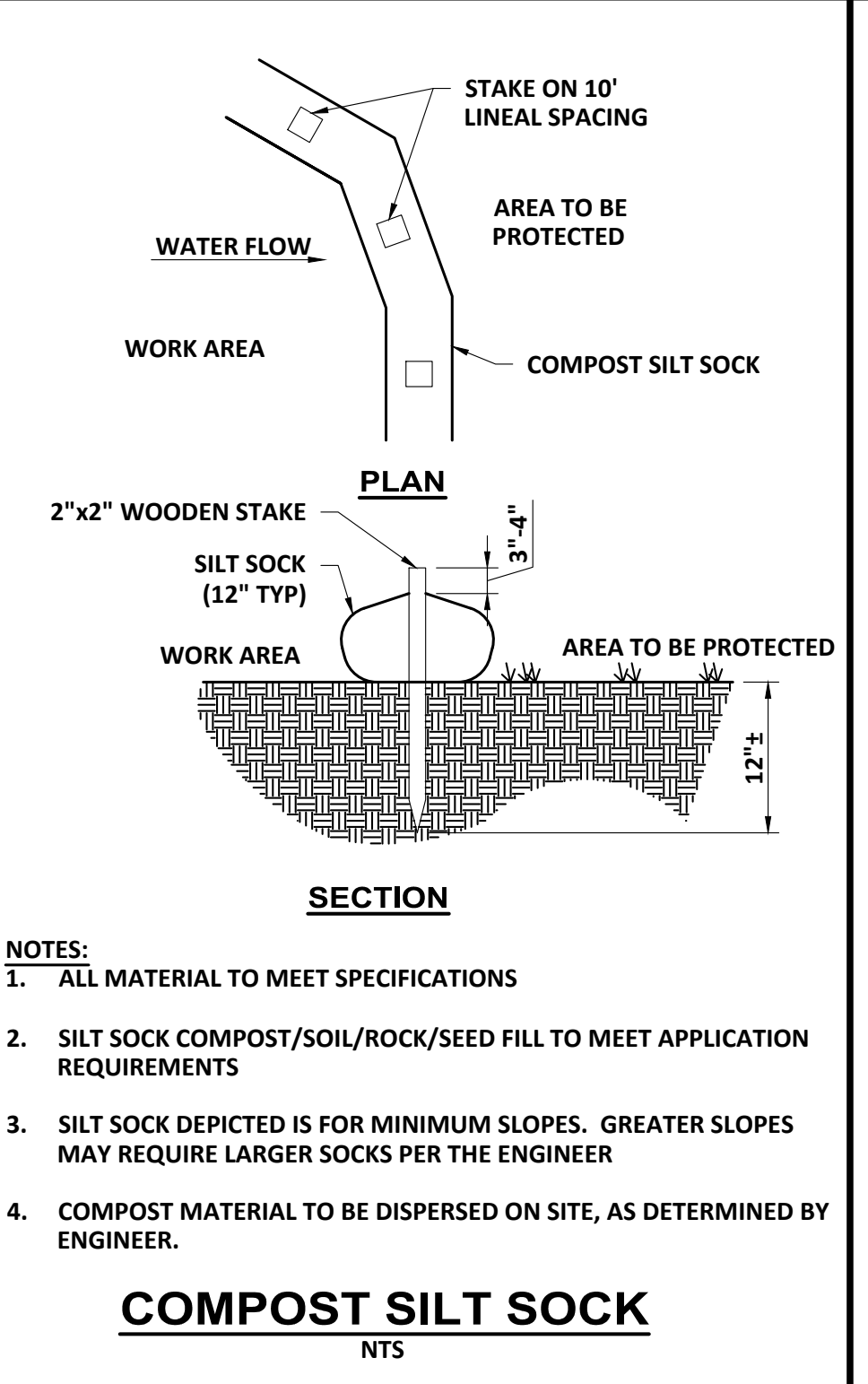
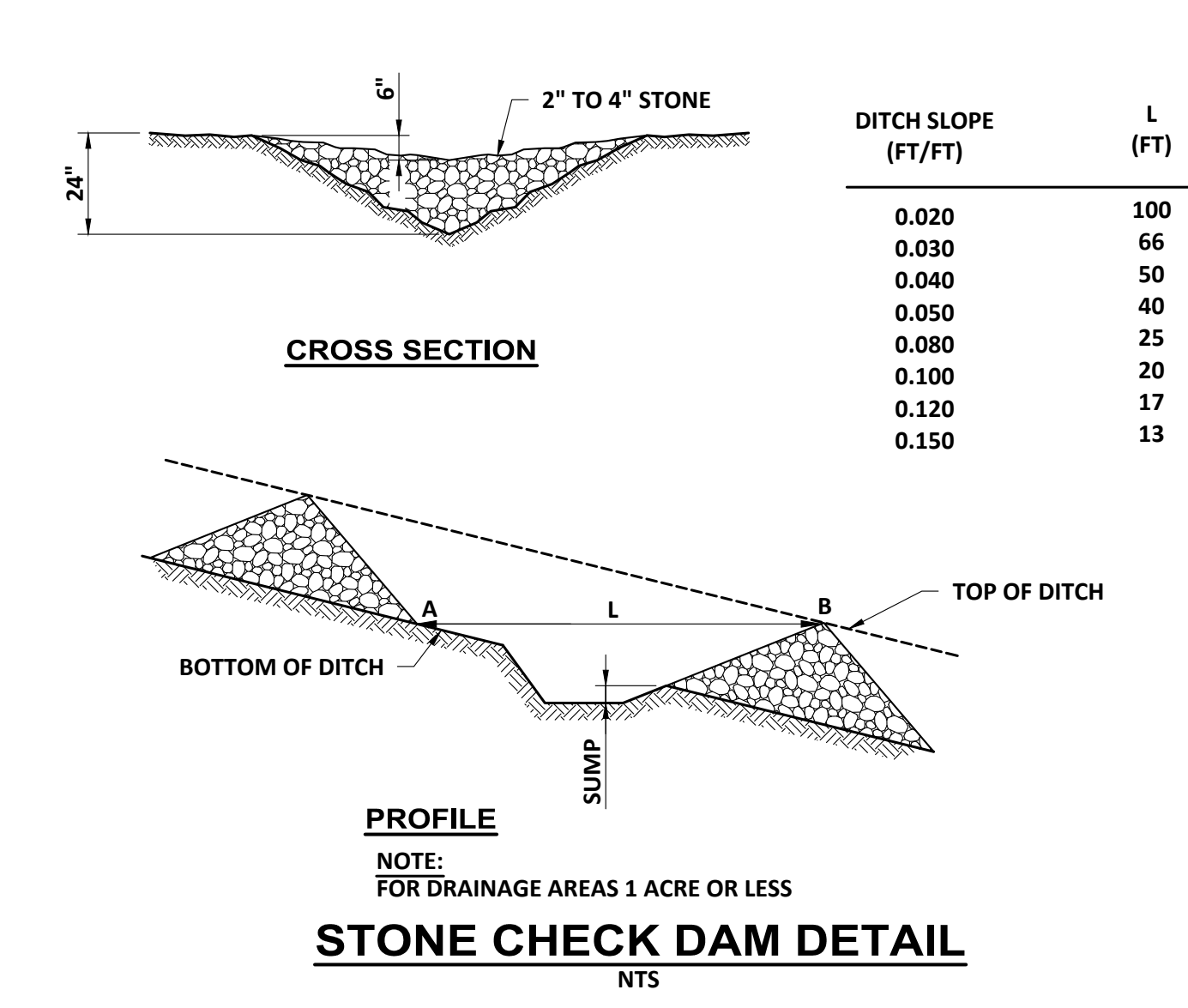
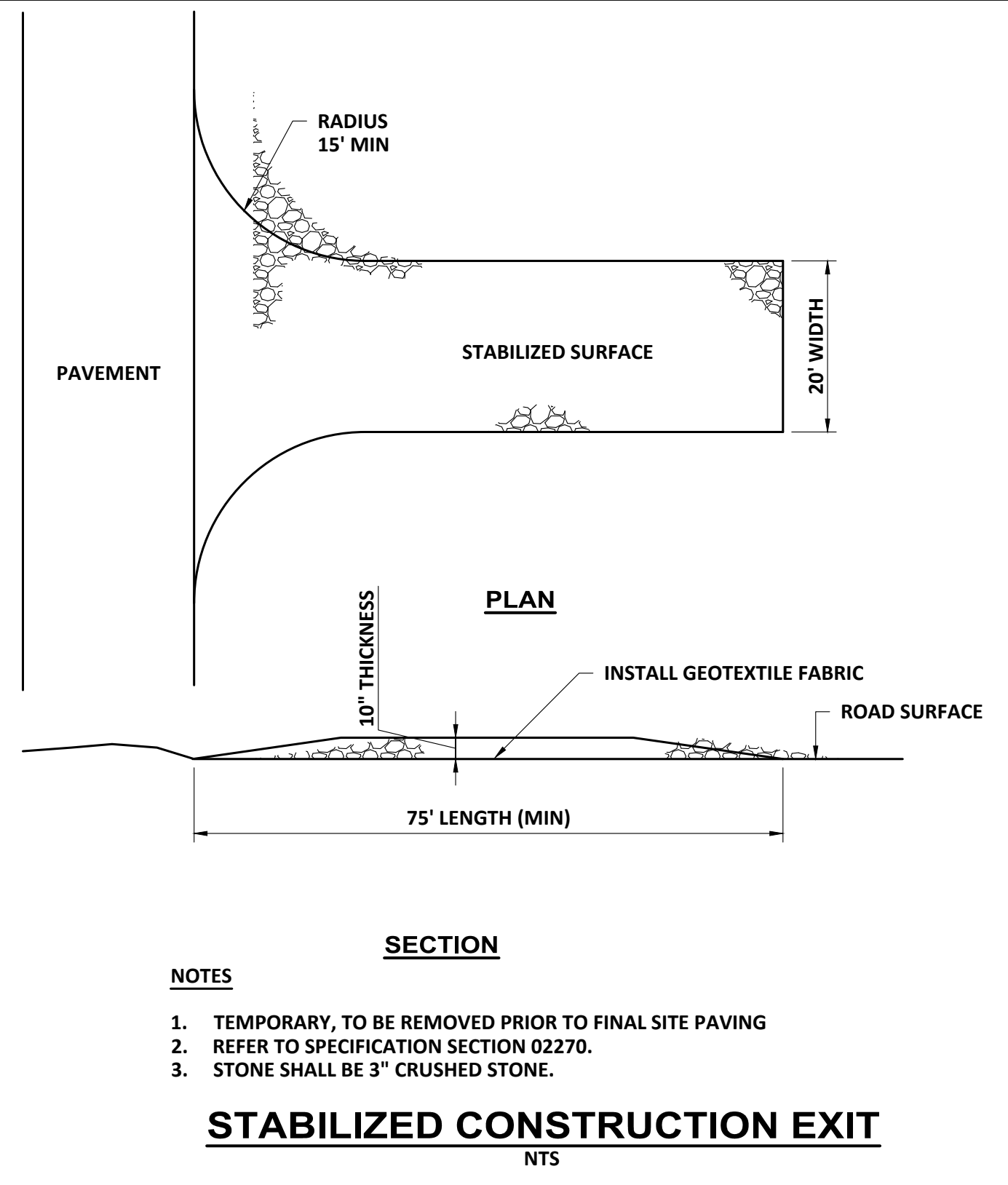
PERMANENT VEGETATION (TABLE 4-2)

USE	MIXTURE TABLES	SOIL DRAINAGE			
		I.	II.	III.	IV.
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	FAIR	GOOD	GOOD	FAIR
	B	POOR	GOOD	EXC.	FAIR
	C	POOR	GOOD	EXC.	GOOD
	E	FAIR	EXC.	EXC.	POOR
WATERWAYS, EMERGENCY SPILLWAYS AND OTHER CHANNELS WITH FLOWING WATER	A	GOOD	GOOD	GOOD	FAIR
	C	GOOD	EXC.	EXC.	FAIR
LIGHTLY USED PARKING LOTS, ODD AREAS, UNUSED LANDS, AND LOW INTENSITY USE RECREATION SITES	A	GOOD	GOOD	GOOD	FAIR
	B	GOOD	GOOD	FAIR	POOR
	C	GOOD	EXC.	EXC.	FAIR
PLAY AREAS AND ATHLETIC FIELDS. (TOPSOIL IS ESSENTIAL FOR GOOD TURF)	F	FAIR	EXC.	EXC.	
	G	FAIR	EXC.	EXC.	

- NOTES:
- I. DROUGHTY
II. WELL DRAINED
III. MODERATELY WELL DRAINED
IV. POORLY DRAINED
 - EXC. = EXCELLENT
 - REFER TO TABLE 4-3 FOR SEED MIXTURE AND APPLICATION RATES

PERMANENT VEGETATION (TABLE 4-3)

MIXTURE	SPECIES	RATE-POUNDS PER ACRE 1,000 SQ. FT.	
A	TALL FESCUE	20	0.45
	CREeping RED FESCUE	20	0.45
	REDTOP	2	0.05
	TOTAL	42	0.95
			40 OR 55
B	TALL FESCUE	15	0.35
	CREeping RED FESCUE	10	0.25
	CROWN VETCH/OR FLATPEA	15	0.35
	TOTAL	40	0.75
			40 OR 55
C	TALL FESCUE	20	0.45
	CREeping RED FESCUE	20	0.45
	BIRDSFOOT TREFLOIL	8	0.2
	TOTAL	48	1.10
			40 OR 55
E	CREeping RED FESCUE	50	1.15
	KENTUCKY BLUEGRASS	50	1.15
	TOTAL	100	2.30
F	TALL FESCUE	150	3.60



NO	REVISIONS	APPD	DATE

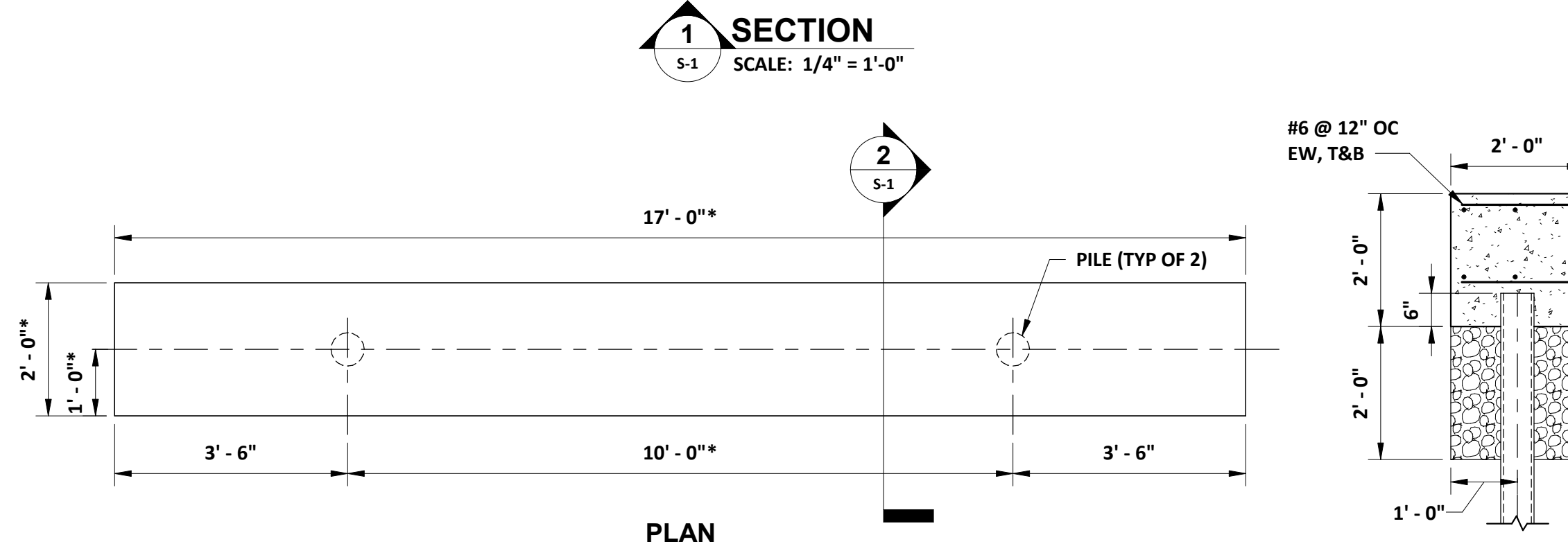
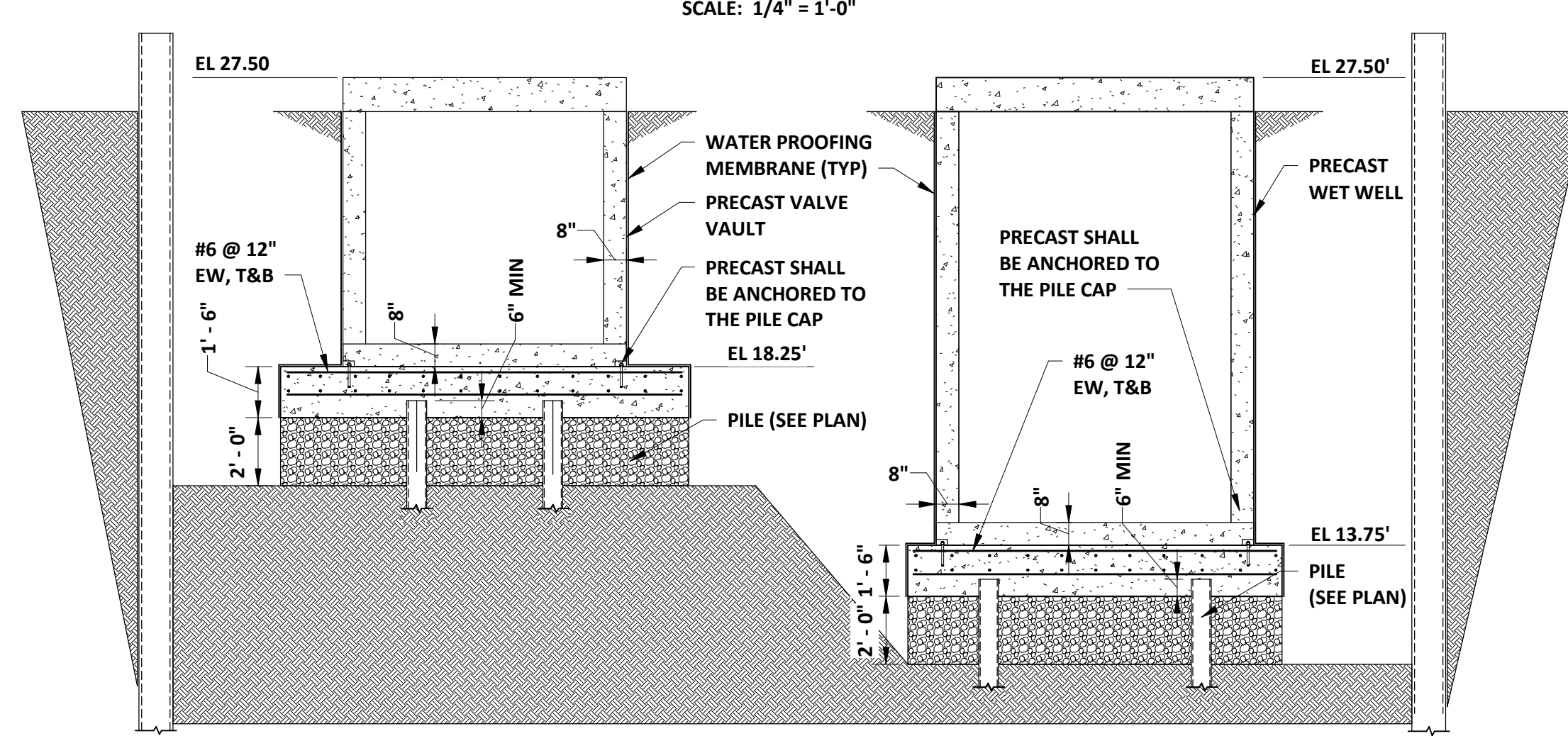
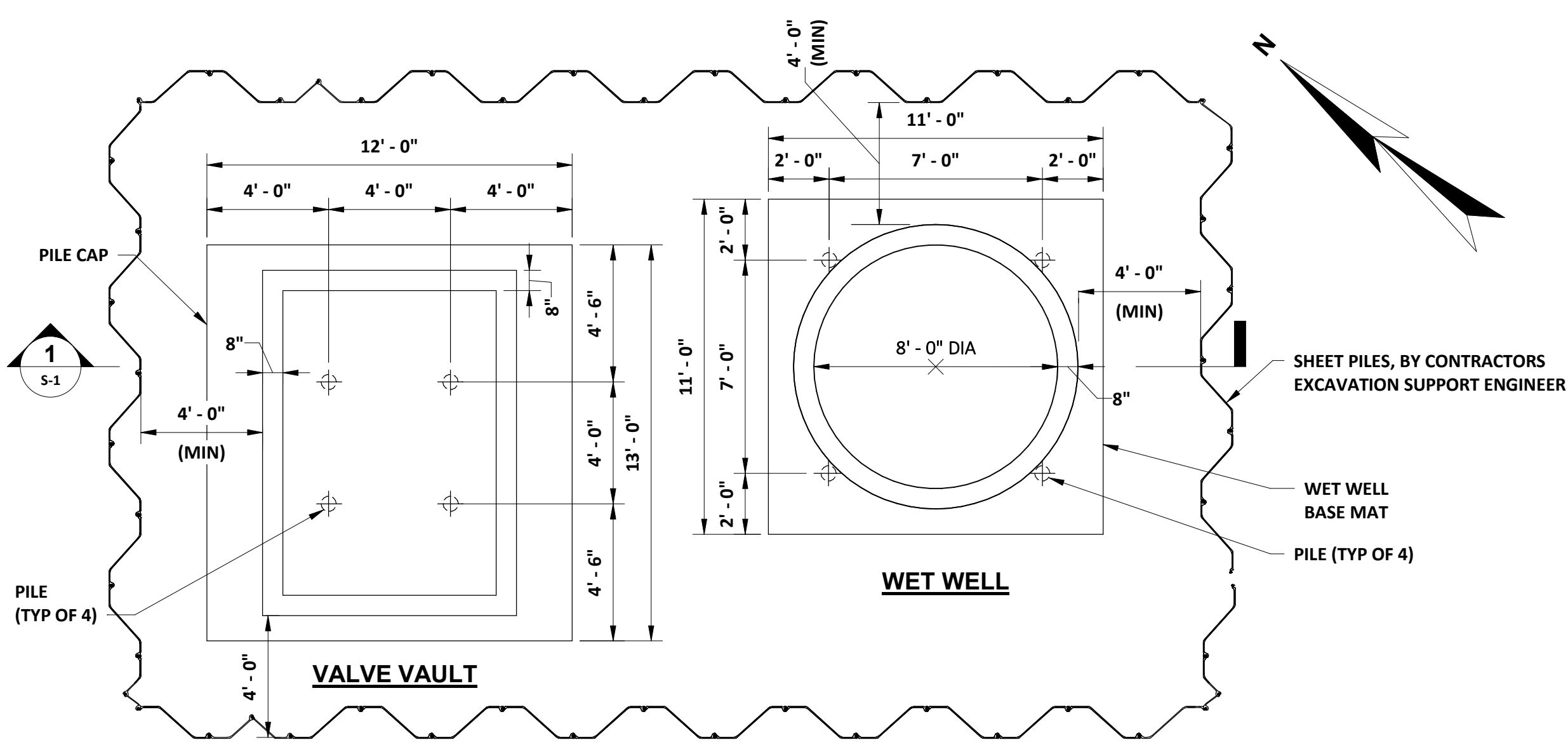
PROJECT NO: 20374
 DESIGNED: C.MARANTO
 CAD COORD: D.SAVAGE
 CAD: D.SAVAGE
 CHECKED: M.THERIAULT
 DATE: 01/09/23
 APPROVED: A.MORRILL
 DATE: 06/11/23
 SUBMISSION: CONTRACT DOCUMENTS

WRIGHT-PIERCE
 603.430.3728 | www.wright-pierce.com
 230 COMMERCE WAY, SUITE 302, PORTSMOUTH, NH 03801

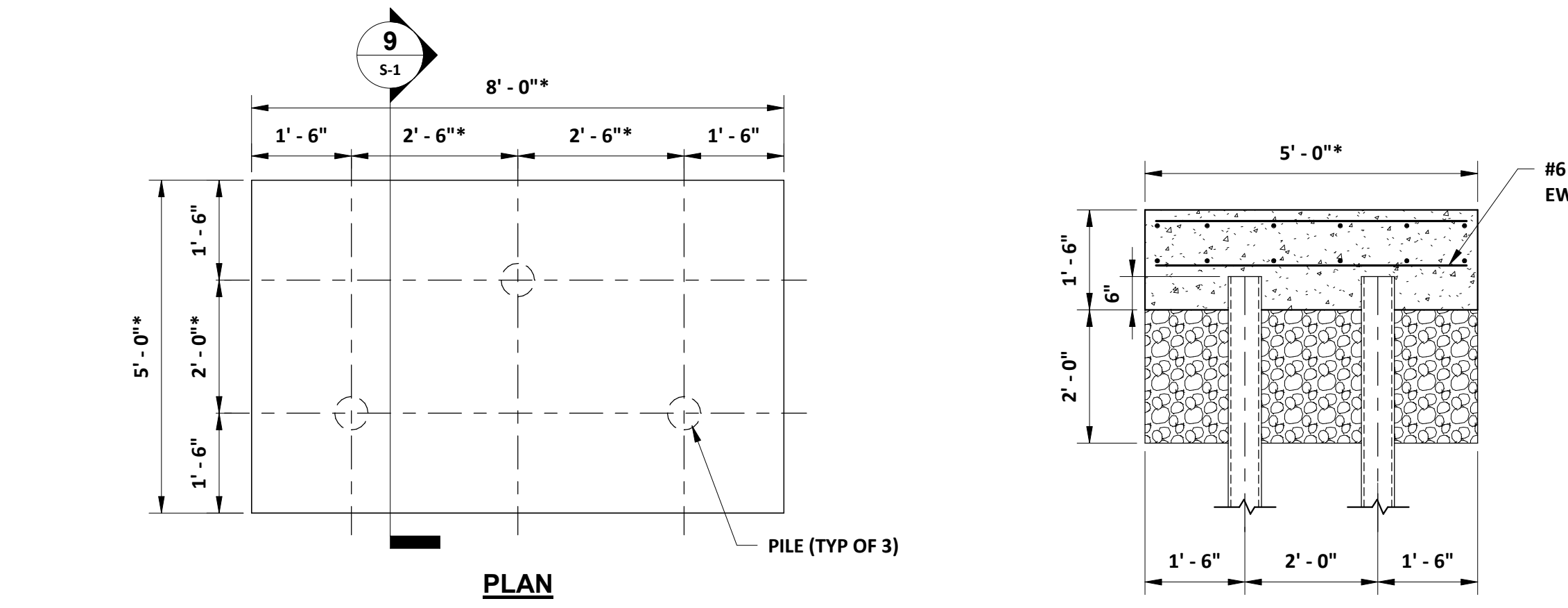
CITY OF PORTSMOUTH, NEW HAMPSHIRE
 MARJORIE STREET PUMP STATION

EROSION CONTROL NOTES AND DETAILS

DRAWING
C-8



PUMP STATION CONTROL CABINET CONCRETE PAD
SCALE: 1/2" = 1'-0"



GENERATOR CONCRETE PAD
SCALE: 1/2" = 1'-0"

STRUCTURAL NOTES

- GENERAL NOTES:**
- * INDICATES THAT THE GENERAL CONTRACTOR SHALL COORDINATE EXACT DIMENSION AND/OR ELEVATION BASED ON EQUIPMENT SUPPLIED. ALL CHANGES SHALL BE REVIEWED WITH NO EXCEPTIONS TAKEN BY THE ENGINEER.
 - DO NOT SCALE DISTANCES OR DIMENSIONS FROM THE DRAWINGS. WRITTEN DIMENSIONS SHALL PREVAIL. REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
 - ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ALL OTHER CONTRACT DRAWINGS, SHOP DRAWINGS (REVIEWED WITH NO EXCEPTIONS TAKEN) AND SPECIFICATIONS.
 - SEE CIVIL, PROCESS, MECHANICAL AND ELECTRICAL DRAWINGS FOR DOVETAIL SLOTS, PIPES, PIPE SLEEVES, CONDUITS, GATE FRAMES OR OTHER ITEMS TO BE EMBEDDED OR PASSED THROUGH THE CONCRETE.
 - THE CONTRACTOR SHALL COORDINATE PREPARED OPENING SIZES AND LOCATIONS WITH THE VARIOUS CONSTRUCTION TRADES AND EQUIPMENT MANUFACTURERS. MANY SLEEVE SIZES AND PREPARED OPENING SIZES ARE LARGER THAN THE NOMINAL DIMENSION IN ORDER TO ACCOMMODATE THE EQUIPMENT.
 - THE DETAILS, STRUCTURAL NOTES, ABBREVIATIONS AND LEGEND SHOWN ON DRAWINGS SHOULD BE USED WHOLLY OR IN PART WHERE THEY APPLY EXCEPT WHERE MODIFIED BY THE DETAILED DRAWINGS OR SPECIFICATIONS.

- FOUNDATION NOTES:**
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN A CONTINUOUS DEWATERING SYSTEM TO INSURE AGAINST FLOTATION OF EACH NEW STRUCTURE UNTIL CONSTRUCTION OF THE CONCRETE FOUNDATION AND BACKFILLING FOR EACH STRUCTURE IS COMPLETED.
 - THE EXISTING SUBGRADE CONDITIONS CONSISTS OF VARIOUS FILL MATERIAL OVERLYING VARIOUS NATIVE MIXTURES OF SILT, SAND AND CLAY. THE FILLS CONSIST OF A HETEROGENEOUS MIXTURE OF SOIL MATERIALS WITH OCCASIONAL ORGANICS AND ASPHALT DEBRIS. BELOW THE FILL THERE IS MEDIUM TO STIFF CONSISTENCY MIXTURE OF GRAY-BROWN SILT, SAND AND CLAY EXTENDING TO A DEPTH OF ABOUT 15 FEET. SUPPORTED BY PRIMARILY SOFT GRAY SILTY CLAY WITH UNDERLYING SOILS.
 - THE CONTRACTOR SHALL REMOVE AN ADDITIONAL 2FT OF EXISTING SOIL AND REPLACE WITH ASTM-D448 NO. 57 CRUSHED STONE BELOW EACH STRUCTURE.
 - ALL CONCRETE STRUCTURES SHALL BE COVERED, INSULATED AND HEATED AS REQUIRED TO PREVENT FROST PENETRATION BENEATH THE STRUCTURES UNTIL SUBSTANTIAL COMPLETION OR UNTIL STRUCTURES ARE COMPLETED AND BACKFILLED.
 - THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE BELOW THE FROST DEPTH (AS MEASURED FROM FINISH GRADE) UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
 - SEE CIVIL DRAWINGS FOR LIMITS AND ELEVATIONS OF UNDERDRAIN SYSTEM AROUND STRUCTURES.

- CAST-IN-PLACE REINFORCED CONCRETE NOTES:**
- REFERENCE SPECIFICATIONS - 03300, 03305, 03346
 - REINFORCED CONCRETE WAS DESIGNED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOLLOWING:
2.1 ACI 305 - CODE REQUIREMENTS FOR ENVIRONMENTAL CONCRETE STRUCTURES AND COMMENTARY
 - MINIMUM CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS:
STRUCTURAL CONCRETE - $f_c = 4,500$ PSI
CONCRETE FILL, ELECTRICAL CONDUIT ENCASEMENTS, PIPE ENCASEMENTS - $f_c = 3,000$ PSI
 - REINFORCING STEEL SHALL BE NEW BILLET STEEL CONFORMING TO ASTM SPECIFICATION A615 GRADE 60 DEFORMED BARS. FABRICATION SHALL BE IN ACCORDANCE WITH THE CRSI CODE OF STANDARD PRACTICE.
 - REINFORCING STEEL SHALL HAVE THE FOLLOWING CLEAR CONCRETE COVER UNLESS OTHERWISE NOTED:
5.1 CONCRETE CAST AGAINST EARTH: 3 INCHES
5.2 ALL OTHER CONCRETE SURFACES: 2 INCHES
 - SPliced BARS SHALL HAVE THE FOLLOWING MINIMUM SPLICE LENGTHS REGARDLESS OF LOCATION (UNLESS OTHERWISE INDICATED ON THE DRAWINGS):
#6 - 2'-5"
 - EMBEDDED HOOKED DOWEL BAR SPlicERS SHALL HAVE THE FOLLOWING MINIMUM DIMENSIONS:
#6 - 10" EMBEDMENT WITH 12" HOOK
 - CONSTRUCTION JOINTS SHALL NOT BE PLACED AT LOCATIONS OTHER THAN SHOWN ON THE DRAWINGS UNLESS REVIEWED WITH NO EXCEPTIONS TAKEN BY THE ENGINEER. CONTROL JOINTS SHALL BE PLACED AT ALL INDICATED LOCATIONS.
 - INDEPENDENT TESTING LABORATORY WILL PERFORM SLUMP AND AIR CONTENT TESTS FOR ALL CONCRETE TRUCKS AND PREPARE AND TEST CONCRETE CYLINDER SAMPLES.

- EXCAVATION AND DEWATERING NOTES:**
- REFERENCE SPECIFICATION SECTIONS 02140 AND 02156.
 - DEEP EXCAVATION SUPPORT SYSTEM DESIGN AND INSTALLATION SHALL BE PROVIDED BY CONTRACTORS, AS REQUIRED. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH MATERIAL, DESIGN AND INSTALLATION. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE, FOR REVIEW PRIOR TO STARTING FABRICATION OR CONSTRUCTION.
 - PRIOR TO PERFORMING ANY EXCAVATION, CONTRACTOR SHALL RETAIN THE SERVICES OF A SPECIALTY DEWATERING FIRM, EXPERIENCED IN THE DESIGN, INSTALLATION, OPERATION, MONITORING, AND REMOVAL OF GROUNDWATER CONTROL SYSTEMS FOR SUBSURFACE CONSTRUCTION. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE, FOR REVIEW PRIOR TO STARTING FABRICATION OR INSTALLATION.
 - THE GROUNDWATER CONTROL SYSTEM SHALL BE DESIGNED TO CONTROL GROUNDWATER WITHIN THE EXCAVATION. THE DEEP EXCAVATION SUPPORT SYSTEM SHALL BE DESIGNED TO RESIST HYDROSTATIC PRESSURE DUE TO GROUNDWATER AND POTENTIAL FLOOD EVENTS THAT MAY OCCUR DURING CONSTRUCTION, AND LIMIT GROUND MOVEMENT. THE EXCAVATION AND SUPPORT SYSTEM, SHALL AT A MINIMUM, REMAIN IN PLACE UNTIL PRECAST STRUCTURES HAS BEEN PLACED AND THE SURROUNDING AREA HAS BEEN BACKFILLED IT IS THE CONTRACTOR'S RESPONSIBILITY TO DESIGN SYSTEMS THAT PROTECT THE EXCAVATION AND STRUCTURE.

- SHORING RECOMMENDATIONS:**
- REFERENCE SPECIFICATION 02140 AND 02156
 - THE EXCAVATION FOR THE PUMP STATION WILL REQUIRE SHORING SYSTEMS TO MAINTAIN SOIL EMBANKMENTS SURROUNDING THE CONSTRUCTION AREA, AS WELL AS TO ASSIST IN GROUNDWATER MANAGEMENT. PROPER DESIGN AND CONSTRUCTION SHOULD ONLY BE UNDERTAKEN BY QUALIFIED PROFESSIONALS WITH EXPERIENCE IN SIMILAR SITUATIONS AND CONDITIONS.
 - THE DESIGN OF THE SHORING IS DEPENDENT UPON THE CONTRACTOR'S APPROACH TO CONSTRUCTION. SHORING SHALL BE DESIGNED TO RESIST ALL FORCES AND PRESSURES ASSOCIATED WITH RETAINED EARTH, HYDROSTATIC PRESSURE DUE TO POTENTIAL FLOOD EVENTS THAT MAY OCCUR DURING CONSTRUCTION, AND SURCHARGES DUE TO EQUIPMENT AND STRUCTURES. EXTERNAL OR INTERNAL SUPPORTS SHALL BE DESIGNED AS PART OF THE SHORING.
 - TYPICAL SHORING SYSTEMS THAT WOULD BE CONSIDERED VIALFOR THIS PROJECT GIVEN THE SOIL CONDITIONS AND GROUNDWATER LEVELS RELATIVE TO CONSTRUCTION DEPTH WOULD INCLUDE SHEET PILES, OR TANGENT PILES. TIEBACK SYSTEMS. ANCHORAGE AND BRACING TO RESIST ALL FORCES ON THE INSTALLED SHORING SYSTEM WILL BE DEPENDENT ON THE TYPE OF SYSTEM INSTALLED, CONFIGURATION, DEPTH, INUNDATION CONSIDERATIONS, CONSTRUCTION APPROACH AND DEWATERING PLAN, AMONG MANY OTHERS. CONTRACTOR SHALL CONSIDER EFFECTS THAT THE INSTALLATION AND POTENTIAL REMOVAL OF THE SHORING SYSTEM MAY IMPOSE ON EXISTING ADJACENT STRUCTURES AND UTILITIES PRIOR TO COMMENCING WITH CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR PRESERVING THE INTEGRITY OF THE EXISTING ADJACENT STRUCTURES AND UTILITES. ALL DAMAGE DUE TO THE INSTALLATION AND / OR REMOVAL OF THE EXCAVATION SUPPORT SYSTEM, SHALL BE REPAIRED BY THE CONTRACTOR.
 - THE DESIGN OF THE SHORING MUST BE STAMPED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE WITHIN THE APPROPRIATE DISCIPLINE AND WITH EXPERIENCE IN SIMILAR TYPES, DEPTHS AND SOIL AND HYDRAULIC CONDITIONS AS THIS PROJECT SITE.
 - CONTRACTOR TO BE PROVIDED WITH A COPY OF THE GEOTECHNICAL ENGINEERING REPORT PREPARED FOR THE CITY OF PORTSMOUTH BY S.W COLE ENGINEERING, INC, DATED AUGUST 19, 2020 IS FOR INFORMATION ONLY. THE DATA PROVIDED IN THE REPORT PREPARED FOR THE CITY OF PORTSMOUTH BY WRIGHT-PIERCE, IS OBTAINED FOR THE PURPOSE OF DESIGN OF THE STRUCTURES SHOWN ON THE DRAWINGS AND IS NOT INTENDED TO MEET ALL THE NEEDS OF THE CONTRACTOR DURING CONSTRUCTION. THE CONTRACTOR SHOULD PERFORM ADDITIONAL INVESTIGATION, TESTING, AND ANALYSIS TO ADEQUATELY ADDRESS SPECIFIC CONCERNS OR NEEDS.
 - POTENTIAL FOR FLOODING OF THIS SITE DURING THE CONSTRUCTION OF THE FACILITY MUST BE CONSIDERED IN THE DESIGN OF THE SHORING. THE SHORING AND BRACING THEREOF MUST BE DESIGNED TO WITHSTAND DEFEATING FORCES IF THE LEVEL OF THE WATER WERE TO REACH THE MAXIMUM HEIGHT OF THE SHORING WALLS, WHICH WOULD IMPOSE MAXIMUM LOADING CONDITIONS ON THE SHORING SYSTEM.
 - SHOULD CONTRACTOR DECIDE TO ABANDON PORTIONS OF SHORING SYSTEM IN PLACE, TO MINIMIZE DISTURBANCE AND POTENTIAL DAMAGE TO THE PUMP STATION AND EXISTING ADJACENT STRUCTURES AND UTILITES DUE TO ITS REMOVAL, CONTRACTORS SHALL FIRST REQUEST AND OBTAIN WRITTEN APPROVAL FROM THE CITY. IF APPROVED, THE CONTRACTOR SHALL TERMINATE THE BRACING SYSTEM AT A MINIMUM DEPTH OF 5 FEET BELOW OVERLYING CONSTRUCTION OR GRADE. CONTRACTOR TO PROVIDE LABOR FOR ECHANICAL OR TORCH CUTTING OF LEFT-IN-PLACE SHORING SYSTEM.

STRUCTURAL DESIGN CRITERIA:

GEOTECHNICAL:

DESIGN GROUNDWATER ELEVATION: 1 FOOT BELOW FINISH GRADE
MICRO PILE - HELICAL OR GROUT FILLED PIPE PILES WITH DESIGNED FOR A 40 KIP ALLOWABLE LOAD
MINIMUM FROST DEPTH = 4'-0"

LIVE LOADS:

REF: NEW HAMPSHIRE STATE BUILDING CODE
GROUND SNOW LOADS FOR NEW HAMPSHIRE - US ARMY CORPS OF ENGINEERS

OCCUPANCY RISK CATEGORY III

WIND LOADS

BASIC WIND SPEED (V):
Vult = 123 MPH
Vasd = 95 MPH
IMPORTANCE FACTOR (Iw) = 1.15
EXPOSURE CATEGORY C

SNOW LOADS

GROUND SNOW LOAD (Pg) = 50 PSF
IMPORTANCE FACTOR (Is) = 1.1
EXPOSURE CATEGORY C

SEISMIC LOADS

EQUIVALENT LATERAL FORCE ANALYSIS
IMPORTANCE FACTOR (Ie) = 1.25
SITE CLASSIFICATION E
SEISMIC DESIGN CATEGORY D
0.2s SPECTRAL RESPONSE ACCELERATION (Ss) = 0.329
1.0s SPECTRAL RESPONSE ACCELERATION (S1) = 0.075
0.2s MCER SPECTRAL RESPONSE ACCELERATION (SMS) = 0.717
1.0s MCER SPECTRAL RESPONSE ACCELERATION (SM1) = 0.314

ABBREVIATIONS

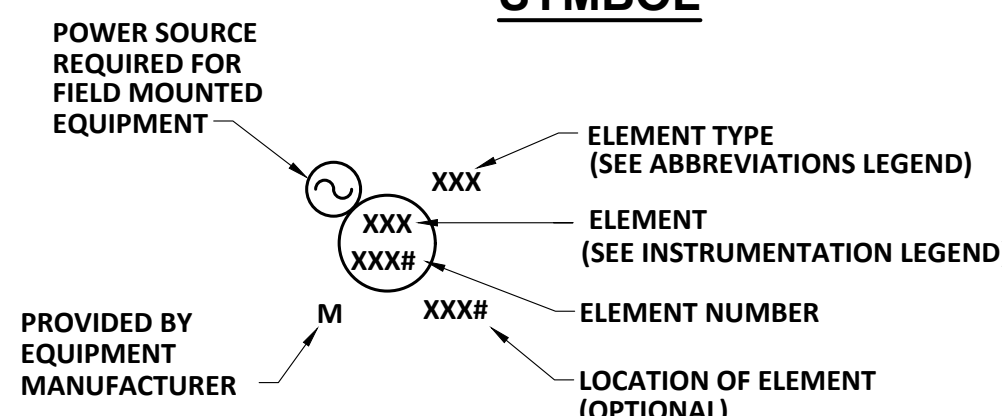
ALUMINUM	ALUM, AL
AND	&
ANGLE	∠
ARCHITECTURAL	ARCH
AT	@
BEAM	BM
BOTTOM	BOT, B/
CROSS BRACING	CB
CENTER	CTR
CENTERLINE	CL
CLEAR	CLR
COLUMN	COL
CONCRETE	CONC
CONCRETE MASONRY UNIT	CMU
CONTINUOUS	CONT
CONTROL JOINT	CJ
CONTROL JOINT (TYPE 1)	CJ (1)
CONTROL JOINT (TYPE 2)	CJ (2)
CONSTRUCTION JOINT	CNJ
DETAIL	DET
DIAMETER	DIA, ∅
DOWEL BAR SPlicERS	DBS
DOWEL	DWL
EACH END	EE
EACH FACE	EF
EACH WAY	EW
ELECTRICAL	ELEC
ELEVATION	ELEV, EL
EQUAL	EQ
EXPANSION JOINT	EJ
EXPANSION	EXP
EXTERIOR	EXT
FEET	FT
FLOOR DRAIN	FD
FIBERGLASS REINFORCED PLASTIC	FRP
GALVANIZED	GA
GUAGE	GALV
GRTG	GRTG
HIGH	H
HIGH POINT	HP
HIGH STRENGTH	HS
HORIZONTAL	HOR
HOT DIPPED GALVANIZED	HDG
INSIDE DIAMETER	ID
INSIDE FACE	IF
INSULATION	INSUL
JOINT	JT
LOW POINT	LP
MANUFACTURER	MFR
MATCHING	MATCH
MAXIMUM	MAX
MECHANICAL	MECH
MINIMUM	MIN
MODULAR OPENING	MO
MOUNTED	MTD
NOT TO SCALE	NTS
NUMBER	NO
ON CENTER	OC
OPENING	OPNG
OUTSIDE DIAMETER	OD
OUTSIDE FACE	OF
PERIMETER	PERIM
PLATE	PL
#	#
POUNDS PER SQUARE FOOT	PSF
POUNDS PER SQUARE INCH	PSI
PRESSURE RELIEF VALVE	PRV
PROCESS	PROC
PROJECTION	PROJ
REINFORCING	REINF
REQUIRED	REQ'D
RISER	R
ROUGH OPENING	RO
SCHEDULE	SCH
SECTION	SECT
SHEET	SHT
SIMILAR	SIM
SLOPE	SL
SPACE(ING)	SP
SPECIFICATION	SPEC
SQUARE	SQ
SYMMETRICAL	SYM
STANDARD	STD
STRUCTURAL	STRUCT
STAINLESS STEEL	SS
STEEL	STL
THICKNESS	THK
T, T/	T, T/
TOP & BOTTOM	T & B
TOP OF CONCRETE	T/ CONC, TOC
TOP OF PLATE	T/ PL
TOP OF STEEL	T/ STL
TREAD	TR
TYPICAL	TYP
UNLESS OTHERWISE NOTED	UNON
WELDED WIRE FABRIC	WWF
WIDE	W
WITHOUT	W/O
WOOD	WD

PROJECT NO: 20374	DESIGNED: R.CYR	CAD COORD: D.SAAGE	CHECKED: R.CYR	DATE: 1/5/2023	APPROVED: A.MORRILL	DATE:
SUBMISSION: CONTRACT DRAWINGS						
 WRIGHT-PIERCE 603.430.3728 www.wright-pierce.com 230 COMMERCE WAY, SUITE 302, PORTSMOUTH, NH 03801						
CITY OF PORTSMOUTH, NEW HAMPSHIRE MARJORIE STREET PUMP STATION						
STRUCTURAL GENERAL NOTES, ABBREVIATIONS, PLAN AND SECTION						
DRAWING						
S-1						

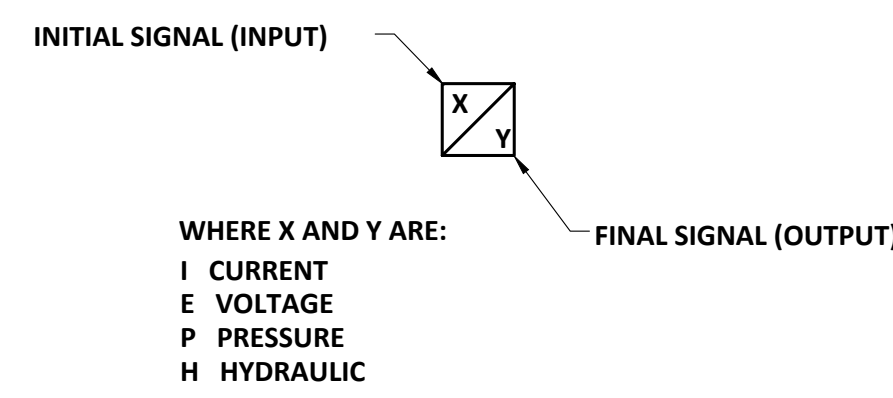
INSTRUMENTATION SYMBOL LEGEND

DESCRIPTION	EXISTING	NEW	FUTURE
PROCESS FLOW			
ELECTRICAL POWER OR PROCESS CONNECTION			
ELECTRICAL SIGNAL			
DATA LINK			
PLC INPUT/OUTPUT			
PNEUMATIC SIGNAL			
VENDOR CABLE			
DISCRETE OUTPUT SIGNAL			
ANALOG OUTPUT SIGNAL			
DISCRETE INPUT SIGNAL			
ANALOG INPUT SIGNAL			
HARDWARE INTERLOCK			
PROGRAMMABLE LOGIC CONTROLLER			
OPERATOR TERMINAL INTERFACE			
LOCAL (FIELD MOUNTED)			
FRONT PANEL MOUNTED			
REAR PANEL MOUNTED			
INTEGRAL EQUIPMENT			
SIGNAL SPLITTER CONVERTER/BOOSTER (SEE BELOW)			
MOTOR			
ALARM/ STATUS LIGHT			
STROBE LIGHT			

TYPICAL INSTRUMENTATION SYMBOL



TYPICAL SIGNAL CONVERTER SYMBOL



VALVES AND FITTINGS

DESCRIPTION	EXISTING	NEW	FUTURE
GATE VALVE			
BALL VALVE			
PLUG VALVE			
GLOBE VALVE			
BUTTERFLY VALVE			
CHECK VALVE			
DOUBLE DISC CHECK VALVE			
DIAPHRAGM VALVE			
MUD VALVE			
TIDE CHECK VALVE			
NEEDLE VALVE			
PINCH VALVE			
3-WAY VALVE			
KNIFE GATE			
TELESCOPING VALVE			
CONCENTRIC REDUCER			
ECCENTRIC REDUCER			
FLOW ARROW			
UNION			
PRESSURE SAFETY VALVE			
VACUUM RELIEF			
BACKPRESSURE VALVE			
PRESSURE REDUCING VALVE			
BACKFLOW PREVENTER			
DUPLEX STRAINER			
SIMPLEX STRAINER			
WYE STRAINER			
IN-LINE MIXER			
EXPANSION JOINT			
ROTAMETER			
PULSTATION DAMPENERS			
DIAPHRAGM ISOLATOR			
WAFER ISOLATOR			

ACTUATORS

DESCRIPTION	EXISTING	NEW	FUTURE
CONTROL ACTUATOR			
SOLENOID ACTUATOR			
PNEUMATIC DIAPHRAGM ACTUATOR			
PNEUMATIC/HYDRAULIC CYLINDER			

ABBREVIATIONS LEGEND

AMD	ADMITTANCE
CAP	CAPACITANCE
CL	CHLORINE
CP	CONTROL PANEL
CR	CONTROL RELAY
DO	DISSOLVED OXYGEN
ESTOP	EMERGENCY STOP
FOR	FORWARD-OFF-REVERSE
FNR	FORWARD-NEUTRAL-REVERSE
FRSA	FORWARD-STOP-REVERSE-AUTO
FX	ACCESSORY
HOA	HAND-OFF-AUTO
I	CURRENT
INF	INFLUENT
LOE	LOSS OF ECHO
LOR	LOCAL-OFF-REMOTE
LT	PILOT LIGHT
MES	MANAGED ETHERNET SWITCH
MBS	MAINTENANCE BY-PASS SWITCH
MCC	MOTOR CONTROL CENTER
O/L	OVERLOAD
OCA	OPEN-CLOSE-AUTO
OIT	OPERATOR TERMINAL
ONC	OPEN-NEUTRAL-CLOSE
PB	PUSH BUTTON
PLC	PROGRAMMABLE LOGIC CONTROLLER
RESET ALARM	RESET
ROL	RAISE OFF LOWER
ROR	RUN-OFF-REMOTE
SCR	SPEED CONTROL RECTIFIER
SS	SELECTOR SWITCH
TR	TIMER RELAY
TURB	TURBIDITY
ULT	ULTRASONIC
UPS	UNINTERRUPTIBLE POWER SUPPLY
VFD	VARIABLE FREQUENCY DRIVE

PUMPS

DESCRIPTION	EXISTING	NEW
POSITIVE DISPLACEMENT		
PROGRESSIVE CAVITY		
SCREW PUMP		
CENTRIFUGAL		
SUBMERSIBLE PUMP		
HOSE		
CHEMICAL METERING		
CHEMICAL TRANSFER		

BLOWERS

DESCRIPTION	EXISTING	NEW
CENTRIFUGAL		
POSITIVE DISPLACEMENT		
COMPRESSOR/TURBO		
AIR INTAKE FILTER		

MISCELLANEOUS SYMBOLS

DESCRIPTION	EXISTING	NEW
MIXER		
IN-LINE STATIC MIXER		
GRINDER		
WEIR		
STOP GATE		
SLIDE GATE		
SHEAR GATE		
CHEMICAL INJECTION NOZZLE		

INDICATOR LIGHT COLOR LEGEND

RUN	GREEN
STOP	RED
WARNING	AMBER
ALARM	RED
POWER	GREEN

NOTES:

- REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
- PROVIDE SIGNAL REPEATERS/CONVERTERS/BOOSTERS AS REQUIRED BASED UPON EQUIPMENT SELECTED BY INSTRUMENTATION SUPPLIER, DISTANCE AND LOCATION.
- PROVIDE DRIP SHIELDS TO PROTECT ALL PANELS LOCATED UNDERNEATH PIPES OR OTHER LIQUID-CONTAINING STRUCTURES.
- REFERENCE PROCESS AND ELECTRICAL DRAWINGS FOR LOCATION OF PANELS AND FIELD INSTRUMENTATION.
- CONTRACTOR TO COORDINATE NEEDED VOLTAGE BASED UPON EQUIPMENT SUPPLIED.
- ALL FLOOR MOUNTED CONTROL PANELS SHALL BE INSTALLED ON 4" HIGH CONCRETE EQUIPMENT PADS.
- WHERE INPUT AND OUTPUT SIGNALS TO A PLC IS REQUIRED, PROVIDE PROPER TYPE AND QUANTITY OF INPUT/OUTPUT MODULES (I/O).
- CONTRACTOR SHALL COORDINATE THE TYPE OF ANALOG SIGNAL PROVIDED BY THE EQUIPMENT OR FIELD DEVICES WITH THE PROPER TYPE PLC I/O.
- ALL ANALOG SIGNALS WILL BE 4-20mA, UNLESS OTHERWISE INDICATED OR REQUIRED.
- ALL FIELD INSTRUMENTS SHALL BE POWERED FROM THEIR RESPECTIVE CONTROLS PANELS WITH UPS POWER.
- PROVIDE DESIGNATED TERMINALS AND MODULES FOR ALL SHOWN I/O POINTS (EXISTING, NEW, AND FUTURE). FUTURE I/O SHALL BE COUNTED TOWARD THE TOTAL I/O COUNT WHEN CALCULATING THE PERCENTAGE OF PROVIDED SPARE I/O.

INSTRUMENTATION LEGEND

FIRST LETTER	SUCCEEDING LETTER	3
A	ANALYSIS	ALARM
B	CONTROL	CONTROL
C	DIFFERENTIAL*	CONTROL
D	VOLTAGE	CONTROL
E	FLOW	CONTROL
F	FLOW	CONTROL
G	GAS	GLASS
H	HAND (MANUAL)	GLASS
I	CURRENT	HIGH**
J	POWER	INDICATE
K	TIME*	INDICATE
L	LEVEL	LOW**
M	MOTOR	INTERMEDIATE
P	PRESSURE	INTERMEDIATE
Q	QUANTITY OR TOTALIZE*	INTERMEDIATE
R	RADIATION	INTERMEDIATE
S	SPEED OR FREQUENCY	RECORD
T	TEMPERATURE	RECORD
V	VIBRATION	RECORD
W	TORQUE, WEIGHT, FORCE	RECORD
X		RECORD
Y	STATUS	RECORD
Z	POSITION	RECORD

APP'D	DATE
XXXX	XXXX

NO	DESCRIPTION	DATE
1		
2		
3		
4		

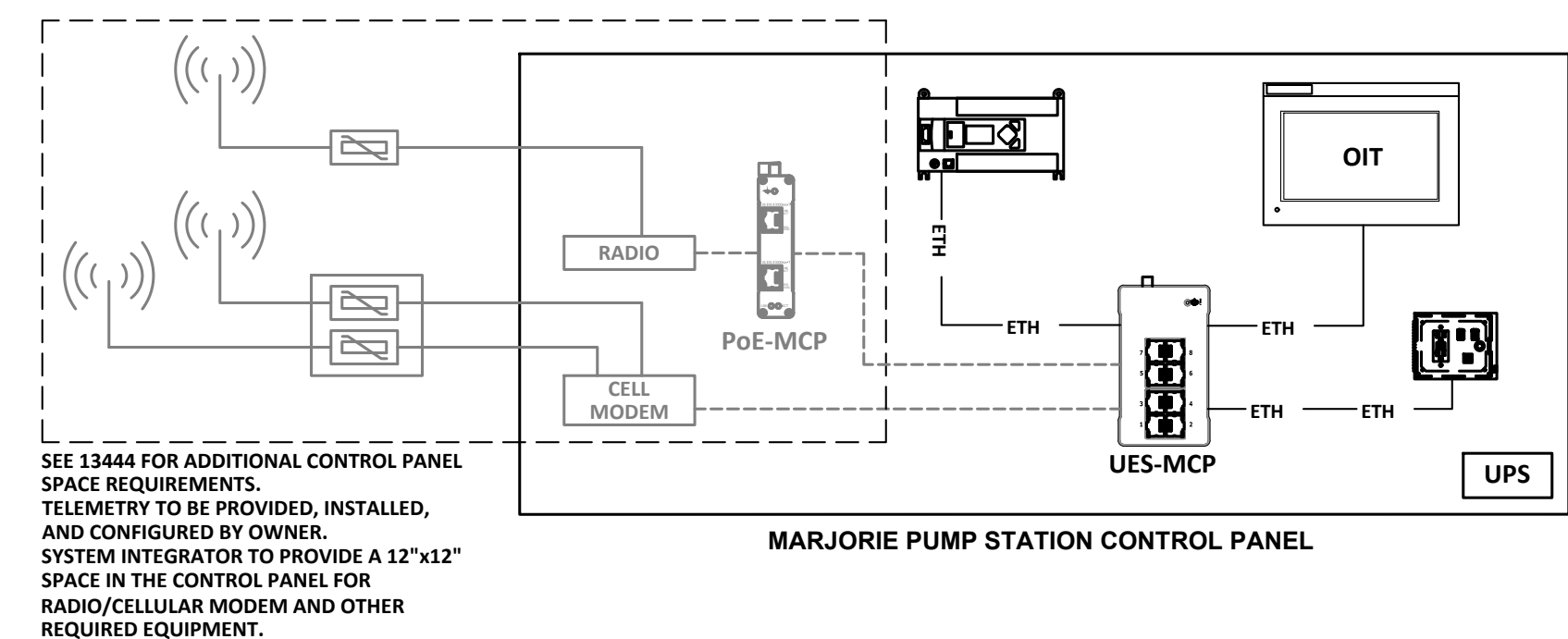
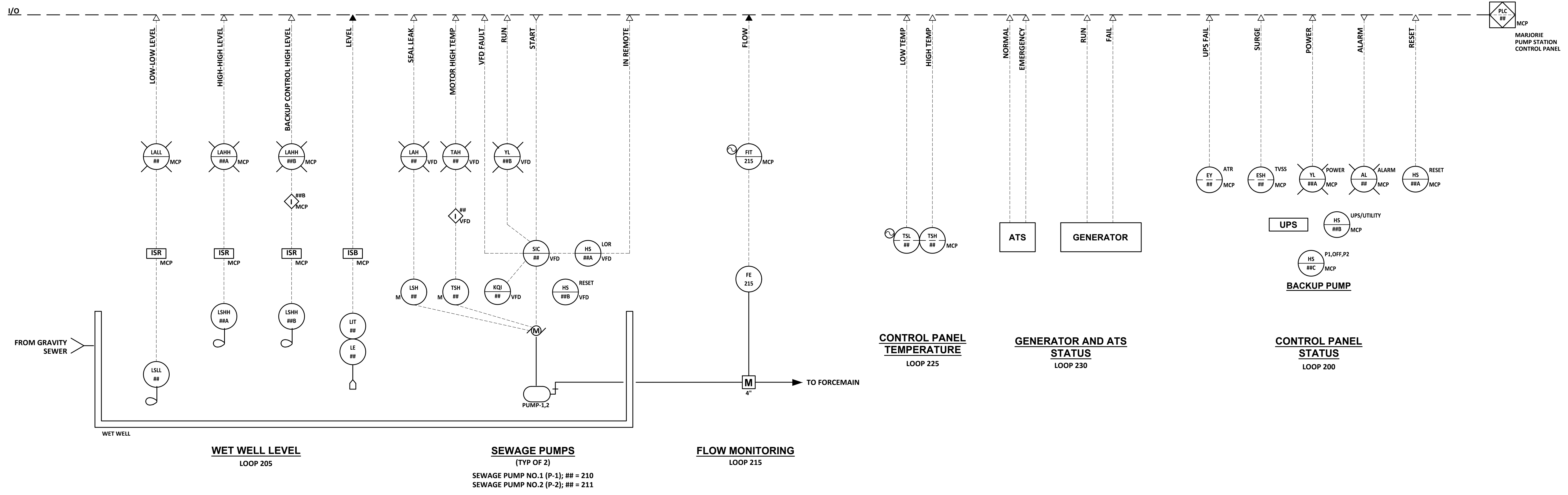
DESIGNED BY: Q.SNY	CAD CORP: D.SAVAGE
CREATED BY: Q.SNY	DATE: 02/05/23
APPROVED BY:	DATE:
	PROJECT NO.: 20374

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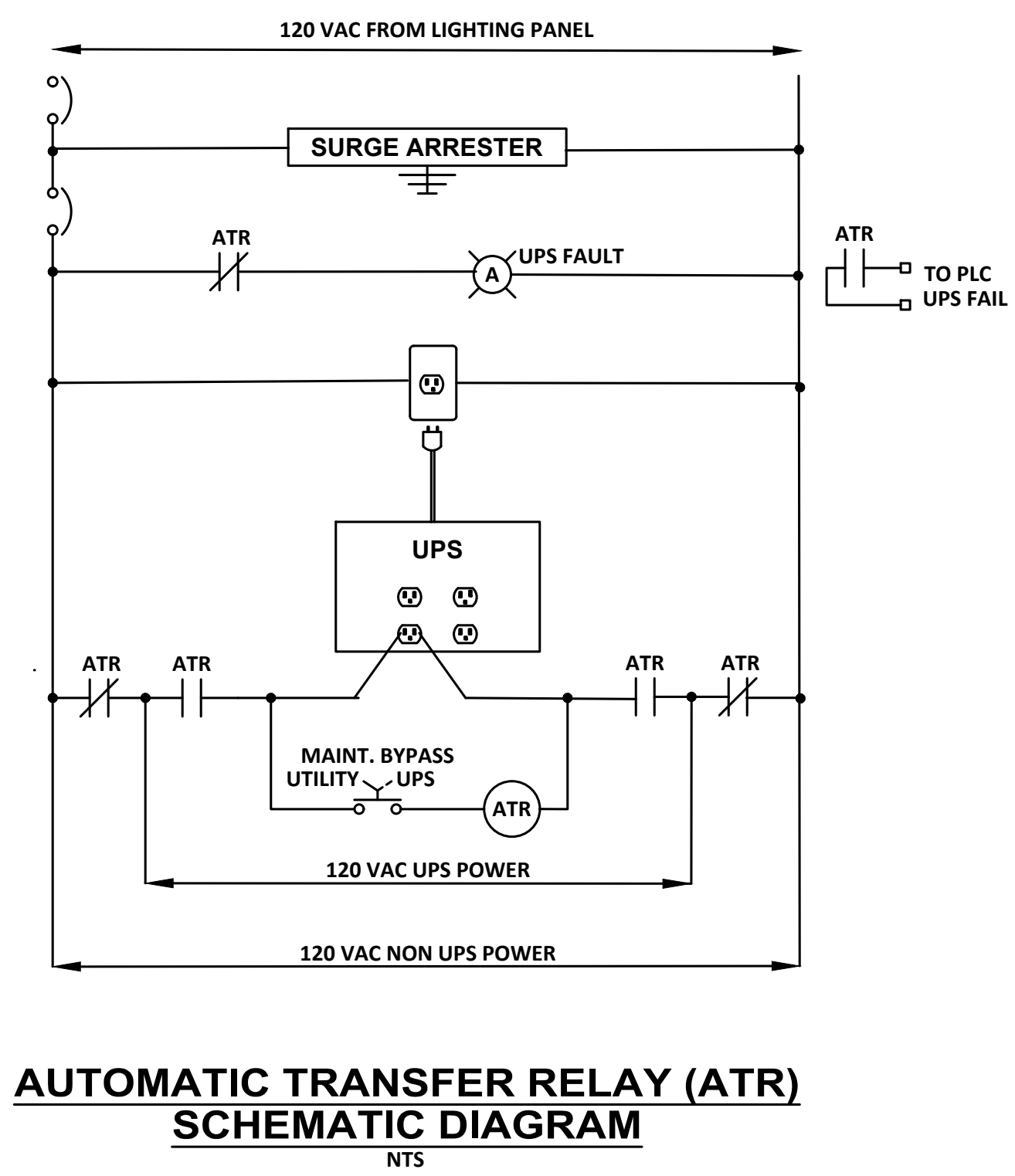
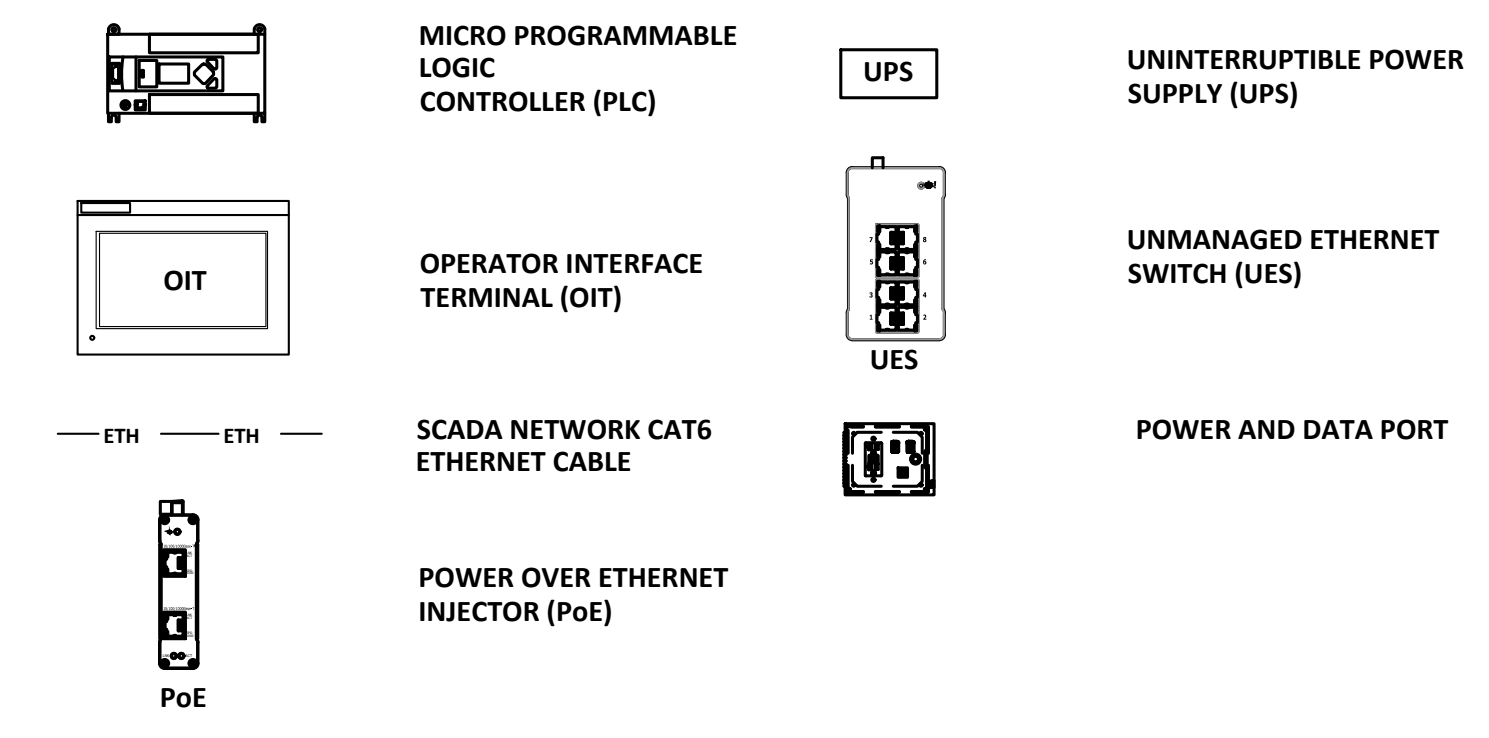
CITY OF PORTSMOUTH, NEW HAMPSHIRE
MARJORIE STREET PUMP STATION

LEGEND, ABBREVIATIONS, & NOTES

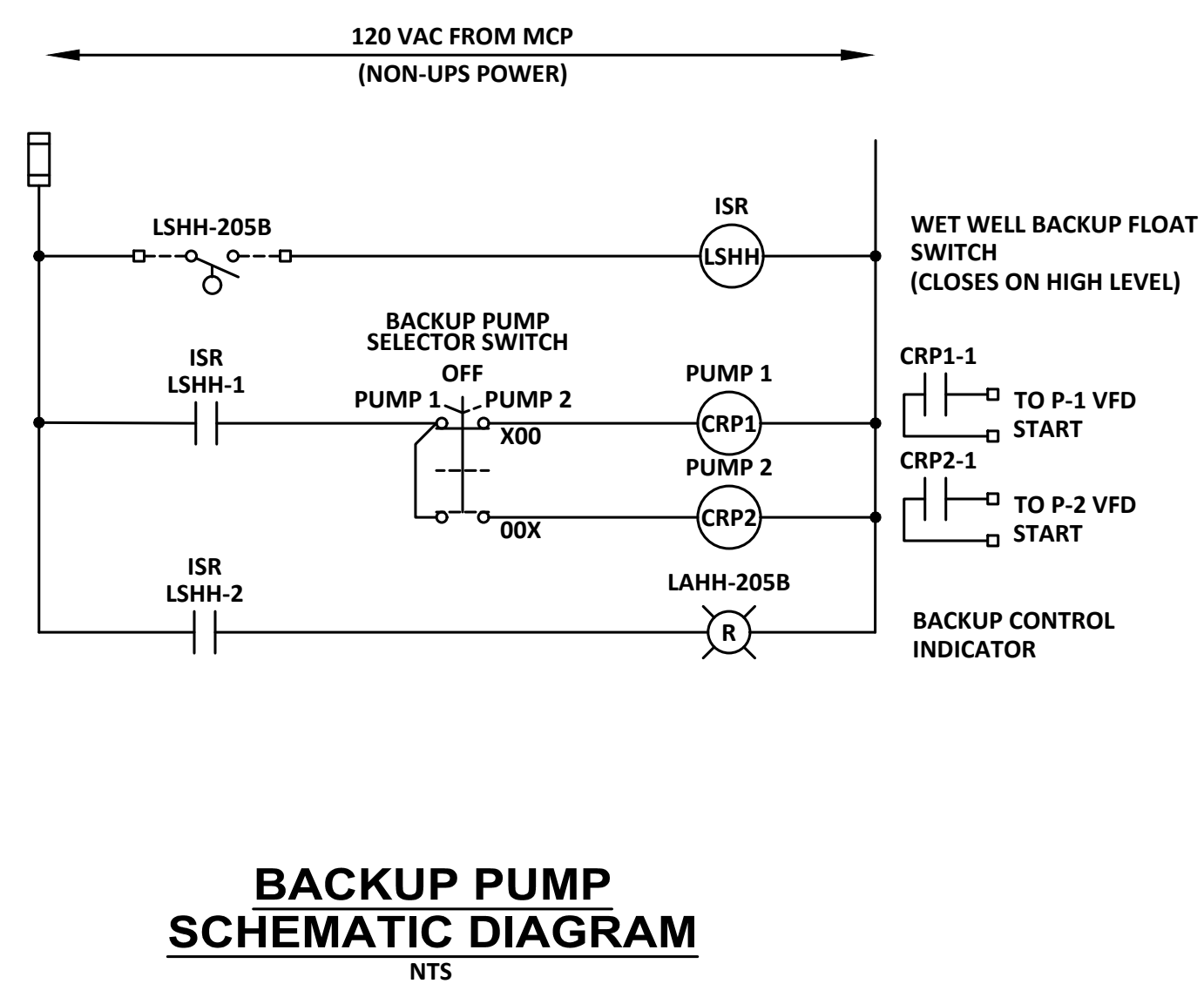
DRAWING
I-1



NETWORK LEGEND



AUTOMATIC TRANSFER RELAY (ATR) SCHEMATIC DIAGRAM
NTS



BACKUP PUMP SCHEMATIC DIAGRAM
NTS

- NOTES:**
- SCHEMATICS ARE SHOWN IN DE-ENERGIZED STATE.
 - REFER TO ELECTRICAL DRAWINGS FOR VFD WIRING.
 - SCHEMATICS ARE REPRESENTATIVE OF THE DESIGN INTENT, AND MAY REQUIRE MODIFICATION BASED ON EQUIPMENT SUBMITTALS. OTHER SCHEMATICS WILL BE ACCEPTED IF THEY MEET THE INTENT.
 - ATR CIRCUIT:
 - ATR SHALL TRANSFER POWER TO EQUIPMENT FROM UPS TO UTILITY POWER IN THE EVENT OF UPS FAILURE. OPERATOR SHALL HAVE ABILITY TO TRANSFER OFF OF UPS POWER USING AN MBS SWITCH.
 - BACKUP PUMP SCHEMATIC:
 - WHEN THE BACKUP FLOAT (LSHH-205B) IS TRIPPED, THE SELECTED BACKUP PUMP WILL RUN. ONCE THE FLOAT HAS DROPPED, PUMP WILL STOP RUNNING.
 - ISR'S SHALL BE 120VAC POWERED OR USE A DEDICATED DC POWER SUPPLY AND SHALL BE MOUNTED IN THE PUMP CONTROL PANEL.

APP'D	DATE
XXXX	XXXX
SUBMISSIONS/REVISIONS	
CONTRACT DOCUMENTS	
NO	DESCRIPTION
1	DESIGNED BY: Q.SNY
2	CAD CORP.: D.SAVAGE
3	CHD: Q.SNY
4	CHECKED BY: Q.SNY
5	DATE: 03/05/23
6	APPROVED BY:
7	DATE:
8	PROJECT NO.: 20374
CITY OF PORTSMOUTH, NEW HAMPSHIRE MARJORIE STREET PUMP STATION	
DRAWING	
I-2	



CONTROL LOOPS AND NETWORK

ELECTRICAL LEGEND

POWER

Table with 2 columns: DESCRIPTION and SYMBOL. Includes items like PUSHBUTTON OR SELECTOR SWITCH STATION, MAINTAINED RED MUSHROOM-HEAD EMERGENCY STOP P.B., PANELBOARD, SURFACE MTD., EQUIPMENT, TERMINAL, OR CONTROL CABINET, MOTOR, JUNCTION BOX, UNFUSED SAFETY SWITCH, FUSED SAFETY SWITCH, LIGHTING OR POWER CONTACTOR, THERMOSTAT, UTILITY METER, TRANSFORMER, PHOTOELECTRIC CELL, PHOTOELECTRIC CELL WITH MOTION SENSOR.

SINGLE LINE DIAGRAM

Table with 2 columns: DESCRIPTION and SYMBOL. Includes items like COMBINATION MOTOR STARTER AND BREAKER, GROUND CONNECTION, MOTOR (HP AS SHOWN), EMERGENCY STOP MUSHROOM SWITCH (RED), METER, TRANSFORMER, SAFETY DISCONNECT SWITCH, SURGE CAPACITOR, LIGHTNING ARRESTER, DELTA CONNECTION, WYE CONNECTION, GROUND CONNECTION, TRANSFER SWITCH, SURGE PROTECTION DEVICE, UTILITY METER.

WIRING

Table with 2 columns: DESCRIPTION and SYMBOL. Includes items like WIRING, CONCEALED IN FINISHED AREAS, EXPOSED WHERE PERMITTED BY SPECIFICATIONS, WIRING INSTALLED IN OR BELOW FLOOR SLAB, HOME RUN TO PANEL, HOME RUN (NO. REFERS TO CONDUIT & WIRE SCHEDULE), CONDUIT AND WIRE, CONDUIT DOWN, CONDUIT UP.

NOTE: ALL NOTES AND SYMBOL LISTS SHALL BE CONSIDERED AS APPLICABLE TO ALL ELECTRICAL DRAWINGS FOR THIS PROJECT. SYMBOLS SHOWN ON THIS SHEET ARE FOR REFERENCE ONLY AND DO NOT INDICATE THEIR INCORPORATION IN THE DESIGN.

SCHEMATIC DIAGRAM

Table with 2 columns: DESCRIPTION and SYMBOL. Includes items like CONTROL RELAY, MOTOR CONTACTOR, CONTACT NORMALLY OPEN, CONTACT NORMALLY CLOSED, OVERLOAD HEATER ELEMENT, SELECTOR SWITCH, START PUSHBUTTON, STOP PUSHBUTTON, RED MUSHROOM-HEAD MAINTAINED-TYPE EMERGENCY STOP PUSHBUTTON, LIMIT SWITCH, TIMED CONTACT, PILOT LIGHT, FUSE, CONNECTION POINT FOR EXTERNAL DEVICE, INTERNAL CONNECTION POINT.

LIGHTING FIXTURES

Table with 2 columns: DESCRIPTION and SYMBOL. Includes items like LIGHT FIXTURE, EXIT SIGN, EMERGENCY LIGHTING BATTERY UNIT WITH 2 LAMP HEADS, REMOTE EMERGENCY LIGHTING.

FIRE ALARM SYSTEM

Table with 2 columns: DESCRIPTION and SYMBOL. Includes items like MANUAL PULL STATION, AUDIO/VISUAL ALARM STATION, VISUAL ALARM, SMOKE DETECTOR, HEAT DETECTOR, FIRE ALARM SYSTEM CONTROL PANEL.

SECURITY SYSTEM

Table with 2 columns: DESCRIPTION and SYMBOL. Includes items like WEATHER PROOF SECURITY SYSTEM FUNCTION KEYPAD, DOOR CONTACT, INFRARED INTRUDER SENSOR, SECURITY ALARM CONTROL PANEL, SINGLE POLE WALL SWITCH, SPECIAL PURPOSE RECEPTACLE, JUNCTION BOX.

WIRING DEVICES

Table with 2 columns: DESCRIPTION and SYMBOL. Includes items like 20 AMPERE, 120 VOLT DUPLEX RECEPTACLE, GF1 20 AMPERE, 120 VOLT DUPLEX RECEPTACLE, WEATHERPROOF EXPLOSION PROOF MANUAL MOTOR STARTER, SPECIAL PURPOSE RECEPTACLE, JUNCTION BOX.

ABBREVIATIONS

Table with 2 columns: ABBREVIATION and DESCRIPTION. Lists various electrical symbols and their meanings, such as AMPERE, ALTERNATING CURRENT, ABOVE FINISHED FLOOR, ANALOG INPUT (PLC), AMPERE INTERRUPTING CAPACITY, ANALOG OUTPUT (PLC), AS REQUIRED, AUXILIARY, AMERICAN WIRE GAUGE, CONDUIT, CIRCUIT BREAKER, CIRCUIT, CONTROL PANEL, CONTROL RELAY, CONTROL POWER TRANSFORMER, COPPER, DIRECT CURRENT, DIGITAL INPUT (PLC), DIGITAL OUTPUT (PLC), ELECTRICAL CONTACTOR, EMERGENCY, ELECTRICAL METALLIC TUBING, EXPLOSION PROOF CL 1 DIV 1 GR D, ETHYLENE PROPYLENE RUBBER EQUIPMENT, EMERGENCY STOP, EXTERIOR, EXISTING, FURNISHED BY OTHERS, FLOW ELEMENT, FLOW INDICATOR TRANSMITTER, FORWARD NEUTRAL REVERSE, FLOW SWITCH, FUSE, FULL VOLTAGE REVERSING, FULL VOLTAGE NON-REVERSING, FURNISHED WITH EQUIPMENT, FULL VOLTAGE NON-REVERSING, GROUND, HAND-OFF-AUTOMATIC, HORSEPOWER, HERTZ, INTERMEDIATE METAL CONDUIT, INTRINSICALLY SAFE RELAY, JUNCTION BOX, KILO, THOUSAND CIRCULAR MILS, KILOVOLT, KILOVOLT-AMPERE, LOCAL, LOCAL CONTROL PANEL, LOCAL CONTROL STATION, LEVEL ELEMENT, LEVEL INDICATOR, LEVEL INDICATOR TRANSMITTER, LIGHTING PANEL, LEVEL SWITCH, L=LOW, H=HIGH, LL=LOW LOW, HH=HIGH HIGH, LEVEL TRANSMITTER, MAIN CIRCUIT BREAKER, MOTOR CONTROL CENTER, MOTOR CIRCUIT PROTECTOR, MANUFACTURER, MAIN LUG ONLY, MOTOR STARTER, MOUNTED, NORMALLY CLOSED, NEGATIVE, NEUTRAL, NORMALLY OPEN, NOT TO SCALE, OVERHEAD, OVERLOAD, POLE, PUSHBUTTON, PRESSURE ELEMENT, POWER FACTOR, PHASE, PRESSURE INDICATOR TRANSMITTER, PROGRAMMABLE LOGIC CONTROLLER, PANEL, PRIMARY, PRESSURE TRANSMITTER, POLYVINYL CHLORIDE, REMOTE, RIGID GALVANIZED STEEL CONDUIT, RIGID STEEL CONDUIT, SURFACE, SECONDARY, SHIELDED CABLE, SPEED INDICATOR, SOLID NEUTRAL SPARE, SURGE PROTECTIVE DEVICE, SWITCH, SYMMETRICAL, TRANSFORMER, TERMINAL BLOCKS, TIME DELAY RELAY, TEMPERATURE ELEMENT, TEMPERATURE INDICATING TRANSMITTER, TEMPERATURE LOW, TRANSFORMER, TEMPERATURE SWITCH, TWISTED SHIELDED CABLE, VOLT, VOLT-AMPERE, VARIABLE FREQUENCY DRIVE, WIRE, CROSS LINKED POLYETHYLENE, TRANSFORMER, LIMIT SWITCH CLOSED, LIMIT SWITCH OPEN.

GROUNDING

Table with 2 columns: DESCRIPTION and SYMBOL. Includes items like GROUND ROD, BARE COPPER CONDUCTOR EMBEDDED IN CONCRETE OR BURIED, MECHANICAL CONNECTION.

GENERAL NOTES

- 1. ALL CONDUIT AND EQUIPMENT SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE CURRENT NATIONAL ELECTRICAL CODE.
2. CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND STRUCTURES. EXPOSED CONDUITS SHALL BE INSTALLED PARALLEL TO BEAMS AND WALLS.
3. CONDUITS SHALL BE PROPERLY TERMINATED WITH NEAT CONNECTIONS TO ALL ASSOCIATED EQUIPMENT.
4. CONTROL AND INSTRUMENTATION CONDUIT SIZES AND NUMBER OF CONDUCTORS ARE TO BE DETERMINED FROM SCHEMATIC DIAGRAMS, INSTRUMENTATION DIAGRAMS, AND/OR SPECIFICATIONS, IF NOT DIRECTLY SHOWN ON POWER PLANS. THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUIT REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL AND INSTRUMENTATION EQUIPMENT. MODIFICATIONS REVIEWED BY THE ENGINEER WITH NO EXCEPTIONS TAKEN, MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED. THE BASIC SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND SPECIFICATIONS. EACH CONTROL AND INSTRUMENTATION CONDUIT SHALL ALSO CONTAIN 10 PERCENT SPARE CONDUCTORS, WITH A MINIMUM OF TWO SPARES, UP TO THE LIMIT OF CONDUIT FILL AS SPECIFIED BY THE NATIONAL ELECTRICAL CODE. INSTRUMENTATION SHIELDED CABLES SHALL BE INSTALLED IN RGS CONDUIT. SEPARATE FROM OTHER POWER WIRING.
5. EACH CONDUIT TO CARRY GROUND WIRE(S) IN ADDITION TO NUMBER OF CONDUCTORS SHOWN ON DRAWINGS OR PER NOTE 4 ABOVE. ALL GROUNDING MUST CONFORM TO ARTICLE 250 OF CURRENT NATIONAL ELECTRICAL CODE.
6. MINIMUM CONDUIT SIZE SHALL BE 3/4" TRADE SIZE, UNLESS OTHERWISE NOTED ON THE ELECTRICAL DRAWINGS. GENERAL LIGHTING, RECEPTACLE AND HVAC POWER CIRCUITS MAY BE 1/2" TRADE SIZE CONDUIT INSTALLED PER NEC. MINIMUM POWER WIRING SHALL BE 2#12 AWG WITH GROUND AND 2#14 AWG FOR CONTROL. MINIMUM INSTRUMENTATION CABLE SHALL BE 2/C#16 AWG TWS AND 3#16 AWG TWS FOR SPEED POTENTIOMETERS AND RTD'S. PROVIDE CONDUIT AND WIRING AS INDICATED.
7. ALL SURFACE MOUNTED PANELS ON THE INSIDE OF EXTERIOR WALLS ABOVE GRADE, OR IN OTHER LOCATIONS CONSIDERED AS DAMP, SHALL BE MOUNTED TO MAINTAIN A 1/4" AIR SPACE BETWEEN THE ENCLOSURE AND THE WALL.
8. ELECTRICAL EQUIPMENT LOCATIONS ARE APPROXIMATE ONLY. COORDINATE LOCATIONS WITH PROCESS PIPING AND OTHER DRAWINGS. CONTRACTOR SHALL COORDINATE MANUFACTURER'S EQUIPMENT REQUIREMENTS WITH SPACE AVAILABLE. FINAL CONTROL PANEL LOCATIONS SHALL BE FIELD COORDINATED.
9. ALL FIELD CONTROL CONDUCTORS WILL TERMINATE AT INDIVIDUAL TERMINAL BLOCKS WITHIN THE CONTROL ENCLOSURE. SERIES AND PARALLEL CONNECTION OF FIELD CONTROL CONDUCTORS WILL BE MADE ONLY AT CONTROL PANEL OR MOTOR CONTROL CENTER TERMINAL BLOCKS.
10. GROUND ALL CONDUCTOR SHIELDS AT CONTROL PANEL ONLY - DO NOT GROUND SHIELDS AT BOTH ENDS.
11. AT THE FOLLOWING LOCATIONS, UNLESS OTHERWISE NOTED, PULL, JUNCTION, TERMINAL, SWITCH, AND OUTLET BOXES SHALL BE CAST IRON WHERE STEEL CONDUIT IS TERMINATED; OR SHALL BE CAST ALUMINUM WHERE ALUMINUM CONDUIT IS TERMINATED:
A - AT LOCATIONS WHERE VAPORTIGHT LIGHTING FIXTURES AND/OR WATERTIGHT RECEPTACLES ARE INDICATED.
B - AT LOCATIONS ON OR IN ALL OUTSIDE WALLS.
C - OUTDOORS
12. NAMEPLATES SHALL CONFORM STRICTLY TO INSTRUCTIONS IN THE ELECTRICAL SPECIFICATIONS AND ON THE DRAWINGS. THE FOLLOWING SHALL HAVE NAMEPLATES:
A - ALL LOCAL CONTROL STATIONS AT OR NEAR EQUIPMENT
B - ALL PANELBOARDS
C - GANGED LIGHT SWITCHES
D - PROCESS CONTROL PANELS
13. CONTRACTOR SHALL PROVIDE ALL CONDUIT, WIRING, EQUIPMENT, AND CONTROL DEVICES AS INDICATED BY SCHEMATICS, SINGLE LINE DIAGRAMS, SCHEDULES, PLANS, SPECIFICATIONS, AND VENDOR DOCUMENTATION TO PROVIDE A COMPLETE WORKING SYSTEM. SINCE NOT ALL HOME RUNS ARE SHOWN ON PLANS, THE CONTRACTOR SHALL REFERENCE ALL SINGLE LINE AND SCHEMATIC DIAGRAMS, SCHEDULES, AND VENDOR DOCUMENTATION TO DETERMINE CONDUIT AND WIRING REQUIREMENTS.
14. PROVIDE CONCRETE HOUSEKEEPING PADS (4" HIGH) UNDER ELECTRICAL AND INSTRUMENTATION EQUIPMENT THAT IS DESIGNED TO BE FLOOR MOUNTED. PROVIDE SUBMITTAL SKETCH FOR ENGINEER REVIEW.
15. CONTRACTOR SHALL PROVIDE A COMPLETE WORKING OPERATING SYSTEM IN ACCORDANCE WITH ALL DRAWINGS, SPECIFICATIONS, CODES AND STANDARDS.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING ALL OF THE ELECTRICAL DRAWINGS AND CONDUIT AND WIRE SCHEDULES RELATIVE TO THE CONDUIT AND WIRE TO BE PROVIDED ON THIS PROJECT. THE INTENT OF THE CONTRACT DOCUMENTS IS TO PROVIDE DETAILED INFORMATION OF SPECIFIC INDIVIDUAL RUNS OF CONDUIT AND WIRE TO SPECIFIC EQUIPMENT. THE CONTRACTOR IS DIRECTED TO COMBINE CONDUIT AND WIRE RUNS AS MUCH AS POSSIBLE. THE LIMITING FACTOR FOR COMBINING CONDUIT AND WIRE SHALL BE BASED ON THE DERATING FACTORS ALLOWED PER THE NATIONAL ELECTRICAL CODE (NEC) BASED ON EQUIPMENT RATINGS AND REQUIRED AMPACITY RATINGS. CONTRACTOR IS DIRECTED TO USE THE MOST COST-EFFECTIVE CONDUIT AND WIRE RUNS CONSISTENT WITH THESE REQUIREMENTS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
17. 120V CIRCUITS EXCEEDING 100 FEET IN LENGTH SHALL BE NO 10 AWG WIRING, MINIMUM.
18. POWER CONDUITS FOR THREE PHASE AND SINGLE PHASE CIRCUITS (DESIGNATED WITH "P" NUMBERS) ARE SHOWN ON POWER PLANS, WITH CONDUIT SIZES AND WIRING INFORMATION INDICATED IN THE CONDUIT AND WIRE SCHEDULES.
19. CONTROL AND INSTRUMENTATION SIGNAL CONDUITS (DESIGNATED WITH "C" AND "S" NUMBERS OR, ALTERNATIVELY, INDICATED BY WAY OF A LEGEND) ARE SHOWN ON CONTROL AND INSTRUMENTATION WIRING DIAGRAMS, WITH CONDUIT SIZES AND WIRING INFORMATION INDICATED EITHER IN THE LEGEND OR IN CONDUIT AND WIRE SCHEDULES. THE CONTRACTOR SHALL NOTE THAT THE MAJORITY OF CONTROL AND INSTRUMENTATION SIGNAL CONDUITS AND WIRING REQUIRED FOR THIS CONTRACT IS INDICATED IN THE AFOREMENTIONED LEGEND AND DOES NOT APPEAR IN THE CONDUIT AND WIRE SCHEDULES. FOR INSTRUMENTS REQUIRING 120V POWER SUPPLIES, THIS INFORMATION IS ALSO SHOWN ON THE CONTROL AND INSTRUMENTATION WIRING DIAGRAMS.
20. PROVIDE CONDUIT EXPANSION PROTECTION FOR ALL EXTERIOR CONDUIT SYSTEMS.
21. FOR ALL OUTDOOR ELECTRICAL EQUIPMENT AND INSTRUMENTATION, CONTRACTOR SHALL USE CONDUIT INSTALLATION MEANS AND METHODS NECESSARY TO MITIGATE MOISTURE AND CONDENSATION PER NEC AND INSTALLATION METHODS LISTED IN SPECIFICATIONS. MITIGATION METHODS INCLUDE DRIP LOOPS, AVOIDING TOP ENTRY, USE OF BREATHERS, DRAINS, AND DUCT SEALANT AS NECESSARY.
22. DO NOT SCALE DISTANCES OR DIMENSIONS FROM THE DRAWINGS. WRITTEN DIMENSIONS SHALL PREVAIL. REPORT ANY DISCREPANCIES TO THE ENGINEER.

GENERAL DEMOLITION NOTES:

- 1. THE EXISTING ELECTRICAL PLAN FOR THIS PROJECT IS BASED ON INFORMATION PROVIDED BY OTHERS AND FIELD SURVEY OF THE SITE. GENERAL CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
2. FIELD VERIFY ALL CONDITIONS AFFECTING THE WORK PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
3. PROTECT ALL EXISTING ITEMS AND EQUIPMENT ADJACENT TO THE WORK AREA. ALL EXISTING ITEMS, EQUIPMENT AND MATERIALS DAMAGED OR AFFECTED BY THE WORK SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
4. THE EXISTING FACILITY SHALL REMAIN OPERATIONAL DURING CONSTRUCTION. SEE SPECIFICATION SECTIONS 01010 AND 16000 FOR ADDITIONAL DETAILS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE DEMOLITION AND CONSTRUCTION WITH THE OWNER'S REQUIREMENTS TO MAINTAIN FACILITY OPERATION. ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY SERVICES AS NECESSARY.
5. PATCH, REPAIR AND REFINISH ALL EXISTING SURFACES AFFECTED BY THE WORK, TO THE SATISFACTION OF THE ENGINEER.
6. ALL ITEMS SHOWN ON THE PLANS WITH SHADING ARE TO BE REMOVED AND DISPOSED OF, UNLESS OTHERWISE INDICATED. THIS SHALL INCLUDE ALL ASSOCIATED CONDUIT, WIRING, BOXES, DEVICES, CONTROLS, ETC. UNLESS OTHERWISE NOTED, THE OWNER RESERVES THE RIGHT TO RETAIN ANY EQUIPMENT OR MATERIALS. THE CONTRACTOR WILL STORE ON SITE AND PROTECT SUCH ITEMS IN A MANNER ACCEPTABLE TO THE OWNER AND ENGINEER. ALSO REFER TO THE STRUCTURAL, MECHANICAL, PROCESS AND ELECTRICAL DRAWINGS FOR A COMPLETE REQUIREMENT OF DEMOLITION WORK FOR THIS PROJECT.

NEMA CLASSIFICATIONS FOR NEW ELECTRICAL EQUIPMENT AND ENCLOSURES (UNLESS OTHERWISE NOTED)

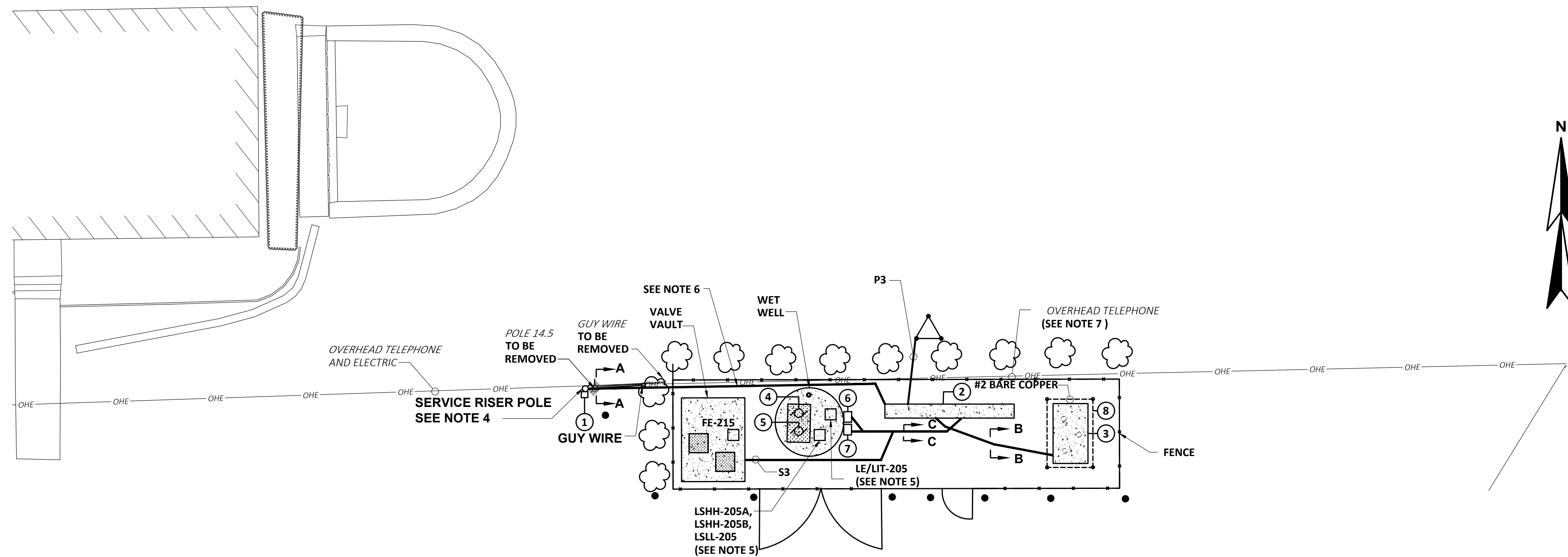
Table with 2 columns: ROOM NAME and NEMA RATING. Includes items like VALVE VAULT (7 CLASS 1, DIV.2 (GR.C & D)), WETWELL (SEE NOTE 2) (7 CLASS 1, DIV.1 (GR.C & D)), GENERAL OUTDOORS (4X).

NOTES:

- 1. THE AREAS NOTED SHALL BE RATED AS INDICATED, EXCEPT THAT EQUIPMENT SUCH AS MOTOR CONTROL CENTERS, SWITCHBOARDS, AND TRANSFORMERS SHALL BE RATED AS SPECIFIED. PANELBOARDS AND TRANSFORMERS SHALL BE, AT A MINIMUM, RATED NEMA 12 IF NOT SPECIFIED.
2. AREAS WITHIN 3' OF VENTS ARE RATED NEMA 7(CLASS 1, DIV. 1) AND BETWEEN 3' AND 5' ARE RATED NEMA 7(CLASS 1, DIV. 2). AREAS 18" ABOVE AND WITHIN 3' FROM HATCH OPENINGS ARE RATED NEMA 7(CLASS 1, DIV. 2). AREAS WITHIN A 3' ENVELOPE FROM DOORS ARE RATED NEMA 7(CLASS 1, DIV. 2).

Project information and revision table. Includes PROJECT NO: 20374, DESIGNED BY: CABELL, CAD COORD: D.SAVAGE, CHECKED BY: K.NEV, DATE: 01/09/23, APPROVED BY: CABELL, DATE: 05/11/23, SUBMISSION: CONTRACT DOCUMENTS. Revision table with columns for NO, APPD, DATE.

WRIGHT-PIERCE logo and contact information: 603.430.3728 | www.wright-pierce.com, 230 COMMERCE WAY, SUITE 302, PORTSMOUTH, NH 03801. City of Portsmouth, New Hampshire Marjorie Street Pump Station. Electrical Legend, Abbreviations, Notes and NEMA Schedule. Drawing E-1.



NOTES:

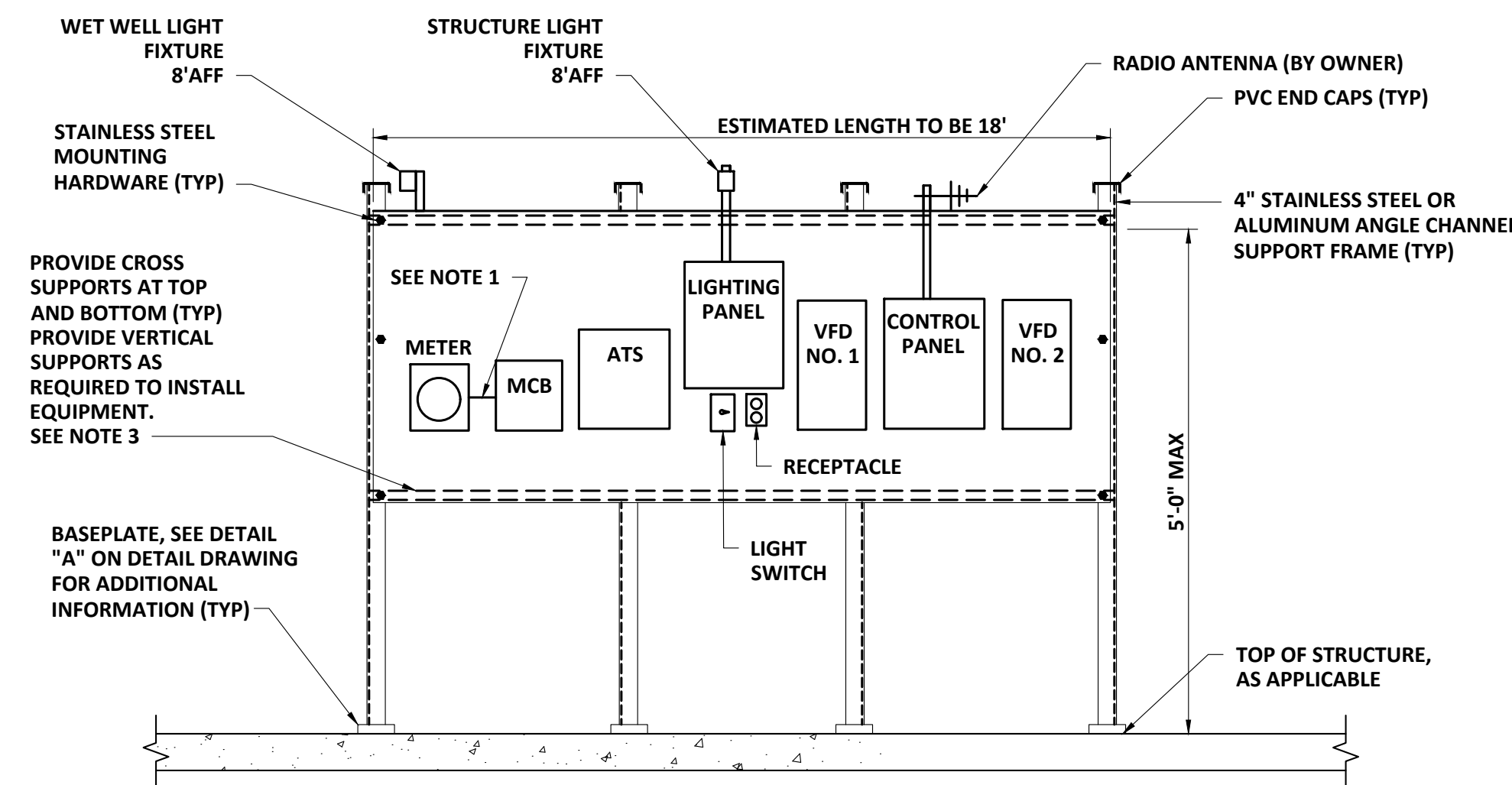
- FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES, REFER TO DRAWING E-1.
- FOR INFORMATION REGARDING CONDUIT AND WIRING REQUIREMENTS, REFER TO GENERAL NOTES 19 AND 20 ON DRAWING E-1.
- REFER TO ELEVATION DETAIL, THIS SHEET, FOR EQUIPMENT ORIENTATION TO BE INSTALLED ON STRUCTURE FOR ADDITIONAL INFORMATION.
- POWER COMPANY TO REMOVE AND REPLACE EXISTING POLE AND GUY WIRE WITH A NEW SERVICE RISER POLE AND INSTALL TRANSFORMER.
- INSTALL LEVEL INSTRUMENTS ON EAST SIDE OF THE HATCH.
- SERVICE CONDUIT ARE TO BE CONCRETE ENCASED.
- THE OVERHEAD TELEPHONE AND FIBER OPTIC LINES ARE TO BE RELOCATED DURING CONSTRUCTION. THE CONTRACTOR IS TO COORDINATE THIS WORK WITH THE RESPECTIVE UTILITY COMPANY FOR CONSTRUCTION OF THE PUMP STATION.
- PROVIDE GROUND RING WITH 4 GROUND RODS TO GROUND THE REBAR OF GENERATOR FOUNDATION AND GENERATOR FRAME AS REQUIRED THE NEC.

EQUIPMENT LEGEND

- ① POLE MOUNTED TRANSFORMER
- ② ELECTRICAL MOUNTING STRUCTURE - SEE NOTE 3
- ③ GENERATOR
- ④ PUMP NO. 1
- ⑤ PUMP NO. 2
- ⑥ POWER JUNCTION BOXES (PUMP NO.1, PUMP NO.2)
- ⑦ INSTRUMENTATION JUNCTION BOX
- ⑧ GENERATOR GROUND RING - SEE NOTE 8-

MAJORIE ST. SITE PLAN DEMOLITION/MODIFICATIONS

SCALE: 1"=10'

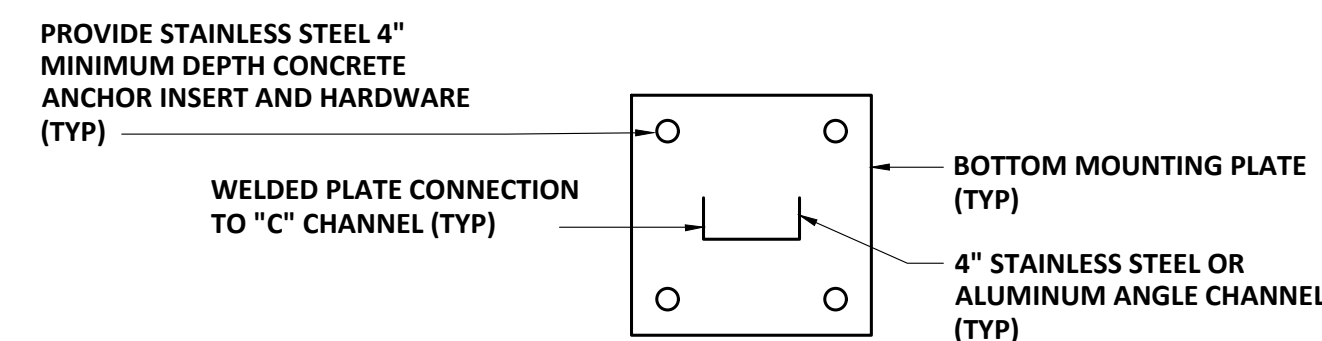


NOTES:

- CONDUIT IS NOT SHOWN FOR CLARITY CONNECTING BETWEEN PANELS.
- ALL CONNECTIONS TO BE RIGID CONDUIT UTILIZING CONDUIT HUBS FOR CONNECTION TO ALL ENCLOSURES.
- PROVIDE METAL CHANNEL THROUGHOUT BACKBOARD AS REQUIRED TO INSTALL EQUIPMENT.

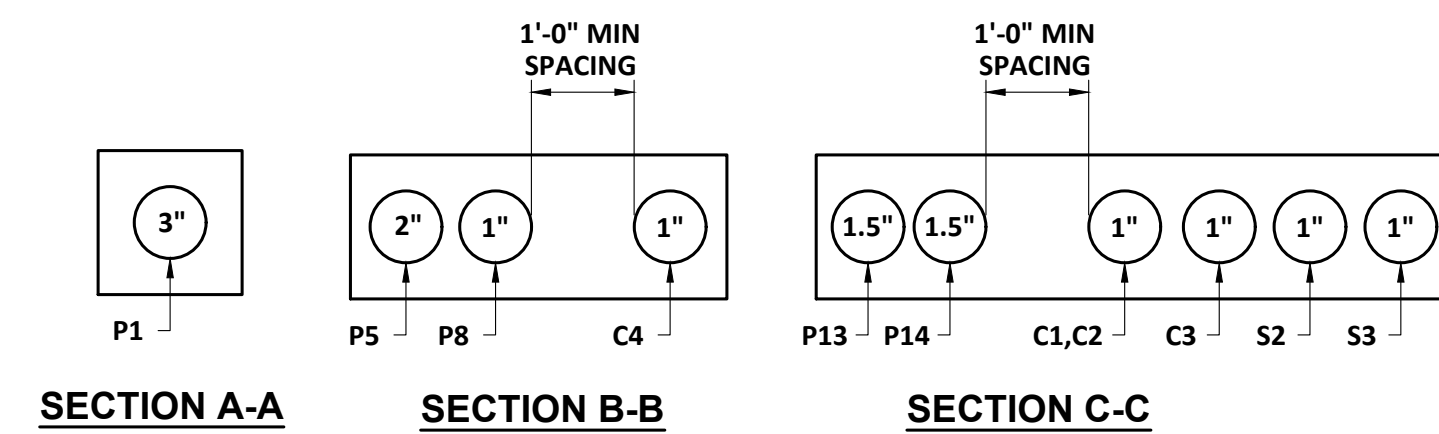
EQUIPMENT MOUNTING STRUCTURE

NTS



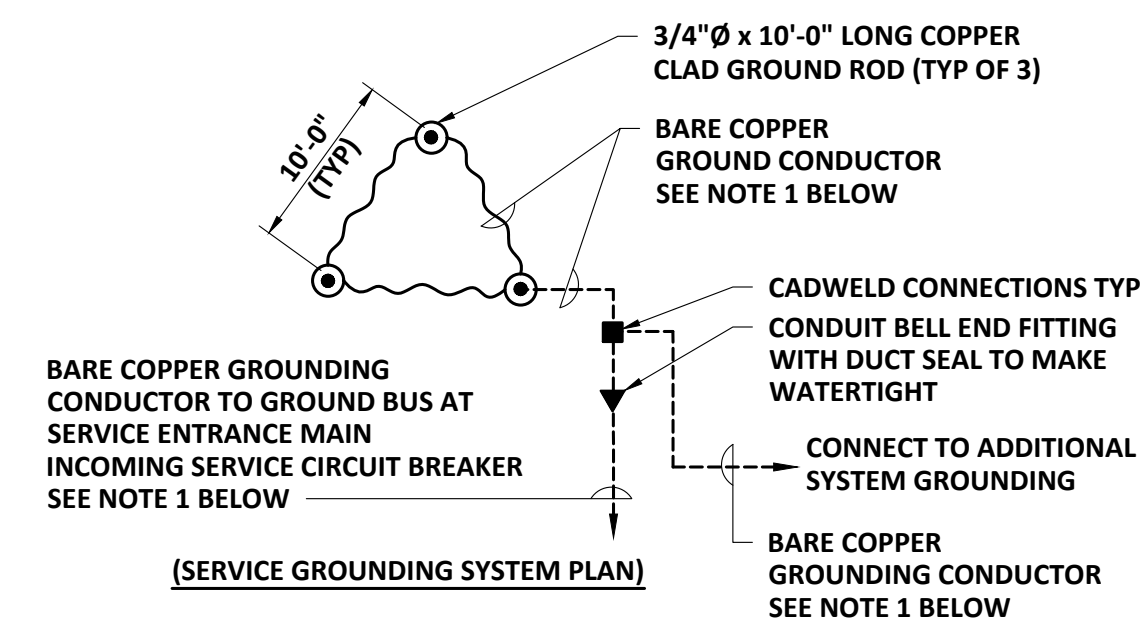
DETAIL "A"

NTS



DUCT BANK SECTIONS

NTS

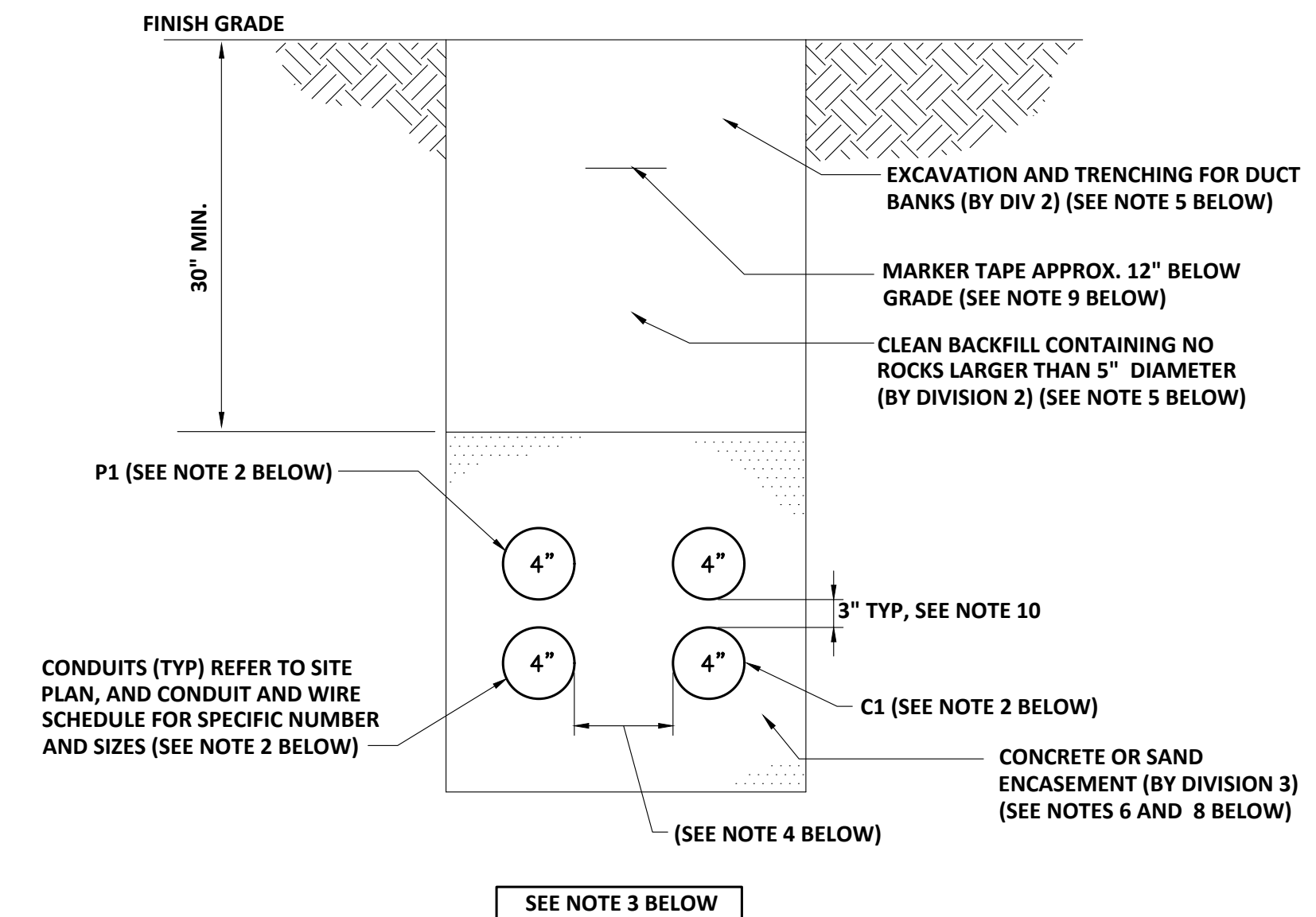


NOTES:

- GROUND CONDUCTOR SIZE IS SHOWN ON THE CONDUIT AND WIRE SCHEDULE.

SERVICE GROUNDING SYSTEM PLAN

NTS



(REFER TO NOTES BELOW FOR ADDITIONAL REQUIREMENTS)

NOTES: (DUCT BANK DETAIL)

- DIMENSIONS TYPICAL FOR ALL DUCT BANKS, UNLESS OTHERWISE NOTED.
- FOR CONDUIT DETAILS, SEE CONDUIT AND WIRE SCHEDULES. REFERENCES P1 AND C1 DENOTES CONDUIT NUMBERS. REFER TO SPECIFIC DUCT BANK SECTIONS AND CONDUIT AND WIRE SCHEDULES FOR DETAILS.
- THIS TYPICAL DUCT BANK SECTION HAS BEEN SHOWN AS AN EXAMPLE OF THE REQUIREMENTS FOR THE UNDERGROUND INSTALLATION FOR THE DUCT BANK SYSTEM. THIS DENOTES SPECIFIC SPACING, CONCRETE ENCASEMENT, REINFORCING, ETC. REQUIRED FOR DUCT BANK INSTALLATIONS. THE SPECIFIC CONDUIT SIZING AND NUMBERS HAVE BEEN SHOWN BY EACH SPECIFIC DUCT BANK SECTION.
- IT SHALL BE REQUIRED THAT A MINIMUM OF 1'-0" CLEARANCE BE PROVIDED AT ALL TIMES BETWEEN ALL POWER CONDUITS AND ALL SIGNAL AND/OR CONTROL CONDUITS IN ORDER TO AVOID ANY ELECTRICAL NOISE INTERFERENCE WITH THE CABLES OR WIRES WITHIN THESE SIGNAL AND CONTROL CONDUITS.
- EXCAVATION, TRENCHING AND BACKFILLING SHALL BE FURNISHED AND INSTALLED UNDER DIVISION 2 OF THIS CONTRACT.
- CONCRETE OR SAND ENCASEMENT SHALL BE FURNISHED AND INSTALLED UNDER DIVISION 3 OF THIS CONTRACT.
- INSTALL MARKER TAPE THE ENTIRE LENGTH OF EACH DUCT BANK.
- THERE SHALL BE 3" SPACING SEPARATION BETWEEN ALL CONDUITS, EXCEPT AS NOTED. ALSO THERE SHALL BE 3" SPACING ALL AROUND OUTSIDE OF THE CONDUIT DUCTBANK (TYP).

TYPICAL DUCT BANK DETAIL

NTS

NO	REVISIONS	APPD	DATE

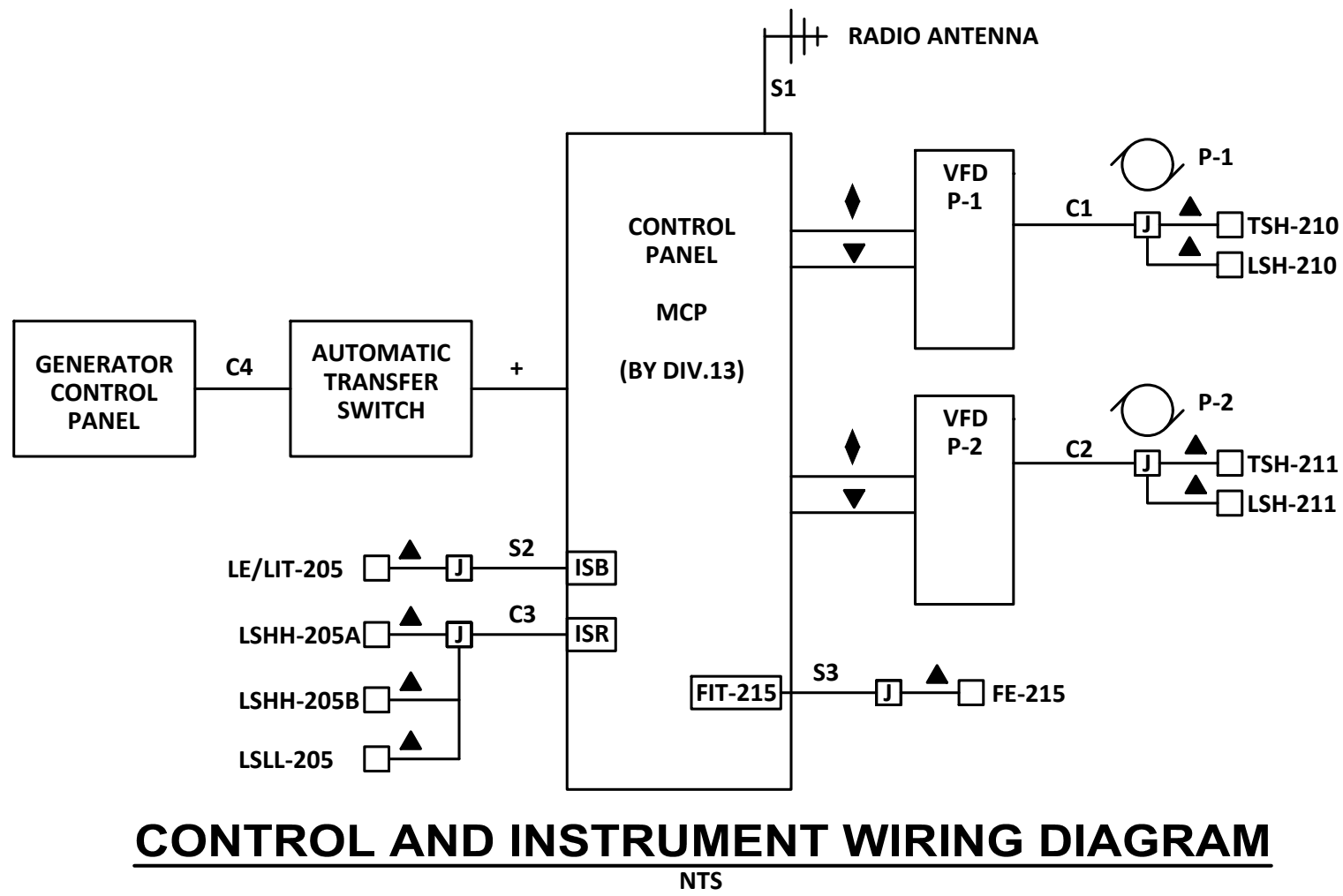
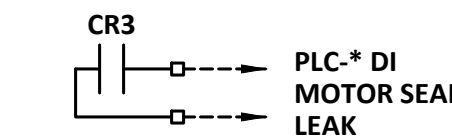
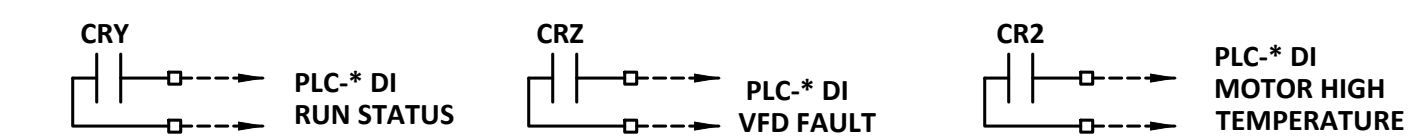
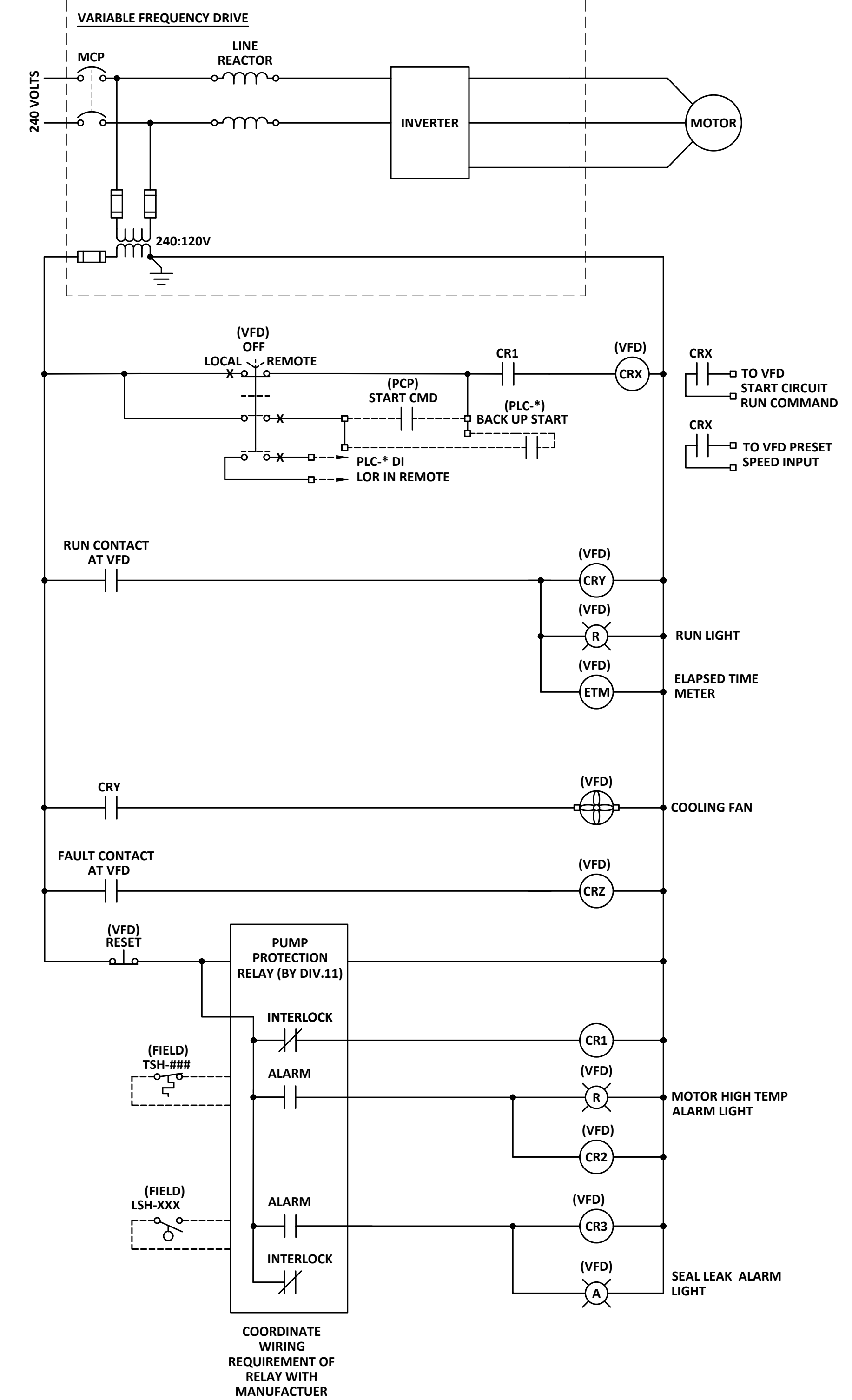
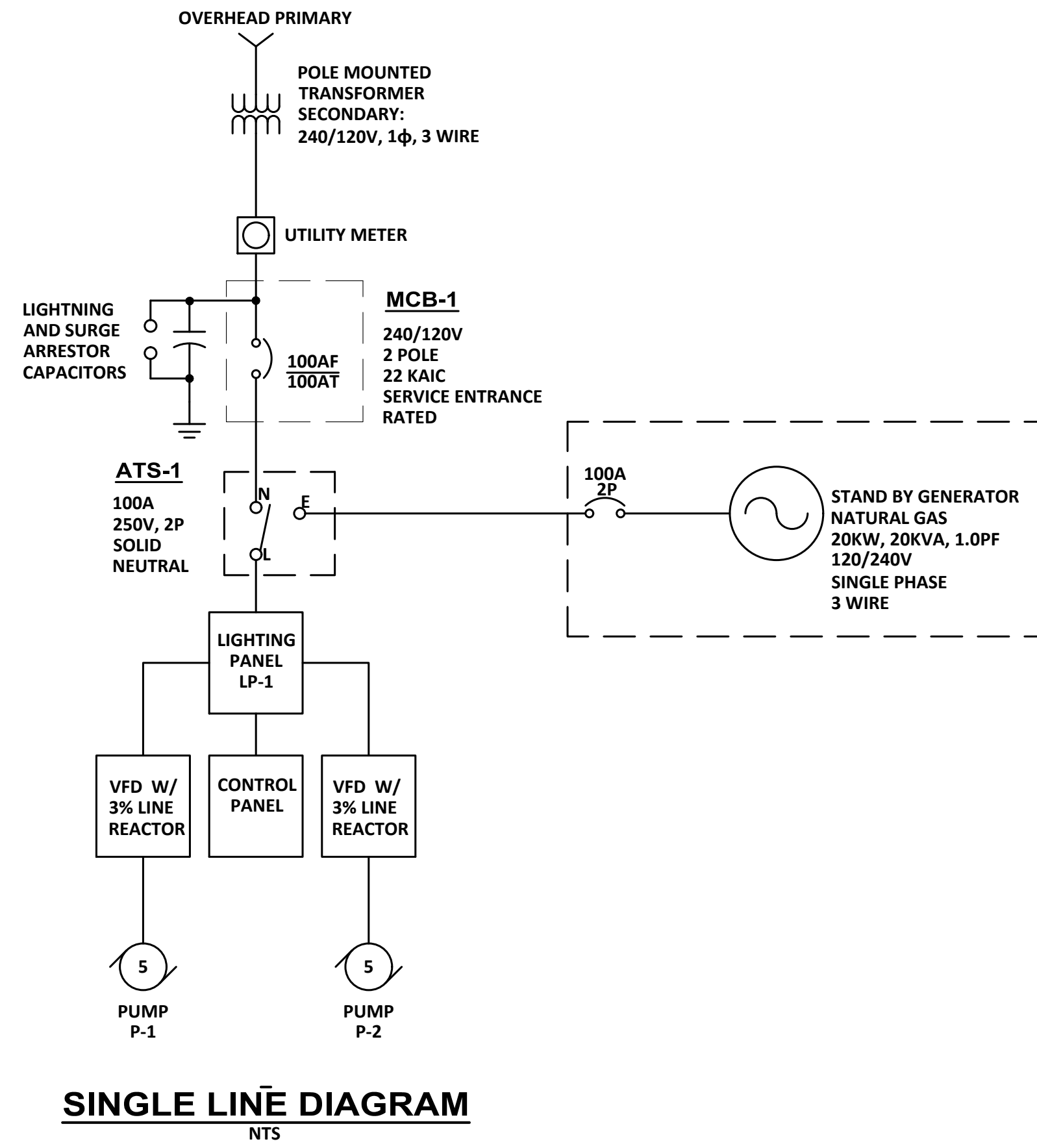
PROJECT NO: 20374	DESIGNED: CABELL	CAD COORD: D.SAVAGE	CHECKED: K.NIEV	DATE: 01/09/23	APPROVED: CABELL	DATE: 05/11/23	SUBMISSION: CONTRACT DOCUMENTS
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CITY OF PORTSMOUTH, NEW HAMPSHIRE
 MARJORIE STREET PUMP STATION
 ELECTRICAL SITE MODIFICATIONS PLAN

LAST SAVED BY: CHRIS ABELL 5/26/2023 3:40 PM

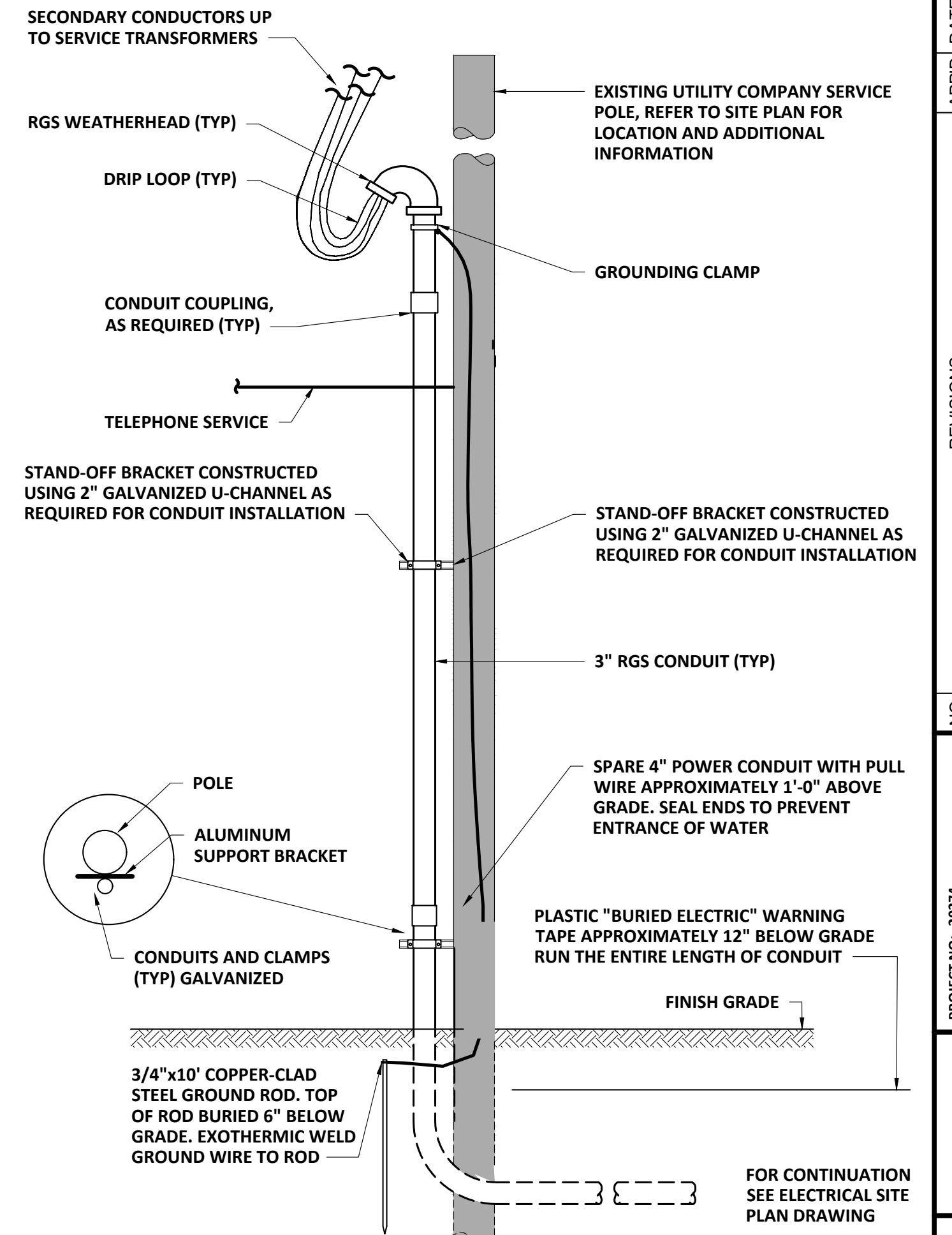
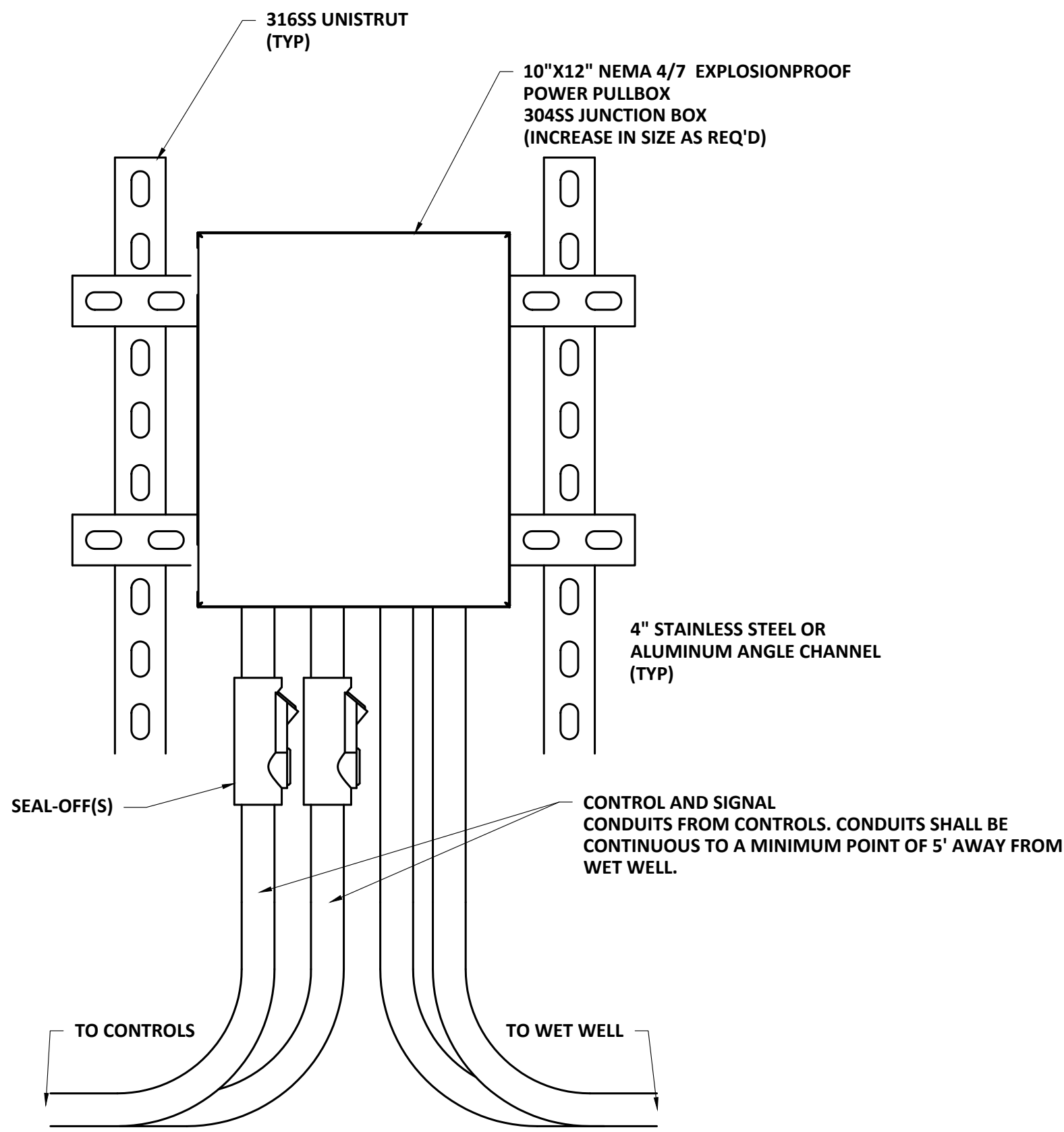
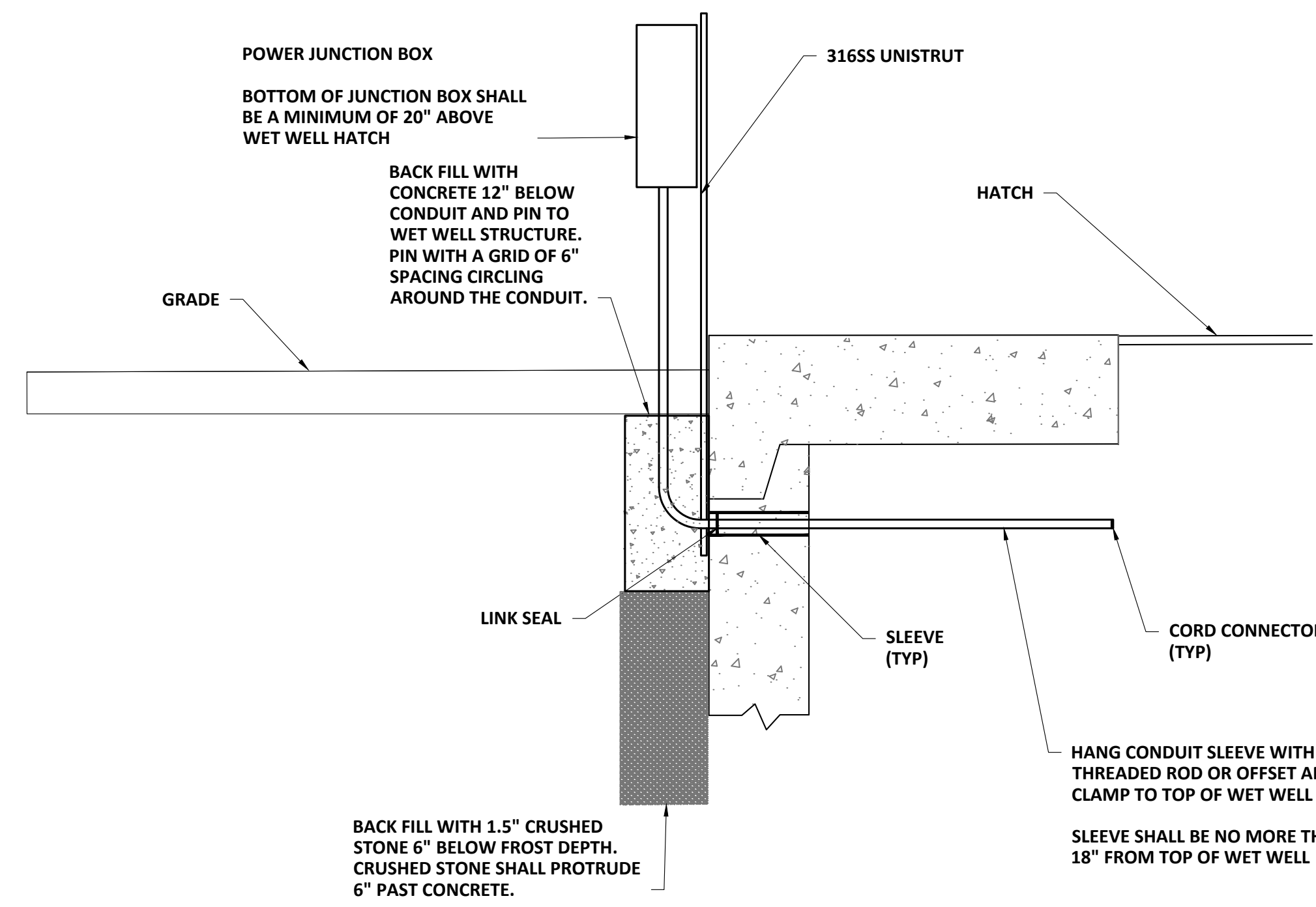
- NOTES:**
- FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES, REFER TO DRAWING E-1.
 - FOR INFORMATION REGARDING CONDUIT AND WIRING REQUIREMENTS, REFER TO GENERAL NOTES 19 AND 20 ON DRAWING E-1.
 - COORDINATE INSTALLATION OF UTILITY SERVICE AND METER WITH UTILITY COMPANY.



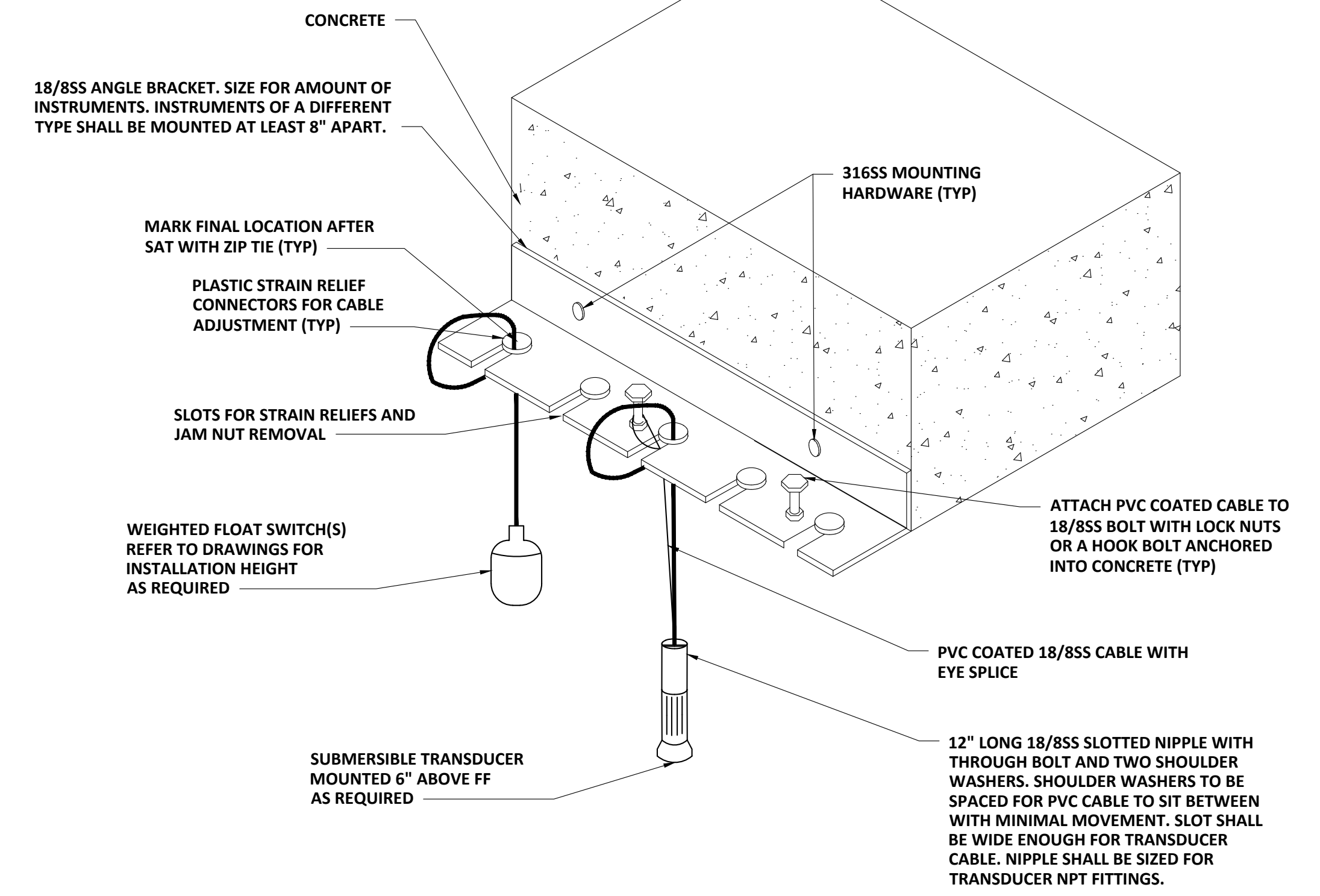
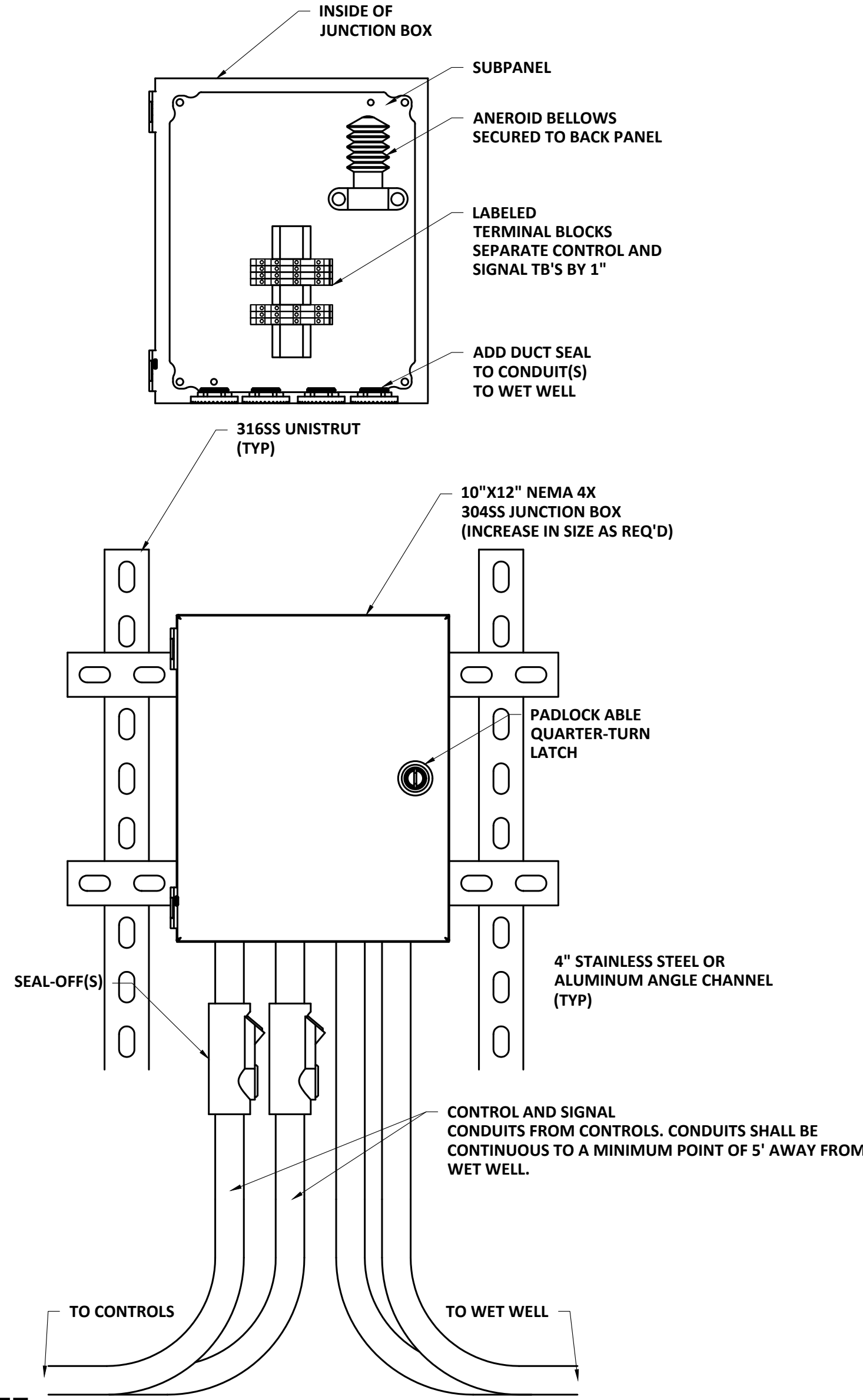
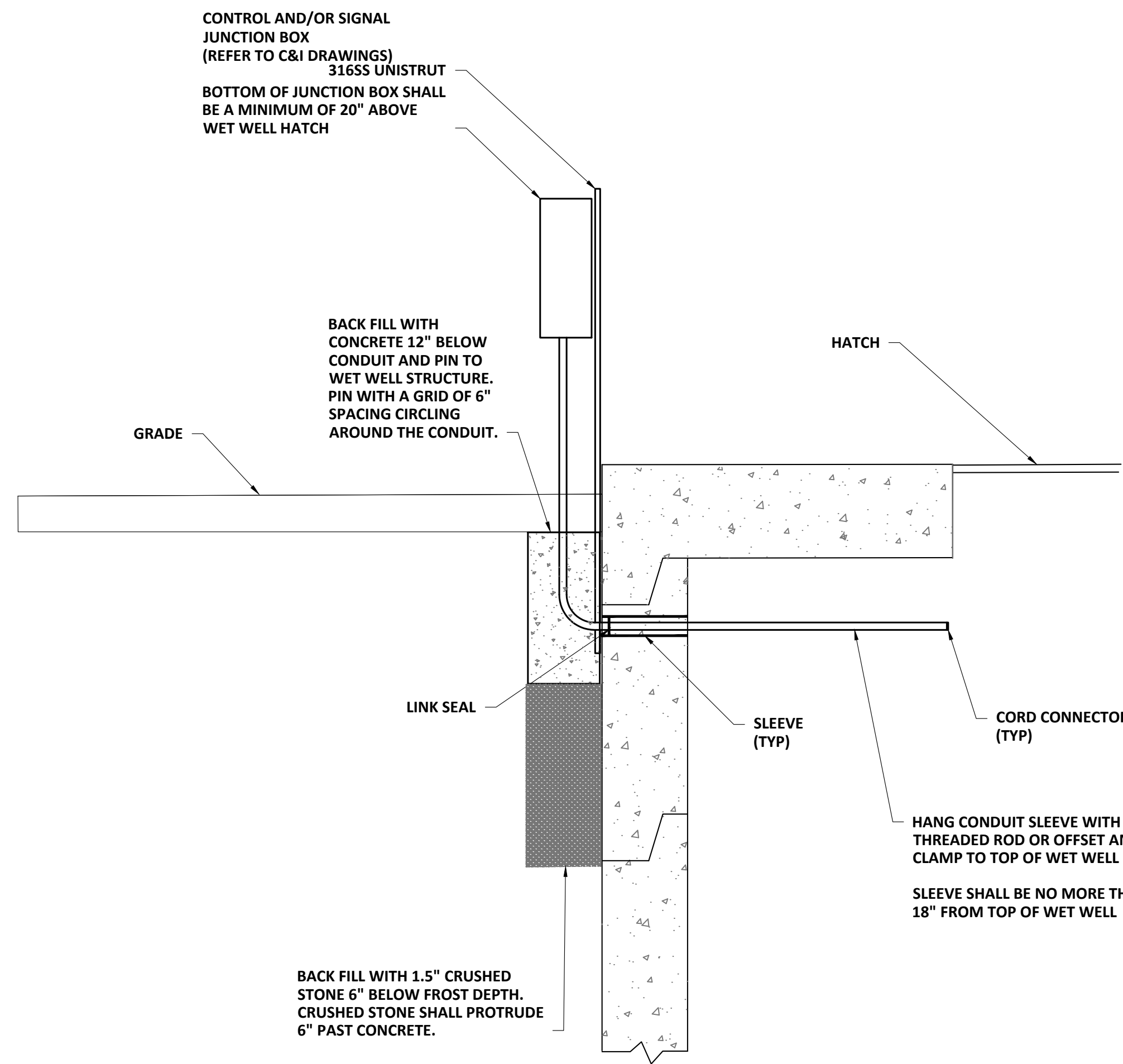
- LEGEND:**
- THE FOLLOWING SYMBOLS SHOWN ON THE CONTROL AND INSTRUMENTATION DIAGRAMS SHALL BE NOTED AS FOLLOWS:
- ▲ MANUFACTURER SUPPLIED CABLE, PROVIDE CONDUIT SIZED AS REQUIRED
 - PROVIDE 3/4" C, 4#14
 - ▬ PROVIDE 3/4" C, 6#14
 - ◀ PROVIDE 3/4" C, 8#14
 - ⊕ PROVIDE 3/4" C, 10#14
 - * PROVIDE 3/4" C, 12#14
 - ◆ PROVIDE 3/4" C, 14#14
 - ++ PROVIDE 1" C, 16#14
 - PROVIDE 1" C, 18#14
 - PROVIDE 3/4" C, 2#12 & 1#12 GND (POWER SUPPLY)
 - ◆ PROVIDE 3/4" C, (1)-2C #16 TWS
 - X PROVIDE 3/4" C, (2)-2C #16 TWS
 - ▼ PROVIDE 1" C, (3)-2C #16 TWS
 - PROVIDE 1" C, (1)-3C #16 TWS
 - ▲ PROVIDE 3/4" C, CAT 6 ETHERNET CABLE

	APPD	DATE	
REVISIONS			
NO	Δ	DATE	DESCRIPTION
PROJECT NO: 20374 DESIGNED: CABELL CAD COORD: D.SAVAGE CAD: CABELL CHECKED: S. CONWAY DATE: 01/09/23 APPROVED: CABELL DATE: 05/11/23 SUBMISSION: CONTRACT DOCUMENTS			
 WRIGHT-PIERCE 603.430.3728 www.wright-pierce.com 230 COMMERCIAL WAY, SUITE 302, PORTSMOUTH, NH 03801			
CITY OF PORTSMOUTH, NEW HAMPSHIRE MARJORIE STREET PUMP STATION			
ELECTRICAL SINGLE LINE DIAGRAM & SCHEMATICS			
DRAWING			
E-3			

A:\ENGIN\PORTSMOUTH\20374-MARJORIE\DRAWINGS\EE\20374-ES-SINGLELINE.DWG | 20374-ES-SINGLELINE | 1:10.12364677 | 15/11/2023 12:26:45 PM | SANDY, MAURO



- RISER POLE NOTES:**
1. THE CONTRACTOR SHALL PROVIDE UNDERGROUND CONDUIT AND ROUTING AS SHOWN ON THIS DETAIL, SITE PLANS AND AS NOTED ON THE CONDUIT AND WIRING SCHEDULE. INSTALLATION TO MEET THE REQUIREMENTS OF THE UTILITY COMPANY.



NO.	REVISIONS	DATE	APPD.

PROJECT NO: 20374
 DESIGNED: CABELL
 CAD COORD: D.SAUSAGE
 CAD: CABELL
 CHECKED: S. CONWAY
 DATE: 01/09/23
 APPROVED: CABELL
 DATE: 05/11/23
 SUBMISSION: CONTRACT DOCUMENTS

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 230 COMMERCIAL WAY, SUITE 302, PORTSMOUTH, NH 03801


CITY OF PORTSMOUTH, NEW HAMPSHIRE
MARJORIE STREET PUMP STATION

ELECTRICAL DETAILS

DRAWING
E-4

CONDUIT NO	SIZE		DESTINATION		REMARKS
	CONDUIT	CONDUCTOR	FROM	TO	
P1	3"	3#1	POLE MOUNTED TRANSFORMER	MAIN CIRCUIT BREAKER	VIA DUCT BANK
P2	NOT USED				
P3	3/4"	1#4 BARE COPPER	MAIN CIRCUIT BREAKER	GROUNDING SYSTEM	
P4	1-1/2"	3#1, 1#6 GND	MAIN CIRCUIT BREAKER	AUTOMATIC TRANSFER SWITCH	
P5	2"	3#1, 1#6 GND	AUTOMATIC TRANSFER SWITCH	GENERATOR	VIA DUCT BANK
P6	1-1/2"	3#1, 1#6 GND	AUTOMATIC TRANSFER SWITCH	LIGHTING PANEL	
P7	1"	2#12, 1#12 GND	LIGHTING PANEL	BACKBOARD RECEPTACLE	VIA DUCT BANK
P8	1"	4#10, 2#10 GND	LIGHTING PANEL	GENERATOR HEATER/BATTERY CHARGER	
P9	3/4"	2#12, 1#12 GND	LIGHTING PANEL	LIGHTS	
P10	3/4"	2#12, 1#12 GND	LIGHTING PANEL	PUMP CONTROL PANEL	
P11	1"	2#6, 1#10GND	LIGHTING PANEL	VARIABLE FREQUENCY DRIVE NO.1	
P12	1"	2#6, 1#10GND	LIGHTING PANEL	VARIABLE FREQUENCY DRIVE NO.2	
P13	1-1/2"	4/C #10 VFD CABLE	VARIABLE FREQUENCY DRIVE NO.1	PUMP NO.1	VIA DUCT BANK
P14	1-1/2"	4/C #10 VFD CABLE	VARIABLE FREQUENCY DRIVE NO.2	PUMP NO.2	VIA DUCT BANK
P15	NOT USED				
P16					
P17					
P18					
P19					
P20					
C1	1"	8#14	VARIABLE FREQUENCY DRIVE NO.1	PUMP NO.1 (TSH AND LSH-210)	
C2	1"	8#14	VARIABLE FREQUENCY DRIVE NO.2	PUMP NO.2 (TSH AND LSH-211)	
C3	1"	12#14	PUMP CONTROL PANEL	WETWELL FLOAT SWITCHES	INTRINSICALLY SAFE
C4	3/4"	8#14	AUTOMATIC TRANSFER SWITCH	GENERATOR CONTROL PANEL	
C5	NOT USED				
C6					
C7					
C8					
C9					
C10					
C11					
C12					
C13					
C14					
C15					
S1	1-1/2"	ANTENNA CABLE	CONTROL PANEL	RADIO ANTENNA	
S2	2"	(2) - 1#16 TW/S	CONTROL PANEL	SUBMERSIBLE TRANSDUCER LE/LT-205	INTRINSICALLY SAFE
S3	1"	MANUFACTURER CABLE	FIT-215 (CONTROL PANEL)	FE-215	
S4	NOT USED				
S5					

PANEL LP-1								
VOLTAGE: 240 / 120		PANEL LOCATION: BACKBOARD						
PHASE: 1		FEEDER POINT: MCB						
WIRE: 3		MOUNTING: SURFACE						
AIC: 10,000		MAIN TYPE: <input checked="" type="checkbox"/> MCB <input type="checkbox"/> MILO <input type="checkbox"/> TRIP AMPS						
BUS RATING: 100								
CKT NO.	AMPS	NO. POLES	DESCRIPTION	PHASE (VA)		NO. POLES	AMPS	CKT NO.
				A	B			
1	20	1	LIGHTING	100		1	20	2
3	20	1	CONTROL PANEL	200		1	20	4
5	50	2	VARIABLE FREQUENCY DRIVE NO.1		800	2	50	6
7								8
9	30	1	GENERATOR BLOCK HEATER	1500		1	20	10
11	20	1	SPARE			1	20	12
				800				
SUB-TOTAL:				1800	1600			
TOTAL:				3400				
ESTIMATED DEMAND LOAD:				100%	3.4	KVA		
DEMAND LINE CURRENT:				14.2	AMPS			

PROJECT NO: 20374	DESIGNED: CABELL	CAD COORD: D.SAVAGE	CAD: CABELL	CHECKED: S. CONWAY	DATE: 01/09/23	APPROVED: CABELL	DATE: 05/11/23	SUBMISSION: CONTRACT DOCUMENTS
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CITY OF PORTSMOUTH, NEW HAMPSHIRE MARJORIE STREET PUMP STATION ELECTRICAL SCHEDULES								
DRAWING E-5								



