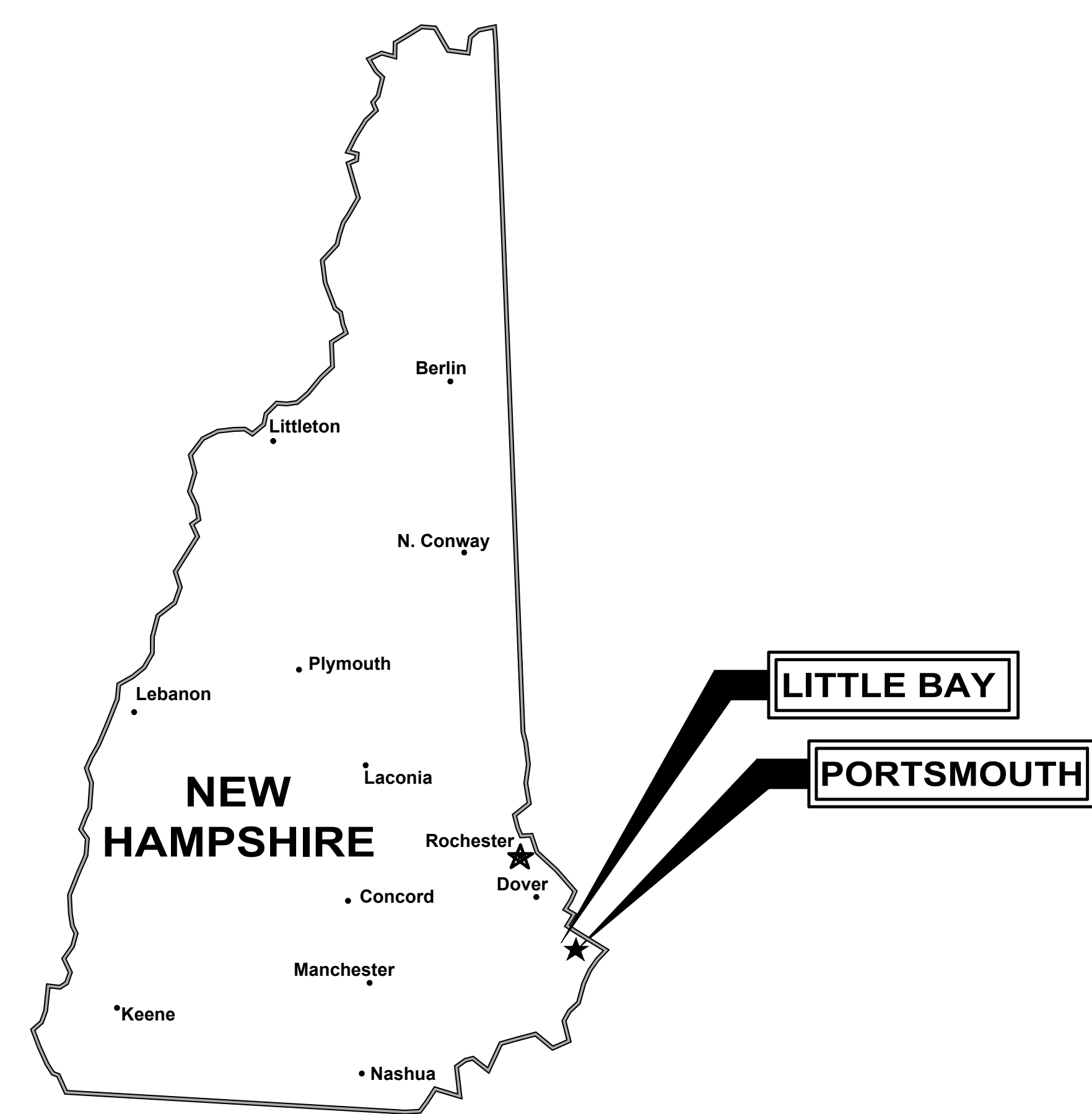


CITY OF PORTSMOUTH LITTLE BAY WATER TRANSMISSION MAIN VALVE IMPROVEMENTS

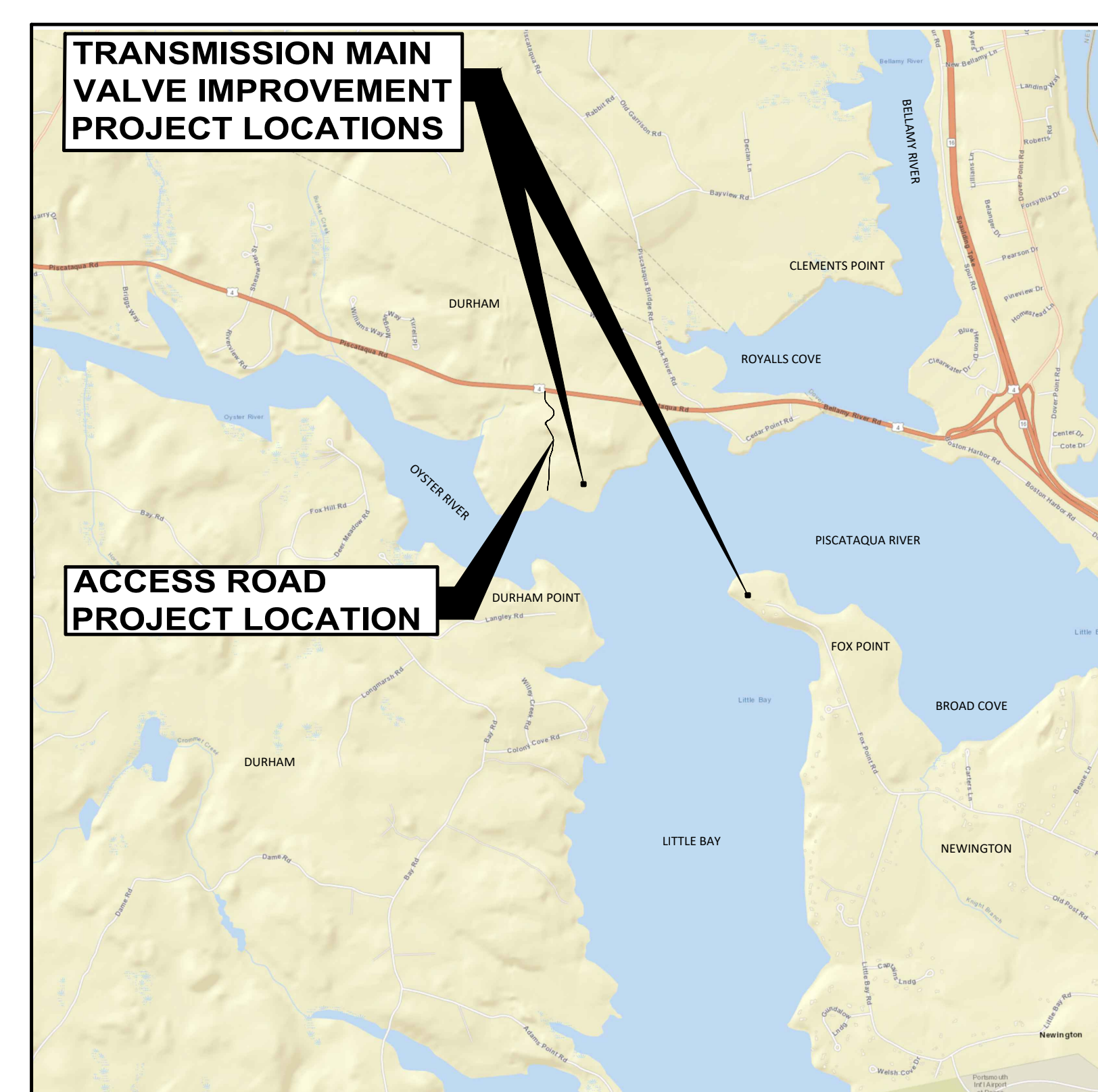
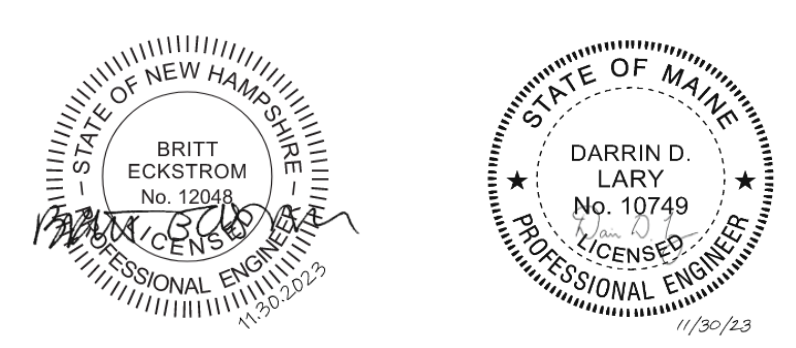
DURHAM & NEWINGTON, NH

NOVEMBER 2023 CONTRACT DRAWINGS



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LOCATION PLAN

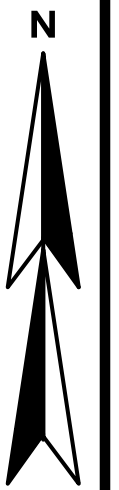


Offices Throughout New England
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FOR REVIEW 11/29/2023

FOR BIDDING 11/29/2023

WP PROJECT No. 14202A



SHEET INDEX
SCALE: 1"=150'

<p>CITY OF PORTSMOUTH WATER TRANSMISSION MAIN VALVE IMPROVEMENTS DURHAM-NEWINGTON, NEW HAMPSHIRE</p>		<p>WRIGHT-PIERCE Engineering a Better Environment 888.621.8156 www.wright-pierce.com</p>		<p>DESIGNED BY: D.LARY CAD CORP.: W.EDGAR CHECKED BY: D.LARY DATE: 11/19/2023 APPROVED BY: F.ECKSTROM DATE: 11/29/2023 PROJECT NO.: 34602</p>	
<p>DRAWING C-1</p>		<p>SHEET INDEX</p>		<p>NO. 1 CONTRACT DRAWINGS</p>	
<p>APP'D DATE B.ECK 11/29</p>		<p>SUBMISSIONS/REVISIONS</p>		<p>STATE OF MAINE DARRIN D No. 10749 LICENSED PROFESSIONAL ENGINEER</p>	
<p>STATE OF NEW HAMPSHIRE F. ECKSTROM No. 2004 LICENSED PROFESSIONAL ENGINEER</p>		<p>PROJECT NO.: 34602</p>		<p>DATE: 11/29/2023</p>	

GENERAL NOTES

- 1. THE CONTRACTOR IS REFERRED TO SECTION 01050 OF THE SPECIFICATIONS REGARDING COORDINATION WITH OTHERS, INCLUDING RESPONSIBILITIES AND RELATED COSTS.
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. ADJUSTMENT OF WATER, SEWER, AND DRAINAGE, COVERS OR SIMILAR STRUCTURES TO MATCH THE NEW PAVEMENT GRADE AND THE RELOCATION OF UTILITY POLES WILL BE PERFORMED BY THE APPROPRIATE UTILITY OR ITS AUTHORIZED REPRESENTATIVE. THE CONTRACTOR SHALL COOPERATE WITH THE UTILITY IN EVERY WAY TO EXPEDITE SUCH ADJUSTMENTS. CONTRACTOR IS RESPONSIBLE TO IMPLEMENT AND SCHEDULE ALL CONTRACTORS INFRASTRUCTURE WORK.
3. THE LOCATION AND LIMITS OF ALL ON SITE WORK AND STORAGE AREAS SHALL BE REVIEWED/COORDINATED WITH, AND ACCEPTABLE TO THE OWNER, TOWN OF DURHAM, TOWN OF NEWINGTON, AND ENGINEER.
4. ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO THE TRENCH EXCAVATION SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. DAMAGE 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.
5. IN THOSE INSTANCES WHERE POWER OR TELEPHONE POLE SUPPORT IS REQUIRED, THE CONTRACTOR SHALL PROVIDE A MINIMUM 48-HOUR NOTIFICATION TO THE UTILITY, RESPECTIVELY. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR TEMPORARY BRACING OF UTILITIES.
6. DO NOT SCALE DRAWINGS UNLESS OTHERWISE NOTED. WRITTEN DIMENSIONS AND STATIONING SHALL PREVAIL.
7. CONTRACTOR SHALL INSTALL AND MAINTAIN TRAFFIC CONTROL DEVICES AS NECESSARY AND IN A MANNER CONSISTENT WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.), N.H.D.O.T. STANDARDS, OR AS REQUIRED BY OWNER.
8. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY RIGHTS OF WAY AND PERMANENT 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 ANY SUCH RIGHTS-OF-WAY AND EASEMENTS ARE AVAILABLE FOR REVIEW FROM THE CITY OF PORTSMOUTH.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREVENTION OF EROSION. ALL DISTURBED EARTH SURFACES ARE TO 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 IS TO BE IN A MANNER THAT WILL MINIMIZE EROSION. MATERIALS AND METHODS USED FOR TEMPORARY EROSION CONTROL SHALL BE AS SPECIFIED BY THE "NEW HAMPSHIRE STORMWATER MANUAL" PREPARED BY THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES. REFER TO SPECIFICATION SECTION 02270.
10. COMPACTION TESTS SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 02200. ANY SETTLEMENT OCCURRING WITHIN ONE YEAR OF SUBSTANTIAL COMPLETION OF THE PROJECT WILL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
11. OPEN TRENCHES IN THE ROADWAY MUST BE BACKFILLED AT THE END OF THE WORKDAY, UNLESS PERMISSION IS GIVEN IN WRITING BY THE OWNER.
12. CONTRACTOR SHALL CONTROL DUST TO A TOLERABLE LIMIT AS OUTLINED IN SPECIFICATION SECTION 01562. CONTRACTOR SHALL NOT TRACK OR SPILL EARTH AND DEBRIS ON PUBLIC STREETS OUTSIDE THE PROJECT AREA. STREETS OPENED TO THE PUBLIC SHALL BE KEPT SWEEP AND FREE OF DEBRIS EACH DAY AT THE BEGINNING AND END OF WORK DAY. CROSS STREETS THAT BOUND THE PROJECT AREA WILL BE SWEEP AT LEAST ONCE EACH WEEK OR AS DIRECTED BY THE ENGINEER.
13. ALL AREAS (EXCEPT GRAVEL DRIVEWAYS) THAT ARE EXCAVATED, FILLED OR OTHERWISE DISTURBED BY THE CONTRACTOR AND ARE NOT TO BE PAVED OR FILLED WITH RIPRAP, SHALL BE LOAMED, GRADED, LIMED, FERTILIZED, SEEDED AND MULCHED, UNLESS OTHERWISE DETAILED IN THE PLANS OR PERMIT CONDITIONS.
14. 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. THE OWNER SHALL HAVE FIRST REFUSAL TO ALL EXCESS SOIL MATERIAL. EXCESS MATERIALS ACCEPTED BY THE OWNER SHALL BE DELIVERED BY THE CONTRACTOR TO THE PORTSMOUTH DEPARTMENT OF PUBLIC WORKS AT 680 PEVERLY HILL RD, PORTSMOUTH, NH 03801. THE CONTRACTOR SHALL DISPOSE OF ALL UNSUITABLE AND EXCESS MATERIAL NOT ACCEPTED FOR REUSE BY THE OWNER IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE CONTRACT DOCUMENTS AND ALL STATE, FEDERAL AND LOCAL REGULATIONS. SUITABLE MATERIAL WITH EXCESSIVE MOISTURE SHALL BE STOCKPILED AND MANAGED TO ALLOW DRYING BEFORE FUTURE USE ON PROJECT.
15. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
16. THE CONTRACTOR IS TO TAKE SPECIAL CARE NOT TO DAMAGE TREES WITHIN THE CONSTRUCTION AREA UNLESS THEY ARE NOTED TO BE REMOVED. PRIOR APPROVAL FROM THE TOWN OF DURHAM TREE WARDEN IS REQUIRED FOR ALL TREE WORK IN DURHAM.
17. LIMITS OF WORK IN EXISTING DRIVES AS SHOWN ON THE PLANS ARE APPROXIMATE. ACTUAL LIMITS OF WORK ARE TO BE DETERMINED IN THE FIELD BASED ON THESE DRAWINGS AND AS APPROVED BY THE ENGINEER.
18. EXISTING SIGNS IMPACTED BY THIS PROJECT SHALL BE RESET AT NO ADDITIONAL COST TO THE OWNER. PLACEMENT SHALL CONFORM TO THE REQUIREMENTS OF THE MUTCD OR RELEVANT TOWN REQUIREMENTS.
19. ALL DUCTILE IRON WATER MAIN, VALVES AND FITTINGS SHALL BE WRAPPED WITH POLYETHYLENE ENCASEMENT PROTECTION WRAP (POLY WRAP). REFER TO SPEC. SECTION 02616.

PIPELINE GENERAL NOTES

- 1. PROVIDE 2 INCH RIGID INSULATION WHERE DIRECTED BY OWNER OR ENGINEER. TYPICAL INSULATION INSTALLATION IS OVER SEWER AND WATER MAINS WHEN COVER IS LESS THAN 5'-0".
2. MINIMUM DEPTH OF COVER FOR WATER MAIN SHALL BE 5'-0"
3. PIPE RESTRAINT FOR WATER MAINS: ALL BENDS, TEES, REDUCERS, HYDRANTS, AND PLUGS SHALL BE RESTRAINED BY USING MEGA-LUGS AND "GRIP RINGS" OR OTHER METHOD AS SHOWN ON THE DRAWINGS. ALL DUCTILE IRON PIPE SHALL BE FULLY RESTRAINED JOINT PIPE, TR-FLEX, HDSS, OR APPROVED EQUAL.
4. A MINIMUM SEPARATION OF 6 INCHES BETWEEN THE WATER MAIN AND STORM DRAINAGE PIPES SHALL BE MAINTAINED. 2 INCH RIGID INSULATION SHALL BE PROVIDED WHEN THE SEPARATION IS LESS THAN 18 INCHES.
5. THE LOCATIONS OF ALL EXISTING DRAINS, SEWERS, WATER MAINS, POWER LINES, TELEPHONE CABLES AND OTHER UTILITIES ARE APPROXIMATE ONLY. FIELD LOCATIONS SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO STARTING THE WORK.
6. 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.
7. ANY UNDERGROUND STRUCTURES, CABLES, AND PIPELINES LOCATED ADJACENT TO THE TRENCH EXCAVATIONS SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. DAMAGE TO ANY SUCH STRUCTURES, CABLES, AND PIPELINES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE OWNERS OF THE STRUCTURES, CABLES, AND PIPELINES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT OF THE WATER IMPROVEMENTS. LAYOUT SHALL BE REVIEWED AND ACCEPTED BY THE OWNER AND ENGINEER. THE NEW WATER VALVES MUST BE LOCATED WITHIN THE RIGHTS-OF-WAY SHOWN ON THE DRAWINGS.
9. TEST PRESSURES FOR THE COMBINATION PRESSURE AND LEAKAGE TESTS SHALL BE 150 PSI. TEST DURATION SHALL BE TWO HOURS.
10. BELOW GRADE UTILITY INFORMATION IS BASED ON RECORD DRAWINGS. 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.
11. ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE UNLESS OTHERWISE NOTED. AT NO ADDITIONAL COST TO THE OWNER THE CONTRACTOR SHALL REPAIR OR COORDINATE WITH THE RESPECTIVE UTILITY ON DAMAGE TO EXISTING UTILITIES.
12. SUITABLE EXCAVATED MATERIALS MAY BE INCORPORATED INTO THE PROJECT. THE OWNER HAS THE RIGHT OF FIRST REFUSAL OF ALL EXCESS SUITABLE MATERIAL FROM THE PROJECT. THIS PROVISION SHALL IN NO WAY RELIEVE THE CONTRACTOR OF HIS OBLIGATIONS TO REMOVE AND DISPOSE OF ANY MATERIAL DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING OR EXCESS SUITABLE MATERIAL UNWANTED BY THE OWNER.
13. CONTINUOUS WATER SERVICE MUST BE MAINTAINED DURING CONSTRUCTION. THE CONTRACTOR WILL PROVIDE TEMPORARY PIPING AND SERVICES SUITABLE FOR AN OPERATING PRESSURE OF 100 PSI. ACCESS TO ROAD AND DRIVEWAYS WILL ALSO BE MAINTAINED.

CIVIL DEMOLITION NOTES

- 1. 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. THE OWNER RESERVES THE RIGHT TO RETAIN ANY SUCH PIPING, EQUIPMENT AND MATERIALS DESIGNATED FOR DEMOLITION FOR THEIR USE. SUCH MATERIALS TO BE RETAINED SHALL BE PROPERLY STORED IN AN ON-SITE LOCATION. COORDINATE LOCATION AND MATERIALS TO BE SALVAGED WITH THE OWNER/ENGINEER.
2. THE CONTRACTOR SHALL KEEP A RECORD OF DEMOLITION AS PART OF THE PROJECT RECORD DOCUMENTS IN ACCORDANCE WITH SPECIFICATION SECTION 01720.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF FLOWS RESULTING FROM PRECIPITATION AND HIS DEWATERING OPERATIONS.
4. CONTRACTOR IS REFERRED TO SPECIFICATION SECTION 01050 FOR COORDINATION WITH OTHERS.

SITE GRADING NOTES

- 1. ALL ROAD AND PARKING AREA SURFACES SHALL PITCH 1/4 INCH PER FOOT MINIMUM UNLESS OTHERWISE NOTED.
2. ALL 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.
3. CONTRACTOR SHALL CONTROL DUST ON THE CONSTRUCTION SITE TO A REASONABLE LIMIT, AS DETERMINED BY THE ENGINEER, AND AS OUTLINED IN SPECIFICATION SECTION 01562.
4. 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.
5. WHERE EXISTING PAVEMENT IS REMOVED AND REPLACED, MATCH EXISTING GRADES TO THE EXTENT POSSIBLE. COORDINATE FINE GRADING WITH THE ENGINEER.

SITE LAYOUT NOTES

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT OF ALL PROPOSED WORK AS SHOWN ON THE DRAWINGS. THE ENGINEER WILL PROVIDE TWO POINTS THAT DEFINE THE HORIZONTAL CONTROL. 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. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RE-ESTABLISHING AND RESETING ALL EXISTING PROPERTY MONUMENTATION DISTURBED BY HIS OPERATIONS. THIS WORK SHALL BE DONE BY A LAND SURVEYOR REGISTERED IN THE STATE OF NEW HAMPSHIRE, AT NO ADDITIONAL COST TO THE OWNER.
3. WRITTEN DIMENSIONS SHALL PREVAIL. DO NOT SCALE DISTANCES FROM THE DRAWINGS. REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
4. THE ENGINEER SHALL PROVIDE THE NECESSARY HORIZONTAL CONTROL POINTS FOR THE CONTRACTOR AND THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THIS INFORMATION THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL ELEVATION REFERENCE INFORMATION PRIOR TO USE IN CONSTRUCTION.
5. TEMPORARY BENCHMARKS (TBM) ARE PROVIDED ON THE DRAWINGS. ELECTRONIC FILES OF ENGINEER'S DRAWINGS WILL BE PROVIDED TO THE SUCCESSFUL CONTRACTOR AFTER CONTRACT AWARD FOR LAYOUT OF THE PROPOSED WORK. ALL LAYOUT INFORMATION PROVIDED ON THE SEALED COPIES OF THE CONTRACT DRAWINGS SHALL PREVAIL IN CASE OF DISCREPANCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT OF THE WORK BASED ON EXISTING CONTROL POINTS PROVIDED BY THE ENGINEER AND IT'S CONSULTANTS. ANY DISCREPANCIES FOUND SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.

SURVEY NOTES

- 1. EXISTING CONDITION INFORMATION AND WETLAND INFORMATION IS BASED ON A GROUND SURVEY CONDUCTED BY DOUCET SURVEY, INC., OF NEWMARKET, NEW HAMPSHIRE. SURVEY CONDUCTED DURING NOVEMBER 2018, AUGUST & SEPTEMBER 2019, AND DECEMBER 2019 USING A TRIMBLE S7 TOTAL STATION AND A TRIMBLE R10 SURVEY GRADE GPS WITH A TRIMBLE TSC3 DATA COLLECTOR AND A SOKKIA BZ1 AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.
2. EXISTING CONDITION INFORMATION IS ALSO BASED ON LIDAR FIELD SURVEY, REFERENCE DRAWINGS, AND AERIAL IMAGERY. REPORT AND DISCREPANCIES TO THE OWNER AND ENGINEER.
3. JURISDICTIONAL RESOURCES INCLUDING HIGHEST OBSERVABLE TIDE LINE WERE DELINEATED ON MAY 29, 2019 BY MARC JACOBS, CERTIFIED WETLAND SCIENTIST NUMBER 090, ACCORDING TO THE STANDARDS OF THE US ARMY CORPS OF ENGINEERS - WETLANDS DELINEATION MANUAL; THE 2012 REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION; AND THE CODE OF ADMINISTRATIVE RULES, NH DEPARTMENT OF ENVIRONMENTAL SERVICES - WETLANDS BUREAU - ENV WT 100-900. SOILS WERE EVALUATED UTILIZING THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4, APRIL 2019 AND THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8, 2016. THE INDICATOR STATUS OF VEGETATION AS HYDROPHYTIC WAS DETERMINED ACCORDING TO THE U.S. ARMY CORPS OF ENGINEERS - NORTHCENTRAL AND NORTHEAST 2016 REGIONAL WETLAND PLANT LIST. COPIES OF SITE PLANS WHICH HAVE BEEN REVIEWED BY THE WETLAND SCIENTIST ARE INDIVIDUALLY STAMPED, SIGNED AND DATED. THIS NOTE HAS BEEN CUSTOMIZED FOR THIS PROJECT.
4. HORIZONTAL DATUM BASED ON NEW HAMPSHIRE STATE PLANE(2800) NAD83(2011) DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.
5. VERTICAL DATUM IS BASED ON APPROXIMATE MLLW (MEAN LOWER LOW WATER) PER CONVERSION FROM NAVD88 TO MLLW, ELEVATION CHANGE -2.27' PROVIDED BY OCEANS SURVEY, INC. AND VERIFIED USING THE NOAA ONLINE VERTICAL DATUM TRANSFORMATION (VDATUM) WEBSITE. NAVD88(GEOID12A) ELEVATIONS DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK (±.2').
6. THE LOCATION OF THE WATER LINE EASEMENT SHOWN IS BASED ON THE LISTED REFERENCE PLAN AND IS ALIGNED USING THE NGS COORDINATE AND TRANSFORMATION TOOL (NCAT) TO CONVERT FROM NAD27 TO NAD83(2011).

LEGEND table with columns: EXISTING, LEGEND, PROPOSED. Lists symbols for PROPERTY/ROW LINE, SETBACK LINE, EASEMENT LINE, EDGE OF PAVEMENT, CURBING, EDGE OF GRAVEL, EDGE OF CONCRETE, CONTOUR, BUILDING, STONEWALL, TREELINE, 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, IRON PIPE/REBAR, DRILLHOLE, MONUMENT, SURVEY CONTROL POINT, SPOT ELEVATION, SEWER MANHOLE, DRAINAGE MANHOLE, CATCH BASIN, ELECTRIC MANHOLE, TELEPHONE MANHOLE, GATE VALVE, CURB STOP, YARD HYDRANT, HYDRANT, UTILITY POLE, UTILITY POLE W/ GUY, LIGHT POLE, BOLLARD, FLAGPOLE, CONIFEROUS TREE, DECIDUOUS TREE, SHRUB, EDGE OF WATER, STREAM, EDGE OF WETLANDS, FLOODPLAIN, WETLANDS, DRAINAGE FLOW, PAVEMENT MARKINGS, SIGN, MAILBOX, TEMPORARY BENCH MARK, TEST BORING, TEST PROBE, LIMIT OF WORK, SILT FENCE, HAY BALES, RIPRAP, MATCHLINE, ROCK OUTCROP, SHEETPILE, TIMBER MATTING, CONSTRUCTION STAGING AREA.

CIVIL ABBREVIATIONS

Table with 2 columns: Symbol/Code and Description. Includes symbols for diameter, number, approved building, catch basin, center, cubic feet per second, cast iron, centerline, corrugated metal pipe, cleanout, concrete, corner, cubic yard, demolition, drill hole set, drain manhole, ductile iron, drain, drawing, elevation, electric manhole, force main, feet, gas, hydrant, inch, influent, invert, pounds, maximum, manhole, minimum, monitoring well, north, national geodetic vertical datum, not available/applicable, not to scale, outside diameter, perforated clay, pounds per square foot, pounds per square inch, primary sludge, point of tangency, polyvinyl chloride, reinforced concrete pipe, roof drain, required, slope, sewer, storm drain, square feet, sanitary sewer manhole, square, station, transformer, temporary bench mark, thickness, top of structure, typical, underdrain, underground, underground electric, vitrified clay, with, potable water.

Project information and title block. Includes: APP'D DATE (B.ECK 11/29), CONTRACT DRAWINGS, SUBMISSIONS/REVISIONS, DESIGNED BY (D.LARY, W.EDGAR), CAD CORP. BY (W.EDGAR), CHECKED BY (D.LARY), DATE (11/19/2023), APPROVED BY (ELECTRUM), DATE (11/29/2023), PROJECT NO. (14602), CITY OF PORTSMOUTH, WATER TRANSMISSION MAIN VALVE IMPROVEMENTS, DURHAM-NEWINGTON, NEW HAMPSHIRE, WRIGHT-PIERCE Engineering a Better Environment, 888.621.8156 | www.wright-pierce.com, GENERAL NOTES, LEGEND & ABBREVIATIONS, DRAWING C-2.

NOTES

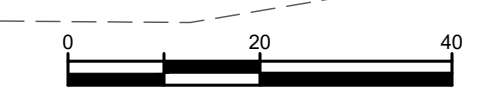
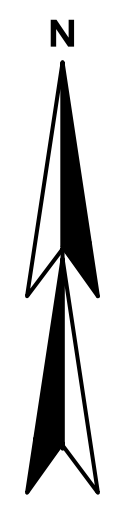
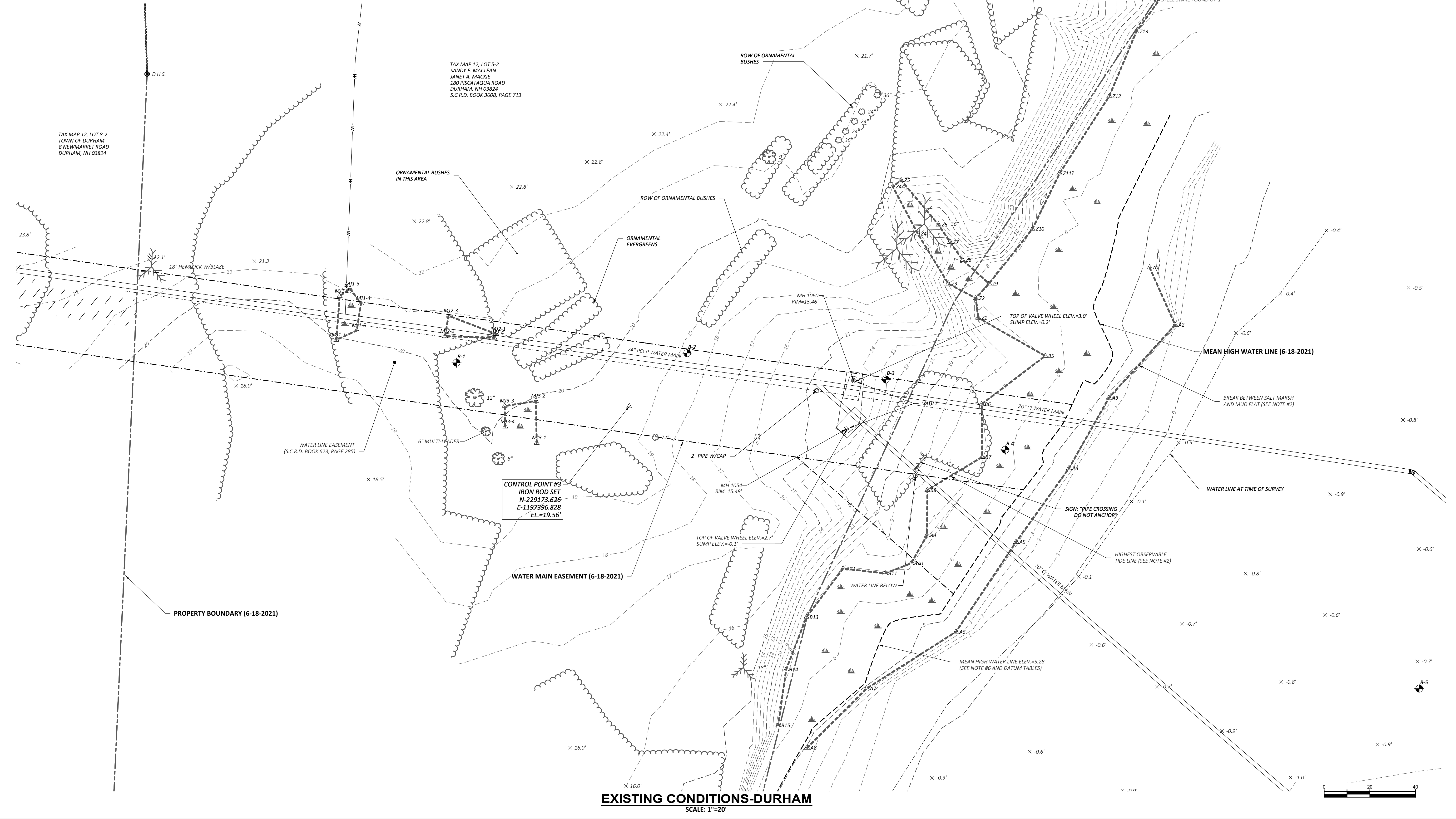
REFERENCE: DURHAM TAX MAP 12, LOTS 5-2 & 8-2
 NEWINGTON TAX MAP 1, LOT 1-1
 D.S. PROJECT NO. 5951

OWNER OF RECORD: DURHAM TAX MAP 12, LOT 5-2
 SANDY F. MACLEAN & JANET A. MACKIE
 180 PISCATAQUA ROAD
 DURHAM, NH 03824
 S.C.R.D. BOOK 3608, PAGE 713

DURHAM TAX MAP 12, LOT 8-2
 TOWN OF DURHAM
 8 NEWMARKET ROAD
 DURHAM, NH 03824

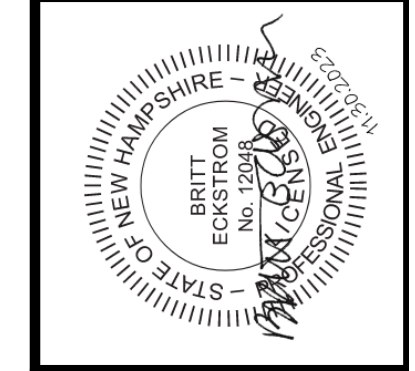
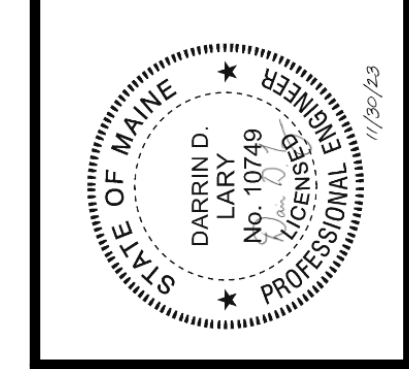
NEWINGTON TAX MAP 1, LOT 1-1
 TOWN OF NEWINGTON - TOWN OFFICE
 205 NIMBLE HILL ROAD
 NEWINGTON, NH 03801

1. FIELD SURVEY PERFORMED BY DOUCET SURVEY, INC., DURING MAY & JUNE 2019 USING A TRIMBLE S7 TOTAL STATION AND A TRIMBLE R10 SURVEY GRADE GPS WITH A TRIMBLE TSC3 DATA COLLECTOR AND A SOKKIA B21 AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.
2. JURISDICTIONAL RESOURCES INCLUDING HIGHEST OBSERVABLE TIDE LINE WERE DELINEATED ON MAY 29, 2019 AND MAY 18, 2021 BY MARC JACOBS, CERTIFIED WETLAND SCIENTIST NUMBER 090, ACCORDING TO THE STANDARDS OF THE US ARMY CORPS OF ENGINEERS - WETLANDS DELINEATION MANUAL; THE 2012 REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTH CENTRAL AND NORTHEAST REGION; AND THE CODE OF ADMINISTRATIVE RULES, NH DEPARTMENT OF ENVIRONMENTAL SERVICES - WETLANDS BUREAU - ENV WT 100-900. SOILS WERE EVALUATED UTILIZING THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4, APRIL 2019 AND THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8, 2016. THE INDICATOR STATUS OF VEGETATION AS HYDROPHYTIC WAS DETERMINED ACCORDING TO THE U.S. ARMY CORPS OF ENGINEERS - NORTH CENTRAL AND NORTHEAST 2016 REGIONAL WETLAND PLANT LIST. COPIES OF SITE PLANS WHICH HAVE BEEN REVIEWED BY THE WETLAND SCIENTIST ARE INDIVIDUALLY STAMPED, SIGNED AND DATED. THIS NOTE HAS BEEN CUSTOMIZED FOR THIS PROJECT.
3. FULL BOUNDARY SURVEY WAS NOT COMPLETED AS PART OF THIS PROJECT. THE COMMON LOT LINE BETWEEN TAX MAP 12, LOTS 5-2 & 8-2 WAS DETERMINED IN AN EFFORT TO DETERMINE THE LIMITS OF THE WATERLINE EASEMENT ON LOT 5-2.



NO	CONTRACT DRAWINGS	DESIGNED BY: D.LARY	APPD DATE
1		W. EDGAR	B.ECK 11/29
2		W. EDGAR	
3		D.LARY	
4		D.LARY	
5		B.ECKSTROM	
6		B.ECKSTROM	
7		B.ECKSTROM	
8		B.ECKSTROM	
9		B.ECKSTROM	
10		B.ECKSTROM	

DESIGNED BY: D.LARY
 CAD CORP: W. EDGAR
 CD: W. EDGAR
 CHECKED BY: D.LARY
 DATE: 11/29/2023
 APPROVED BY: B.ECKSTROM
 DATE: 11/29/2023
 PROJECT NO.: 14202



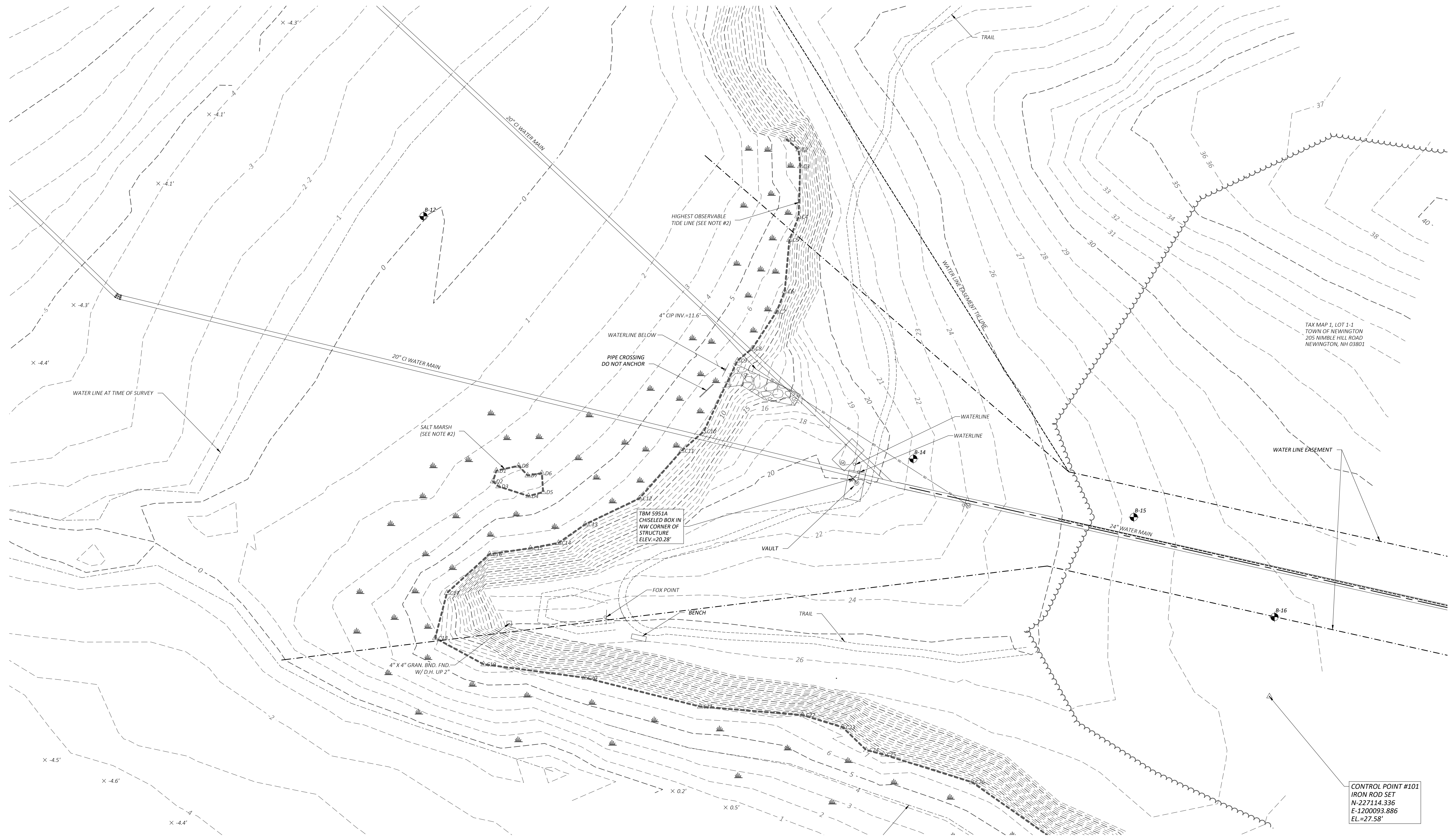
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CITY OF PORTSMOUTH
 WATER TRANSMISSION MAIN
 VALVE IMPROVEMENTS
 DURHAM-NEWINGTON, NEW HAMPSHIRE
 EXISTING CONDITIONS PLAN - 180 PISCATAQUA, DURHAM

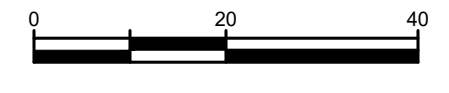
DRAWING
 C-3

NOTES

1. FIELD SURVEY PERFORMED BY DOUCET SURVEY, INC., DURING MAY & JUNE 2019 USING A TRIMBLE S7 TOTAL STATION AND A TRIMBLE R10 SURVEY GRADE GPS WITH A TRIMBLE TSC3 DATA COLLECTOR AND A SOKKIA B21 AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.
2. JURISDICTIONAL RESOURCES INCLUDING HIGHEST OBSERVABLE TIDE LINE WERE DELINEATED ON MAY 29, 2019 BY MARC JACOBS, CERTIFIED WETLAND SCIENTIST NUMBER 090, ACCORDING TO THE STANDARDS OF THE US ARMY CORPS OF ENGINEERS - WETLANDS DELINEATION MANUAL; THE 2012 REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION; AND THE CODE OF ADMINISTRATIVE RULES, NH DEPARTMENT OF ENVIRONMENTAL SERVICES - WETLANDS BUREAU - ENV WT 100-900. SOILS WERE EVALUATED UTILIZING THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4, APRIL 2019 AND THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8, 2016. THE INDICATOR STATUS OF VEGETATION AS HYDROPHYTIC WAS DETERMINED ACCORDING TO THE U.S. ARMY CORPS OF ENGINEERS - NORTHCENTRAL AND NORTHEAST 2016 REGIONAL WETLAND PLANT LIST. COPIES OF SITE PLANS WHICH HAVE BEEN REVIEWED BY THE WETLAND SCIENTIST ARE INDIVIDUALLY STAMPED, SIGNED AND DATED. THIS NOTE HAS BEEN CUSTOMIZED FOR THIS PROJECT.



CONTROL POINT #101
IRON ROD SET
N=227114.336
E=1200093.886
EL.=27.58'



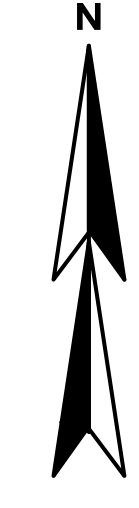
EXISTING CONDITIONS-NEWINGTON
SCALE: 1"=20'



APP'D DATE		B.ECK 11/29	
SUBMISSIONS/REVISIONS			
NO	CONTRACT DRAWINGS		
DESIGNED BY: D.LARY	W.EDGAR		
CD: W.EDGAR			
CHECKED BY: D.LARY			
DATE: 11/19/2023			
APPROVED BY: E.ECKSTROM			
DATE: 11/29/2023			
PROJECT NO: 14202			
<p>TAX MAP 1, LOT 1-1 TOWN OF NEWINGTON 205 NIMBLE HILL ROAD NEWINGTON, NH 03801</p>			
<p>WRIGHT-PIERCE Engineering a Better Environment 888.621.8156 www.wright-pierce.com</p>			
<p>CITY OF PORTSMOUTH WATER TRANSMISSION MAIN VALVE IMPROVEMENTS DURHAM-NEWINGTON, NEW HAMPSHIRE</p>			
<p>EXISTING CONDITIONS PLAN - FOX POINT, NEWINGTON</p>			
<p>DRAWING C-4</p>			



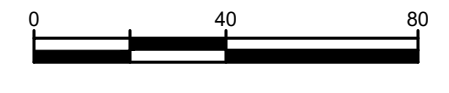
EXISTING CONDITIONS PLAN - WAGON HILL FARM
SCALE: 1"=125'



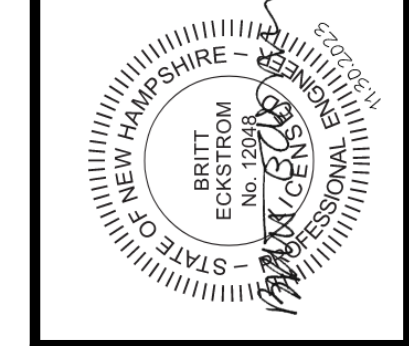
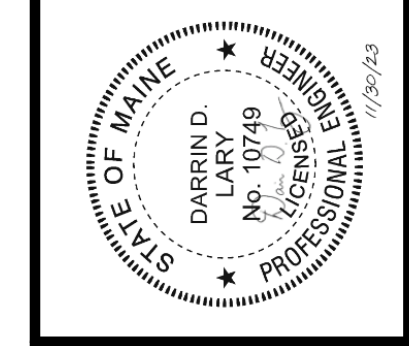
<p>WRIGHT-PIERCE Engineering a Better Environment 888.621.8156 www.wright-pierce.com</p>		<p>DESIGNED BY: D.LARY CAD CORP.: W.EDGAR CHECKED BY: D.LARY DATE: 11/29/2023 APPROVED BY: B.ECKSTROM DATE: 11/29/2023 PROJECT NO.: 34502</p>	
<p>CITY OF PORTSMOUTH WATER TRANSMISSION MAIN VALVE IMPROVEMENTS DURHAM-NEWINGTON, NEW HAMPSHIRE</p>		<p>NO. 1 CONTRACT DRAWINGS</p>	
<p>EXISTING CONDITIONS PLAN - WAGON HILL FARM, DURHAM</p>		<p>APP'D DATE B.ECK 11/29</p>	
<p>DRAWING C-5</p>		<p>STATE OF NEW HAMPSHIRE BRETT M. GAGNON No. 1204 LICENSED PROFESSIONAL ENGINEER</p>	
<p>STATE OF MAINE DARRIN D. LARY No. 10749 LICENSED PROFESSIONAL ENGINEER</p>		<p>NO. 2 CONTRACT DRAWINGS</p>	



CONSTRUCTION ACCESS PLAN-NEWINGTON
SCALE: 1"=40'



NO	DATE	DESCRIPTION
1	11/29/2023	CONTRACT DRAWINGS



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CITY OF PORTSMOUTH
WATER TRANSMISSION MAIN
VALVE IMPROVEMENTS
DURHAM-NEWINGTON, NEW HAMPSHIRE
CONSTRUCTION ACCESS PLAN - FOX POINT, NEWINGTON

DRAWING
C-6



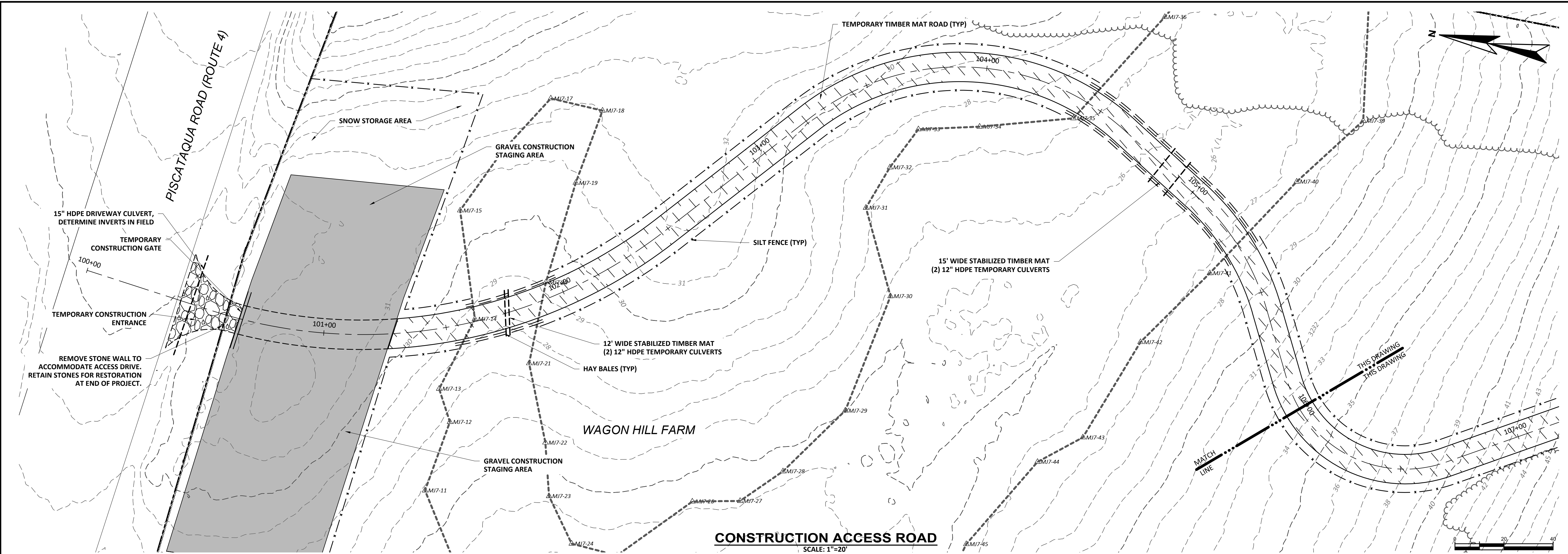
CONSTRUCTION ACCESS PLAN - DURHAM
SCALE: 1"=125'

EXISTING		PROPOSED	
---	PROPERTY/ROW LINE	---	PROPERTY/ROW LINE
---	PERM. EASEMENT LINE	---	PERM. EASEMENT LINE
---	EDGE OF PAVEMENT	---	EDGE OF PAVEMENT
---	EDGE OF GRAVEL	---	EDGE OF GRAVEL
▨	BUILDING	▨	BUILDING
○	STONEWALL	○	STONEWALL
4" W	WATER	8" W	WATER
---	EDGE OF WETLANDS	---	EDGE OF WETLANDS
△	WETLAND FLAG	---	WETLAND FLAG
---	SILT FENCE	---	SILT FENCE
---	CONS. STAGING AREA	---	CONS. STAGING AREA
---	TIMBER MAT AREA	---	TIMBER MAT AREA

APP'D	DATE	SUBMISSIONS/REVISIONS	NO	CONTRACT DRAWINGS	DATE
B.ECK	11/29		1		
DESIGNED BY:	D.LARY				
C&D CORP.:	W.EDGAR				
CHECKED BY:	D.LARY				
DATE:	11/29/2023				
APPROVED BY:	E.ECKSTROM				
DATE:	11/29/2023				
PROJECT NO.:	34602				

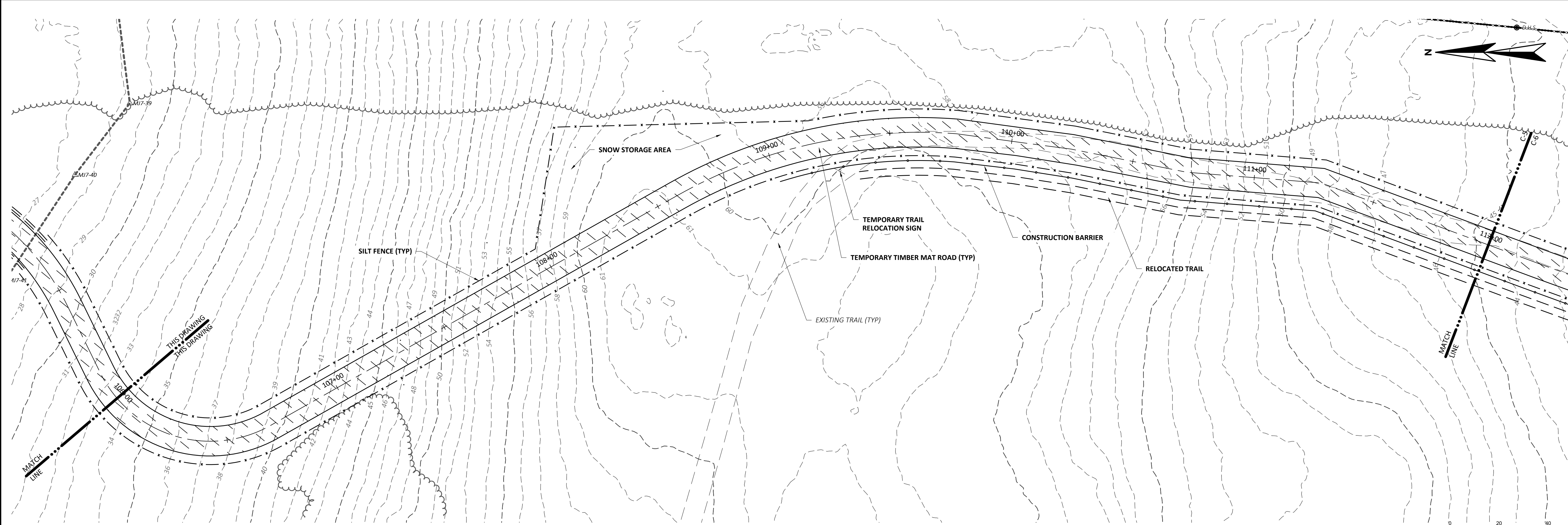
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CITY OF PORTSMOUTH WATER TRANSMISSION MAIN VALVE IMPROVEMENTS DURHAM-NEWINGTON, NEW HAMPSHIRE	CONSTRUCTION ACCESS PLAN - DURHAM
DRAWING	
C-7	



CONSTRUCTION ACCESS ROAD

SCALE: 1"=20'



CONSTRUCTION ACCESS ROAD

SCALE: 1"=20'

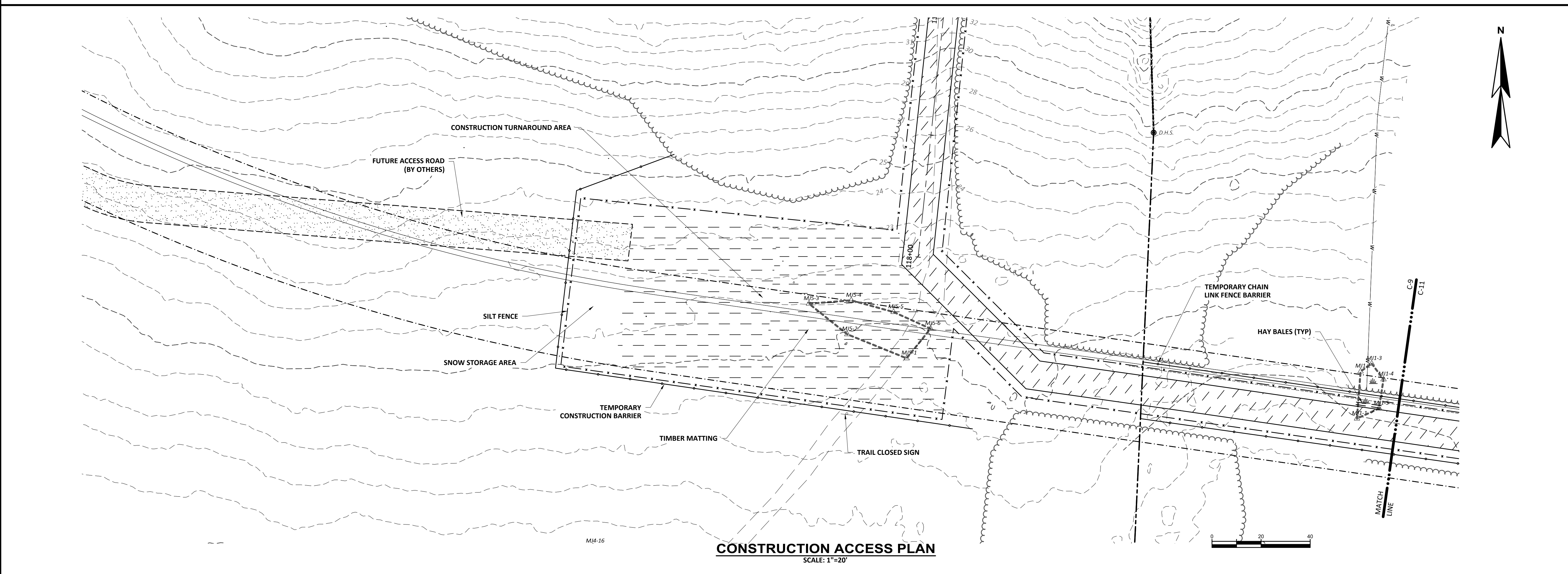
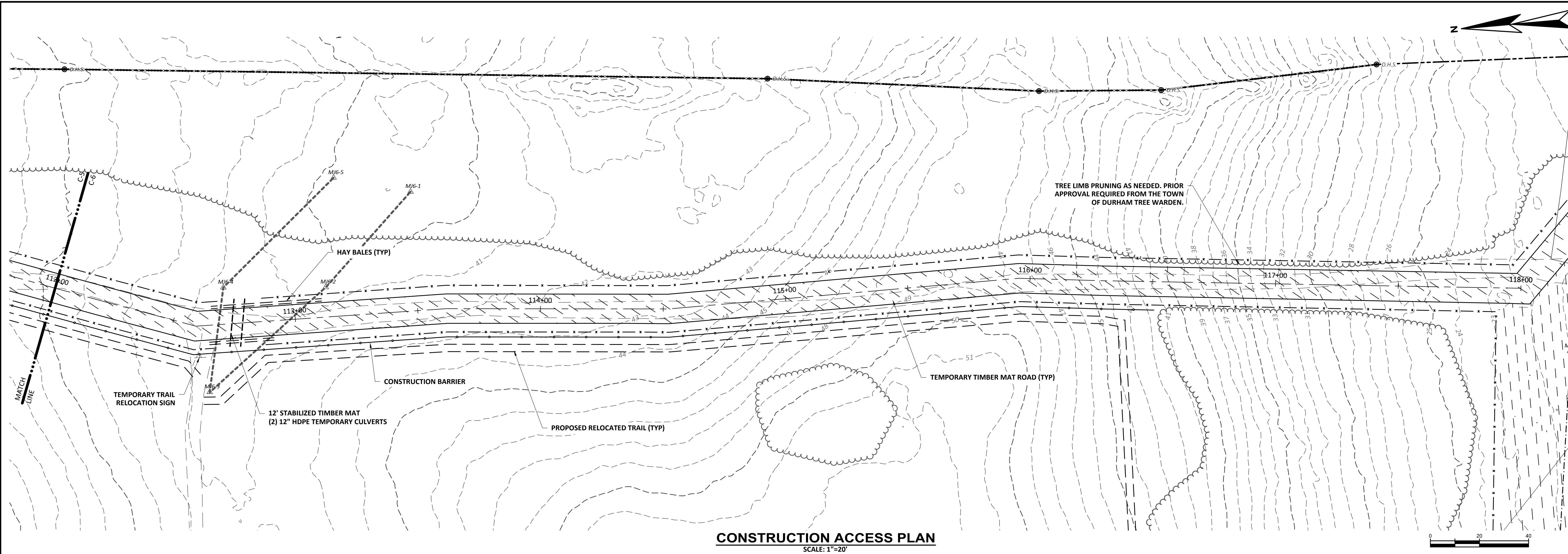
NO	CONTRACT DRAWINGS	SUBMISSIONS/REVISIONS	APPD	DATE
1			B.ECK	11/29

DESIGNED BY: D.LARY
 CAD CORP.: W.EDGAR
 CD: W.EDGAR
 CHECKED BY: D.LARY
 DATE: 11/29/2023
 APPROVED BY: E.ECKSTROM
 DATE: 11/29/2023
 PROJECT NO.: 34202

STATE OF NEW HAMPSHIRE
 PROFESSIONAL ENGINEERING
 ECKSTROM
 No. 10749
 LICENSED PROFESSIONAL ENGINEER

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CITY OF PORTSMOUTH
 WATER TRANSMISSION MAIN
 VALVE IMPROVEMENTS
 DURHAM-NEWINGTON, NEW HAMPSHIRE
 DURHAM ACCESS ROAD - PLAN VIEW I
 STA. 100+00 TO STA. 112+00

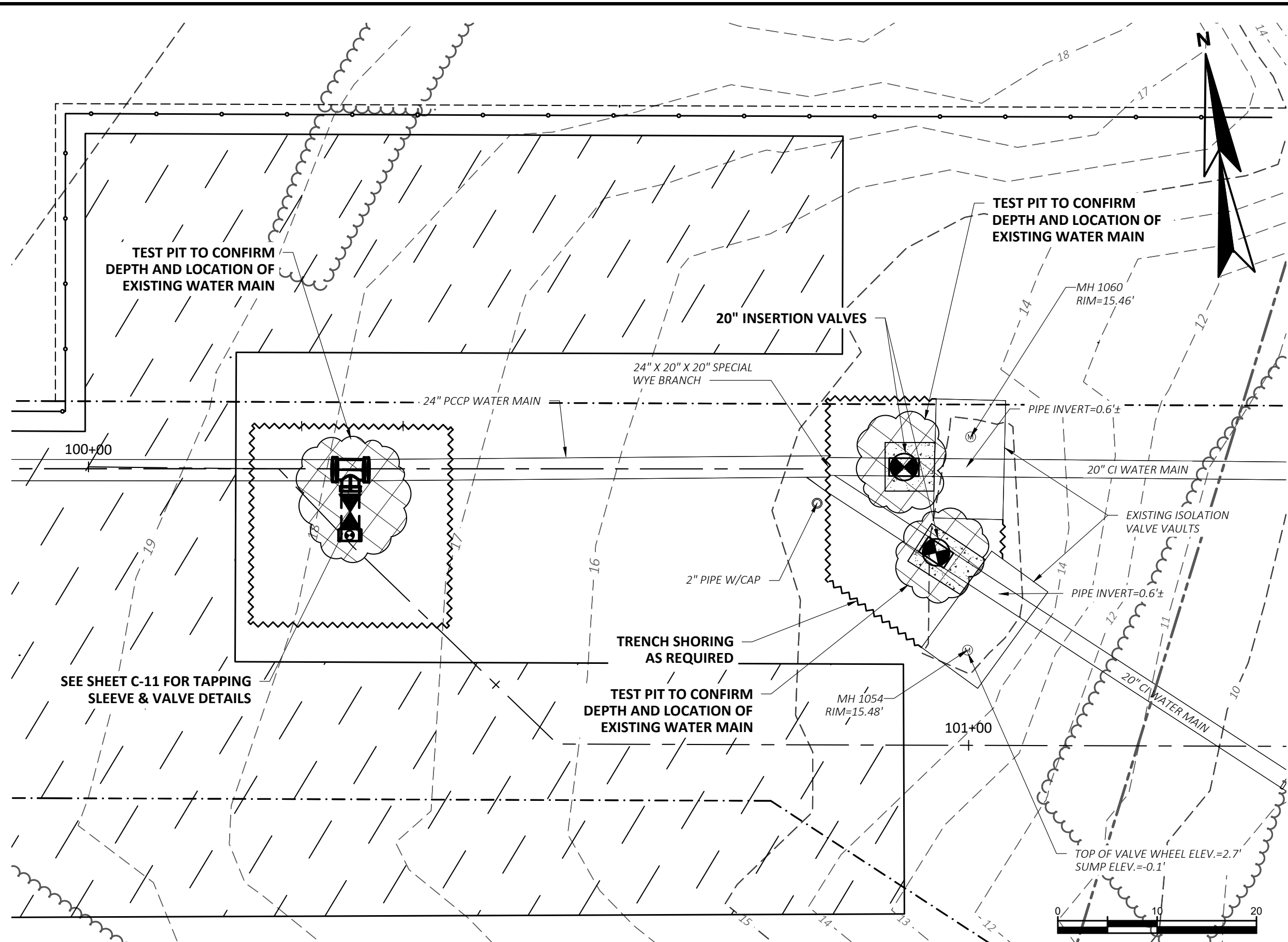


NO	CONTRACT DRAWINGS	DATE
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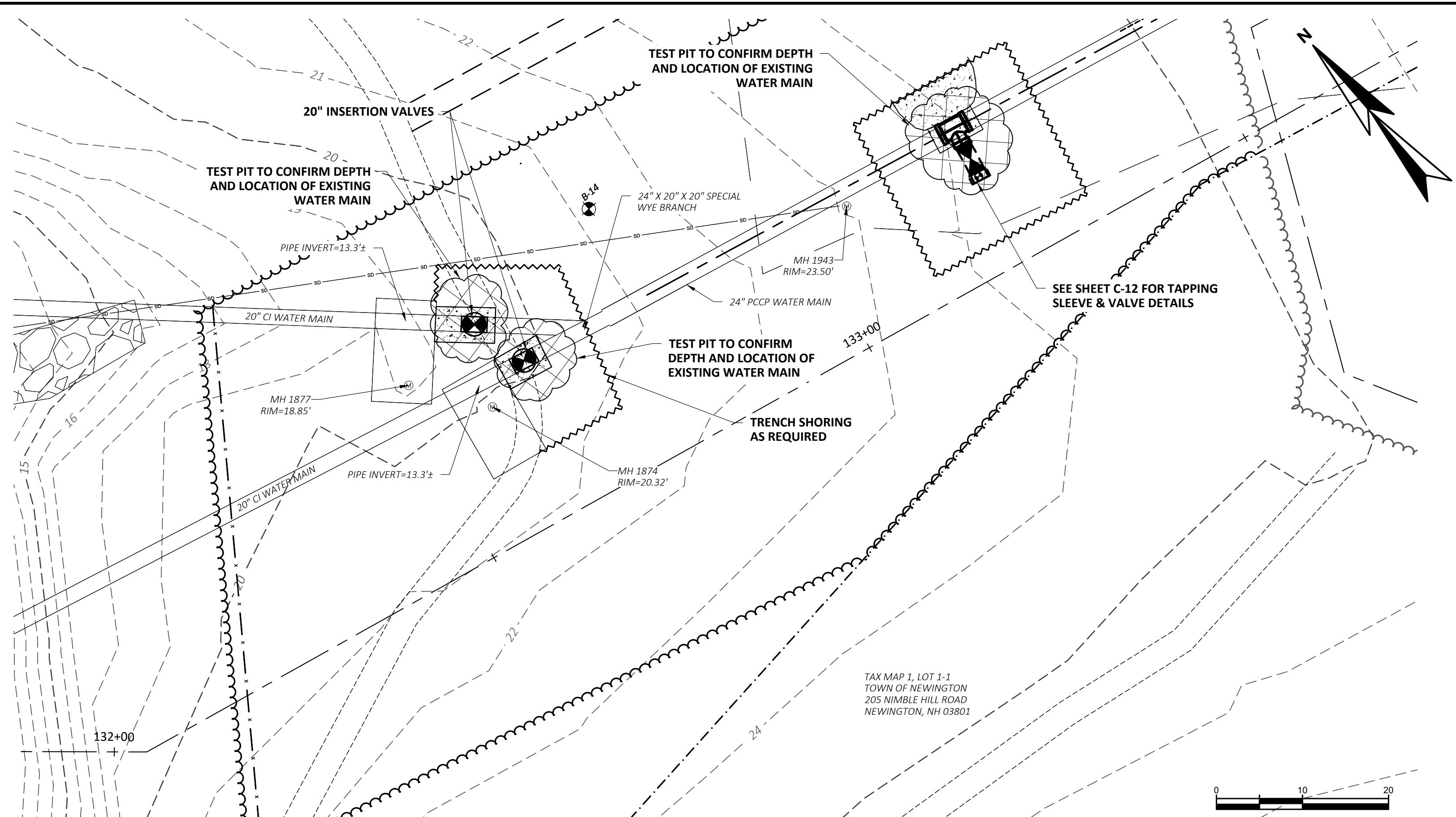
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CITY OF PORTSMOUTH
WATER TRANSMISSION MAIN
VALVE IMPROVEMENTS
DURHAM-NEWINGTON, NEW HAMPSHIRE
DURHAM ACCESS ROAD - PLAN VIEW II
STA. 112+00 TO STA. 118+00

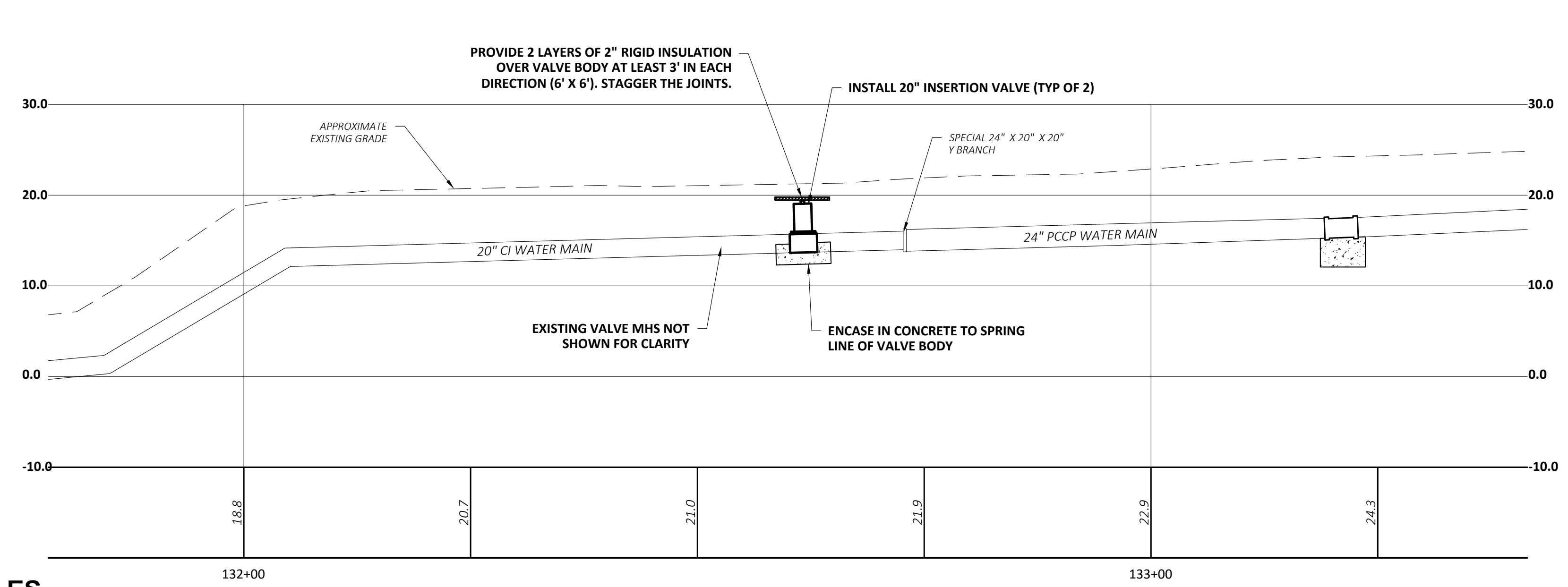
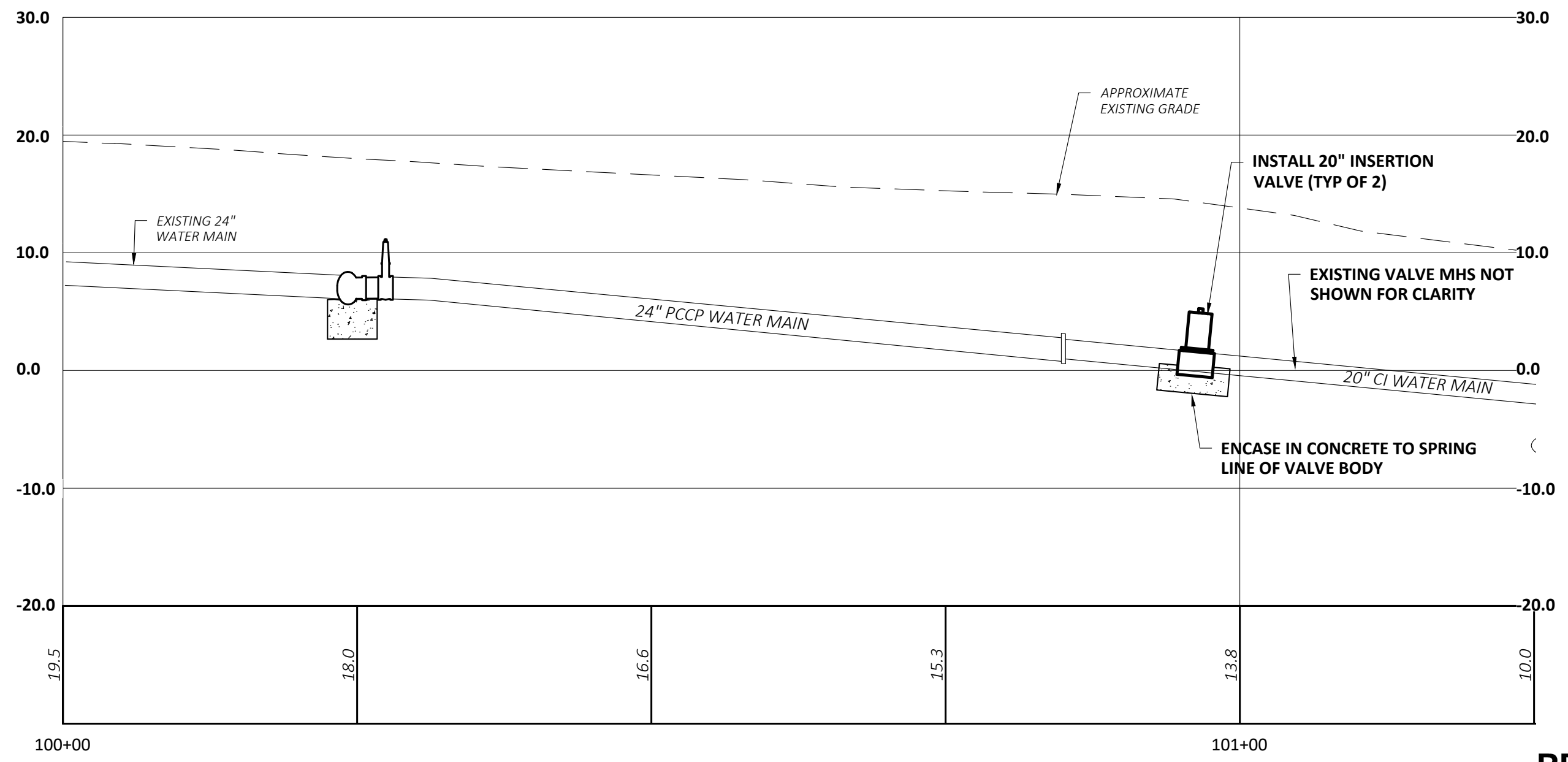
DRAWING
C-9



PLAN - DURHAM
SCALE: 1"=10'



PLAN - NEWINGTON
SCALE: 1"=10'

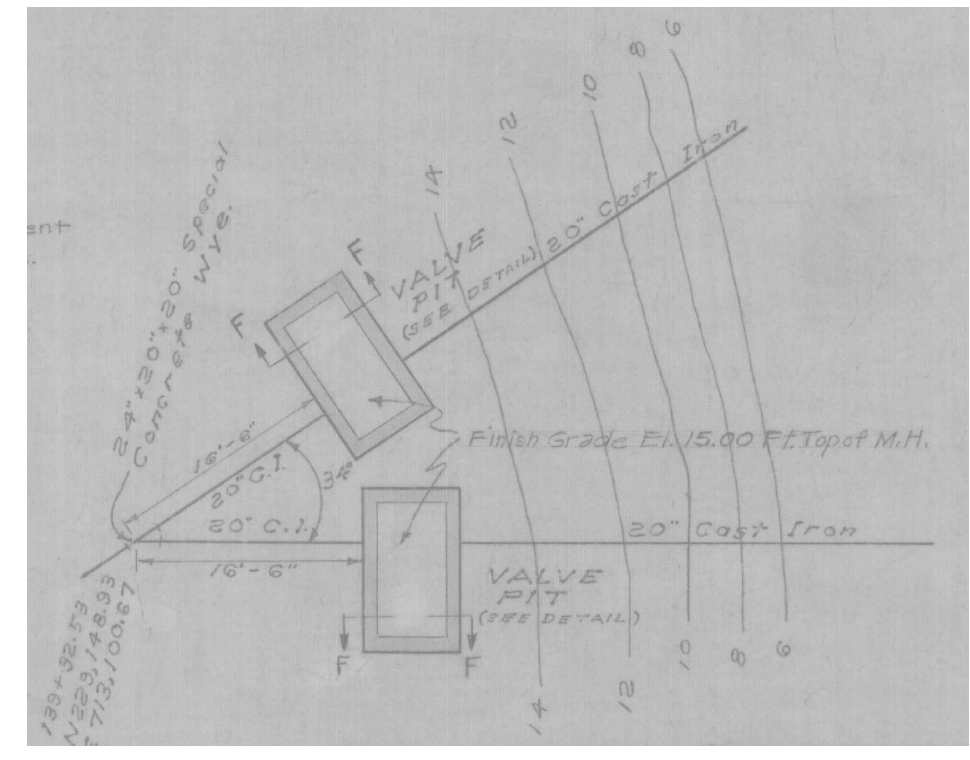


PROFILES

SCALES
VERT: 1"=10'
HORIZ: 1"=10'

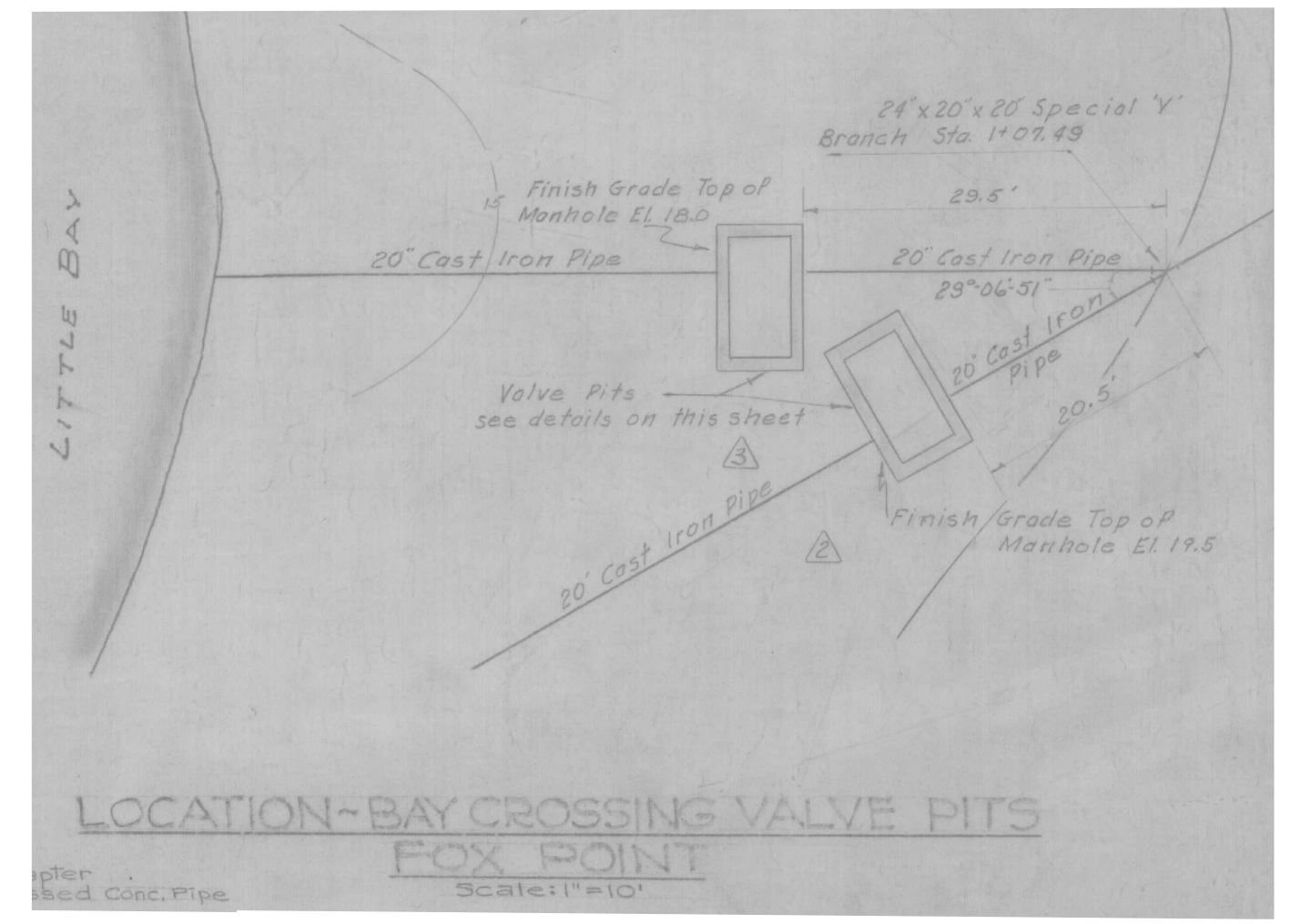
INSERTION VALVE INSTALLATION

1. ALL TOP SOIL REMOVED FOR INSERTION VALVE EXCAVATION SHALL BE STOCKPILED AND USED TO RESTORE THE IMPACTED AREA.
2. CONCRETE ENCASEMENT/THRUST RESTRAINT SHALL BE PINNED TO EXISTING VALVE STRUCTURE FOR STRUCTURAL STRENGTH.
3. CONTRACTOR SHALL TAKE EXTRA CARE WHEN INSTALLING SHEETING/SHORING OVER ADJACENT TO EXISTING WATER MAINS. WATER MAINS SHALL REMAIN IN SERVICE AT ALL TIMES. CONTRACTOR SHALL HAVE REPAIR SUPPLIES AVAILABLE ON SITE IN THE EVENT OF INADVERTENT DAMAGE TO THE EXISTING WATER MAINS.



LOCATION - BAY CROSSING VALVE PITS
DURHAM POINT Final Field Corrections

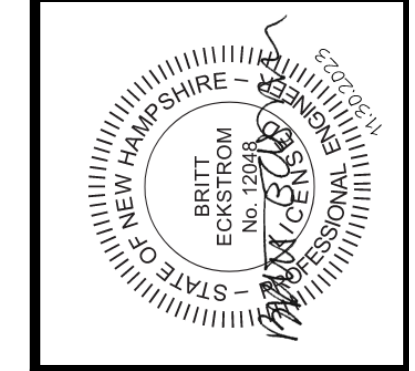
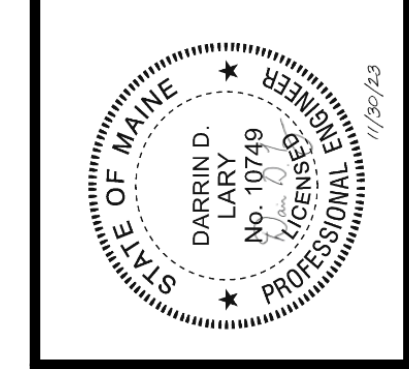
EXISTING VALVE PITS - DURHAM
NTS



LOCATION - BAY CROSSING VALVE PITS
FOX POINT

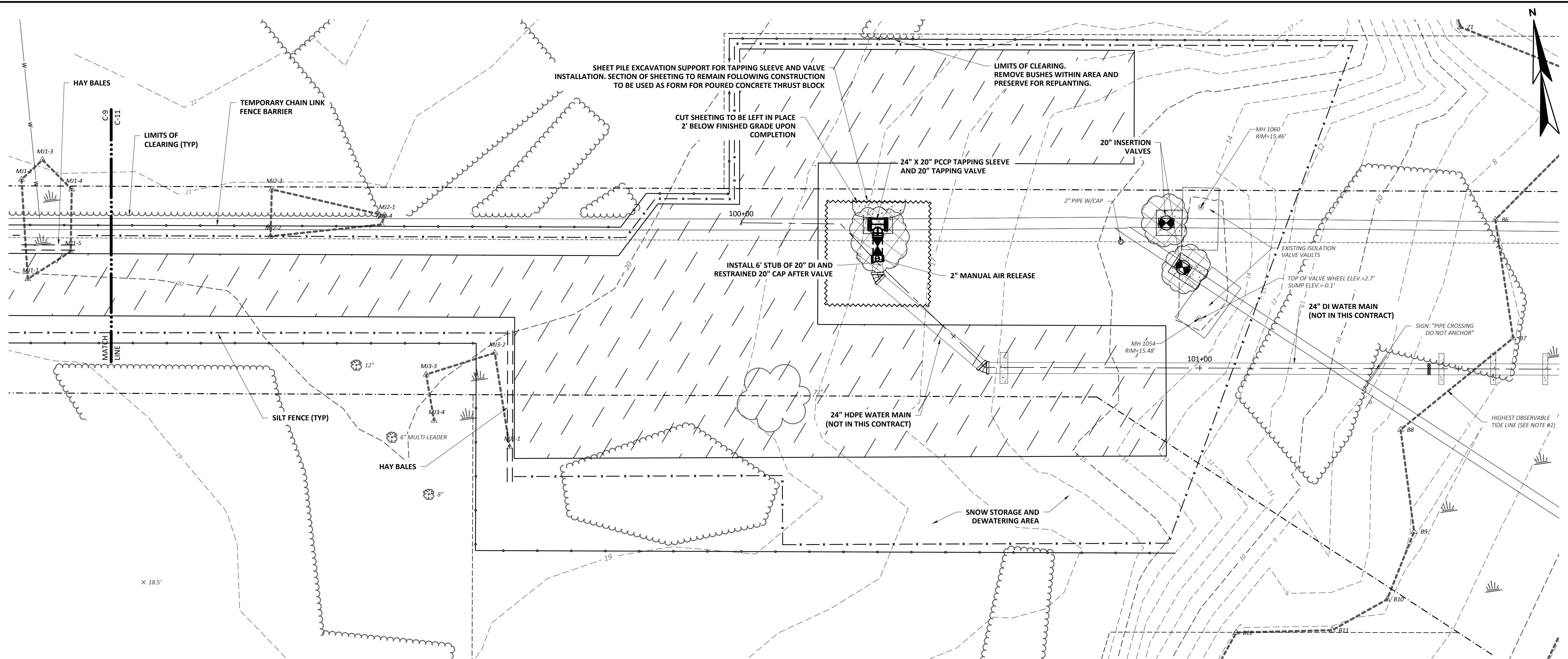
EXISTING VALVE PITS - NEWINGTON
NTS

NO	CONTRACT DRAWINGS	NO	DATE
1			11/29
2			
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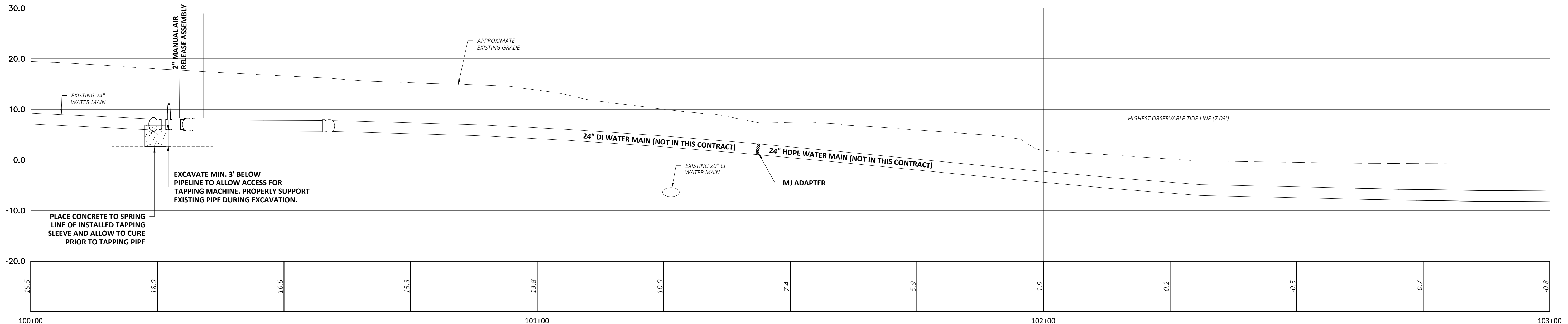
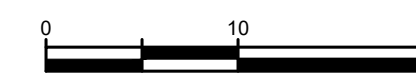
CITY OF PORTSMOUTH
WATER TRANSMISSION MAIN
VALVE IMPROVEMENTS
DURHAM-NEWINGTON, NEW HAMPSHIRE



NOTES:

1. ALL TOP SOIL THAT IS REMOVED FOR EXCAVATION SHALL BE STOCKPILED AND PRESERVED.
2. UPON COMPLETION OF THE INSERTION VALVE INSTALLATION, ALL TIMBER MATS SHALL BE REMOVED.
3. DISTURBED AREAS SHALL BE RESTORED BY SPREADING STOCKPILED TOP SOIL AND PLANTING WITH GRASS SEED. REFER TO SPECIFICATION.
4. CONTRACTOR SHALL TAKE CARE WHEN INSTALLING SHEETING/SHORING OVER AND ADJACENT TO EXISTING WATER MAINS. WATER MAINS SHALL REMAIN IN SERVICE AT ALL TIMES. CONTRACTOR SHALL HAVE REPAIR SUPPLIES AVAILABLE ON SITE IN THE EVENT OF INADVERTENT DAMAGE TO THE EXISTING WATER MAINS.
5. SHEETING ON THE NORTH SIDE OF THE TAPPING SLEEVE AND VALVE EXCAVATION, IN CONTACT WITH THE SUPPORT BLOCK CONCRETE, SHALL BE LEFT IN PLACE AND CUT OFF A MINIMUM OF 2' BELOW GRADE UPON COMPLETION OF THE VALVE INSTALLATION.

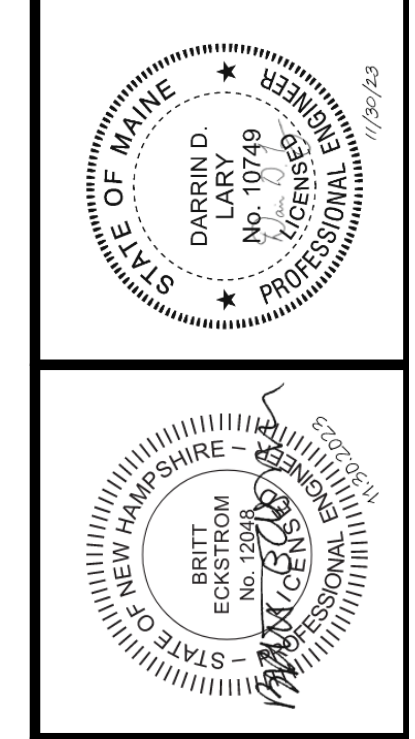
PLAN
SCALE: 1"=10'



PROFILE
SCALE:
VERT: 1"=10'
HORIZ: 1"=10'

NO	CONTRACT DRAWINGS	DATE
1	B.ECK	11/29

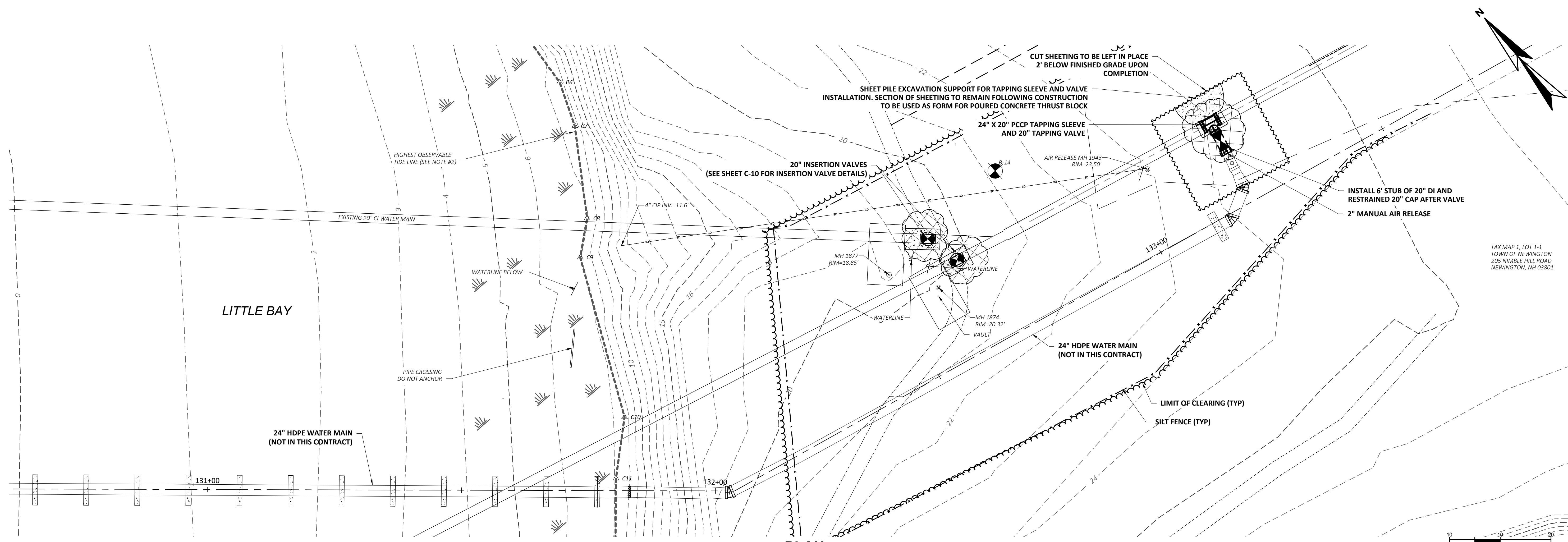
DESIGNED BY	CD	CHECKED BY	DATE	APPROVED BY	DATE	PROJECT NO.
D.LARY	W.EDGAR	D.LARY	11/19/2023	B.ECKSTROM	11/29/2023	34602



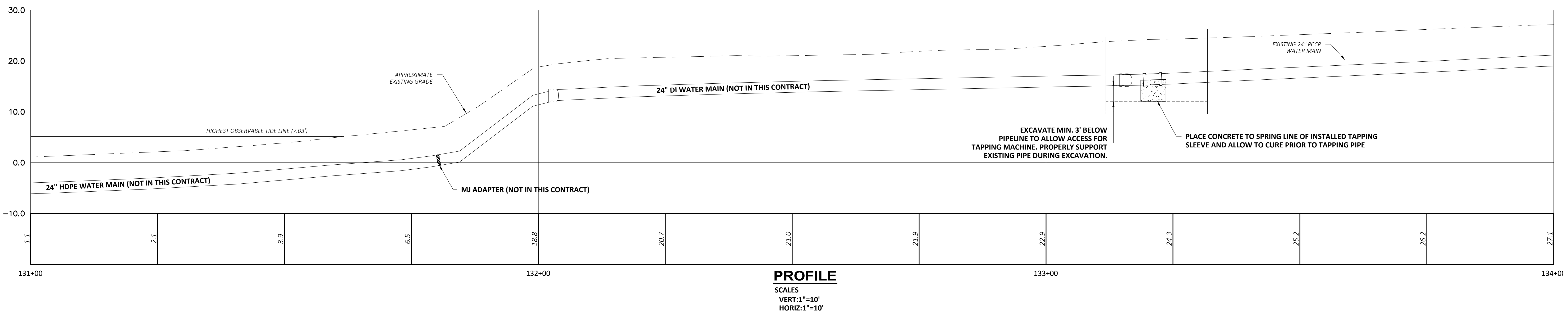
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CITY OF PORTSMOUTH
WATER TRANSMISSION MAIN
VALVE IMPROVEMENTS
DURHAM-NEWINGTON, NEW HAMPSHIRE
WATER MAIN CONNECTION DETAIL PLAN - DURHAM

DRAWING
C-11



- NOTES:**
1. ALL TOP SOIL THAT IS REMOVED FOR EXCAVATION SHALL BE STOCKPILED AND PRESERVED.
 2. UPON COMPLETION OF THE INSERTION VALVE INSTALLATION, ALL TIMBER MATS SHALL BE REMOVED.
 3. DISTURBED AREAS SHALL BE RESTORED BY SPREADING STOCKPILED TOP SOIL AND PLANTING WITH GRASS SEED. REFER TO SPECIFICATION.
 4. CONTRACTOR SHALL TAKE CARE WHEN INSTALLING SHEETING/SHORING OVER AND ADJACENT TO EXISTING WATER MAINS. WATER MAINS SHALL REMAIN IN SERVICE AT ALL TIMES. CONTRACTOR SHALL HAVE REPAIR SUPPLIES AVAILABLE ON SITE IN THE EVENT OF INADVERTENT DAMAGE TO THE EXISTING WATER MAINS.
 5. SHEETING ON THE NORTH SIDE OF THE TAPPING SLEEVE AND VALVE EXCAVATION, IN CONTACT WITH THE SUPPORT BLOCK CONCRETE, SHALL BE LEFT IN PLACE AND CUT OFF A MINIMUM OF 2' BELOW GRADE UPON COMPLETION OF THE VALVE INSTALLATION.



APP'D	DATE
B. BECK	11/29
SUBMISSIONS/REVISIONS	
NO	CONTRACT DRAWINGS
DESIGNED BY: D. LARY	NO
CD CORP: W. EDGAR	NO
CD: W. EDGAR	NO
CHECKED BY: D. LARY	NO
DATE: 11/29/2023	NO
APPROVED BY: FLECKSTROM	NO
DATE: 11/29/2023	NO
PROJECT NO: 14202	NO

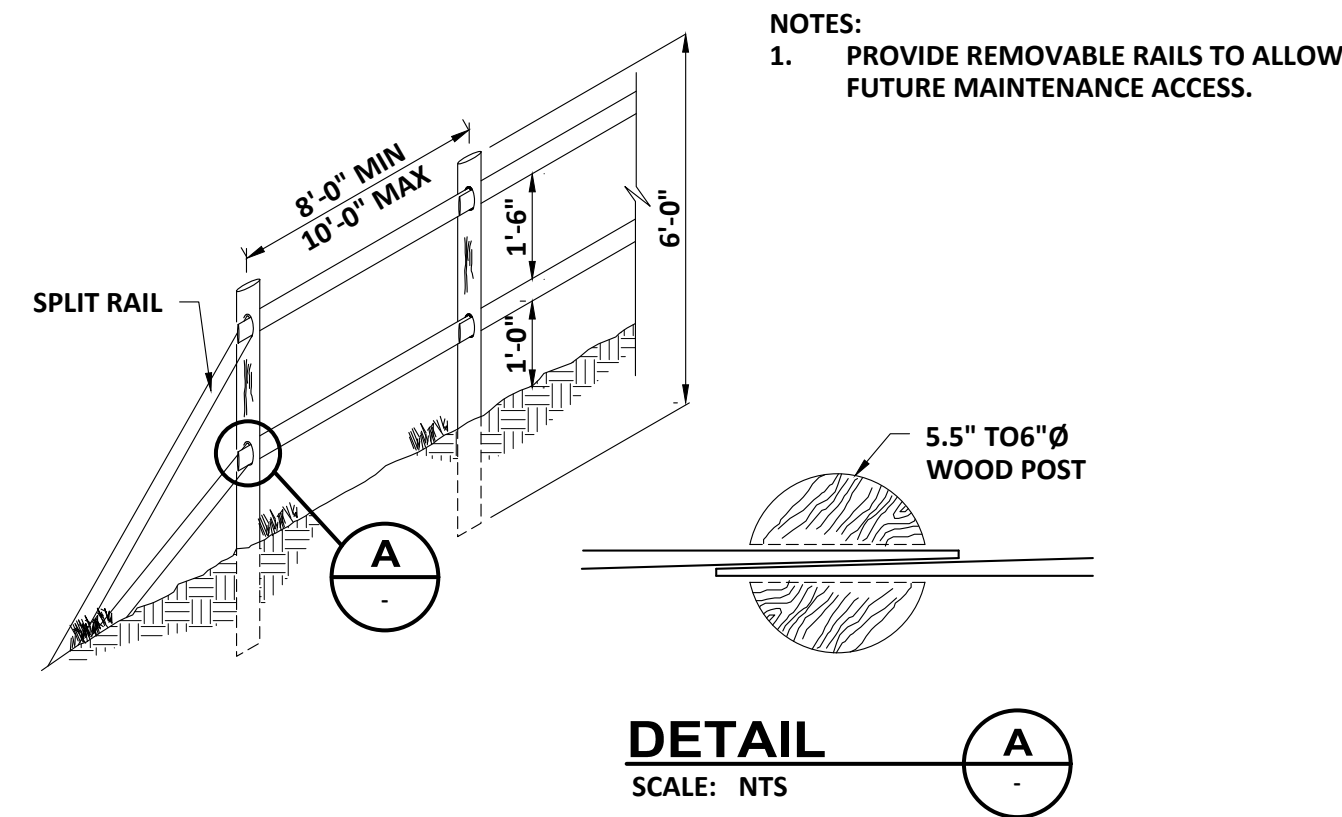
TAX MAP 1, LOT 1-1
TOWN OF NEWINGTON
205 NIMBLE HILL ROAD
NEWINGTON, NH 03801

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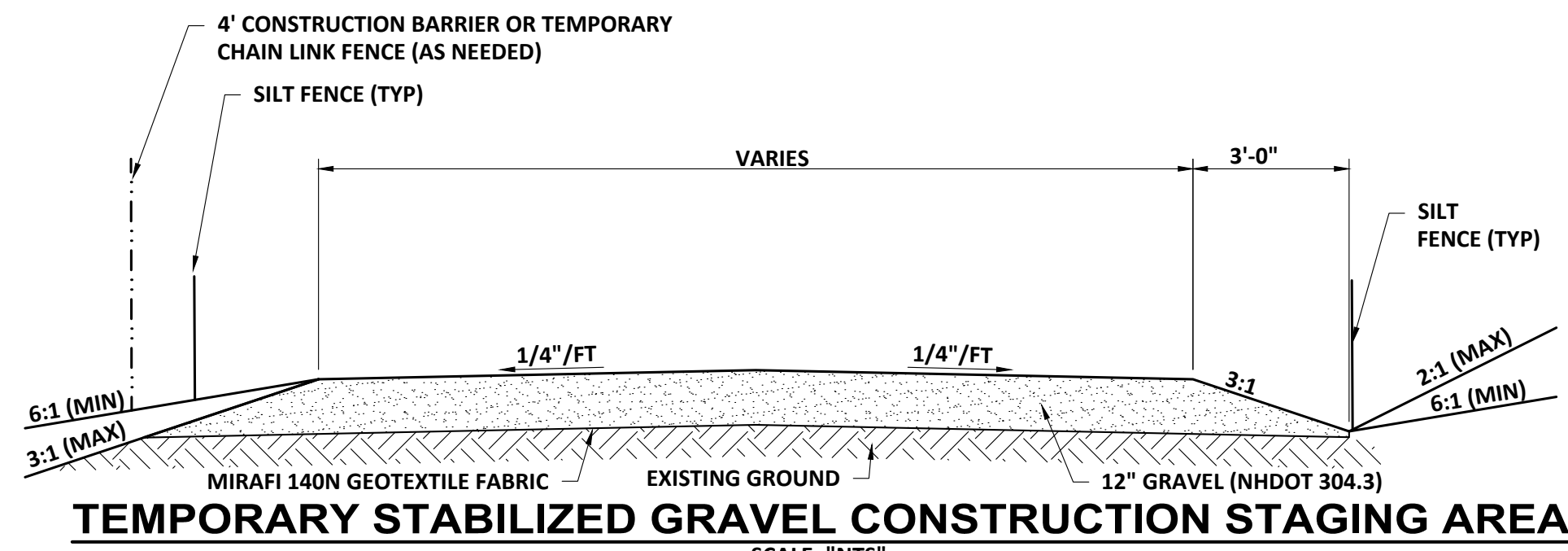
CITY OF PORTSMOUTH
WATER TRANSMISSION MAIN
VALVE IMPROVEMENTS
DURHAM-NEWINGTON, NEW HAMPSHIRE

WATER MAIN CONNECTION DETAIL - NEWINGTON

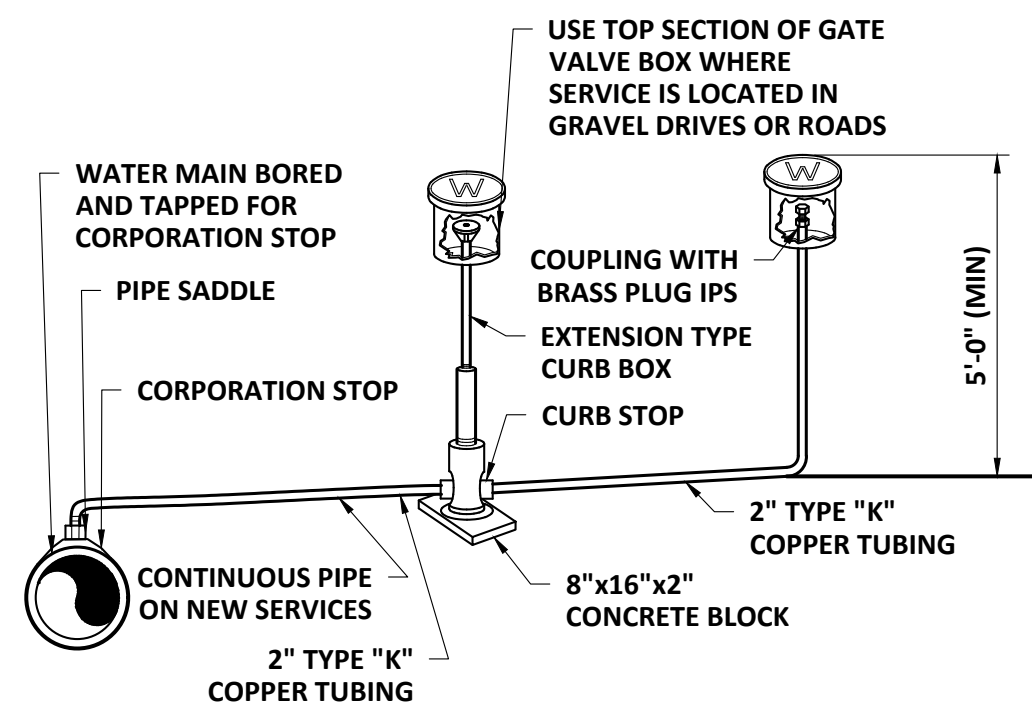
DRAWING
C-12



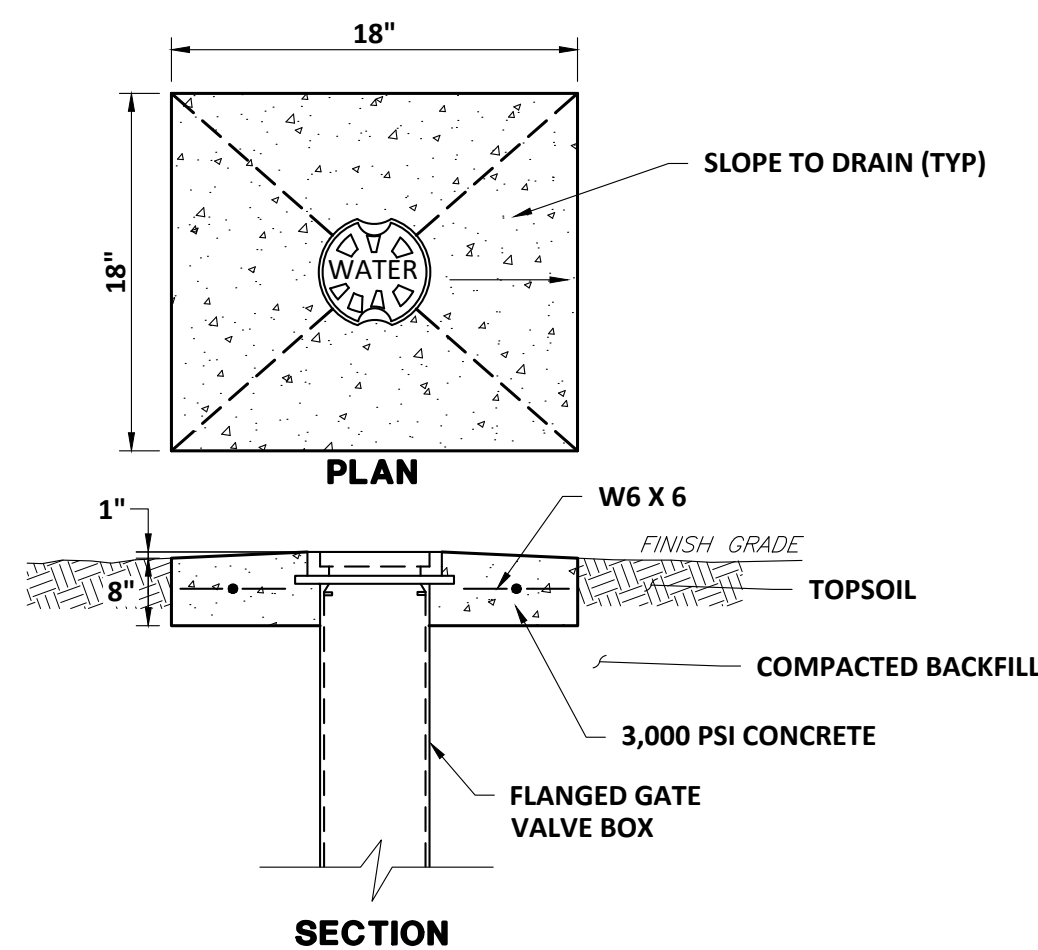
SPLIT RAIL FENCE
SCALE: NTS



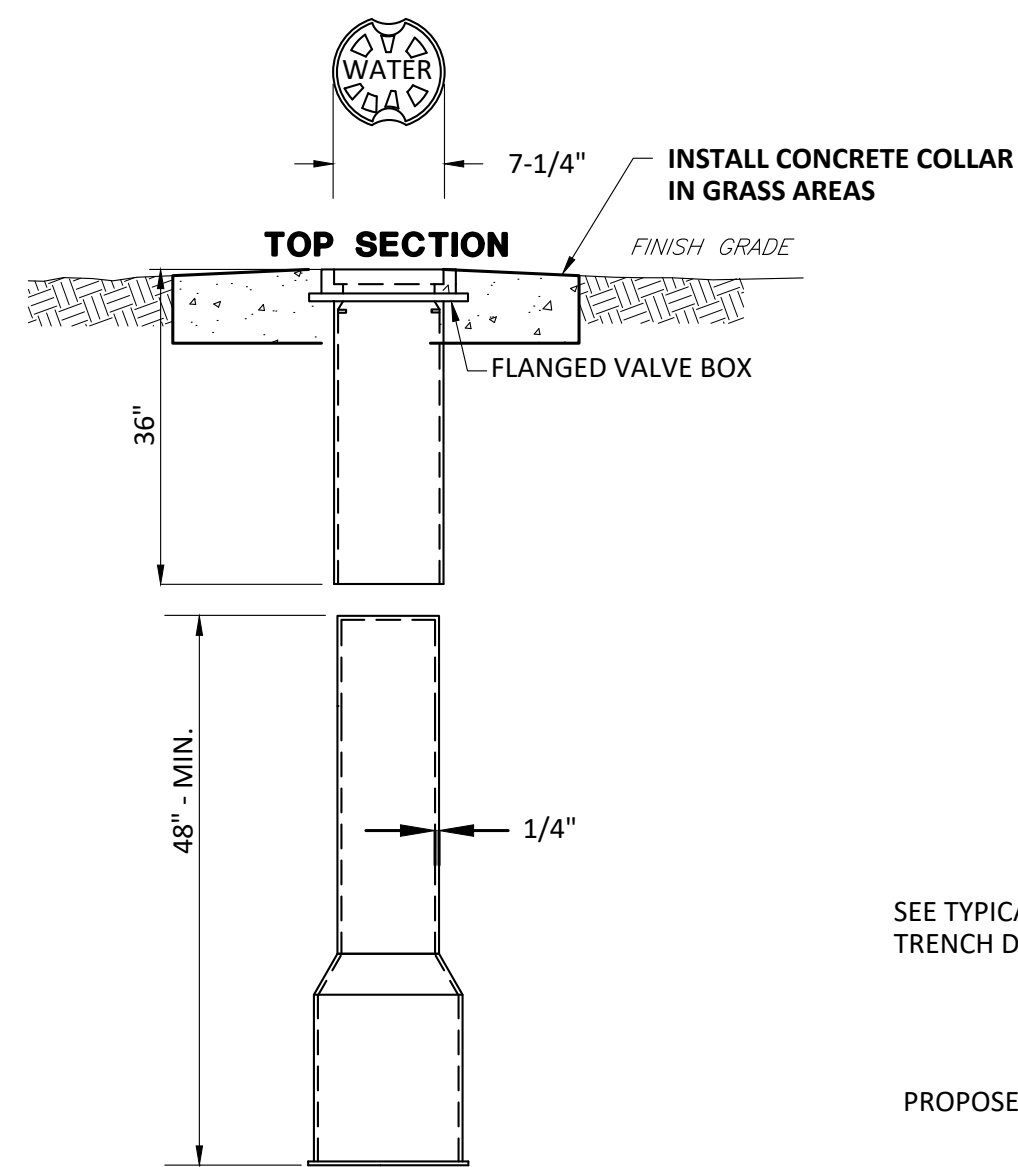
WAGON HILL FARM WATER SERVICE
SCALE: 1"=40'



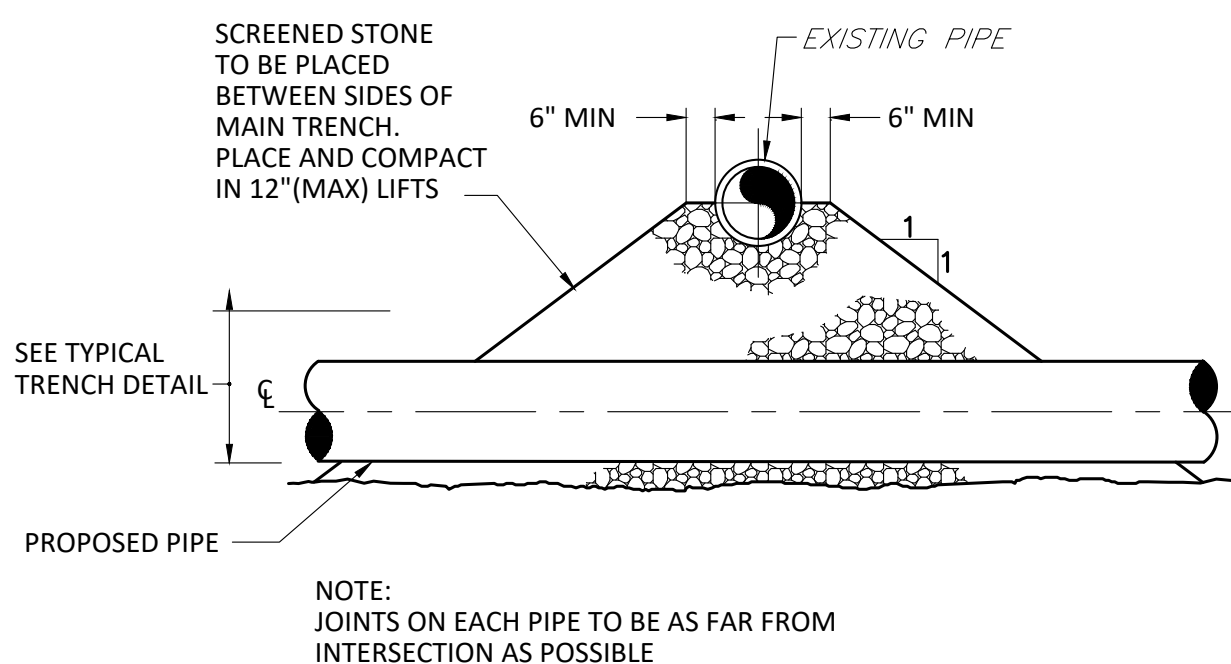
MANUAL AIR RELEASE ASSEMBLY
SCALE: NTS



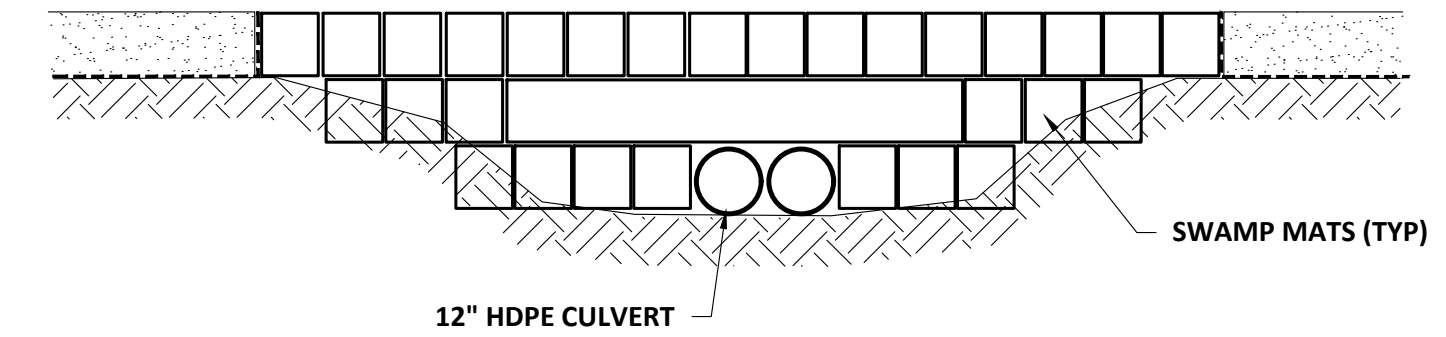
VALVE BOX CONCRETE COLLAR
NTS



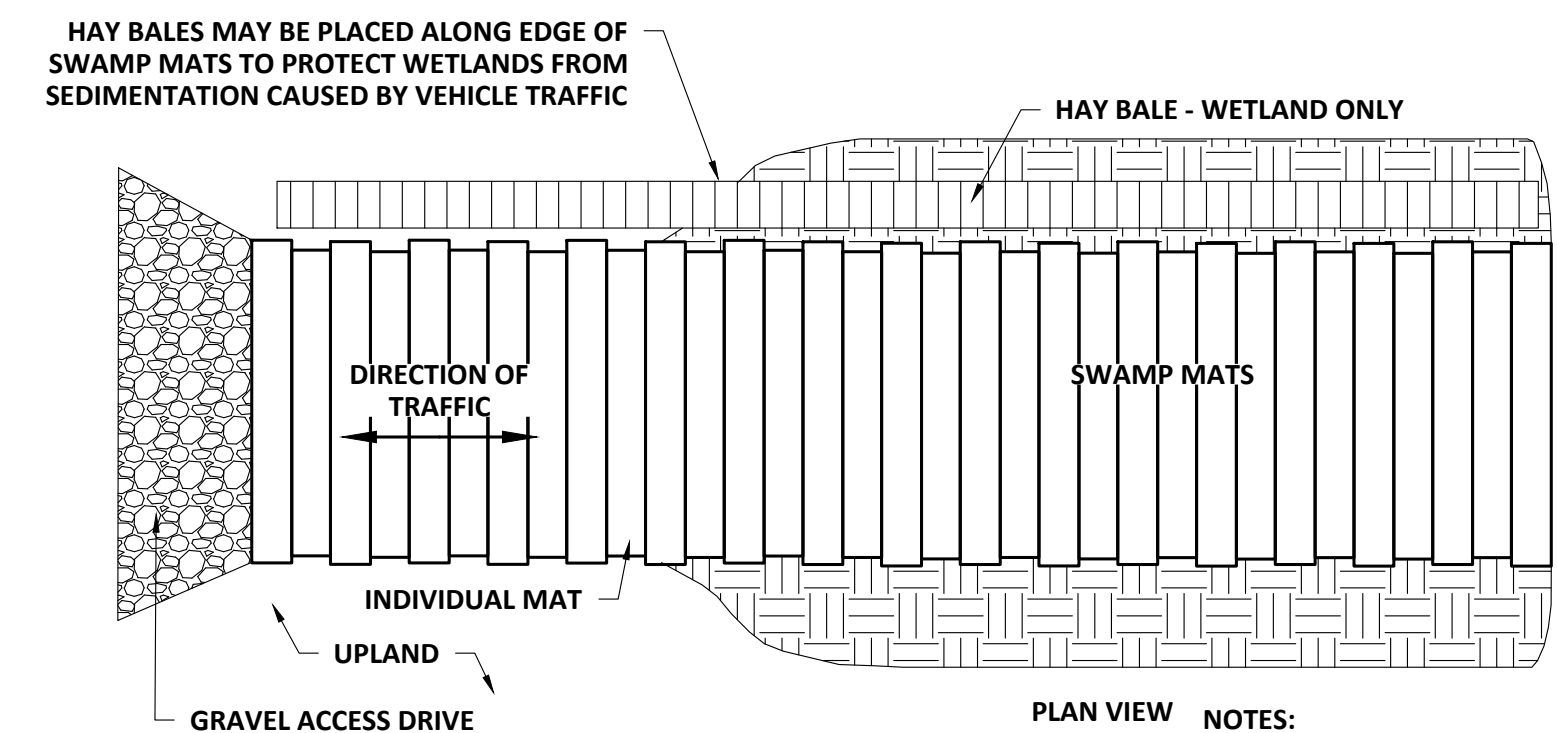
2-PIECE SLIDING VALVE BOX
NTS



PIPE CROSSING DETAIL
NTS

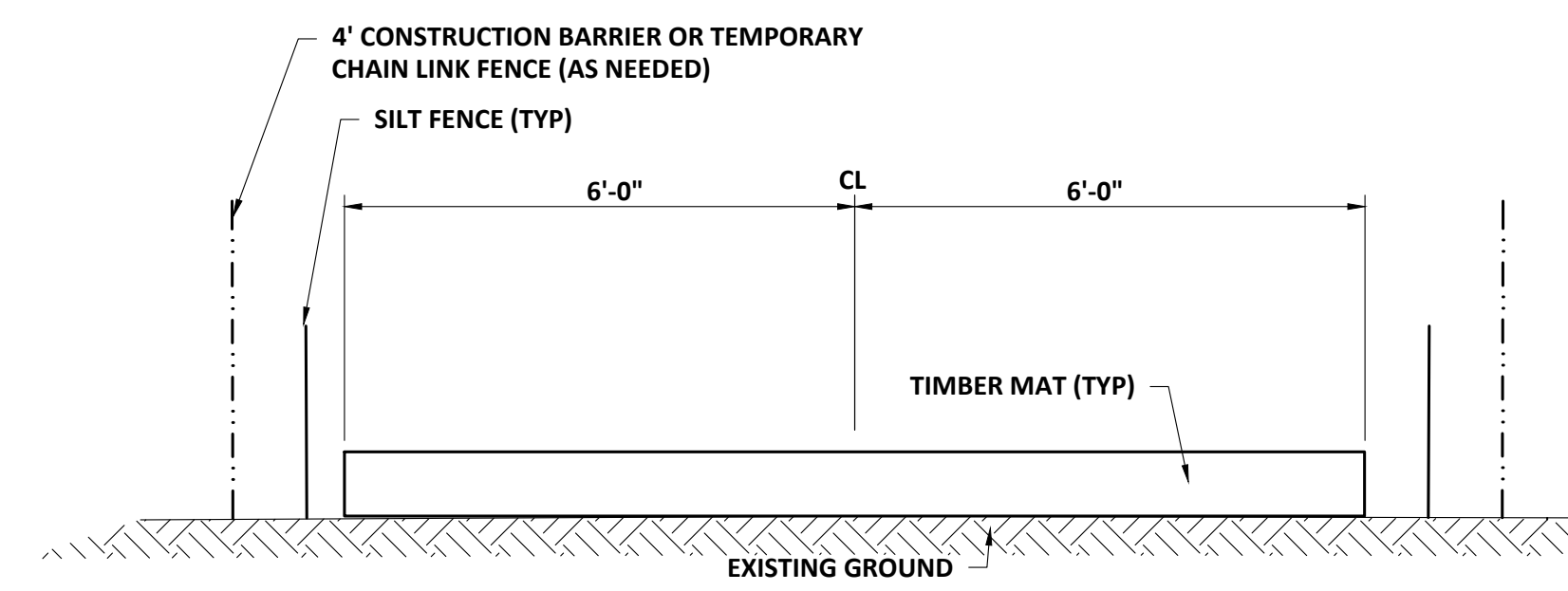


TEMPORARY CULVERT CROSSING
SCALE: "NTS"

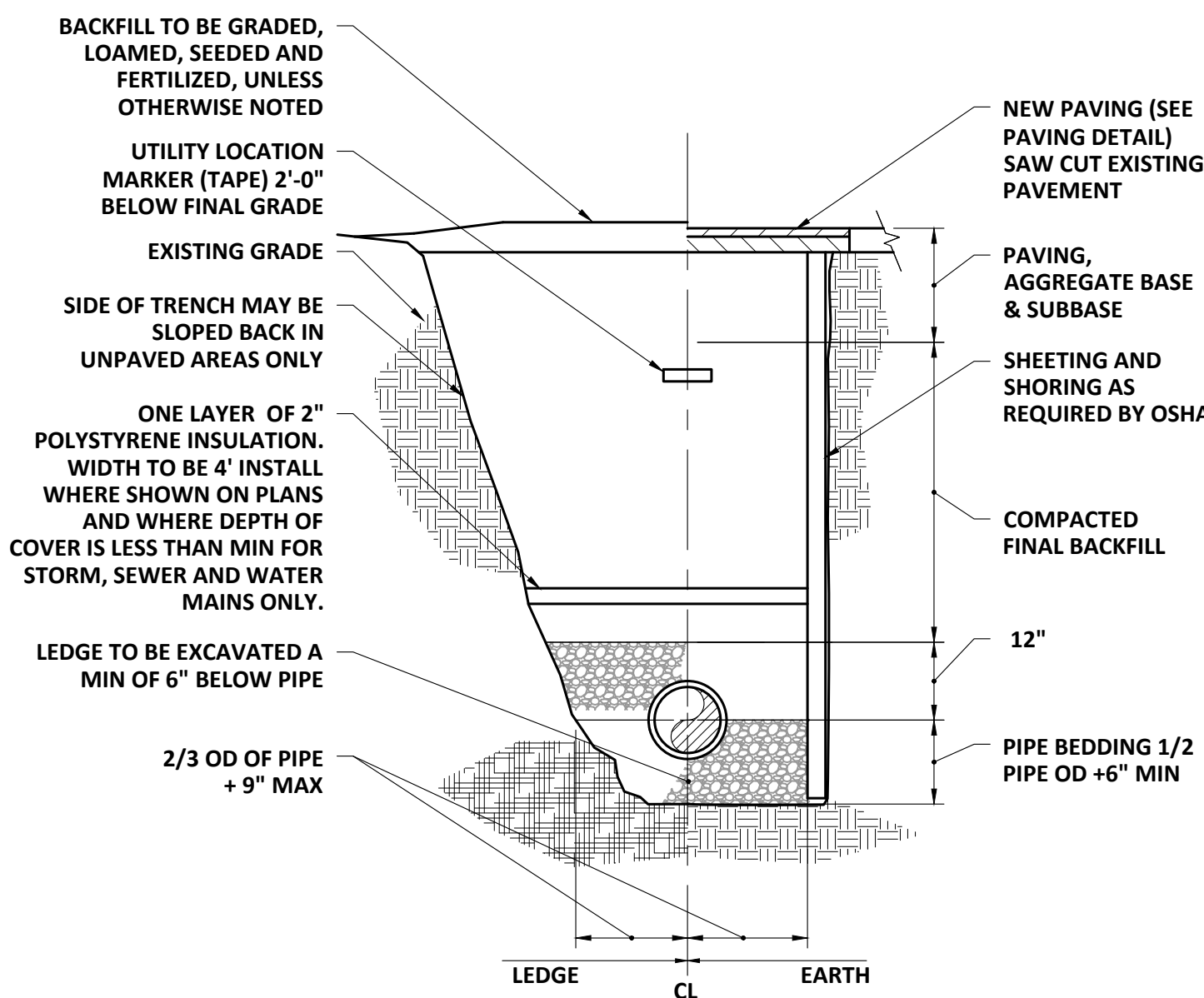


- NOTES:
1. PLACE SWAMP MATS SO PLANKS ARE PERPENDICULAR TO DIRECTION OF TRAFFIC.
 2. PLACE MATS CLOSELY TOGETHER SO THERE ARE NO GAPS BETWEEN MAT SECTIONS.
 3. REMOVE SEDIMENT DEPOSITS ALONG EDGES OF MATS ON A REGULAR BASIS.

TEMPORARY STABILIZED TIMBER MAT CONSTRUCTION ACCESS DRIVE DETAIL - UPLAND
SCALE: "NTS"



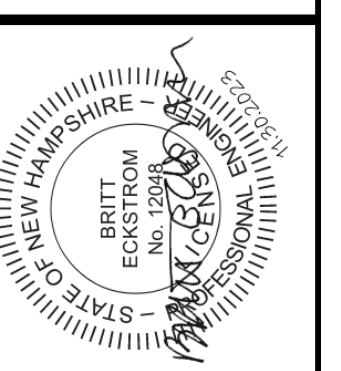
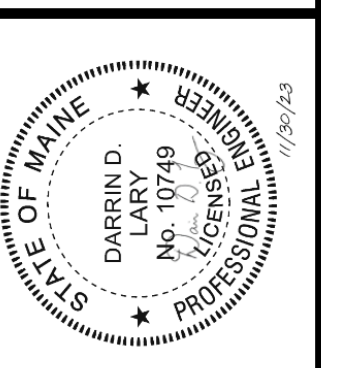
TEMPORARY STABILIZED TIMBER MAT CONSTRUCTION ACCESS DRIVE DETAIL - UPLAND
SCALE: "NTS"



- 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
SCALE: "NTS"

NO	CONTRACT DRAWINGS	DATE
1		11/29
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CITY OF PORTSMOUTH
WATER TRANSMISSION MAIN
VALVE IMPROVEMENTS
DURHAM-NEWINGTON, NEW HAMPSHIRE
DRAWING
C-13

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-Wq 1500: ALTERATION OF TERRAIN AND THE NHDES BEST MANAGEMENT PRACTICES MANUAL FOR THE UTILITY MAINTENANCE IN AND ADJACENT TO WETLANDS AND WATERBODIES.
- THOSE AREAS UNDERGOING ACTUAL CONSTRUCTION WILL BE MAINTAINED IN AN UNTREATED OR UNVEGETATED CONDITION FOR THE MINIMUM TIME REQUIRED. IN GENERAL AREAS TO BE VEGETATED SHALL BE PERMANENTLY STABILIZED WITHIN 15 DAYS OF FINAL GRADING AND TEMPORARILY STABILIZED WITHIN 30 DAYS OF INITIAL DISTURBANCE OF THE SOIL.
- SEDIMENT BARRIERS (SILT FENCE, STONE CHECK DAMS, ETC.) SHOULD BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF UPGRADIENT DRAINAGE AREAS.
- INSTALL SILT FENCE AT TOE OF SLOPES TO FILTER SILT FROM RUNOFF. SEE SILT FENCE DETAIL FOR PROPER INSTALLATION. SILT FENCE WILL REMAIN IN PLACE PER NOTE #5.
- 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 THEY REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS UPSLOPE ARE PERMANENTLY STABILIZED.
- NO SLOPES, EITHER PERMANENT OR TEMPORARY, SHALL BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2 TO 1) UNLESS STABILIZED WITH RIPRAP OR OTHER STRUCTURAL MEANS.
- IF FINAL SEEDING AND SODDING IS NOT EXPECTED PRIOR TO THE ANTICIPATED DATE OF THE FIRST KILLING FROST, USE TEMPORARY ANNUAL RYEGRASS SEEDING AND MULCHING ON ROUGH GRADED SUBSOIL TO PROTECT THE SITE AND DELAY PERMANENT LOAMING, FINE GRADING, AND SEEDING OR SODDING UNTIL SPRING.
- WHEN FEASIBLE, TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINISH GRADED SHALL BE COMPLETED 30 DAYS PRIOR TO THE FIRST KILLING FROST.
- DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT WILL BE RETURNED TO THE SITE AND REGRADED ONTO OPEN AREAS. POST SEEDING SEDIMENT, IF ANY, WILL BE DISPOSED OF IN AN ACCEPTABLE MANNER.
- REVEGETATION MEASURES WILL COMMENCE UPON COMPLETION OF CONSTRUCTION EXCEPT AS NOTED ABOVE. ALL DISTURBED AREAS NOT OTHERWISE STABILIZED WILL BE GRADED, SMOOTHED, AND REVEGETATED.
- ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE IS STABILIZED.
- STABILIZATION SCHEDULE BEFORE WINTER:

SEPTEMBER 15 ALL DISTURBED AREAS MUST BE SEEDED AND MULCHED. ALL SLOPES MUST BE STABILIZED, SEEDED AND MULCHED. SLOPES 3:1 OR GREATER TO BE STABILIZED WITH EROSION CONTROL MATTING AND SEEDED. ALL DISTURBED AREAS TO BE PROTECTED WITH AN ANNUAL GRASS MUST BE SEEDED AT A SEEDING RATE OF 3 POUNDS PER 1,000 SQUARE FEET AND MULCHED.

OCTOBER 1 ALL GRASS-LINED DITCHES AND CHANNELS MUST BE STABILIZED WITH MULCH OR EROSION CONTROL BLANKET.

NOVEMBER 15 ALL STONE-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED. SLOPES THAT ARE COVERED WITH RIPRAP MUST BE CONSTRUCTED BY THAT DATE.

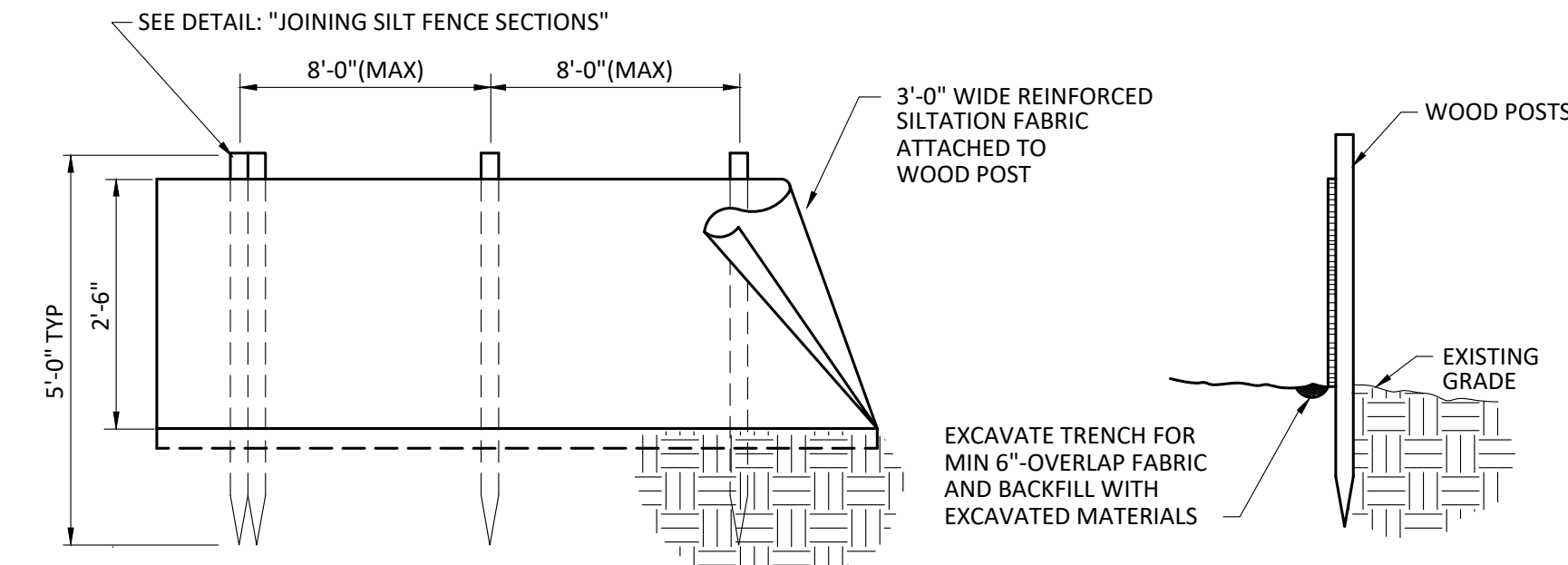
DECEMBER 1 ALL DISTURBED AREAS WHERE THE GROWTH OF VEGETATION FAILS TO BE AT LEAST THREE INCHES TALL OR AT LEAST 75% OF THE DISTURBED SOIL IS COVERED BY VEGETATION, MUST BE PROTECTED FOR OVER-WINTER.

EROSION CONTROL - WINTER CONSTRUCTION

- WINTER CONSTRUCTION PERIOD DEFINED: NOVEMBER 1 THROUGH APRIL 15
- 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 AREA SHOULD BE LIMITED SUCH THAT THE AREA CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT.
- CONTINUATION OF EARTHWORK OPERATIONS ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED SUCH THAT NO LARGER AREA OF THE SITE IS WITHOUT EROSION CONTROL PROTECTION AS LISTED IN ITEM 2 ABOVE.
- AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW AT A RATE OF 100 LB. PER 1,000 SQUARE FEET (WITH OR WITHOUT SEEDING) OR DORMANT SEEDED, MULCHED AND ADEQUATELY ANCHORED BY AN APPROVED ANCHORING TECHNIQUE. IN ALL CASES, MULCH SHALL BE APPLIED SUCH THAT SOIL SURFACE IS NOT VISIBLE THROUGH THE MULCH.
- BETWEEN THE DATES OF OCTOBER 15 AND APRIL 15, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE-FREEZING TEMPERATURES, THE SLOPES SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1ST AND IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADED AND IS SMOOTH, THEN THE AREA MUST BE STABILIZED WITH MULCH. IF CONSTRUCTION CONTINUES DURING FREEZING WEATHER, ALL EXPOSED AREAS SHALL BE GRADED BEFORE FREEZING AND THE SURFACE TEMPORARILY PROTECTED FROM EROSION BY THE APPLICATION OF MULCH. SLOPES SHALL NOT BE LEFT EXPOSED OVER THE WINTER OR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS WEATHER CONDITIONS ALLOW DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF BALES OF HAY OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS.
- THE APPLICATION OF MULCH TO FINE GRADED AREAS WILL BE STABILIZED AS FOLLOWS:
 - BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 15TH ALL MULCH SHALL BE ANCHORED BY EITHER PEG LINE, MULCH NETTING, ASPHALT EMULSION, CHEMICAL TACK OR WOOD CELLULOSE FIBER.
 - MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GRATER THAN 8%.
 - MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 15%. AFTER OCTOBER 1ST, THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.
- AFTER NOVEMBER 1ST THE CONTRACTOR SHALL APPLY MULCH AND ANCHORING ON ALL BARE EARTH AT THE END OF EACH WORKING DAY.
- DURING WINTER CONSTRUCTION PERIODS ALL SNOW SHALL BE REMOVED FROM AREAS OF MULCHING PRIOR TO PLACEMENT.

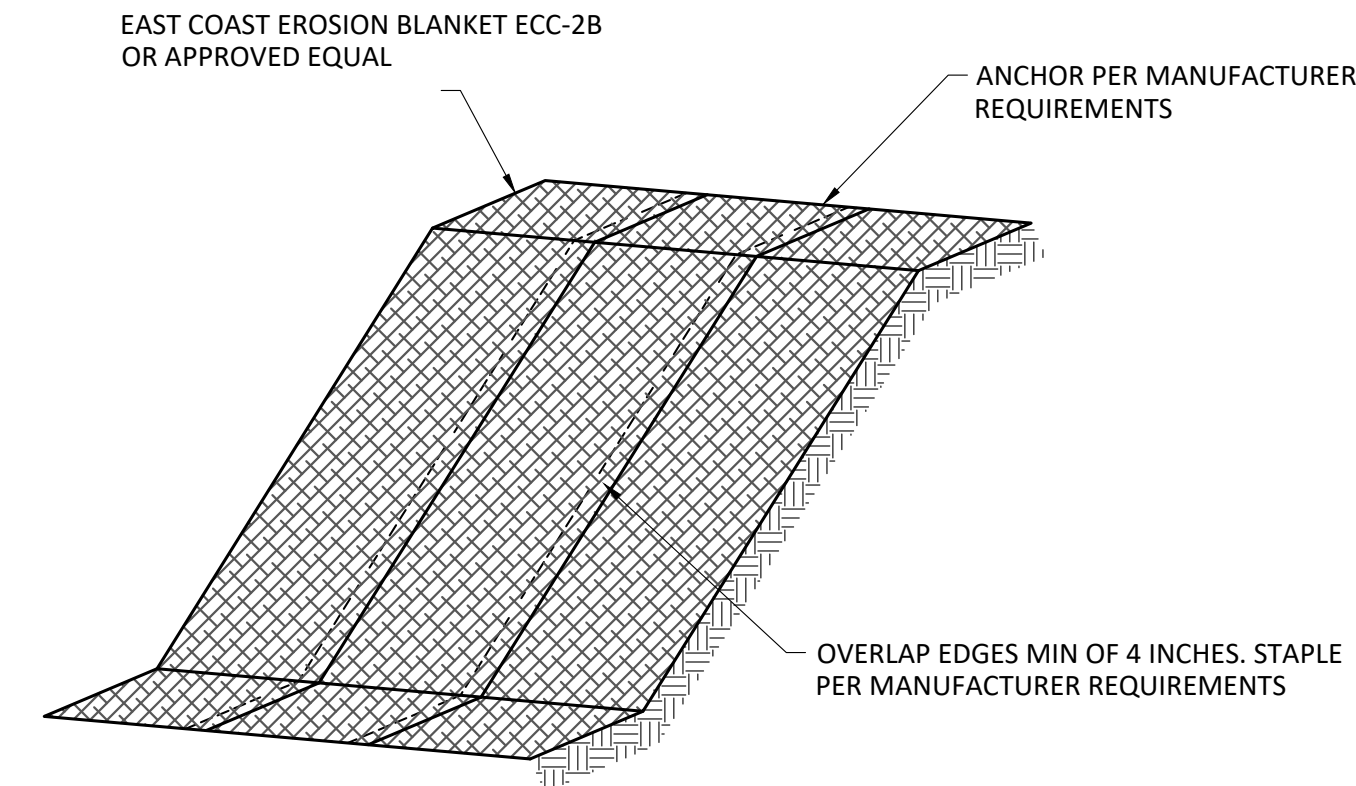
EROSION CONTROL - WETLAND NOTES

- WETLANDS AND SURFACE WATERS (EXCEPTING 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.
- IF THE WORK INCLUDES CROSSING OF WETLANDS AND/OR STREAMS, THE CONTRACTOR SHALL TAKE SPECIAL PRECAUTIONS WORKING IN THESE AREAS. CONTRACTOR IS TO PLAN EARTH DISTURBANCE AND GRADING ACTIVITIES TO MINIMIZE THE AREA OF SOIL EXPOSED AT ONE TIME, AS WELL AS THE LENGTH OF TIME BETWEEN INITIAL SOIL EXPOSURE AND FINAL GRADING.
- ANY WETLAND CROSSING WORK SHALL BE COMPLETED BETWEEN THE PERIOD OF MAY 1 AND SEPTEMBER 30
- ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO COMMENCING CONSTRUCTION WITHIN OR ADJACENT TO WETLAND AREAS.
- WETLAND VEGETATIVE LAYERS SHALL BE REMOVED AND SALVAGED FOR RESTORATION OF THE DISTURBED AREAS.
- SOIL EXCAVATED FROM WETLANDS SHALL BE TEMPORARILY STOCKPILED IN UPLAND AREAS SEPARATED FROM OTHER MATERIALS AND SOILS. ALL STOCKPILED WETLAND SOILS SHALL BE PUT BACK IN THE SAME TRENCH THEY WERE EXCAVATED FROM. STORAGE AREAS FOR WETLAND MATERIALS SHALL BE PROPERLY PROTECTED AGAINST EROSION.
- DISPERSE CLEAN STORMWATER AWAY FROM ALL WETLANDS TO UNDISTURBED, VEGETATED, FLAT OR MODERATE-SLOPED, SURFACES WHEREVER POSSIBLE, RATHER THAN CONCENTRATED INTO CHANNELS.
- ANY SIGN OF RILL OR GULLY EROSION SHALL BE IMMEDIATELY INVESTIGATED AND REPAIRED AS NEEDED BASED ON THE DISCRETION OF THE ENGINEER AND OR OWNER.
- ONLY DISTURB, CLEAR OR GRADE AREAS NECESSARY FOR CONSTRUCTION. FLAG OR OTHERWISE DELINEATE IDENTIFIED WETLAND AREAS NOT TO BE DISTURBED. EXCLUDE VEHICLES AND CONSTRUCTION EQUIPMENT FROM THESE AREAS TO PRESERVE NATURAL VEGETATION. CONTRACTOR TO AVOID GRADING IN WETLANDS CROSSING AREAS.
- FALL AND WINTER EROSION CONTROL MEASURES MUST BE UPGRADED AND REFINED TO PROTECT THE DISTURBED WETLAND AREAS FROM SPRING RUNOFF AND SNOWMELT
- SEEDING OF THE DISTURBED AREAS WITHIN WETLAND AREAS SHALL UTILIZE MIXTURES APPROPRIATE FOR WETLAND AREAS AS OUTLINED IN SECTION 02270 OF THE SPECIFICATIONS.
- TRENCH DEWATERING RUNOFF MUST BE DIRECTED AWAY FROM WETLANDS AREAS USING THE APPLICABLE EROSION CONTROL PRACTICES. DEWATERING WILL NOT BE PERMITTED FOR TRENCH EXCAVATION IN WETLANDS.



SILT FENCE INSTALLATION DETAIL

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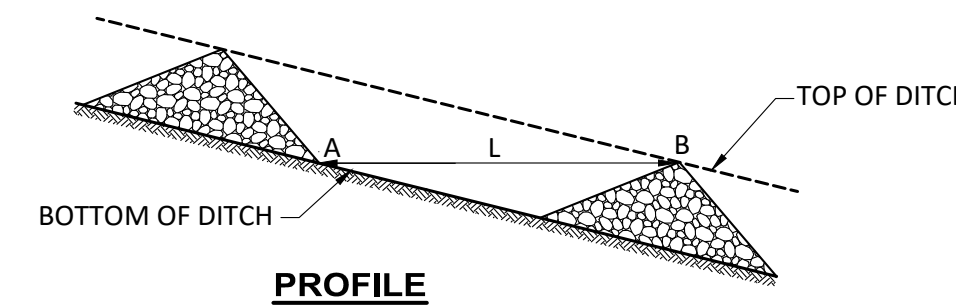
EROSION CONTROL MATTING - SLOPES

NTS

INSTALL ON SLOPES 3:1 OR GREATER

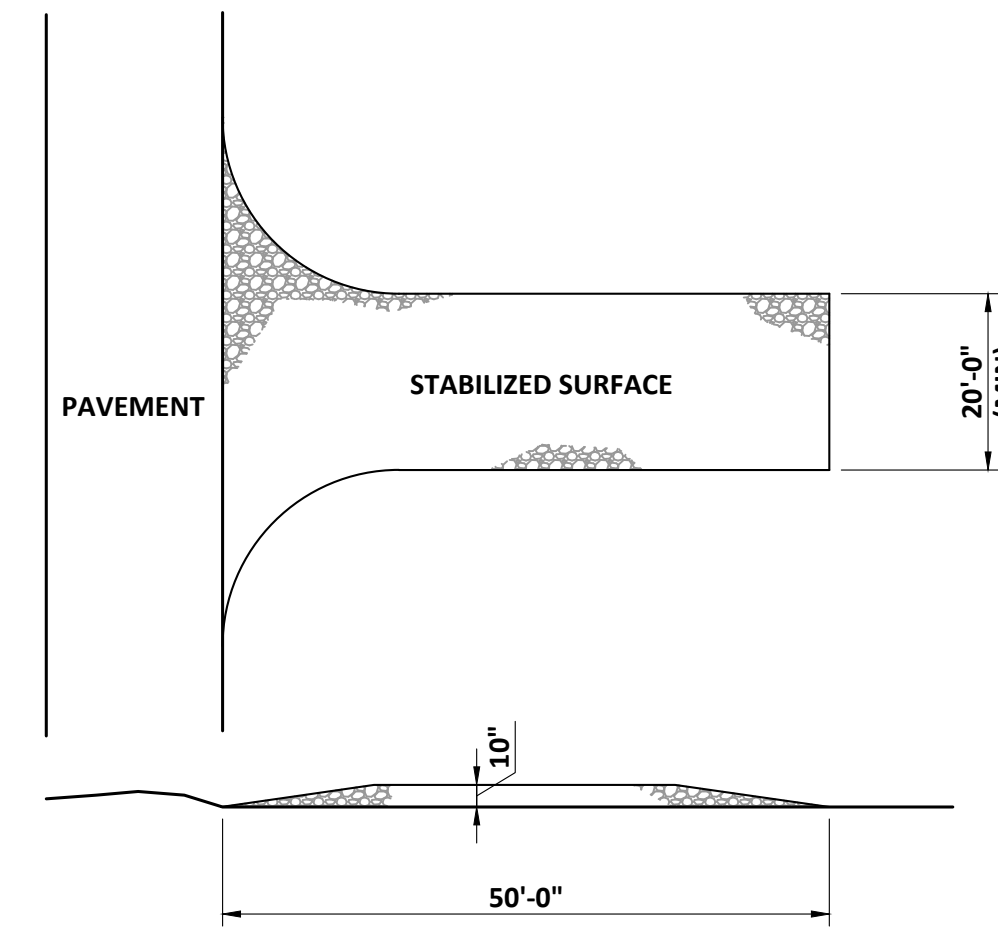
DITCH SLOPE (FT/FT)	L (FT)
0.020	100
0.030	66
0.040	50
0.050	40
0.080	25
0.100	20
0.120	17
0.150	13

CROSS SECTION



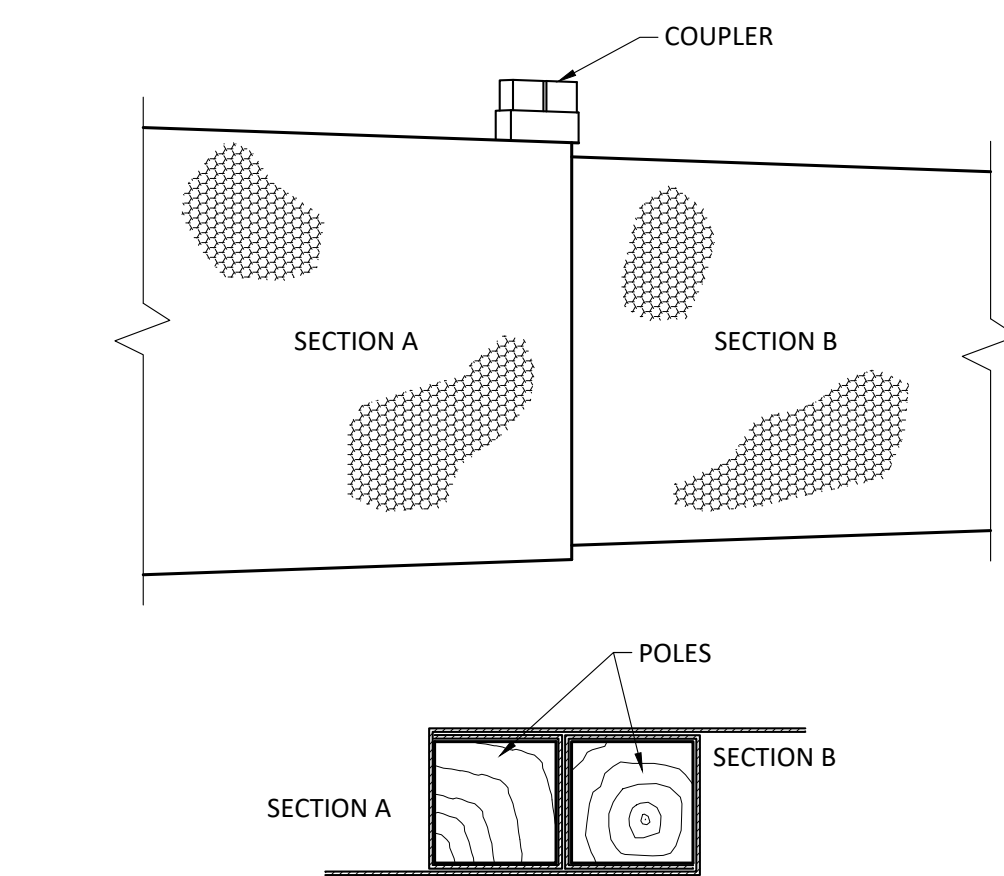
STONE CHECK DAM DETAIL

NTS



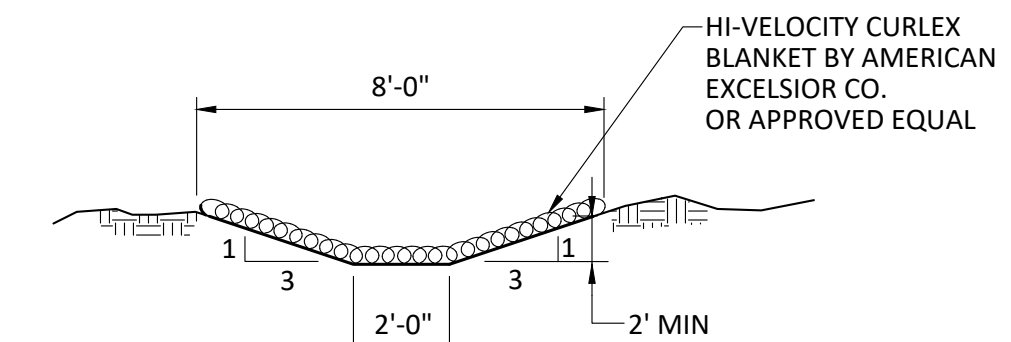
STABILIZED CONSTRUCTION ENTRANCE

SCALE: "NTS"



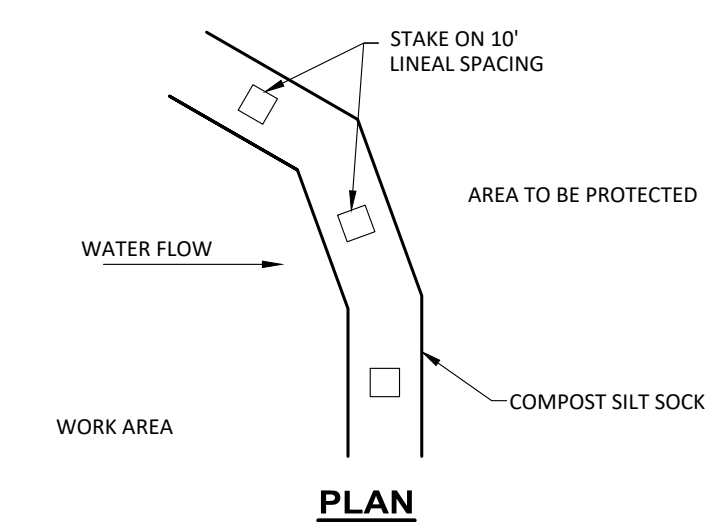
JOINING SILT FENCE SECTIONS

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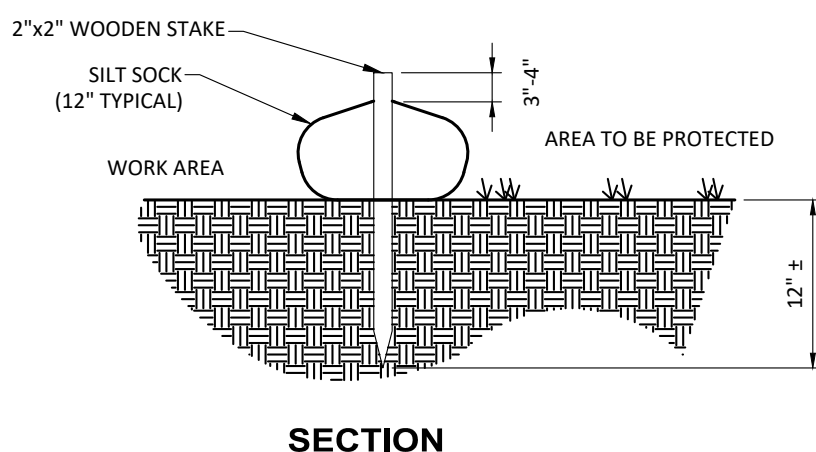


EROSION CONTROL MATTING - DITCHES

NTS



PLAN



SECTION

NOTES:

- ALL MATERIAL TO MEET SPECIFICATIONS
- SILT SOCK COMPOST/SOIL/ROCK/SEED FILL TO MEET APPLICATION REQUIREMENTS
- SILT SOCK DEPICTED IS FOR MINIMUM SLOPES. GREATER SLOPES MAY REQUIRE LARGER SOCKS PER THE ENGINEER
- COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

COMPOST SILT SOCK

NTS

APP'D	DATE
B. BECK	11/29

NO	CONTRACT DRAWINGS	SUBMISSIONS/REVISIONS
1		
2		
3		
4		

DESIGNED BY: D. LARY
 CAD CORP.: W. EDGAR
 CD: W. EDGAR
 CHECKED BY: D. LARY
 DATE: 11/29/2023
 APPROVED BY: E. EKSTROM
 DATE: 11/29/2023
 PROJECT NO.: 14202

STATE OF NEW HAMPSHIRE
 PROFESSIONAL ENGINEER
 DARRIN D. EKSTROM
 No. 10749
 License No. 10749

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CITY OF PORTSMOUTH
 WATER TRANSMISSION MAIN
 VALVE IMPROVEMENTS
 DURHAM-NEWINGTON, NEW HAMPSHIRE
 EROSION CONTROL NOTES & DETAILS
DRAWING
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