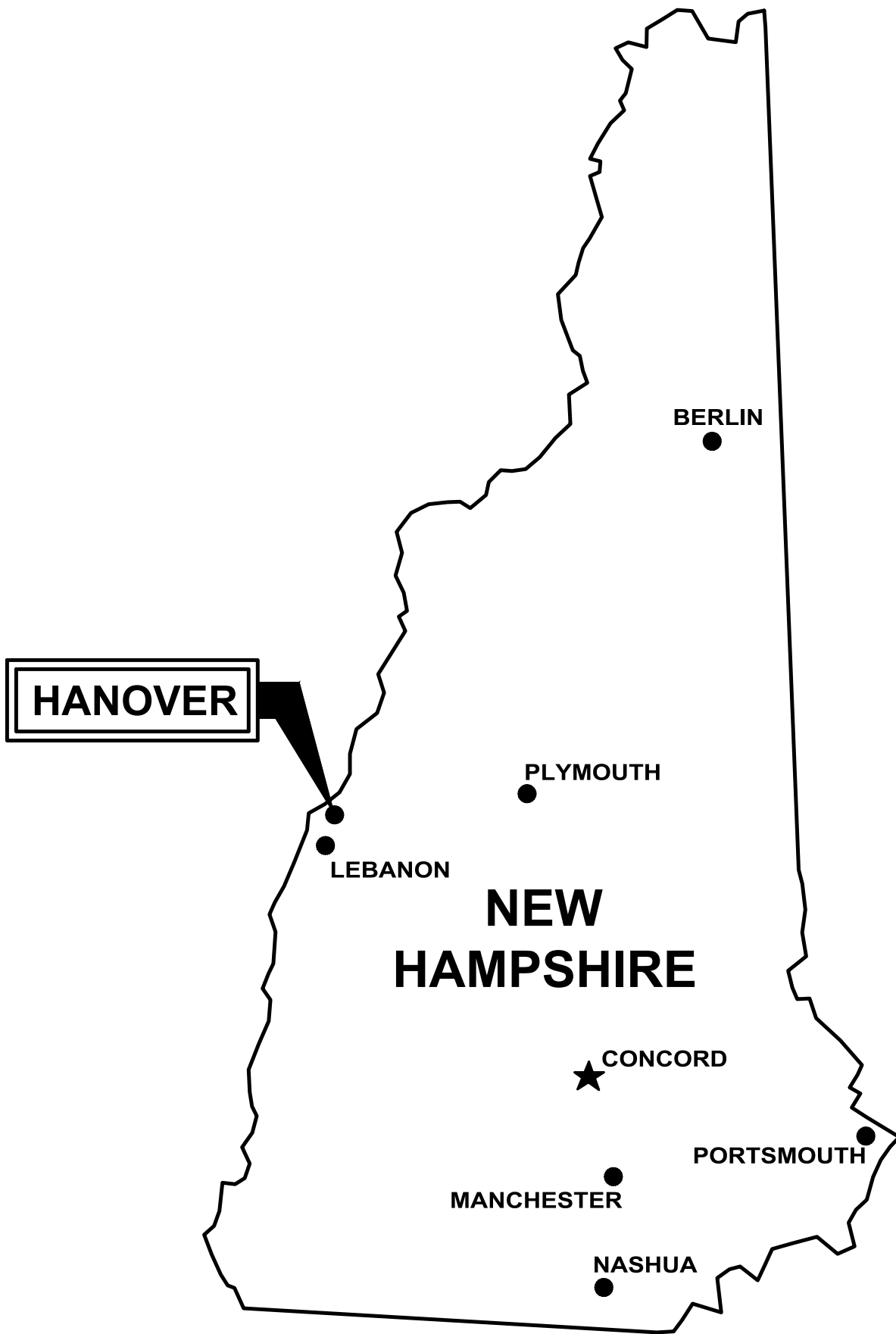


TOWN OF HANOVER, NEW HAMPSHIRE

CONTRACT DRAWINGS FOR WATER DISTRIBUTION IMPROVEMENTS

OCTOBER 2024



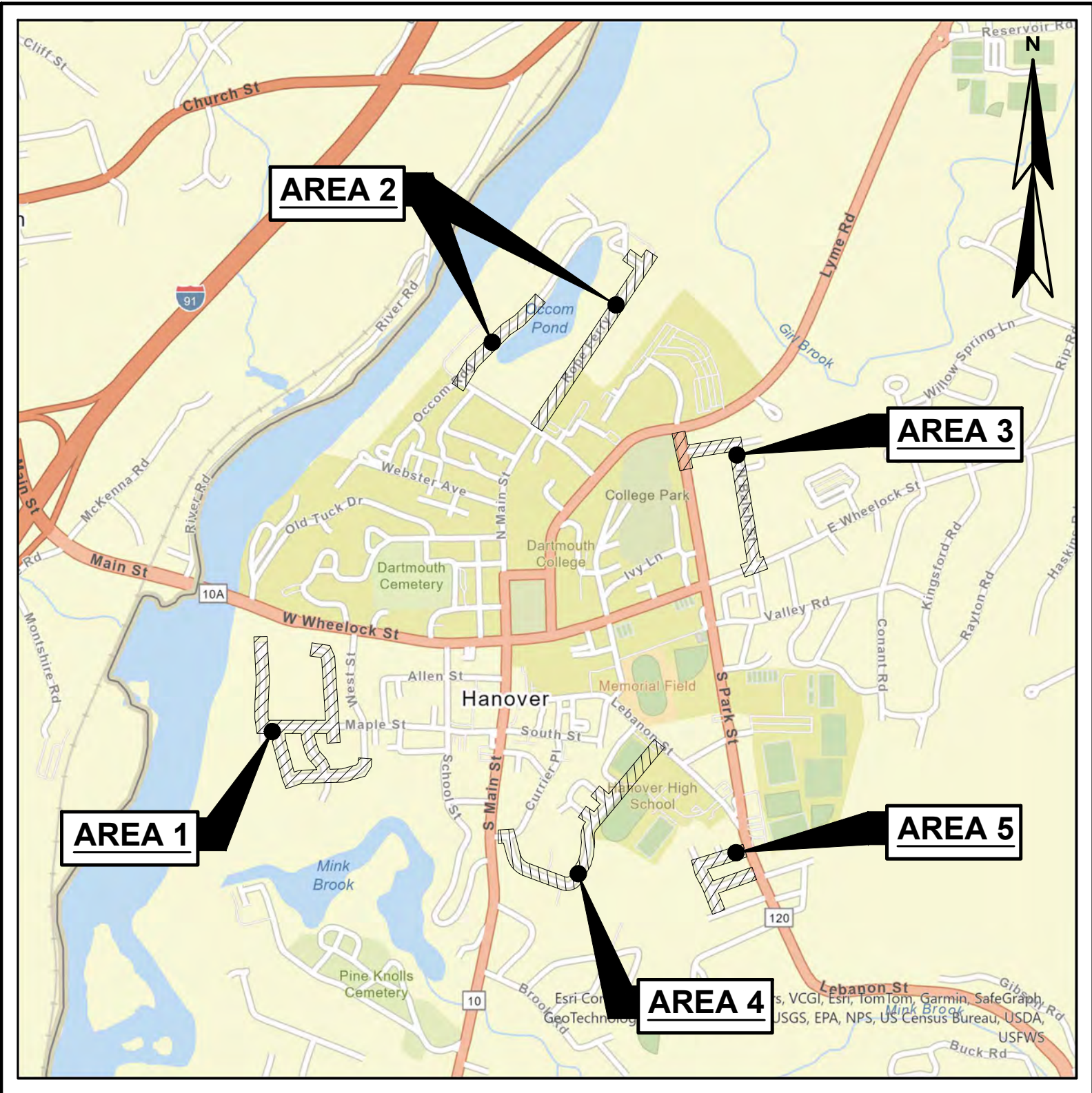
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--- COVER SHEET

CIVIL

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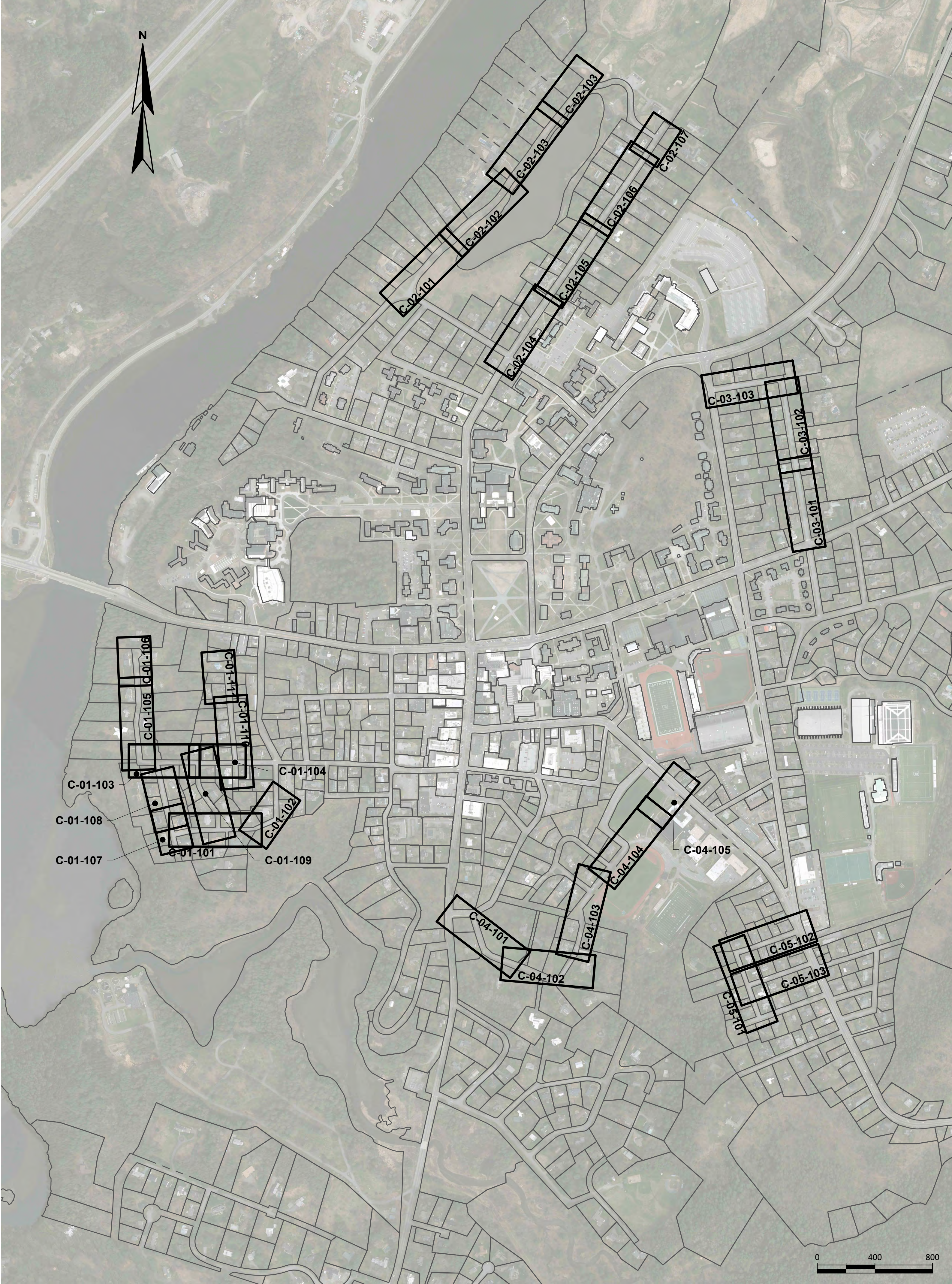


LOCATION PLAN
SCALE: 1"=2,000'



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DRAWING INDEX
SCALE: 1"=400'

SUMMARY OF PRIVATE WATER SERVICES TO BE REPLACED

Project Area	Address	Parcel ID	Private Service Diameter	Private Service Material	Private Service Length	Pipe Coming In From Wall or Floor?
1	3 Downing Road	22-003-01	3/4"	Brass	31	Wall
1	6 Downing Road	22-093-01		Brass	44	
1	8 Downing Road	22-086-01	3/4"	Brass	41	Wall
1	11 Downing Road	33-003-01	3/4"	Brass	39	Wall
1	16 Downing Road	33-001-01	3/4"	Brass	25	Wall
1	17 Downing Road	33-002-01	3/4"	Brass	60	Wall
1	25 Maple Street	22-005-01	3/4"	Brass	50	Wall
1	30 Maple Street	22-060-01		Brass	28	
1	1 River Ridge Road	22-083-01	3/4"	Brass	27	Wall
1	7 River Ridge Road	22-080-01	3/4"	Brass	40	Wall
1	8 River Ridge Road	22-076-01	3/4"	Brass	31	Wall
1	2 Sargent Street	22-006-01	3/4"	Brass	30	Wall
1	3 Sargent Street	22-012-01		Brass	27	
1	8 Sargent Street	22-009-01	3/4"	Brass	28	Floor
2	16 Occom Ridge	37-008-01	3/4"	Brass	130	Floor
2	16 Rope Ferry Road	40-019-01	3/4"	Brass	19	Wall
2	18 Rope Ferry Road	40-020-01		Brass	50	
3	6 N Balch Street	38-035-01	3/4"	Brass	48	Wall
3	7 N Balch Street	38-046-01		Brass	51	
3	10 N Balch Street	38-037-01	3/4"	Brass	49	Wall
3	11 N Balch Street	38-043-01		Brass	52	
3	16 N Balch Street	38-040-01	3/4"	Brass	45	Wall
3	3 Parkway	38-024-01	3/4"	Brass	75	Floor
3	4 Parkway	38-017-01	3/4"	Brass	47	Wall
4	4 Hovey Lane	23-050-01	3/4"	Brass	47	Floor
5	2 Barrymore Road	23-138-01		Brass		
5	3 Barrymore Road	23-147-01	3/4"	Brass	26	Wall
5	4 Barrymore Road	23-139-01		Brass	29	
5	6 Brockway Road	23-127-01	3/4"	Brass	27	Floor
5	8 Woodrow Road	23-130-01		Brass	80	

NOTE:
THESE PROPERTIES ARE INDICATED ON THE DRAWINGS WITH THE TEXT "HOMEOWNER SERVICE OPTION"

PROJECT NO: 21662
DESIGNED: D.SAULNER
CAD COORD: J.MICHAUD
CAD: J.MICHAUD
CHECKED: R.DAVEE
DATE: 10-18-2024
APPROVED: B.ECKSTROM
DATE: 10-18-2024
SUBMISSION: CONTRACT DRAWINGS

NO
REVISIONS
APPD
DATE

TOWN OF HANOVER, NEW HAMPSHIRE
WATER DISTRIBUTION IMPROVEMENTS

DRAWING INDEX

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

STATE OF NEW HAMPSHIRE
BRITT
ENGINEER
No. 12538
Professional Seal

4-200711101

DRAWING
G-00-001

GENERAL NOTES

1.

THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE PERMITS OF A TEMPORARY NATURE NECESSARY FOR THE PROSECUTION OF THE WORK LISTED IN THE 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.
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 WATER OR WHEN DIRECTED BY THE OWNER TO BE REPLACED.
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 AT LEAST 10 CALENDAR DAYS PRIOR TO CONNECTING PROPOSED UTILITIES TO EXISTING UTILITIES. THE RESULTS OF TEST PITS DUG TO DETERMINE EXISTING UTILITY ELEVATIONS AND LOCATIONS WILL BE REPORTED TO THE ENGINEER AT LEAST 10 CALENDAR DAYS PRIOR TO ANY WORK. ADJUSTMENTS TO INVERTS, LENGTHS, AND SLOPES OF PROPOSED UTILITIES MAY BE REQUIRED AS DIRECTED BY THE ENGINEER. THE HORIZONTAL ALIGNMENT OF THE NEW UTILITY MAY BE ADJUSTED IN THE FIELD SUBJECT TO PRIOR APPROVAL OF THE ENGINEER.
11.

TEMPORARY PAVING OR STEEL PLATING SHALL BE PLACED OVER TRENCHES WITHIN THE ROADWAY AT THE END OF EVERY WORK DAY. BASE PAVING SHALL BE CONDUCTED WITHIN TWO WEEKS OF COMPLETION OF PLACEMENT OF FINAL BACKFILL UNLESS OTHERWISE AUTHORIZED BY ENGINEER. BASE PAVEMENT SHALL BE INSTALLED AND MAINTAINED BY CONTRACTOR FOR THE WINTER SEASON BEFORE FINAL PAVEMENT IS PLACED. FINAL PAVEMENT MAY BE PLACED OVER THE BASE PAVING PROVIDED BASE PAVING COURSE IS IN GOOD REPAIR. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING AND SHIMMING THE BASE PAVEMENT AS NECESSARY TO ACCEPT THE FINAL PAVING COURSE. IF CONDITIONS WARRANT, THE CONTRACTOR MAY BE REQUIRED TO REMOVE AND REPLACE BASE PAVING PRIOR TO FINAL PAVING.

EXISTING SITE CONDITIONS

1.

THE LOCATIONS OF UNDERGROUND UTILITIES AND STRUCTURES, AS SHOWN ON THE DRAWINGS, ARE APPROXIMATE AND MAY NOT BE COMPLETE. 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 SERVICES, WATER SERVICES 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:

LIBERTY UTILITIES

MEREDITH VERNER

DISTRIBUTION DESIGN ENGINEER

603-558-9144
- WATER/SEWER/DRAIN:

TOWN OF HANOVER

CHRISTINA HALL

DEPUTY DIRECTOR OF ENG'G AND UTILITIES

603-640-3384
- TELEPHONE/CABLE:

CONSOLIDATED COMM.

17 MAIN ST

ENFIELD, NH 03748

844-968-7224
- DIG SAFE:

1-800-DIG-SAFE

1-800-344-7233
- OTHER:

DARTMOUTH COLLEGE

RAY BRANDARIZ

FACILITIES WORK PROCESS MANAGER

603-646-1869
3.

THERE ARE NO KNOWN HAZARDOUS ENVIRONMENTAL CONDITIONS WITHIN THE AREA OF WORK. IF THE PRESENCE OF 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.
4.

TO THE EXTENT POSSIBLE ASBESTOS CEMENT (AC) PIPE MATERIAL IS IDENTIFIED. CONTRACTOR MAY ENCOUNTER AC MATERIALS OUTSIDE OF THOSE IDENTIFIED. CONTRACTOR SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF OSHA AND ALL OTHER FEDERAL, STATE, AND LOCAL REGULATIONS WHEN HANDLING, REMOVING, AND DISPOSING OF ASBESTOS CEMENT PIPES. A BID ITEM HAS BEEN INCLUDED IN THE BID FORM TO ESTABLISH A UNIT PRICE FOR THE REMOVAL AND DISPOSAL OF ASBESTOS CEMENT PIPE. SEE SPECIFICATION SECTION 02076.
5.

EXISTING TRAFFIC SIGNAL LOOP DETECTORS ARE NOT ALL SHOWN AND MAY NOT BE VISUALLY DISCERNABLE. CONTRACTOR IS TO ASSUME THAT SIGNAL LOOP DETECTORS ARE PRESENT AT ALL INTERSECTIONS WITH TRAFFIC SIGNALS. IF EXCAVATION IS REQUIRED AT THE INTERSECTION, SIGNAL LOOP SHALL BE REPLACED IN ACCORDANCE WITH MUNICIPALITY'S TRAFFIC SIGNAL STANDARDS.

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, BUT AT ALL TIMES WITHIN EXISTING ROAD RIGHTS_OF_WAY AND PROPERTY LINES ON STATE OR TOWN OWNED PROPERTY OR EASEMENTS. 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. ALL TREE CUTTING WILL BE FLAGGED BY CONTRACTOR AND REVIEWED ON SITE WALK WITH HANOVER'S ARBORIST PRIOR TO CUTTING. PLEASE REFER TO SPECIFICATION SECTION 02110 FOR CONTACT INFO.
3.

CONTRACTOR SHALL PROVIDE PROPER EROSION CONTROL AND DRAINAGE MEASURES IN ALL AREAS OF WORK, AND CONFINE SOIL SEDIMENT TO WITHIN THE LIMITS OF EXCAVATION. 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.
4.

ALL STORM DRAINAGE INLETS SHALL BE PROTECTED 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.
5.

TEST PIT AND/OR BORING LOGS FOR THE PROJECT SITE ARE INCLUDED IN APPENDIX A OF THE SPECIFICATIONS. THESE ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. PLEASE NOTE THAT THE SOIL DESCRIPTIONS PROVIDED ON THE TEST PIT BORING LOGS DO NOT REPRESENT FIELD CONDITIONS OTHER THAN AT THE SPECIFIC TEST BORING LOCATIONS. THE CONDITIONS BETWEEN BORING LOCATIONS MAY VARY FROM THOSE SHOWN ON THE TEST BORING LOGS.
6.

CONTRACTOR SHALL CONTROL DUST ON THE CONSTRUCTION SITE TO A REASONABLE LIMIT, AS DETERMINED BY THE ENGINEER, AND AS OUTLINED IN SPECIFICATION SECTION 01562.
7.

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.
8.

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.

9.

THE CONTRACTOR SHALL NOT HAVE ANY RIGHT OF PROPERTY IN ANY MATERIALS TAKEN FROM ANY EXCAVATION. FERROUS METALS (CAST IRON AND DUCTILE IRON PIPES, VALVES, FITTINGS, AND APPURTENANCES) SHALL BE DELIVERED AND STOCKPILED AT THE TOWN'S SHED NO. 2 AT 181 GREENSBOROUGH ROAD. 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, INCLUDING NON-FERROUS PIPING AND OTHER ITEMS. THE CONTRACTOR SHALL DISPOSE OF UNSUITABLE AND EXCESS MATERIAL IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE CONTRACT DOCUMENTS.
10.

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.
11.

WHERE EXISTING PAVEMENT IS REMOVED AND REPLACED, MATCH EXISTING GRADES TO THE EXTENT POSSIBLE. COORDINATE FINE GRADING WITH THE ENGINEER.
12.

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.
13.

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.

REFER TO THE DRAWINGS FOR ADDITIONAL LAYOUT INFORMATION.
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.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR RE-ESTABLISHING AND RESETTling ALL EXISTING PROPERTY MONUMENTATION DISTURBED BY CONSTRUCTION. THIS WORK SHALL BE DONE BY A LAND SURVEYOR REGISTERED IN THE STATE OF NEW HAMPSHIRE, AT NO ADDITIONAL COST TO THE OWNER.
5.

WRITTEN DIMENSIONS SHALL PREVAIL. DO NOT SCALE DISTANCES FROM THE DRAWINGS. REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
6.

ALL ELEVATIONS REFER TO THE NAVD83 DATUM. ORIENTATION IS GRID NORTH ON THE NEW HAMPSHIRE STATE PLANE NAD83 COORDINATE SYSTEM. PROJECT BENCH MARK IS SHOWN ON THE DRAWINGS. CONTRACTOR SHALL VERIFY BENCHMARK ELEVATIONS PRIOR TO USING IN CONSTRUCTION.
7.

EXISTING CONDITIONS SITE PLAN DEVELOPED FROM SURVEY DRAWING PREPARED BY HAYNER/SWANSON, INC., DATED MARCH 23, 2024, AND EXISTING RECORD DRAWING INFORMATION.
8.

WETLANDS WERE DELINEATED AND FLAGGED BY SEEKAMP ENVIRONMENTAL CONSULTANTS IN NOVEMBER OF 2023 AND FIELD LOCATED BY HAYNER/SWANSON, INC.

WATER MAIN GENERAL NOTES

1.

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.
2.

REFER TO SPECIFICATION SECTION 02200 FOR PIPE AND STRUCTURE BEDDING AND BACKFILL REQUIREMENTS.
3.

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.
4.

OPEN TRENCHES IN THE ROADWAY MUST BE BACKFILLED AND PLATED OR PROVIDED WITH TEMPORARY PAVEMENT AT THE END OF THE WORKDAY.
5.

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.
6.

WHENEVER SEWER AND WATER MAINS MUST CROSS, WATER LINES SHOULD BE INSTALLED ABOVE SEWER 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 MUST CROSS UNDER A SEWER LINE, A FULL LENGTH OF PIPE SHALL BE CENTERED ON THE SEWER LINE SO THAT BOTH JOINTS WILL BE AS FAR FROM THE SEWER LINE AS POSSIBLE. WHERE 18-INCHES OF VERTICAL SEPARATION IS NOT POSSIBLE, THE CONTRACTOR SHALL OBTAIN A SEPARATION REQUIREMENT WAIVER FROM DES.
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 NEW WATER MAIN. LAYOUT SHALL BE REVIEWED AND ACCEPTED BY THE OWNER AND ENGINEER. THE NEW WATER MAIN MUST BE LOCATED WITHIN THE RIGHTS-OF-WAY SHOWN ON THE DRAWINGS. THE CONTRACTOR WILL BE RESPONSIBLE FOR DOCUMENTATION OF THE WATER MAIN LAYOUT FOR RECORD DRAWINGS.
9.

MINIMUM DEPTH OF COVER SHALL BE 5'-6" AND MAXIMUM DEPTH OF COVER SHALL BE 7'-0". UNLESS SHOWN OTHERWISE ON THE DRAWINGS. THE NEW MAIN SHALL GENERALLY FOLLOW THE GROUND CONTOUR, HOWEVER, ABRUPT CHANGES IN GRADE SHALL BE AVOIDED. AT LOCAL HIGH POINTS OR WHERE AIR RELEASE VALVES ARE SHOWN, THE CONTRACTOR SHALL SLOPE NEW MAIN AS NEEDED TO MAINTAIN HIGH POINT AT AIR RELEASE VALVE. IF LEDGE IS ENCOUNTERED THE MINIMUM DEPTH OF COVER SHALL BE 5'-0".
10.

IF MINIMUM COVER CANNOT BE ATTAINED DUE TO UTILITY CONFLICTS THE DEPTH OF COVER SHALL NOT BE LESS THAN 4'-0" AND 2" RIGID BOARD INSULATION SHALL BE USED AS DETAILED. RIGID BOARD INSULATION SHALL BE 40 PSI COMPRESSIVE STRENGTH, DOW STYROFOAM HIGHLOAD 40, CERTIFOAM 40 OR EQUAL.
11.

NEW HYDRANTS SHALL BE FIELD LOCATED AND APPROVED BY THE OWNER AND FIRE DEPARTMENT.
12.

ALL BENDS, TEES, REDUCERS, HYDRANTS AND PLUGS SHALL BE RESTRAINED BY USING CONCRETE THRUST BLOCKS AND GRIP-RINGS OR OTHER METHOD AS SHOWN ON THE DRAWINGS. ANCHOR TEES SHALL BE USED FOR ALL HYDRANT BRANCHES.
13.

TEST PRESSURES FOR THE COMBINATION PRESSURE AND LEAKAGE TESTS SHALL BE 150 PSI. TEST DURATION SHALL BE TWO HOURS.
14.

CONNECTIONS TO EXISTING WATER MAIN SHALL BE COORDINATED WITH THE OWNER.
15.

ALL WATER MAINS THAT ARE DISCONNECTED FROM THE WATER SYSTEM AND ARE TO BE LEFT IN PLACE SHALL BE CAPPED WITH A M.J. CAP OR PLUG. ABANDONED MAINS SHALL BE FILLED WITH PRESSURE GROUT.
16.

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.
17.

CONTINUOUS WATER SERVICE MUST BE MAINTAINED DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE TEMPORARY PIPING AND SERVICES SUITABLE FOR AN OPERATING PRESSURE OF 110 PSI. ACCESS TO ROAD AND DRIVEWAYS SHALL ALSO BE MAINTAINED.
18.

ALL EXISTING WATER SERVICES ARE TO BE CONNECTED TO THE NEW MAIN. EXISTING SERVICES, AS SHOWN ON THE DRAWINGS, ARE FOR THE CONTRACTOR'S REFERENCE. THE CONTRACTOR SHALL VERIFY LOCATION, SIZE AND TYPE OF ALL SERVICES. IF NOT LABELED ON THE PLAN, THE SERVICE SHALL BE ASSUMED TO BE A MINIMUM SERVICE SIZE OF 1-INCH. NEW CURB STOPS SHALL BE INSTALLED AS CLOSE AS PRACTICABLE TO THE PROPERTY LINE.
19.

SOME WATER SERVICES SHALL BE REPLACED BEYOND THE RIGHT-OF-WAY, ON PRIVATE PROPERTY, UP TO AND INTO RESIDENCES. REFER TO LIST OF PRIVATE SERVICE REPLACEMENTS IN APPENDIX B OF THE SPECIFICATIONS. THESE PROPERTIES ARE NOTED ON THE DRAWINGS WITH THE TEXT "HOMEOWNER SERVICE OPTION". FINAL DECISION ABOUT WORK PROCEEDING ON ANY PRIVATE PROPERTY LIES WITH THE OWNER OF SAID PROPERTY.
20.

EXISTING HYDRANTS TO BE REMOVED SHALL BE STORED AT AN OWNER APPROVED LOCATION AND REMAIN PROPERTY OF THE OWNER UNLESS OTHERWISE NOTED.
21.

EXISTING VALVES AND FITTINGS SALVAGED FOR REUSE SHALL BE STORED AT AN OWNER APPROVED LOCATION AND REMAIN PROPERTY OF THE OWNER.
22.

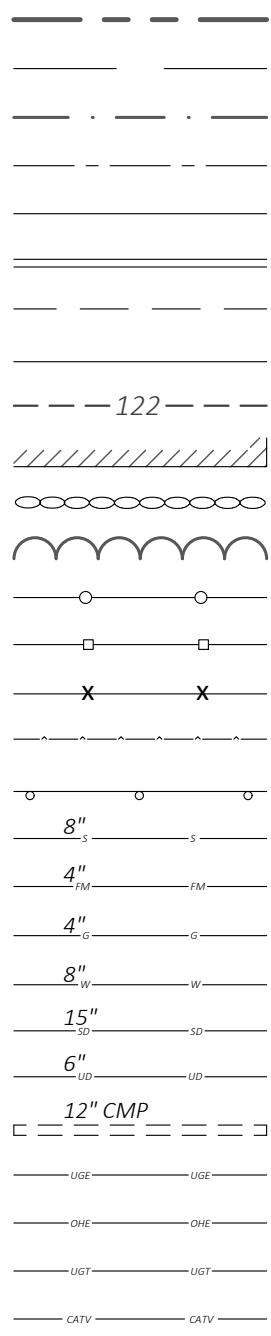
ALL VALVES SHALL OPEN LEFT.
23.

CONSTRUCT HANDICAP RAMPS AT ENDS OF ALL SIDEWALKS AND ROADWAYS AND AS OTHERWISE SHOWN ON THE PLANS. SIDEWALKS AND HANDICAP RAMPS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA).

CIVIL ABBREVIATIONS

&	AND
Ø, DIA	DIAMETER
#, NO	NUMBER
AC	ASBESTOS CEMENT
APP'D	APPROVED
BR	BRICK
BLDG	BUILDING
CB	CATCH BASIN
CEN	CENTER
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CIPP	CURED-IN-PLACE-PIPE
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
DWVG	DRAWING
EL	ELEVATION
EMH	ELECTRIC MANHOLE
FM	FORCE MAIN
FT	FEET
G	GAS
HDPE	HIGH DENSITY POLYETHYLENE
HYD	HYDRANT
IN	INCH
INF	INFLUENT
INV	INVERT
LB	POUNDS
LF	LINEAR FOOT
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
OUT	OUTFALL
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
VF	VERTICAL FOOT
W/	WITH
W	POTABLE WATER

EXISTING

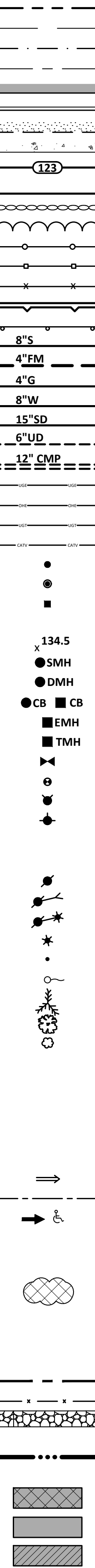


LEGEND

PROPERTY/ROW LINE

SETBACK LINE	
EASEMENT LINE	
CENTERLINE	
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	
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	
HEAVY DUTY PAVEMENT	
NORMAL DUTY PAVEMENT	
WALKWAY PAVEMENT	

PROPOSED



PROJECT NO: 21662

DESIGNED: D.DAUNIER

CAD COORD: J.MICHAUD

CAD: J.MICHAUD

CHECKED: R.DAVEE

DATE: 10-18-2024

APPROVED: B.ECKSTROM

DATE: 10-18-2024

SUBMISSION: CONTRACT DRAWINGS

NO

APPRO

DATE

REVISIONS

NO

APPRO

DATE

DESIGNED: D.DAUNIER

CAD COORD: J.MICHAUD

CAD: J.MICHAUD

CHECKED: R.DAVEE

DATE: 10-18-2024

APPROVED: B.ECKSTROM

DATE: 10-18-2024

SUBMISSION: CONTRACT DRAWINGS

STATE OF NEW HAMPSHIRE

BRITTON E. COOK

REGISTERED PROFESSIONAL ENGINEER

NO. 12345

EXPIRATION DATE: 12/31/2025

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603.430.3728

www.wright-pierce.com

230 CONNEMEE WAY, SUITE 302, PORTSMOUTH, NH 03801

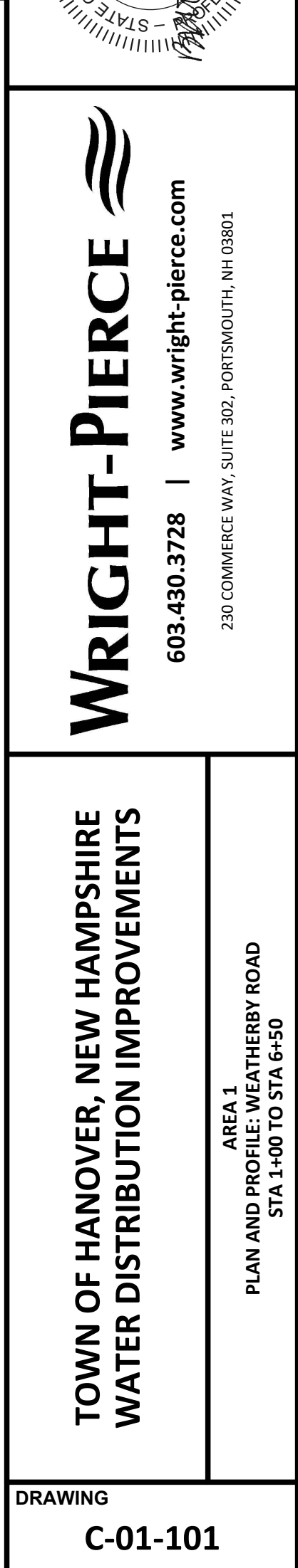
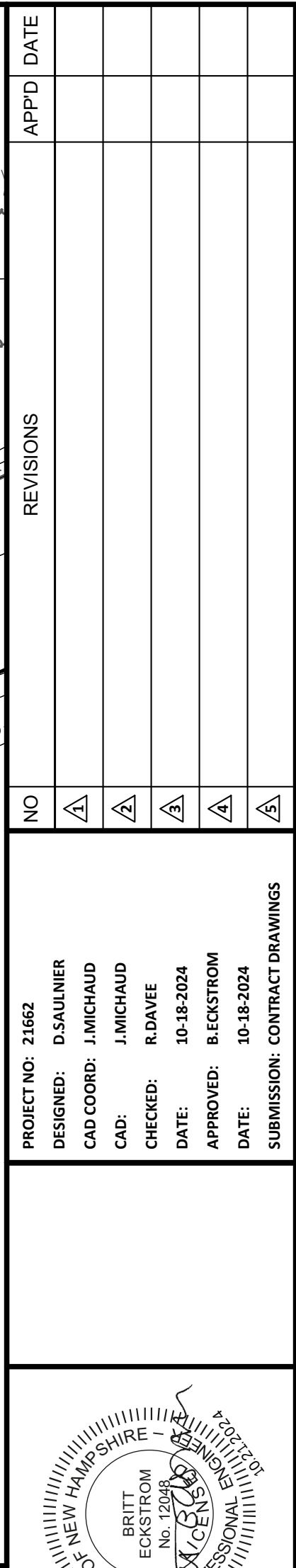
TOWN OF HANOVER, NEW HAMPSHIRE

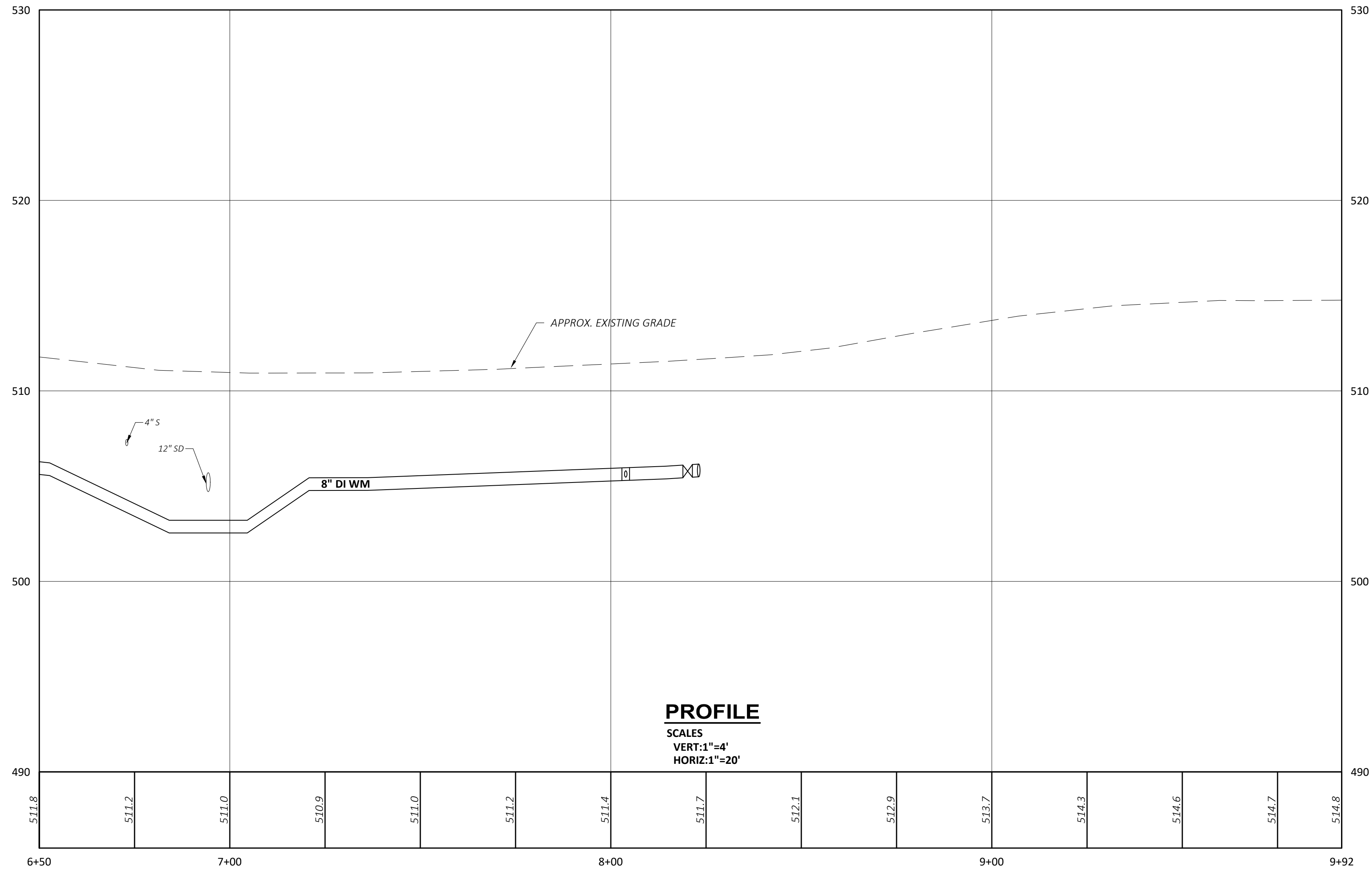
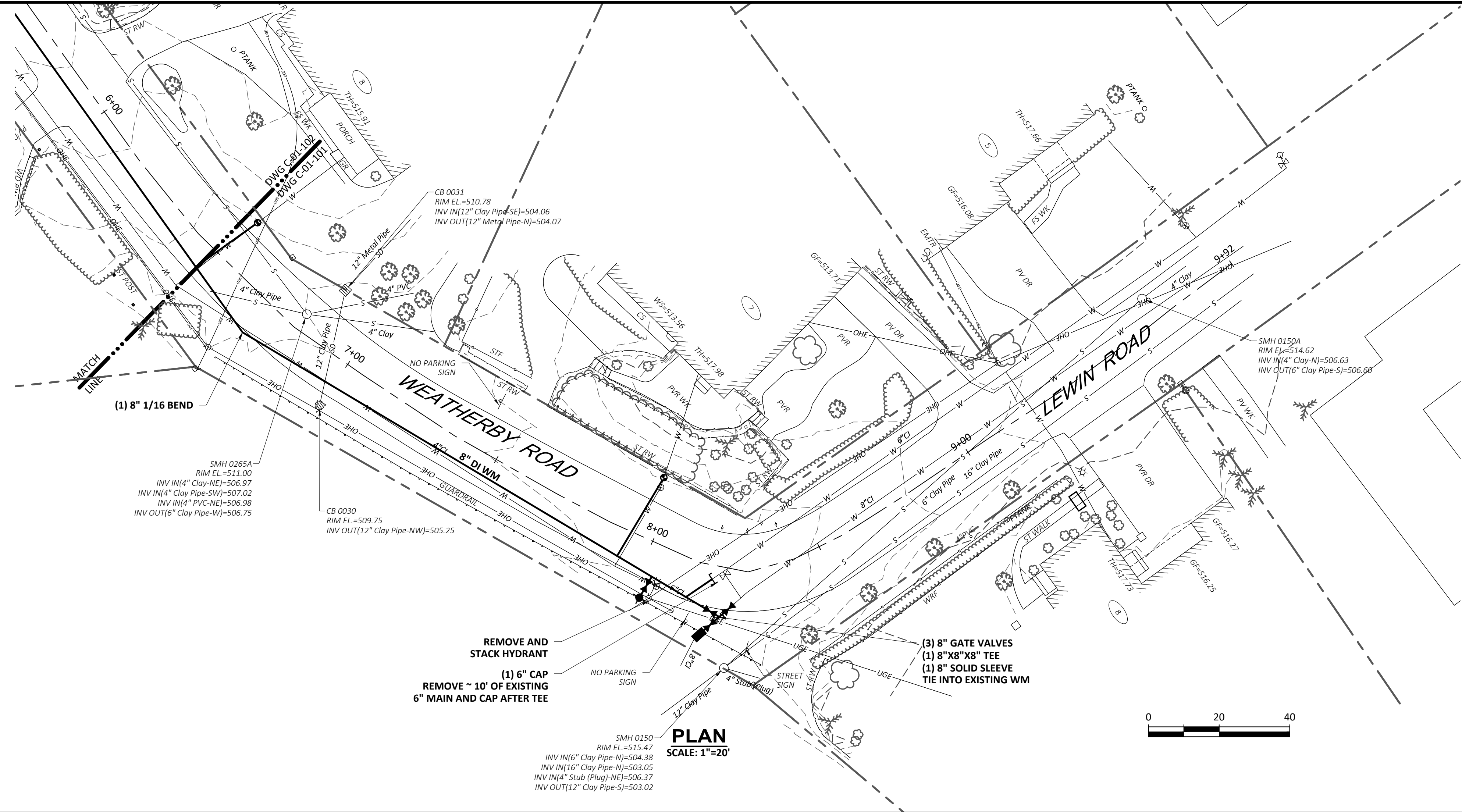
WATER DISTRIBUTION IMPROVEMENTS

GENERAL NOTES, LEGEND, AND ABBREVIATIONS

DRAWING

C-00-001



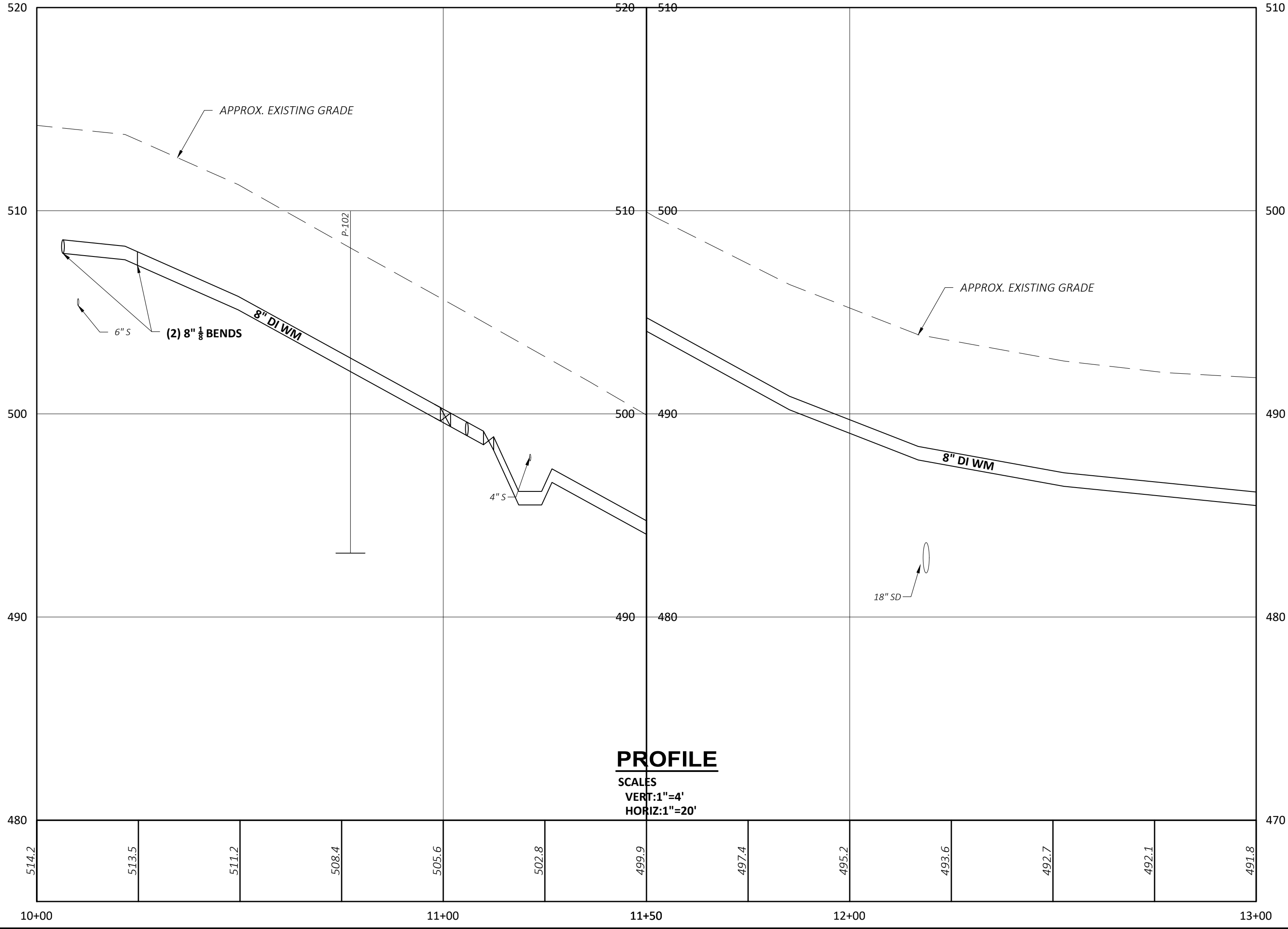
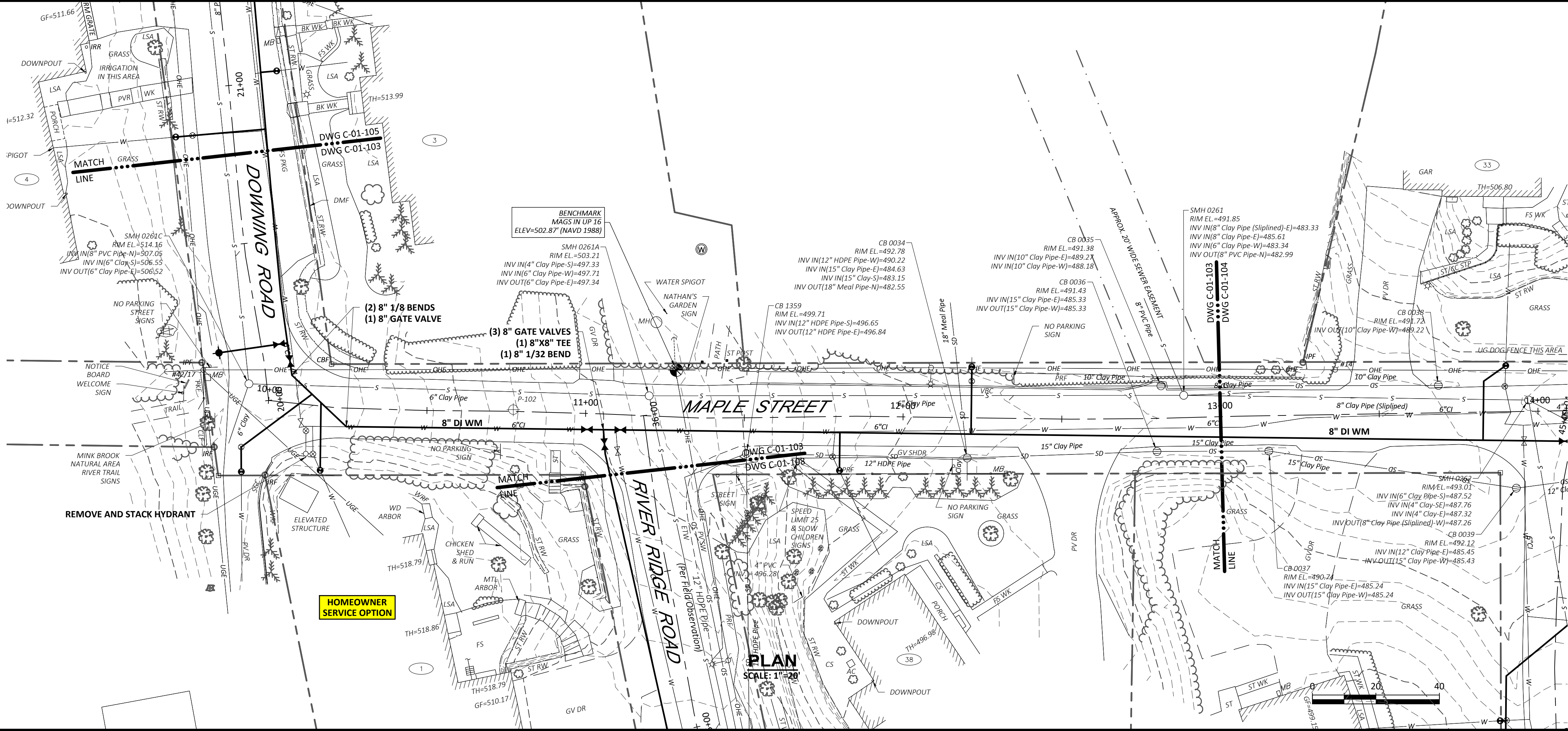


DRAWING	TOWN OF HANOVER, NEW HAMPSHIRE WATER DISTRIBUTION IMPROVEMENTS	 603.430.3728 www.wright-pierce.com 239 COMMERCE WAY, SUITE 302, PORTSMOUTH, NH 03801			PROJECT NO: 21662	NO	REV/ISSIONS	APPD. DATE
	DESIGNED: D.SAVANIER				△			
AREA 1 PLAN AND PROFILE: WEATHERBY ROAD STA 6+50 TO STA 9+92					CAD COORD: J.NICHAUD	△		
					CAD: J.NICHAUD	△		
					CHECKED: R.DANEE	△		
					DATE: 10-18-2024	△		
					APPROVED: B.ECKSTROM	△		
					DATE: 10-18-2024	△		
					SUBMISSION: CONTRACT DRAWINGS	△		

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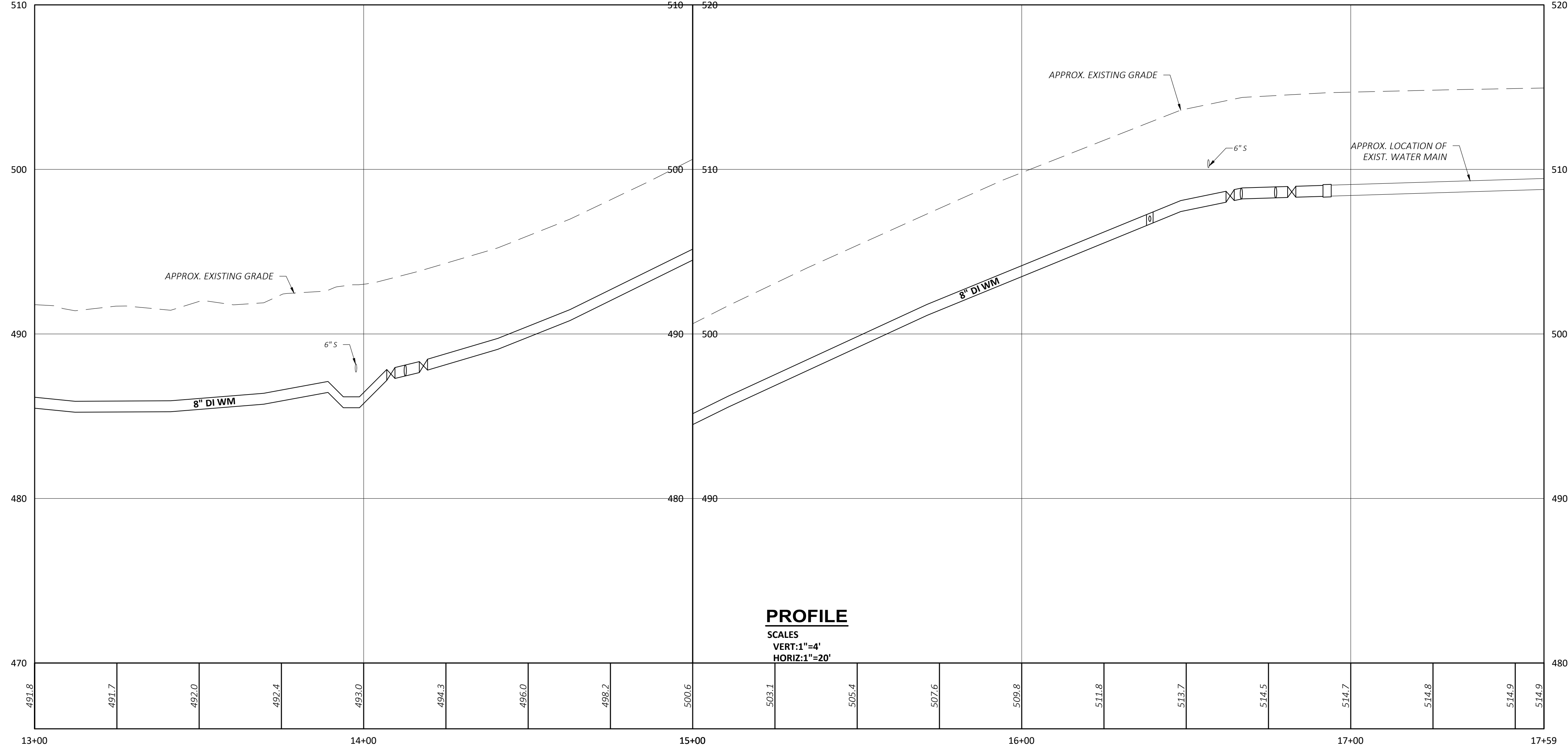
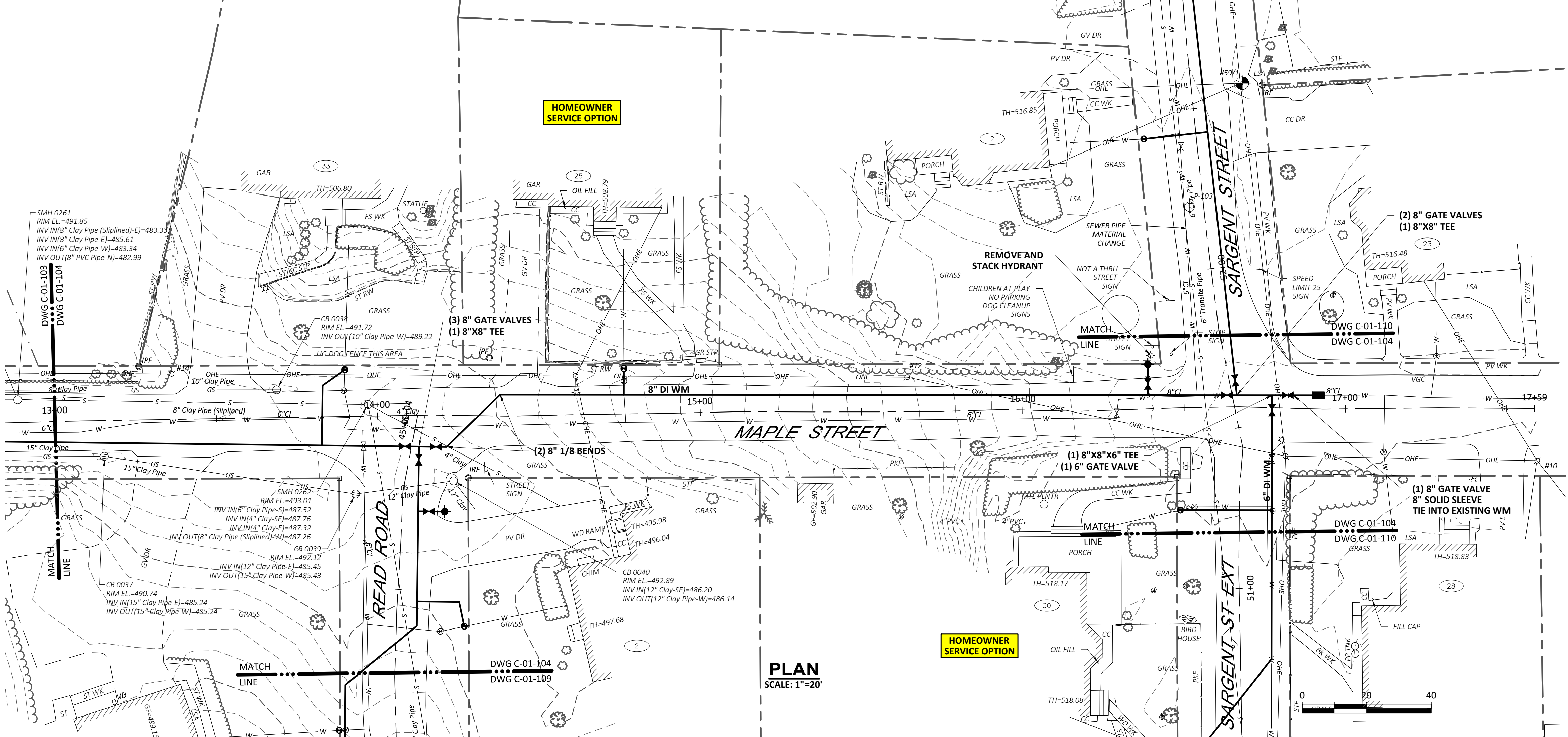
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NOTE:
DRAINAGE ISSUES HAVE BEEN
REPORTED BETWEEN STATIONS 13+00
AND 14+00.



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REVISIONS		NO		DATE	

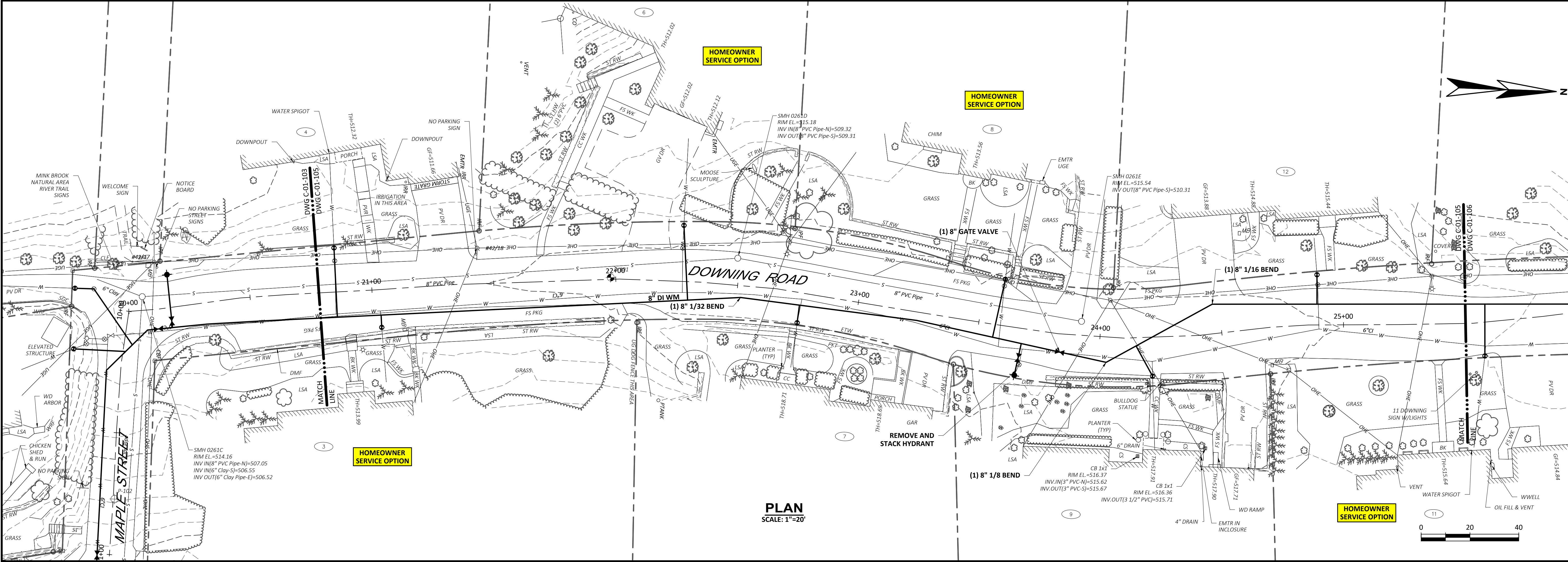
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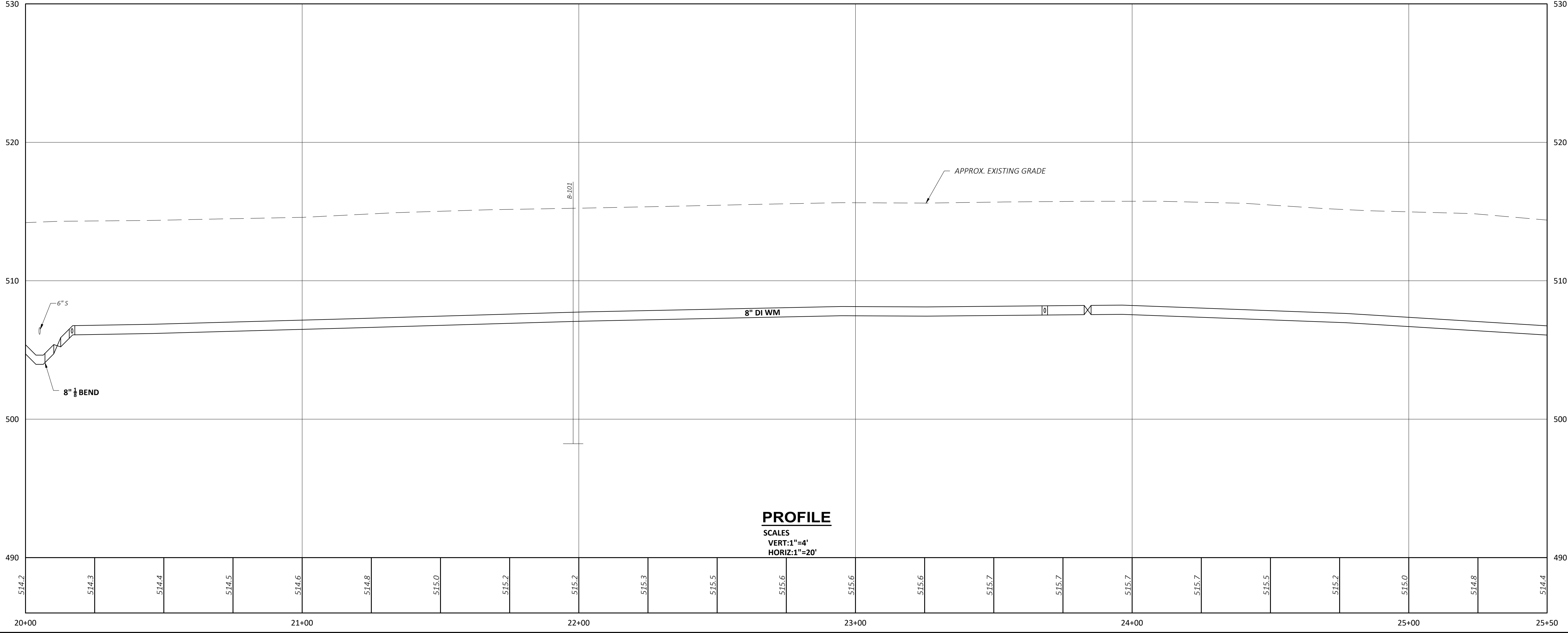
DRAWING		TOWN OF HANOVER, NEW HAMPSHIRE WATER DISTRIBUTION IMPROVEMENTS		603.430.3728 www.wright-pierce.com 230 COMMERCE WAY, SUITE 302, PORTSMOUTH, NH 03801	
C-01-104		AREA 1 PLAN AND PROFILE MAPLE STREET STA 13+00 TO STA 17+59			
PROJECT NO: 21662		DESIGNED: DSALNER		REVISIONS	
CAD COORD: J.MICHAUD		CAD: J.MICHAUD		NO	
CHECKED: R.DAVEE		DATE: 10-18-2024		APPROVED: B.ECKSTROM	
DATE: 10-18-2024		DATE: 10-18-2024		SUBMISSION: CONTRACT DRAWINGS	

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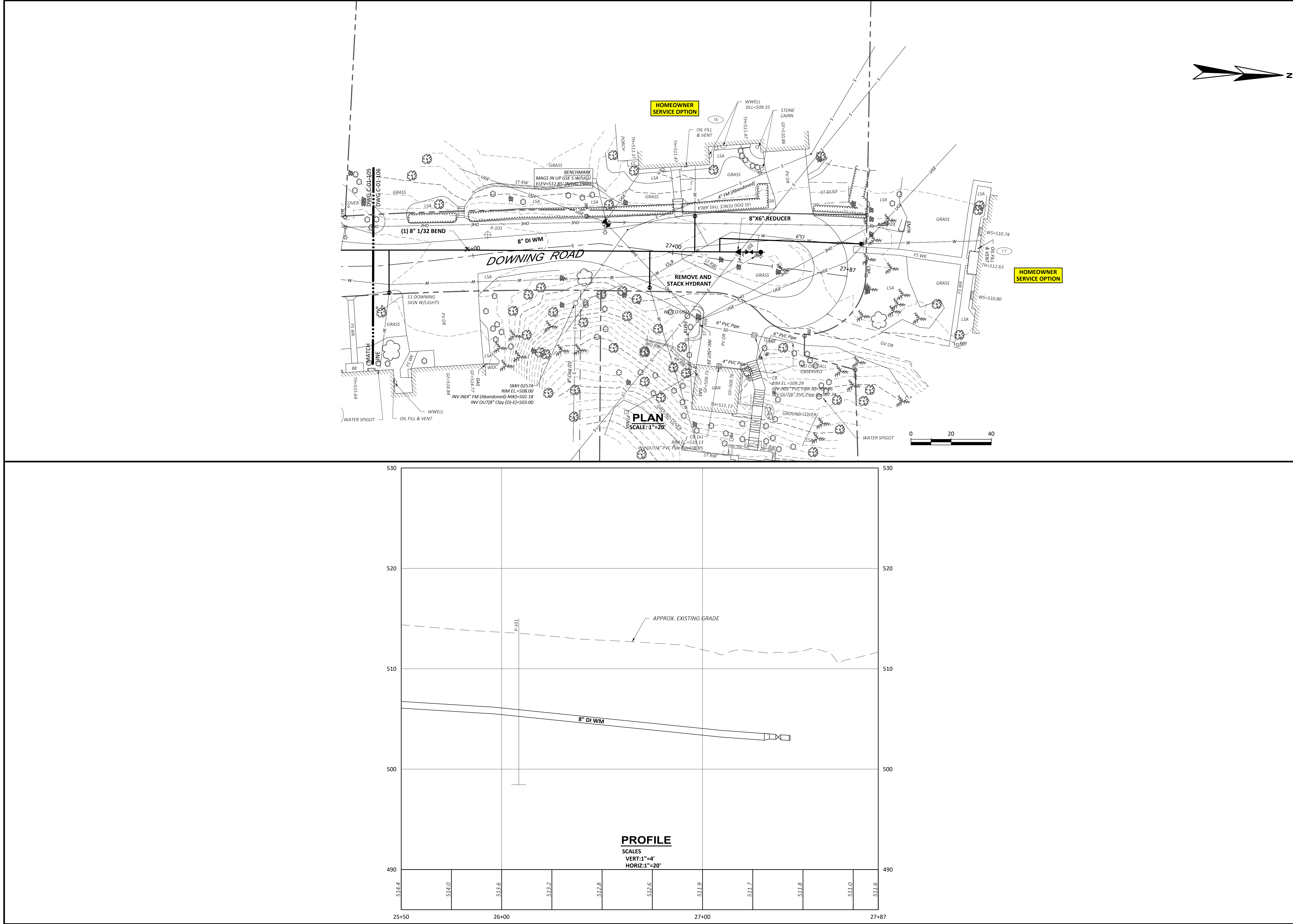
REVISIONS		APPD	DATE
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CAD COORD: J.MICHAUD	CAD: J.MICHAUD
CHECKED: R.DAVEE	DATE: 10-18-2024
APPROVED: B.ECKSTROM	DATE: 10-18-2024
SUBMISSION: CONTRACT DRAWINGS	

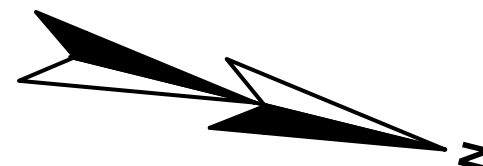
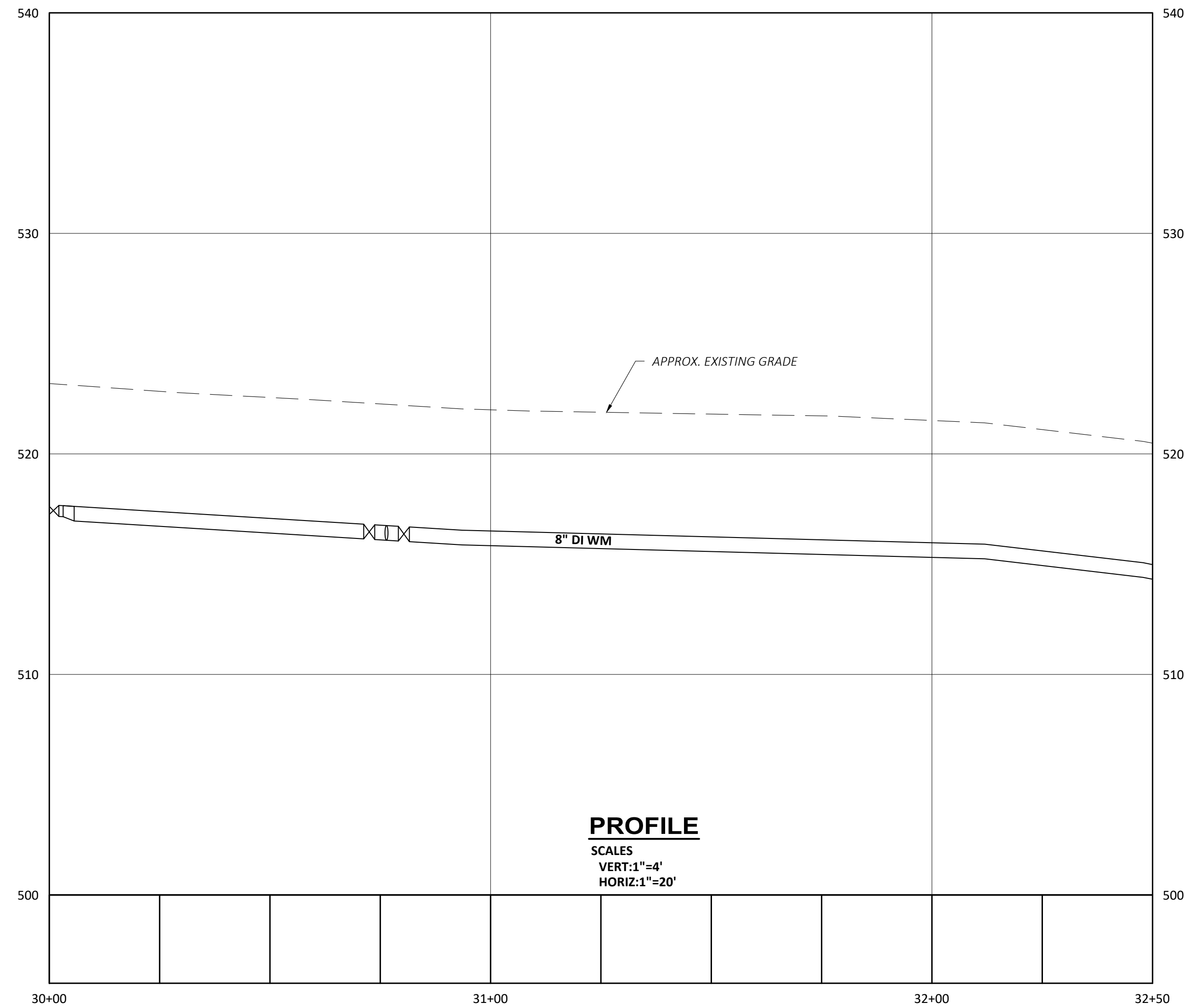
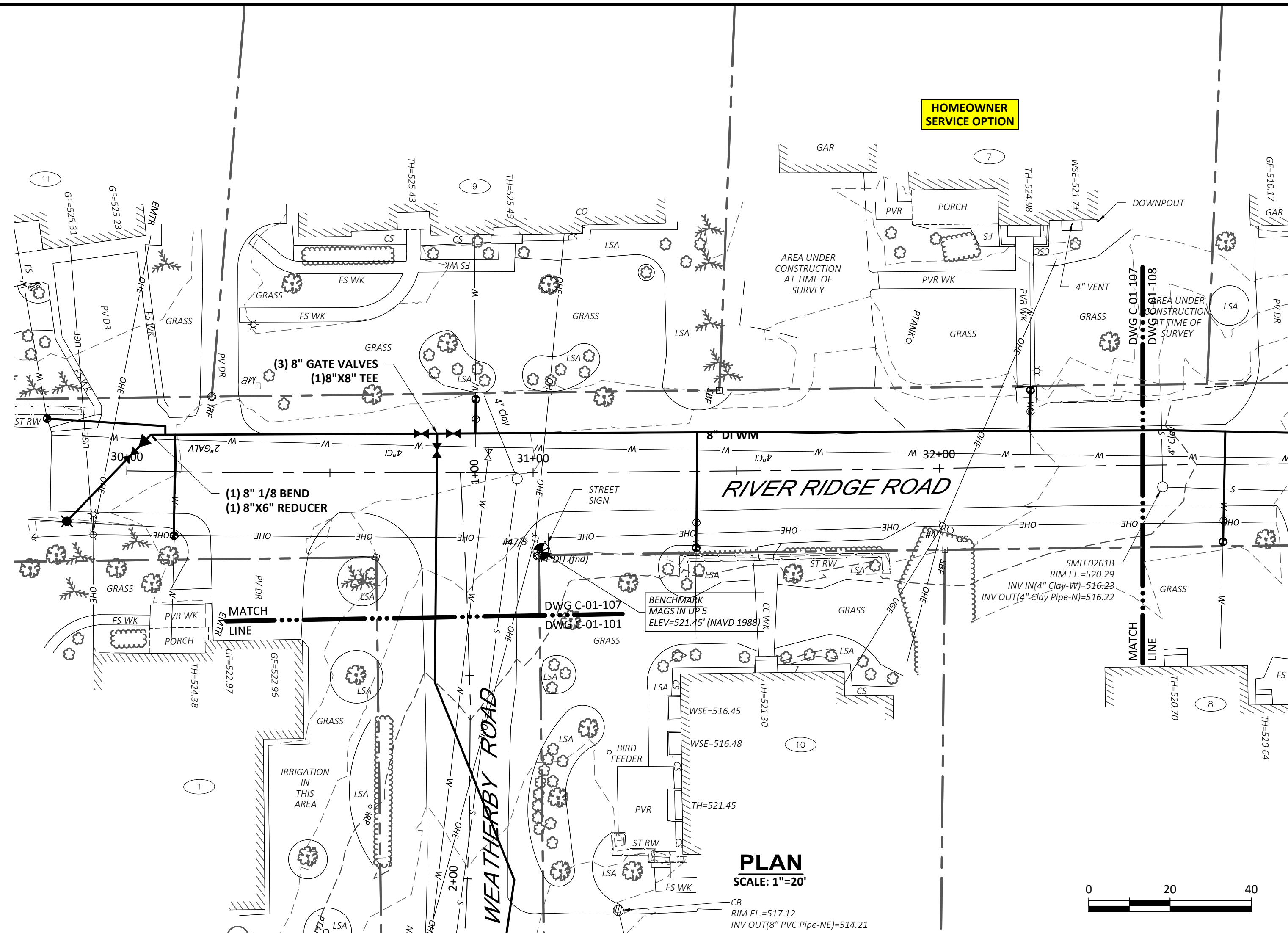
STATE OF NEW HAMPSHIRE
BRIAN M. KENNEL
REGISTERED PROFESSIONAL ENGINEER
No. 12338
EXPIRATION DATE 12/31/2025

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

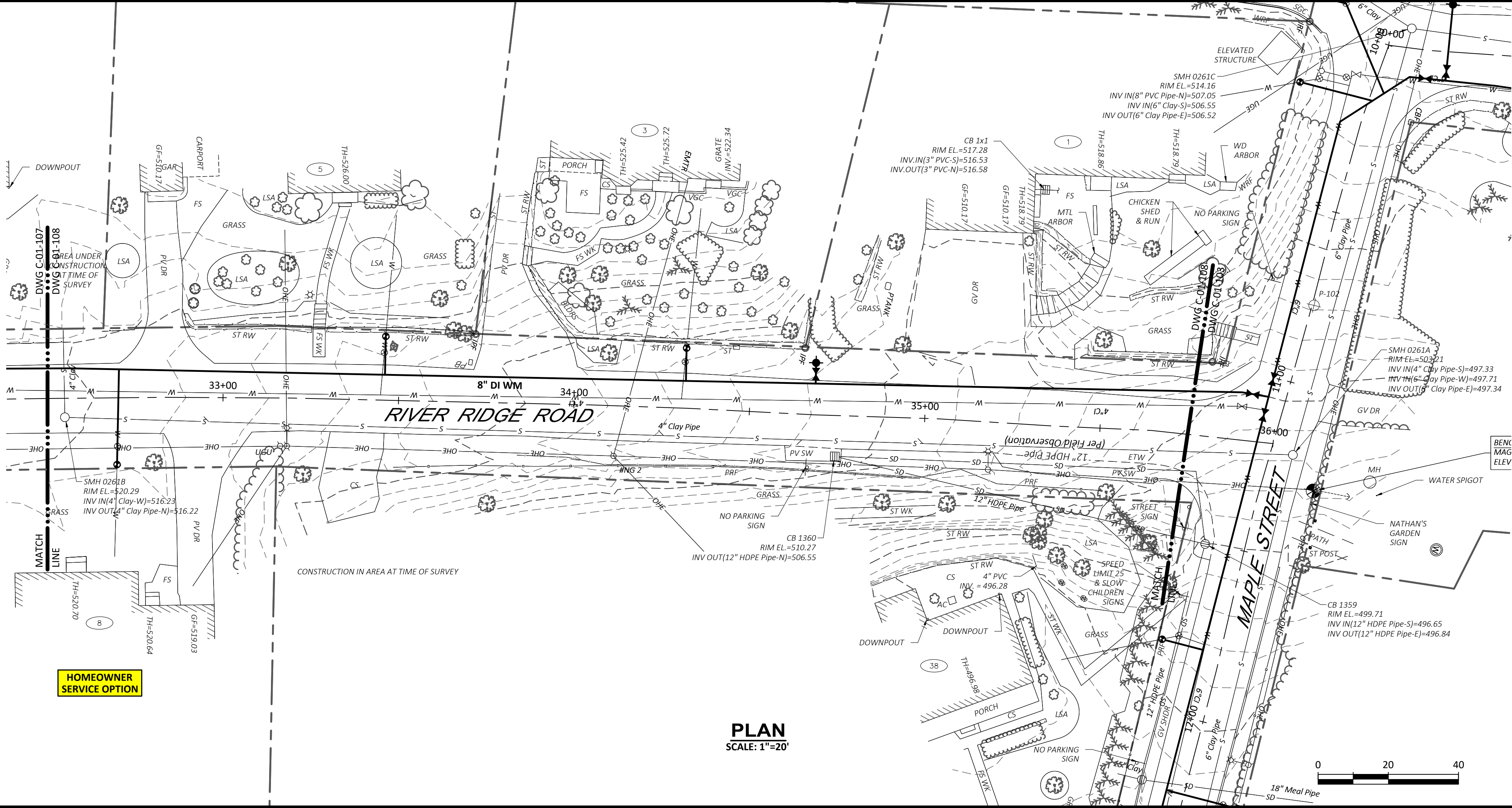
TOWN OF HANOVER, NEW HAMPSHIRE WATER DISTRIBUTION IMPROVEMENTS	AREA 1 PLAN AND PROFILE OF DOWNING ROAD STA 20+00 TO STA 25+00
	DRAWING C-01-105



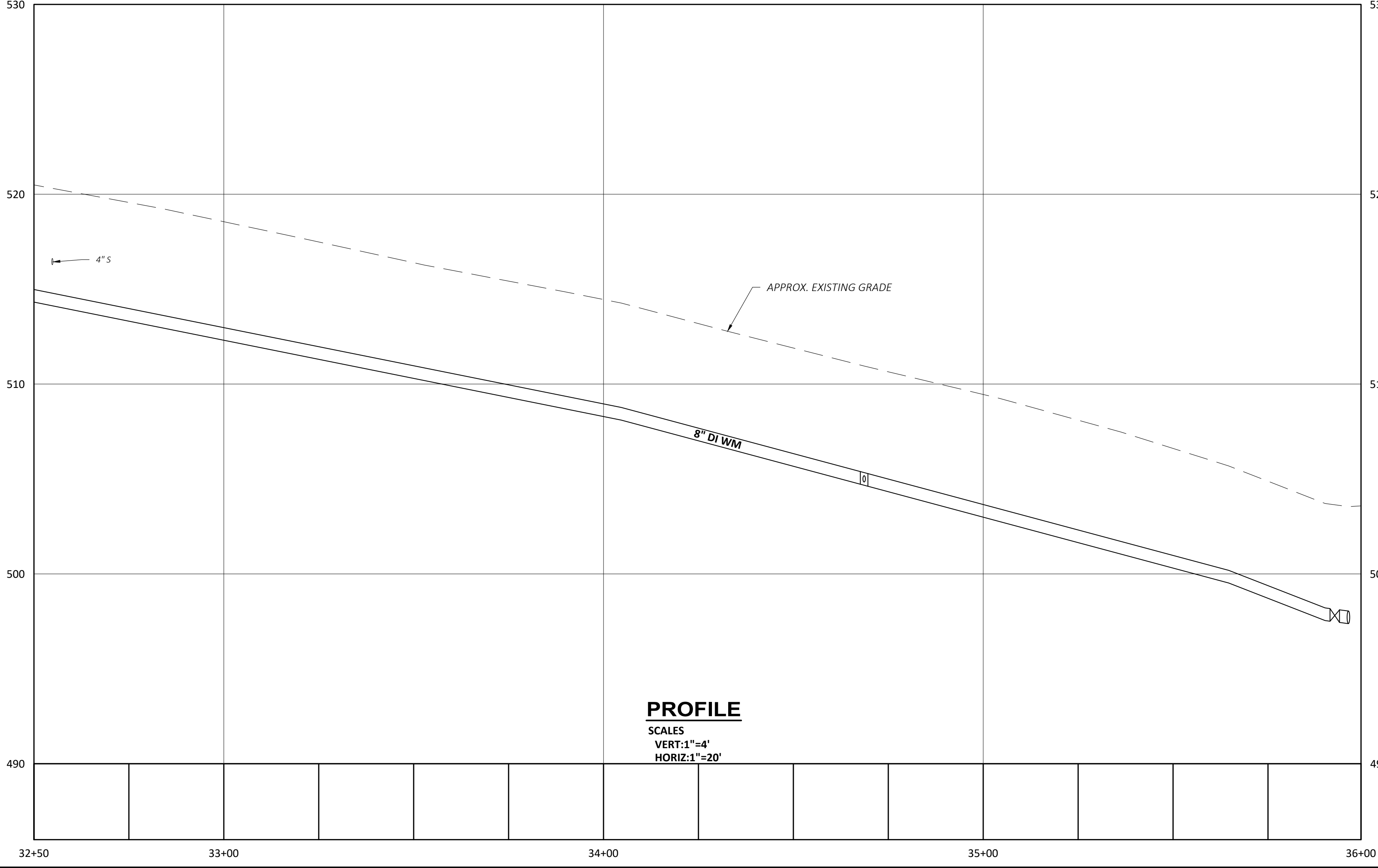
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			603.430.3728 www.wright-pierce.com 230 COMMERCE WAY, SUITE 302, PORTSMOUTH, NH 03801	
WRIGHT-PIERCE			STATE OF NEW HAMPSHIRE BRETT L. PIERCE REGISTERED PROFESSIONAL ENGINEER No. 12538 EXPIRATION DATE 12/31/2025	
PROJECT NO: 21662 DESIGNED: D.SAULNIER CAD COORD: J.MICHAUD CAD: J.MICHAUD CHECKED: R.DAVEE DATE: 10-18-2024 APPROVED: B.ECKSTROM DATE: 10-18-2024 SUBMISSION: CONTRACT DRAWINGS			REVISIONS	
			NO	APPD DATE



TOWN OF HANOVER, NEW HAMPSHIRE WATER DISTRIBUTION IMPROVEMENTS AREA 1 PLAN AND PROFILE: RIVER RIDGE ROAD STA 30+00 TO STA 32+50		WRIGHT-PIERCE 603.430.3728 www.wright-pierce.com 230 COMMERCE WAY, SUITE 302, PORTSMOUTH, NH 03801 		PROJECT NO: 21652 DESIGNED: D.SAULNIER CAD COORD: J.NICHAUD CAD: J.NICHAUD CHECKED: R.DAVEE DATE: 10-18-2024 APPROVED: B.ECKSTROM DATE: 10-18-2024 SUBMISSION: CONTRACT DRAWINGS		REV/SIONS		NO	APPD	DATE	
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PLAN
SCALE: 1"=20'



PROFILE
SCALES
VERT: 1"=4'
HORIZ: 1"=20'

PROJECT NO: 21662
DESIGNED: D.SAULNIER
CAD COORD: J.MICHAUD
CAD: J.MICHAUD
CHECKED: R.DAVEE
DATE: 10-18-2024
APPROVED: B.ECKSTROM
DATE: 10-18-2024
SUBMISSION: CONTRACT DRAWINGS

NO

REVISIONS

APPD

DATE

TOWN OF HANOVER, NEW HAMPSHIRE
WATER DISTRIBUTION IMPROVEMENTS

AREA 1
PLAN AND PROFILE OF RIVER RIDGE ROAD
STA 32+50 TO STA 36+00

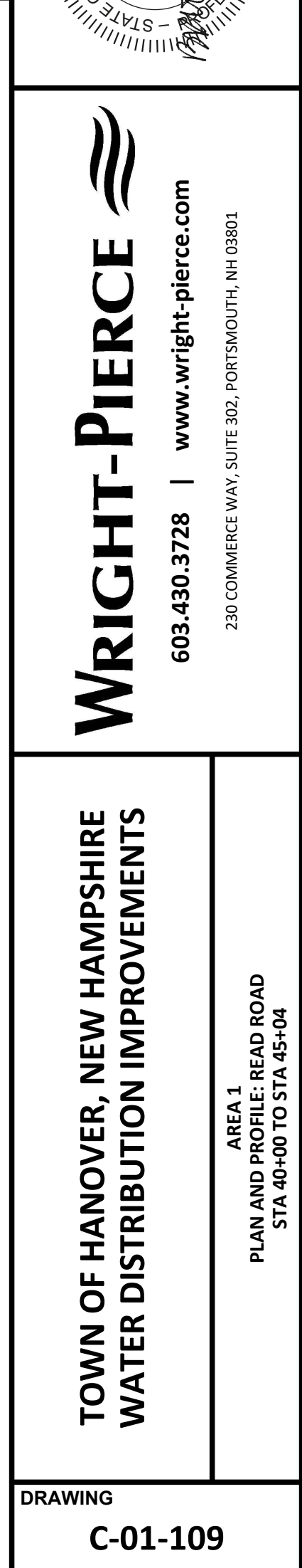
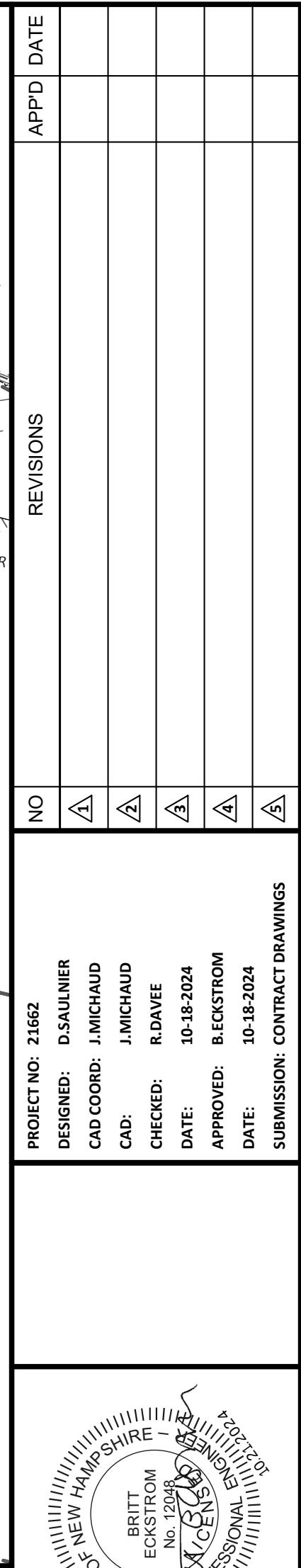
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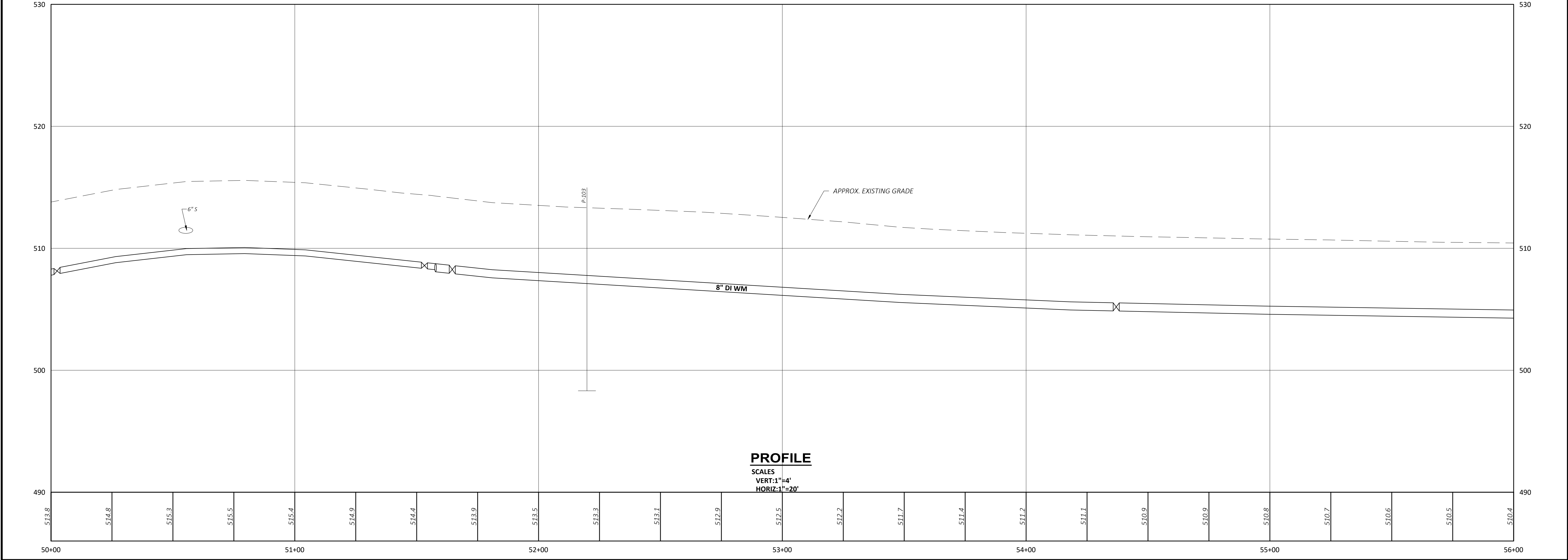
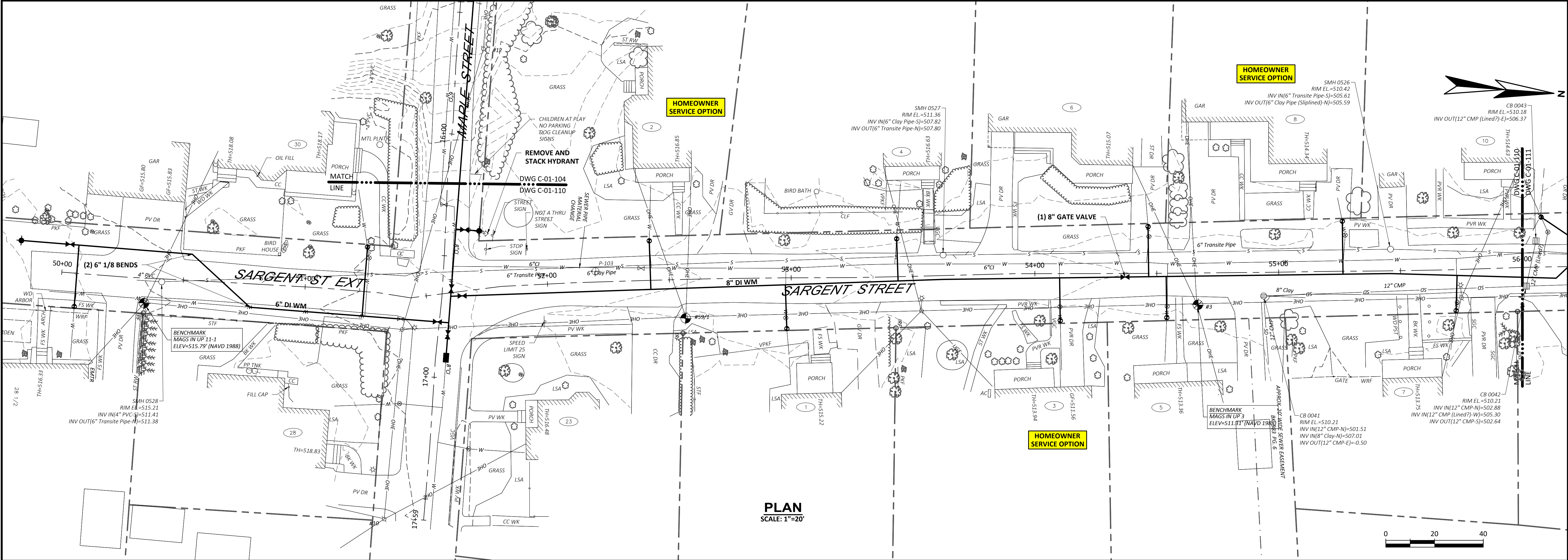
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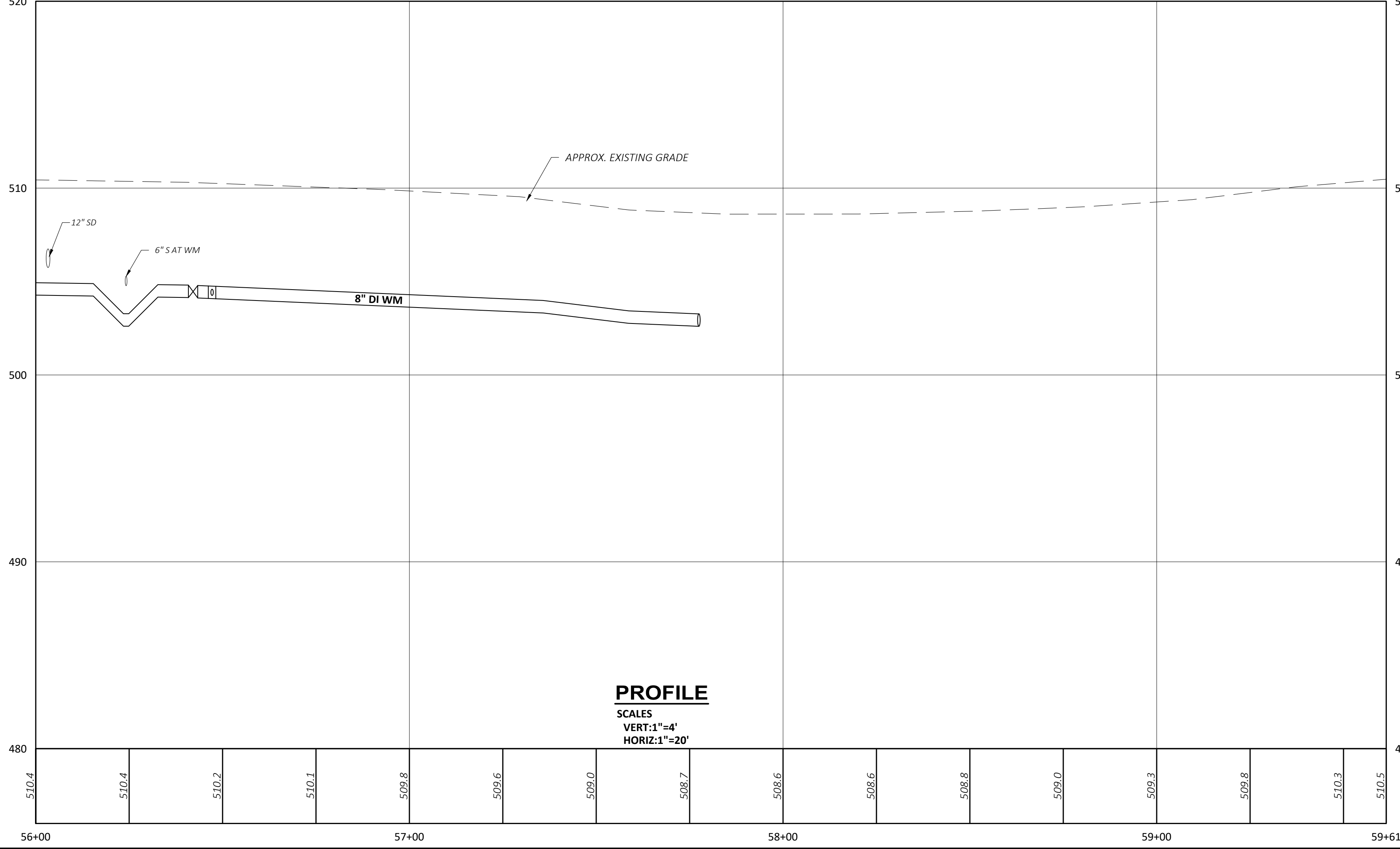
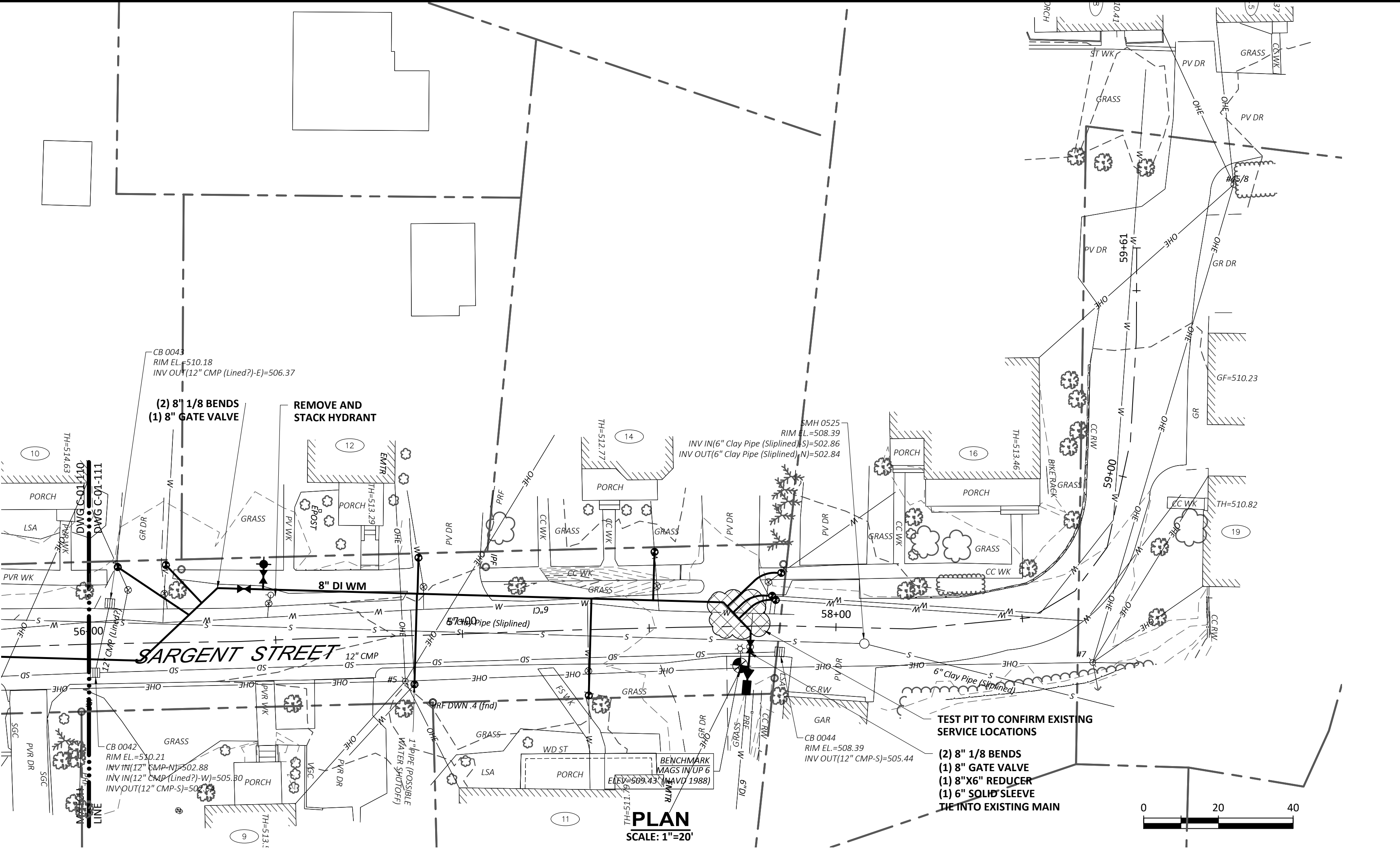
STATE OF NEW HAMPSHIRE
BRETT
ECOM
No. 1238
PROFESSIONAL
10/21/2024

DRAWING
C-01-108





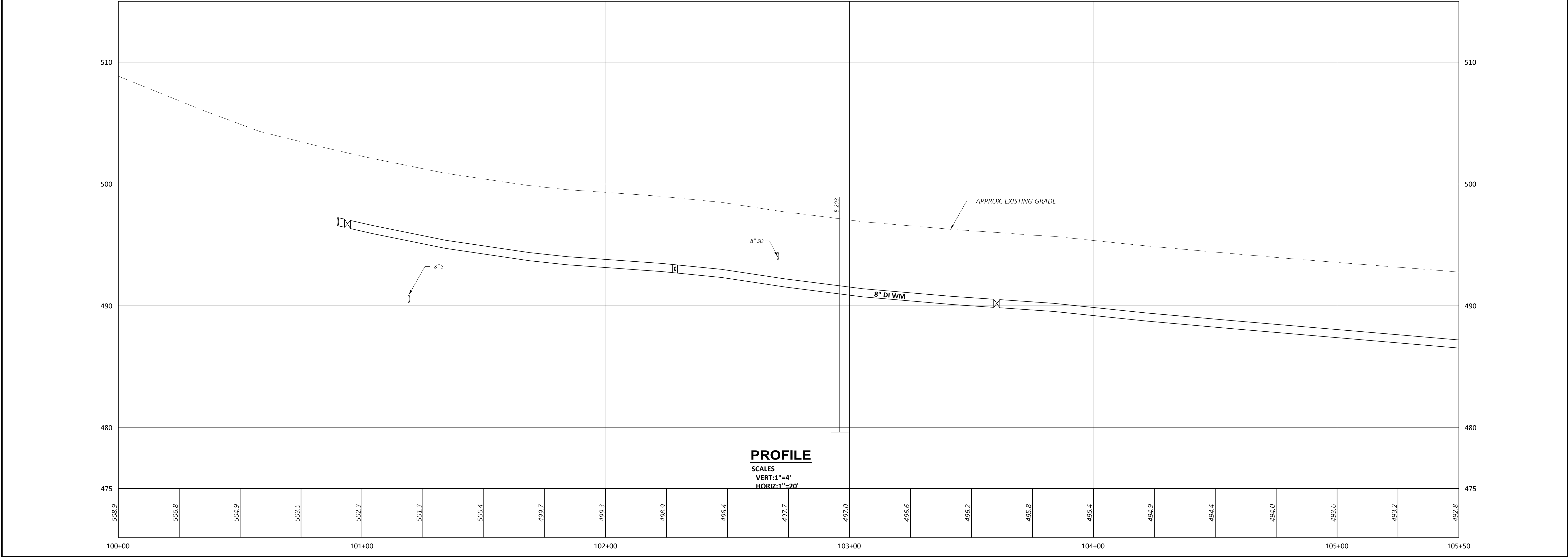
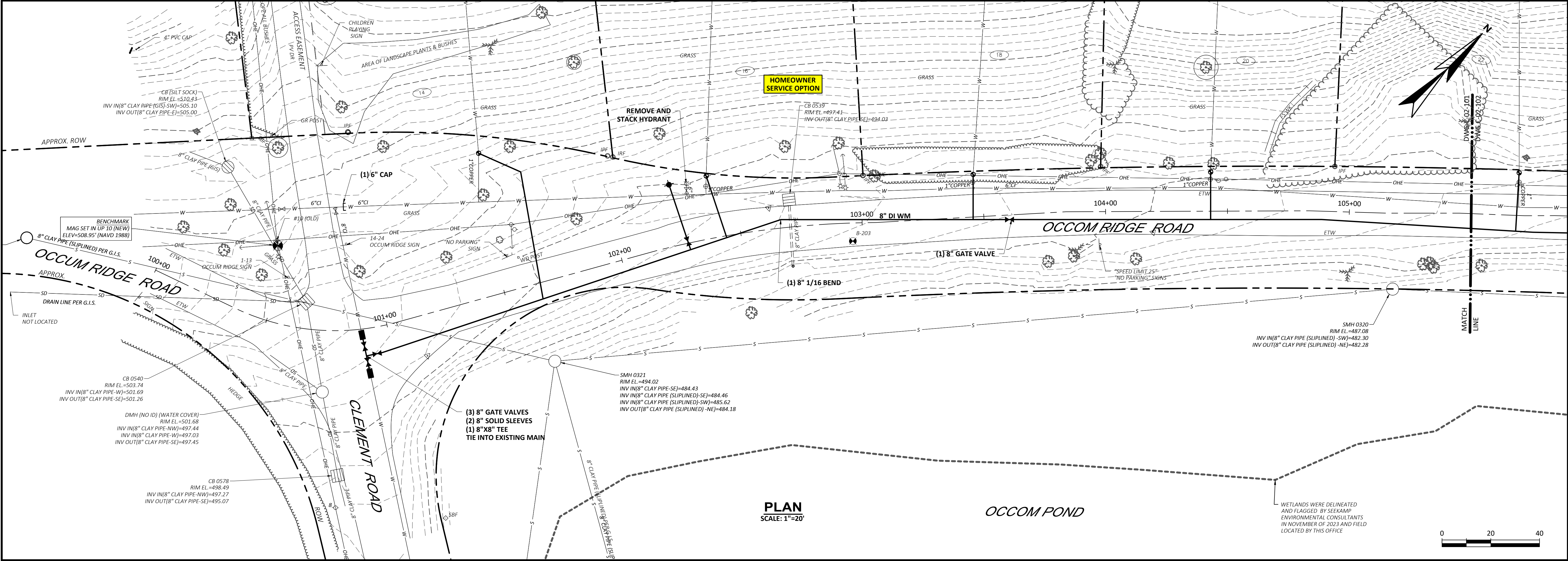
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TOWN OF HANOVER, NEW HAMPSHIRE WATER DISTRIBUTION IMPROVEMENTS		AREA 1 PLAN AND PROFILES STA 50+00 TO STA 56+00	
603.430.3728 www.wright-pierce.com 230 COMMERCE WAY, SUITE 302, PORTSMOUTH, NH 03801		WRIGHT-PIERCE	
PROJECT NO: 21662		DESIGNED: DSALNER CAD COORD: JMICHAUD CAD: JMICHAUD CHECKED: R.DAVEE DATE: 10-18-2024 APPROVED: B.ECOSTOM DATE: 10-18-2024 SUBMISSION: CONTRACT DRAWINGS	
NO		REVISIONS	
APPD		DATE	



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TOWN OF HANOVER, NEW HAMPSHIRE WATER DISTRIBUTION IMPROVEMENTS		AREA 1 PLAN AND PROFILES ALONG SARGENT STREET STA 56+00 TO STA 59+61	
WRIGHT-PIERCE 603.430.3728 www.wright-pierce.com 230 COMMENCE WAY, SUITE 302, PORTSMOUTH, NH 03801		PROJECT NO: 21662 DESIGNED: D.SAULNER CAD COORD: J.MICHAUD CAD: J.MICHAUD CHECKED: R.DAVEE DATE: 10-18-2024 APPROVED: B.ECKSTROM DATE: 10-18-2024 SUBMISSION: CONTRACT DRAWINGS	
NO		REVISIONS	
NO		APPD DATE	

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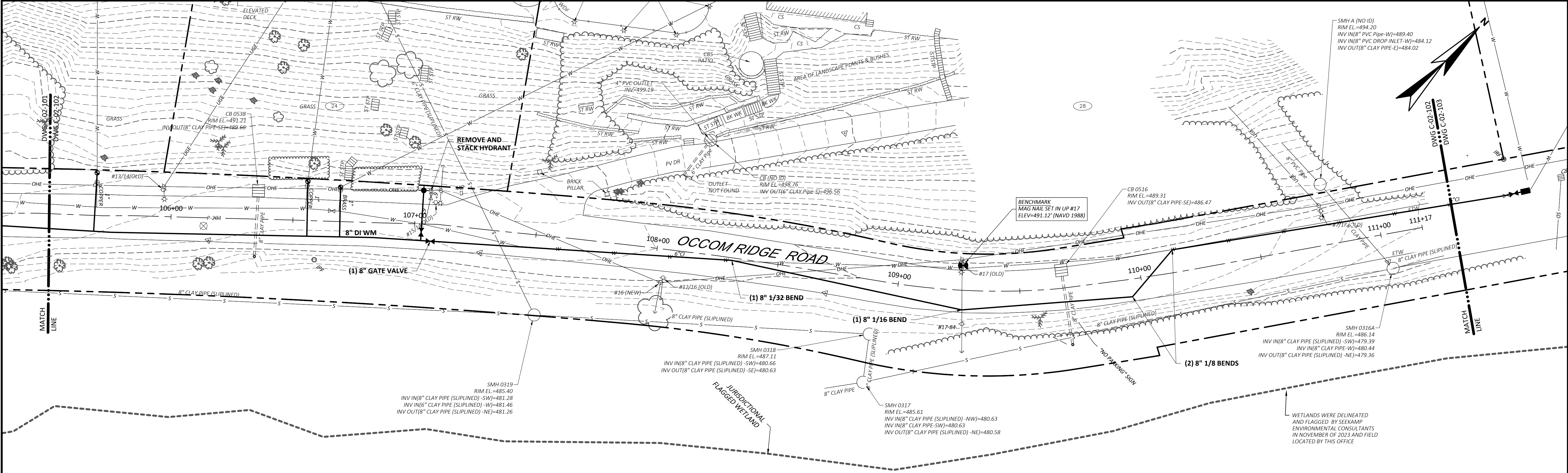
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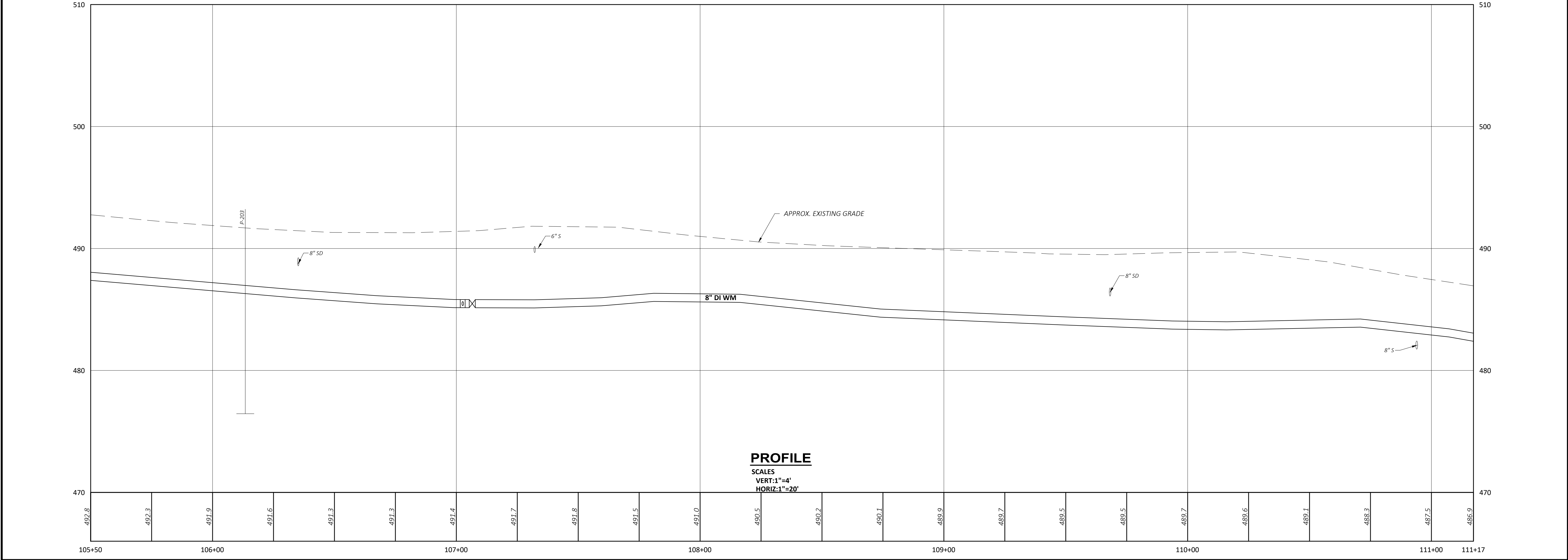
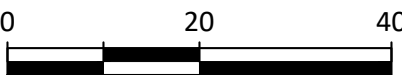
REVISIONS		APPD	DATE
NO	Δ		
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CAD COORD: J.MICHAUD			
CAD: J.MICHAUD			
CHECKED: R.DAVEE			
DATE: 10-18-2024			
APPROVED: B.ECKSTROM			
DATE: 10-18-2024			
SUBMISSION: CONTRACT DRAWINGS			
TOWN OF HANOVER, NEW HAMPSHIRE WATER DISTRIBUTION IMPROVEMENTS			
603.430.3728 www.wright-pierce.com 230 COMMERCE WAY, SUITE 302, PORTSMOUTH, NH 03801			
AREA 2 PLAN AND PROFILE OF OCCOM RIDGE ROAD STA 100+00 TO STA 105+50			
DRAWING C-02-101			

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PLAN
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PROFILE
SCALES
VERT: 1"=4'
HORIZ: 1"=20'

REVISIONS		APPD	DATE
NO			

PROJECT NO: 21662	DESIGNED: DSALLNER
CAD COORD: JMICHAUD	CAD: JMICHAUD
CHECKED: R.DAVEE	DATE: 10-18-2024
APPROVED: B.ECKSTROM	DATE: 10-18-2024
SUBMISSION: CONTRACT DRAWINGS	

STATE OF NEW HAMPSHIRE
BRETT ECKSTROM
No. 12938
PROFESSIONAL ENGINEER

WRIGHT-PIERCE

603.430.3728 | www.wright-pierce.com

230 COMMERCE WAY, SUITE 302, PORTSMOUTH, NH 03801

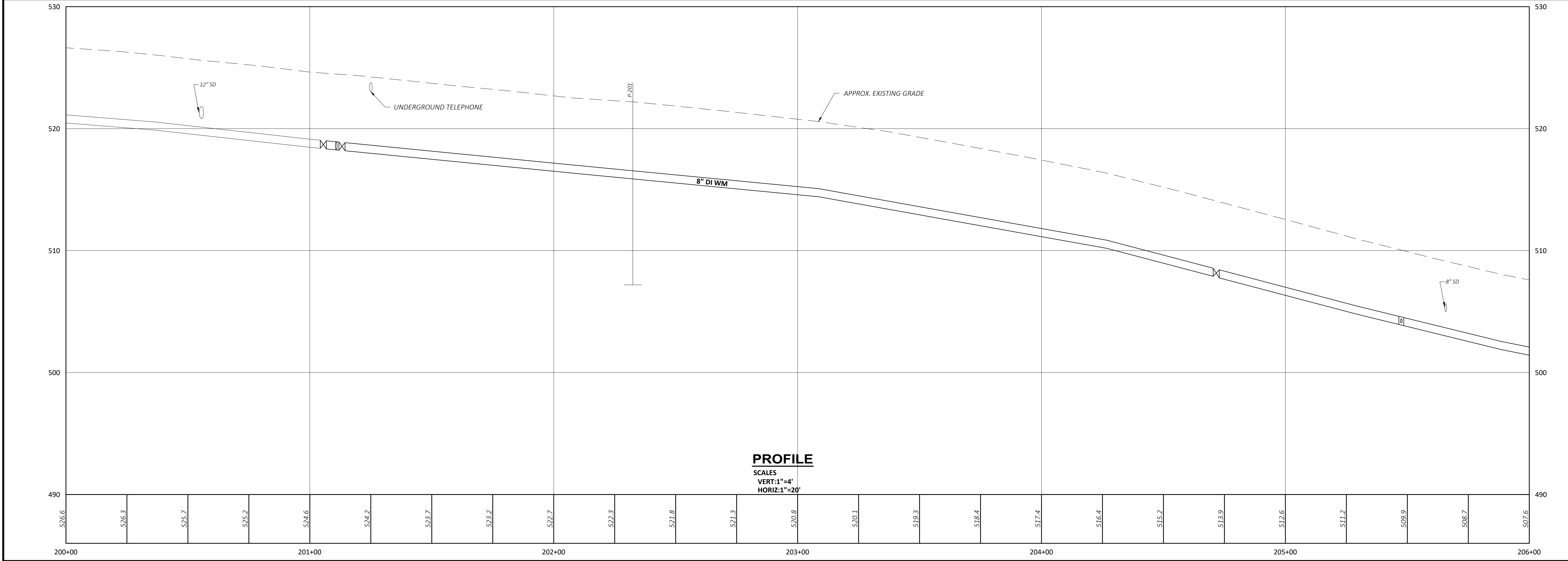
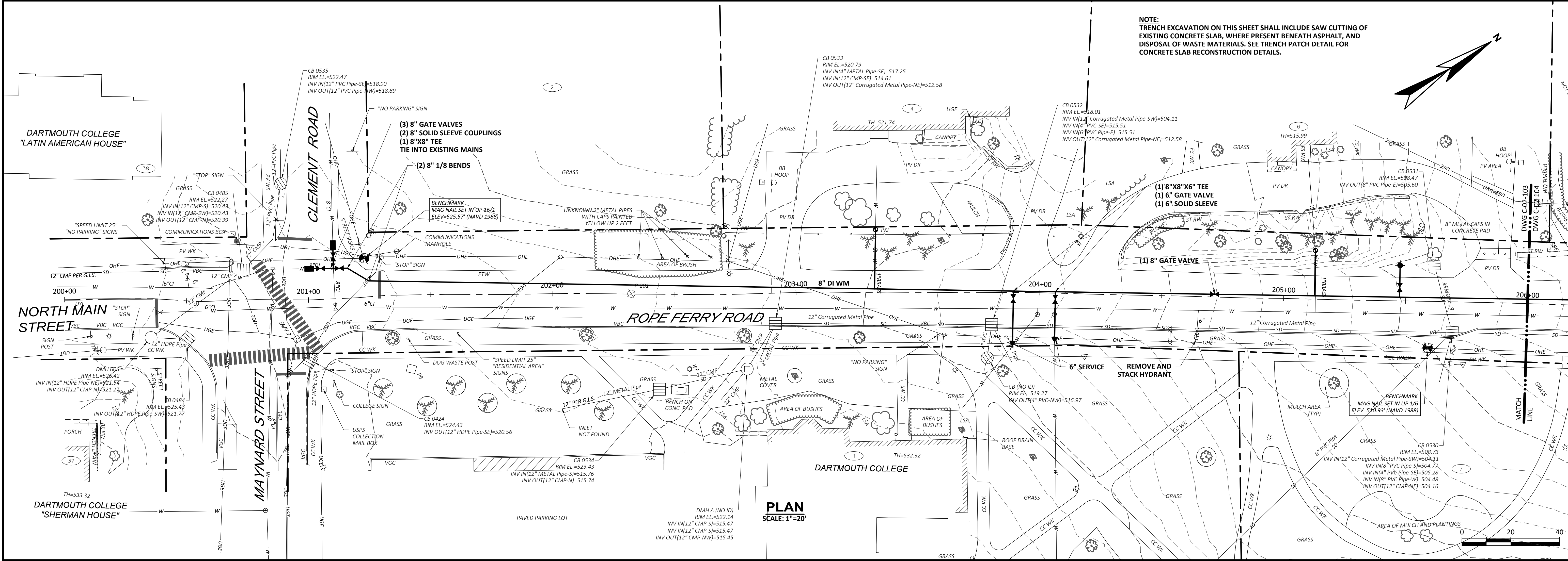
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	AREA 2 PLAN AND PROFILE OF OCCOM RIDGE ROAD STA 105+50 TO STA 111+17



DRAWING	TOWN OF HANOVER, NEW HAMPSHIRE		PROJECT NO: 21662		DESIGNED: D.SAULNER		NO		REVISIONS		APP'D		DATE	
	WATER DISTRIBUTION IMPROVEMENTS		CAD COORD: J.MICHAUD		CAD: J.MICHAUD		Δ							
	AREA 2		CHECKED: R.DAVEE		DATE: 10-18-2024		Δ							
	PLAN		APPROVED: B.ECKSTROM		DATE: 10-18-2024		Δ							
	OCCUM RIDGE ROAD		SUBMISSION: CONTRACT DRAWINGS		DATE: 10-18-2024		Δ							

LAST SAVED BY: DANIEL.METZ.10/17/2024 8:06 AM

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REVISIONS		APPD	DATE
NO			

PROJECT NO: 21662	DESIGNED: DSALNER
CAD COORD: J.MICHAUD	CAD: J.MICHAUD
CHECKED: R.DAVID	APPROVED: B.ECOSTOM
DATE: 10-18-2024	DATE: 10-18-2024
SUBMISSION: CONTRACT DRAWINGS	

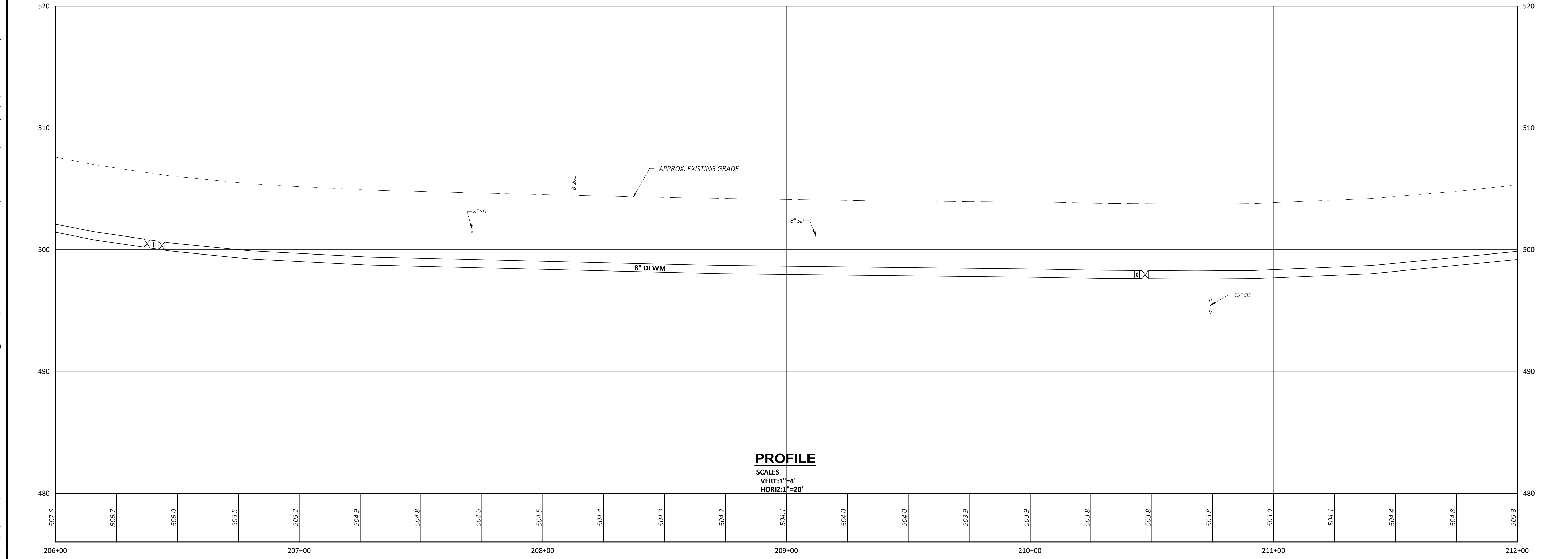
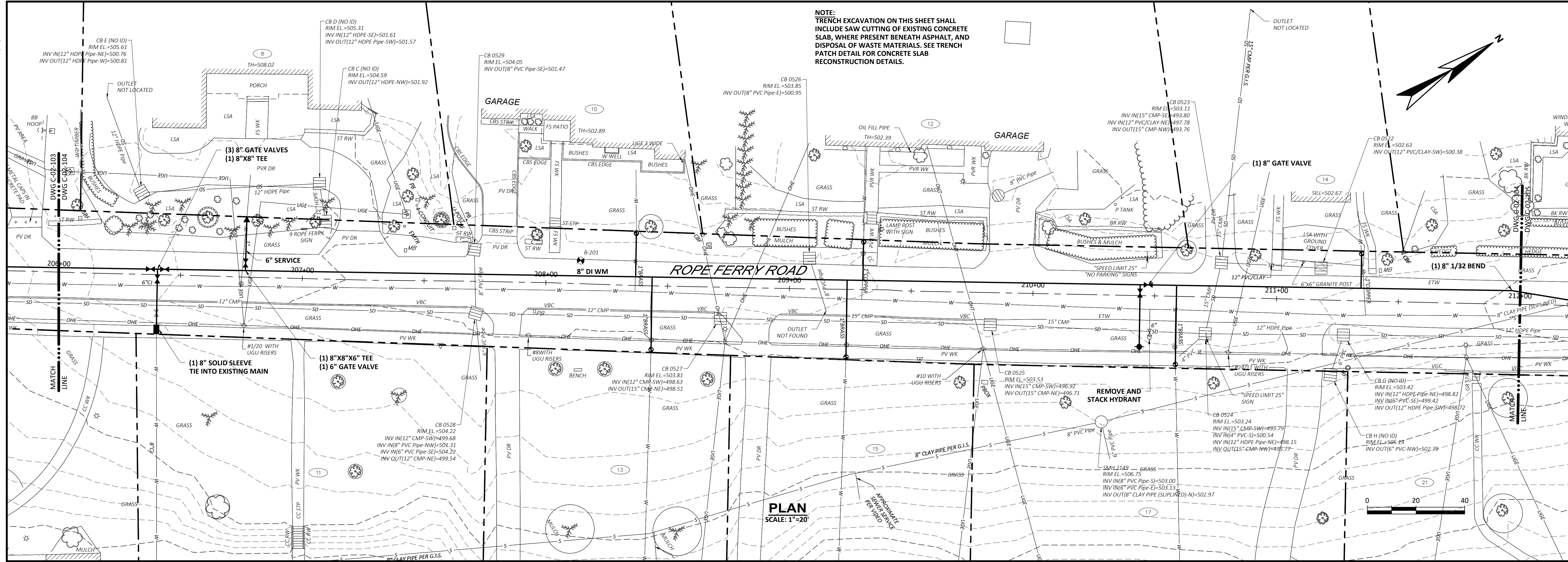
STATE OF NEW HAMPSHIRE
JAMES MICHAUD
No. 12938
MECHANICAL
Professional Engineer

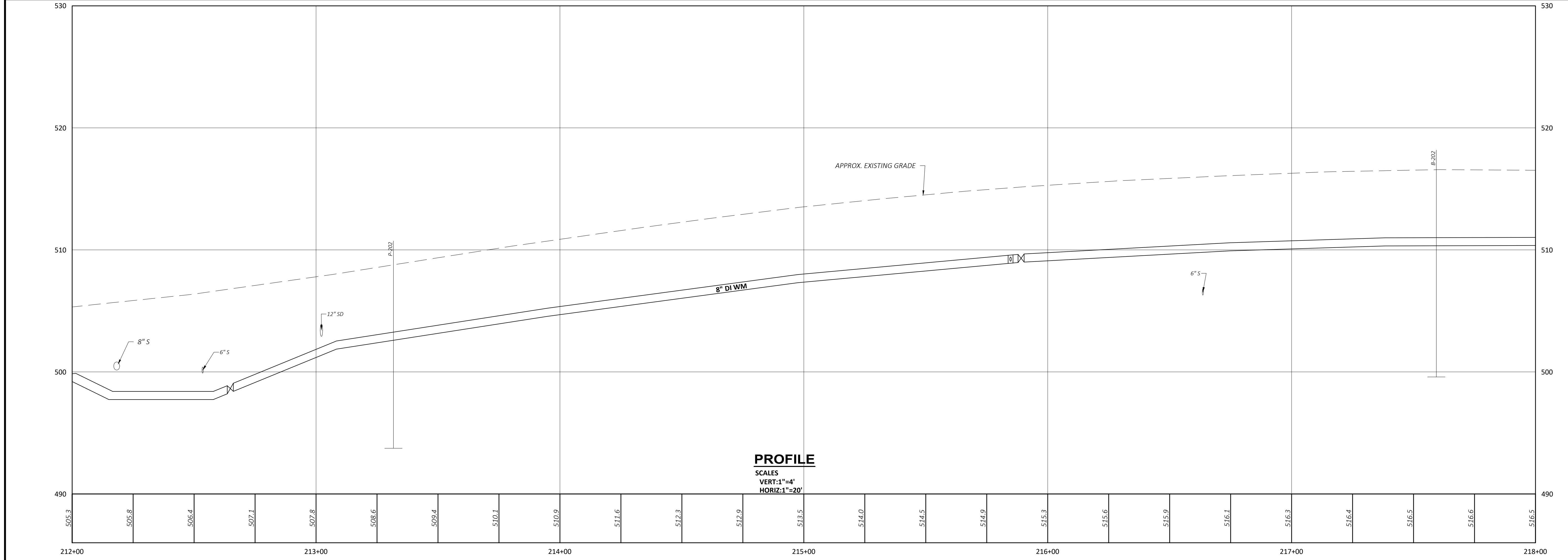
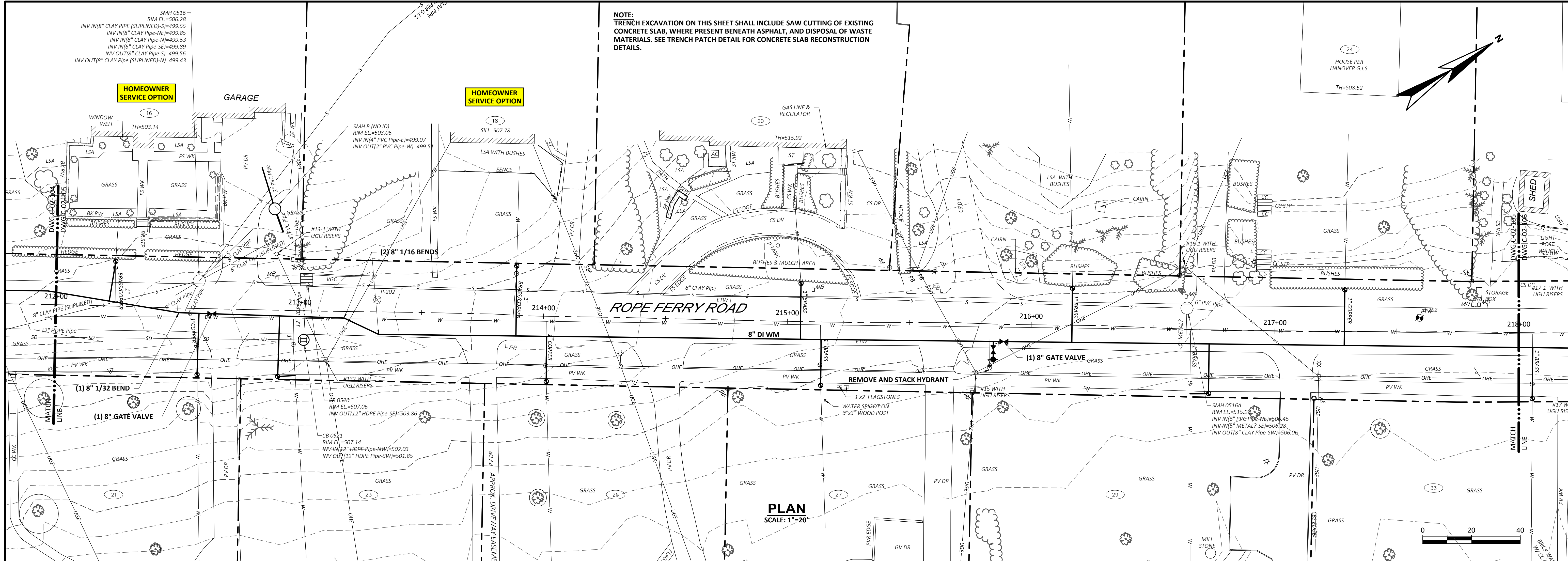
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230 COMMENCE WAY, SUITE 302, PORTSMOUTH, NH 03801

TOWN OF HANOVER, NEW HAMPSHIRE
WATER DISTRIBUTION IMPROVEMENTS

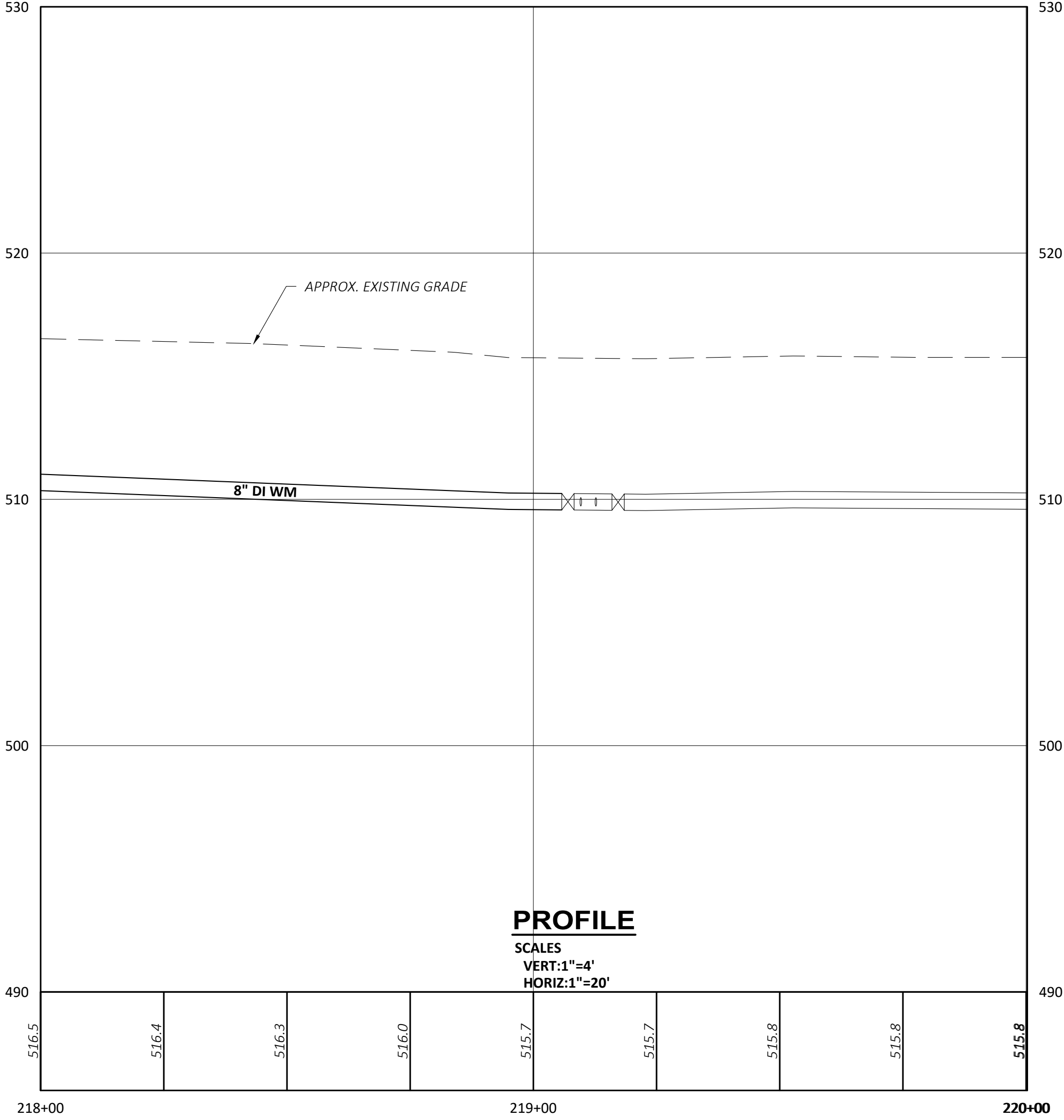
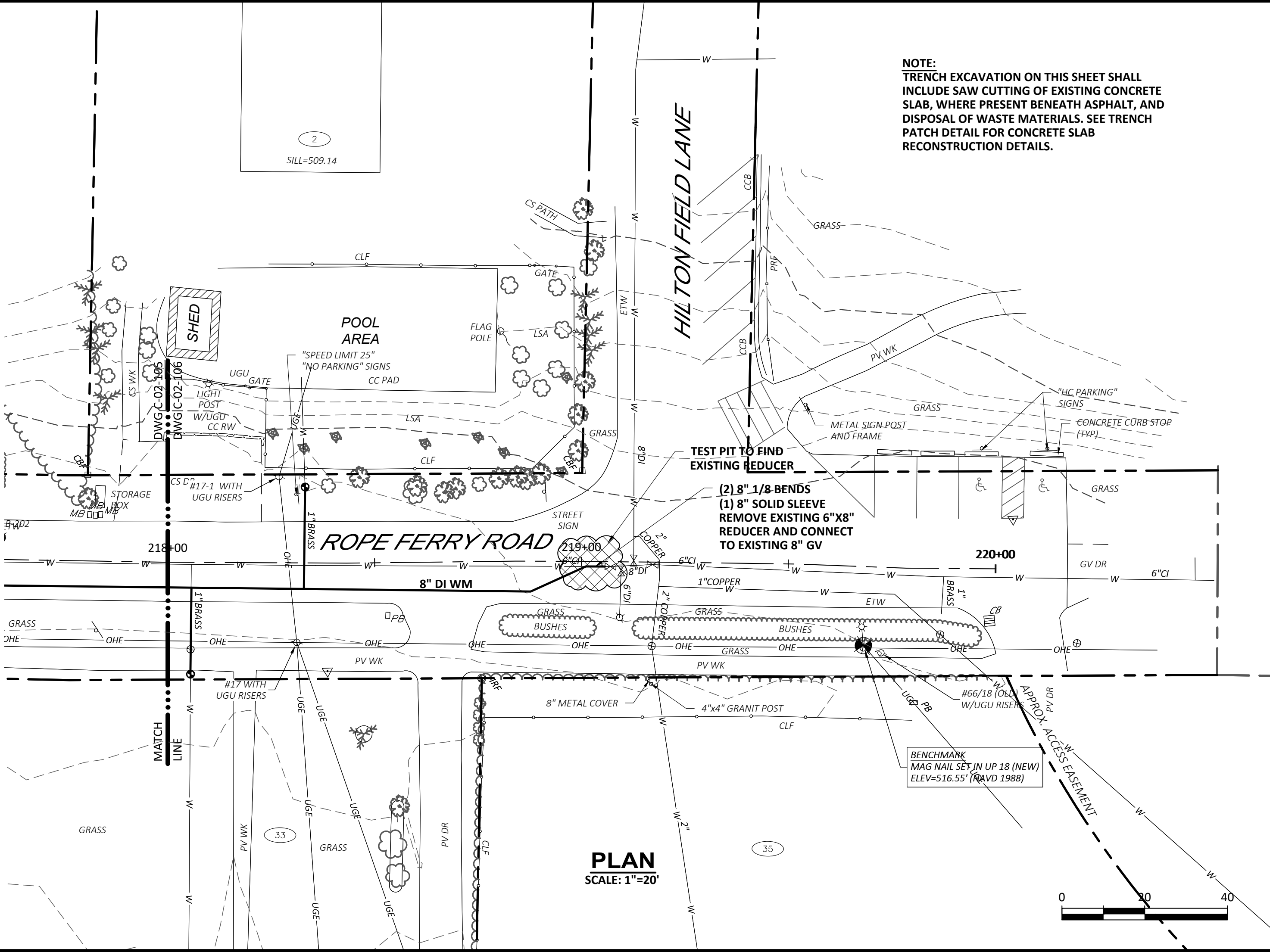
AREA 2
PLAN AND PROFILE OF ROPE FERRY ROAD
STA 200+00 TO STA 206+00

DRAWING
C-02-104





TOWN OF HANOVER, NEW HAMPSHIRE WATER DISTRIBUTION IMPROVEMENTS	WRIGHT-PIERCE 603.430.3728 www.wright-pierce.com 230 COMMERCE WAY, SUITE 302, PORTSMOUTH, NH 03801			PROJECT NO: 21662 DESIGNED: D.SAULNIER CAD COORD: J.NICHAUD CAD: J.NICHAUD CHECKED: R.DAVEE DATE: 10-18-2024 APPROVED: B.ECKSTROM DATE: 10-18-2024 SUBMISSION: CONTRACT DRAWINGS	NO REVISIONS	APPD DATE
	AREA 2 PLAN AND PROFILE: ROPE FERRY ROAD STA 212+00 TO STA 218+00	△ △ △ △ △ △				
DRAWING C-02-106						



PROJECT NO: 21662
DESIGNED: D.SAULNER
CAD COORD: J.MICHAUD
CAD: J.MICHAUD
CHECKED: R.DAVEE
DATE: 10-18-2024
APPROVED: B.ECKSTROM
DATE: 10-18-2024
SUBMISSION: CONTRACT DRAWINGS

NO

REVISIONS

APPD

DATE

TOWN OF HANOVER, NEW HAMPSHIRE
WATER DISTRIBUTION IMPROVEMENTS

AREA 2
PLAN AND PROFILE OF ROPE FERRY ROAD
STA 218+00 TO STA 220+00

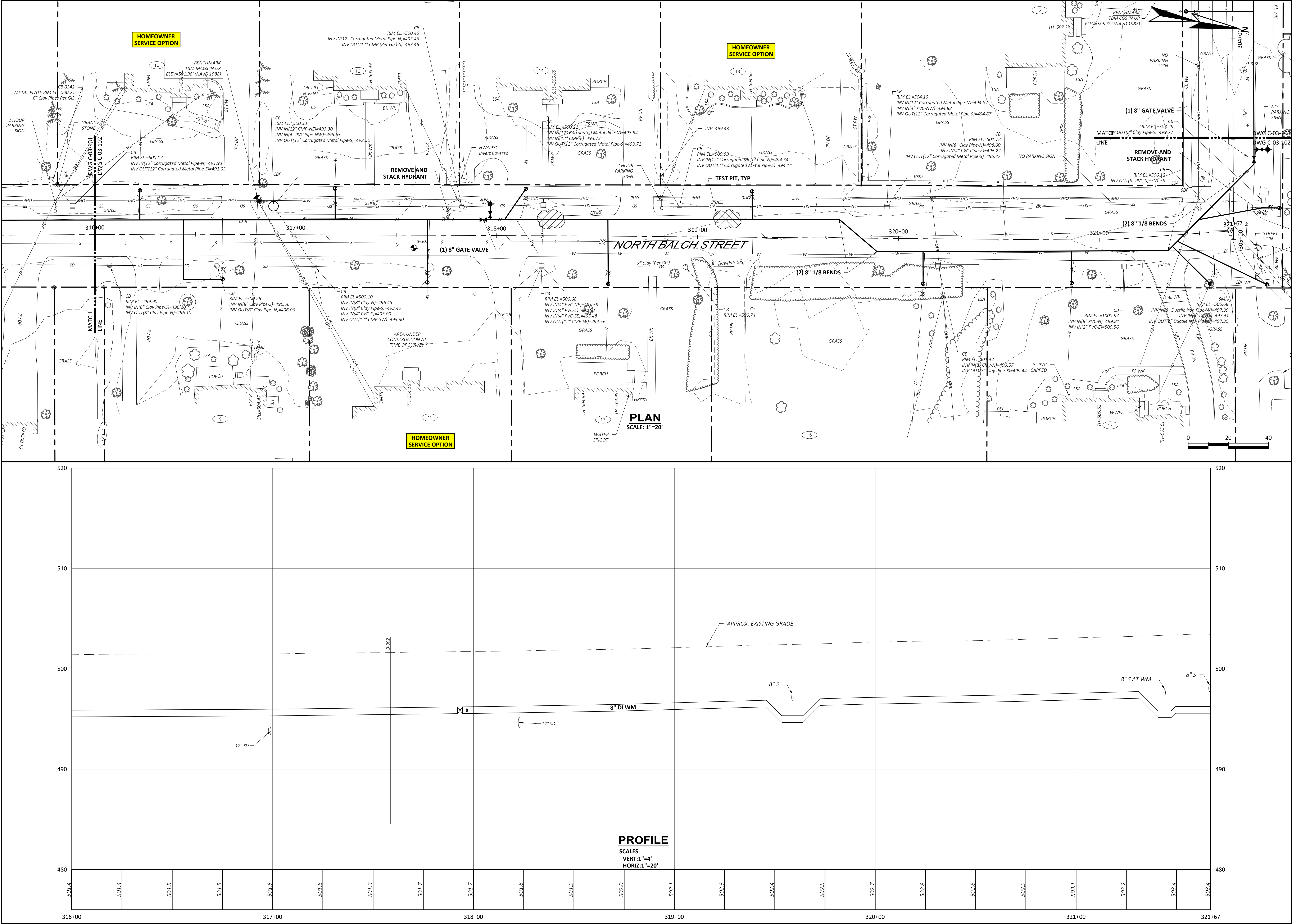
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STATE OF NEW HAMPSHIRE
BRETT L. COHEN
No. 12938
Professional Seal

DRAWING
C-02-107

PLAN AND PROFILE OF ROPE FERRY ROAD
STA 218+00 TO STA 220+00

A:\ENGINE\HANOVER\21662-WATERHANDSDISTRIBUTIONREPLACEMENT&REHAB_DRAININGS\CV\21662-CS-AREA3-PLAN\PROFILES\DWG | Area3-Plan\Profile1.dwg | 1:2.5849 | 10/21/2024 8:34:17 AM | JAMES MICHAUD
LAST SAVED BY: JAMES MICHAUD 10/9/2024 5:04:40 AM



REVISIONS		APPD	DATE
NO			

PROJECT NO:	21662
DESIGNED:	DSALNER
CAD COORD:	JMICHAUD
CAD:	JMICHAUD
CHECKED:	R.DAVEE
DATE:	10-18-2024
APPROVED:	B.ECKSTROM
DATE:	10-18-2024
SUBMISSION:	CONTRACT DRAWINGS

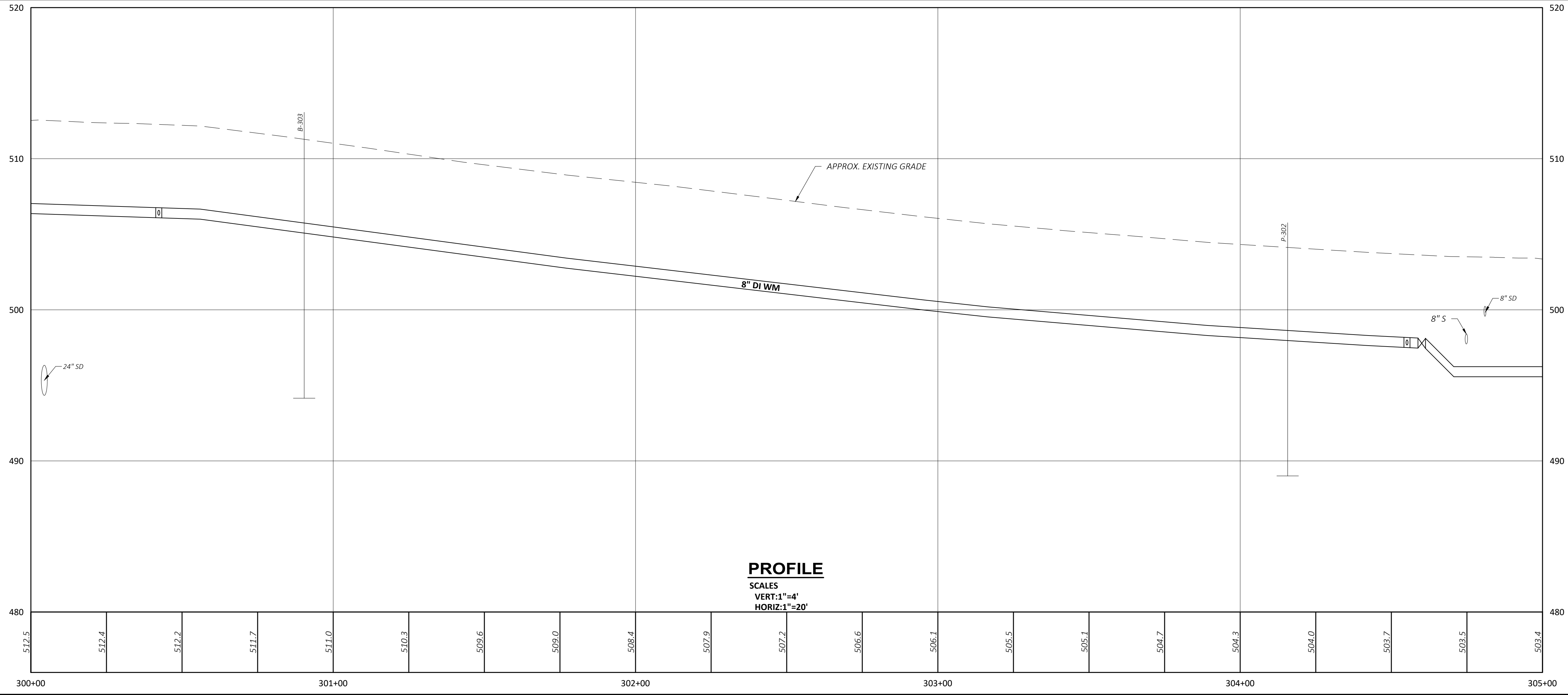
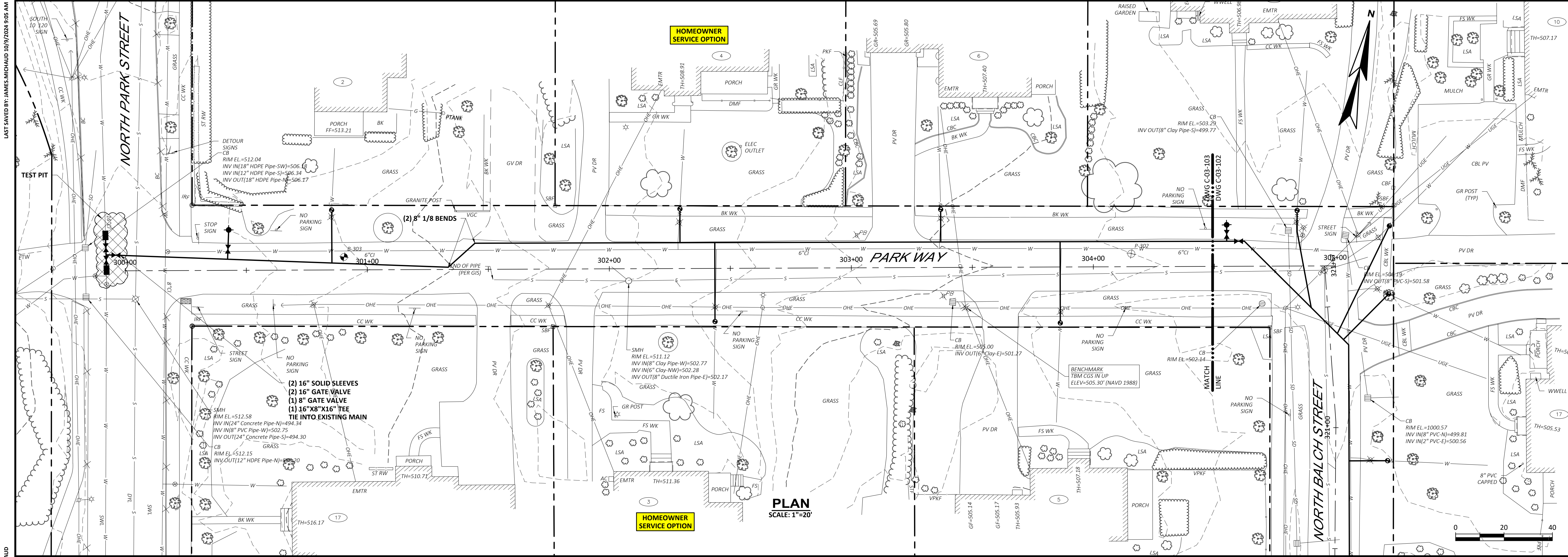
STATE OF NEW HAMPSHIRE
BRETT ECKSTROM
LICENSE NO. 12938
MECHANICAL ENGINEERING

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230 COMMERCE WAY, SUITE 302, PORTSMOUTH, NH 03801

TOWN OF HANOVER, NEW HAMPSHIRE
WATER DISTRIBUTION IMPROVEMENTS

AREA 3
PLAN AND PROFILE OF NORTH BALCH STREET
STA 316+00 TO STA 321+67

DRAWING
C-03-102



REVISIONS		PROJECT NO: 21662	DESIGNED: DSALNER	CAD COORD: J.MICHAUD	CAD: J.MICHAUD	CHECKED: R.DAVEE	DATE: 10-18-2024	APPROVED: B.ECOSTOM	DATE: 10-18-2024	SUBMISSION: CONTRACT DRAWINGS
NO										

SEAL

STATE OF NEW HAMPSHIRE

BRITTON

ENGINEER

NO. 1258

PROFESSIONAL

4-2024

TOWN OF HANOVER, NEW HAMPSHIRE

WATER DISTRIBUTION IMPROVEMENTS

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AREA 3

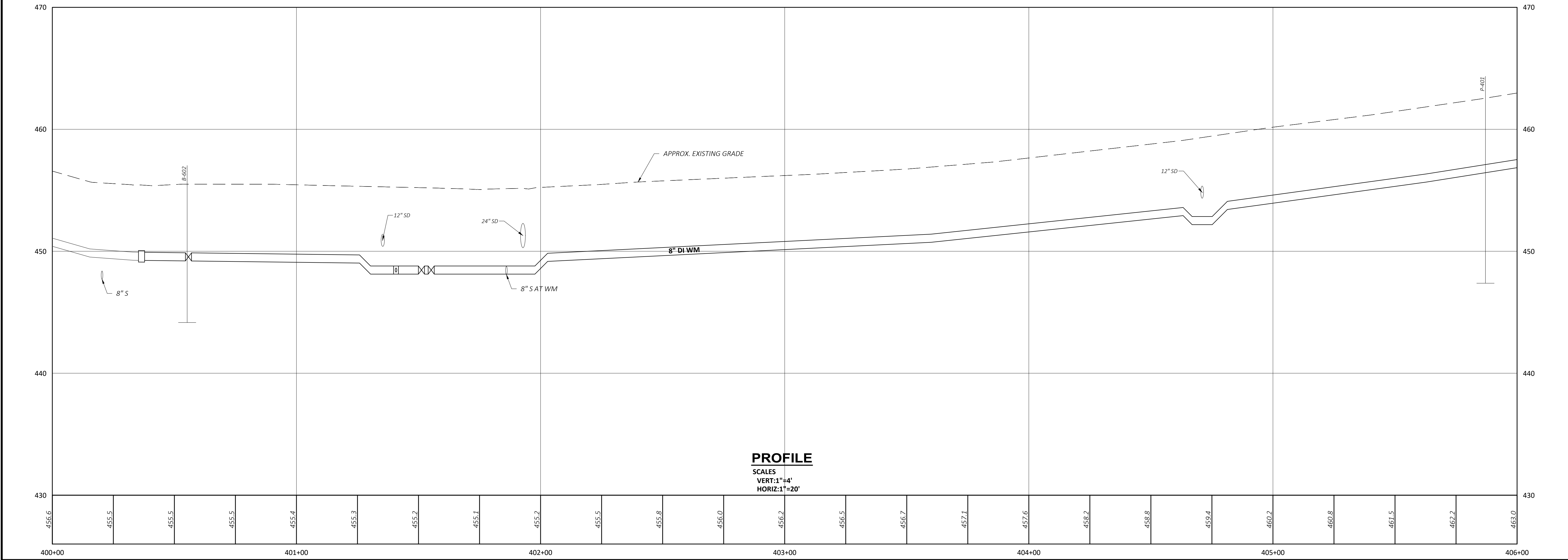
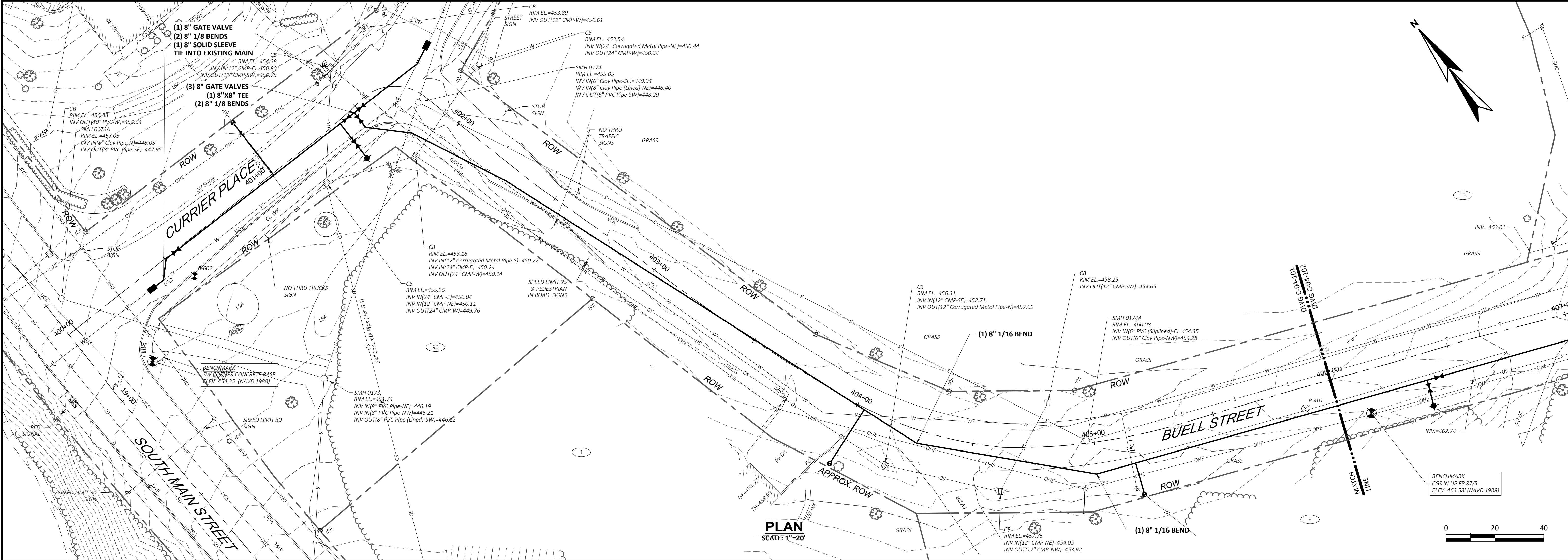
PLAN AND 10' PARK WAY

STA 300+00 TO STA 305+00

DRAWING

C-03-103

A:\ENGINE\HANOVER\21662-WATERMAIN DISTRIBUTION REPLACEMENT & REHAB - DRAWINGS\CUV\21662-CS-AREA 4-PLAN\PROFILE.DWG | Area 4-Plan Profile | 1:2,849 | — | 10/21/2024 8:34:41 AM | JAMES MICHAUD
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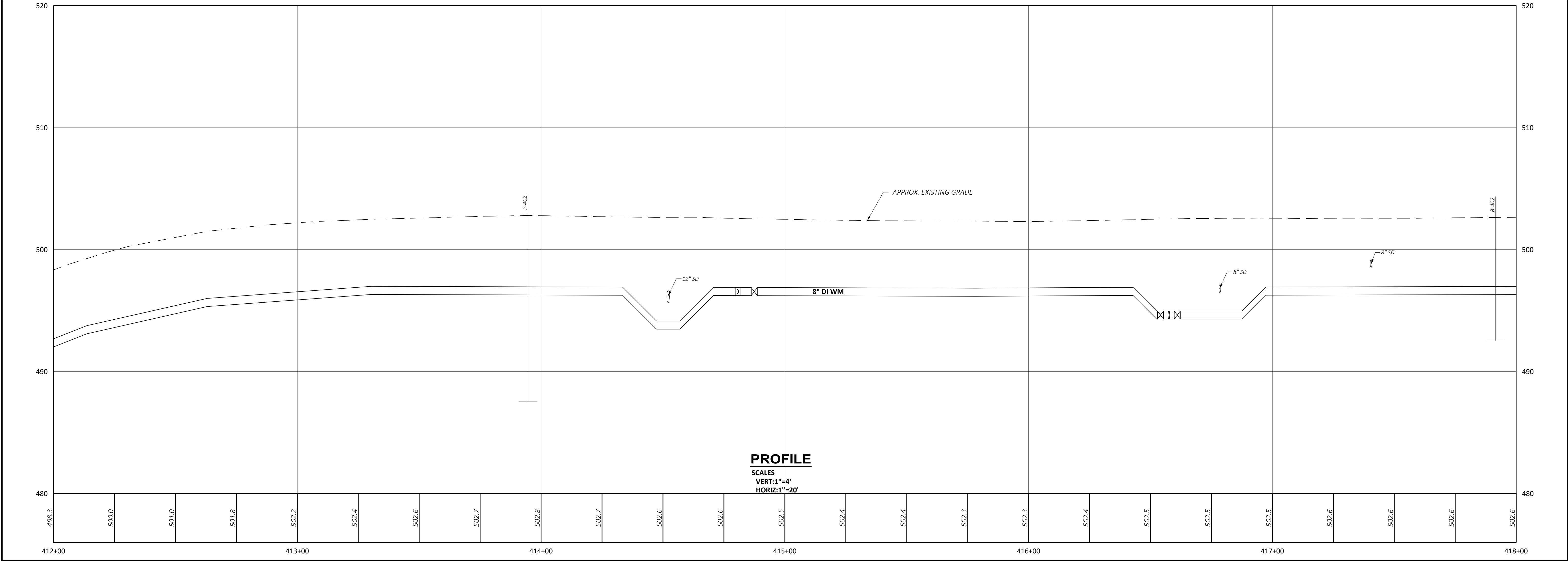
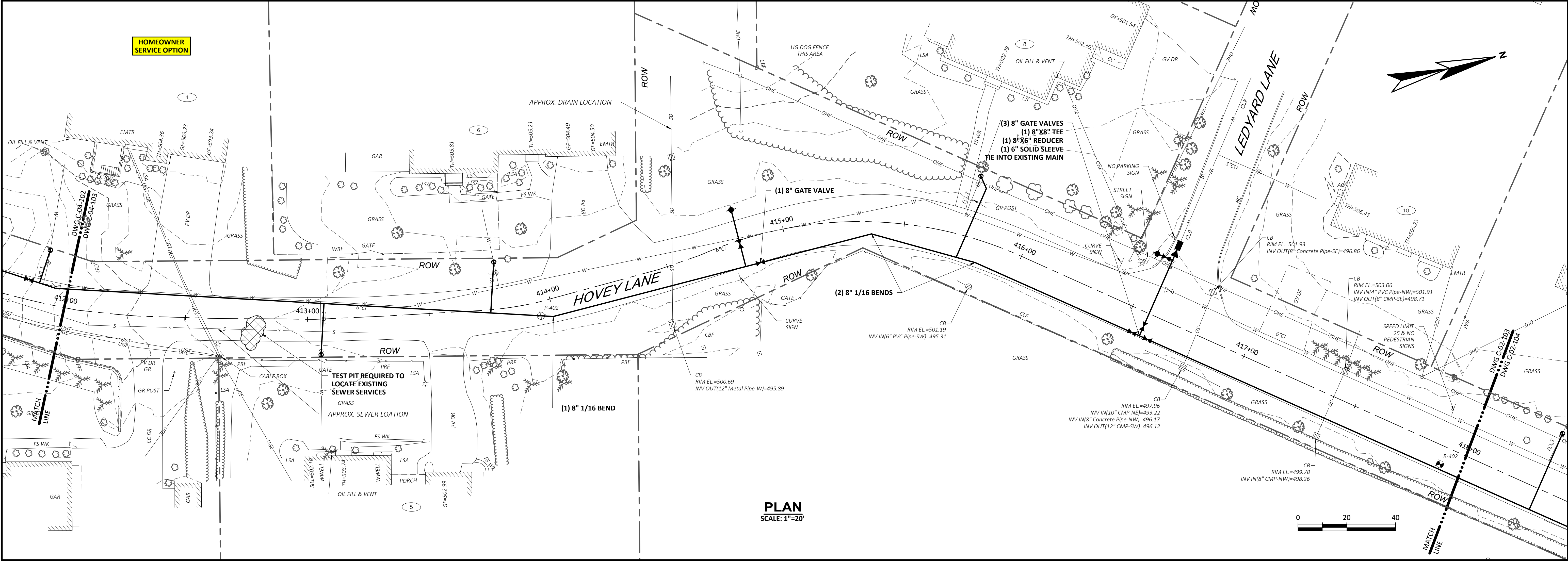
PROJECT NO: 21662	DESIGNED: D.SAULNER
CAD COORD: J.MICHAUD	CAD: J.MICHAUD
CHECKED: R.DAVEE	DATE: 10-18-2024
APPROVED: B.ECKSTROM	DATE: 10-18-2024
SUBMISSION: CONTRACT DRAWINGS	

STATE OF NEW HAMPSHIRE
JAMES MICHAEL WRIGHT-PIERCE
No. 12938
MECHANICAL ENGINEERING

WRIGHT-PIERCE
603.430.3728 | www.wright-pierce.com
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DRAWING C-04-101	TOWN OF HANOVER, NEW HAMPSHIRE WATER DISTRIBUTION IMPROVEMENTS
	AREA 4 PLAN AND PROFILE: CURRIER PLACE & BUELL STREET STA 400+00 TO STA 406+00

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LAST SAVED BY: JAMES.MICHAUD 10/19/2024 10:22 AM



REVISIONS		APPD	DATE
NO			

PROJECT NO: 21662	DESIGNED: D.SAULNER
CAD COORD: J.MICHAUD	CAD: J.MICHAUD
CHECKED: R.DAVEE	DATE: 10-18-2024
APPROVED: B.ECKSTROM	DATE: 10-18-2024
SUBMISSION: CONTRACT DRAWINGS	

STATE OF NEW HAMPSHIRE
BRIAN J. MICHAUD
No. 12345
Professional Engineer

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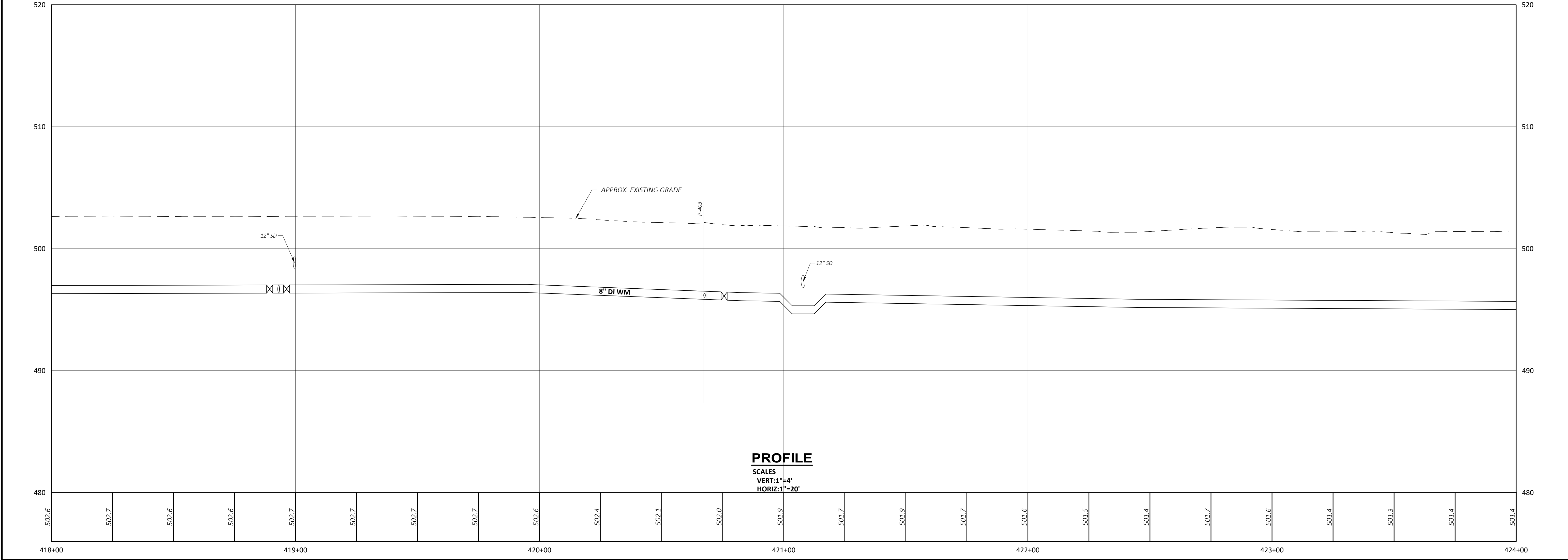
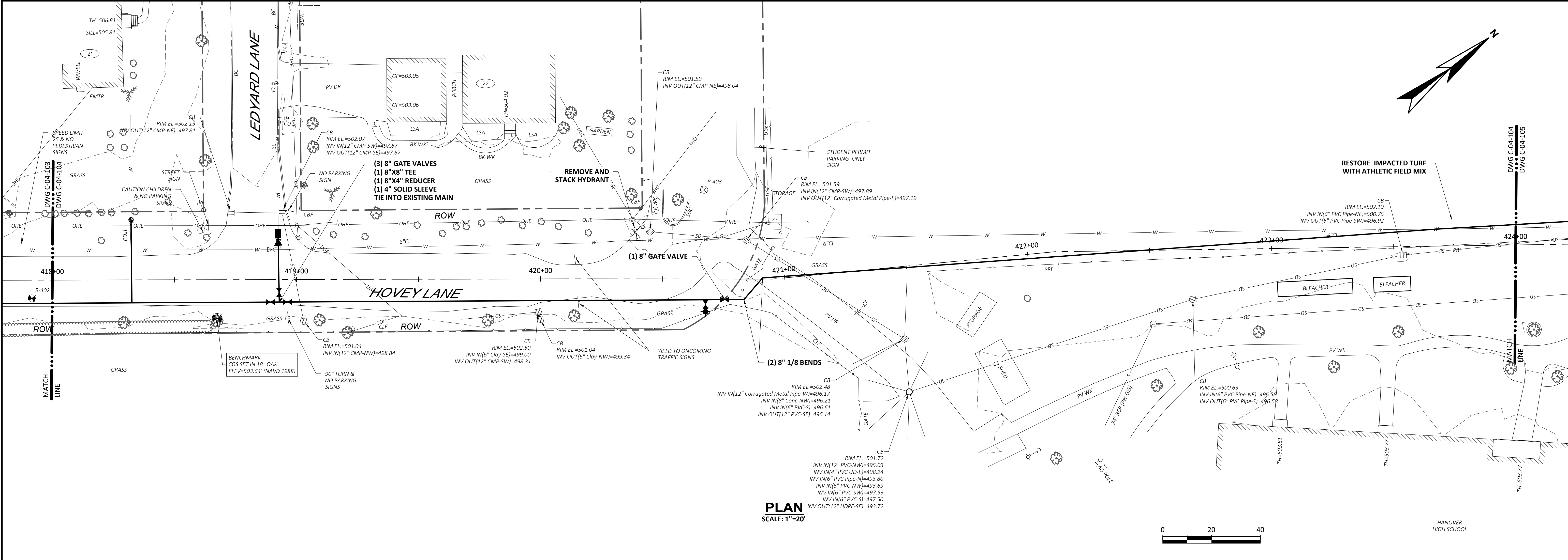
TOWN OF HANOVER, NEW HAMPSHIRE
WATER DISTRIBUTION IMPROVEMENTS

AREA 4
PLAN AND PROFILE FOR HOVEY LANE
STA 412+00 TO STA 418+00

DRAWING
C-04-103

LAST SAVED BY: JAMES.MICHAUD 10/09/2024 10:40 AM

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REVISIONS		APPROD	DATE
NO			

PROJECT NO: 21662	DESIGNED: D.SAULNER
CAD COORD: J.MICHAUD	CAD: J.MICHAUD
CHECKED: R.DAVEE	APPROVED: B.ECKSTROM
DATE: 10-18-2024	DATE: 10-18-2024
SUBMISSION: CONTRACT DRAWINGS	

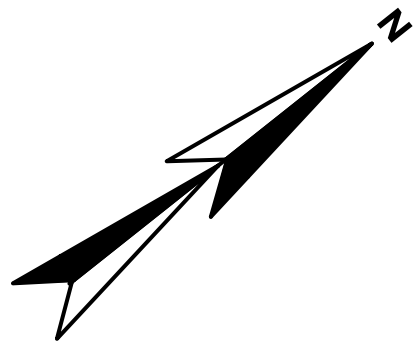
STATE OF NEW HAMPSHIRE
BRITTON
No. 1234
Professional Seal

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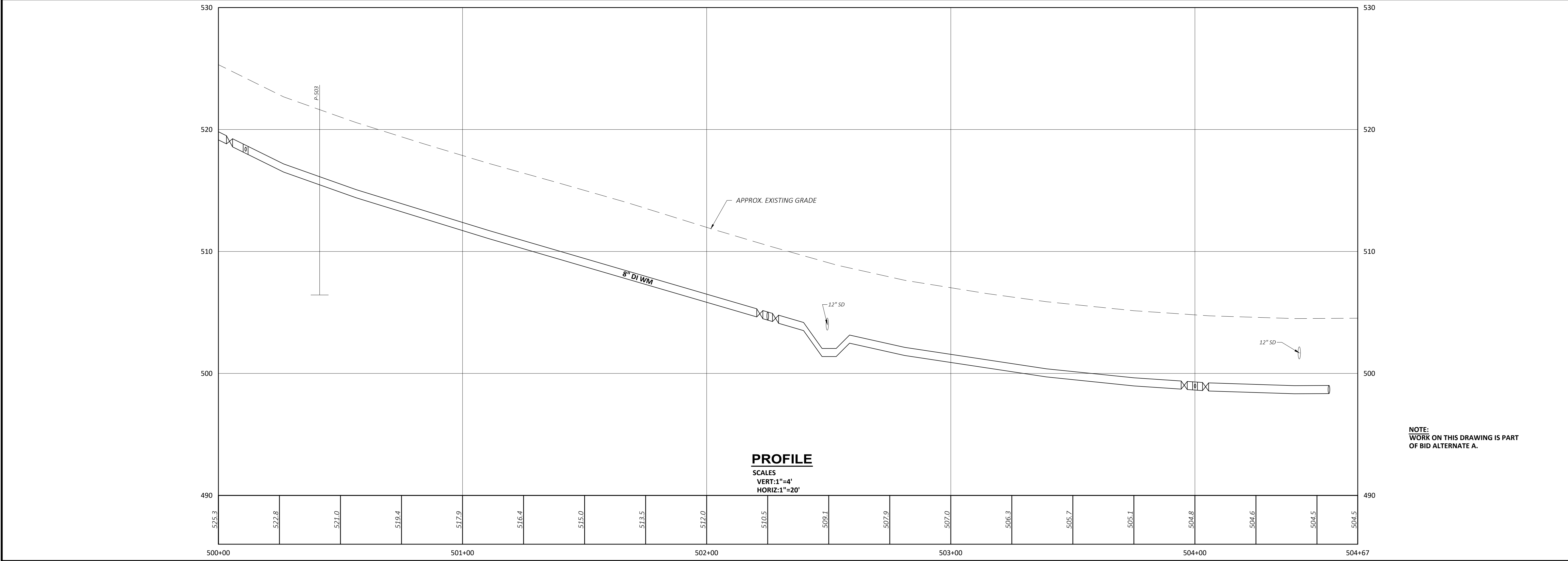
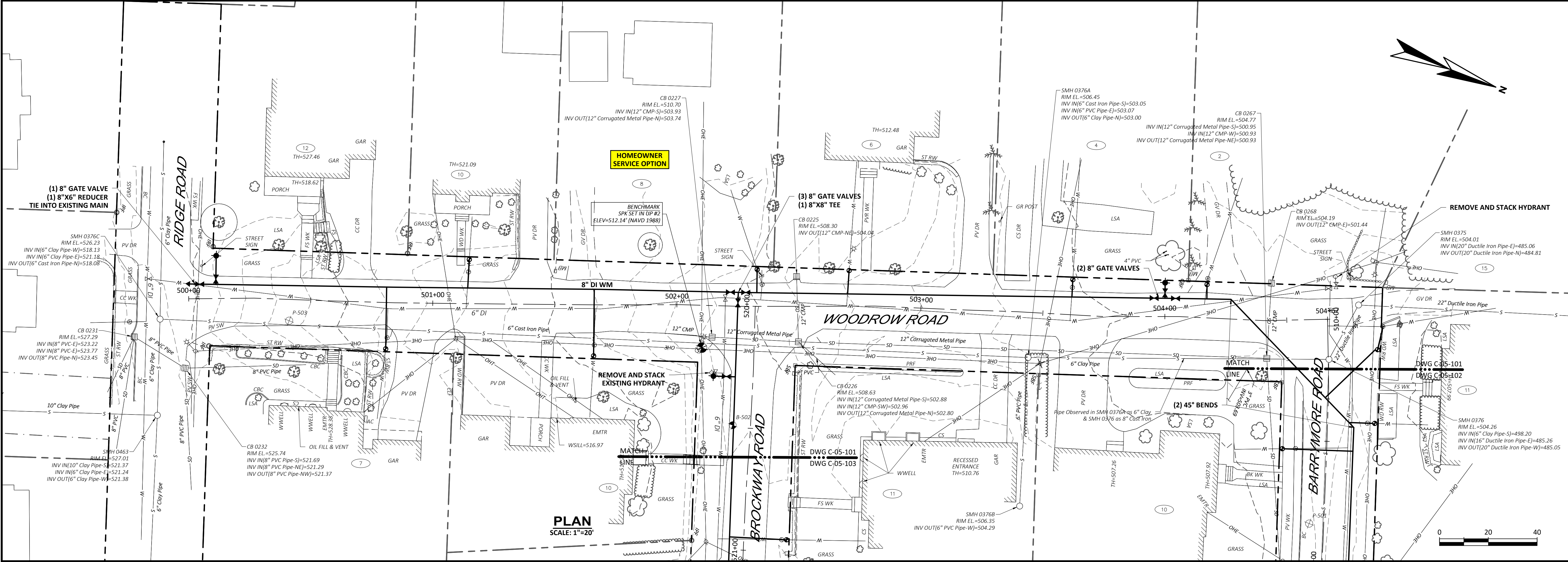
TOWN OF HANOVER, NEW HAMPSHIRE
WATER DISTRIBUTION IMPROVEMENTS

AREA 4
PLAN AND PROFILE OF HOVEY LANE
STA 418+00 TO STA 424+00

DRAWING
C-04-104



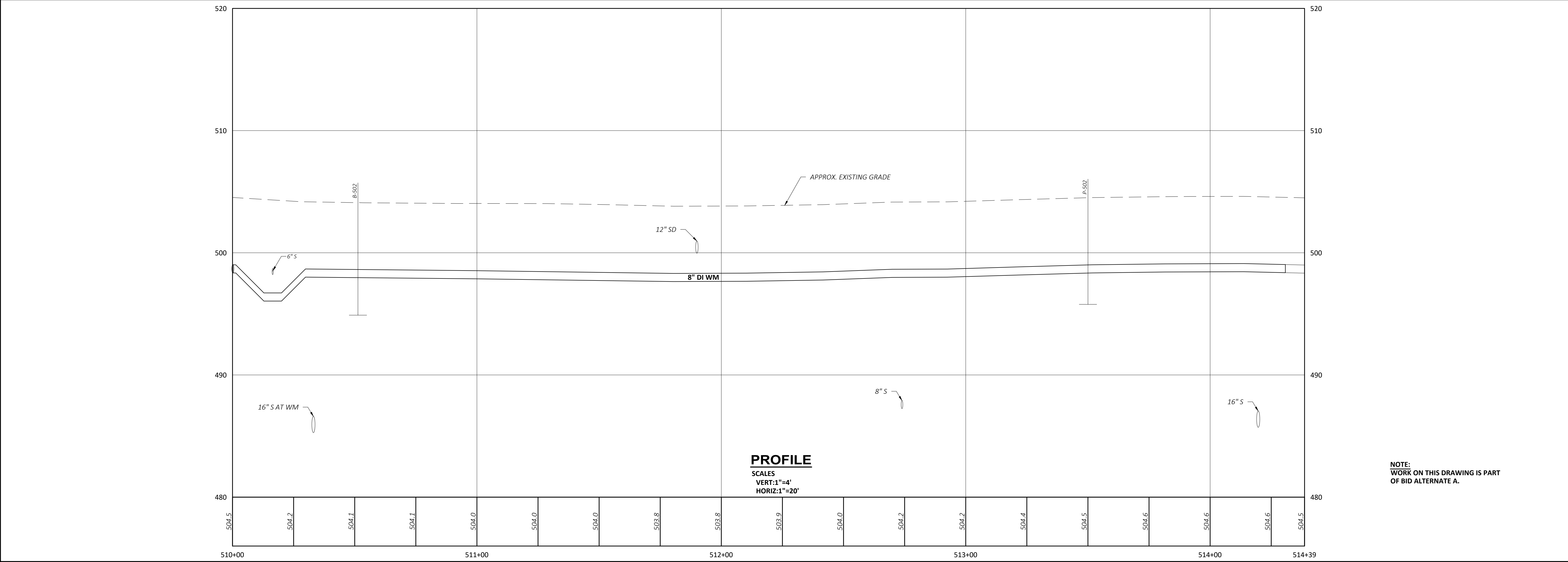
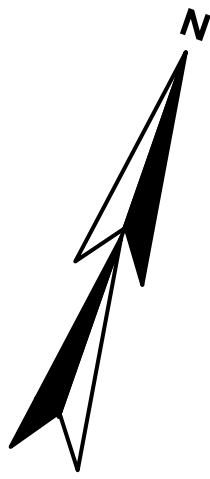
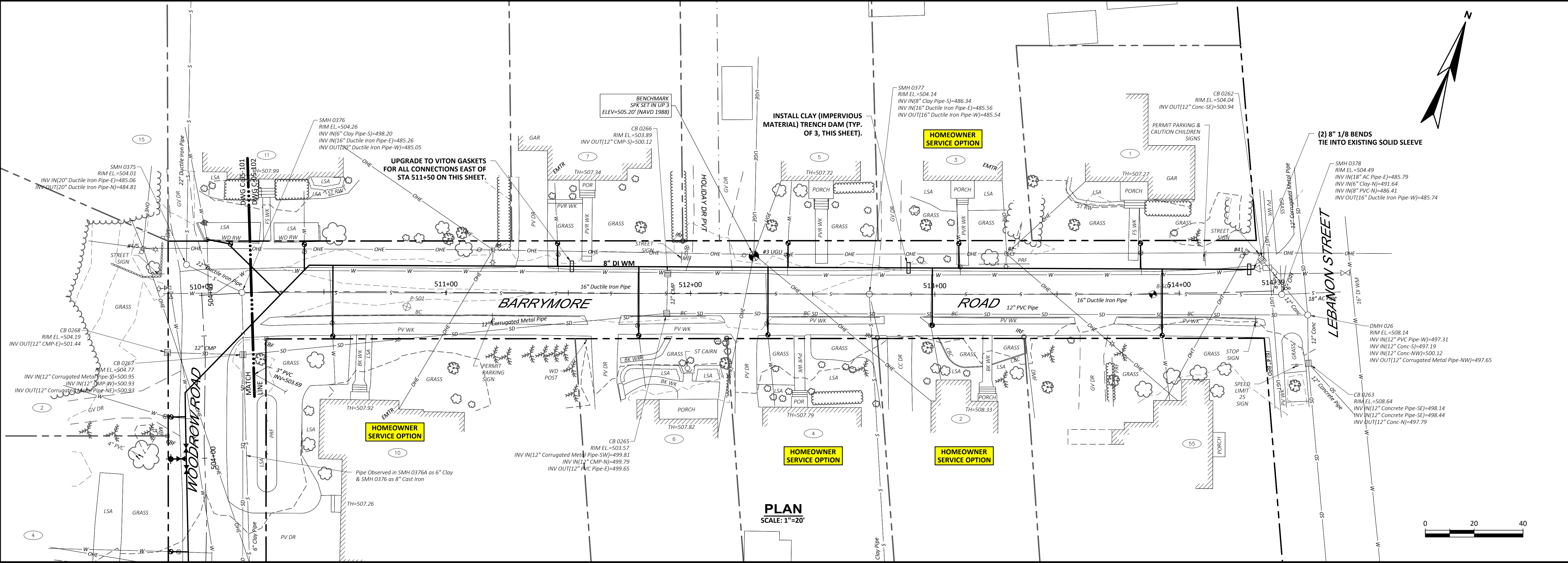
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												DESIGNED: D.SAVANIER		△					
												CAD COORD: J.NICHAUD		△					
												CAD: J.NICHAUD		△					
												CHECKED: R.DANEE		△					
												DATE: 10-18-2024		△					
												APPROVED: B.ECKSTROM		△					
												DATE: 10-18-2024		△					
												SUBMISSION: CONTRACT DRAWINGS		△					



REVISIONS		APPROVED	DATE
NO	Δ		
PROJECT NO: 21662 DESIGNED: D.SAULNER CAD COORD: J.MICHAUD CAD: J.MICHAUD CHECKED: R.DAVEE DATE: 10-18-2024 APPROVED: B.ECKSTROM DATE: 10-18-2024 SUBMISSION: CONTRACT DRAWINGS			
STATE OF NEW HAMPSHIRE BRIAN M. KENNEL REGISTERED PROFESSIONAL ENGINEER No. 12938 EXPIRATION DATE 12/31/2026 40001001			
WRIGHT-PIERCE 603.430.3728 www.wright-pierce.com 230 COMMERCE WAY, SUITE 302, PORTSMOUTH, NH 03801			
TOWN OF HANOVER, NEW HAMPSHIRE WATER DISTRIBUTION IMPROVEMENTS		BID ALTERNATE "A" AREA 5 PLAN STA 500+00 TO STA 504+67	
DRAWING C-05-101			

LAST SAVED BY: DANIEL.METZ 10/17/2024 8:30 AM

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DRAWING		REVISIONS		APPD		DATE	
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		4	4	4	4	4	4
TOWN OF HANOVER, NEW HAMPSHIRE WATER DISTRIBUTION IMPROVEMENTS		PROJECT NO: 21662					
		DESIGNED: D.SAULNER					
		CAD COORD: J.MICHAUD					
		CAD: J.MICHAUD					
		CHECKED: R.DAVEE					
BID ALTERNATE "A" AREA 5 PLAN STA 510+00 TO STA 514+39		DATE: 10-18-2024					
		APPROVED: B.ECKSTROM					
		DATE: 10-18-2024					
		SUBMISSION: CONTRACT DRAWINGS					
		DATE: 10-18-2024					

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-VWq 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.
 - 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:

A. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;

B. A MINIMUM OF 85% VEGETATIVE GROWTH HAS BEEN ESTABLISHED;

C. A MINIMUM OF 3" OF NON-EROSIVE MATERIALS SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR

D. 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 LB) 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

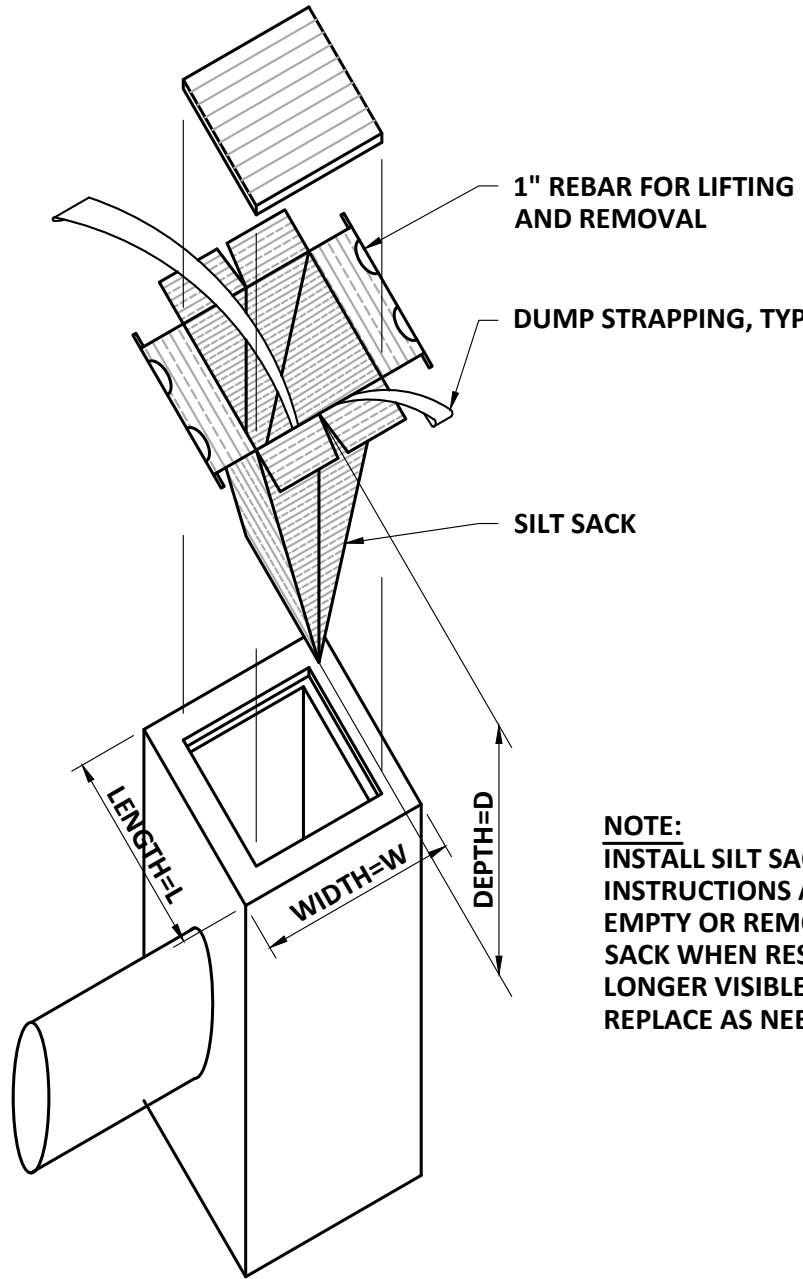
- WINTER CONSTRUCTION PERIOD DEFINED: NOVEMBER 1 THROUGH MAY 1
- WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
- EXPOSED AREAS SHOULD BE LIMITED TO WHICH CAN BE MULCHED IN ONE DAY PRIOR TO ANY PRECIPITATION EVENT.
- ALL 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

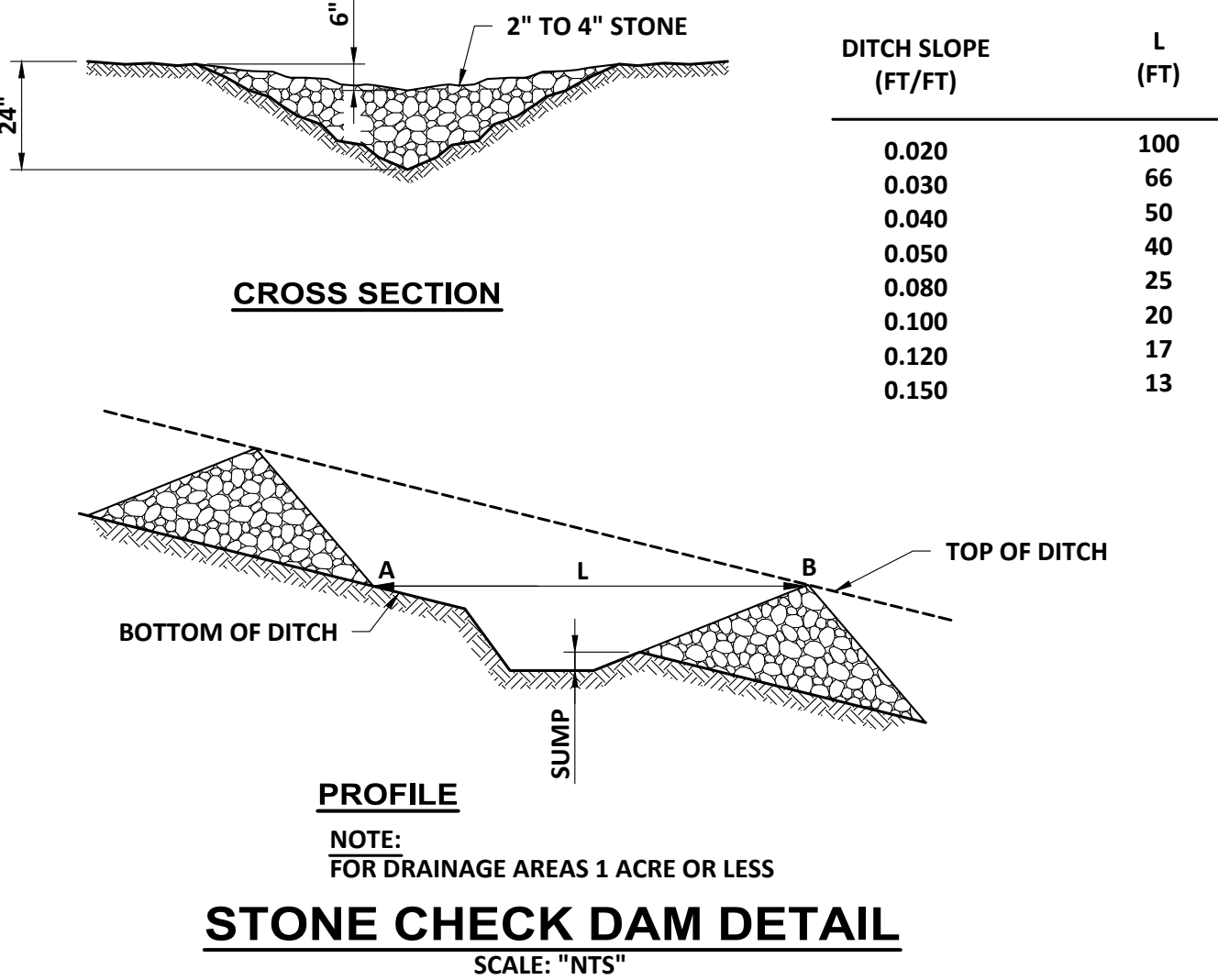
SEEDING TYPE	SEED DATES	LIME RATE (TONS/ACRE)	FERTILIZER RATE/RATIO (TYPE) (LB/1,000 ACRE)
PERMANENT AND/OR TEMPORARY	MAY. 1 - SEPT. 15	3	600/ENGINEER APPROVED (N-P205-K20)
NOTES: 1. USE LOW PHOSPHATE FERTILIZER AT ALL TIMES AND SLOW RELEASE NITROGEN FERTILIZER WHEN BETWEEN 25 AND 250 FEET OF A SURFACE WATER BODY. 2. NO FERTILIZER EXCEPT LIMESTONE SHOULD BE APPLIED WITHIN 25 FEET OF THE SURFACE WATER. 3. APPLY LIMESTONE AT 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE.			

TEMPORARY VEGETATION (TABLE 4-1)

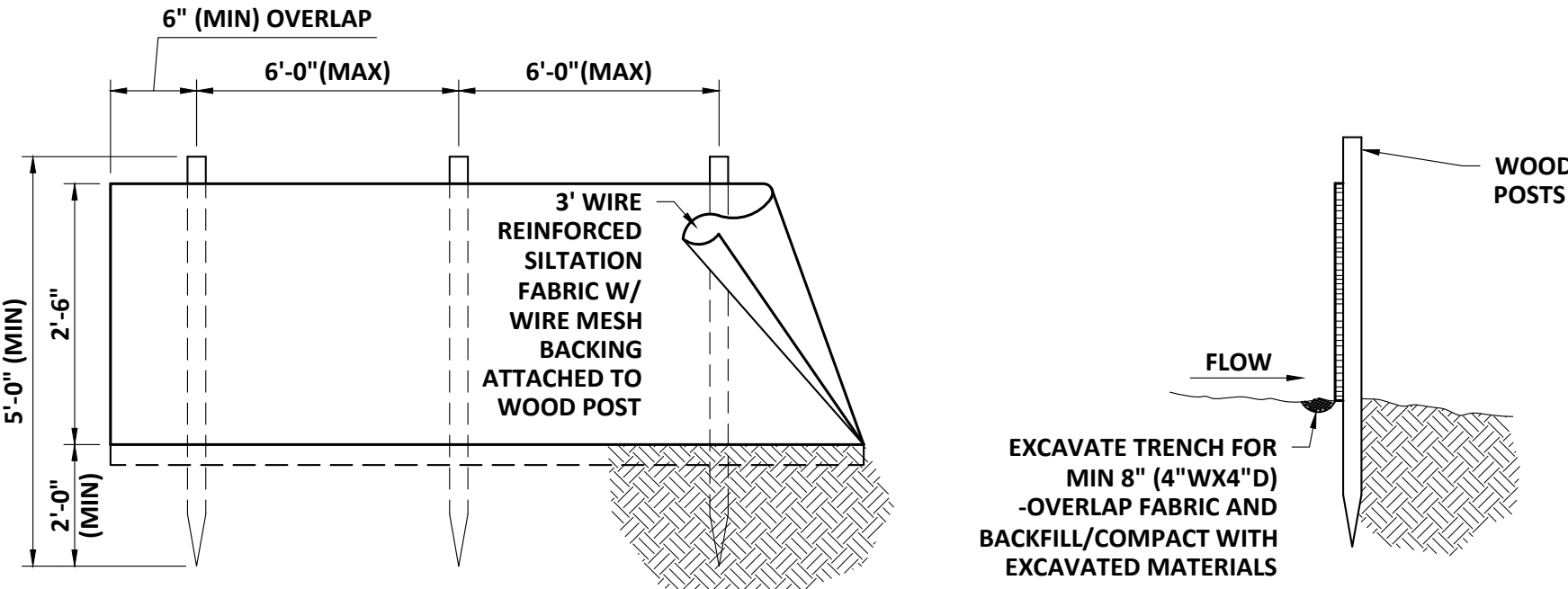
ADDITIONAL TEMPORARY SEED MIXTURE (FOR PERIODS LESS THAN 12 MONTHS)			
DATES	SEED	RATE	
PRIOR TO MAY 15	OATS	80 LB/ACRE	
AUG. 15 - SEP. 15	ANNUAL RYE GRASS	40 LB/ACRE	
AUG. 15 - SEP. 15	WINTER RYE GRASS	112 LB/ACRE	
APR. 1 - JUN. 1 (AUG. 15 - SEP. 15)	PERENNIAL RYE GRASS	40 LB/ACRE	



SILT SACK CATCH BASIN INLET
SCALE: NTS

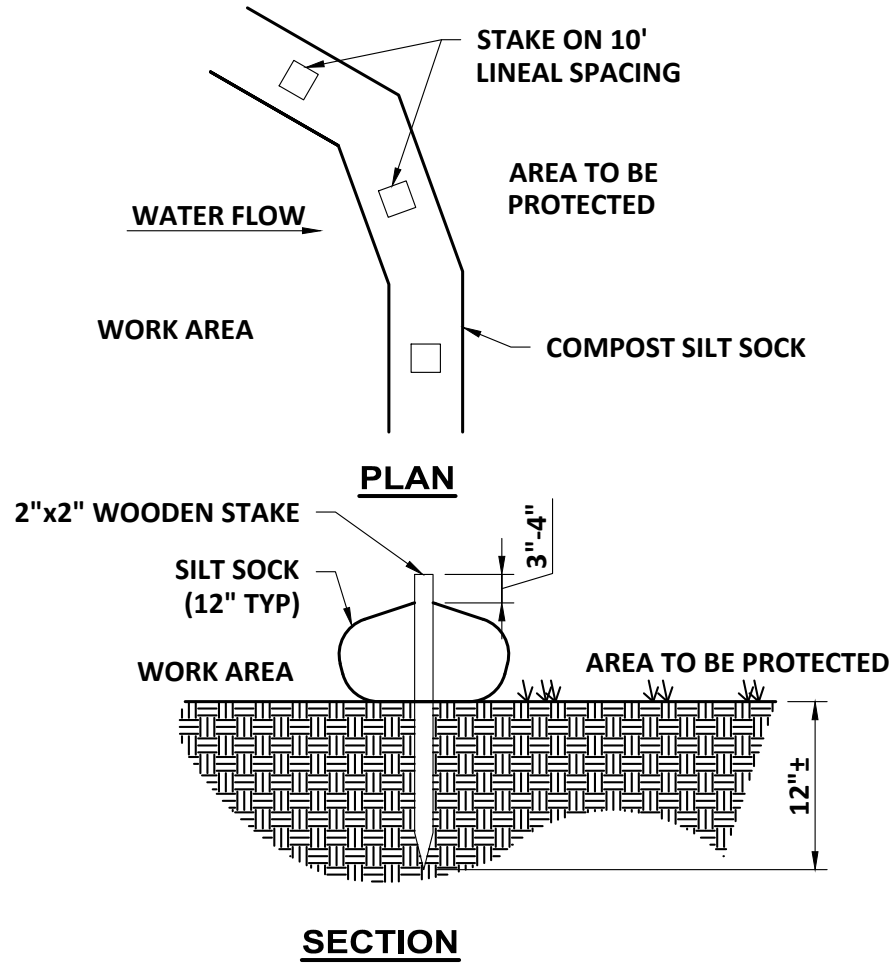


STONE CHECK DAM DETAIL
SCALE: "NTS"



- NOTES:
1. MAXIMUM LENGTH OF SLOPE ABOVE THE FENCE SHALL BE 100 FEET
2. MAXIMUM SLOPE ABOVE FENCE SHALL BE 2H TO 1V

SILT FENCE INSTALLATION DETAIL
SCALE: "NTS"



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

COMPOST SILT SOCK
SCALE: NTS

NO	REVISIONS	APPD	DATE

PROJECT NO: 21662
DESIGNED: D.SALLNER
CAD COORD: J.MICHAUD
CAD: J.MICHAUD
CHECKED: R.DAVEE
DATE: 10-18-2024
APPROVED: B.ECKSTROM
DATE: 10-18-2024
SUBMISSION: CONTRACT DRAWINGS

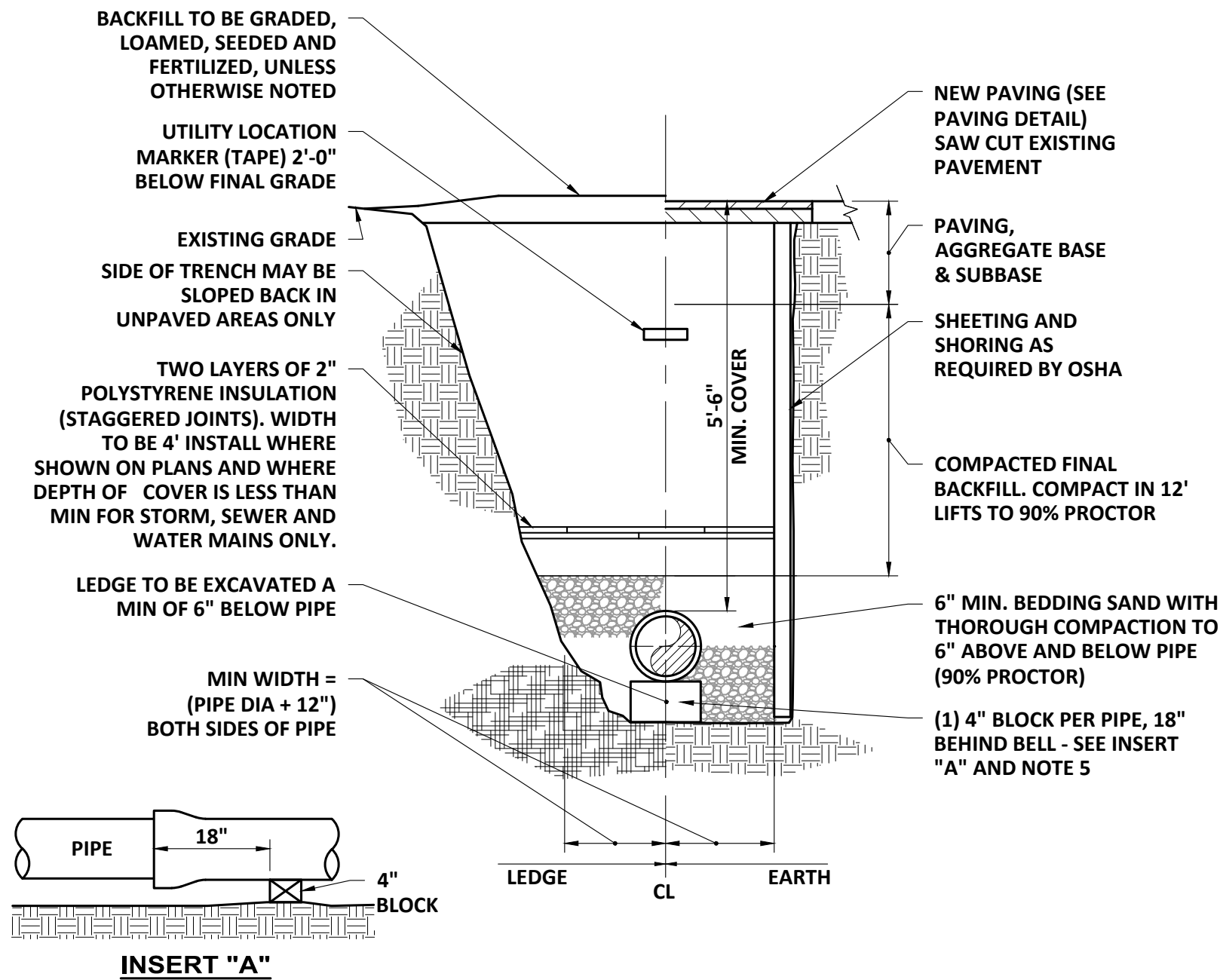
STATE OF NEW HAMPSHIRE
BRIAN K. EGAN
GOVERNOR
JAMES MICHAUD
COMMISSIONER
DEPARTMENT OF ENVIRONMENTAL SERVICES

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

TOWN OF HANOVER, NEW HAMPSHIRE
WATER DISTRIBUTION IMPROVEMENTS

EROSION CONTROL NOTES AND DETAILS

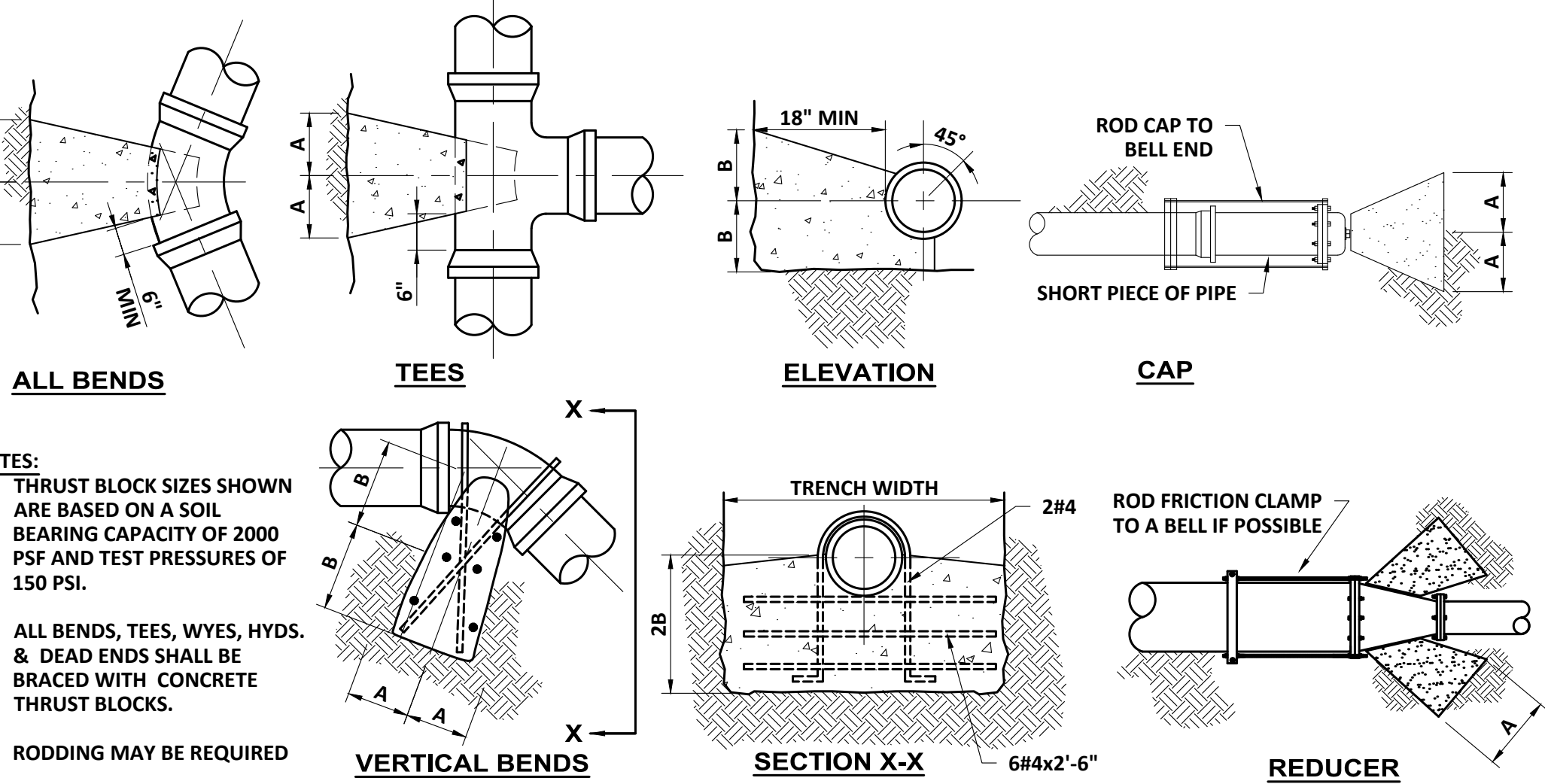
DRAWING
C-99-501



- NOTES:**
- ALL EXCAVATION MUST MEET OSHA STANDARDS.
 - 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 CHanneled ALONG BEDDING/INITIAL BACKFILL.
 - SEE SPECIFICATIONS FOR BEDDING AND BACKFILL REQUIREMENTS.
 - ALL PIPE SHALL HAVE A MINIMUM DEPTH OF 5'-6" FROM TOP OF PIPE TO FINISH GRADE.
 - BELL END OF EVERY PIPE SHALL BE SUPPORTED BY WOODEN 4X4 BLOCK PLACED 18" BEHIND BELL. MOUND EARTH MAY BE USED INSTEAD OF BLOCK ONLY WHEN EXISTING SOIL CONDITIONS ARE EQUAL TO 6-INCH MIN. BEDDING SAND MATERIAL WITH THOROUGH COMPACTION.

PIPE TRENCH

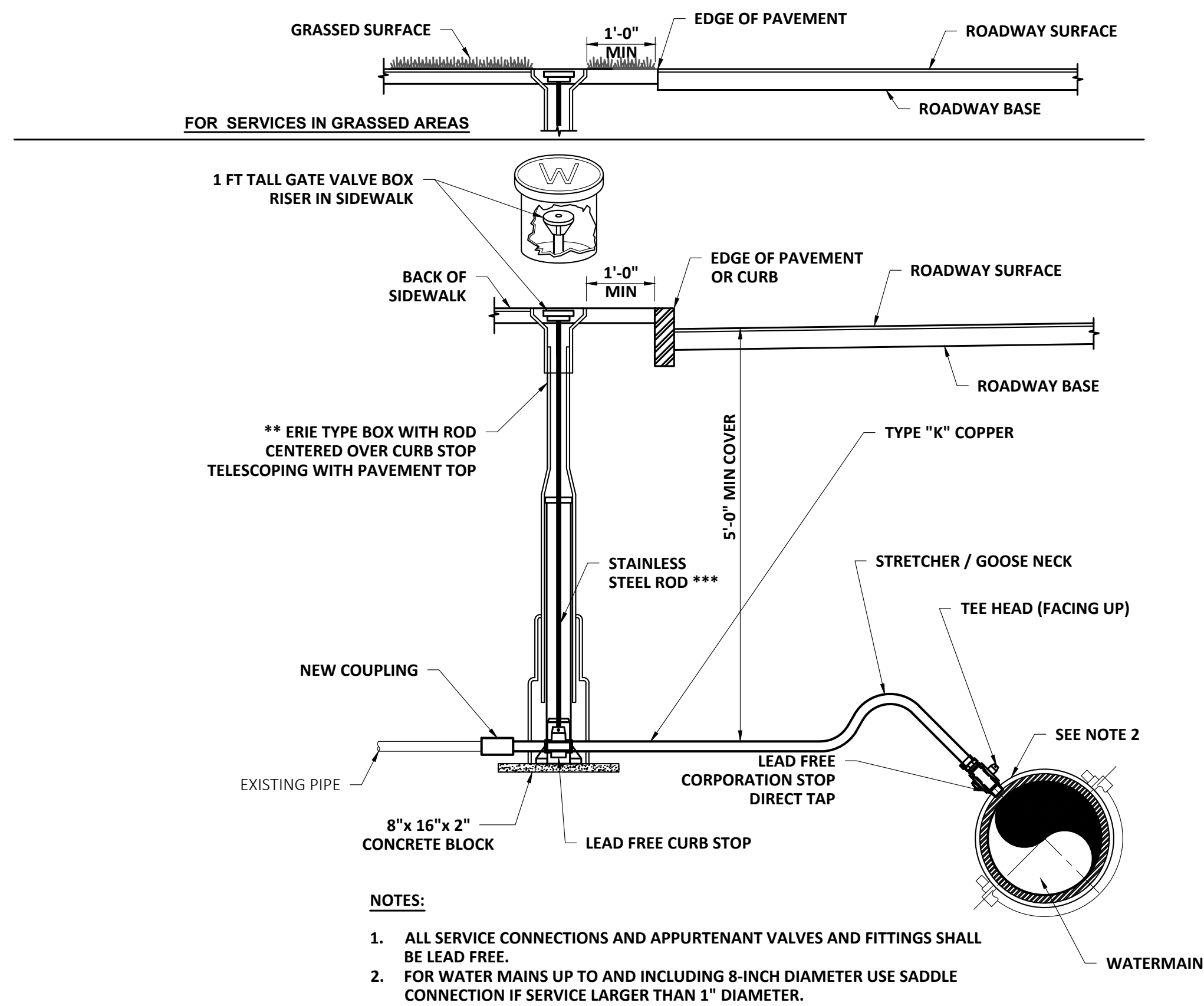
SCALE: "NTS"



PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEE		VERTICAL BEND (DOWN)		PLUG		REDUCER	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
4"	15"	12"	12"	9"	9"	6"	6"	6"	12"	12"	24"	21"	12"	12"	12"	12"
6"	15"	12"	12"	9"	9"	6"	6"	6"	12"	12"	24"	21"	12"	12"	12"	12"
8"	20"	15"	14"	12"	9"	9"	9"	6"	18"	12"	33"	24"	14"	14"	18"	12"
10"	21"	21"	18"	15"	15"	9"	9"	9"	20"	18"	40"	27"	16"	16"	20"	18"
12"	27"	24"	23"	15"	15"	12"	12"	9"	25"	18"	48"	30"	18"	18"	25"	18"
16"	37"	30"	30"	21"	21"	15"	13"	12"	32"	24"	57"	36"	22"	22"	32"	24"

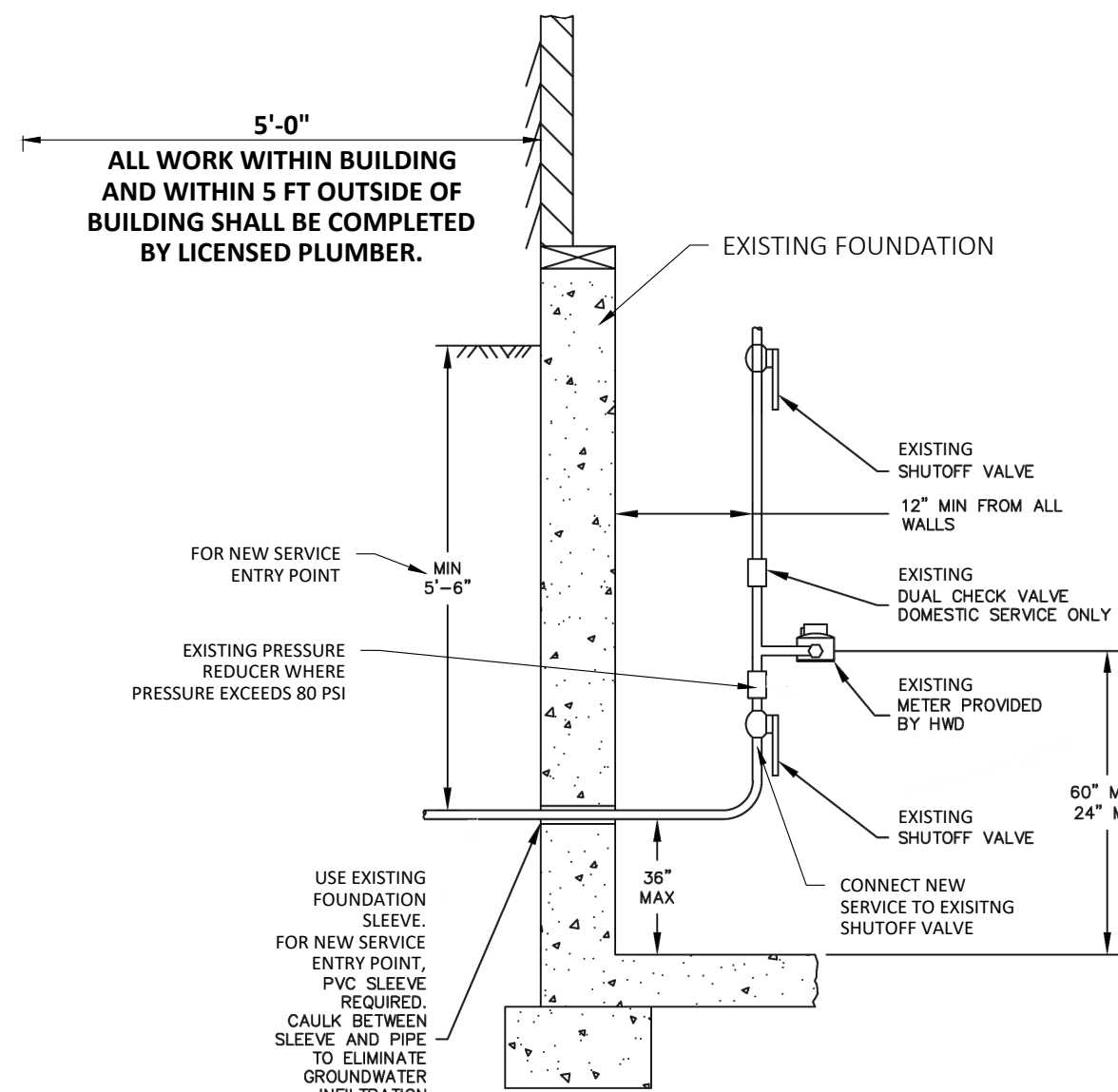
THRUST BLOCKS

NTS



WATER CONNECTION FOR 1"-2" SERVICE

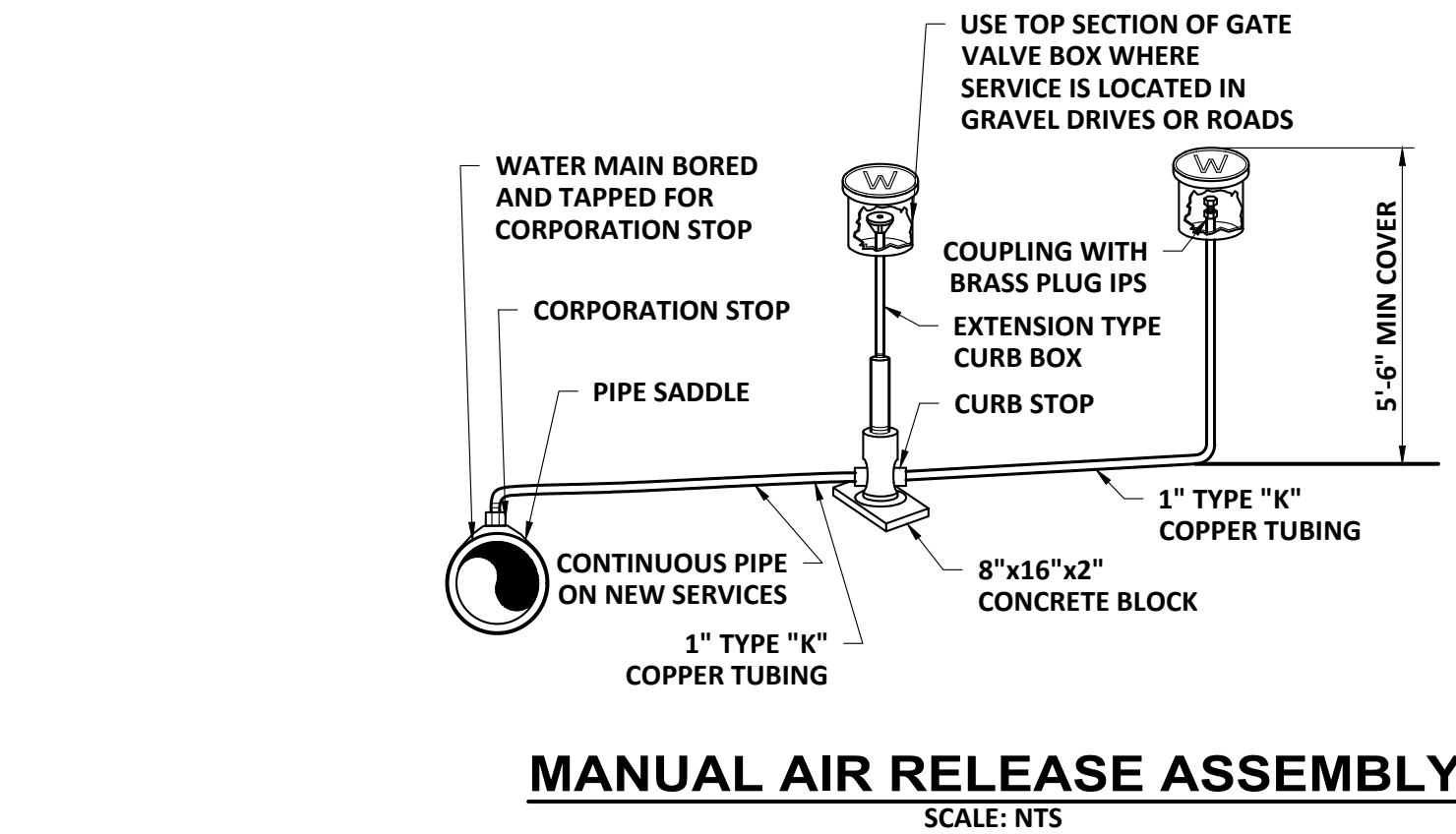
SCALE: NTS



- NOTES:**
- LOCATIONS WHERE SERVICES OUTSIDE THE RIGHT OF WAY SHALL BE REPLACED ARE INDICATED IN THE SERVICE SUMMARY LIST IN THE CONTRACT DOCUMENTS.
 - ALL SERVICE WORK OUTSIDE OF RIGHT OF WAY SHALL BE CAREFULLY COORDINATED WITH PROPERTY OWNER AND TOWN OF HANOVER.
 - CONTRACTOR SHALL ATTEMPT TO REPLACE EXISTING SERVICE OUTSIDE OF ROW BY TRENCHLESS METHODS.
 - SERVICES THAT CAN NOT BE REPLACED BY TRENCHLESS METHODS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PIPE TRENCH DETAIL.

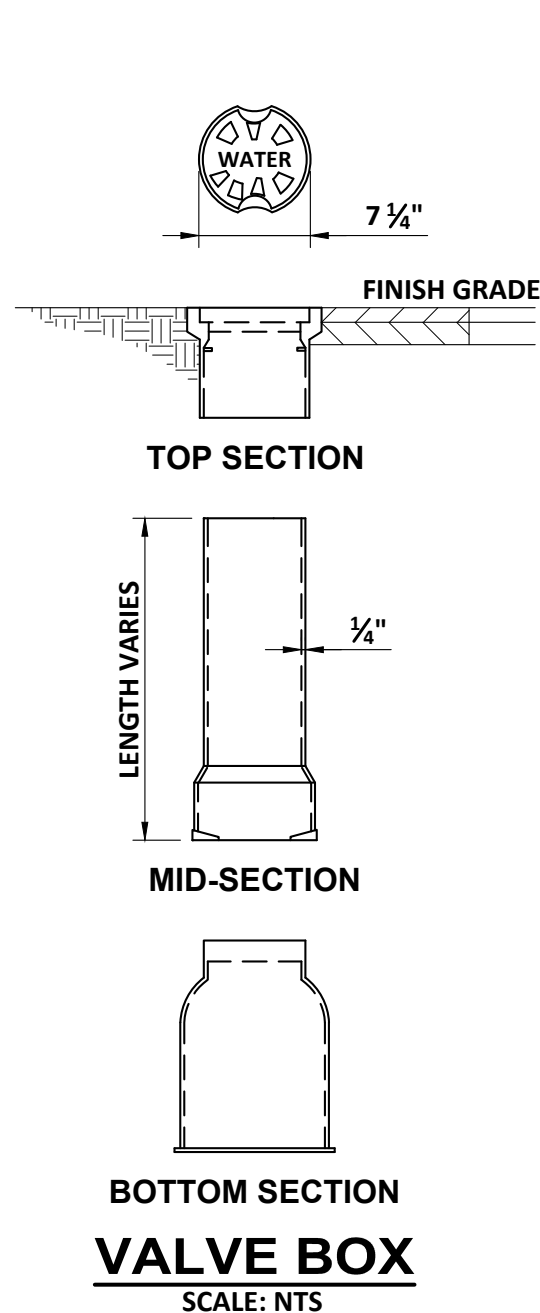
WATER SERVICE REPLACEMENT

SCALE: NTS



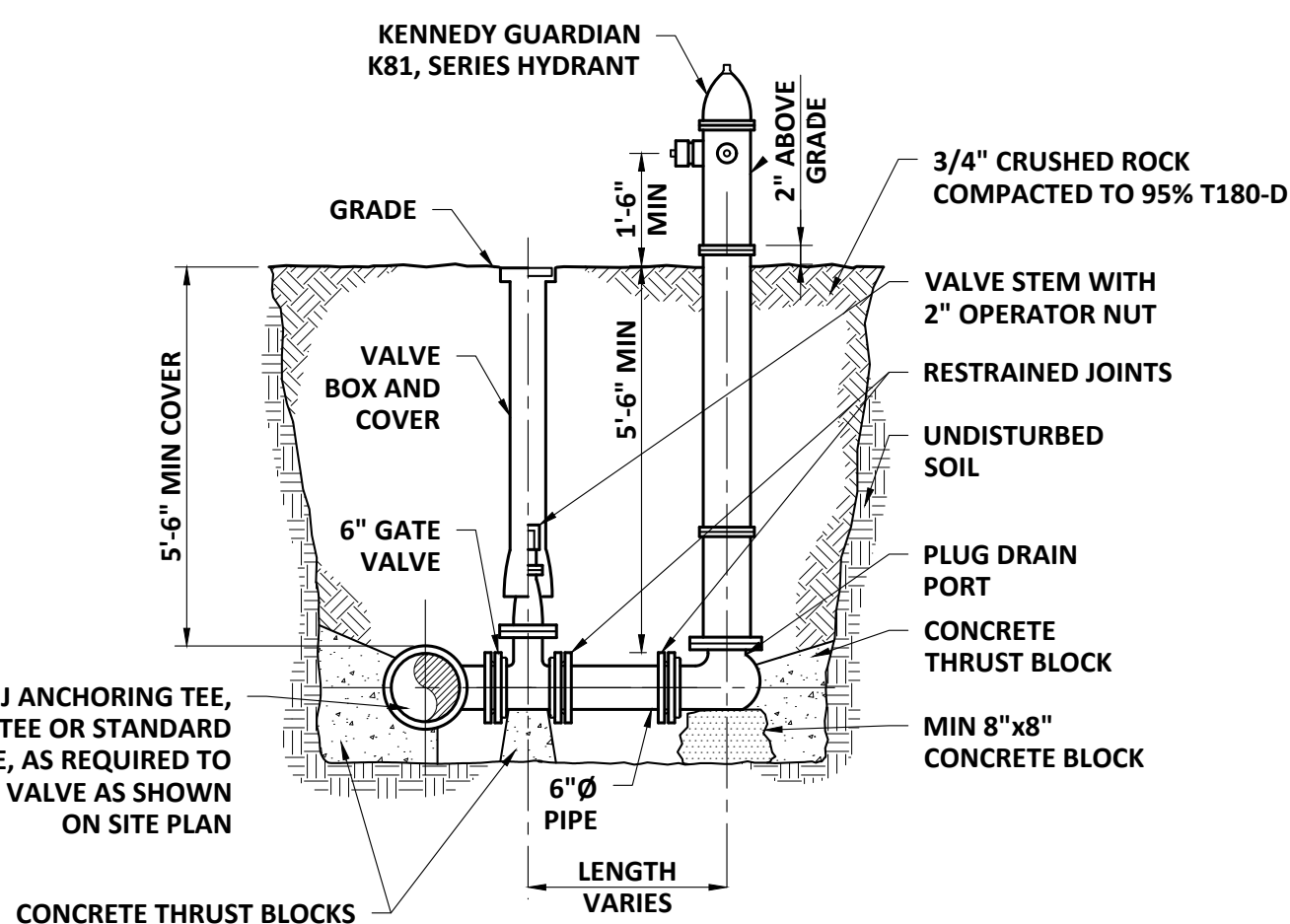
MANUAL AIR RELEASE ASSEMBLY

SCALE: NTS



VALVE BOX

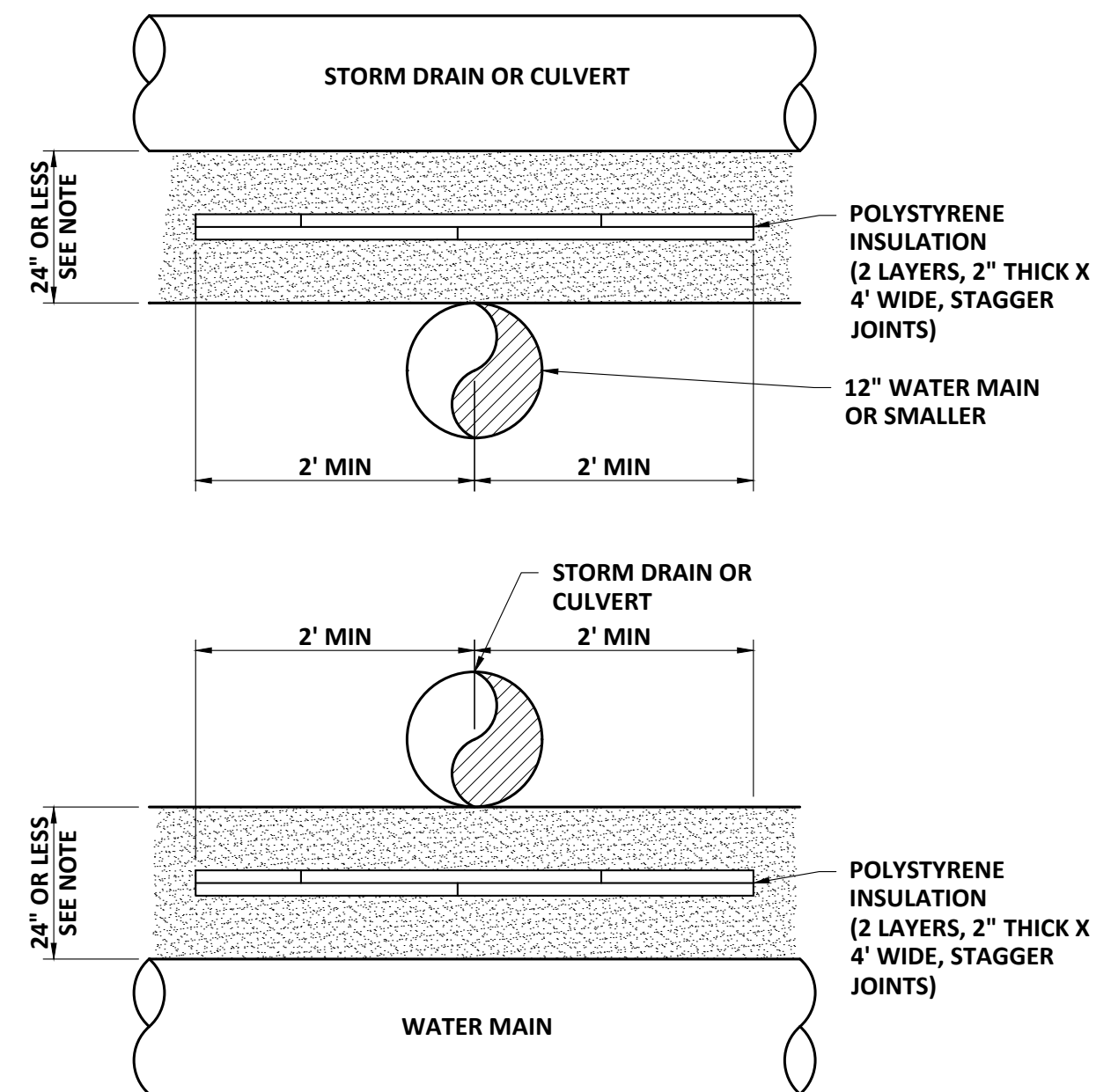
SCALE: NTS



- NOTES:**
- HYDRANTS SHALL BE FIELD LOCATED BY OWNER.
 - OWNER MAY, AT THEIR OPTION, DELIVER UP TO FOUR REMOTE-COMMUNICATING "I-HYDRANTS" TO THE CONTRACTOR FOR INSTALLATION IN EXCHANGE FOR NEW HYDRANTS, WHICH WILL BE COLLECTED BY THE OWNER.

HYDRANT CONNECTION

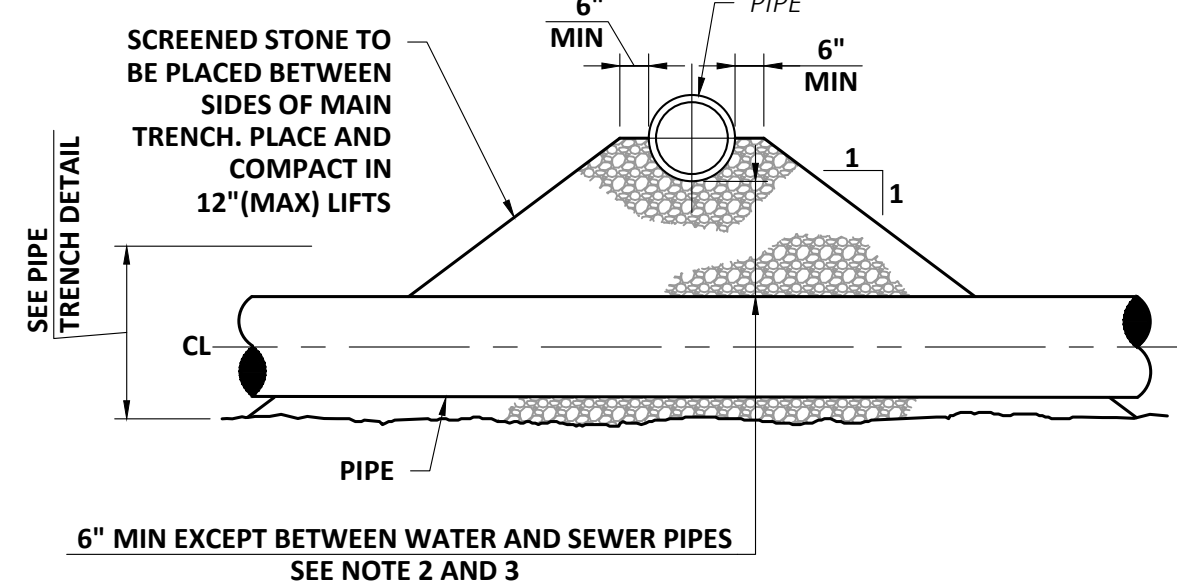
SCALE: NTS



STORM DRAIN OR CULVERT CROSSING WATER MAIN

SCALE: NTS

- NOTES:**
- JOINTS ON EACH PIPE TO BE AS FAR FROM INTERSECTION AS POSSIBLE.
 - 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.
 - WHENEVER SEWER AND WATER MAINS MUST CROSS, WATER LINES SHOULD BE INSTALLED ABOVE SEWER 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 MUST CROSS UNDER A SEWER LINE, A FULL LENGTH OF PIPE SHALL BE CENTERED ON THE SEWER LINE SO THAT BOTH JOINTS WILL BE AS FAR FROM THE SEWER LINE AS POSSIBLE. WHERE 18-INCHES OF VERTICAL SEPARATION IS NOT POSSIBLE, THE CONTRACTOR SHALL OBTAIN A SEPARATION REQUIREMENT WAIVER FROM DES.



PIPE CROSSING

SCALE: NTS

NO	REVISIONS	APPROVED	DATE

PROJECT NO:	DESIGNED:	CAD COORD:	CAD:	CHECKED:	DATE:	APPROVED:	DATE:	SUBMISSION:
21662	D.SAULNER	J.MICHAUD	J.MICHAUD	R.DAVEE	10-18-2024	B.ECKSTROM	10-18-2024	CONTRACT DRAWINGS

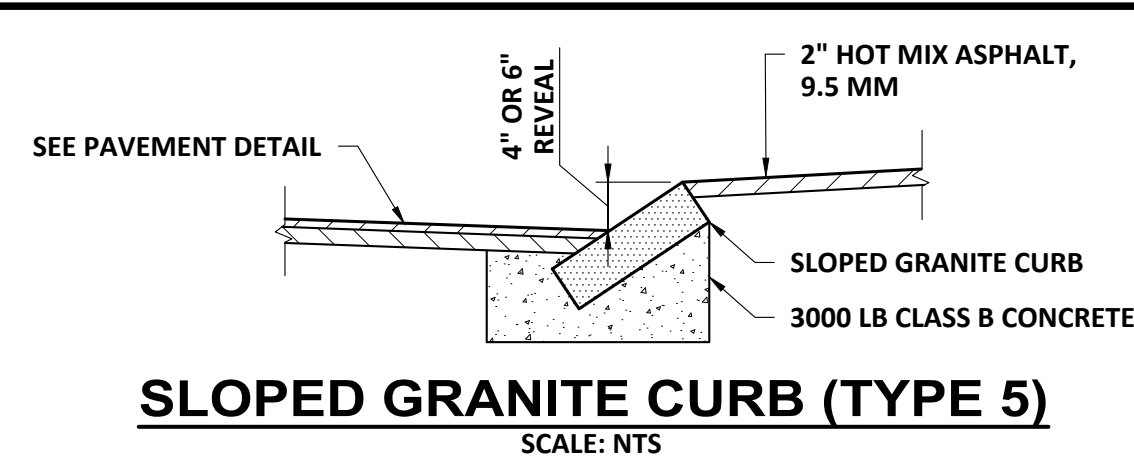
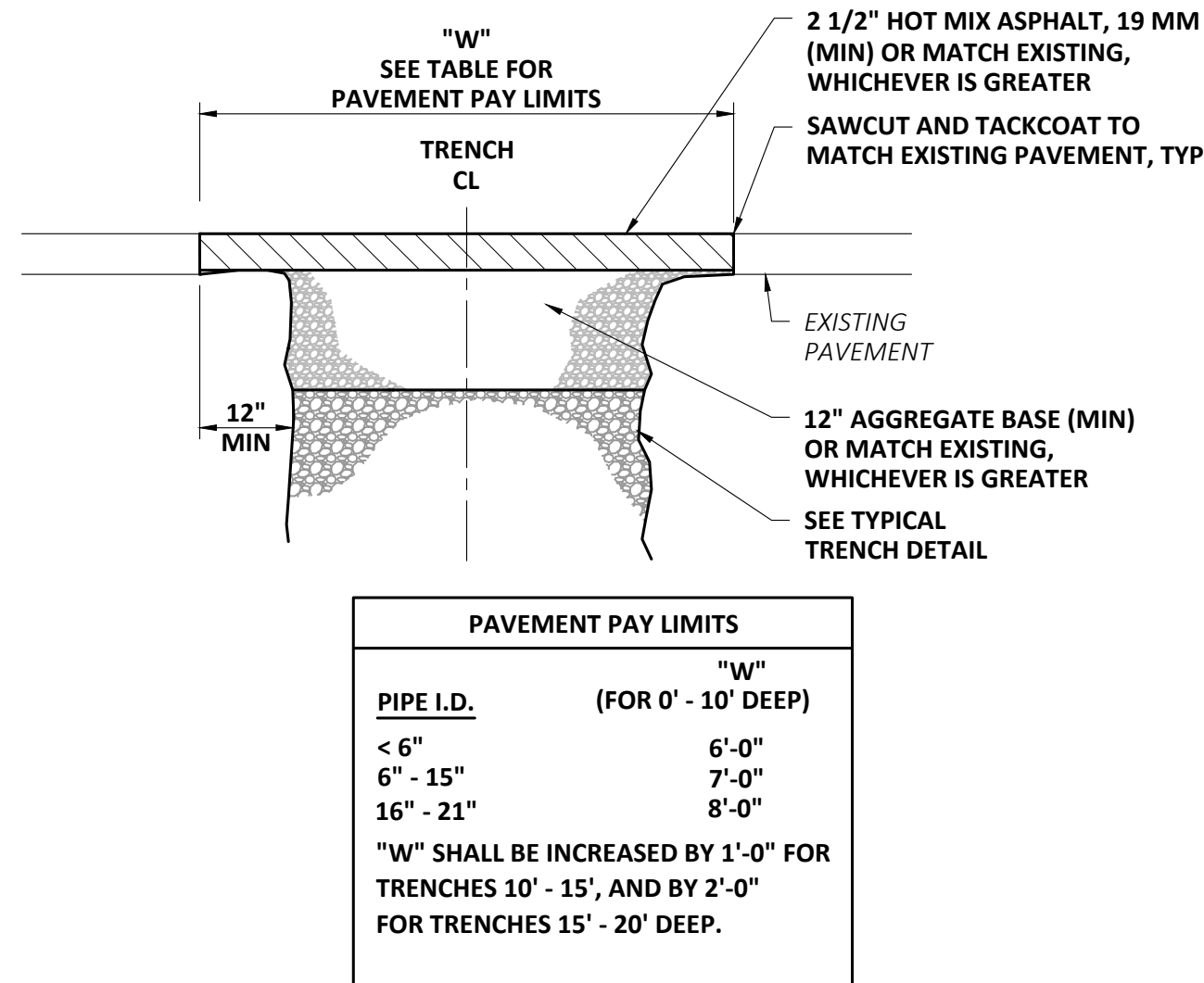
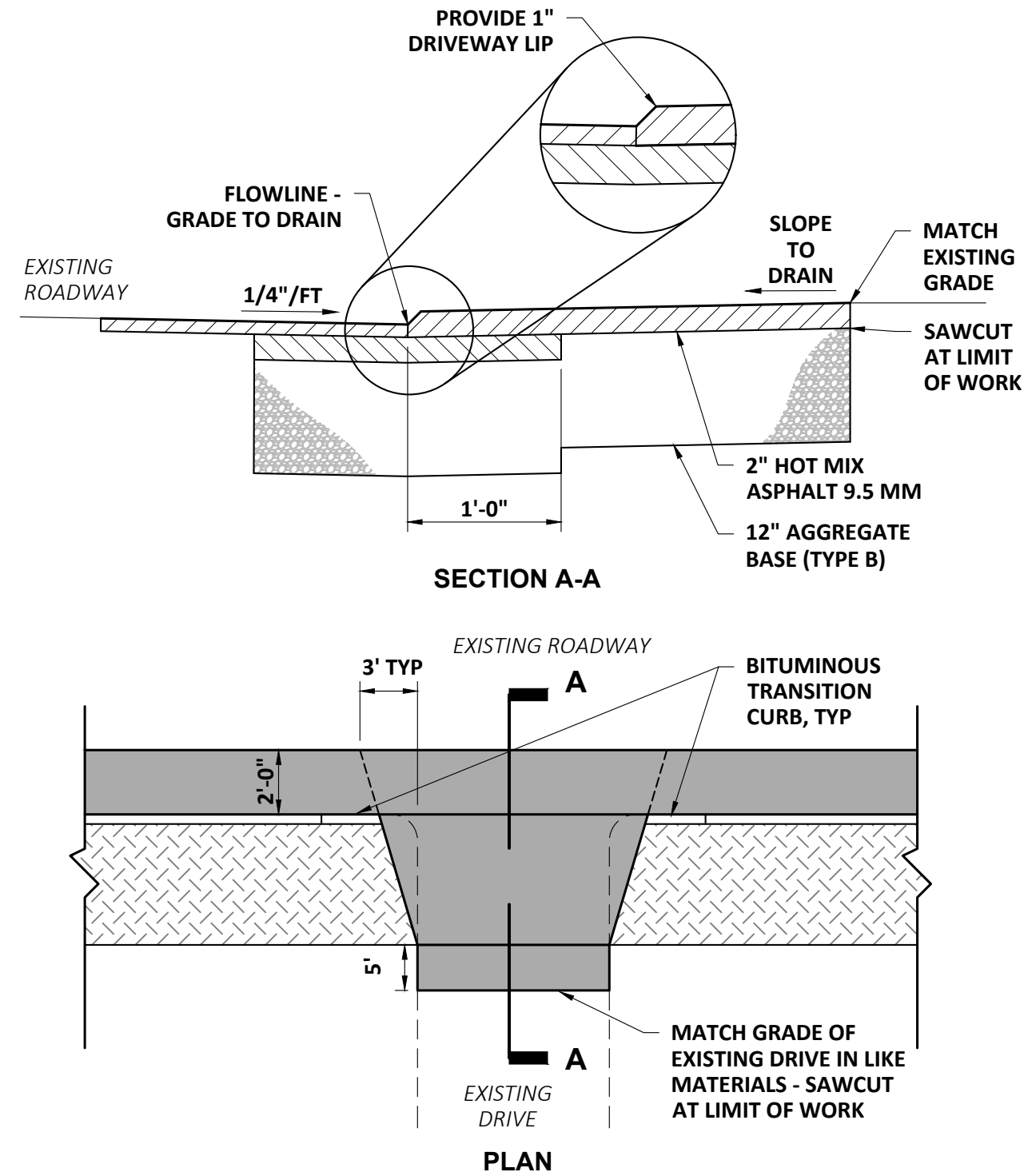
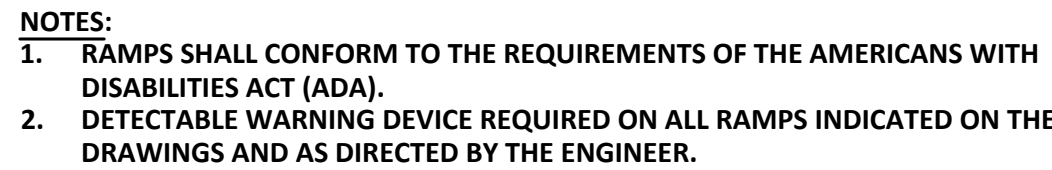
603.430.3728 | www.wright-pierce.com

230 COMMENCE WAY, SUITE 302, PORTSMOUTH, NH 03801

TOWN OF HANOVER, NEW HAMPSHIRE
WATER DISTRIBUTION IMPROVEMENTS

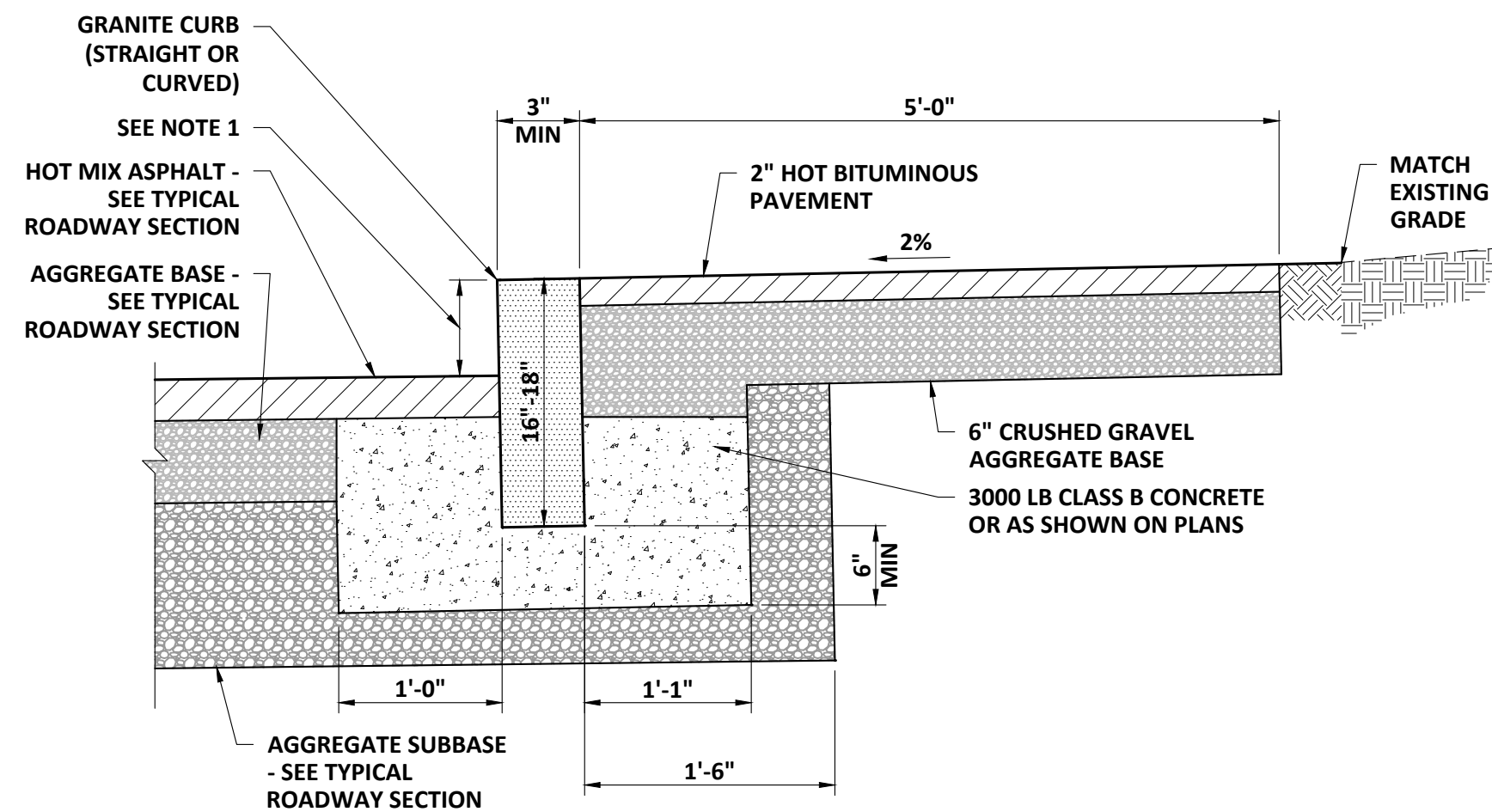
DETAILS 1

DRAWING
C-99-502



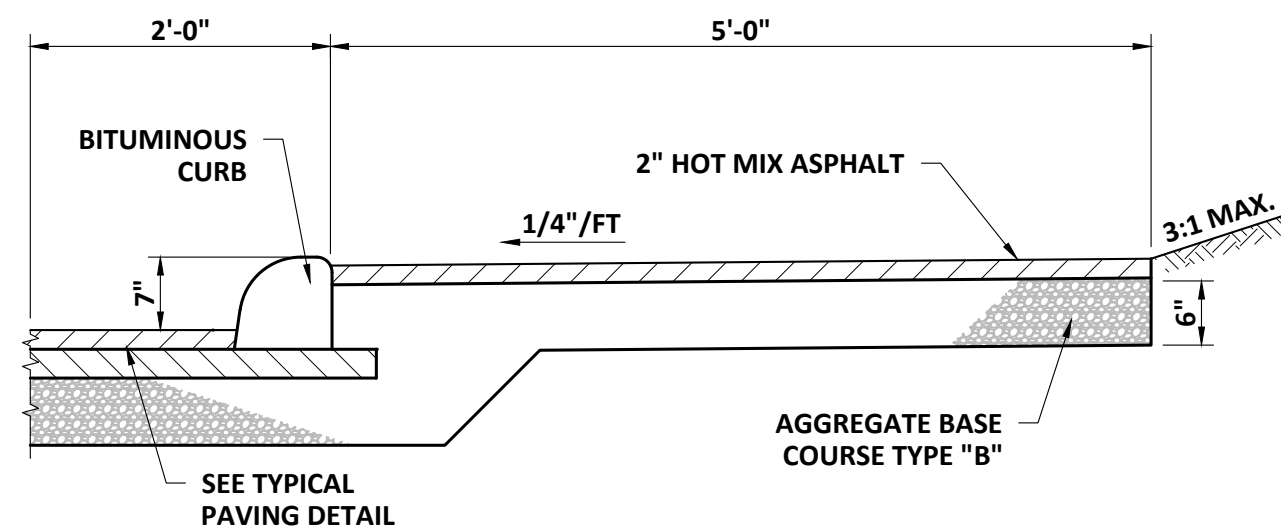
- NOTES:**
1. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
 2. STONES SHALL HAVE WIDTH OF 6" TO 8".
 3. STONES SHALL HAVE HEIGHT (MEASURED ALONG SLOPE) OF 9" (+/- 1/2") FOR 4" REVEAL OR 12" (+/- 1/2") FOR 24" REVEAL.
 4. STRAIGHT CURB STONES SHALL HAVE LENGTH BETWEEN 1.5' AND 8'.

RADIUS FOR STONES WITH SQUARE JOINTS	MAXIMUM LENGTH
< 2'	USE CURVED CURB
2' - 15'	USE RADIAL JOINTS
16' - 28'	1' - 6"
29' - 41'	2'
42' - 55'	3'
56' - 68'	4'
69' - 82'	5'
83' - 96'	6'
97' - 110'	7'
> 110'	8'



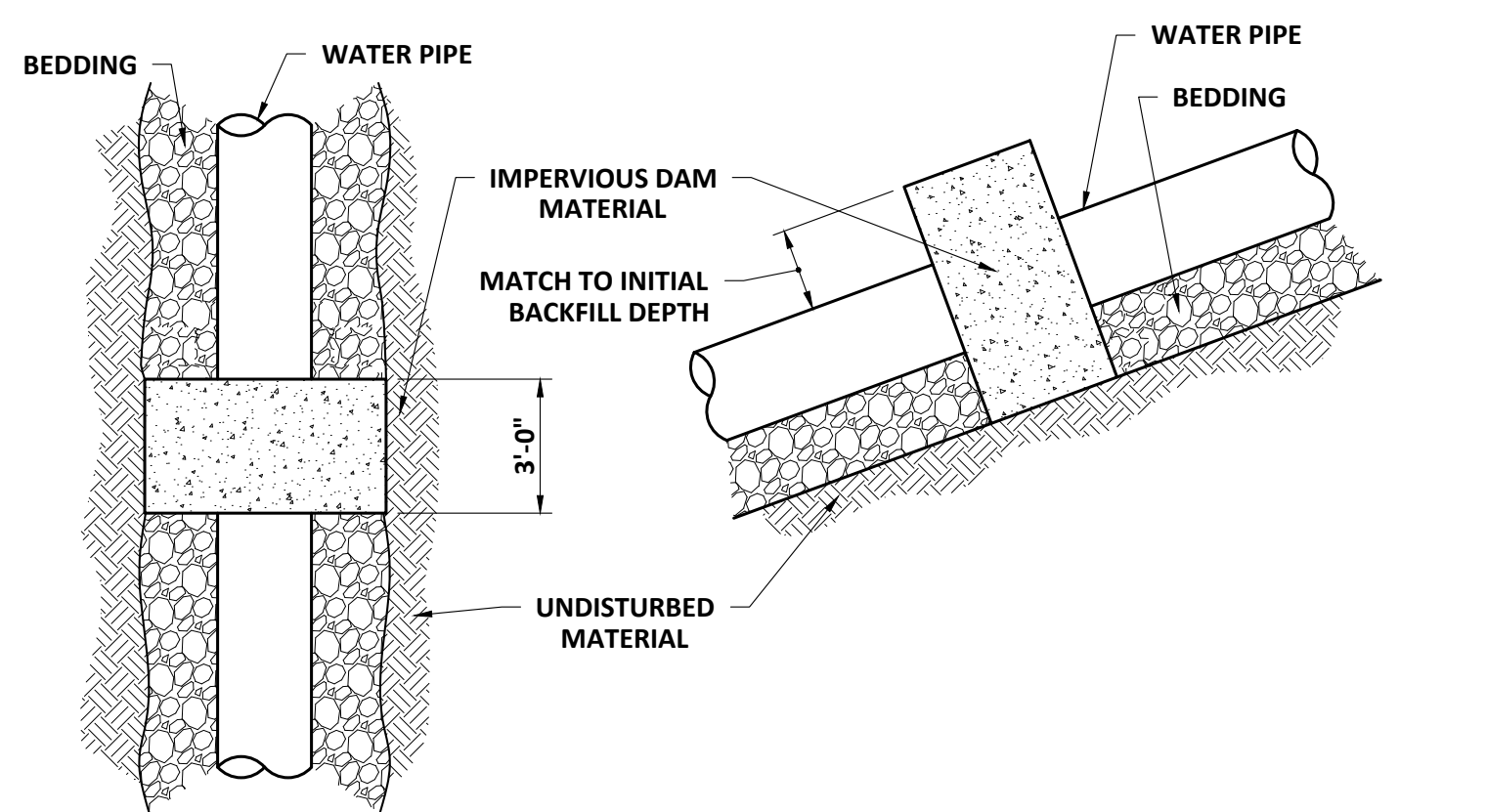
- NOTES:**
1. NORMALLY 6" REVEAL MAXIMUM TO 1" AT DRIVEWAYS AND 0" AT PEDESTRIAN SIDEWALK RAMPS.
 2. STRAIGHT CURB STONES SHALL BE 3' MIN LENGTH AND 8' MAX LENGTH.
 3. ADJOINING STONES SHALL HAVE APPROXIMATELY THE SAME LENGTH.
 4. FOR CURBS WITH RADIUS LESS THAN 21', USE CURVED CURB. FOR ALL OTHER CURVES, SEE TABLE.

RADIUS	MAX. LENGTH
> 21'	USE CURVED CURB
21'	3'
22'-28'	4'
29'-35'	5'
36'-42'	6'
43'-49'	7'
50'-56'	8'
57'-60'	9'
OVER 60'	10'

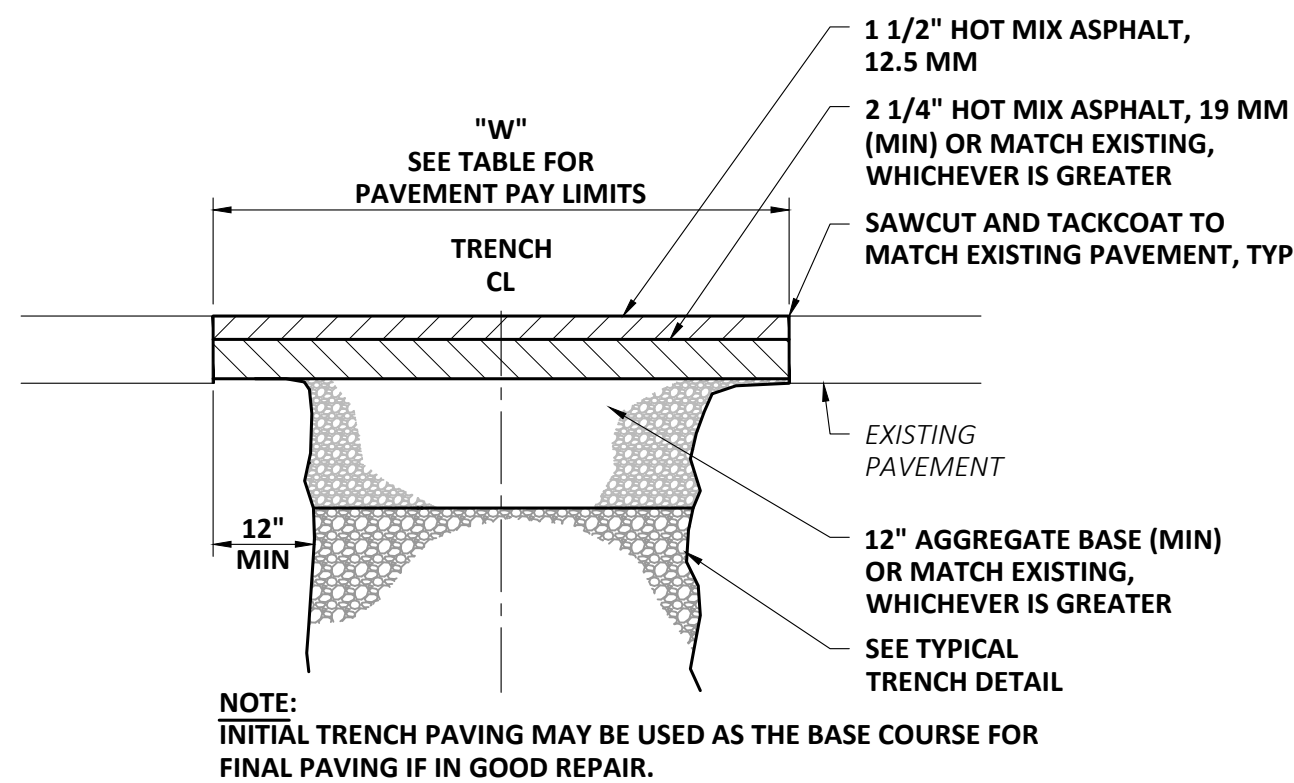


NOTE:
SAWCUT EXISTING PAVEMENT AT ALL MATCH
LINES WITH NEW PAVEMENT.

SIDEWALK CONSTRUCTION
NEW BITUMINOUS CURBING
SCALE: NTS

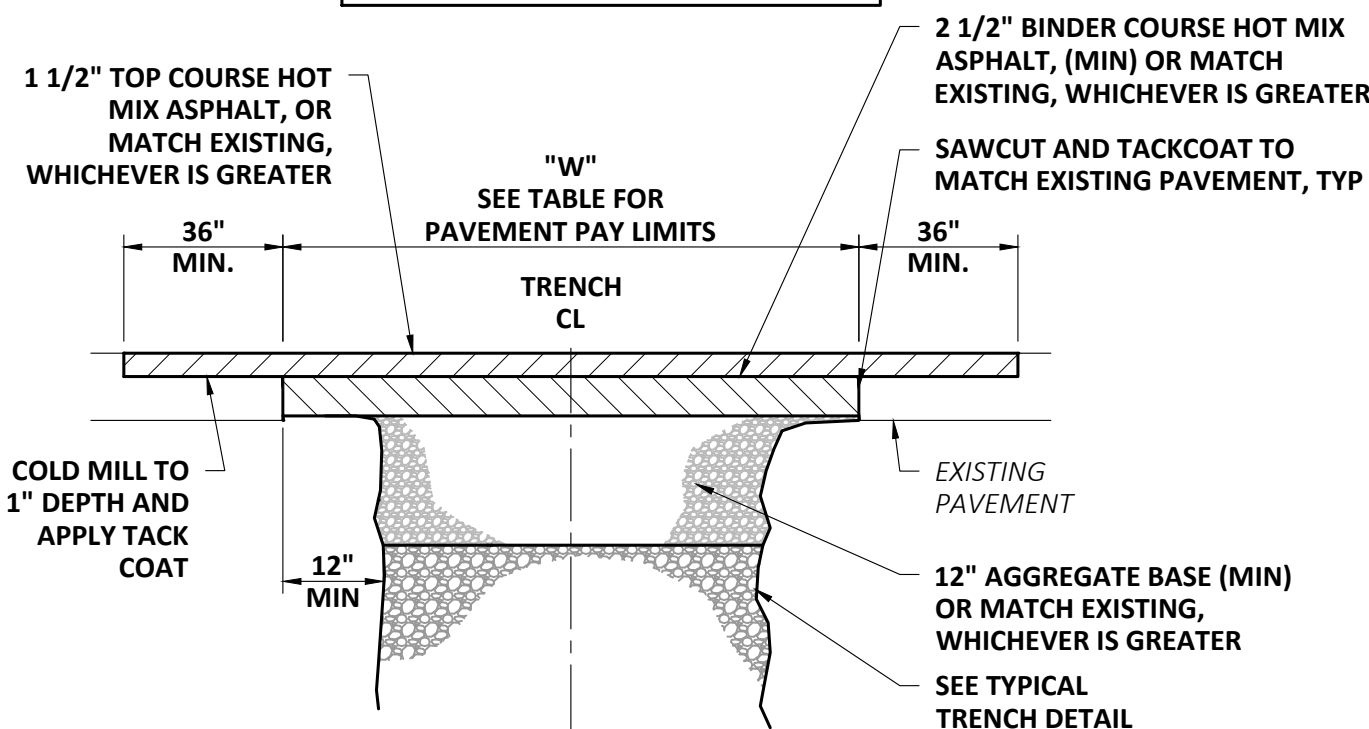


NOTE:
INSTALL IMPERVIOUS DAMS WHERE SHOWN ON THE DRAWINGS AND WHERE REQUIRED BY THE ENGINEER



FINAL TRENCH PAVING (WITHOUT OVERLAY)

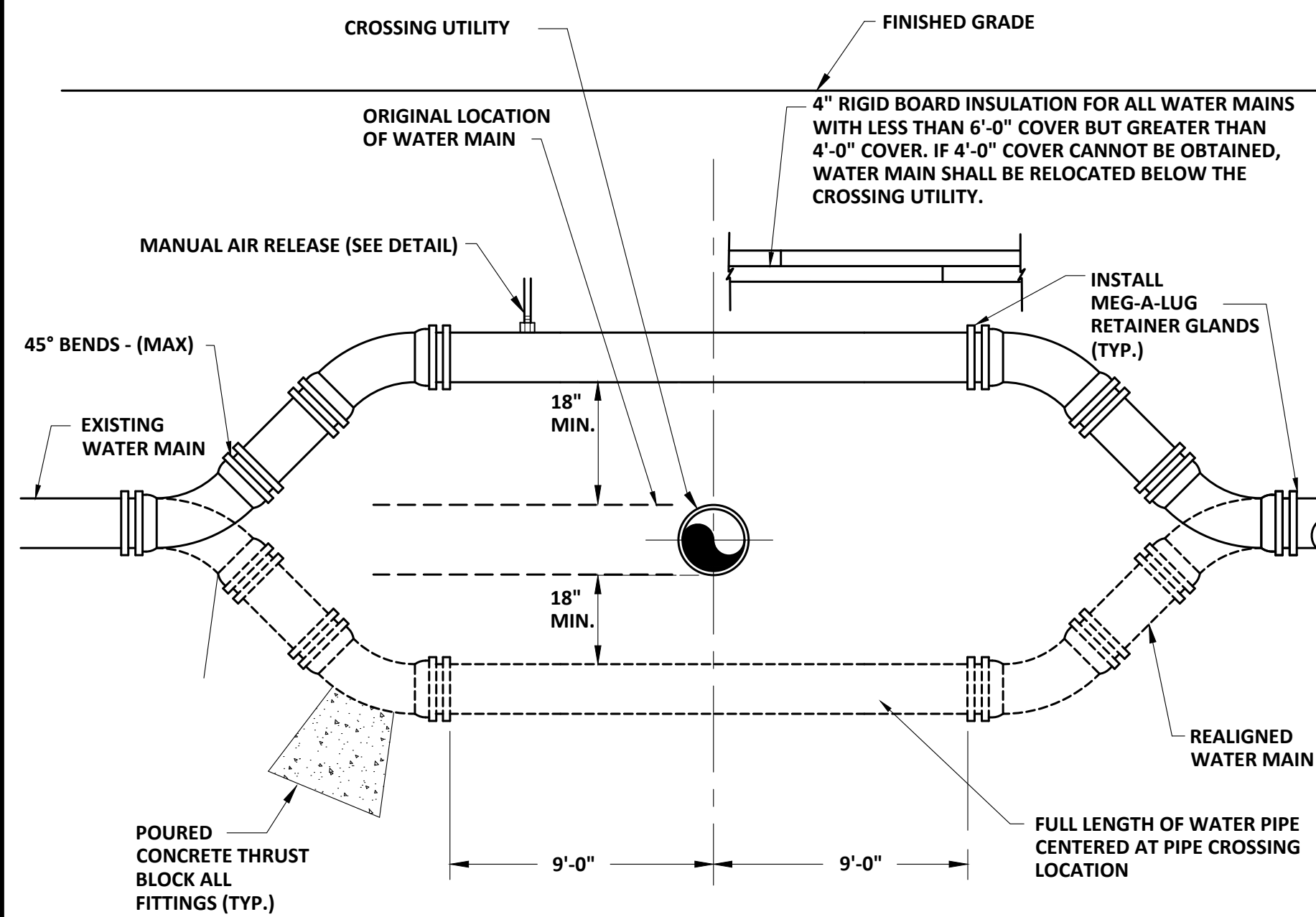
PAVEMENT PAY LIMITS	
<u>PIPE I.D.</u>	"W" (FOR 0' - 10' DEEP)
< 6"	6'-0"
6" - 15"	7'-0"
16" - 21"	8'-0"
"W" SHALL BE INCREASED BY 1'-0" FOR TRENCHES 10' - 15', AND BY 2'-0" FOR TRENCHES 15' - 20' DEEP.	



- NOTES:**
1. INITIAL TRENCH PAVING MAY BE USED AS THE BINDER COURSE FOR FINAL PAVING IF IN GOOD REPAIR.
 2. AGGREGATE BASE IS NOT REQUIRED IN LOCATIONS WHERE REINFORCED CONCRETE SLAB IS PRESENT. IN THESE LOCATIONS, CONCRETE SLAB SHALL BE RECONSTRUCTED AT DEPTH MATCHING EXISTING SLAB. WELDED WIRE FABRIC (WWF 6X6-W4XW4) SHALL BE PROVIDED BETWEEN THE UPPER THIRD AND MID-HEIGHT OF THE SLAB, AND SHALL BE SUPPORTED WITH REBAR CHAIRS. WWF SHALL BE TIED TO NO. 4 EPOXY DOWELS EMBEDDED 8 INCHES INTO EXISTING SLAB, SPACED 12 INCHES ON CENTER, EACH SIDE OF TRENCH WALL. DOWELS SHALL EXTEND A MINIMUM OF 1 FOOT INTO NEW CONCRETE SLAB.

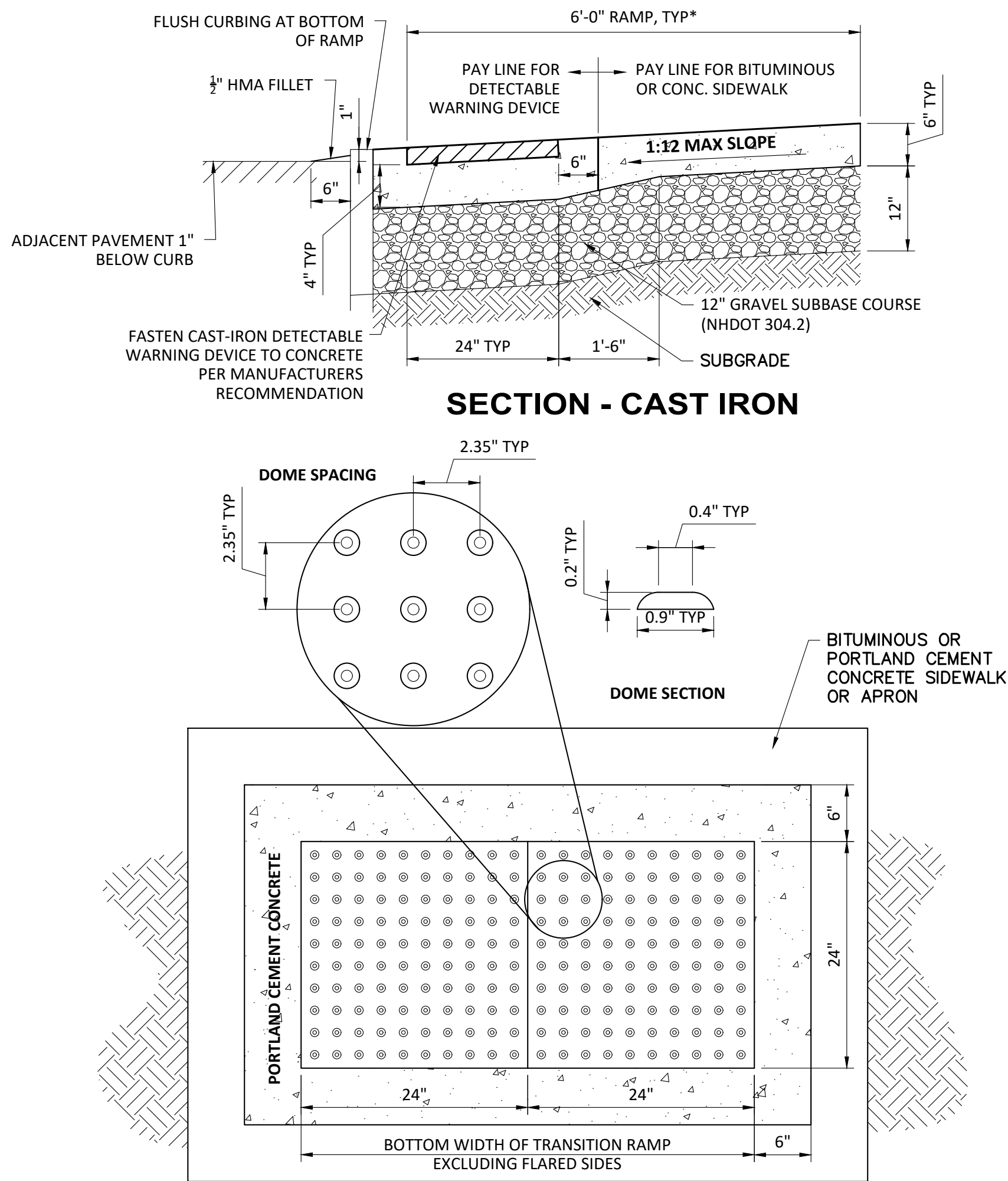
TRENCH PATCH

SCALE: NTS



- NOTES:**
- SCALE: NTS**
1. ALL FITTINGS AND JOINTS IN LOWERING AREA TO BE RESTRAINED.
 2. WHEN IT IS IMPOSSIBLE TO OBTAIN HORIZONTAL OR VERTICAL SEPARATION AS INDICATED IN THE DETAIL ABOVE, BOTH THE WATER AND THE SEWER SHOULD BE ENCASED IN CONTROLLED DENSITY FILL FOR A DISTANCE OF 10 FEET ON EITHER SIDE OF THE CROSSING.
 3. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE WRAPPED WITH POLYETHYLENE ENCASEMENT WHEN CONTACTING POURED CONCRETE PRODUCTS.

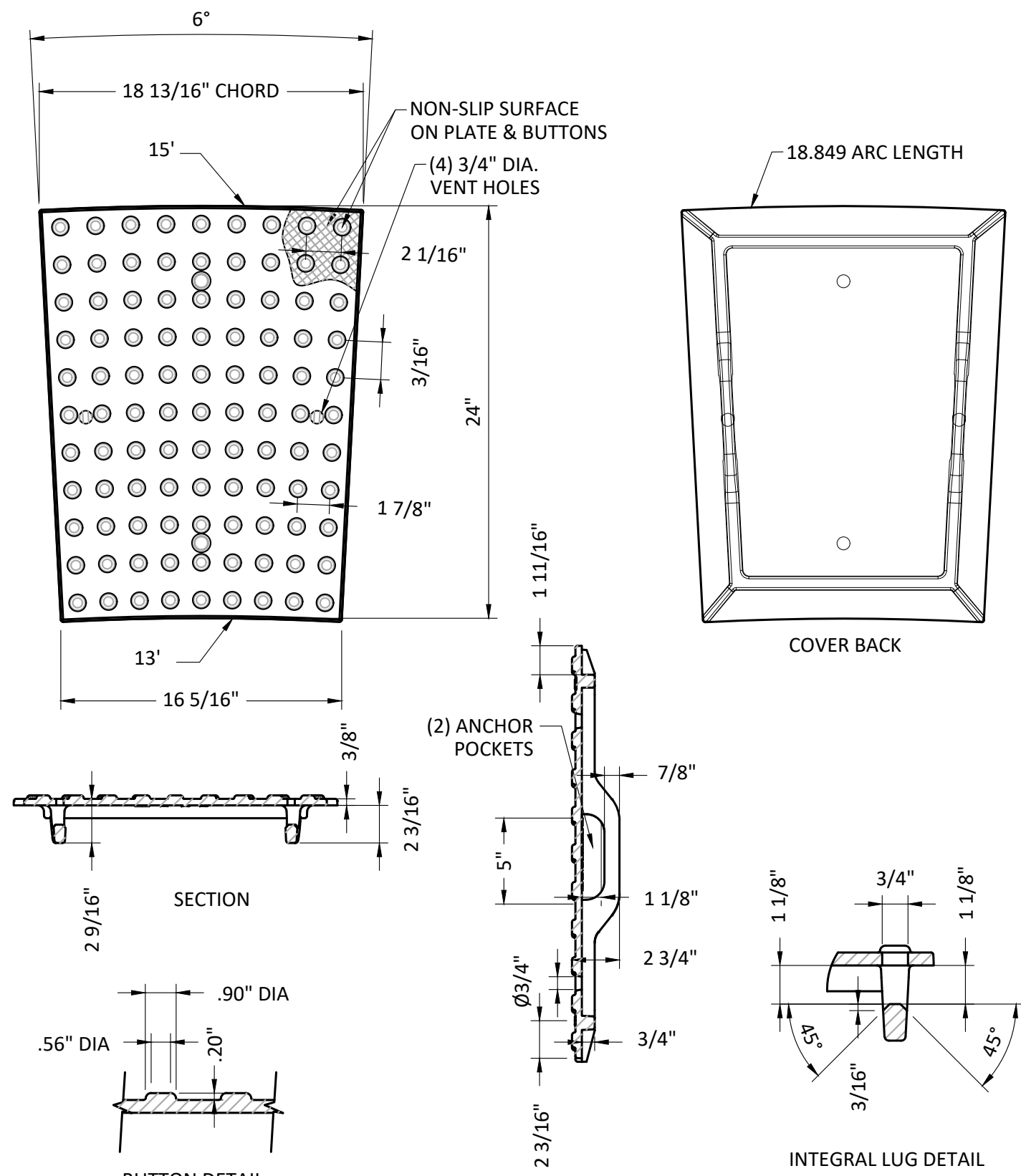
DRAWING		TOWN OF HANOVER, NEW HAMPSHIRE WATER DISTRIBUTION IMPROVEMENTS		WRIGHT-PIERCE  603.430.3728 www.wright-pierce.com 230 COMMERCE WAY, SUITE 302, PORTSMOUTH, NH 03801						PROJECT NO: 21662 DESIGNED: D.SAULNIER CAD COORD: J.NICHAUD CAD: J.NICHAUD CHECKED: R.LIVANEE DATE: 10-18-2024 APPROVED: B.ECKSTROM DATE: 10-18-2024 SUBMISSION: CONTRACT DRAWINGS		NO REVISIONS PROJECT NO: 21662 DESIGNED: D.SAULNIER CAD COORD: J.NICHAUD CAD: J.NICHAUD CHECKED: R.LIVANEE DATE: 10-18-2024 APPROVED: B.ECKSTROM DATE: 10-18-2024 SUBMISSION: CONTRACT DRAWINGS		APPD. DATE	
C-99-503		DETAILS II													



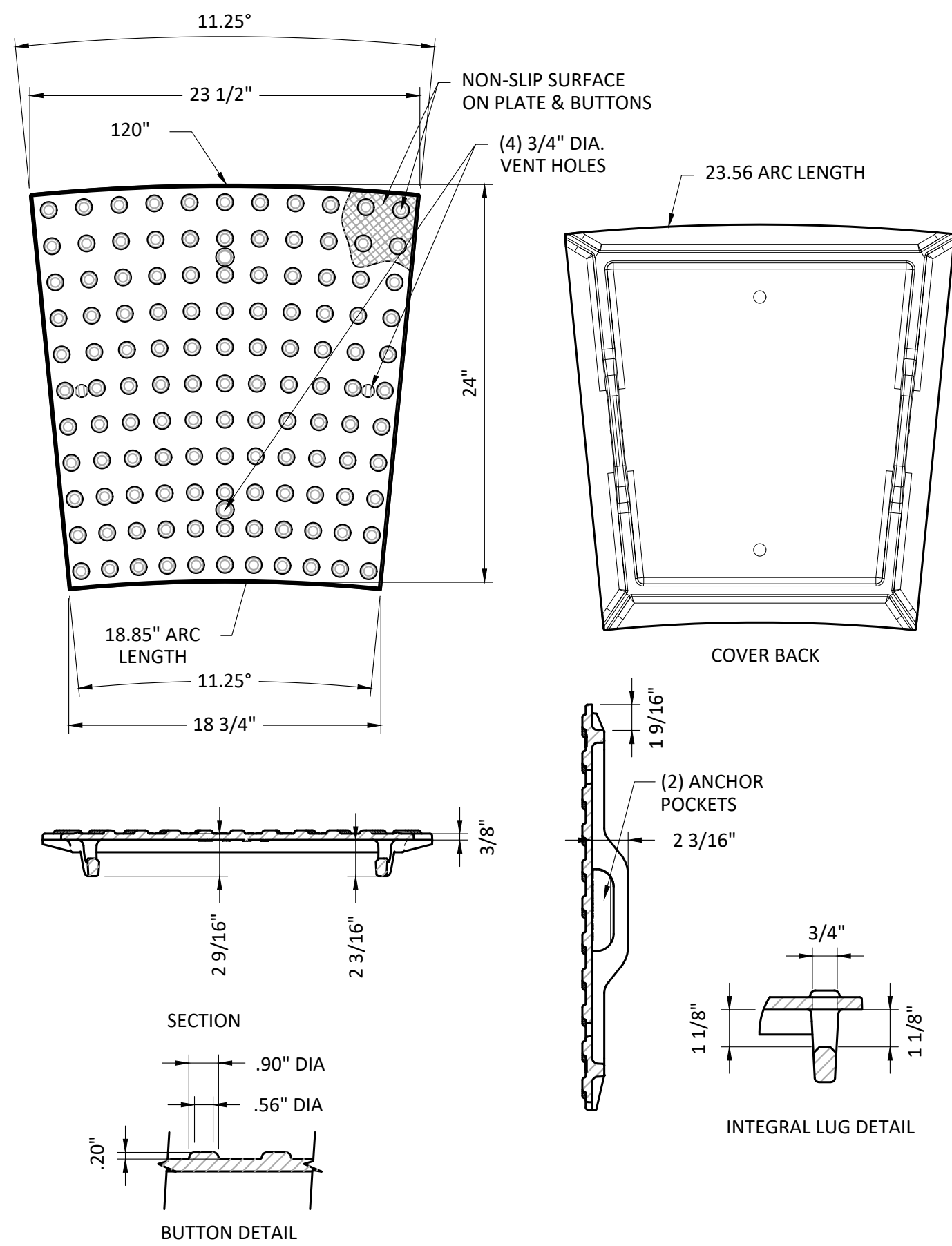
- NOTE:
- ALL DETECTABLE WARNING DEVICES SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG). 2'x2', 2'x4' AND RADIUS DEVICES ARE ACCEPTABLE.
 - INSTALL DETECTABLE WARNING DEVICES AT ALL ROADWAYS, HIGH USE ACCESS WAYS, OR AT THE DIRECTION OF THE ENGINEER.
 - ALL DEVICES SHALL HAVE A MIN. 6" WIDTH PORTLAND CEMENT CONCRETE SURROUND REGARDLESS OF THE SURROUNDING WALK OR APRON MATERIAL.

**RECTANGULAR CAST IRON HANDICAP
DETECTABLE WARNING DEVICE DETAIL**

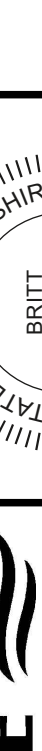
SCALE: NTS



- NOTES:
- REFER TO RECTANGULAR DETECTABLE WARNING DEVICE DETAIL. THIS DRAWING FOR EMBEDMENT AND CONCRETE SURROUND DETAILS.
 - TAKES FIFTEEN (15) PLATES TO COMPLETE FULL 90° TURN.



- NOTES:
- REFER TO RECTANGULAR DETECTABLE WARNING DEVICE DETAIL. THIS DRAWING FOR EMBEDMENT AND CONCRETE SURROUND DETAILS.
 - TAKES FIFTEEN (15) PLATES TO COMPLETE FULL 90° TURN.

DRAWING		TOWN OF HANOVER, NEW HAMPSHIRE WATER DISTRIBUTION IMPROVEMENTS		WRIGHT-PIERCE 603.430.3728 www.wright-pierce.com 230 COMMERCE WAY, SUITE 302, PORTSMOUTH, NH 03801								PROJECT NO: 231662 DESIGNED: D.SAULNIER CAD COORD: J.MICHAUD CAD: J.MICHAUD CHECKED: R.DAEE DATE: 10-18-2024 APPROVED: B.ECKSTROM DATE: 10-18-2024 SUBMISSION: CONTRACT DRAWINGS		NO		REVISIONS		APPD. DATE	
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