

PLANS OF PROPOSED BRIDGE REPLACEMENT
BRIDGE STREET OVER SPICKET RIVER
NHDOT BRIDGE NO. 115/097
NHDOT PROJECT NO. 44309
FEDERAL PROJECT NO. X-A005(398)

INDEX OF SHEETS

DATE	BY	DESCRIPTION	NEW
11/09/97		RESERVED	
		FILE NAME	
		9151000\Title	KMW
		MODEL NAME	PRXMY
		9181000\TISC	TAG
		SCALE	
		CHECKED	
		AS SHOWN	
DATE		JCR	
AUGUST 2025			



CAPITAL PROJECTS ENGINEER

JAMES A. DANIS, P.E.



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SALEM, NEW HAMPSHIRE

BRIDGE STREET OVER ST JOCKEY RIVER

ALLIANCE

PROJECT NO.	19.918109.01
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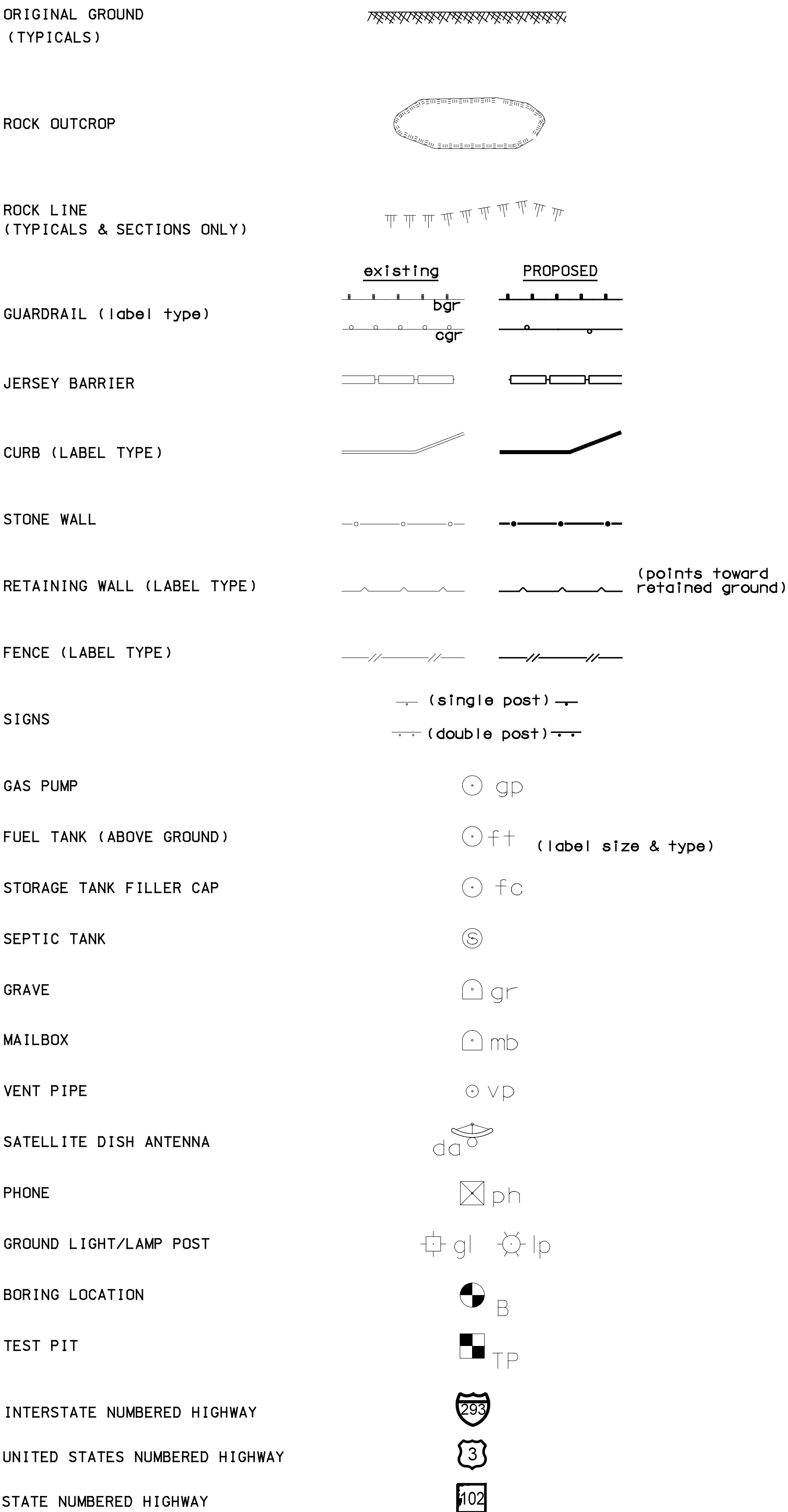
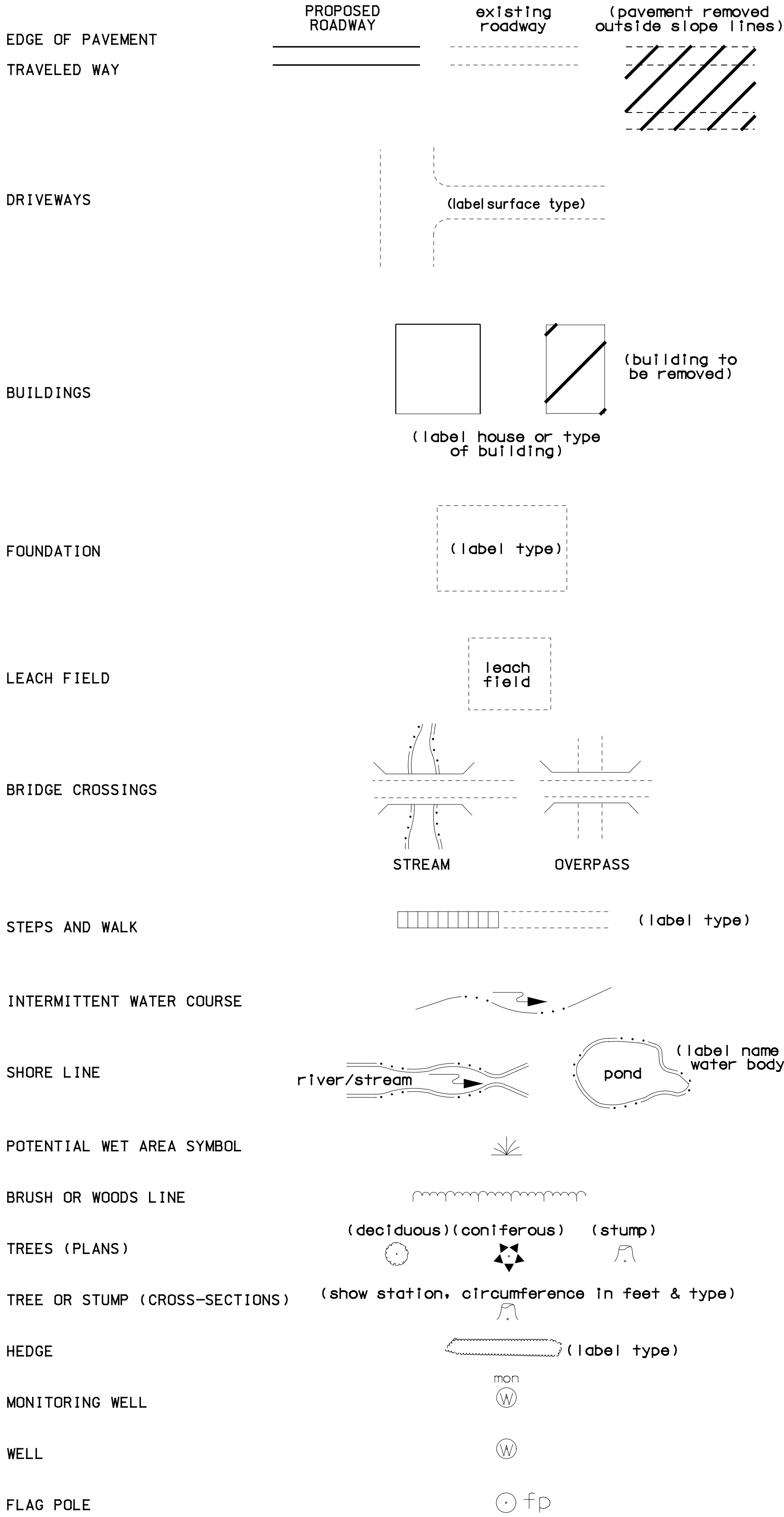
SHEET NO.

SHEET 1 OF 54

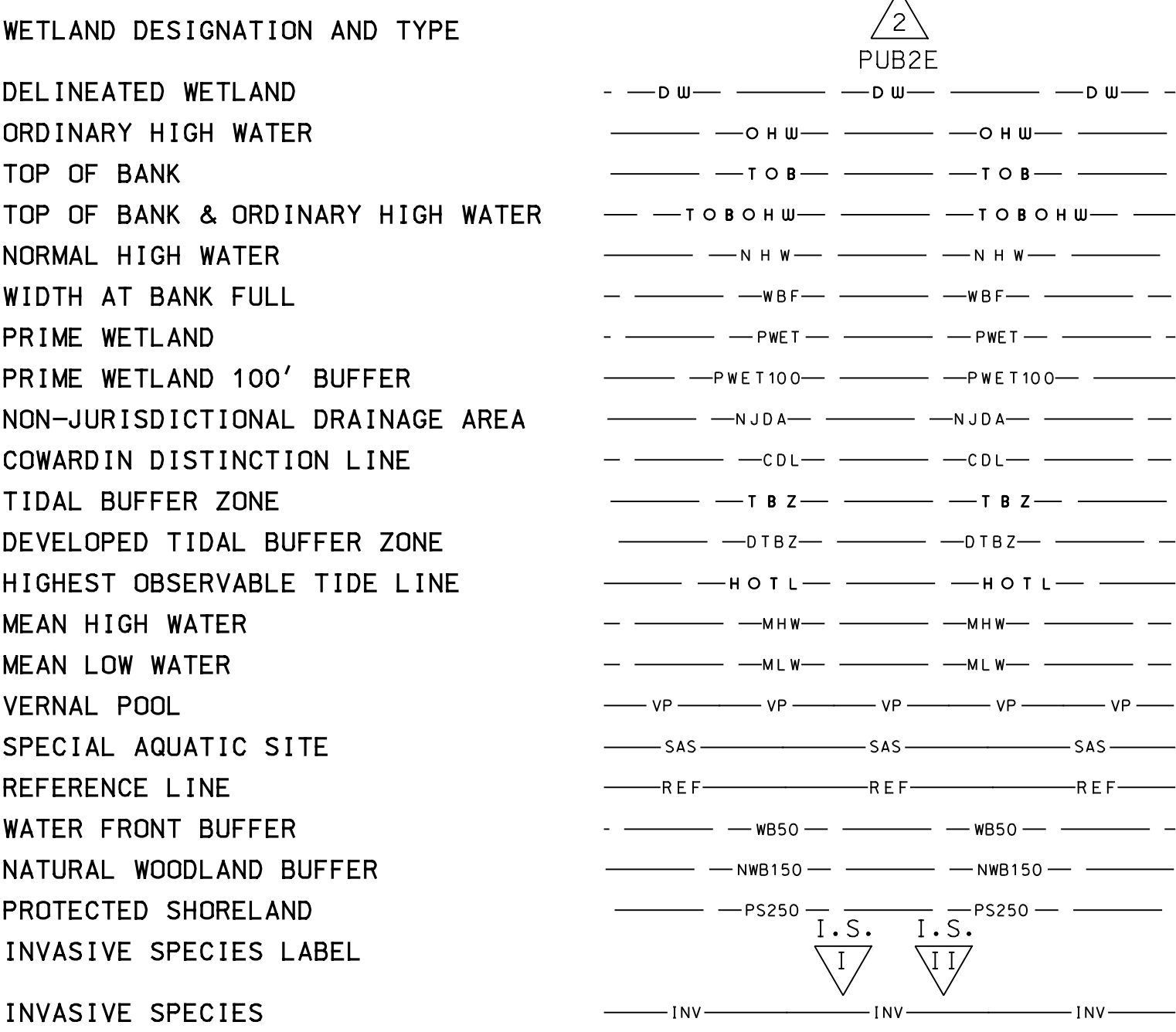
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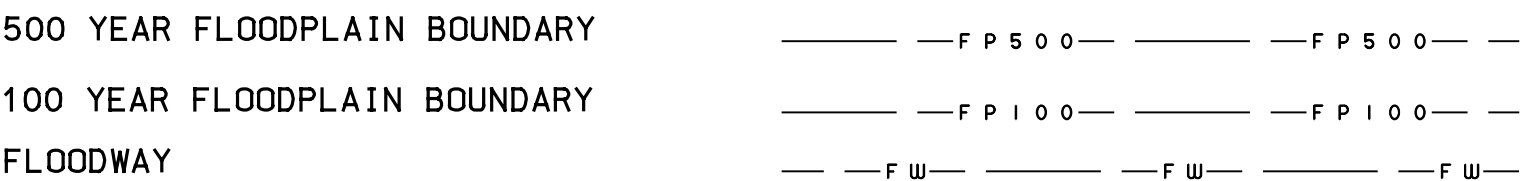
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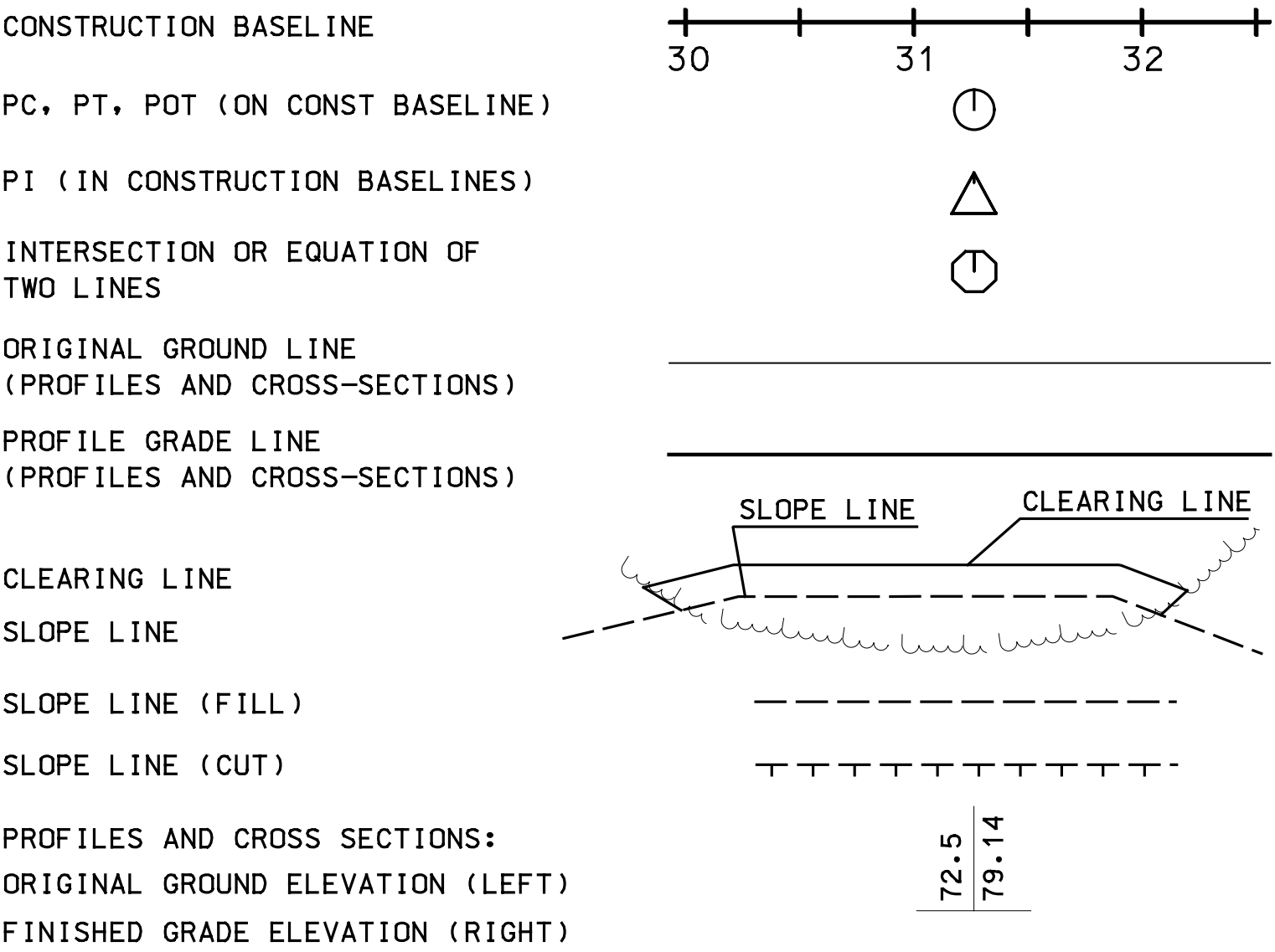
SHORELAND - WETLAND



FLOODPLAIN / FLOODWAY



ENGINEERING



NOTE

1. INFORMATION ON THIS SHEET TAKEN FROM NHDOT STANDARD SYMBOL SHEET, DATED 11-21-2014, AND HAS NOT BEEN ALTERED.

REV.	DESCRIPTION	DATE	DRAWN BY	CHECKED BY	DATE
1	DESIGNED		FILE NAME		
2	DRAWN		91810901SYM		
3	CHECKED		91810901SYM1		
4	AS SHOWN		91810901SYM1		
5	JCR		91810901SYM1		
6	DATE		91810901SYM1		
7	AUGUST 2025		91810901SYM1		

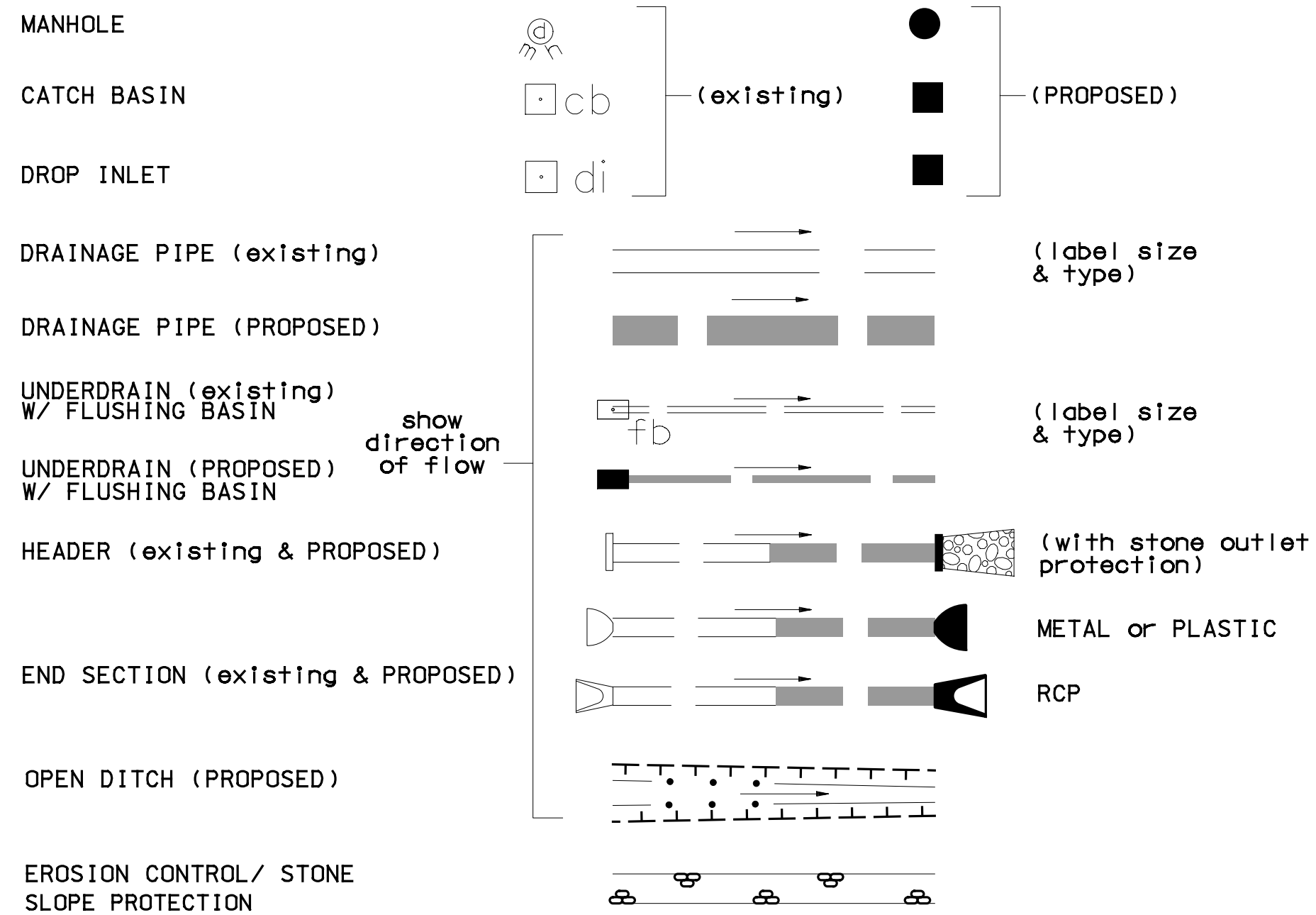
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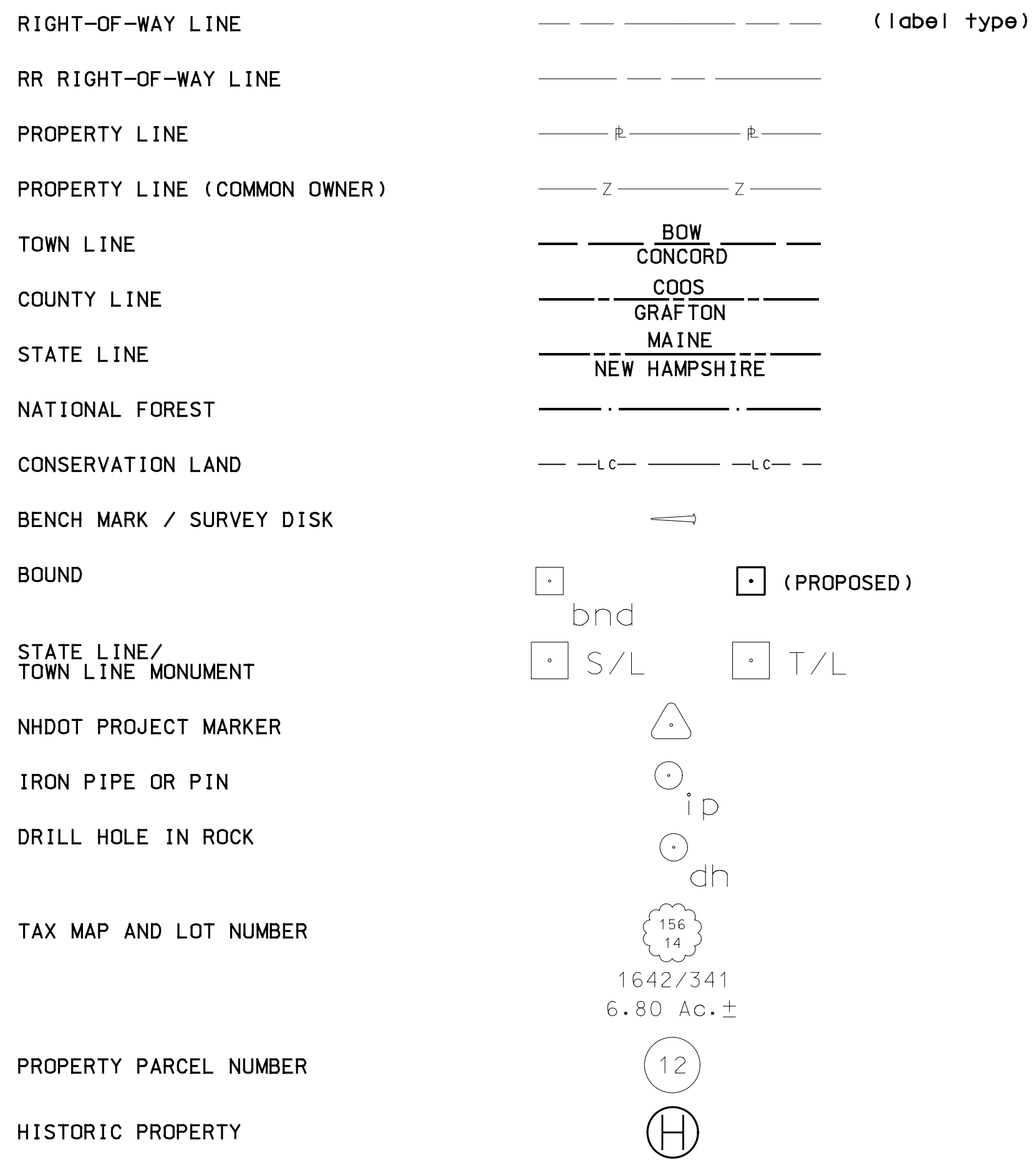
TOWN OF SALEM	BRIDGE STREET OVER SPICKET RIVER	STANDARD SYMBOLS SHEET (1 OF 2)
SALEM, NEW HAMPSHIRE		

PROJECT NO.	19.918109.01
SHEET NO.	2
SHEET 2 OF 54	

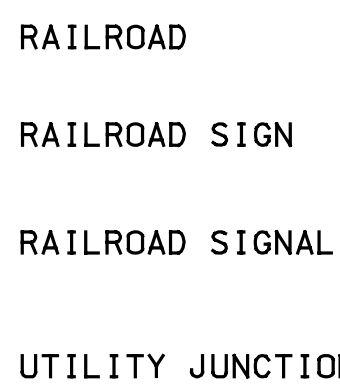
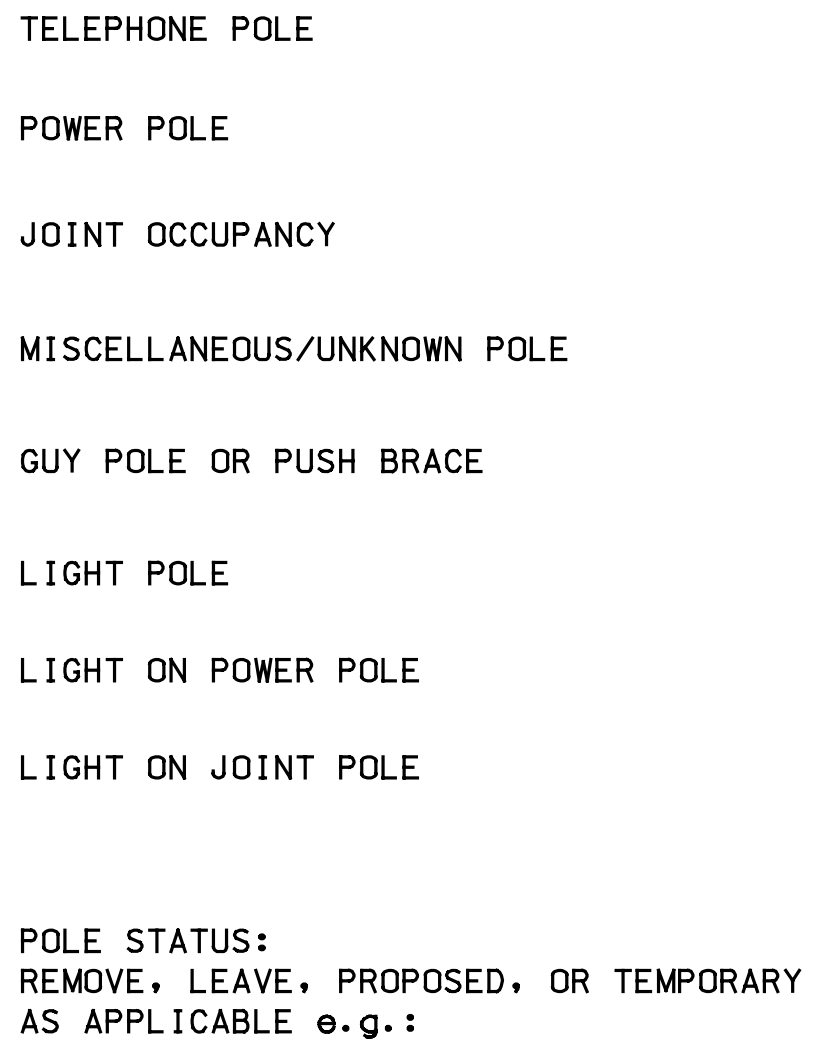
DRAINAGE



BOUNDARIES / RIGHT-OF-WAY



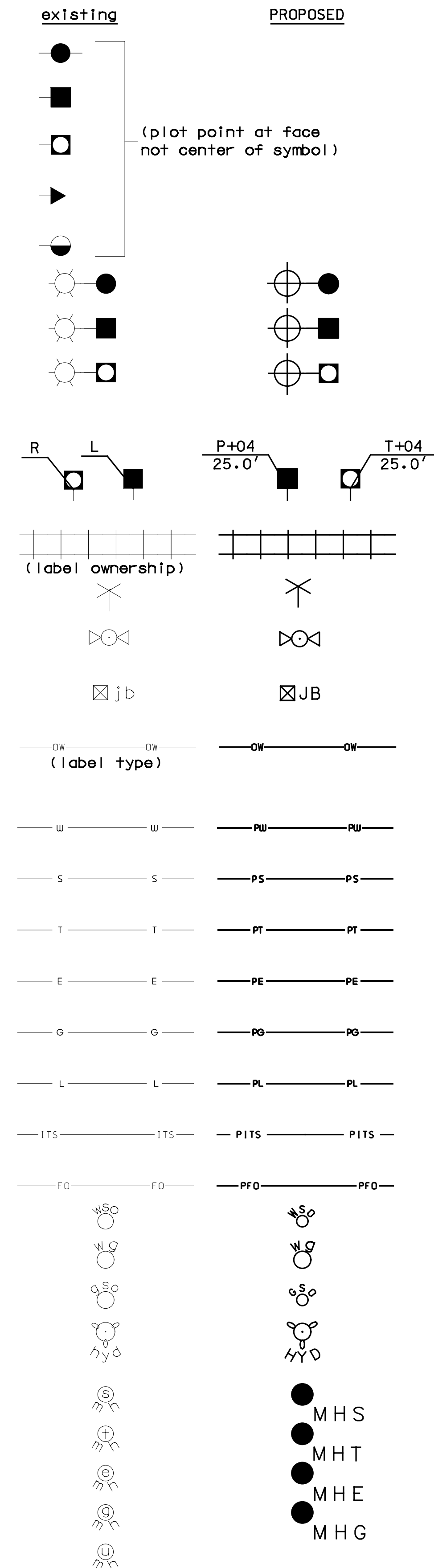
UTILITIES



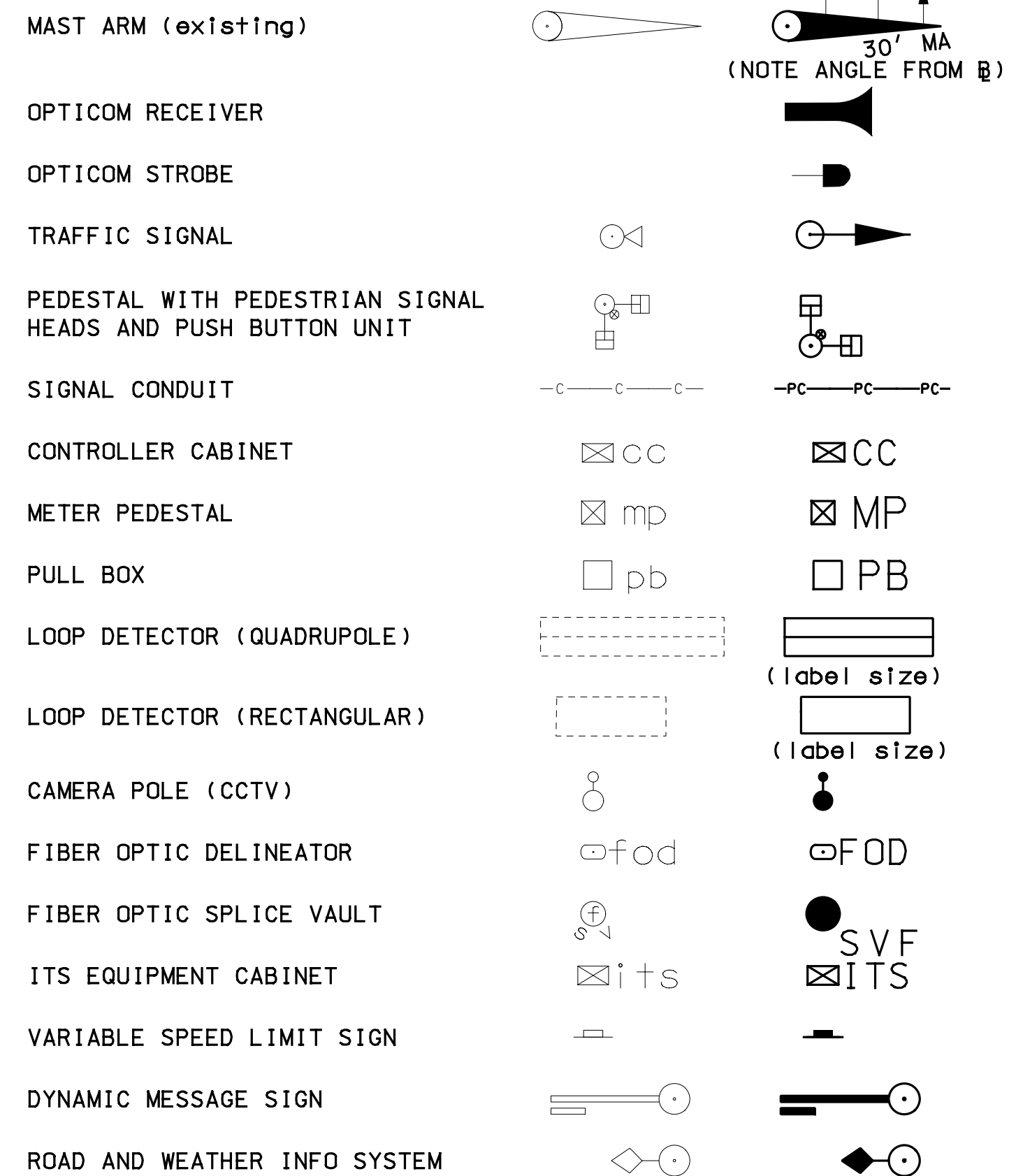
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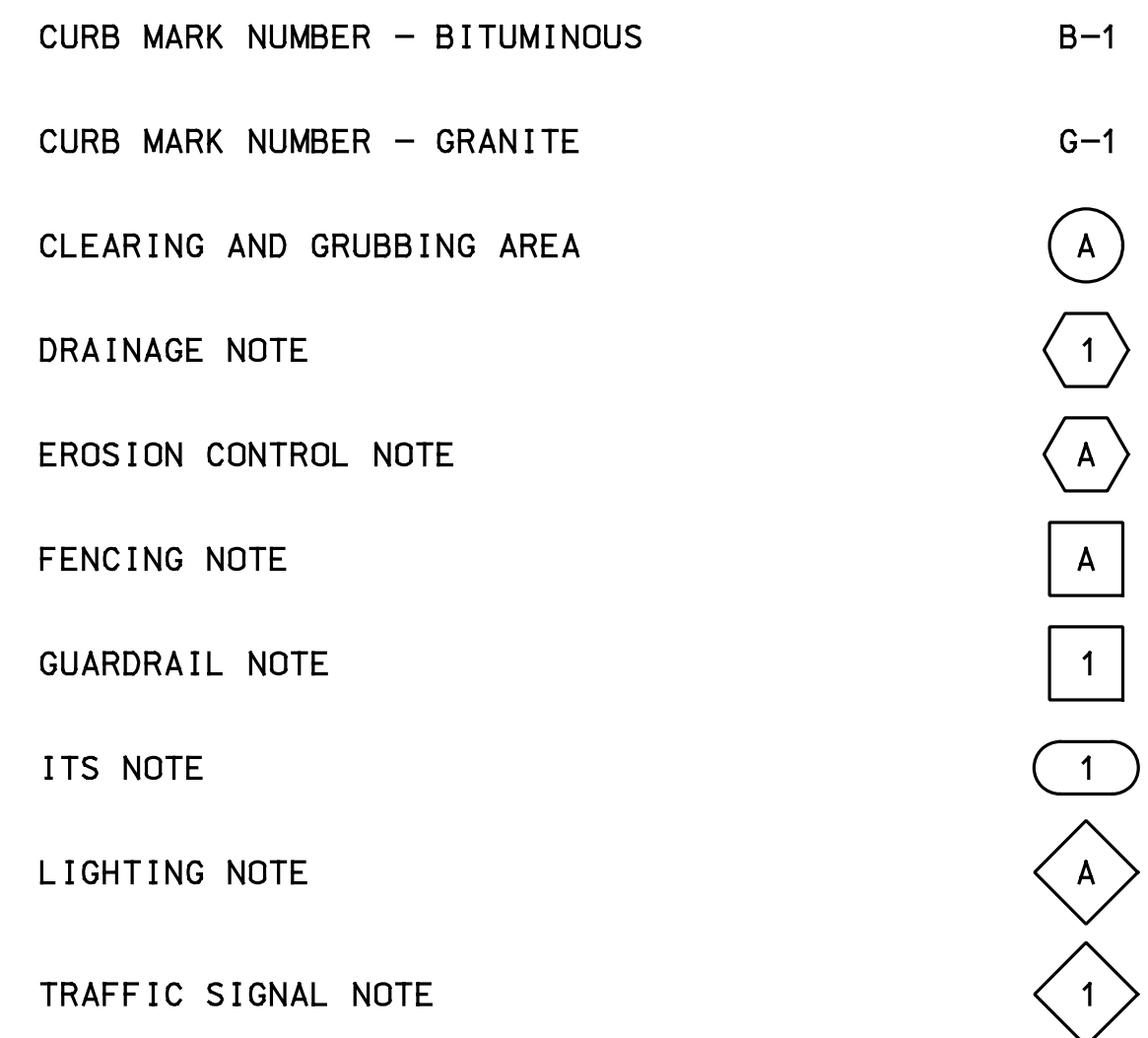
MANHOLES



TRAFFIC SIGNALS / ITS



CONSTRUCTION NOTES



NOTE

1. INFORMATION ON THIS SHEET TAKEN FROM NHDOT STANDARD SYMBOL SHEET, DATED 9-1-2016, AND HAS NOT BEEN ALTERED.

PROJECT NO. 19.918109.01					
SHEET NO.					
3					
SHEET 3 OF 54					
TOWN OF SALEM SALEM, NEW HAMPSHIRE BRIDGE STREET OVER SPICKET RIVER STANDARD SYMBOLS SHEET (2 OF 2)					
		150 Dow Street • Manchester, NH 03301 (603) 669-5555 • www.hoyletanner.com			
		NHDOT BRIDGE NO. 115/097		REV.	DESCRIPTION
	FILENAME 91810901SYM	DESIGNED KMW			
	MODEL NAME 91810901SYM2	DRAWN TAG			
	SCALE	CHECKED			
	AS SHOWN	JCR			
	DATE AUGUST 2025				
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GENERAL NOTES

1.

ALL WORK SHALL CONFORM TO ALL FEDERAL, STATE AND LOCAL CODES, REGULATIONS AND STANDARDS AND THE MORE STRINGENT SHALL GOVERN.
2.

THE GENERAL CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS AND COORDINATION OF OTHER TRADES.
3.

THESE DOCUMENTS DO NOT INCLUDE THE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. CARE OF ADJACENT PROPERTIES DURING CONSTRUCTION AND COMPLIANCE WITH STATE AND FEDERAL REGULATIONS REGARDING SITE SAFETY SHALL SOLELY BE THE CONTRACTOR'S RESPONSIBILITY.
4.

ALL DIMENSIONS, ELEVATIONS AND CONDITIONS MUST BE VERIFIED BY THE GENERAL CONTRACTOR OR RESPONSIBLE TRADES PRIOR TO COMMENCING WITH THE WORK, FABRICATION OR ORDERING MATERIALS. DO NOT SCALE DRAWINGS, USE DIMENSIONS SHOWN.
5.

ANY DISCREPANCIES BETWEEN THESE DRAWINGS AND EXISTING CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY, BEFORE PROCEEDING WITH THE WORK.
6.

THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. ALL COSTS FOR DETERMINING UNDERGROUND UTILITY TYPES AND LOCATIONS SHALL BE SUBSIDIARY TO THE CONTRACT. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION SHALL BE AGREED TO BY THE ENGINEER AND UTILITY OWNERS BEFORE PROCEEDING WITH THE WORK.
7.

ALL APPLICABLE UTILITY DEPARTMENTS AND COMPANIES SHALL BE NOTIFIED BEFORE EXCAVATION IS STARTED. UTILITIES WITHIN 50 FEET OF AN EXCAVATION SHALL BE MARKED IN THE FIELD.
8.

IN THE PREPARATION OF THESE DRAWINGS, HOYLE, TANNER HAS RELIED UPON INFORMATION OBTAINED FROM THE FOLLOWING REPORTS, DRAWINGS, TEST DATA/RESULTS OR OTHER DOCUMENTATION AS FOLLOWS:

•

BRIDGE WIDENING DESIGN DRAWINGS, NHDOT PROJECT NO. S-3748, DATED 11/6/1958

•

WATERMAIN LAYOUT DRAWING PREPARED BY SFC ENGINEERING PARTNERSHIP, INC., DATED 5/5/1995

THESE DRAWINGS ARE NOT INCLUDED IN THE CONTRACT SPECIFICATIONS BUT CAN BE MADE AVAILABLE TO THE CONTRACTOR.

9.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING, INSTALLATION AND REMOVAL OF ALL TEMPORARY SHORING AND BRACING REQUIRED DURING CONSTRUCTION.
10.

THE CONTRACTOR SHOULD NOTE THAT THE NHDOT "STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION" ARE MADE A PART OF THIS PROJECT AND ALL APPLICABLE DETAILS, STANDARDS AND SPECIFICATIONS SHALL APPLY. THIS PROJECT SHALL INCLUDE, BUT IS NOT LIMITED TO, THE FOLLOWING STANDARD PLANS:

•

INTERIM, SPECIAL DETAIL "ROADSIDE DELINEATION"

•

GR-1 -31" MID-SPLICE BEAM GUARDRAIL STANDARD SECTION – STEEL POSTS AND HARDWARE DETAILS

•

GR-24 -PORTABLE CONCRETE BARRIER (1 OF 2) (12.5FT-MASH)

•

GR-25 -PORTABLE CONCRETE BARRIER (2 OF 2) (12.5FT-MASH)

•

PM-1 -LAYOUT DETAILS

•

PM-2 -TOLERANCES FOR PAVEMENT MARKING LINES

•

PM-9 -PAVEMENT MARKING AT MINOR INTERSECTIONS
11.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3 EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION" BY THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES.
12.

ARLINGTON MILL RESERVOIR AND BIG ISLAND POND ARE SCHEDULED TO BE DRAWN DOWN IN MID-OCTOBER 2025. THE CONTRACTOR'S SCHEDULE SHALL ACCOUNT FOR THIS IN THE SCHEDULING OF CONSTRUCTION OPERATIONS.

STORMWATER POLLUTION PREVENTION NOTES

1.

THE EROSION AND SEDIMENT CONTROLS DETAILED IN THESE PLANS ARE SCHEMATIC ONLY AND ARE NOT INTENDED TO DICTATE CONSTRUCTION MEANS AND METHODS, NOR THE SPECIFIC EROSION AND SEDIMENT CONTROLS NECESSARY TO COMPLETE THE WORK. THE CONTRACTOR SHALL SUBMIT ITEM 645.7, STORMWATER POLLUTION AND PREVENTION PLAN (SWPPP), FOR REVIEW AND APPROVAL TO THE ENGINEER. UPON APPROVAL BY THE ENGINEER, THE SWPPP WILL BE SENT TO NHDES FOR REVIEW AND APPROVAL PRIOR TO THE START OF WORK IF ANY OF THE PROPOSED EROSION AND SEDIMENT CONTROL MEASURES VARY FROM THOSE SHOWN IN THESE PLANS.
2.

THE EROSION AND SEDIMENT CONTROL MEASURES DETAILED ON THESE PLANS ARE BASED ON THE NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION, DECEMBER 2008.
3.

ALL STORMWATER, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE LOCATED WITHIN THE TEMPORARY AND PERMANENT EASEMENT AREAS SHOWN ON THE EASEMENT PLAN.
4.

PERFORM ALL WORK DURING LOW FLOW PERIODS. ALL WORK SHALL BE PERFORMED WITHIN THE IMPACT AREAS AS PERMITTED BY NHDES.
5.

ALL STORMWATER, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE CONTRACTOR'S STORM WATER POLLUTION PREVENTION PLAN (ITEM 645.7). SILT FENCE SHALL BE INSTALLED AS SHOWN ON PAGE 96 AND THE DEWATERING BAG SHALL BE INSTALLED AS SHOWN ON PAGE 149 OF NHDES STORMWATER MANUAL, VOLUME 3.

SALVAGED MATERIAL NOTES:

1.

ALL EXISTING GRANITE CURB TO BE REMOVED SHALL BE SALVAGED TO THE TOWN OF SALEM. CONTRACTOR SHALL DELIVER THE CURBING TO THE TRANSFER STATION AT 163 SHANNON ROAD DURING NORMAL BUSINESS HOURS. TWO WEEKS ADVANCE NOTICE PRIOR TO DELIVERY IS REQUIRED. COSTS FOR HANDLING, LOADING, TRUCKING AND UNLOADING CURBS WILL BE PAID UNDER ITEM 202.6, CURB REMOVAL FOR SALVAGE.

GENERAL CONSTRUCTION NOTES

1.

FOR WORKING POINTS LAYOUT, SEE SHEET 16.
2.

THE BRIDGE WILL BE CLOSED DURING CONSTRUCTION AND TRAFFIC WILL BE DETOURED AROUND THE SITE (ITEM 619.1). THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING, ERECTING, AND MAINTAINING PERMANENT CONSTRUCTION FENCING, SIGNS, AND/OR WARNING DEVICES AS APPROVED OR DIRECTED BY THE ENGINEER. ALL DEVICES SHALL CONFORM TO SECTION 619 OF THE NHDOT STANDARD SPECIFICATIONS AND THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). WORK ON THE PROJECT OR ANY SEPARATE ACTIVITY THEREIN SHALL NOT START UNTIL ALL REQUIRED SIGNS AND WARNING DEVICES ARE INSTALLED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.
3.

DIMENSIONS, ANGLES, BEARINGS AND ELEVATIONS SHOWN ON THESE CONTRACT PLANS HAVE BEEN OBTAINED FROM EXISTING PLANS, LIMITED FIELD INVESTIGATIONS, AND SURVEY, AND MAY NOT ACCURATELY REFLECT ACTUAL FIELD CONDITIONS. ACCORDINGLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS OF ALL EXISTING STRUCTURE COMPONENTS IMPACTED BY THE PROPOSED WORK TO ASSURE CONSISTENCY WITH THE PROPOSED MODIFICATIONS. ANY DISCREPANCIES IN DIMENSIONS, CHARACTER OR EXTENT OF THE EXISTING FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE ADVANCING THE WORK.
4.

THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION.
5.

WATER LEVEL MAY VARY FROM THAT SHOWN.
6.

CONCRETE TIES AND ANCHORAGES FOR USE IN FORMS ABOVE THE TOP OF FOOTINGS SHALL BE FABRICATED SO AS TO BE REMOVED TO A MINIMUM DEPTH OF 2" WITHOUT INJURY TO THE CONCRETE. HOLES SHALL BE PLUGGED WITH A MORTAR MATCHING THE COLOR OF ADJACENT CONCRETE FOR EXPOSED CONCRETE SURFACES.
7.

ALL BACKFILL MATERIAL (EXCEPT SUITABLE FILL) SHALL NOT EXCEED THE OPTIMUM MOISTURE CONTENT BY MORE THAN 2 PERCENTAGE POINTS. THE MATERIAL SHALL BE PLACED IN LAYERS NOT MORE THAN 12" LOOSE DEPTH, UNLESS OTHERWISE NOTED IN THE PLANS. FOR EARTH MATERIALS UNDER APPROACH SLABS AND FOR EARTH MATERIALS WITHIN 10' OF THE BACK OF STRUCTURES NOT HAVING APPROACH SLABS, AT LEAST 98 PERCENT OF MAXIMUM DENSITY SHALL BE OBTAINED. ALL OTHER BACKFILL MATERIAL SHALL BE COMPACTED TO NOT LESS THAN 95 PERCENT OF MAXIMUM DENSITY. THE COMPACTION WILL BE TESTED AT FREQUENCIES DETERMINED IN THE FIELD BY THE ENGINEER.
8.

IF CONCRETE FORMS ARE TO BE TREATED WITH FORM RELEASE COMPOUND THIS WORK SHALL BE DONE PRIOR TO THE ERECTION OF THE FORMS. THE REINFORCING STEEL, AT THE TIME CONCRETE IS PLACED, SHALL BE FREE OF DIRT, PAINT, OIL, FORM RELEASE COMPOUND, OR OTHER ORGANIC MATERIALS THAT MAY ADVERSELY AFFECT OR REDUCE BOND.

TOPOGRAPHIC SURVEY NOTES

1.

THE SURVEY FOR THIS PROJECT WAS COMPLETED BY:
DOUCET SURVEY, LLC
2 COMMERCE DRIVE (SUITE 202) BEDFORD, NH 03110
(603) 614-4060
MICHAEL J. CARTER, LLS NO. 1017
2.

THE SURVEY CONSISTED OF 3 SHEETS TITLED:
EXISTING CONDITIONS PLAN FOR HOYLE, TANNER & ASSOCIATES, INC.
OF BRIDGE STREET BRIDGE OVER SPICKET RIVER SALEM, NH
3.

WETLAND RESOURCES WITHIN THE SURVEY AREA WERE DELINEATED BY:
THOMAS E. SOKOLOSKI, CWS NO. 127
4.

DATUM USED FOR THESE DRAWINGS IS AS FOLLOWS:
VERTICAL – NAVD88
HORIZONTAL – NAD83(2011)/NHSP(2800)

HYDRAULIC DATA

1.

DRAINAGE AREA:

48.2 SQUARE MILES
2.

DESIGN FLOOD:

Q50
3.

Q50 VELOCITY:

4.0 FPS

Q100 VELOCITY:

4.6 FPS
4.

Q50 FLOOD ELEVATION:

117.1 FT

Q100 FLOOD ELEVATION:

117.7 FT
5.

Q50 FLOOD FLOW:

1300 CFS

Q100 FLOOD FLOW:

1600 CFS
6.

BRIDGE WATERWAY OPENING:

525 SF
7.

BRIDGE WATERWAY OPENING BELOW THE Q50 FLOOD ELEVATION:

400 SF

WORK AREA NOTES

1.

PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL LAYOUT LIMITS OF ALL EASEMENTS AND TOWN'S RIGHT-OF-WAY WITHIN THE PROJECT LIMITS. COST IS INCLUDED UNDER ITEM 692., MOBILIZATION. LAYOUT SHALL BE PERFORMED BY A LAND SURVEYOR LICENSED IN THE STATE OF NEW HAMPSHIRE. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2.

TEMPORARY AND PERMANENT EASEMENTS HAVE BEEN OBTAINED BY THE OWNER FOR THE LOTS SHOWN ON SHEET 7.
3.

CONSTRUCTION ACCESS SHALL BE LIMITED TO WITHIN THE TOWN'S RIGHT-OF-WAY AND EASEMENTS LIMITS SHOWN IN THESE PLANS, UNLESS NOTED OTHERWISE. ADDITIONAL AREAS REQUIRED BY THE CONTRACTOR SHALL BE AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL COORDINATE WITH AFFECTED PROPERTY OWNERS AND OBTAIN TEMPORARY USE RIGHTS FOR SUCH AREAS.

DESIGN LOADS, MATERIALS AND SPECIFICATIONS

1.

DESIGN LOADING:

HL-93
2.

DESIGN SPEED:

30 MPH
3.

DESIGN METHOD:

LOAD AND RESISTANCE FACTOR DESIGN METHOD (LRFD)
4.

SPECIFICATIONS:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION.

NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2010 WITH CURRENT ADDITIONS AND MODIFICATIONS AS OF THE BID OPENING DATE.
5.

FOUNDATION DATA:

CAST-IN-PLACE CONCRETE SPREAD FOOTINGS FOUNDED ON LEDGE WITH A NOMINAL BEARING CAPACITY OF 11 TSF IN COMBINATION WITH A RESISTANCE FACTOR OF 0.45.
6.

REINFORCING STEEL:

AASHTO M 31 (ASTM A615) GRADE 60 (FOOTINGS AND WINGWALLS)

AASHTO M 284 (ASTM A775) GRADE 60 EPOXY COATED GRADE 60 (RIGID FRAME, BRIDGE SIDEWALKS, BRIDGE RAILINGS)
7.

CONCRETE:

RIGID FRAME AND SIDEWALKS (ON BRIDGE):
ITEM 520.02, CONCRETE CLASS AA, ABOVE FOOTINGS (F)
4,000 PSI (AT 28 DAYS)

BRIDGE RAILING (EXCLUDING PARAPET STONE AND STONE CAP):
ITEM 520.0512, CONCRETE CLASS AA, BRIDGE RAIL
4,000 PSI (AT 28 DAYS)

WINGWALLS:
ITEM 520.12, CONCRETE CLASS A, ABOVE FOOTINGS (F)
3,000 PSI (AT 28 DAYS)

FOOTINGS:
ITEM 520.211, CONCRETE CLASS B, FOOTINGS (ON ROCK)
3,000 PSI (AT 28 DAYS)

SUBFOOTINGS:
ITEM 520.211, CONCRETE CLASS B, FOOTINGS (ON ROCK)
3,000 PSI (AT 28 DAYS)
8.

SEISMIC:

PEAK GROUND ACCELERATION (PGA) = 0.10
SITE CLASS = C
ZONE = 1

UTILITY COORDINATION

1.

OVERHEAD UTILITIES ARE PRESENT WITHIN THE PROJECT SITE. THE CONTRACTOR SHALL BE FAMILIAR AND TAKE NECESSARY PRECAUTIONS WITH THESE UTILITIES DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE SHIELDING NECESSARY FOR EQUIPMENT MOBILIZATION AND TEMPORARY DE-ENERGIZATION OF POWER WITH THE UTILITY OWNERS IF REQUIRED. ALL COST FOR THIS COORDINATION SHALL BE INCLUDED IN ITEM 692, MOBILIZATION. ALL COSTS ASSOCIATED WITH MISCELLANEOUS TREE TRIMMING & CLEARING FOR TEMPORARY UTILITY RELOCATIONS SHALL BE INCLUDED IN ITEM 201.1, CLEARING AND GRUBBING (F).

OVERHEAD UTILITY OWNER INFORMATION:
LIBERTY UTILITIES
CONTACT NAME: CHRIS FURTIER
PHONE: (603) 493-3920

CONSOLIDATED COMMUNICATIONS
CONTACT NAME: MIKE MULLEN
PHONE: (603) 801-5064
2.

UNDERGROUND UTILITIES ARE PRESENT WITHIN THE PROJECT SITE. THE CONTRACTOR SHALL BE FAMILIAR AND TAKE NECESSARY PRECAUTIONS WITH THESE UTILITIES DURING CONSTRUCTION. THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. ALL COSTS FOR DETERMINING UNDERGROUND UTILITY TYPES AND LOCATIONS SHALL BE SUBSIDIARY TO THE CONTRACT. THE CONTRACTOR SHALL CONTACT DIG SAFE AND ALL APPLICABLE UTILITY DEPARTMENTS AND COMPANIES BEFORE EXCAVATION IS STARTED. UTILITIES WITHIN 50 FEET OF AN EXCAVATION SHALL BE MARKED IN THE FIELD.

SALEM MUNICIPAL SERVICES DEPARTMENT
PHONE: (603) 890-2150
3.

THE CONTRACTOR SHALL PERFORM A RELOCATION OF THE UNDERGROUND WATER LINE AT THE BRIDGE (ITEM 611.05212) AND THE INSTALLATION OF AN UNDERGROUND SEWER LINE AT THE BRIDGE (ITEM 612.35220). ALL UNDERGROUND UTILITY WORK SHALL BE COORDINATED WITH THE ENGINEER AND THE TOWN OF SALEM.
4.

THE POWER SERVICE LINE TO 6 BRIDGE ST RESIDENCE WILL BE RELOCATED BY LIBERTY UTILITIES TO PROVIDE ADDITIONAL OVERHEAD ROOM FOR THE CONTRACTOR.
5.

IT IS ANTICIPATED THAT POWER WILL BE DE-ENERGIZED OVER THE BRIDGE FOR A DURATION OF APPROXIMATELY 2 WEEKS FOR 2 SEPARATE OCCURRENCES TO ALLOW THE INSTALLATION AND REMOVAL OF COFFERDAMS/SUPPORT STRUCTURES. THE FIRST WEEK LIBERTY UTILITIES WILL MOBILIZE AT THE SITE ON MONDAY AND POWER WILL BE DE-ENERGIZED BY TUESDAY A.M. THE CONTRACTOR WILL NEED TO COMPLETE ALL WORK BY THURSDAY OF WEEK 2 IN ORDER FOR LIBERTY UTILITIES TO ENERGIZE THE LINE ON FRIDAY OF WEEK 2.

HOYLE
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TOWN OF SALEM
SALEM, NEW HAMPSHIRE

BRIDGE STREET OVER SPICKET RIVER

PROJECT NOTES (1 OF 2)

PROJECT NO. 19.918109.01

SHEET NO.

4

SHEET 4 OF 54

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SUGGESTED CONSTRUCTION SEQUENCE

1. INSTALL TEMPORARY EROSION CONTROL MEASURES AS DETAILED IN THE STORMWATER POLLUTION PREVENTION PLAN.
2. REMOVE EXISTING BRIDGE SUPERSTRUCTURE AND RAILING.
3. INSTALL TEMPORARY WATER DIVERSION STRUCTURE.
4. REMOVE EXISTING BRIDGE SUBSTRUCTURE AND EXCAVATE TO THE LIMITS AND ELEVATIONS SHOWN ON THE PLANS. INSTALL PROPOSED WATER MAIN.
5. CONSTRUCT FOOTINGS AND WINGWALL FOOTINGS.
6. INSTALL THE SEWER CASING AND CONSTRUCT THE RIGID FRAME LEGS AND WINGWALLS.
7. INSTALL RIPRAP IN FRONT OF WINGWALLS AND RIGID FRAME LEGS AS SHOWN IN THE PLAN DETAILS.
8. INSTALL TOP SLAB FALSEWORK AND CONSTRUCT RIGID FRAME TOP SLAB, BRIDGE SIDEWALKS, AND CONCRETE BRIDGE RAILING.
9. BACKFILL FRAME TO A MINIMUM OF 1' BELOW THE CONSTRUCTION JOINT AND REMOVE FALSEWORK. DO NOT REMOVE TOP SLAB FALSEWORK UNTIL BACKFILLING IS COMPLETE.
10. REMOVE COFFERDAMS AND TEMPORARY WATER DIVERSION STRUCTURE.
11. COMPLETE ROADWAY RECONSTRUCTION AND APPROACH GUARDRAIL.
12. RESTORE ALL DISTURBED AREAS TO PRECONSTRUCTION CONDITIONS WITH TURF ESTABLISHMENT AND SLOPE STABILIZATION.

WATER DIVERSION NOTES

1. TEMPORARY WATER DIVERSION STRUCTURES WILL BE REQUIRED. WATER DIVERSION STRUCTURES SHALL BE DESIGNED TO ACCOMMODATE THE STORM EVENT DISCHARGE AS DETERMINED BY THE CONTRACTOR. MEASURES SUCH AS CLEAN STONE FILL SHALL BE PROVIDED AT THE INLET AND OUTLET ENDS TO PROTECT AGAINST EROSION, SCOUR, AND SILTATION OF THE SPICKET RIVER. THE CONTRACTOR'S METHOD OF WATER DIVERSION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO THE START OF WORK.
2. A TURBIDITY CURTAIN MAY BE INSTALLED IN THE SPICKET RIVER UPSTREAM OF THE BRIDGE AT THE RIPRAP SLOPE, AND DOWNSTREAM OF THE BRIDGE, PRIOR TO ANY EXCAVATION IN THE SPICKET RIVER, TO PREVENT SILTATION OF THE SPICKET RIVER OUTSIDE THE PROJECT LIMITS AND IN ACCORDANCE WITH THE APPROVED SWPPP. ALL COSTS FOR SUCH WORK SHALL BE PAID FOR UNDER ITEM 645.0011, TURBIDITY BARRIER.
3. ALL COSTS FOR THE INSTALLATION, MAINTENANCE AND REMOVAL OF THE WATER DIVERSION STRUCTURE WILL BE PAID FOR UNDER ITEM 503.101.
4. DEWATERING SHALL BE REQUIRED IN THE CHANNEL TO CONTROL THE WATER INFLOW AND ADEQUATELY DEWATER THE CHANNEL EXCAVATION. SUMP PUMPING AREAS AROUND THE ENTIRE PERIMETER MAY BE REQUIRED TO ADEQUATELY CONTROL THE GROUNDWATER WITHIN THE EXCAVATION AREAS. DEWATERING SHALL BE CONTINUOUS UNTIL THE RIPRAP SLOPE, FOOTINGS, AND RIGID FRAME ARE CONSTRUCTED. THE CONCRETE RIGID FRAME SHALL BE BACKFILLED EVENLY ON BOTH SIDES TO THE ELEVATIONS OF THE SURROUNDING WATER TABLE. ALL COSTS FOR DEWATERING SHALL BE INCLUDED IN ITEM 503.101, WATER DIVERSION STRUCTURE.
5. WATER PUMPED FROM DEWATERING LOCATIONS SHALL BE FILTERED ADEQUATELY TO REMOVE FINE MATERIALS PRIOR TO RETURNING THE WATER TO THE SPICKET RIVER. ALL COSTS FOR CONSTRUCTION AND MAINTENANCE OF SEDIMENTATION BASIN OR OTHER METHODS TO CONTROL WATER POLLUTION SHALL BE INCLUDED IN ITEM 645.0002, SEDIMENTATION BASIN. ACTUAL LOCATION OF SEDIMENTATION BASIN TO BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

EXISTING BRIDGE REMOVAL NOTES

1. THE CONTRACTOR'S METHOD OF REMOVAL OF THE EXISTING BRIDGE SUPERSTRUCTURE AND SUBSTRUCTURE SHALL BE SUBMITTED IN ACCORDANCE WITH SPECIFICATION SECTION 01300 OF THE CONTRACT DOCUMENTS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO THE COMMENCEMENT OF ANY REMOVAL OPERATIONS.
2. REMOVAL OF EXISTING BRIDGE STRUCTURE, ITEM 502., SHALL INCLUDE COMPLETE REMOVAL OF THE EXISTING SUPERSTRUCTURE (DECK, BEAMS, SIDEWALK AND RAILING) AND SUBSTRUCTURE (ABUTMENTS, WINGWALLS AND FOOTINGS).
3. ITEM 207.3, UNCLASSIFIED CHANNEL EXCAVATION SHALL INCLUDE NECESSARY EXCAVATION REQUIRED TO INSTALL RIPRAP IN FRONT OF THE WINGWALLS AND RIGID FRAME.
4. THE CONTRACTOR SHALL TAKE SPECIAL CARE TO ENSURE THAT NO DEBRIS FALLS INTO THE SPICKET RIVER DURING CONSTRUCTION OPERATIONS. THE ERECTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURES OR OTHER METHODS TO PREVENT DEBRIS FROM FALLING INTO THE SPICKET RIVER, AND THE CONTRACTOR'S METHOD OF REMOVAL SHALL BE SUBMITTED IN ACCORDANCE WITH SECTION 01300 TO THE ENGINEER FOR REVIEW AND APPROVAL. ALL COSTS SHALL BE INCLUDED IN ITEM 502.

PAVEMENT NOTES

1. ALL PAVING OPERATIONS SHALL BE PERFORMED BY A SUBCONTRACTOR THAT IS LISTED ON THE NHDOT PREQUALIFIED CONTRACTORS LIST IN THE CATEGORY OF PAVING.
2. THE BITUMINOUS MIXTURE SHALL BE THOROUGHLY COMPACTED BY ROLLING. THE INITIAL ROLLING SHALL BE DONE WITH A STATIC OR VIBRATORY STEEL-DRUM ROLLER. FINAL ROLLING SHALL BE DONE WITH A STATIC-DRUM ROLLER. THE MINIMUM WEIGHT OF STATIC ROLLER SHALL BE 8 TONS.
3. SUBMIT PAVEMENT MIX DESIGN TO ENGINEER FOR APPROVAL PRIOR TO PAVING. SEE SECTION 401 OF THE NHDOT STANDARD SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
4. THE GRADE OF ASPHALT CEMENT SHALL BE PG 64-28.

REINFORCING NOTES

1. REINFORCEMENT IN THE FOOTING AND FACE OF CONCRETE SIDEWALK SHALL HAVE 3" CLEAR COVER. ALL OTHER REINFORCEMENT SHALL HAVE 2½" MINIMUM CLEAR COVER UNLESS OTHERWISE NOTED.
2. PLACE REINFORCING STEEL TO AVOID WEEPERS.
3. REINFORCING LEGEND:

SP = SPACE SPL = SPLICE FS = FAR SIDE
NS = NEAR SIDE BOT = BOTTOM MID = MIDDLE
EQ = EQUAL ALT = ALTERNATING DOW = DOWELS
4. REINFORCING BAR MARKS WITH AN (E) REFERENCE, INDICATE EPOXY COATING
5. ANY EPOXY COATED REBARS CUT TO FIT SHALL BE TOUCHED UP WITH AN APPROVED EPOXY COATING MATERIAL. ALL COSTS SHALL BE INCLUDED IN ITEM 544.31.

FOOTING AND SUBFOOTING NOTES

1. ANY UNSUITABLE MATERIALS SUCH AS BOULDERS, ROOTS, ORGANIC SOILS, LOOSE OR WEATHERED BEDROCK OR SILT/CLAY ENCOUNTERED AT THE PROPOSED BOTTOM OF EXCAVATION ELEVATION SHALL BE REMOVED AND REPLACED WITH ITEM 520.211, CONCRETE CLASS B, FOOTINGS (ON ROCK) AS REQUESTED BY THE ENGINEER.
2. ROCK BRIDGE EXCAVATION MAY USE EITHER DRILLING AND BLASTING METHODS OR MECHANICAL METHODS AND WILL BE PAID FOR UNDER ITEM 504.2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE OR REPAIRS, AT NO COST TO THE OWNER, TO THE COFFERDAM THAT RESULT FROM BLASTING.
3. PRIOR TO PLACEMENT OF CONCRETE, THE BEDROCK SURFACE SHALL BE COMPLETELY CLEANED OF LOOSE BEDROCK AND DEBRIS. FRACTURES OR SEAMS IN THE BEDROCK SURFACES EXPOSED AT THE BOTTOM OF THE FOUNDATION EXCAVATION SHALL BE CLEANED AND GROUTED IN ACCORDANCE WITH 504.3.2 OR CHINKED WITH CLEAN STONE FOR STRUCTURAL FILL AS DIRECTED TO PREVENT MIGRATION OF CONCRETE OR BACKFILL INTO ANY BEDROCK FRACTURES. COST OF THIS WORK IS SUBSIDIARY TO ITEM 504.2, ROCK BRIDGE EXCAVATION.
4. THE FOOTING THICKNESS MAY VARY FROM 3'-0" MIN. TO 4'-0" MAX. WITH THE TOP OF FOOTING AT THE ELEVATION AS DETAILED ON THE PLANS. FOOTING DESIGN IS BASED ON A 3'-0" THICKNESS AND REINFORCEMENT SHALL BE PLACED AS SHOWN IN THE PLANS.
5. A CONCRETE SUBFOOTING SHALL BE USED ONLY WHERE THE EXISTING BEDROCK LINE IS MORE THAN 4'-0" BELOW TOP OF FOOTING. NO PAYMENT SHALL BE MADE FOR CONCRETE SUBFOOTING WHERE THE CONTRACTOR HAS REMOVED ROCK BELOW THE PAY LIMITS FOR ITEM 504.2, ROCK BRIDGE EXCAVATION EXCEPT WHERE BEDROCK HAS BEEN REMOVED TO MINIMIZE STEEP SLOPES AS DESCRIBED IN FOUNDATION OR SUBFOOTING NOTE 7. THE CONCRETE SUBFOOTING, IF NECESSARY, SHALL BE PAID AS ITEM 520.211. MINIMUM SUBFOOTING DEPTH SHALL BE 1'-0".
6. THE TOP OF CONCRETE SUBFOOTINGS WHICH ARE TO BE IN CONTACT WITH FOOTINGS SHALL HAVE A ROUGHENED SURFACE.
7. THE FINAL BEDROCK SURFACE SHALL BE NO STEEPER THAN 5H:1V AND FREE OF ANY SHARP PROTRUSIONS. TRANSVERSE AND LONGITUDINAL BEDROCK SLOPES STEEPER THAN 5H:1V SHALL BE STEPPED IN LEVEL INCREMENTS WITH A MINIMUM HORIZONTAL STEP LENGTH OF 2 FEET OR AS DIRECTED.
8. ALL SUBFOOTING AND FOOTING CONCRETE SHALL BE PLACED IN THE DRY.
9. ALL SUBFOOTING CONCRETE SHALL BE PAID AS ITEM 520.211, CONCRETE CLASS B, FOOTINGS (ON ROCK).

MORTARED SQUARED STONE MASONRY NOTES:

1. MORTARED SQUARED STONE MASONRY TEXTURE AND COLOR SHALL BE CONSISTENT THROUGHOUT THE BRIDGE AND SHALL MATCH THE TEXTURE AND COLOR OF THE EXISTING PUMP HOUSE STONE WALL. STONE MASONRY SAMPLES SHALL BE SUBMITTED TO THE TOWN AND ENGINEER FOR REVIEW AND APPROVAL.
2. MORTARED SQUARED STONE MASONRY FOR BRIDGE PARAPETS AND WINGWALL FACING SHALL BE GENERALLY RECTANGULAR WITH NO ROUNDED FACES OR EDGES AND SHALL BE LAID OUT IN A RANDOM UNCOURSED ASHLAR PATTERN. THE MINIMUM STONE HEIGHT SHALL BE 6" AND THE MAXIMUM STONE HEIGHT SHALL BE 2. THE MINIMUM STONE LENGTH SHALL BE 6" AND THE MAXIMUM STONE LENGTH SHALL BE 2. THE MAXIMUM JOINT WIDTH BETWEEN STONES SHALL BE 2".
3. MORTARED SQUARED STONE MASONRY FOR THE ARCH SHALL BE LAID OUT RADially AND IN A RANDOM PATTERN. THE MINIMUM STONE HEIGHT SHALL BE 2' AND THE MAXIMUM STONE HEIGHT SHALL BE 3'. THE MINIMUM STONE WIDTH SHALL BE 10" AND THE MAXIMUM STONE WIDTH SHALL BE 15". THE MINIMUM STONE THICKNESS SHALL BE 9" AND THE MAXIMUM STONE THICKNESS SHALL BE 12". SEE SHEET 39 FOR LAYOUT DETAILS.
4. REFERENCE THE SPECIAL PROVISION FOR SECTION 570 – STONE MASONRY, FOR ADDITIONAL REQUIREMENTS.

INVASIVE SPECIES NOTES

1. NO MATERIAL CONTAINING ANY LIVING OR Viable PORTION OF PLANTS ON THE NEW HAMPSHIRE PROHIBITED INVASIVE SPECIES LIST (AGR3800 TABLE 3800.01) SHALL BE TRANSPORTED TO OR FROM CONSTRUCTION SITE WITHOUT NOTIFICATION AND APPROVAL FROM THE NEW HAMPSHIRE DEPARTMENT OF AGRICULTURE PER RSA 430:55.
2. INVASIVE SPECIES HAVE BEEN OBSERVED WITHIN THE PROJECT LIMITS. UPON APPROVAL OF ITEM 607.11, INVASIVE SPECIES CONTROL AND MANAGEMENT PLAN THE CONTRACTOR SHALL PERFORM THE WORK NECESSARY TO REMOVE AND DISPOSE OF THE INVASIVE PLANT SPECIES ENCOUNTERED WITHIN THE PROJECT LIMITS. THE PLANT SPECIES OF CONCERN WITHIN THE PROJECT LIMITS IS THE JAPANESE KNOTWEED. OTHER INVASIVE SPECIES ENCOUNTERED SHALL NOT BE REMOVED. ALL COSTS (MATERIALS AND LABOR REQUIRED) SHALL BE INCLUDED IN ITEM 201.882, INVASIVE SPECIES CONTROL, TYPE II AS RECOMMENDED IN THE APPROVED PLAN.
3. WORK SHALL BE DONE IN ACCORDANCE WITH THE NHDOT BEST MANAGEMENT PRACTICES FOR ROADSIDE INVASIVE SPECIES PLANTS HANDBOOK. THE CONTRACTOR IS ADVISED TO REVIEW THE CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION.

RIGID FRAME AND WINGWALL NOTES

1. REINFORCING CONFORMING TO AASHTOM 31 SHALL BE USED FOR THE FOOTINGS AND WINGWALLS (ALL COSTS INCLUDED IN ITEM 544.3).
2. REINFORCING CONFORMING TO AASHTOM 284 (ASTM A775) GRADE 60 EPOXY COATED BARS SHALL BE USED FOR THE RIGID FRAME, BRIDGE SIDEWALKS, AND BRIDGE RAILINGS (ALL COSTS INCLUDED IN ITEM 544.31).
3. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED ¾".
4. WEEPERS SHALL BE PLACED SYMMETRICALLY 10'-0" APART AND CENTERED AT 12" ABOVE THE TOP OF FOOTINGS. WEEPERS SHALL BE 4" IN DIAMETER AND SLOPED TO DRAIN WITH A 12:1 SLOPE. ALL COSTS SHALL BE SUBSIDIARY TO THE RELEVANT 520 ITEM.
5. SLEEVES SHALL BE PROVIDED IN THE RIGID FRAME LEGS AND FOOTINGS TO ALLOW FOR THE INSTALLATION OF PROPOSED UTILITIES. SEE SHEET 47 FOR DETAILS.
6. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FALSEWORK PLANS AND CALCULATIONS FOR THE CONSTRUCTION OF THE RIGID FRAME FOR REVIEW AND APPROVAL PRIOR TO THE START OF CONSTRUCTION. THE FALSEWORK SHALL BE DESIGNED, SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE. FALSEWORK PLANS SHALL INDICATE THE SIZE AND QUALITY OF MEMBERS, CONSTRUCTION JOINTS AND CONCRETE PLACING SCHEDULE. THE DESIGN, INSTALLATION, MAINTENANCE AND REMOVAL OF THE FALSEWORK SHALL BE SUBSIDIARY TO ITEM 520.02.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ELEVATIONS TO SET DECK FORMS FOR THE RIGID FRAME TO ACCOUNT FOR FALSEWORK DEFLECTIONS AND TO ENSURE PROPER FINISHED GRADES ARE ACHIEVED. THE FALSEWORK PLANS TO BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL SHALL INDICATE THE ANTICIPATED DEFLECTION. THE RIGID FRAME ELEVATIONS MUST INCLUDE ALL DEAD LOAD DEFLECTIONS PROVIDED IN THESE PLANS ACCOUNT FOR LONG TERM DEFLECTIONS.
8. PARAPET STONE AND ARCH RING STONE SHALL BE CONSTRUCTED PER THE CONTRACT PLANS AND SHALL BE PAID UNDER ITEM 570.2. WINGWALL FACING STONES SHALL BE CONSTRUCTED PER THE CONTRACT PLANS AND SHALL BE PAID UNDER ITEM 570.21.
9. ITEM 538.2, BARRIER MEMBRANE, FEL AND STICK - VERTICAL SURFACES (F) 2'-0" WIDE WITH PROTECTION BOARD (SUBSIDIARY), SHALL BE PLACED CENTERED OVER THE RIGID FRAME TOP SLAB CONSTRUCTION JOINT AND CENTERED OVER THE VERTICAL CONSTRUCTION JOINTS.
10. MEMBRANED SURFACES TO BE BACKFILLED AGAINST SHALL BE PROTECTED BY A PROTECTION BOARD. THE PROTECTION BOARD SHALL BE SEALTIGHT PC-2 MANUFACTURED BY W.R. MEADOWS OR APPROVED EQUAL AND AS SHOWN ON THE NHDOT QUALIFIED PRODUCTS LIST AND SUBSIDIARY TO THE APPROPRIATE 538 PAY ITEM. THE USE OF CLOSED-CELL EXTRUDED POLYSTYRENE BOARD (RIGID INSULATION) IS NOT ALLOWED FOR THIS PROJECT.
11. RIGID FRAME LEGS AND WINGWALLS SHALL BE BACKFILLED EVENLY ON BOTH SIDES. RIGID FRAME LEG BRACING SHALL REMAIN UNTIL THE TOP SLAB HAS CURED TO AT LEAST 80% OF DESIGN STRENGTH OR 7 DAYS. RIGID FRAME TOP SLAB SHALL REMAIN SUPPORTED UNTIL BACKFILL IS COMPLETED TO 1' BELOW THE CONSTRUCTION JOINT.
12. ALL CAULKING AND JOINT SEALERS SHALL BE INSTALLED AFTER BACKFILLING AND PRIOR TO APPLICATION OF THE WATER REPELLENT. CONCRETE SURFACES SHALL HAVE CURED A MINIMUM OF 14 DAYS AND SHALL BE DRY PRIOR TO THE APPLICATION OF WATER REPELLENT. MINIMUM SUBSTRATE AND AMBIENT APPLICATION TEMPERATURES SHALL BE AS NOTED ON THE NHDOT QUALIFIED PRODUCTS LIST FOR THE PRODUCT USED.
13. ITEM 534.3, WATER REPELLENT (SILANE/SILOXANE) SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES ON RIGID FRAME LEGS AND ALL WINGWALLS TO 1'-0" BELOW THE FILL LINES AND TO THE RIGID FRAME TOP SLAB AS SHOWN ON THE CONTRACT DOCUMENTS.
14. ITEM 583.3, RIPRAP CLASS III, SHALL BE 2'-0" THICK, UNLESS OTHERWISE NOTED.

COFFERDAM NOTES

1. SHOP DRAWINGS AND DESIGN CALCULATIONS FOR THE COFFERDAMS SHALL BE SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE AND SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
2. THE COFFERDAMS SHOWN ARE CONCEPTUAL AND SCHEMATIC ONLY AND ARE NOT INTENDED TO SHOW REQUIRED OR PREFERRED METHODS OF CONSTRUCTION. AT CONTRACTORS OPTION, COFFERDAMS MAY BE USED TO REDUCE THE EXCAVATION LIMITS.
3. COFFERDAMS SHALL BE DESIGNED IN ACCORDANCE WITH THE AASHTO DESIGN SPECIFICATIONS FOR TEMPORARY BRIDGE WORKS, 1995, WITH CURRENT INTERIMS.
4. COFFERDAMS SHALL BE REMOVED AFTER THE COMPLETION OF WORK, WITH CARE BEING TAKEN TO NOT DISTURB THE SURROUNDING SOIL OR THE FINISHED WORK.
5. IF STEEL SHEETING IS USED FOR COFFERDAMS, IT SHALL BE PLACED A MINIMUM OF 5'-0" FROM ALL FOOTINGS. IF IT IS PLACED CLOSER THAN 5'-0", IT SHALL NOT BE REMOVED, BUT RATHER CUT TO 6" BELOW THE FINISHED GRADE ELEVATION AND LEFT IN PLACE, AT NO ADDITIONAL COST.
6. THE COFFERDAM MAY BE REQUIRED TO PROVIDE SUPPORT OF EXCAVATION. REGARDLESS OF WHAT MATERIAL IS USED, ALL COSTS FOR DESIGN, INSTALLATION (INCLUDING INTERNAL BRACING AND/OR ROCK ANCHORS), MAINTENANCE, RELATED MATERIALS AND REMOVAL OF THE COFFERDAM SYSTEM SHALL BE INCLUDED IN ITEM 503.201 AND 503.202, AS APPLICABLE.

HOYLE
TANNER



TOWN OF SALEM
SALEM, NEW HAMPSHIRE

BRIDGE STREET OVER SPICKET RIVER

PROJECT NOTES (2 OF 2)

PROJECT NO. 19.918109.01

SHEET NO.

5

SHEET 5 OF 54

REV. DESCRIPTION

FILE NAME
91810901P\Notes1.kwmv

MODEL NAME
91810901P\Notes2

SCALE
AS SHOWN

DATE
AUGUST 2025

DRW. CHKD. BY

DATE

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SUMMARY OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
201.1	CLEARING AND GRUBBING (F)	A	0.2
201.21	REMOVING SMALL TREES	EA	5
201.22	REMOVING LARGE TREES	EA	3
201.882	INVASIVE SPECIES CONTROL TYPE II	SY	70
202.31	FILL ABANDONED PIPE	CY	1
202.41	REMOVAL OF EXISTING PIPE 0-24" DIAMETER	LF	135
202.42	REMOVAL OF EXISTING PIPE OVER 24" DIAMETER	LF	45
202.43	REMOVAL AND DISPOSAL OF ASBESTOS (ACM) PIPE, 0-24" DIAMETER	LF	240
202.5	REMOVAL OF CATCH BASINS, DROP INLETS, AND MANHOLES	EA	2
202.6	CURB REMOVAL FOR SALVAGE	LF	420
202.7	REMOVAL OF GUARDRAIL	LF	555
203.1	COMMON EXCAVATION	CY	1400
203.5572	EAGRT PLATFORM ALTERNATE, TL 2 - 25'	U	3
203.6	EMBANKMENT-IN-PLACE (F)	CY	365
206.1	COMMON STRUCTURE EXCAVATION	CY	3
206.19	COMMON STRUCTURE EXCAVATION EXPLORATORY	CY	20
206.2	ROCK STRUCTURE EXCAVATION	CY	20
207.3	UNCLASSIFIED CHANNEL EXCAVATION	CY	735
209.1	GRANULAR BACKFILL	CY	10
209.201	GRANULAR BACKFILL (BRIDGE) (F)	CY	650
209.3	GRANULAR BACKFILL (SAND)	CY	15
214	FINE GRADING	U	1
304.4	CRUSHED STONE (FINE GRADATION) (F) (SIDEWALK & BOX)	CY	915
304.41	CRUSHED STONE (FINE GRADATION) (AS DIRECTED)	CY	600
403.11023	HBP-3/4" BINDER MIX, MACHINE METHOD	TON	300
403.11043	HBP-1/2" SURFACE MIX, MACHINE METHOD	TON	170
403.12	HBP - HAND METHOD	TON	40
403.21053	HBP-3/8", MACHINE METHOD (1" BRIDGE BASE)	TON	11
417	COLD PLANING BITUMINOUS SURFACES	SY	135
502	REMOVAL OF EXISTING BRIDGE STRUCTURE	U	1
503.101	WATER DIVERSION STRUCTURE	U	1
503.201	COFFERDAMS	U	1
503.202	COFFERDAMS	U	1
504.1	COMMON BRIDGE EXCAVATION (F)	CY	1415
504.2	ROCK BRIDGE EXCAVATION	CY	190
508	STRUCTURAL FILL	CY	7
520.01	CONCRETE CLASS AA	CY	2
520.02	CONCRETE CLASS AA, ABOVE FOOTINGS (F)	CY	426
520.0512	CONCRETE CLASS AA, BRIDGE RAIL	CY	7
520.12	CONCRETE CLASS A, ABOVE FOOTINGS (F)	CY	57
520.211	CONCRETE CLASS B, FOOTINGS (ON ROCK)	CY	375
534.3	WATER REPELLENT (SILANE/ SILOXANE)	GAL	8
538.2	BARRIER MEMBRANE, PEEL AND STICK - VERTICAL SURFACES (F)	SY	34
538.5	BARRIER MEMBRANE, HEAT WELDED (F)	SY	187
541.1	PVC WATERSTOPS, NH TYPE 1 (F)	LF	87
541.4	PVC WATERSTOPS, NH TYPE 4 (F)	LF	67
544.3	REINFORCING STEEL (CONTRACTOR DETAILED)	LB	17700
544.31	REINFORCING STEEL, EPOXY COATED (CONTRACTOR DETAILED)	LB	71100
562.1	SILICONE JOINT SEALANT (F)	LF	122
570.2	MORTARED SQUARED STONE MASONRY (PARAPET WALL)	SF	1080
570.21	MORTARED SQUARED STONE MASONRY (WINGWALL)	SF	760
570.6	STONE COPING (F)	LF	116
570.61	STONE COPING (WINGWALL) (F)	LF	81
570.99	DRY RUBBLE MASONRY WALL	LF	175
583.3	RIPRAP, CLASS III	CY	600
585.31	STONE FILL, CLASS C1	CY	3
593.411	GEOTEXTILE; PERM CONTROL CL.1, NON-WOVEN	SY	900
603.00212	12" R.C. PIPE, 2000D	LF	245
604.0007	POLYETHYLENE LINER	EA	4
604.124	CATCH BASINS TYPE B, 4-FOOT DIAMETER	U	4
604.316	SEWER MANHOLES, 6-FOOT DIAMETER	U	2

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
604.324	DRAINAGE MANHOLES, 4-FOOT DIAMETER	U	1
606.012	W6X9 STEEL POST REPLACEMENTS FOR BEAM GUARDRAIL POSTS	EA	15
606.0122	W6X9 STEEL POST ASSEMBLIES FOR BEAM GUARDRAIL POSTS	EA	15
606.12551	BEAM GUARDRAIL (TERMINAL UNIT TYPE EAGRT, TL2 - 25') (STEEL POST)	U	4
606.1285	BEAM GUARDRAIL (BRIDGE APPROACH UNIT)	U	2
606.12859	BEAM GUARDRAIL (BRIDGE APPROACH UNIT) (MODIFIED)	U	2
606.18001	31" W-BEAM GUARDRAIL WITH 8" OFFSET BLOCK (STEEL POST)	LF	287.5
606.417	PORTABLE CONCRETE BARRIER FOR TRAFFIC CONTROL	LF	200
607.24	CHAINLINK FENCE WITH ALUMINUM COATED STEEL FABRIC, 4' HIGH	LF	100
607.516	WOOD FENCE (STOCKADE), 6'-0" HIGH	LF	75
608.125	2.5" BITUMINOUS SIDEWALK (F)	SY	580
608.54	DETECTABLE WARNING DEVICES, CAST IRON	SY	3
609.01	STRAIGHT GRANITE CURB	LF	900
609.3	STRAIGHT GRANITE CURB (BRIDGE)	LF	120
609.93	SPECIAL STRAIGHT GRANITE CURB (REVEAL 12" - 18")	LF	80
611.05212	12" CEMENT LINED DUCTILE IRON WATER PIPE, CL 52	LF	340
611.5001	1" WATER SERVICE CONNECTION	EA	1
611.70012	12" FITTING	EA	15
611.71012	12" GATE VALVE	EA	2
611.81	HYDRANT ASSEMBLIES	EA	1
611.90001	ADJUSTING WATER GATES AND SHUTOFFS SET BY OTHERS	EA	6
612.3522	20" HDPE SEWER PIPE, DR 21	LF	90
612.999	30" CASING PIPE FOR 20" SEWER PIPE	LF	70
615.0301	TRAFFIC SIGN TYPE C	SF	35
615.034	RELOCATING TRAFFIC SIGN, TYPE C	U	1
615.0601	TRAFFIC SIGN TYPE CC	SF	5
618.61	UNIFORMED OFFICERS WITH VEHICLE	\$	10000
619.1	MAINTENANCE OF TRAFFIC	U	1
619.253	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT	4
621.2	RETROREFLECTIVE BEAM GUARDRAIL DELINEATOR	EA	15
621.31	SINGLE DELINEATOR WITH POST	EA	2
621.32	DOUBLE DELINEATOR WITH POST	EA	2
622.1	STEEL WITNESS MARKERS	EA	3
622.55	REMOVE AND RESET MONUMENTS	EA	4
628.2	SAWED BITUMINOUS PAVEMENT	LF	1000
632.0104	RETROREFLECTIVE PAINT PAVE. MARKING, 4" LINE	LF	2300
632.3108	RETROREFLECT. THERMOPLAS. PAVE. MARKING, 8" LINE	LF	100
632.3112	RETROREFLECT. THERMOPLAS. PAVE. MARKING, 12" LINE	LF	200
632.3118	RETROREFLECT. THERMOPLAS. PAVE. MARKING, 18" LINE	LF	15
645.0002	SEDIMENTATION BASIN	U	1
645.0011	TURBIDITY CURTAIN	MON	9
645.3	EROSION STONE	TON	105
645.44	TEMPORARY SLOPE MATTING TYPE D (WILDLIFE FRIENDLY)	SY	1150
645.441	SEDIMENT FILTER LOG	LF	2000
645.531	SILT FENCE	LF	1000
645.7	STORM WATER POLLUTION PREVENTION PLAN	U	1
645.719	MONITORING SWPPP AND EROSION AND SEDIMENT CONTROLS	EA	60
645.72	FINAL WETLAND IMPACT REPORT	U	1
646.512	TURF ESTABLISHMENT WITH MULCH, TACKIFIERS AND LOAM (F)	SY	1150
651.1	EVERGREEN TREES	EA	5
652.1	DECIDUOUS TREES	EA	5
654.1	EVERGREEN SHRUBS	EA	10
670.0661	REMOVE AND RESET SINGLE OR DOUBLE MAILBOX ASSEMBLIES	EA	4
670.8	STAFF GAUGE	U	1
670.99	BRONZE DISK	EA	1
692	MOBILIZATION	U	1
697.11	INVASIVE SPECIES CONTROL AND MANAGEMENT PLAN	U	1
698.13	FIELD OFFICE TYPE C	MON	10
699	MISCELLANEOUS TEMPORARY EROSION AND SEDIMENT CONTROL	\$	10000
900.1	12" - 18" HEADWALL	EA	2

REV.

DESCRIPTION

DRW CHG BY

DATE

NH00T BRIDGE NO.
1151097

FILE NAME
91810901\PJNotes

DESIGNED
KMW

MODEL NAME
91810901\PJNotes3

DRAWN
TAG

SCALE
AS SHOWN

CHECKED
JCR

DATE
AUGUST 2025

HOYLE
TANNER

150 Dow Street • Manchester, NH 03301
(603) 669-5555 • www.hoyletanner.com

TOWN OF SALEM
SALEM, NEW HAMPSHIRE

BRIDGE STREET OVER SPICKET RIVER

SUMMARY OF QUANTITIES

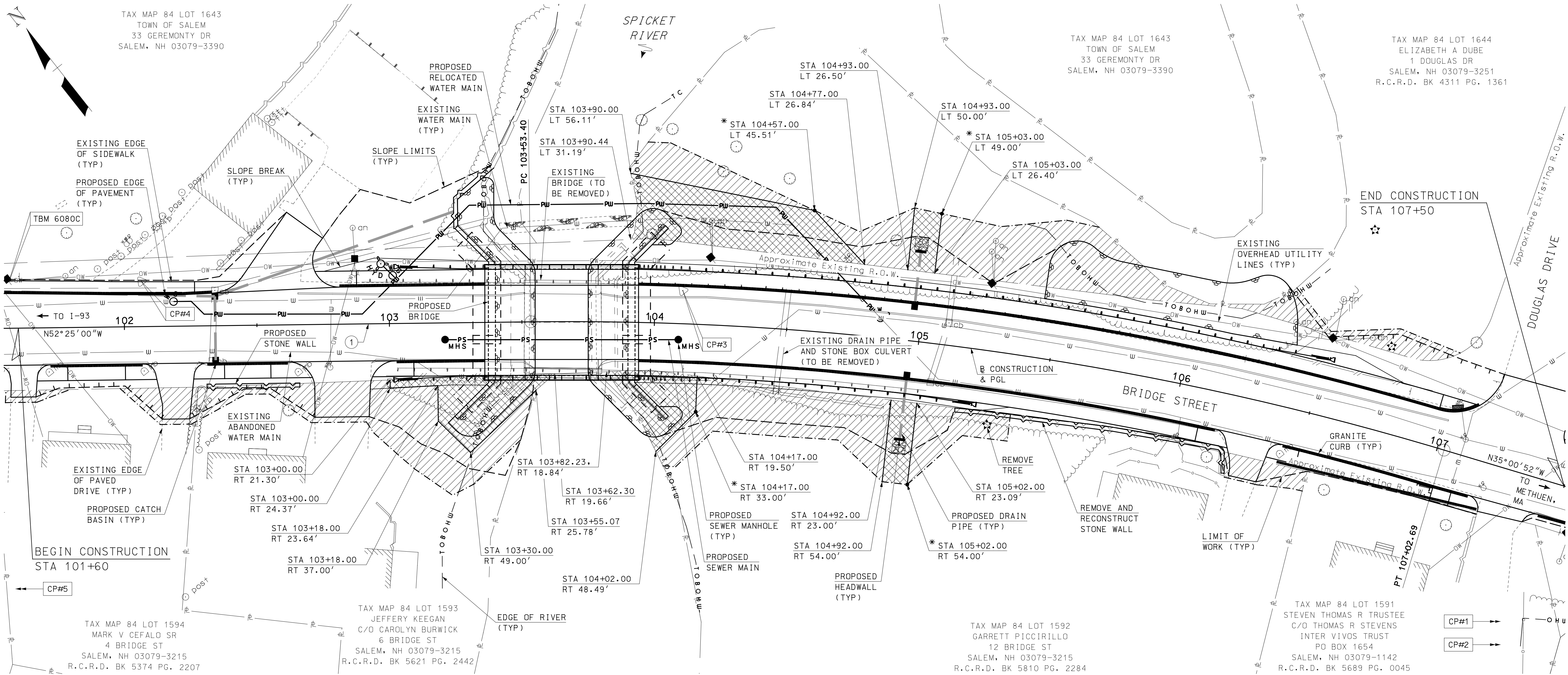
PROJECT NO. 19.918109.01

SHEET NO.
6

SHEET 6 OF 54

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EXISTING EASEMENT AREA PLAN
SCALE: 1" = 20'

VERTICAL CONTROL (TBM) TABLE			
NUMBER	ELEVATION	STATION & OFFSET	DESCRIPTION
TBM 6080C	128.04'	101+56.63, LT 17.60'	MAG NAIL SET UP 12" IN POLE 2

NOTE: INFORMATION PROVIDED IN TABLES ABOVE IS FOR GENERAL LOCATION ONLY

TABLE OF EXISTING PROPERTY RIGHTS					
PARCEL NO.	PROPERTY OWNER	EASEMENT			
		PERMANENT		TEMPORARY	
		SF	TYPE	BOOK/PAGE	SF TYPE
MAP 84, LOT 1644	ELIZABETH A DUBE	240	DRAINAGE	6329/351	3385 CONSTRUCTION
		1585	STRUCTURE/UTILITY		
MAP 84, LOT 1594	MARK V CEFALO SR				380 CONSTRUCTION
MAP 84, LOT 1593	JEFFERY KEEGAN C/O CAROLYN BURWICK	775	STRUCTURE/GUARDRAIL	6329/347	1920 CONSTRUCTION
MAP 84, LOT 1592	GARRETT PICCIRILLO	605	STRUCTURE/SIDEWALK	6329/355	2490 CONSTRUCTION
		305	DRAINAGE		

HORIZONTAL CONTROL POINT (CP) TABLE					
NUMBER	NORTHING	EASTING	ELEVATION	STATION & OFFSET	DESCRIPTION
CP#1	104770.854	1109962.571	122.37	N/A	R.S.S.
CP#2	104983.506	1109861.369	120.43	107+72.13, LT 14.69'	R.S.S.
CP#3	105257.188	1109621.298	122.47	104+10.24, LT 12.49'	MAG SET
CP#4	105386.492	1109463.091	125.91	102+06.60, LT 17.05'	5/8" REBAR SET FLUSH W/ID CAP DOUCET SURVEY POINT
CP#5	105454.413	1109279.345	129.39	100+19.56, RT 41.19'	R.S.S.

CURVE NO. ①

PI = 105+29.40
N = 105176.09874
E = 1109708.50283
Δ = 17°24'08.57"
T = 176.00'
R = 1150.00'
L = 349.29'
E = 13.39'

EASEMENT MONUMENT COORDINATE TABLE		
STATION & OFFSET	NORTHING	EASTING
STA 104+17.00 RT 33.00'	1109596.79	105218.28
STA 104+57.00 LT 45.51'	1109679.06	105250.07
STA 105+02.00 RT 54.00'	1109642.44	105147.27
STA 105+03.00 LT 49.00'	1109715.99	105219.38

* RESET 5/8" REBAR W/ID CAP IF DISTURBED DURING CONSTRUCTION (ITEM 622.55).

NOTE: THE PURPOSE OF THIS PLAN IS TO IDENTIFY CENTERLINE GEOMETRY, PROJECT HORIZONTAL AND VERTICAL CONTROL, EXISTING TEMPORARY AND PERMANENT RIGHTS FROM WHICH THE CONTRACTOR MAY LAYOUT WORK LIMITS.

LEGEND

- TEMPORARY EASEMENT
- PERMANENT EASEMENT

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TOWN OF SALEM
SALEM, NEW HAMPSHIRE
BRIDGE STREET OVER SPICKET RIVER

EXISTING EASEMENT AREA PLAN

PROJECT NO. 19.918109.01

SHEET NO.

7

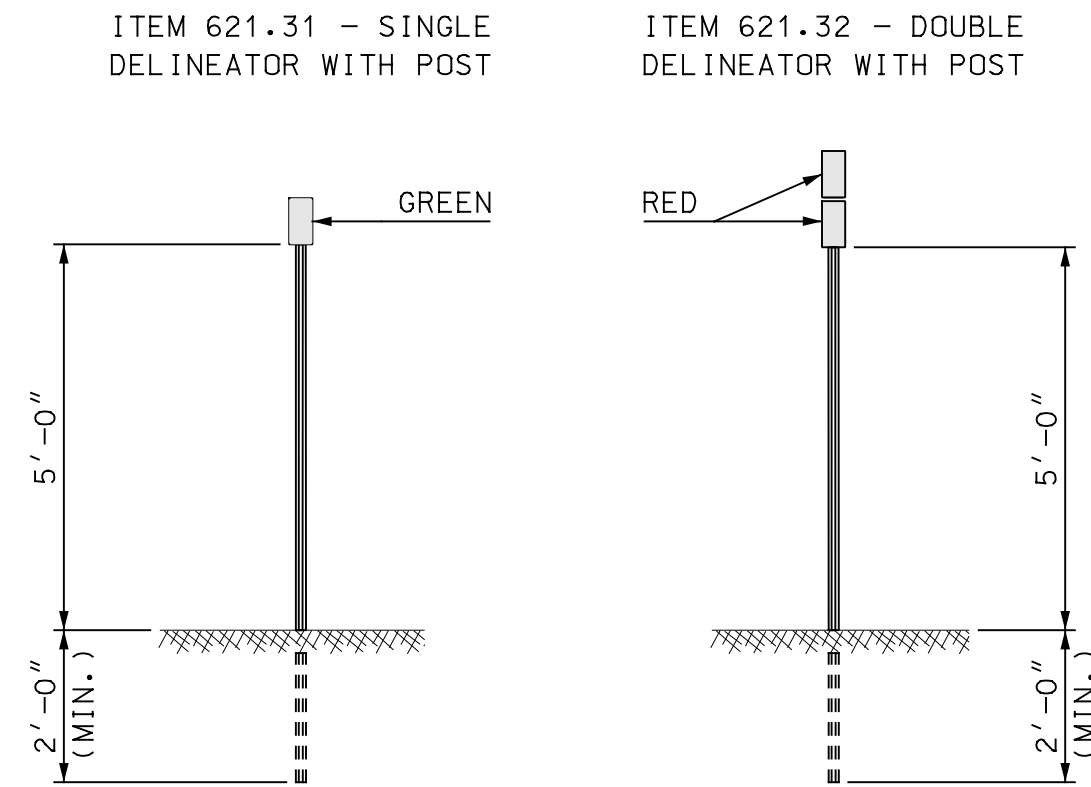
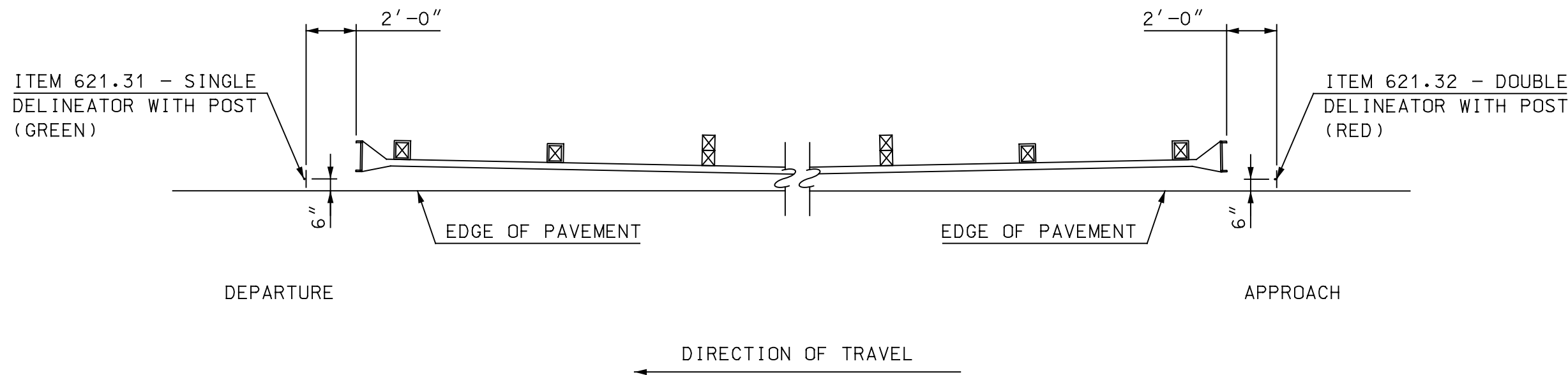
SHEET 7 OF 54

REV.	DESCRIPTION	DATE

FILE NAME 91810901Easplan	DESIGNED KMW
MODEL NAME 91810901Easplan	DRAWN TAG
SCALE AS SHOWN	CHECKED JCR
NH001 BRIDGE NO. 115097	DATE AUGUST 2025

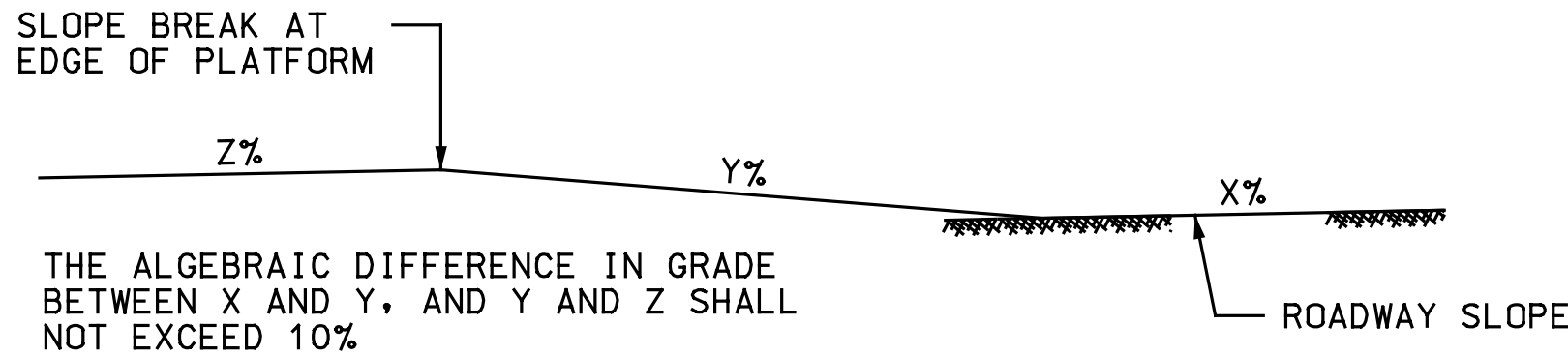
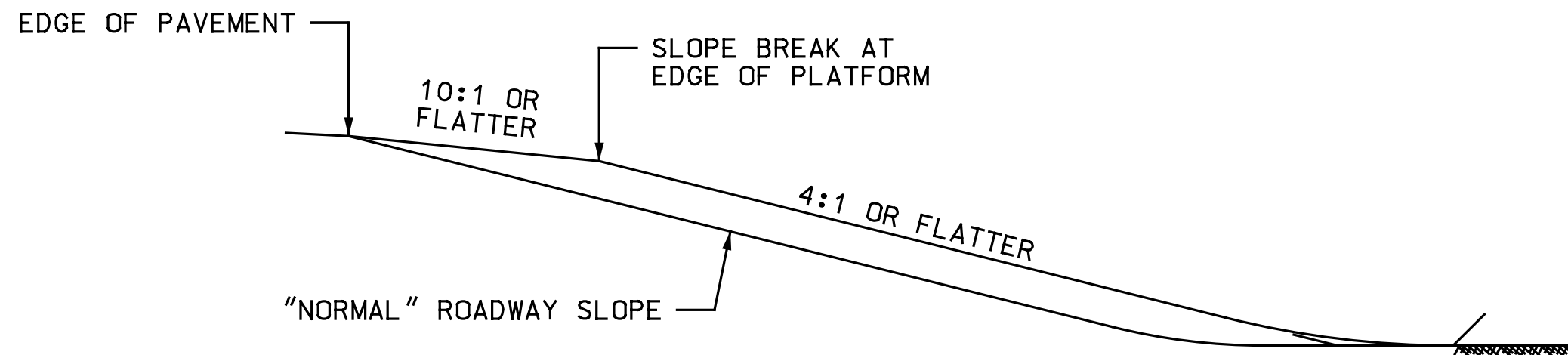
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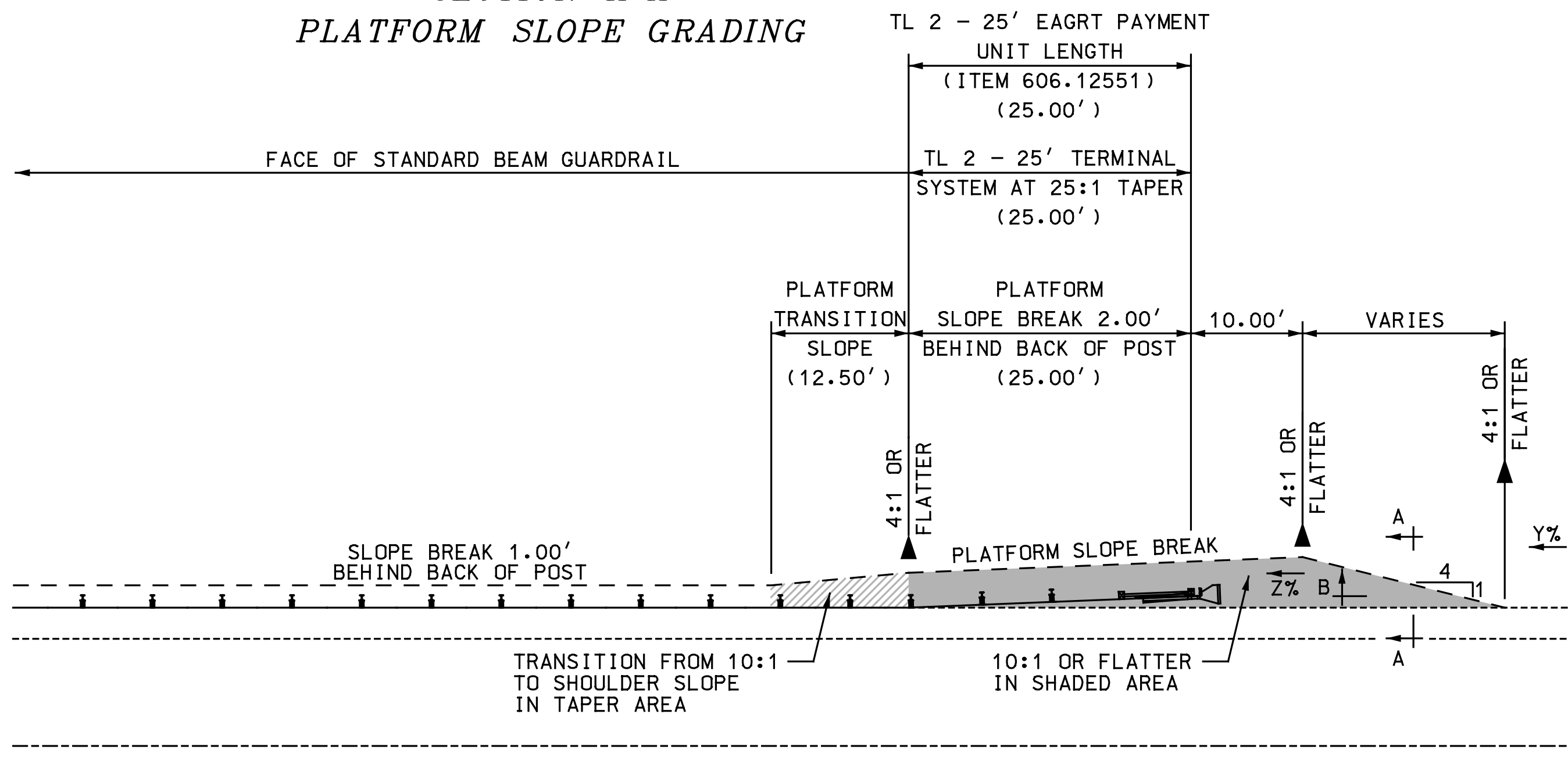


TERMINAL UNIT DELINEATION

NOT TO SCALE



X% = LONGITUDINAL GRADE OF ROADWAY SLOPE IN ADVANCE OF PLATFORM
Y% = LONGITUDINAL GRADE OF PLATFORM APPROACH
Z% = LONGITUDINAL GRADE OF PLATFORM



NOTES

1. THE TL 2 - 25' SYSTEM IS A 25' ENERGY ABSORBING GUARDRAIL TERMINAL (EAGRT) UNIT ONLY TO BE USED WHEN SITE CONDITIONS RESTRICT THE USE OF A STANDARD TL 2 SYSTEM.
2. WHEN POSSIBLE, PROVIDE 16' MINIMUM CLEARANCE BETWEEN ROADWAY CENTERLINE AND FACE OF STANDARD BEAM GUARDRAIL.
3. THE PREFERRED GRADING LAYOUT SHOULD BE USED ON ALL NEW CONSTRUCTION, AS WELL AS WHEN UPGRADING EXISTING TERMINALS WHEN PRACTICAL.
4. TL 2 - 25' EAGRTS SHALL ONLY BE USED IN AREAS WITH DESIGN SPEEDS OF 45 MPH AND UNDER.

ITEM 203.5572 - EAGRT PLATFORM
ALTERNATE, TL 2 - 25'

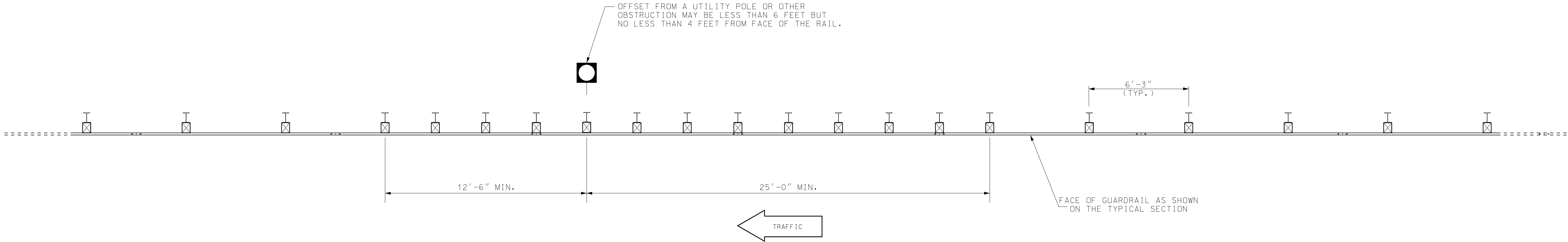
REV.		DESCRIPTION	DATE
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PROJECT NO. 19.918109.01	
SHEET NO. 9	
SHEET 9 OF 54	

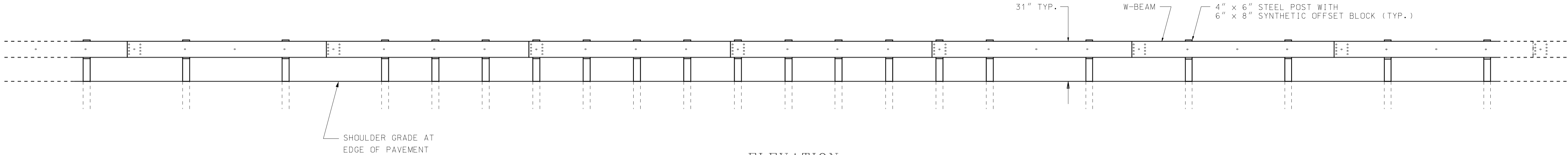
TOWN OF SALEM SALEM, NEW HAMPSHIRE	
BRIDGE STREET OVER SPICKET RIVER	
ROADWAY DETAILS (1 OF 7)	

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PLAN VIEW



ELEVATION

GENERAL NOTES

- 1) THIS TREATMENT IS ONLY TO BE USED WHEN THE OBSTRUCTION CANNOT PRACTICALLY BE MOVED OR OTHERWISE BE MADE SAFE WITHIN THE ZONE OF INTRUSION AS NORMALLY REQUIRED. ADDITIONAL ITEMS NEEDED TO CONSTRUCT THIS DETAIL WILL BE PAID FOR UNDER:
- 2) ITEM 606.012 - W6x9 STEEL POST REPLACEMENT FOR BEAM GUARDRAIL POSTS.
ITEM 606.0122 - W6x9 STEEL POST ASSEMBLIES FOR BEAM GUARDRAIL POSTS.
- 3) DETAIL ABOVE REFLECTS USE OF GUARDRAIL BEAM PANELS WITH HOLES FOR ATTACHING POSTS AT 3'-1 1/2" C.C. SPACING.
- 4) 12'-6" W-BEAM PANELS SHOWN, 25'-0" ALLOWED.

MID-SPLICE W-BEAM
GUARDRAIL STIFFENING DETAIL

NOT TO SCALE

REV.	DESCRIPTION	DRW CHG BY	DATE
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NH001 BRIDGE NO. 115/097	DESIGNED KMW	DRAWN KMW	CHECKED SBH
FILENAME 91810901DT0	MODEL NAME DT02	SCALE AS SHOWN	DATE AUGUST 2025



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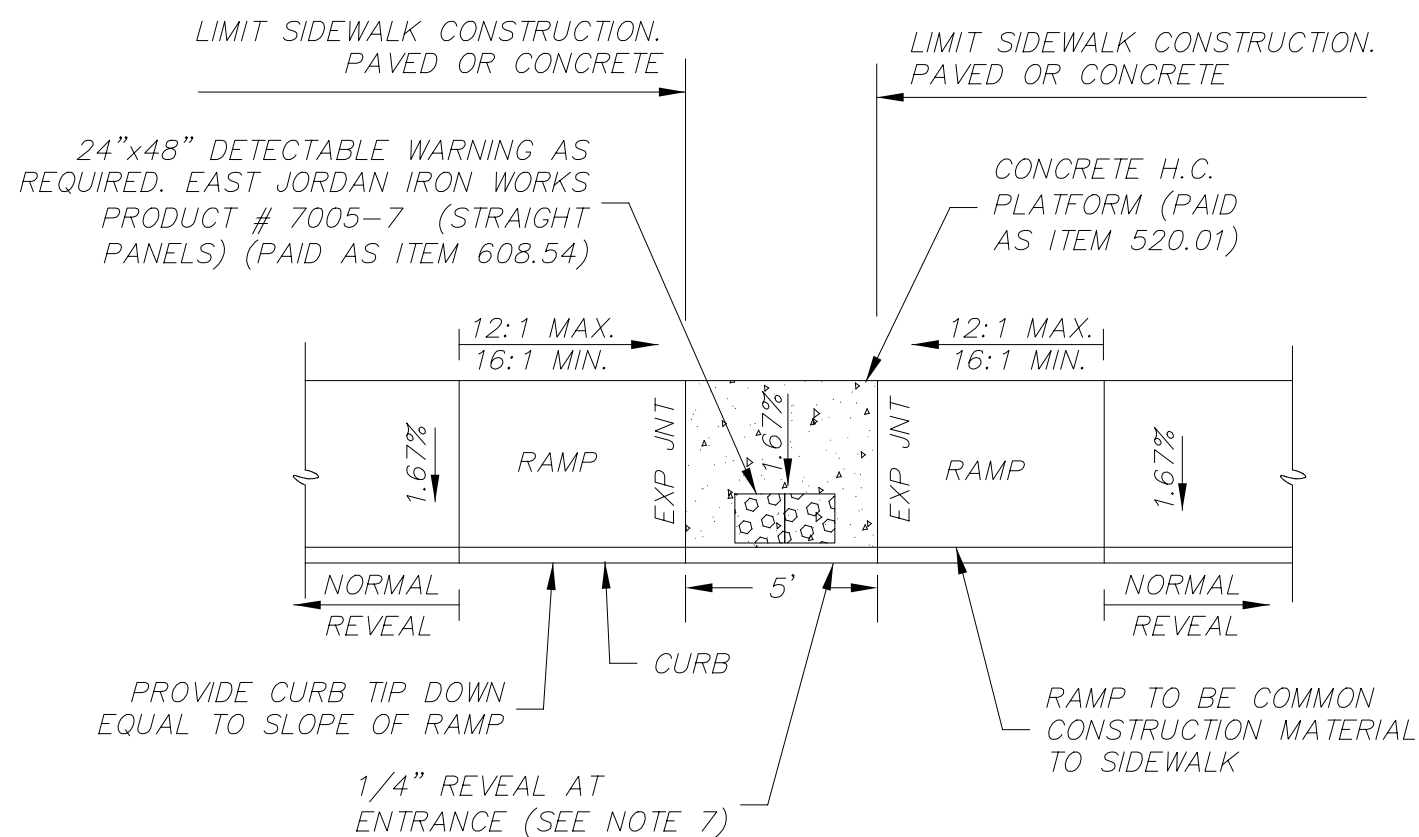
TOWN OF SALEM SALEM, NEW HAMPSHIRE
BRIDGE STREET OVER SPICKET RIVER
ROADWAY DETAILS (2 OF 7)

PROJECT NO. 19.918109.01

SHEET NO.

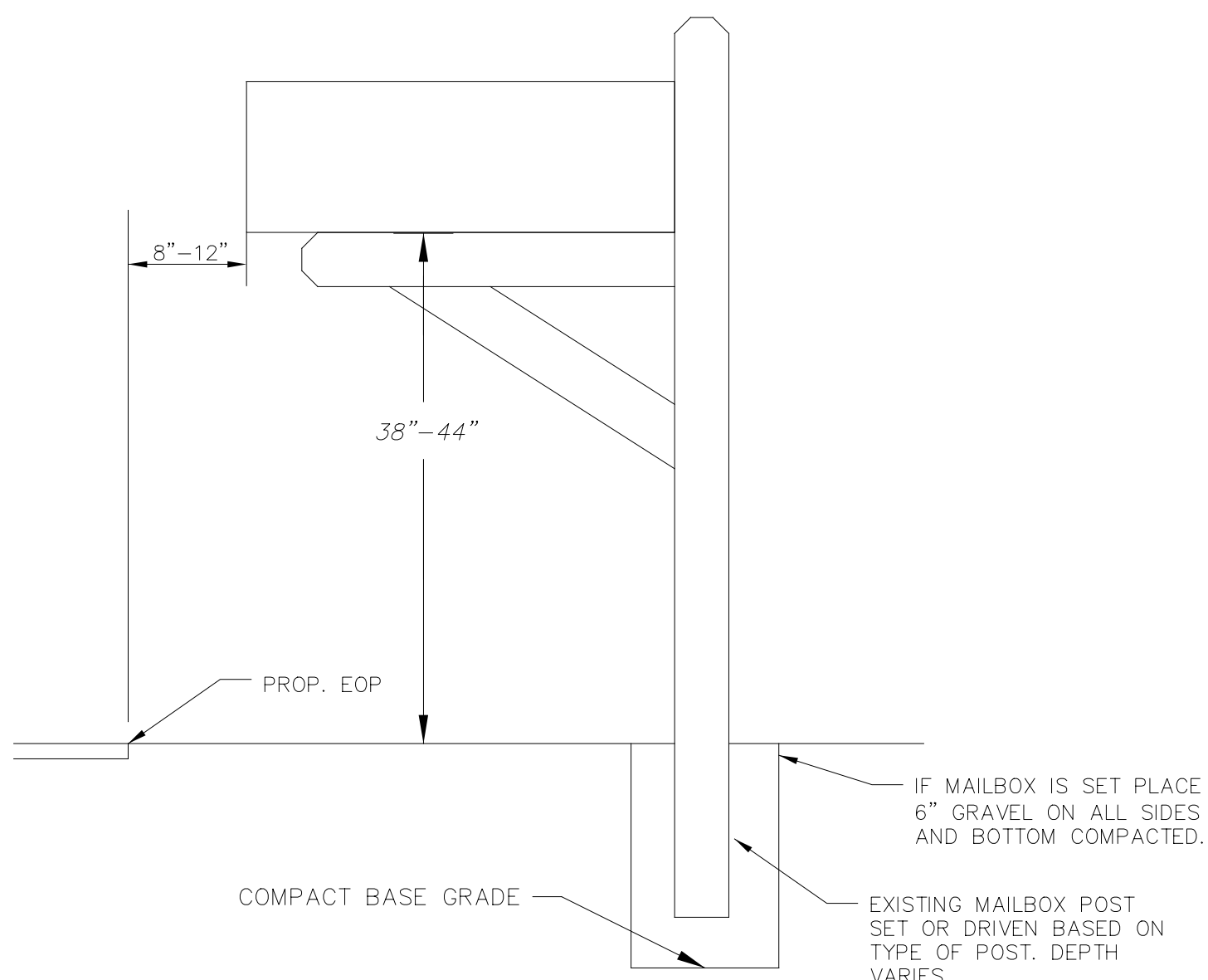
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SHEET 10 OF 54



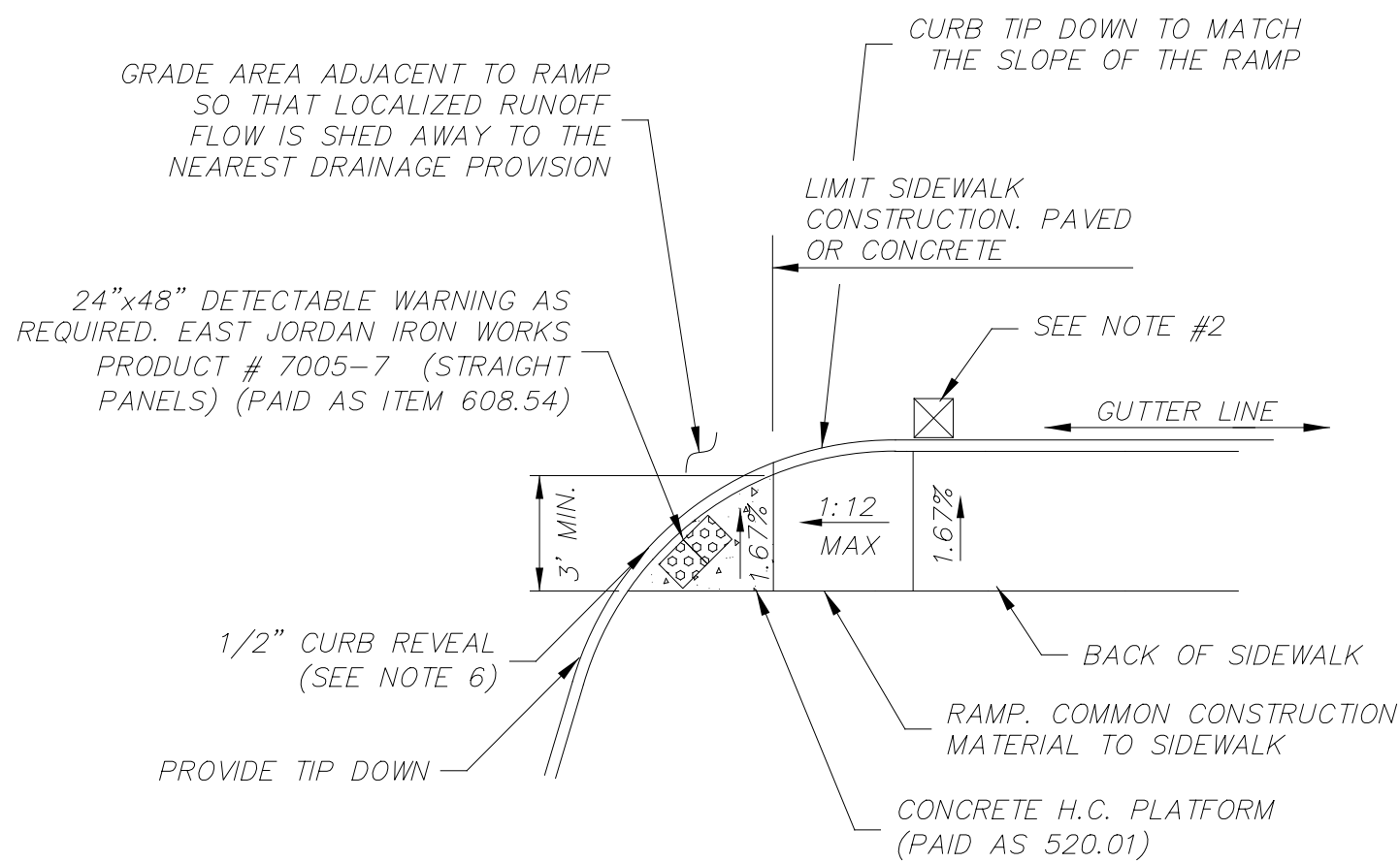
NOTES:

1. REFERENCE NHDOT MATERIAL SPECIFICATIONS. ALL MATERIALS SHALL CONFORM TO APPLICABLE NHDOT MATERIAL SPECIFICATIONS.
2. REFERENCE CONCRETE SIDEWALK WITH GRANITE CURB DETAIL.
3. INTERCEPT DRAINAGE ALONG THE CURB IN ADVANCE OF THE RAMP.
4. CURB RAMPS SHALL COMPLY WITH SECTION 4.7 OF THE AMERICANS WITH DISABILITIES ACT.
5. SIDEWALK CROSS SLOPE NOT TO EXCEED 2% IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT.
6. CONCRETE SHALL BE CURED AND TREATED 4,000 PSI, AIR ENTRAINED, BROOM FINISHED (SO AS TO BE SLIP RESISTANT) WITH TOOLED EDGES. SURFACE TREATMENT IS INCIDENTAL TO THE SIDEWALK ITEM.
7. SIDEWALK ENTRANCE SHALL HAVE A $\frac{1}{4}$ " CURB REVEAL WITH 2:1 BEVEL IN ACCORDANCE WITH ADA DESIGN GUIDELINES.



NOTES:

1. REMOVE AND RESET MAILBOXES SHALL ONLY BE APPLICABLE IF THE EXISTING MAILBOX IS CLOSER THAN THE MINIMUM DISTANCE TO EDGE OF PAVE AS A RESULT OF CONSTRUCTION. NOT ALL MAILBOXES SHALL BE RESET.
2. ELEVATION OF MAILBOX IS MEASURED FROM THE NEW EDGE OF PAVEMENT REGARDLESS OF WHETHER CURB HAS BEEN INSTALLED.
3. WHERE NEW POSTS ARE REQUIRED CONTRACTOR SHALL PROVIDE 4x4 P.T. POST SIMILAR TO POST ASSEMBLY SHOWN IN THIS DETAIL. NEW POLES ARE SUBSIDIARY.
4. WHERE EXISTING MAILBOX IS SET IN CONCRETE THEN THE CONTRACTOR SHALL DUPLICATE THE EXISTING CONDITION WITH NEW CONCRETE (INCIDENTAL).



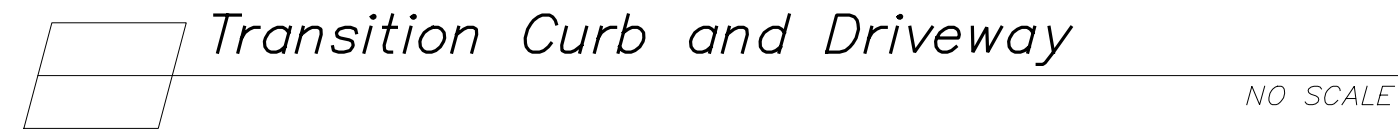
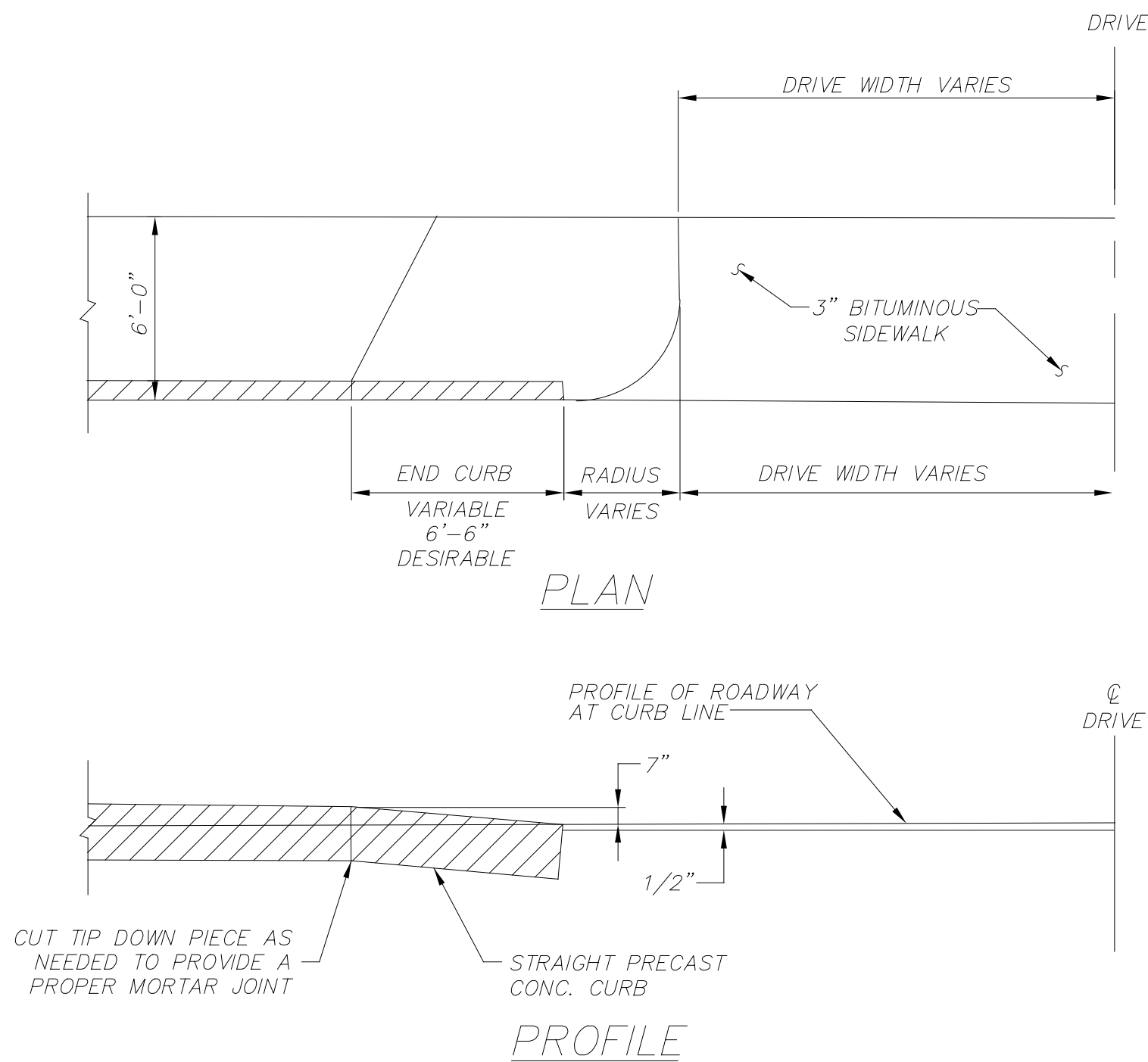
NOTES:

1. REFERENCE NHDOT MATERIAL SPECIFICATIONS. ALL MATERIALS SHALL CONFORM TO APPLICABLE NHDOT MATERIAL SPECIFICATIONS.
2. REFERENCE CONCRETE SIDEWALK WITH GRANITE CURB DETAIL.
3. INTERCEPT DRAINAGE ALONG THE CURB IN ADVANCE OF THE RAMP.
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6. CONCRETE SHALL BE 4,000 PSI, AIR ENTRAINED, BROOM FINISHED (SO AS TO BE SLIP RESISTANT) WITH TOOLED EDGES. SURFACE TREATMENT IS INCIDENTAL TO THE SIDEWALK ITEM.
7. SIDEWALK ENTRANCE SHALL HAVE A $\frac{1}{4}$ " CURB REVEAL WITH 2:1 BEVEL IN ACCORDANCE WITH ADA DESIGN GUIDELINES.



NOTES:

1. SIGNS SHALL MEET THE REQUIREMENTS OF THE CURRENT EDITION THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
2. SIGNS SHALL BE GREEN WITH WHITE LETTERS. NO BORDER.
3. THE FIRST LETTER OF THE NAME SHALL BE 6" UPPER CASE. THE REMAINING LETTERS SHALL BE 4.5" LOWER CASE.
4. THE FIRST LETTER OF ROAD INDICATORS (AVE, ST, RD) SHALL BE 4". THE REMAINING LETTERS SHALL BE 3.5".
5. TOP AND BOTTOM EDGES OF THE SIGN SHALL BE EXTRUDED CONSTRUCTION.



NOTE:

1. THE SIDEWALK, RAMP, AND CURB DETAILS ON THIS SHEET SHALL GOVERN UNLESS NOTED OTHERWISE. REFERENCE THE NHDOT SIDEWALK, RAMP, AND CURB DETAILS FOR ADDITIONAL INFORMATION AS MAY BE REQUIRED OR AS DIRECTED BY THE ENGINEER.

TOWN OF SALEM

SALEM, NEW HAMPSHIRE

BRIDGE STREET OVER SPICKET RIVER

ROADWAY DETAILS (5 OF 7)

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PROJECT NO.

19.918109.01

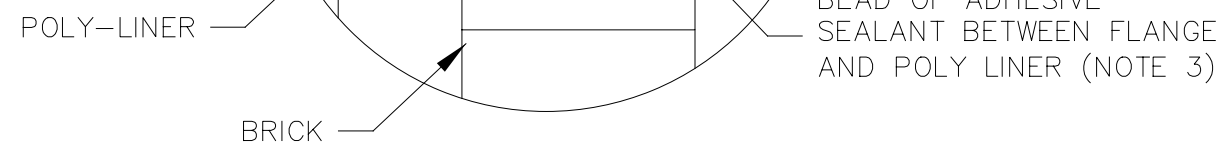
SHEET NO.

13

SHEET 13 OF 54



3. ALL CATCH BASINS SHALL BE OUTFITTED WITH A POLYETHYLENE LINER. DOWNSPOUT SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
4. PLACE A CONTINUOUS BEAD OF AN APPROVED BONDING ADHESIVE SEALANT BETWEEN FRAME AND POLYETHYLENE SHEET AND AT THE INSIDE JOINT AFTER ASSEMBLY IS COMPLETE.
5. PLACE CLASS AA CONCRETE TO 2" BELOW THE TOP OF GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURE).
6. TRIM POLYETHYLENE BEYOND THE OUTSIDE EDGE OF BRICK TO PROVIDE A MORTAR CONNECTION BETWEEN THE FRAME AND BRICK. ALTERNATE TRIMMING METHODS MAY/SKALL BE REQUIRED BY THE OWNER WHEN USED WITH CURBING AND GUTTER INLETS.
7. THE CENTER OF THE GRATE & FRAME MAY BE SHIFTED A MAXIMUM OF 1" FROM THE CENTER OF THE DOWNSPOUT IN ANY DIRECTION.
8. BRICK MORTAR: COMPLETELY FILL AND TROWEL ANNULAR SPACE BETWEEN ALL BRICKS. MORTAR BED BETWEEN BRICK SHALL BE 1/4" TO 1/2" THICK. FACE JOINTS SHALL NOT BE LESS THAN 1/8".
9. BRICK SHALL BE AASHTO M91 GRADE SS SEWER BRICK WITH 3%-4% MAX ABSORPTION DURING THE 5-HOUR BOIL TEST.

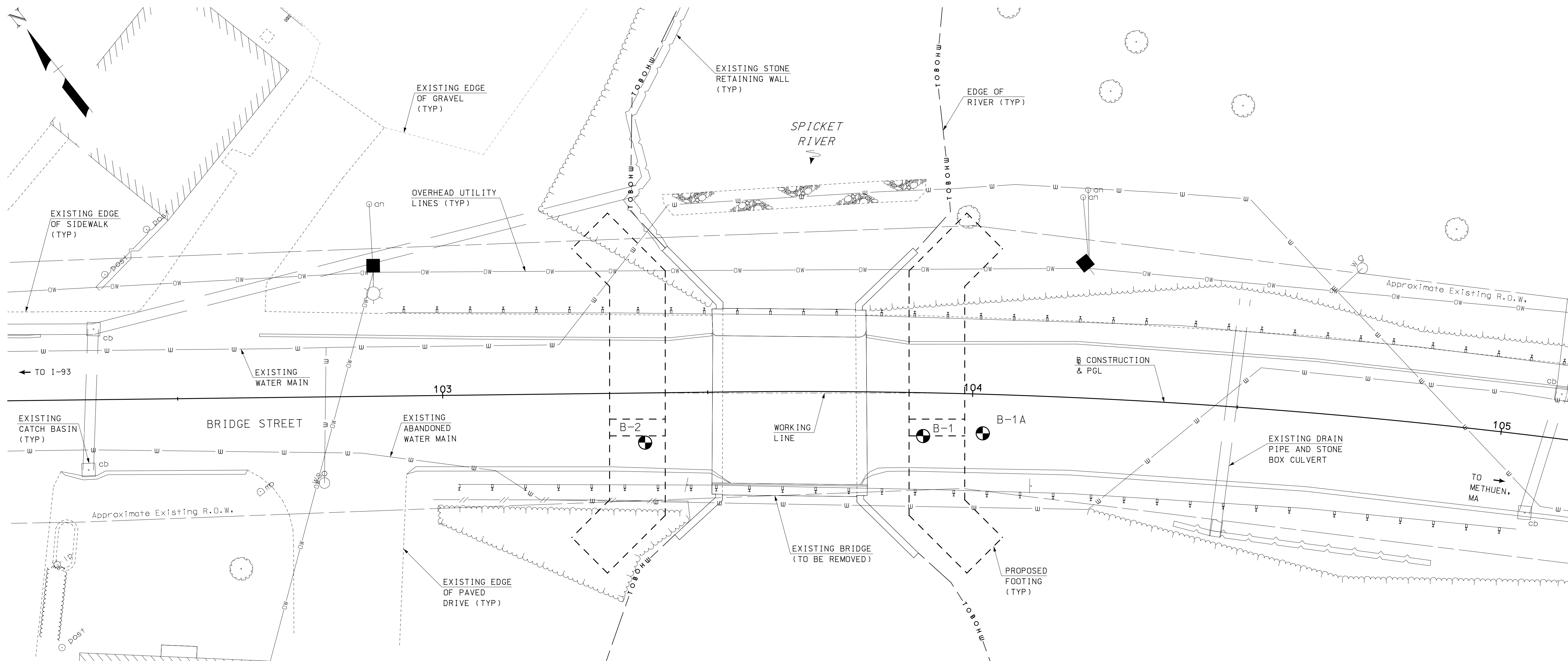


1. REFERENCE NHDOT SECTION 604 AND TOWN OF SALEM SUPPLEMENTAL SPECIFICATIONS TO STANDARD REQUIREMENTS.
2. PAVEMENT REPAIR IN EXISTING ROADWAYS SHALL CONFORM TO STREET OPENING REGULATIONS.
3. ALL LOCAL STATE AND FEDERAL SAFETY STANDARDS SHALL BE STRICTLY ADHERED TO.
4. NEW ROADWAY CONSTRUCTION SHALL CONFORM TO TOWN OF SALEM SUBDIVISION REQUIREMENTS.
5. TRENCH PATCH: AFTER THE BASE COURSE HAS BEEN ROLLED TO THE REQUIRED GRADE, ANY BROKEN OR IRREGULAR EDGES OF THE EXISTING PAVEMENT SHALL BE SAW CUT IN STRAIGHT LINES LEAVING A SOUND VERTICAL FACE 24-INCHES BACK FROM THE EDGE OF THE TRENCH OR OTHER EXCAVATIONS TO ACCEPT PLACEMENT OF A 24-INCH MINIMUM OVERLAP OF BITUMINOUS BASE COURSE PAVEMENT ON UNDISTURBED MATERIAL.
6. BITUMINOUS PAVEMENT, DEPTH EQUAL TO EXISTING PAVEMENT WITH 4.5" MIN. (1.5" OF $\frac{1}{2}$ " WEARING, 3" OF $\frac{3}{4}$ " BINDER). PAVEMENT SHALL CONFORM TO NHDOT ITEM 403.11.
7. DAMAGED OR OTHERWISE DEFICIENT PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
8. INSPECTION: FOLLOWING INSTALLATION DRAIN LINES SHALL BE CLEANED AND VISUALLY INSPECTED. PIPES SHALL BE TRUE TO LINE AND GRADE PRIOR TO ACCEPTANCE AND USE.
9. UNSUITABLE MATERIAL & OVER EXCAVATION: ANY EXCAVATION OUTSIDE OF DEFINED PAY LIMIT SHALL BE STRICTLY COORDINATED AND MEASURED WITH THE ENGINEER FOR PAYMENT. ANY MATERIAL REMOVED WITHOUT PRIOR AUTHORIZATION SHALL NOT BE PAID. EXCAVATION AREAS SHALL BE BACKFILLED WITH APPROPRIATE BEDDING MATERIALS. UNSUITABLES WITHIN TRENCH PAY LIMITS ARE SUBSIDIARY.
10. MATERIAL SHALL BE REPLACED IN KIND WHENEVER POSSIBLE.
11. SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL AND ALL ROCKS OVER SIX INCHES IN THE LARGEST DIMENSION, OR ANY MATERIAL WHICH, AS DETERMINED BY THE TOWN OF SALEM DEPARTMENT OF ENGINEERING, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION. SUITABLE MATERIAL SHALL BE PLACED IN 6" LIFTS AND THOROUGHLY COMPACTED.
12. COMPACTION: BACKFILL OF THE TRENCHES SHALL BE COMPACTED TO TO 95% MAX. DRY DENSITY UNDER ALL PAVED AREAS AND 92% MAX. DRY DENSITY UNDER OTHER AREAS IN ACCORDANCE WITH NHDOT STANDARD SPECIFICATIONS – SECTION 304.
13. IF TRENCH BOTTOM IS DISTURBED THEN CONTRACTOR SHALL COMPACT AS APPROPRIATE.
14. ENGINEER SHALL DETERMINE AT THE TIME OF CONSTRUCTION IF STONE IN SHALLOW TRENCHES SHALL BE WRAPPED IN FABRIC WHERE FIELD CONDITIONS DICTATE. FABRIC IS SUBSIDIARY TO PIPE ITEM NUMBER.
15. WHERE ROCK IS ENCOUNTERED IN TRENCH EXCAVATION. ALLOWABLE PAY LIMIT SHALL BE AS DEFINED IN THE CHART SHOWN IN THIS DETAIL TO 12-INCHES BELOW PIPE.
16. CORES: WHERE IT IS NECESSARY TO CORE AN EXISTING STRUCTURE THE CORE SHALL BE COMPLETED WITH A CIRCULAR HOLE SAW AND SHALL BE LARGE ENOUGH TO RECEIVE THE PIPE AND NEOPRENE BOOT. CRUDE METHODS WITH A PIPE SAW, SLEDGE HAMMER OR OTHER TOOLS ARE UNACCEPTABLE.
17. PAYMENT OF 304.4 SHALL BE PART OF ROADWAY BOX EXCAVATION AFTER DRAINAGE INSTALLATION. NO SEPARATE PAYMENT SHALL BE MADE DURING TRENCH ACTIVITIES.



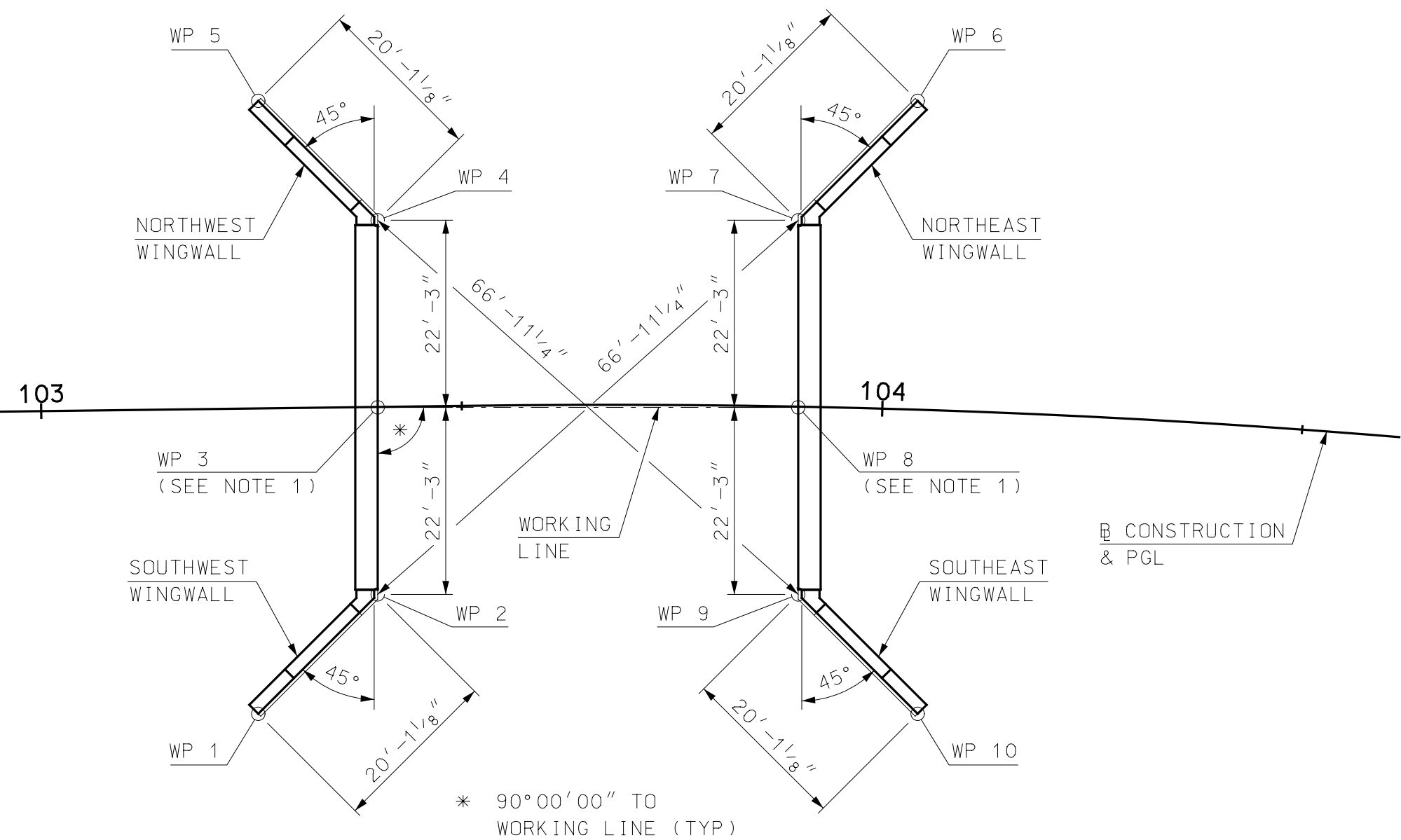
1. ALL STANDARD CATCH BASINS SHALL BE OUTFITTED WITH A POLYETHYLENE LINER DOWNSPOUT. EXCEPTIONS MAY APPLY. REFER TO SPECIFIC STRUCTURE TYPE AND CORRESPONDING CONSTRUCTION DETAILS (I.E. DOUBLE GRATE CB, "C-TOP" CB, DROP INLET, ETC.).
2. PLACE MORTAR TO 4" BELOW THE TOP OF GRATE ELEVATION (SUBSIDIARY TO STRUCTURE ITEM).
3. BRICK MORTAR: COMPLETELY FILL AND TROWEL ANNULAR SPACE BETWEEN ALL BRICKS. MORTAR BED BETWEEN BRICK SHALL BE $\frac{1}{4}"$ TO $\frac{1}{2}"$ THICK. FACE JOINTS SHALL AVERAGE $\frac{1}{4}"$ BUT NOT BE LESS THAN $\frac{1}{8}"$.
4. DO NOT PLASTER OR MORTAR OVER BRICK WORK. ALL JOINTS SHALL BE CLEAN AND PROPERLY POINTED.
5. BRICK SHALL BE ASHTO M91 GRADE SS SEWER BRICK WITH 3%-4% MAX ABSORPTION DURING THE 5-HOUR BOIL TEST. CONCRETE GRADE RINGS SHALL NOT BE ALLOWED.
6. DMH & SEWER FRAME AND COVER SHALL BE NEEHAH MODEL #R-1743. DMH SHALL READ "DRAIN". SMH SHALL READ "SEWER". CB FRAME AND GRATE SHALL BE NEEHAH MODEL #R-3570. DOUBLE GRATES SHALL BE EJ MODEL #0MA52000066.
7. ALL CATCH BASIN FRAMES (SINGLE AND DOUBLE) INSTALLED AT GRANITE CURBING LOCATIONS SHALL BE 3-FLANGED. ALL CATCH BASIN FRAMES (SINGLE AND DOUBLE) INSTALLED WITH NO CURBING SHALL BE 4-FLANGED.
8. PLACE CLASS AA CONCRETE TO 2" BELOW THE TOP OF GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURE).

<div>  <div> <div>HOYLE</div> <div>TANNER</div> </div> </div> <p> 150 Dow Street • Manchester, NH 03301 (603) 669-5555 • www.hoyletanner.com </p>	TOWN OF SALEM SALEM, NEW HAMPSHIRE		PROJECT NO. 19.918109.01	SHEET NO. 15	SHEET 15 OF 54
	BRIDGE STREET OVER SPICKET RIVER				
	ROADWAY DETAILS (7 OF 7)				
	PROJECT NO. 19.918109.01				
	SHEET NO. 15				



WORKING POINT COORDINATES		
WP	NORTHING	EASTING
1	105271.7661	1109524.6413
2	105274.1129	1109544.5930
3	105291.5763	1109558.3804
4	105309.0396	1109572.1679
5	105328.9913	1109569.8210
6	105280.4034	1109631.3631
7	105278.0566	1109611.4114
8	105260.5932	1109597.6239
9	105243.1299	1109583.8365
10	105223.1782	1109586.1833

BORING LOCATIONS TABLE				
NO.	STATION	OFFSET	NORTHING	EASTING
B-1	103+91	6' RT	105254	1109593
B-1A	104+02	7' RT	105247	1109602
B-2	103+38	9' RT	105285	1109551

[illegible]

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TOWN OF SALEM SALEM, NEW HAMPSHIRE BRIDGE STREET OVER SPICKET RIVER BORING LOCATION PLAN AND SURVEY LAYOUT

8/26/2025 11:30:31 PM K:\1_PROJECTS\Salem-NH\19_918109_01-Bridge-Street-Spicket-River-Study-TO12-CADD\BRC-Details\91810901 Borings.dgn

APPROXIMATE
EXISTING
GROUND
EL 122.4±

BORING / WELL 19-27.GPJ SWICE TEMPLATE.GDT 2/26/20

		BORING LOG		BORING NO.: B-1					
		CLIENT: Hoyle, Tanner & Associates, Inc.		SHEET: 1 of 1					
		PROJECT: Bridge Replacement Project		PROJECT NO. 19-27					
		LOCATION: Bridge Street over Spicket River, Salem, NH		DATE START: 1/15/2020					
				DATE FINISH: 1/15/2020					
Drilling Information									
LOCATION: See Exploration Location Plan		ELEVATION (FT): N/A		TOTAL DEPTH (FT): 10.3					
DRILLING CO.: S. W. Cole Explorations, LLC		DRILLER: Brett Raiche		LOGGED BY: Corey Culligan					
RIG TYPE: Truck Mounted Diedrich D-50		AUGER ID/OD: N/A / N/A		DRILLING METHOD: Cased Boring					
HAMMER TYPE: Automatic / Automatic		HAMMER WEIGHT (lbs): 140 / 140		SAMPLER: Standard Split-Spoon					
HAMMER EFFICIENCY FACTOR:		HAMMER DROP (inch): 30 / 30		CASING ID/OD: 4 in / 4 1/2 in					
WATER LEVEL DEPTHS (ft): No free water observed.		CORE BARREL: N/A							
GENERAL NOTES:									
<div>KEY TO NOTES AND SYMBOLS:<div>Water Level ▽ At time of Drilling ▼ At Completion of Drilling ▼ After Drilling</div><div>D = Split Spoon Sample U = Thin Walled Tube Sample R = Rock Core Sample V = Field Vane Shear</div><div>Pen. = Penetration Length Rec. = Recovery Length bpf = Blows per Foot mpf = Minute per Foot</div><div>WOR = Weight of Rods WOH = Weight of Hammer RQD = Rock Quality Designation PID = Photoionization Detector</div><div>S_v = Field Vane Shear Strength, kips/sq.ft. q_u = Unconfined Compressive Strength, kips/sq.ft. Ø = Friction Angle (Estimated) N/A = Not Applicable</div></div>									
Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION			Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks
			Sample No.	Type	Depth (ft)				
			1D		0-2	24/8	8-10-8-6		
	5		2D		5-7	24/6	1-1-2-3		
									Obstruction at approximately 7'
	10		34		10-10.3	4/4	50/4"		
Auger Refusal at 10.3 feet Cobble or Boulder. Boring location offset									
Stratification lines represent approximate boundary between soil types; transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.									
BORING NO.: B-1									

BORING LOGS
NOT TO SCALE

APPROXIMATE
EXISTING
GROUND
EL 122.3±

TOP OF
FOOTING
EL 106.02

MAXIMUM
BOTTOM OF
FOOTING
EL 103.02

BORING / WELL 19-27.GPJ SWICE TEMPLATE.GDT 2/26/20

		BORING LOG		BORING NO.: B-1A					
		CLIENT: Hoyle, Tanner & Associates, Inc.		SHEET: 1 of 1					
		PROJECT: Bridge Replacement Project		PROJECT NO. 19-27					
		LOCATION: Bridge Street over Spicket River, Salem, NH		DATE START: 1/23/2020					
				DATE FINISH: 1/23/2020					
Drilling Information									
LOCATION: See Exploration Location Plan		ELEVATION (FT): N/A		TOTAL DEPTH (FT): 20.4					
DRILLING CO.: S. W. Cole Explorations, LLC		DRILLER: Corey Culligan		LOGGED BY: Corey Culligan					
RIG TYPE: Truck Mounted Diedrich D-50		AUGER ID/OD: N/A / N/A		DRILLING METHOD: Cased Boring					
HAMMER TYPE: Automatic / Automatic		HAMMER WEIGHT (lbs): 140 / 140		SAMPLER: Standard Split-Spoon					
HAMMER EFFICIENCY FACTOR:		HAMMER DROP (inch): 30 / 30		CASING ID/OD: 4 in / 4 1/2 in					
WATER LEVEL DEPTHS (ft): ▽ 10 ft Samples saturated below 10 feet.		CORE BARREL: N/A							
GENERAL NOTES:									
<div>KEY TO NOTES AND SYMBOLS:<div>Water Level ▽ At time of Drilling ▼ At Completion of Drilling ▼ After Drilling</div><div>D = Split Spoon Sample U = Thin Walled Tube Sample R = Rock Core Sample V = Field Vane Shear</div><div>Pen. = Penetration Length Rec. = Recovery Length bpf = Blows per Foot mpf = Minute per Foot</div><div>WOR = Weight of Rods WOH = Weight of Hammer RQD = Rock Quality Designation PID = Photoionization Detector</div><div>S_v = Field Vane Shear Strength, kips/sq.ft. q_u = Unconfined Compressive Strength, kips/sq.ft. Ø = Friction Angle (Estimated) N/A = Not Applicable</div></div>									
Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION			Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks
			Sample No.	Type	Depth (ft)				
			1D		5-7	24/4	6-4-7-8		
	5								
			2D		10-12	24/4	35-36-31-50		
	10								Obstruction at approximately 7'
									Obstruction at approximately 9.5'
			3D		15-15.5	6/8	6-8-4-7/0"		
	15								
			4D		20-20.4	5/4	50/5"		
	20								
Split Spoon Refusal at 20.4 feet Probable bedrock or boulder.									
Stratification lines represent approximate boundary between soil types; transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.									
BORING NO.: B-1A									

REV.	DESCRIPTION	DRW	CHKD	BY	DATE	This document is prepared as an instrument of service and shall remain the property of Hoyle, Tanner. It may not be used, reproduced, disseminated or transferred in any manner, including electronically, for any other purpose than this project, without the written permission of Hoyle, Tanner.
NH001 BRIDGE NO. 115/097	FILENAME 91810901 Borings	DESIGNED KMW	91810901 Borings	DRAWN TAG	CHECKED JCR	DATE AUGUST 2025
<div><div>150 Dow Street • Manchester, NH 03301 (603) 669-5555 • www.hoyletanner.com</div></div>						
TOWN OF SALEM SALEM, NEW HAMPSHIRE BRIDGE STREET OVER SPICKET RIVER BORING LOGS (1 OF 2)						
PROJECT NO. 19.918109.01 SHEET NO. 17 SHEET 17 OF 54						


8/26/2025 11:30:43 PM K:\1_PROJECTS\Salem-NH\19_918109_01-Bridge-Street-Spicket-River-Study-TO12-CADD\BRC\Details\91810901 Borings.dgn

APPROXIMATE
EXISTING
GROUND
EL 123.4±

TOP OF
FOOTING EL
106.83

MAXIMUM
BOTTOM OF
FOOTING
EL 103.83

BORING / WELL 19-27 GPJ SWCE TEMPLATE.GDT 2/26/20

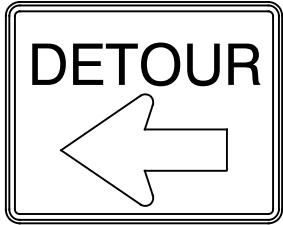
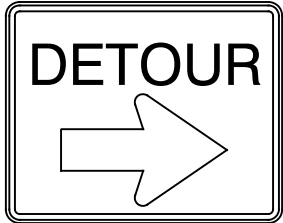
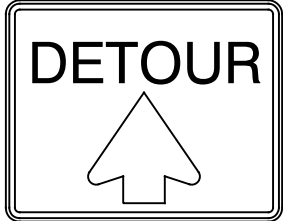





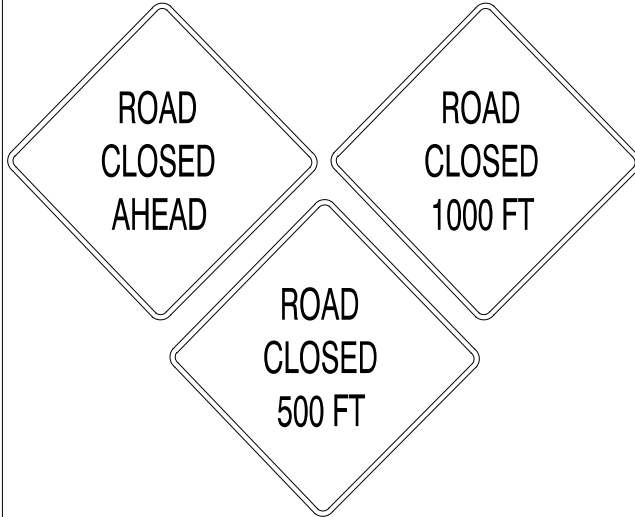
		BORING LOG		BORING NO.: B-2					
CLIENT: <u>Hoyle, Tanner & Associates, Inc.</u>		PROJECT: <u>Bridge Replacement Project</u>		SHEET: <u>1 of 1</u>					
LOCATION: <u>Bridge Street over Spicket River, Salem, NH</u>				PROJECT NO. <u>19-27</u>					
				DATE START: <u>1/24/2020</u>					
				DATE FINISH: <u>1/24/2020</u>					
Drilling Information									
LOCATION: <u>See Exploration Location Plan</u>		ELEVATION (FT): <u>N/A</u>		TOTAL DEPTH (FT): <u>28.0</u>					
DRILLING CO.: <u>S. W. Cole Explorations, LLC</u>		DRILLER: <u>Sam Shaw</u>		LOGGED BY: <u>Corey Culligan</u>					
RIG TYPE: <u>Truck Mounted Diedrich D-50</u>		AUGER ID/OD: <u>N/A / N/A</u>		DRILLING METHOD: <u>Cased Boring</u>					
HAMMER TYPE: <u>Automatic / Automatic</u>		HAMMER WEIGHT (lbs): <u>140 / 140</u>		SAMPLER: <u>Standard Split-Spoon</u>					
HAMMER EFFICIENCY FACTOR: <u></u>		HAMMER DROP (inch): <u>30 / 30</u>		CASING ID/OD: <u>4 in / 4 1/2 in</u>					
WATER LEVEL DEPTHS (ft): <u>▽ 12 ft</u> Samples saturated below 12 feet.		CORE BARREL: <u>NQ2 / 2</u>							
GENERAL NOTES:									
KEY TO NOTES AND SYMBOLS:									
<div>Water Level ▽ At time of Drilling ▼ At Completion of Drilling ▽ After Drilling</div> <div>D = Split Spoon Sample U = Thin Walled Tube Sample R = Rock Core Sample V = Field Vane Shear</div> <div>Pen. = Penetration Length Rec. = Recovery Length bpf = Blows per Foot mpf = Minute per Foot</div> <div>WOR = Weight of Rods WOH = Weight of Hammer RQD = Rock Quality Designation PID = Photoionization Detector</div> <div>S_v = Field Vane Shear Strength, kips/sq.ft. q_u = Unconfined Compressive Strength, kips/sq.ft. Ø = Friction Angle (Estimated) N/A = Not Applicable</div>									
Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION			Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks
			Sample No.	Type	Depth (ft)				
	5								
	10		1R	█	9-11	24/22			9.0 Boulder
	15		1D	⊗	12-14	24/6	6-9-14-15		11.0 Medium dense, brown SAND some gravel some silt
	20		2R	█	18-23	60/28	23		18.0 Bedrock
	25		3R	█	23-28	60/40	12		
Bottom of Exploration at 28.0 feet									
Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.									
BORING NO.: B-2									

BORING LOGS
NOT TO SCALE

REV.		DESCRIPTION	DRW. CHKD. BY	DATE
NH001 BRIDGE NO. 115/097		DESIGNED FILE NAME 91810901 Borings	DESIGNED KMW	This document is prepared as an instrument of service and shall remain the property of Hoyle, Tanner. It may not be used, reproduced, disseminated or transferred in any manner, including electronically, for any other purpose than this project, without the written permission of Hoyle, Tanner.
MODE NAME 91810901 Borings2	DRAWN TAG			
SCALE AS SHOWN	CHECKED JCR			
DATE AUGUST 2025				
<div>HOYLE TANNER 150 Dow Street • Manchester, NH 03301 (603) 669-5555 • www.hoyletanner.com</div>				
TOWN OF SALEM SALEM, NEW HAMPSHIRE BRIDGE STREET OVER SPICKET RIVER BORING LOGS (2 OF 2)				
PROJECT NO. 19.918109.01				
SHEET NO.				
18				
SHEET 18 OF 54				



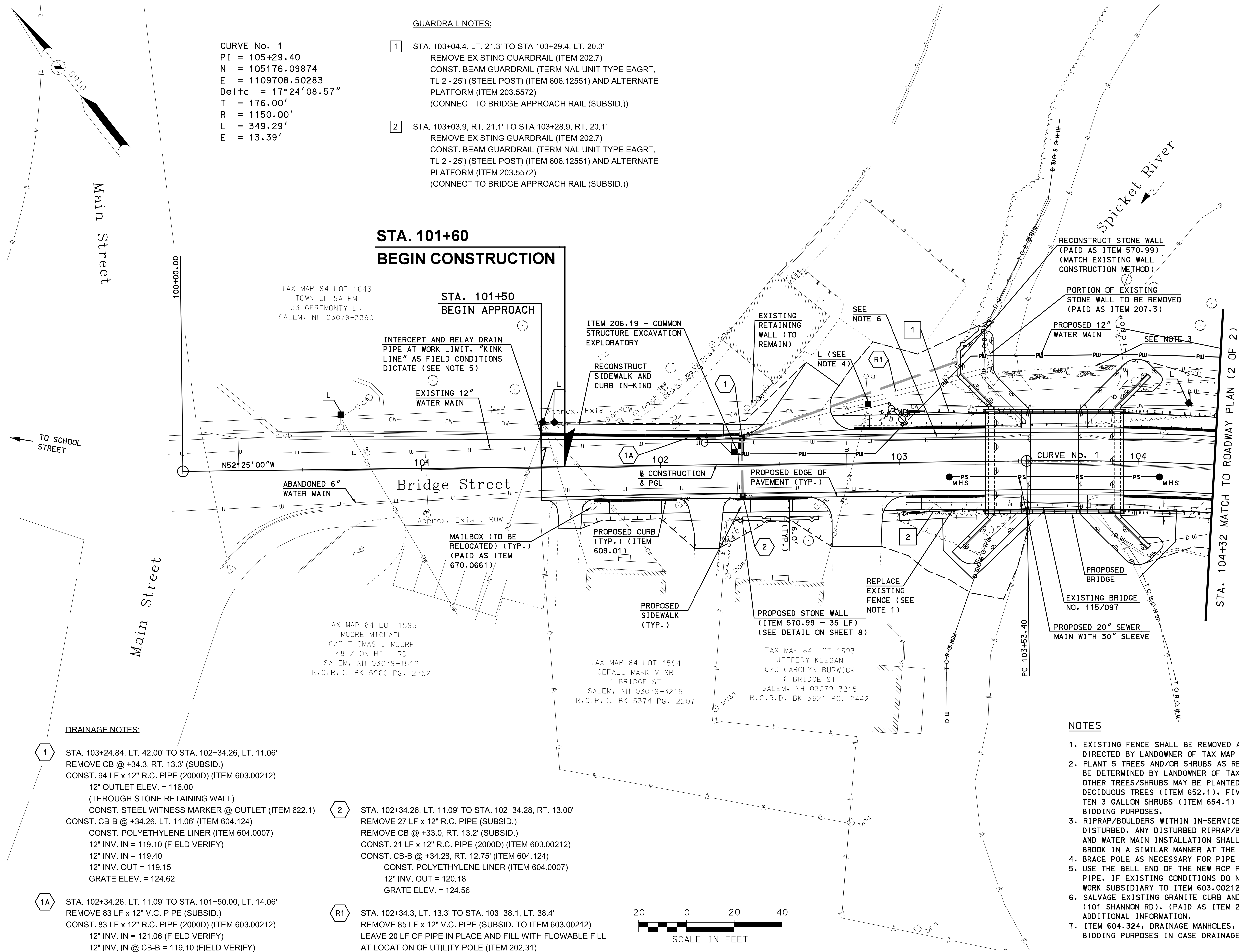
NOT TO SCALE

- | CONSTRUCTION SIGNS AND WARNING DEVICES (ITEM 619.1) | | | | | | | |
|---|---|-------------|---------|---------|---------------|--------------------|-------|
| TYPE | DESCRIPTION | SIZE
WxH | SQ. FT. | NO REQ. | TOTAL
AREA | POST | COLOR |
| M4-9L |  | 30" X 24" | 5 | 6 | 30 | 1 POST
PER SIGN | B/O |
| M4-9R |  | 30" X 24" | 5 | 7 | 35 | 1 POST
PER SIGN | B/O |
| M4-9S |  | 30" X 24" | 5 | 1 | 5 | 1 POST
PER SIGN | B/O |
| M4-8a |  | 24" X 18" | 3 | 2 | 6 | 1 POST
PER SIGN | B/O |
| R11-2B |  | 48" X 30" | 10 | 2 | 20 | * | B/W |
| R11-4 |  | 60" X 30" | 12.5 | 3 | 37.5 | * | B/W |
| SP-1 |  | 36" X 8" | 2 | 14 | 32.2 | ** | B/O |
| W20-2 |  | 36" X 36" | 9 | 2 | 18 | 1 POST
PER SIGN | B/O |
| W20-3 |  | 36" X 36" | 9 | 1 | 9 | 1 POST
PER SIGN | B/O |
| W20-3a | | 36" X 36" | 9 | 1 | 9 | 1 POST
PER SIGN | B/O |
| W20-3b | | 36" X 36" | 9 | 1 | 9 | 1 POST
PER SIGN | B/O |

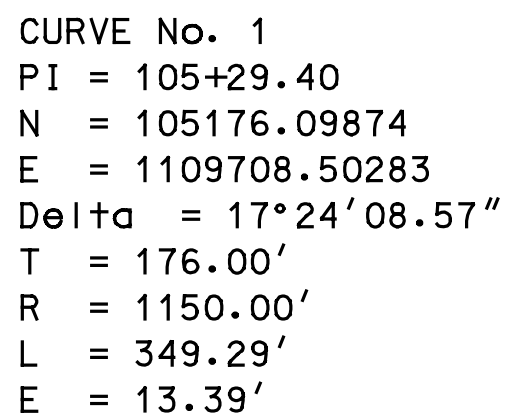
---	UNPAVED ROAD	—	PAVED ROAD
	TEMPORARY CONSTRUCTION SIGN	*	MOUNTED ON TYPE III BARRICADE
	TYPE III BARRICADE	**	MOUNTED ON POST WITH M4-9
	WORK AREA	B	BLACK
	DETOUR ROUTE	W	WHITE
	PORTABLE CHANGEABLE MESSAGE SIGN	O	ORANGE
		R	RED
		Y	YELLOW



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<div><div><div><div>HOYLE</div><div>TANNER</div></div></div><div>150 Dow Street • Manchester, NH 03301 (603) 669-5555 • www.hoyletanner.com</div></div>			PROJECT NO. 19.9181109.01		SHEET NO. 20			
TOWN OF SALEM			REV.		DRW. CHKD. BY		DATE	
SALEM, NEW HAMPSHIRE			FILE NAME		DESIGNED			
BRIDGE STREET OVER SPICKET RIVER			91810901gerplans		KMW			
			MODEL NAME		DRAWN			
			GEN1		KMW			
			SCALE		CHECKED			
			AS SHOWN		SBH			
			DATE					
			AUGUST 2025					
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TAX MAP 84 LOT 1643
TOWN OF SALEM
33 GEREMONTY DR
SALEM, NH 03079-3390

TAX MAP 84 LOT 1644
DUBE ELIZABETH A
1 DOUGLAS DR
SALEM, NH 03079-3251
R.C.R.D. BK 4311 PG. 1361

TAX MAP 84 LOT 1644
DUBE ELIZABETH A
1 DOUGLAS DR
SALEM, NH 03079-3251
R.C.R.D. BK 4311 PG. 1361

GUARDRAIL NOTES:

- 3 STA. 104+12.5, LT. 20.0' TO STA 106+27.5, LT. 20.0'
REMOVE EXISTING GUARDRAIL (ITEM 202.7)
CONST. 206.25 LF 31" W-BEAM GUARDRAIL (STEEL POST)
(ITEM 606.18001)
(CONNECT TO BRIDGE APPROACH RAIL (SUBSID.))
CONST. MID-SPLICE W-BEAM GUARDRAIL STIFFENING FOR
UTILITY POLE AT STA. 104+20 AND 105+24 (SEE DETAIL)
STA. 106+27.5, LT. 20.0' TO STA 106+51.9, LT. 21.5'
REMOVE EXISTING FENCE (ITEM 202.8)
CONST. BEAM GUARDRAIL (TERMINAL UNIT TYPE EAGRT,
TL 2 - 25') (STEEL POST) (ITEM 606.12551) AND ALTERNATE
PLATFORM (ITEM 203.5572)
- 4 STA. 104+14.2, RT. 20.0' TO STA 104+96.8, RT. 20.0'
REMOVE EXISTING GUARDRAIL (ITEM 202.7)
CONST. 81.25 LF 31" W-BEAM GUARDRAIL (STEEL POST)
(ITEM 606.18001)
(CONNECT TO BRIDGE APPROACH RAIL (SUBSID.))
STA. 104+96.8, RT. 20.0' TO STA 105+22.1, RT. 20.7'
CONST. BEAM GUARDRAIL (TERMINAL UNIT TYPE EAGRT,
TL 2 - 25') (STEEL POST) (ITEM 606.12551)

STA. 107+50
END CONSTRUCTION

STA. 107+60
END APPROACH

TAX MAP 84 LOT 1692
ABDELSAAD DAWN MARIE & YOUSSEF W
2 DOUGLAS DR
SALEM, NH 03079-3252
R.C.R.D. BK 5695 PG. 1366

DRAINAGE NOTES:

- | | | | |
|---|---|----|---|
| 3 | STA. 104+97.00, LT. 34.38" TO STA. 104+97.00, LT. 12.75"
CONST. 20 LF x 12" R.C. PIPE (2000D) (ITEM 603.00212)
CONST. 12" CONCRETE HEADWALL @ +97.00, LT. 34.38" (ITEM 900.1)
12" OUTLET ELEV. = 115.40
CONST. STEEL WITNESS MARKER @ OUTLET (ITEM 622.1) | R2 | STA. 104+47.4, RT. 24.7' TO STA. 104+50.0, LT. 20.4'
REMOVE 42 LF X 30" RCP PIPE AND STONE BOX CULVERT (ITEM 202.42) |
| | CONST. CB-B @ +97.00, LT. 12.75" (ITEM 604.124)
CONST. POLYETHYLENE LINER (ITEM 604.0007)
12" INV. OUT = 115.60
GRATE ELEV. = 120.81 | R3 | STA 105+10.3, LT. 33.4' TO STA. 105+06.2, RT. 14.6'
REMOVE 48 LF x 12" HDPE PIPE (ITEM 202.41)
REMOVE CB @ +10.5, LT. 8.4' (ITEM 202.5)
REMOVE CB @ +06.2, RT. 14.6' (ITEM 202.5) |
| 4 | STA. 104+97.00, RT. 37.87' TO STA. 104+97.00, RT. 12.75"
CONST. 23 LF x 12" R.C. PIPE (2000D) (ITEM 603.00212)
CONST. 12" CONCRETE HEADWALL @ +97.00, RT. 37.87' (ITEM 900.1)
12" OUTLET ELEV. = 115.30
CONST. STEEL WITNESS MARKER @ OUTLET (ITEM 622.1) | | <u>GENERAL DRAINAGE NOTES:</u>
1. CATCH BASINS TO BE SET SUCH THAT GRATE WILL BE 1/2" BELOW FINISHED GRADE.
2. CONTRACTOR SHALL COORDINATE GUARDRAIL POSTS AND DRAINAGE LAYOUT PRIOR TO INSTALLATION OF DRAINAGE STRUCTURE. |
| | CONST. CB-B @ +97.00, RT. 12.75" (ITEM 604.124)
CONST. POLYETHYLENE LINER (ITEM 604.0007)
12" INV. OUT = 115.60
GRATE ELEV. = 120.81 | | |

GENERAL DRAINAGE NOTES:

1. CATCH BASINS TO BE SET SUCH THAT GRATE WILL BE 1/2" BELOW FINISHED GRADE.
2. CONTRACTOR SHALL COORDINATE GUARDRAIL POSTS AND DRAINAGE LAYOUT PRIOR TO INSTALLATION OF DRAINAGE STRUCTURE.

TAX MAP 84 LOT 1591
STEVEN THOMAS R TRUSTEE
C/O THOMAS R STEVENS
INTER VIVOS TRUST
PO BOX 1654
SALEM, NH 03079-1142
R.C.R.D. BK 5689 PG. 0045

NOTES

1. WATER LINE LOCATIONS SHALL BE VERIFIED BEFORE FINAL CATCH BASIN LAYOUT IS COMPLETED.
2. CONTRACTOR TO REMOVE ALL FALLEN OR DEAD TREES FROM THE SPICKET RIVER AND ALONG THE NORTHEAST BANKS AND ALL TREE LOGS WITHIN PROJECT CLEARING LIMITS (SUBSIDIARY TO ITEM 201.1).
3. NEW CHAIN LINK FENCE SHALL BE SET AT LOCATION AS DIRECTED BY LANDOWNER OF TAX MAP 84/LOT 1644 PROPERTY OWNER (PAID AS ITEM 607.240, CHAIN LINK FENCE WITH ALUMINUM COATED STEEL FABRIC, 4' HIGH). WHERE THE LAND OWNER DOES NOT WANT THE FENCE THEN THE EXISTING FENCE SHALL BE REMOVED AND DISCARDED (INCIDENTAL TO ITEM 607.240).
4. SALVAGE EXISTING GRANITE CURB AND DELIVER TO TOWN AT TRANSFER STATION (101 SHANNON RD). (PAID AS ITEM 202.6). SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

[illegible]

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TOWN OF SALEM
SALEM, NEW HAMPSHIRE
GE STREET OVER SPICKET RIVER

ROADWAY PLAN (2 OF 2)

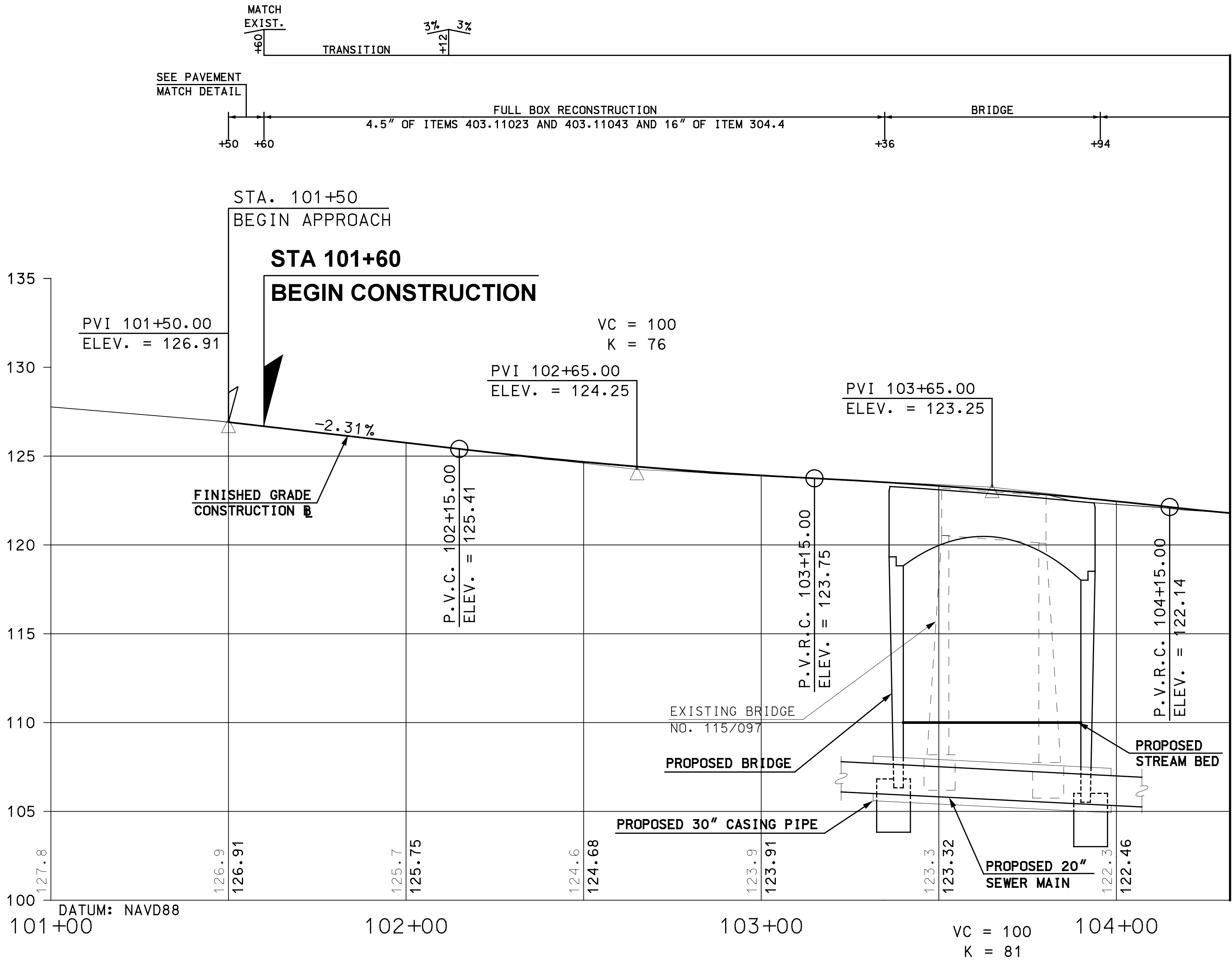
PROJECT NO. 19.918109.01

SHEET NO.

21

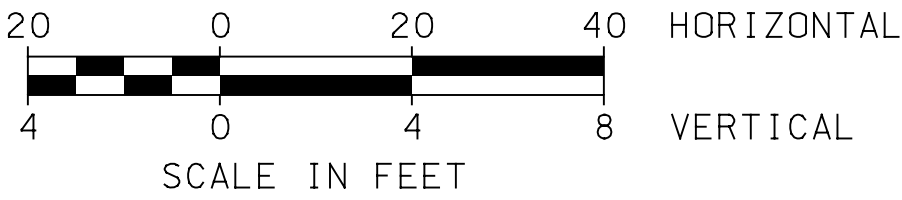
SHEET 21 OF 54

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BRIDGE STREET PROFILE

STA. 104+32 MATCH TO ROADWAY PROFILE (2 OF 2)



PROJECT NO. 19.918109.01

SHEET NO. 22

SHEET 22 OF 54

TOWN OF SALEM
SALEM, NEW HAMPSHIRE
BRIDGE STREET OVER SPICKET RIVER
ROADWAY PROFILE (1 OF 2)

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REV. DESCRIPTION

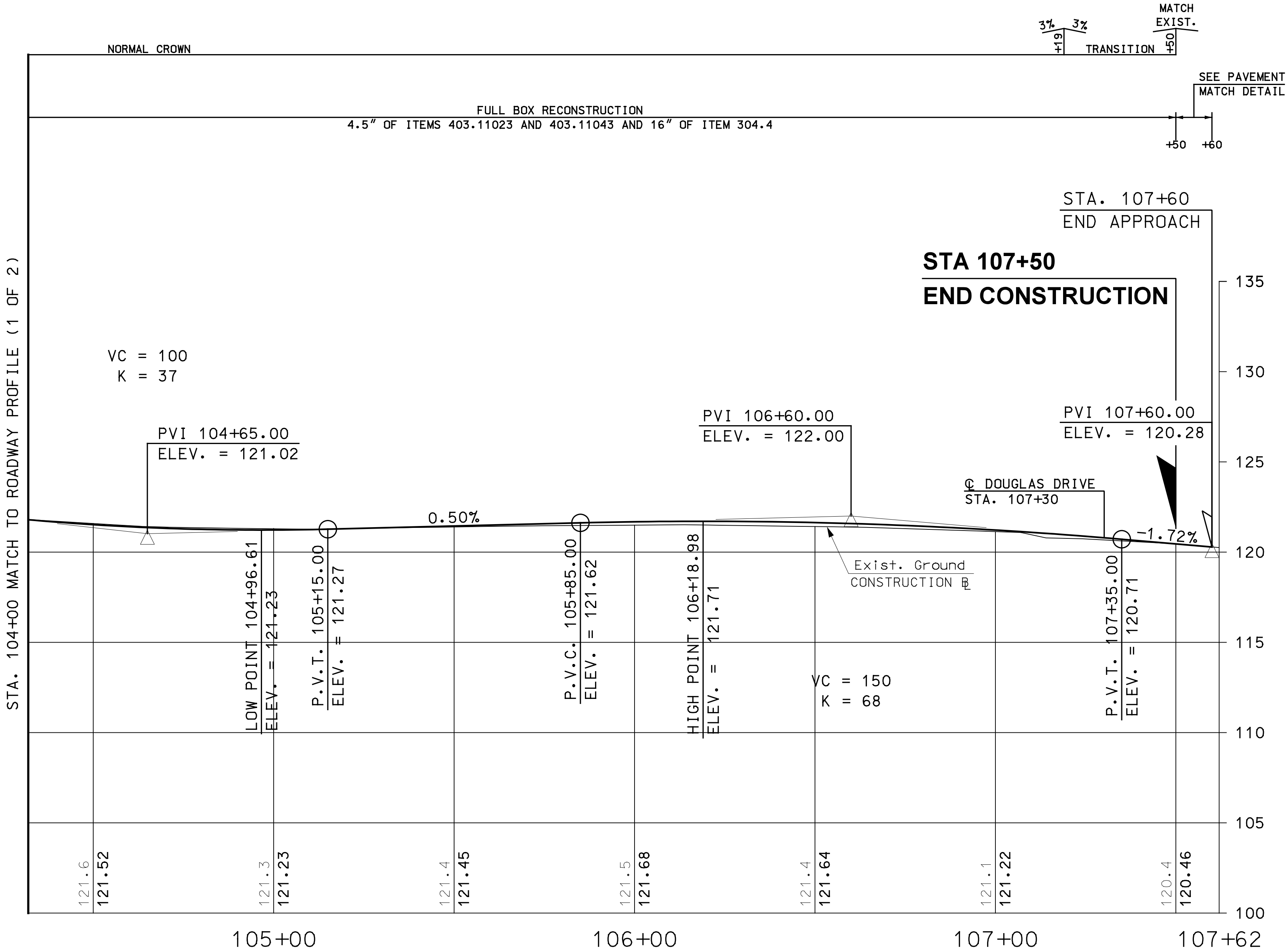
115/097	DESIGNED FILENAME 91810901proplans	DRAWN MODEL NAME PRO1	CHECKED SCALE AS SHOWN	DATE AUGUST 2025

DRW. CHKD. BY

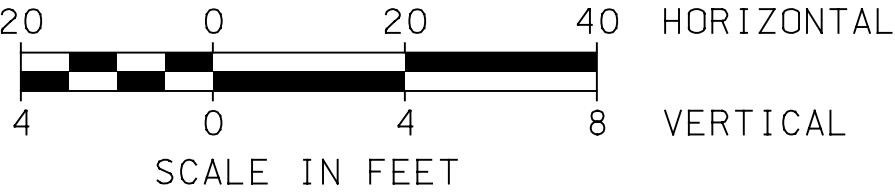
DATE

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BRIDGE STREET PROFILE

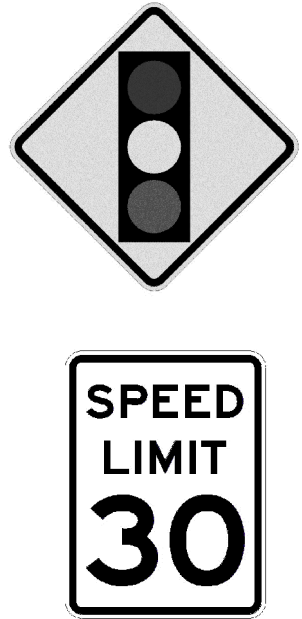


PROJECT NO. 19.918109.01		SHEET NO. 23		SHEET 23 OF 54		TOWN OF SALEM SALEM, NEW HAMPSHIRE BRIDGE STREET OVER SPICKET RIVER ROADWAY PROFILE (2 OF 2)		 150 Dow Street • Manchester, NH 03301 (603) 669-5555 • www.hoyletanner.com		NH007 BRIDGE NO. 115/097 FILE NAME 91810901proplans MODEL NAME 91810901proplans SCALE AS SHOWN DESIGNED KMW DRAWN KMW CHECKED SBH DATE AUGUST 2025		REV.	DESCRIPTION	DRW CHG BY	DATE

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CURBING (WEST)					
ITEM NO.			609.01	609.930	
DESCRIPTION	MARK NO.	RADIUS	STRAIGHT GRANITE CURB	SPECIAL STRAIGHT GRANITE CURB (REVEAL 12"-18")	NOTES
UNIT		FT	LF	LF	
STA. 101+71.9, RT. 14.0 TO STA. 101+78.4, RT. 14.0	G-1		6.5		2" TO 7" REVEAL
STA. 101+78.4, RT. 14.0 TO STA. 102+00.2, RT. 14.0	G-2		21.8		7" REVEAL
STA. 102+00.2, RT. 14.0 TO STA. 102+06.7, RT. 14.0	G-3		6.5		7" TO 2" REVEAL
STA. 102+31.1, RT. 14.0 TO STA. 102+37.6, RT. 14.0	G-4		6.5		2" TO 7" REVEAL
STA. 102+37.6, RT. 14.0 TO STA. 102+54.5, RT. 14.0	G-5		16.9		7" REVEAL
STA. 102+54.5, RT. 14.0 TO STA. 102+61.0, RT. 14.0	G-6		6.5		7" TO 2" REVEAL
STA. 103+02.5, RT. 14.0 TO STA. 103+09.0, RT. 14.0	G-7		6.5		2" TO 7" REVEAL
STA. 103+09.0, RT. 14.0 TO STA. 103+35.8, RT. 14.0	G-8		26.8		7" REVEAL
STA. 101+50.0, LT. 13.2 TO STA. 102+26.6, LT. 12.0	G-9		76.6		7" REVEAL
STA. 102+26.6, LT. 12.0 TO STA. 102+33.1, LT. 12.3	G-10		6.5		7" TO 2" REVEAL
STA. 102+81.3, LT. 14.0 TO STA. 102+87.8, LT. 14.0	G-11		6.5		2" TO 7" REVEAL
STA. 102+87.8, LT. 14.0 TO STA. 103+36.2, LT. 14.0	G-12		48.4		7" REVEAL
SUBTOTAL			236.0	0.0	



1. REMOVE EXISTING SIGN (SUBSID.).
CONST. W3-3 (30" x 30") SIGN (PAID
AS ITEM 615.0301) AT STA. 101+61, LT.



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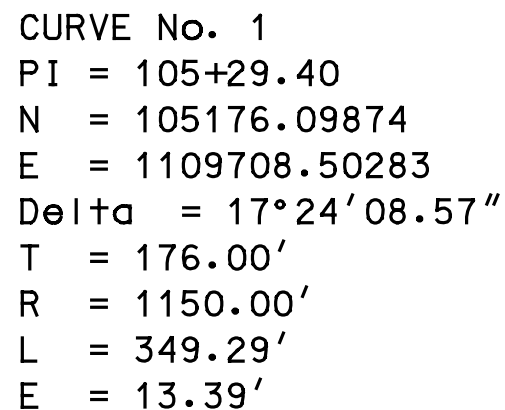
TOWN OF SALEM
SALEM, NEW HAMPSHIRE
BRIDGE STREET OVER SPICKET RIVER
ALIGNMENT, CURBING, PAVEMENT
MARKING, AND SIGNING PLAN (1 OF 2)

PROJECT NO.	19.918109.01
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24

SHEET 24 OF 54

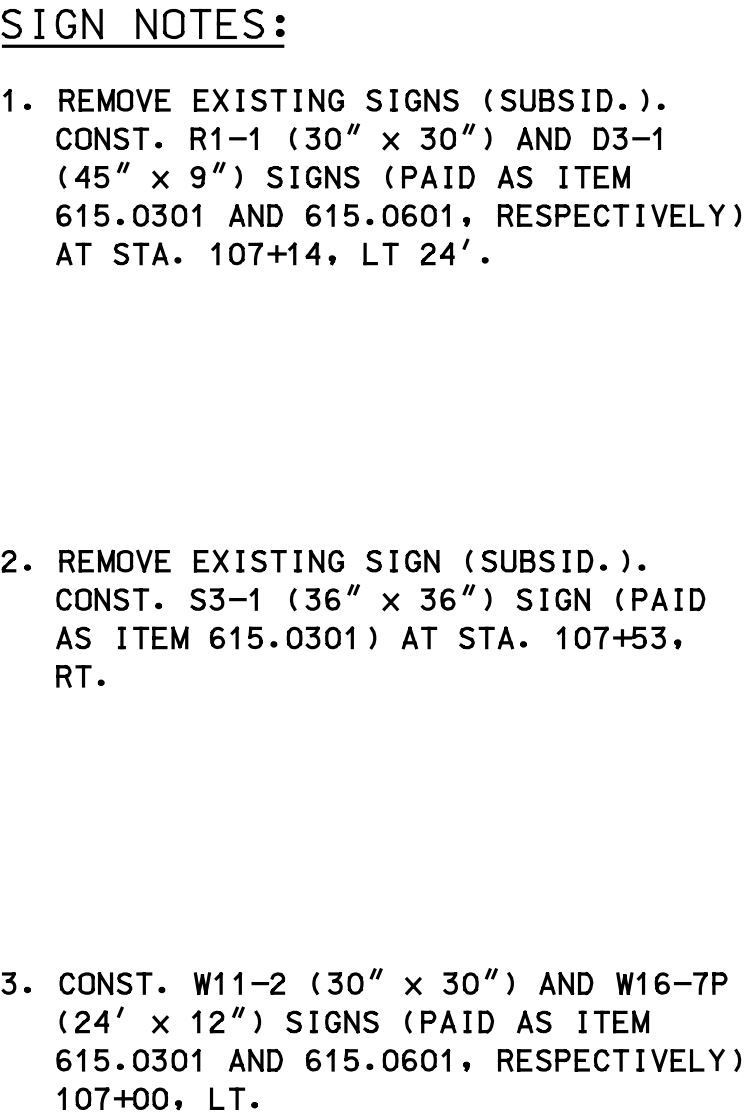
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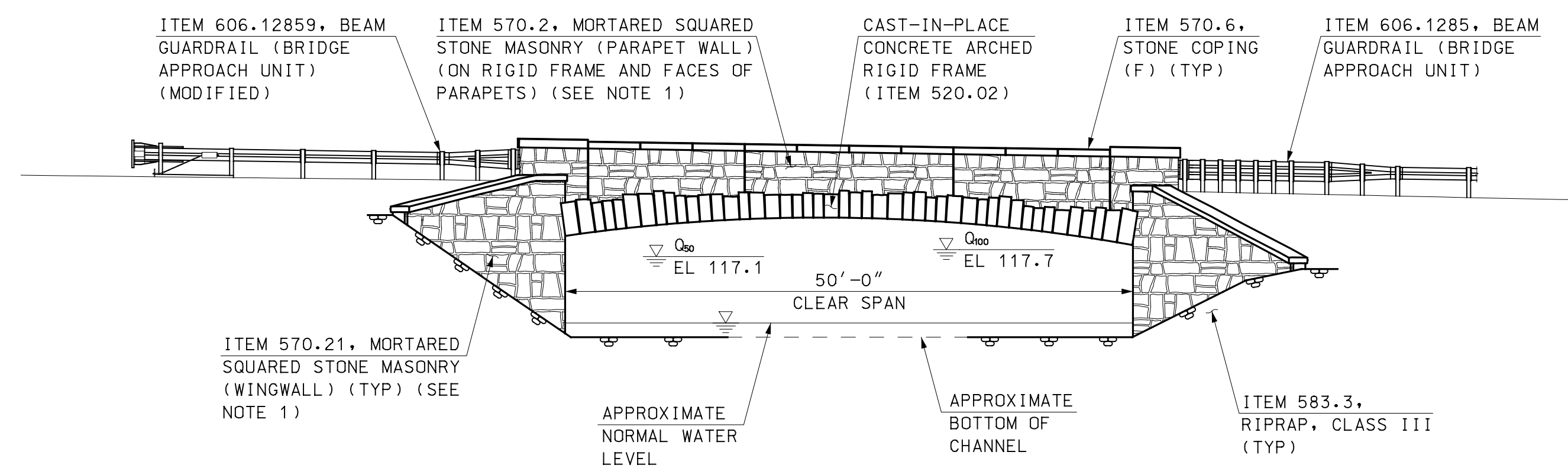
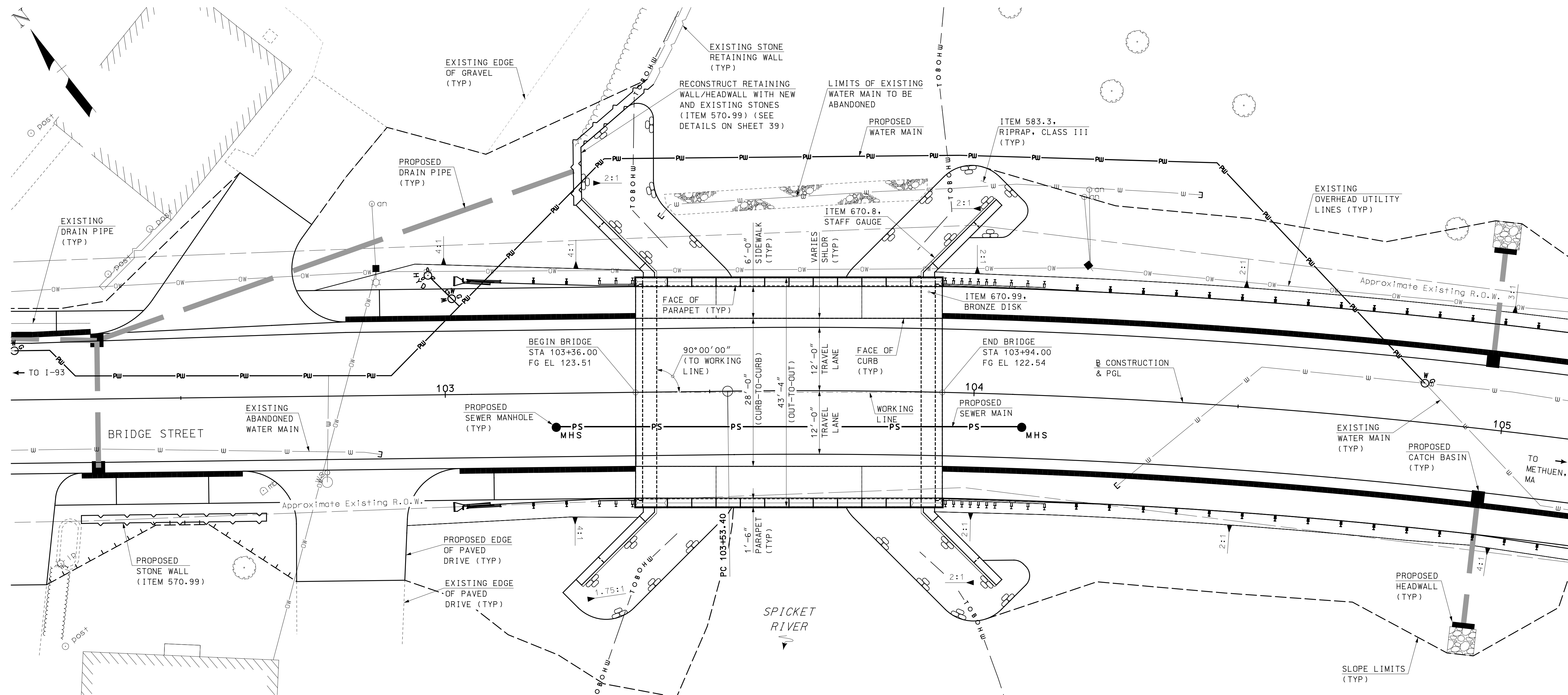


* PAY AS STRAIGHT GRANITE CURB ITEM 609.01



STA. 107+60
END APPROACH

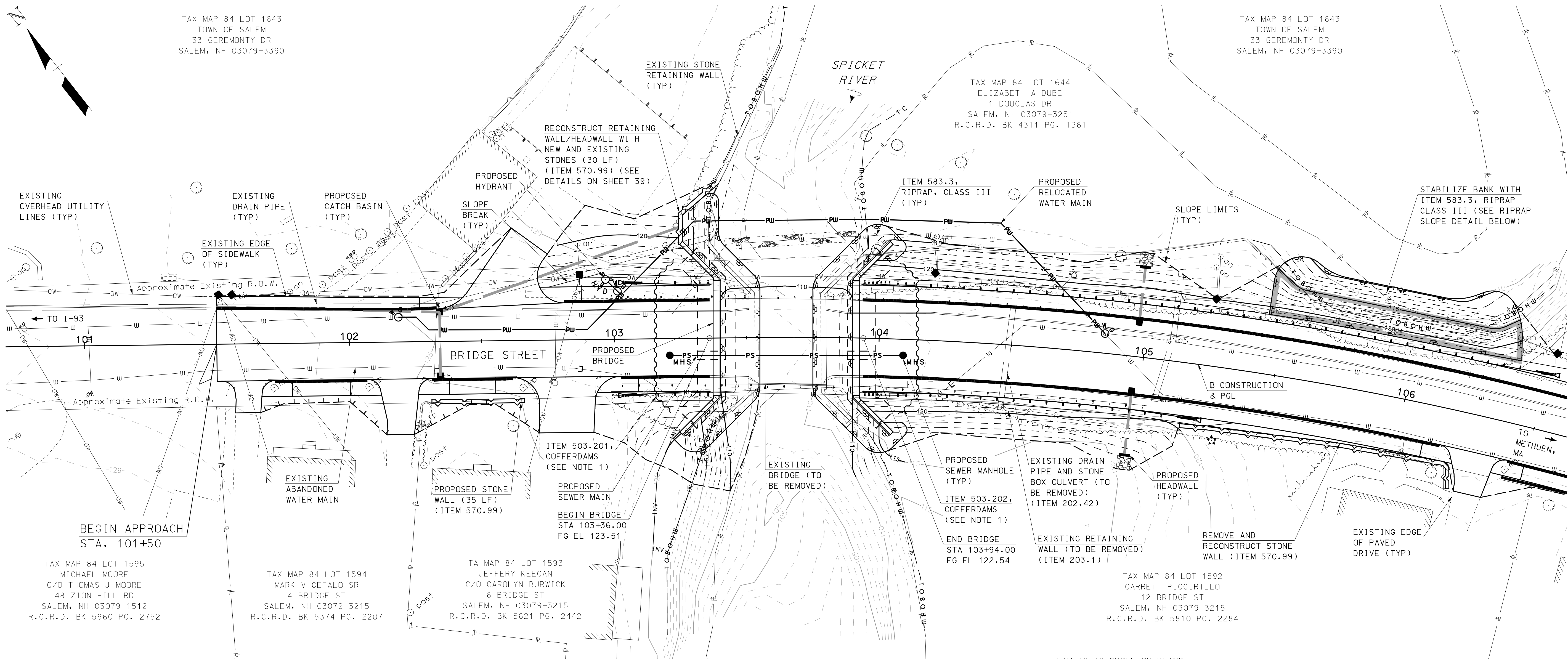
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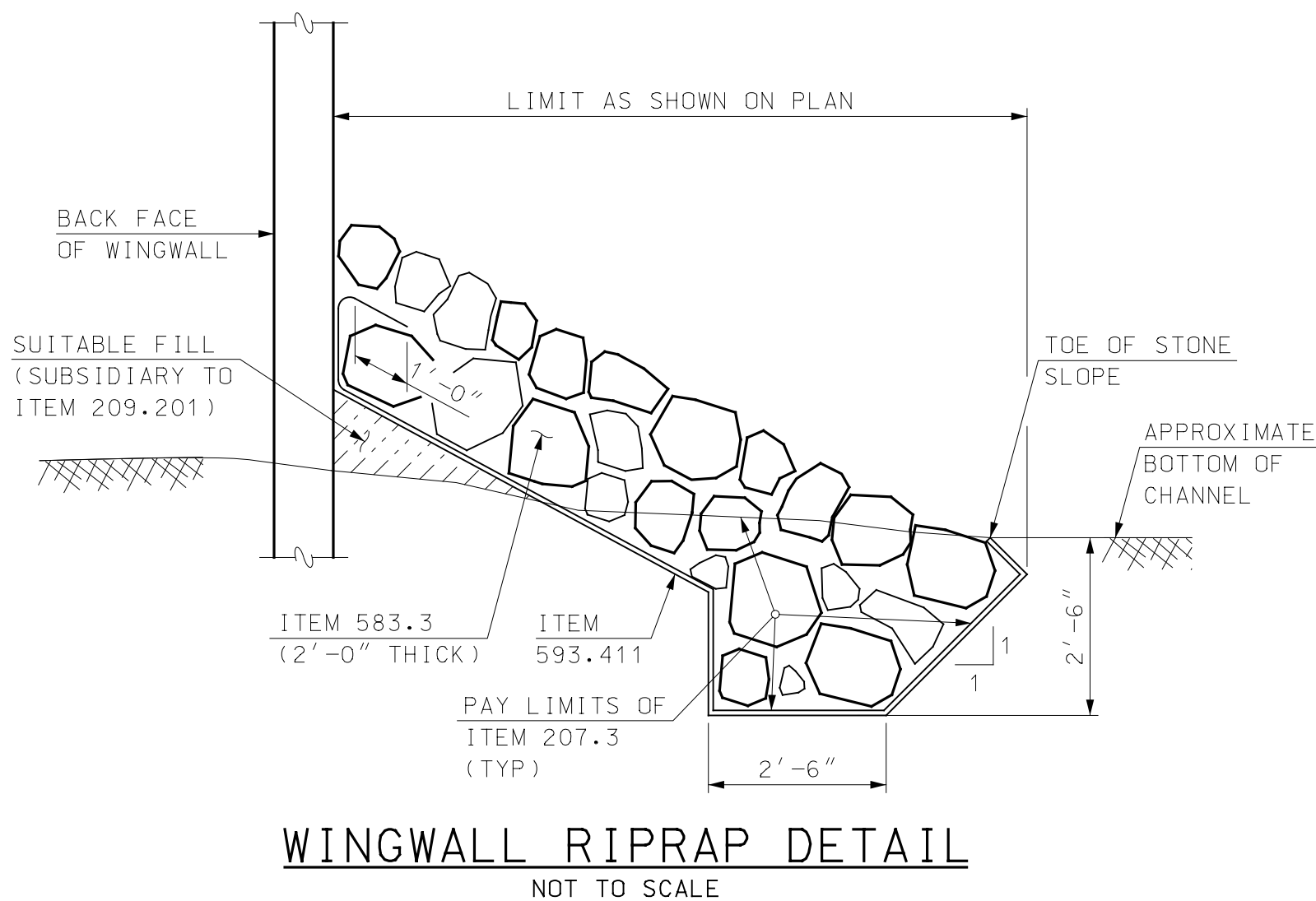
NOTE
1. SEE PARAPET STONE AND WINGWALL
STONE FACING REFERENCE PHOTOS
ON SHEET 39.

<div><div></div><div>HOYLE TANNER</div><div>150 Dow Street • Manchester, NH 03301 (603) 669-5555 • www.hoyletanner.com</div></div>	TOWN OF SALEM		NHDOT BRIDGE NO.	REV.	DESCRIPTION	DRW CHG'D BY	DATE
	SALEM, NEW HAMPSHIRE		DESIGNER				
	BRIDGE STREET OVER SPICKET RIVER		FILENAME				
			91810907.Gendplan	KWM			
			MODEL NAME	BRAWN			
			91810901.Gendplan	TAG			
	GENERAL PLAN AND ELEVATION		SCALE	CHECKED	This document is prepared as an instrument of service and shall remain the property of Hoyle, Tanner. It may not be used, reproduced, disseminated or transferred in any manner, including electronically, for any other purpose than this project, without the written permission of Hoyle, Tanner.		
			AS SHOWN	JCR			
			DATE				
			AUGUST 2025				
PROJECT NO.		19-918109.01					
SHEET NO.							
26							
SHEET 26 OF 54							

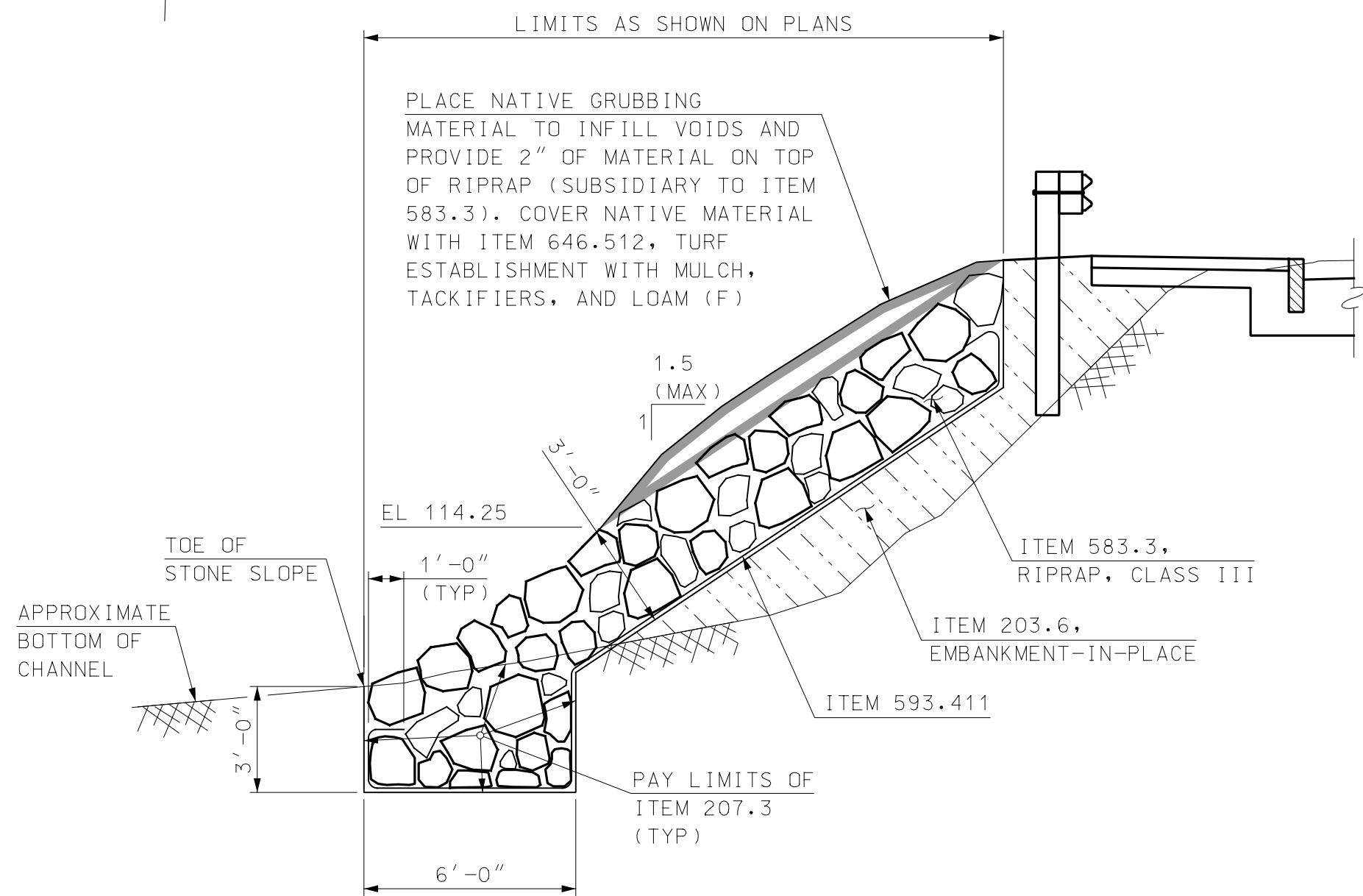
8/26/2025 11:37:22 PM K:\PROJECTS\Salem-NH\19_918109_01-Bridge-Street-Spicket-River-Study-TO12-CADD\BRCB-Site\91810901-Siteplan.dgn



SITE PLAN
SCALE: 1" = 20'



WINGWALL RIPRAP DETAIL



RIPRAP SLOPE DETAIL
(STA 105+44.50 LT TO STA 106.39.77 LT.)
NOT TO SCALE

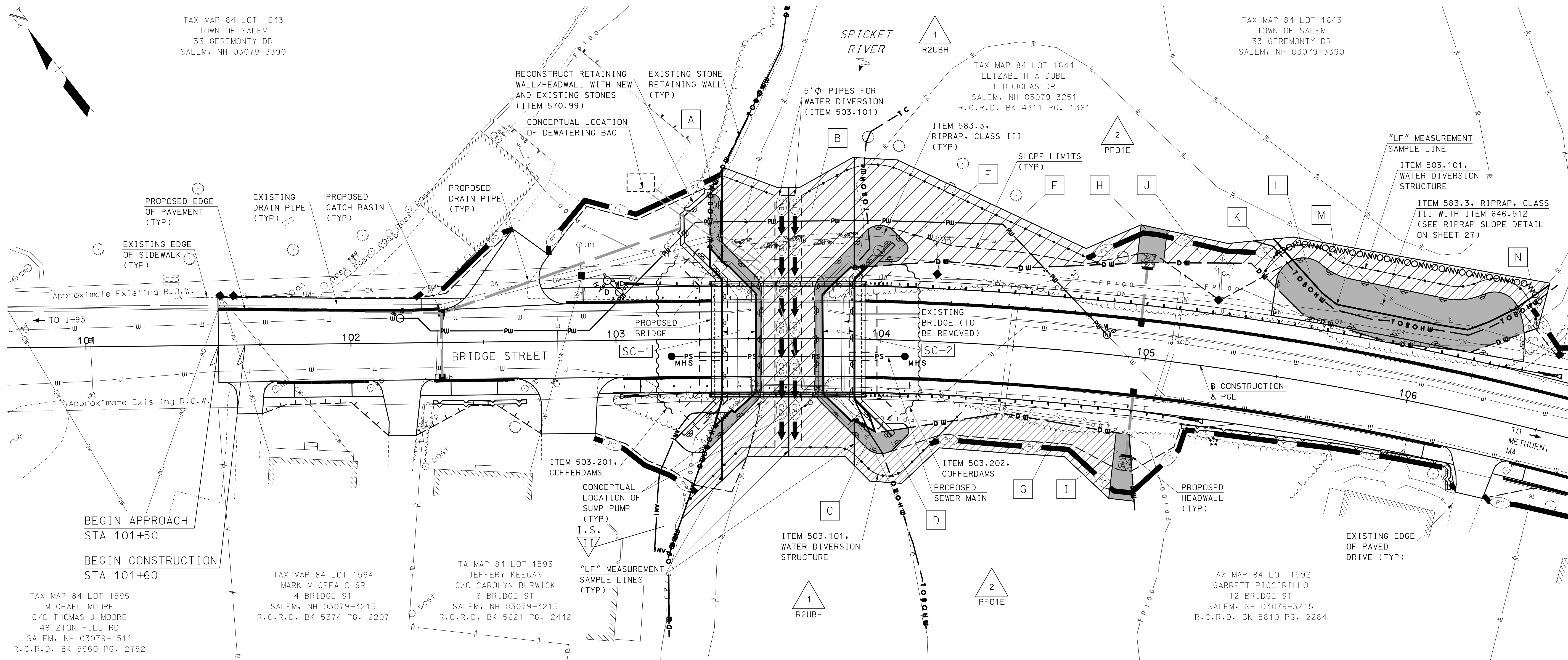
NOTE

- COFFERDAMS (ITEM 503.201 AND 503.202) ARE CONCEPTUALLY SHOWN AND NOT INTENDED TO DICTATE CONTRACTOR'S MEANS AND METHODS OF CONSTRUCTION. AT THE CONTRACTOR'S OPTION, COFFERDAMS MAY BE USED TO REDUCE THE LIMITS OF EXCAVATION.

LEGEND

BOUNDARY SHOWING LIMITS OF NATIVE MATERIAL AND TURF ESTABLISHMENT

TOWN OF SALEM SALEM, NEW HAMPSHIRE BRIDGE STREET OVER SPICKET RIVER		 150 Dow Street • Manchester, NH 03301 (603) 669-5555 • www.hoyletanner.com		PROJECT NO. 19.918109.01	
SHEET NO.		27		SHEET 27 OF 54	
SHEET 27 OF 54					



SUMMARY OF IMPACTS

TOTAL NEW TEMPORARY IMPACTS = 9019 SF / 213 LF
TOTAL NEW PERMANENT IMPACTS = 3089 SF / 124 LF

TOTAL IMPACTS = 12108 SF / 337 LF

TOTAL STREAM CREATION = 1304 SF / 117 LF

WETLAND IMPACTS (SF)		
SYMBOL	IMPACT TYPE	AREA
A	PERMANENT BED OF STREAM	356
B	TEMPORARY BED OF STREAM	4069
C	PERMANENT BED OF STREAM	381
D	PERMANENT WETLAND	88
E	PERMANENT WETLAND	194
F	TEMPORARY WETLAND	2133
G	TEMPORARY WETLAND	1233
H	PERMANENT WETLAND	134
I	PERMANENT WETLAND	182
J	TEMPORARY WETLAND	436
K	PERMANENT WETLAND	713
L	PERMANENT BED OF STREAM	1041
M	TEMPORARY BED OF STREAM	1075
N	TEMPORARY WETLAND	73

WETLAND IMPACTS (LF)		
SYMBOL	IMPACT TYPE	LENGTH
A	PERMANENT BED/BANK OF STREAM	8(US)/6(DS)
B	TEMPORARY BED/BANK UPSTREAM	27(L)/32(R)
B	TEMPORARY BED/BANK DOWNSTREAM	17(L)/11(R)
B	TEMPORARY CHANNEL	101
C	PERMANENT BED/BANK OF STREAM	9(US)/6(DS)
L	PERMANENT BED/BANK OF STREAM	95
M	TEMPORARY BED/BANK OF STREAM	11(L)/14(R)

NOTE

OHW AND TOB ARE THE SAME IN THIS LOCATION THUS ALL IMPACTS ARE TO BED OF STREAM, NOT BANK. WATERCOURSE LF OF IMPACTS CALCULATED FOR A PERENNIAL STREAM PER ENV-WT 407.03(C)(2) AS LEFT BANK + RIGHT BANK + CHANNEL ARE SHOWN AS BED OF STREAM IMPACTS ON THE APPLICATION FORM.

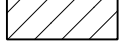








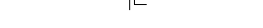

STREAM CREATION			
SYMBOL	IMPACT TYPE	AREA (SF)	LENGTH (LF)
SC-1	AT WEST ABUTMENT	669	60
SC-2	AT EAST ABUTMENT	635	57

WETLAND IMPACTS PLAN

SCALE: 1" = 20'

WETLAND CLASSIFICATION	
1 R2UBH	RIVERINE, LOWER PERENNIAL, UNCONSOLIDATED BOTTOM, PERMANENTLY FLOODED
2 PF01E	PALUSTRINE, FORESTED, BROAD-LEAVED DECIDUOUS, SEASONALLY FLOODED/SATURATED

THOMAS SOKOLOSKI, CERTIFIED WETLAND SCIENTIST
#127, OF TES ENVIRONMENTAL CONSULTANTS, L.L.C. OF
BOW, NH, PERFORMED THE WETLAND MAPPING ON DECEMBER
16, 2019 ACCORDING TO THE STANDARDS OF THE CORPS
OF ENGINEERS WETLAND DELINEATION MANUAL AND THE
REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS
WETLAND DELINEATION MANUAL: NORTHCENTRAL AND
NORTHEAST REGION, VERSION 2.0, JANUARY 2012, US
ARMY CORPS OF ENGINEERS.

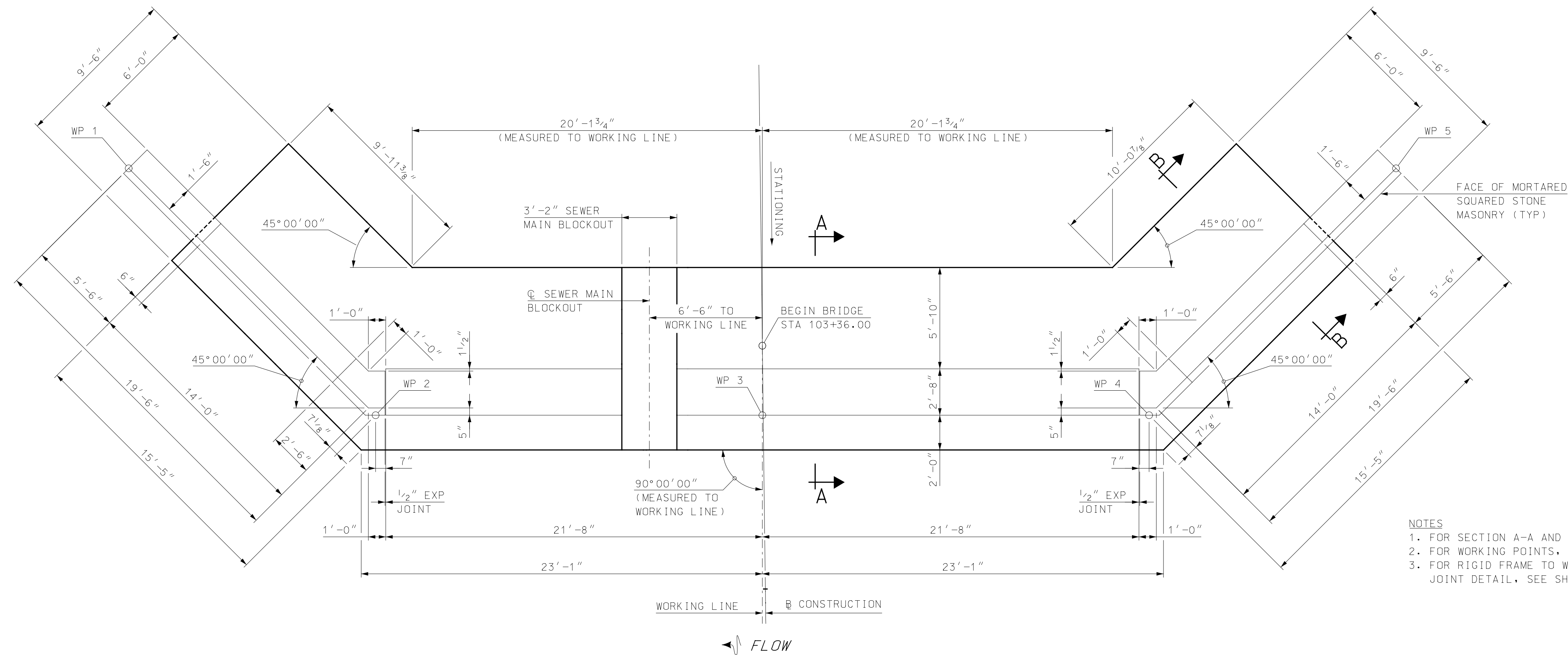
LEGEND	
	TEMPORARY IMPACTS
	PERMANENT IMPACTS
	DELINEATED WETLAND
	TOP OF BANK AND ORDINARY HIGH WATER
	100 YEAR FLOOD PLAIN BOUNDARY
	CLEAR WATER BYPASS
	WATER DIVERSION STRUCTURE
	PERIMETER CONTROL (SILT FENCE OR SILT SOCK)
	TURBIDITY BARRIER
	PROPERTY LINE
	WETLAND DESIGNATION NUMBER

NOTE

1. SEE SHEETS 2 AND 3 FOR ADDITIONAL LEGEND OF SYMOLOGY USED IN THIS PLAN.

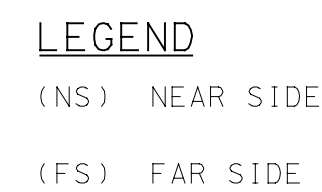
GENERAL WETLAND IMPACTS NOTES

1. AFTER COMPLETION OF IN-WATER WORK, REMOVE ALL WATER DIVERSION STRUCTURES AND RESTORE ALL DISTURBED AREAS TO PRE-CONSTRUCTION CONDITIONS.
2. EROSION AND SEDIMENT CONTROL SHOWN FOR PLANNING PURPOSES ONLY. CONTRACTOR MEANS AND METHODS MAY ALTER SLIGHTLY BASED ON SITE CONDITIONS.
3. CONTRACTOR SHALL RETAIN SEDIMENT ON-SITE AND IMPLEMENT THE FOLLOWING DEWATERING CONTROL PRACTICES:
 - A. TEMPORARY SEDIMENT BASINS SHALL BE SIZED TO RETAIN ON SITE, THE VOLUME OF A 2-YEAR 24-HOUR STORM EVENT FOR ANY AREA OF DISTURBANCE OR 3,600 CUBIC FEET OF STORMWATER RUNOFF PER ACRE OF DISTURBANCE, WHICHEVER IS GREATER.
 - B. CONSTRUCT AND STABILIZE DEWATERING INFILTRATION BASINS OR BAGS PRIOR TO ANY EXCAVATION THAT MAY REQUIRE DEWATERING.
 - C. TEMPORARY SEDIMENT BASINS SHALL BE PLACED AND STABILIZED AT LOCATIONS WHERE CONCENTRATED FLOW (CHANNELS AND PIPES) DISCHARGE TO THE SURROUNDING ENVIRONMENT FROM AREAS OF UNSTABILIZED EARTH DISTURBING ACTIVITIES.
 - D. SEDIMENT FROM THE DEWATERING INFILTRATION BASINS OR BAGS SHALL BE DISPOSED OF PER NHDES REGULATIONS.
4. EASEMENTS FOR WORK PROPOSED AS SHOWN ON PRIVATE PROPERTIES OUTSIDE OF THE ROW HAVE BEEN OBTAINED BY THE TOWN.

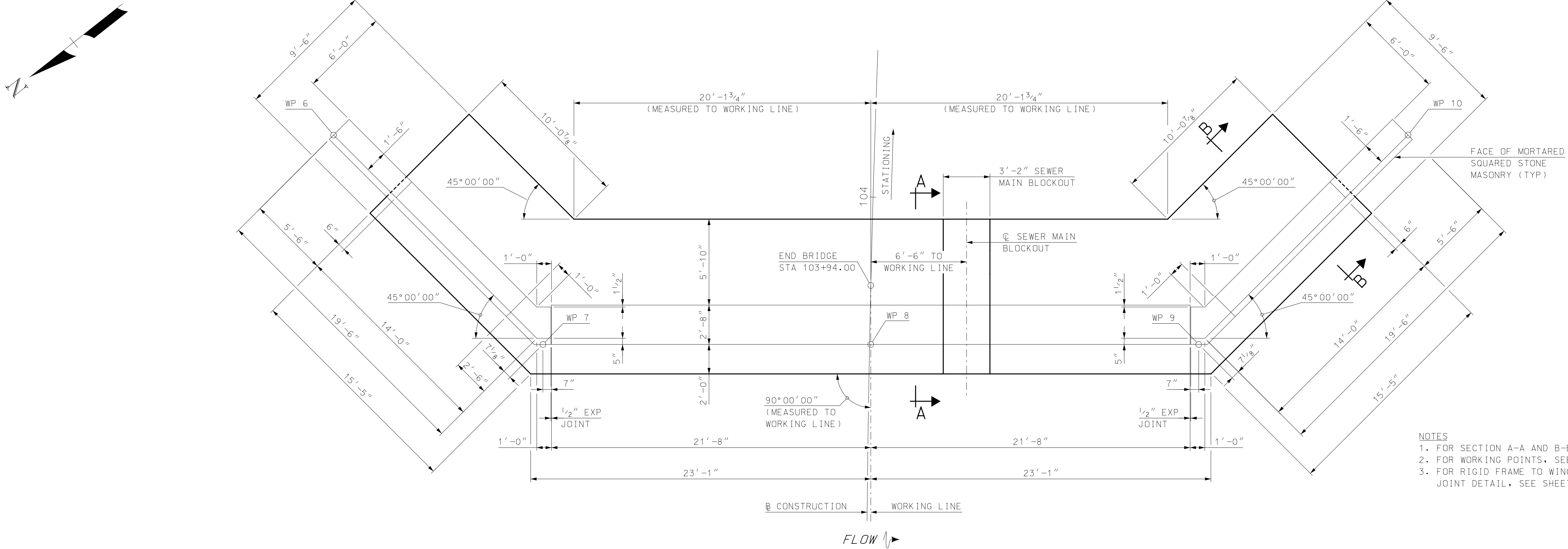


NOTES

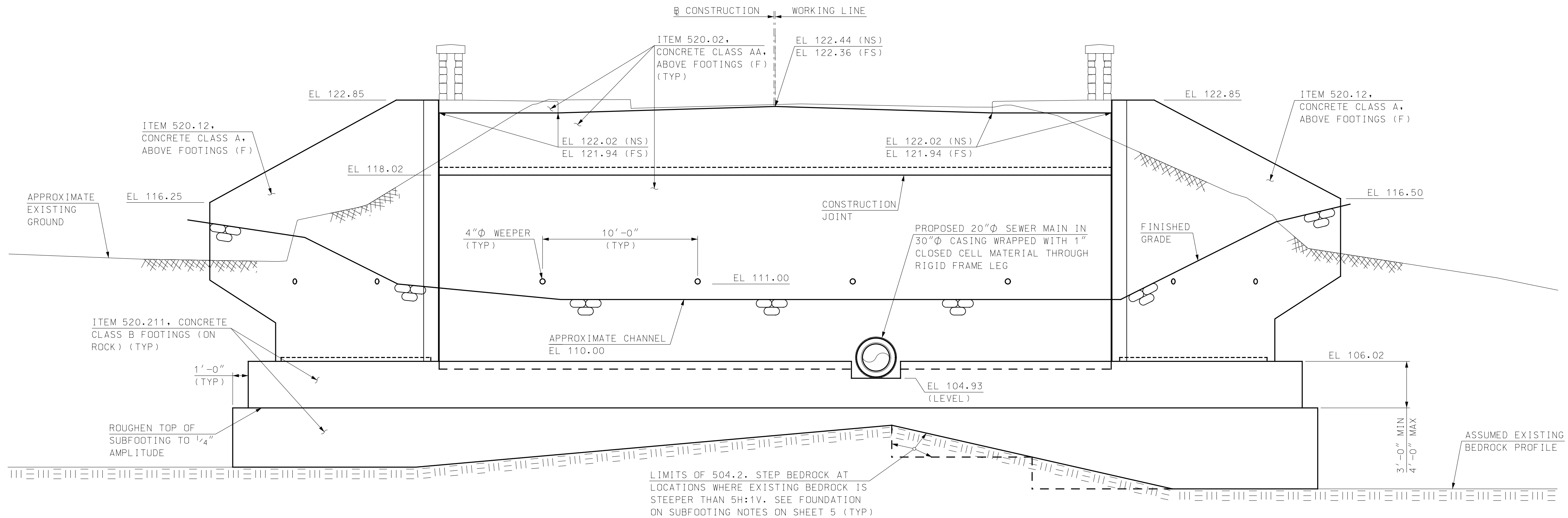
1. FOR SECTION A-A AND B-B, SEE SHEET 32.
2. FOR WORKING POINTS, SEE SHEET 16.
3. FOR RIGID FRAME TO WINGWALL EXPANSION JOINT DETAIL, SEE SHEET 32.



8/26/2025 11:38:46 PM K:\1 PROJECTS\Salem-NH\19_918109_01-Bridge-Street-Spicket-River-Study-TO12-CADD\BRC\Abut\B1910901B-Abut.dgn



PLAN
SCALE: 1/4" = 1'-0"

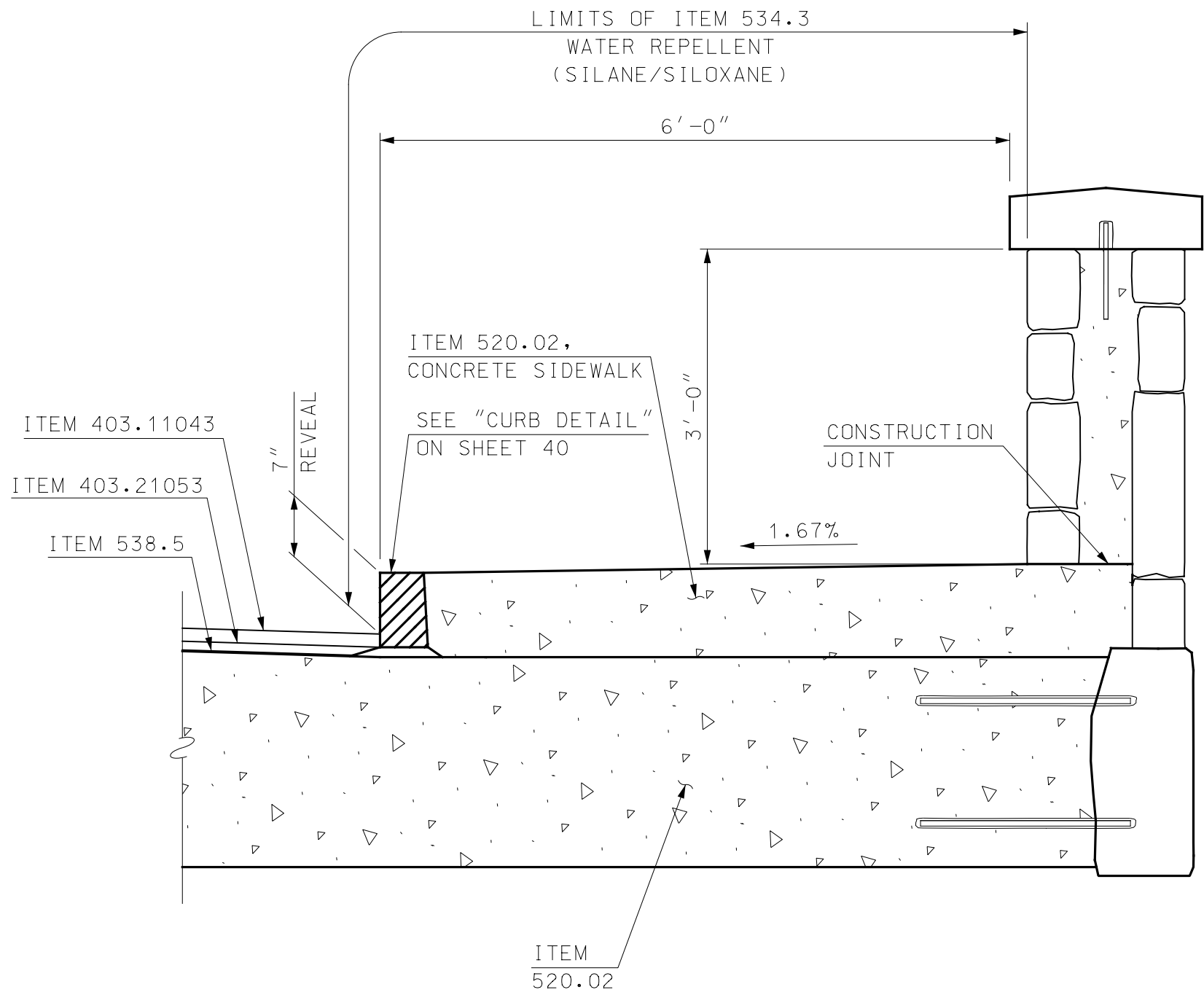


ELEVATION
SCALE: 1/4" = 1'-0"

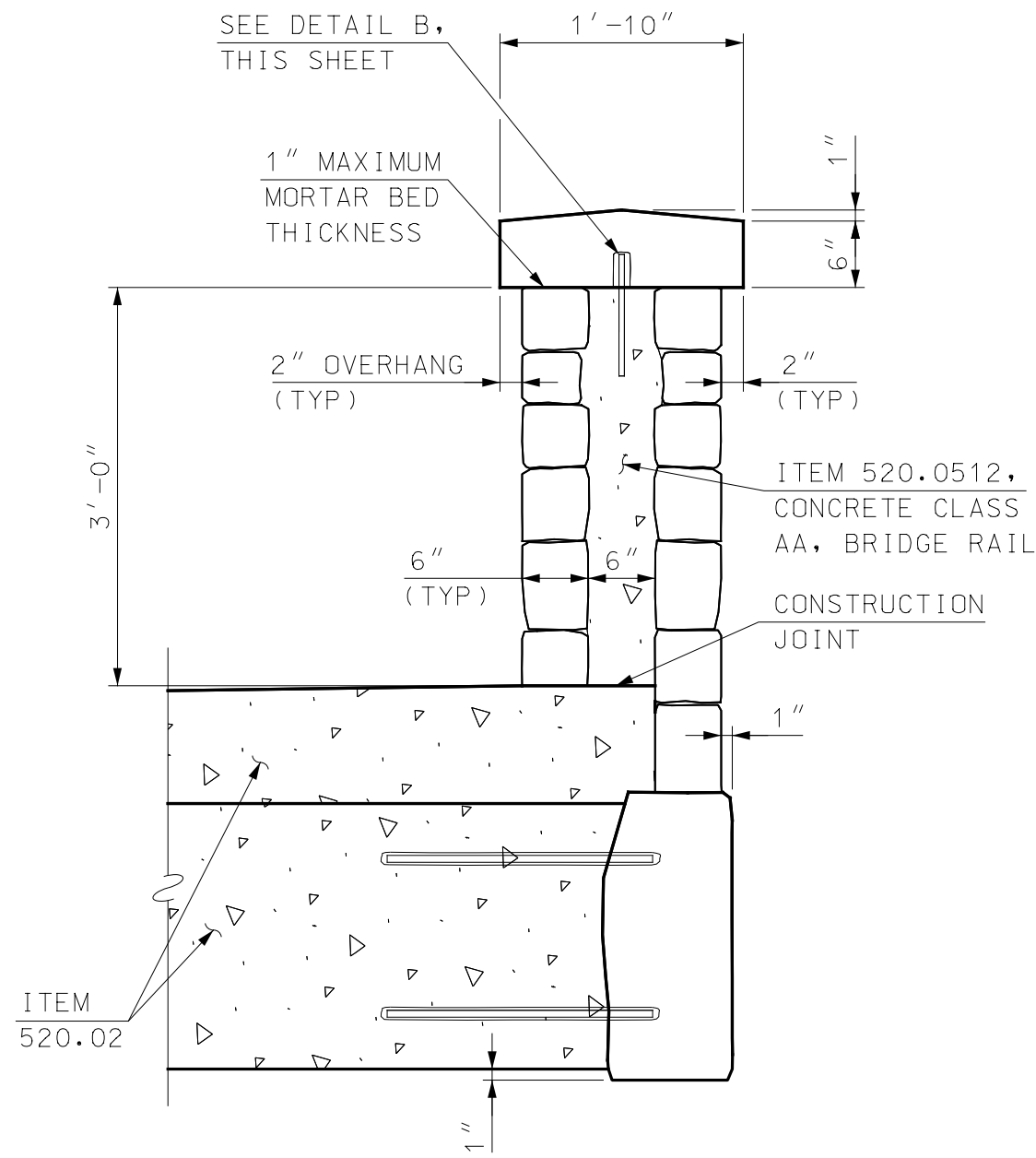
LEGEND
(NS) NEAR SIDE
(FS) FAR SIDE

PROJECT NO. 19.918109.01	SHEET NO. 31	SHEET 31 OF 54	TOWN OF SALEM SALEM, NEW HAMPSHIRE BRIDGE STREET OVER SPICKET RIVER EAST FOOTING MASONRY AND ELEVATION	 150 Dow Street • Manchester, NH 03301 (603) 669-5555 • www.hoyletanner.com	NH00T BRIDGE NO. 115/097 FILE NAME 91810901B-Abut MODEL NAME 91810901B-Abut SCALE AS SHOWN DESIGNED KMW DRAWN TAG CHECKED JCR DATE AUGUST 2025	REV.	DESCRIPTION	DRW CHG BY	DATE
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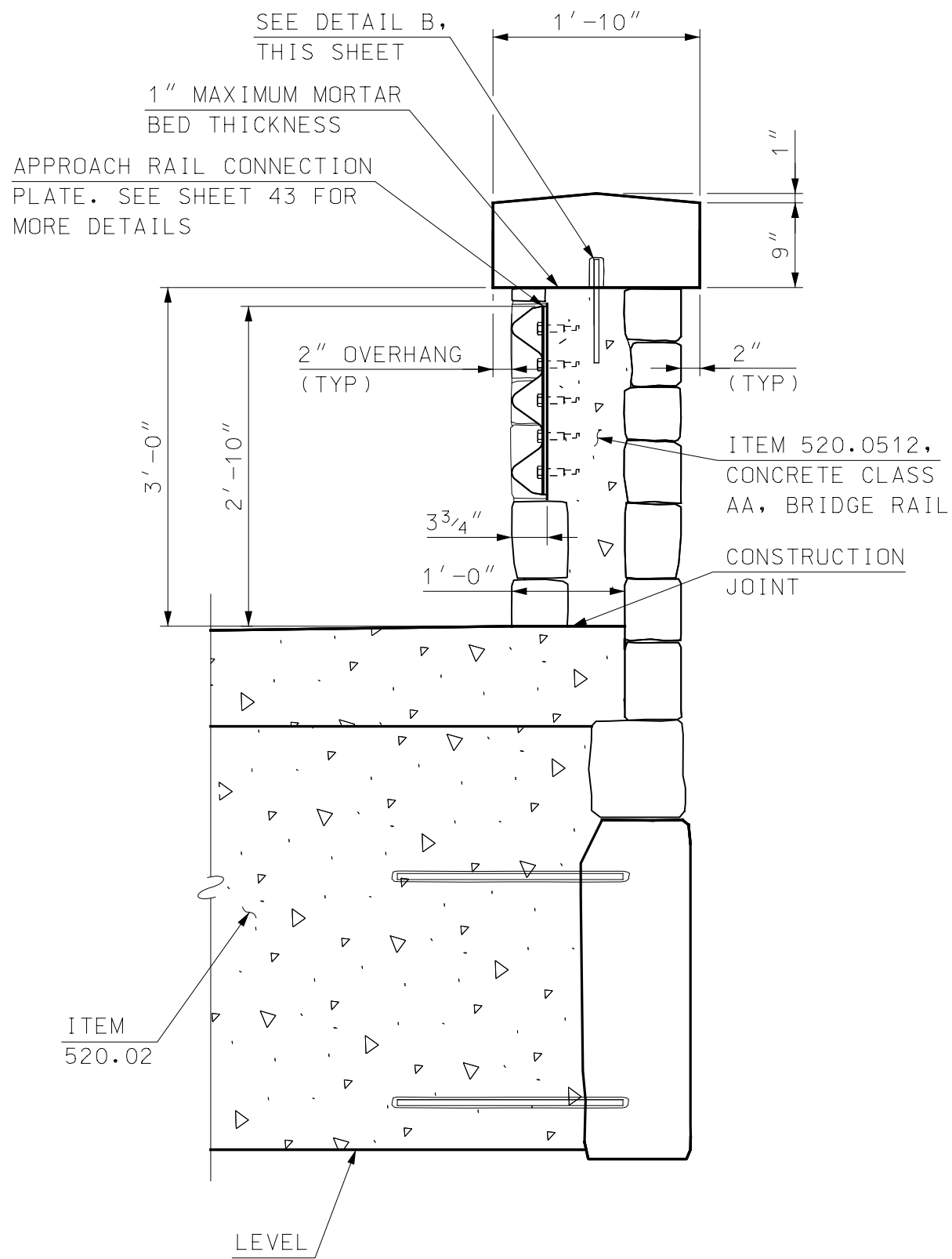
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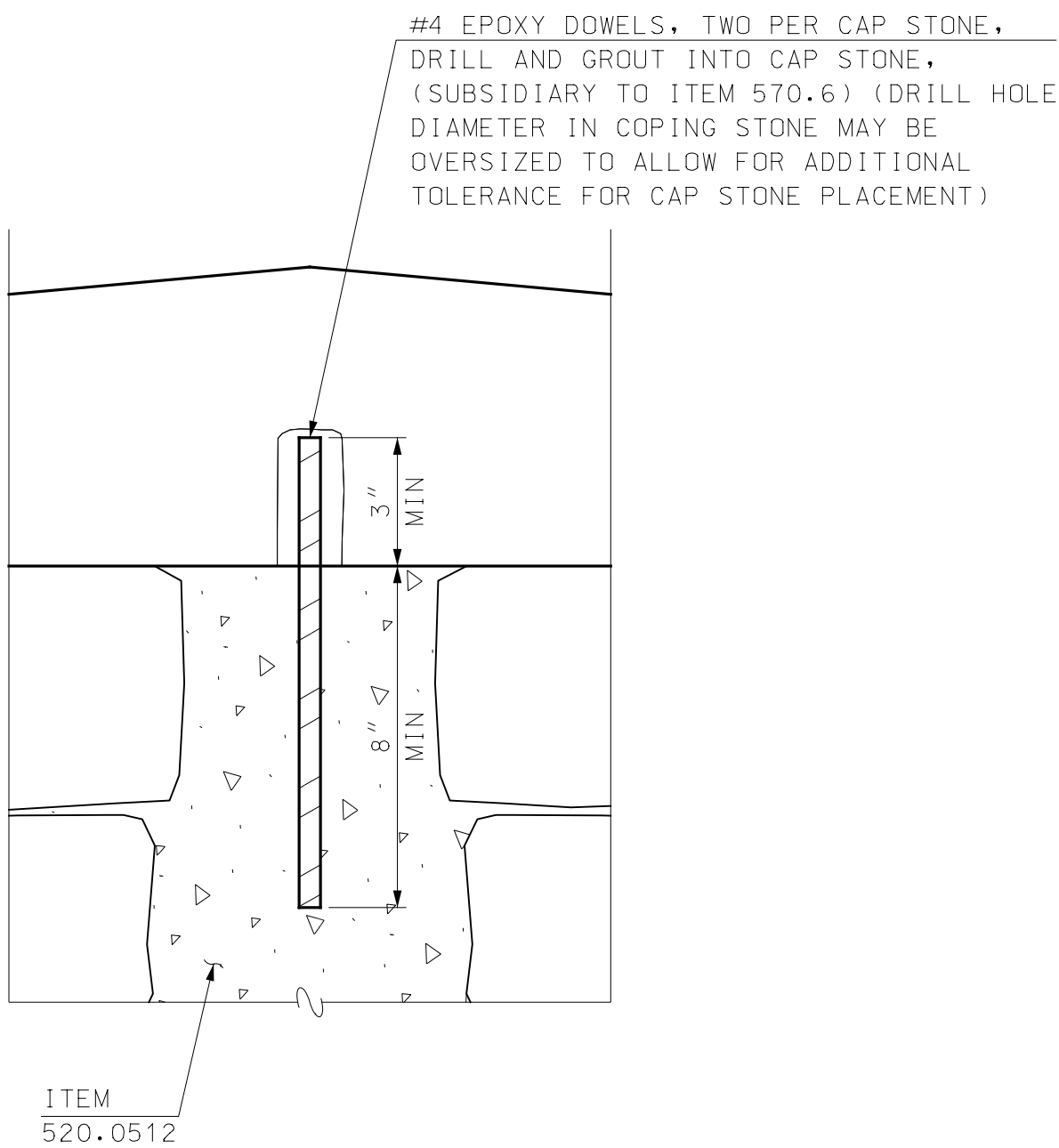
SIDEWALK MASONRY
SECTION
SCALE: $\frac{3}{4}" = 1'-0"$



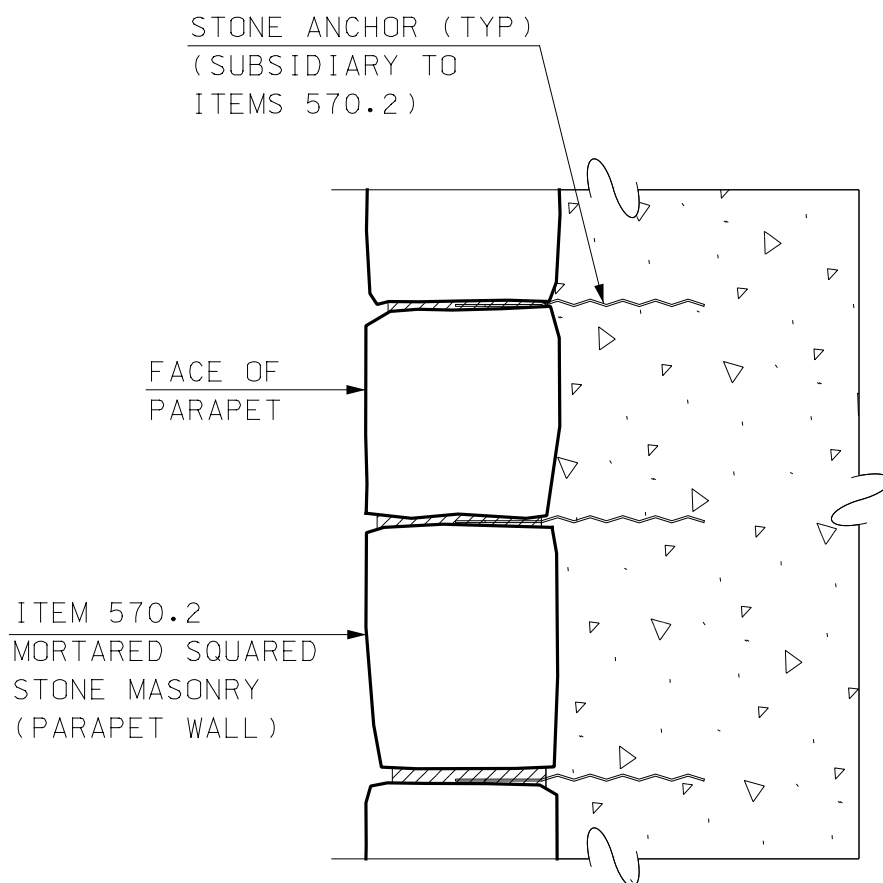
TYPICAL PARAPET
SECTION
SCALE: $\frac{3}{4}" = 1'-0"$



TYPICAL PARAPET
END SECTION
SCALE: $\frac{3}{4}" = 1'-0"$

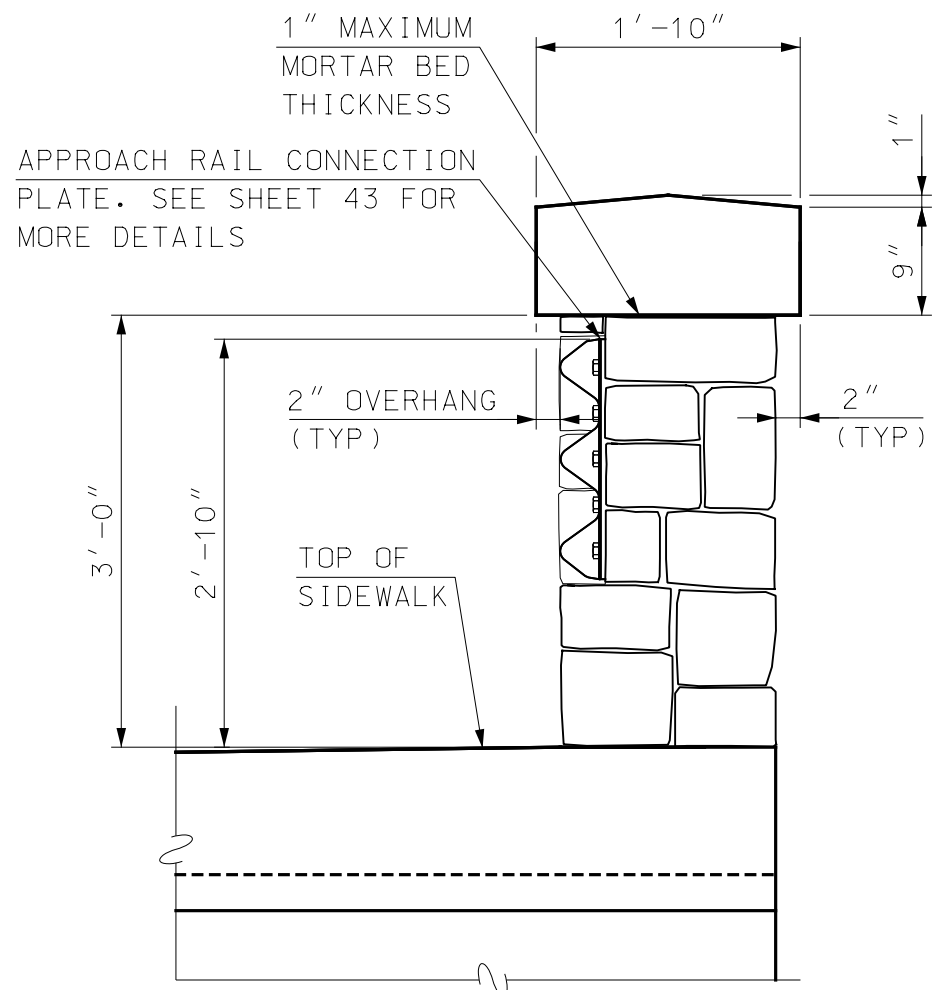


DETAIL B
SCALE: 3" = 1'-0"



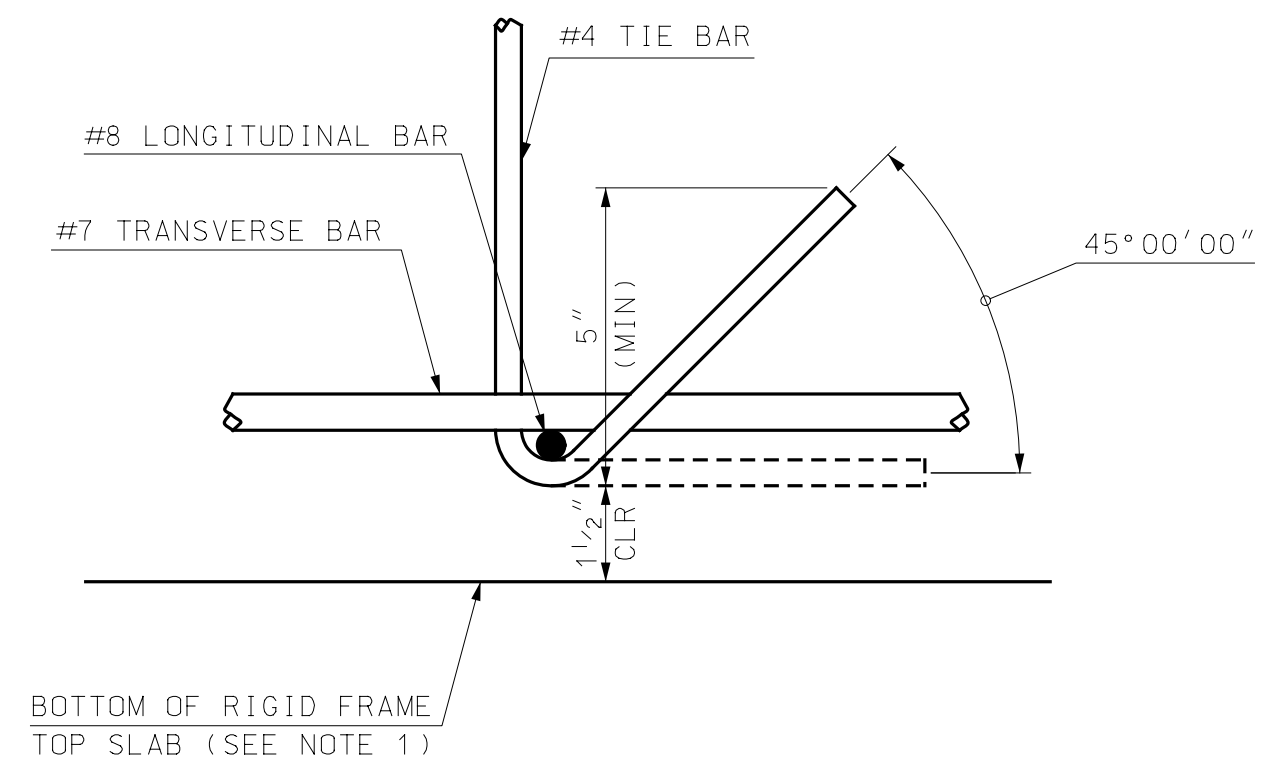
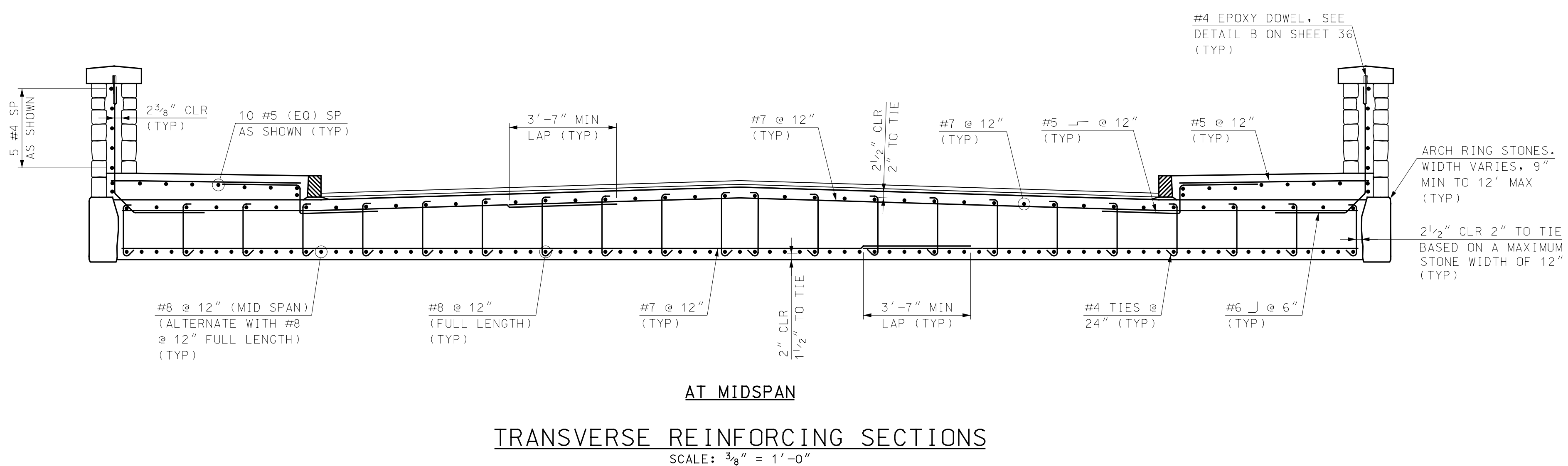
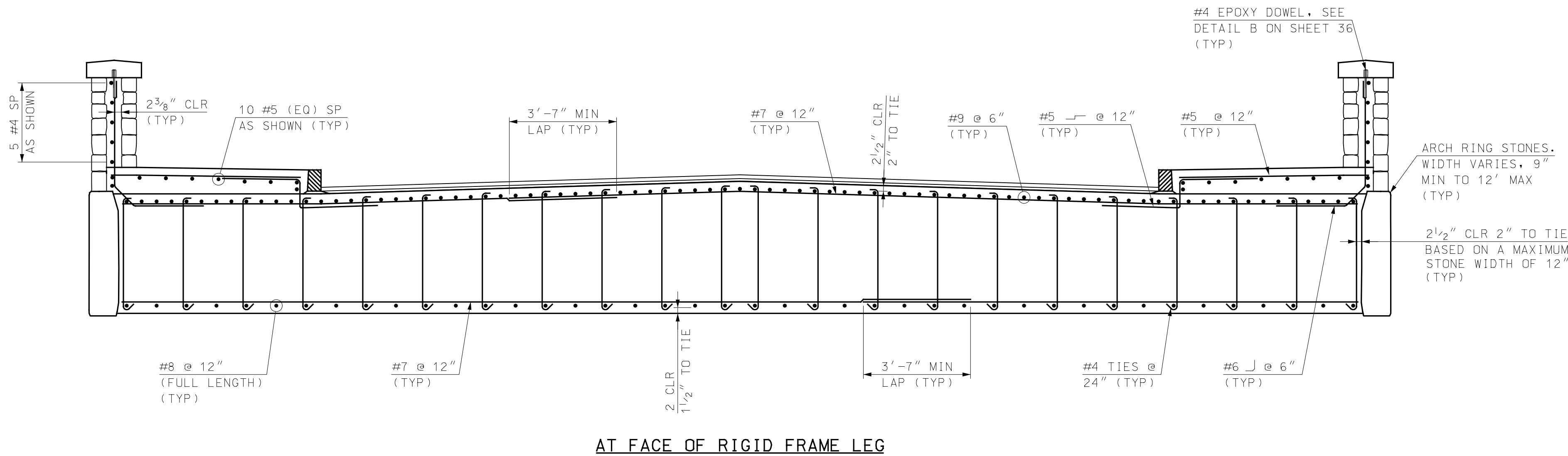
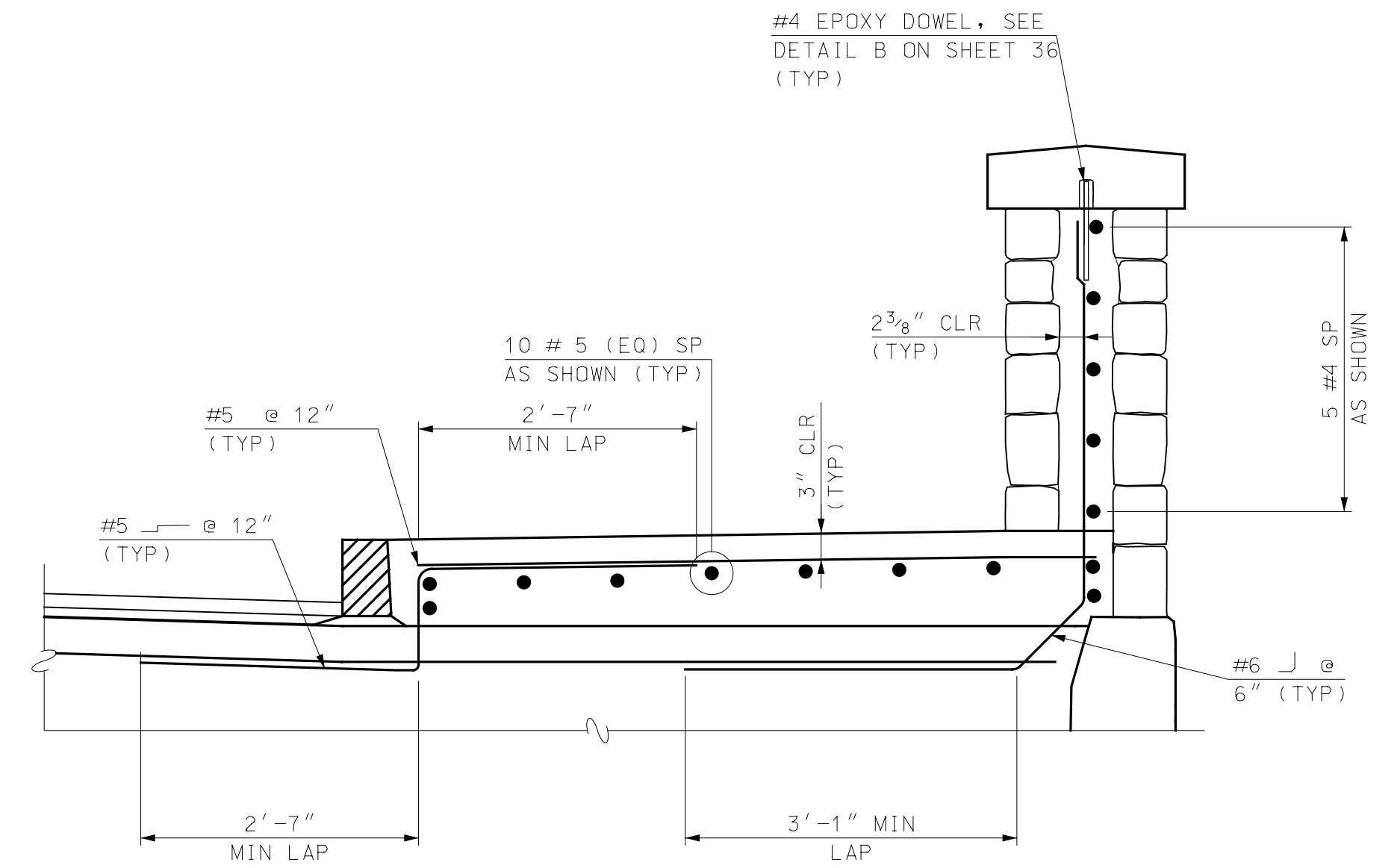
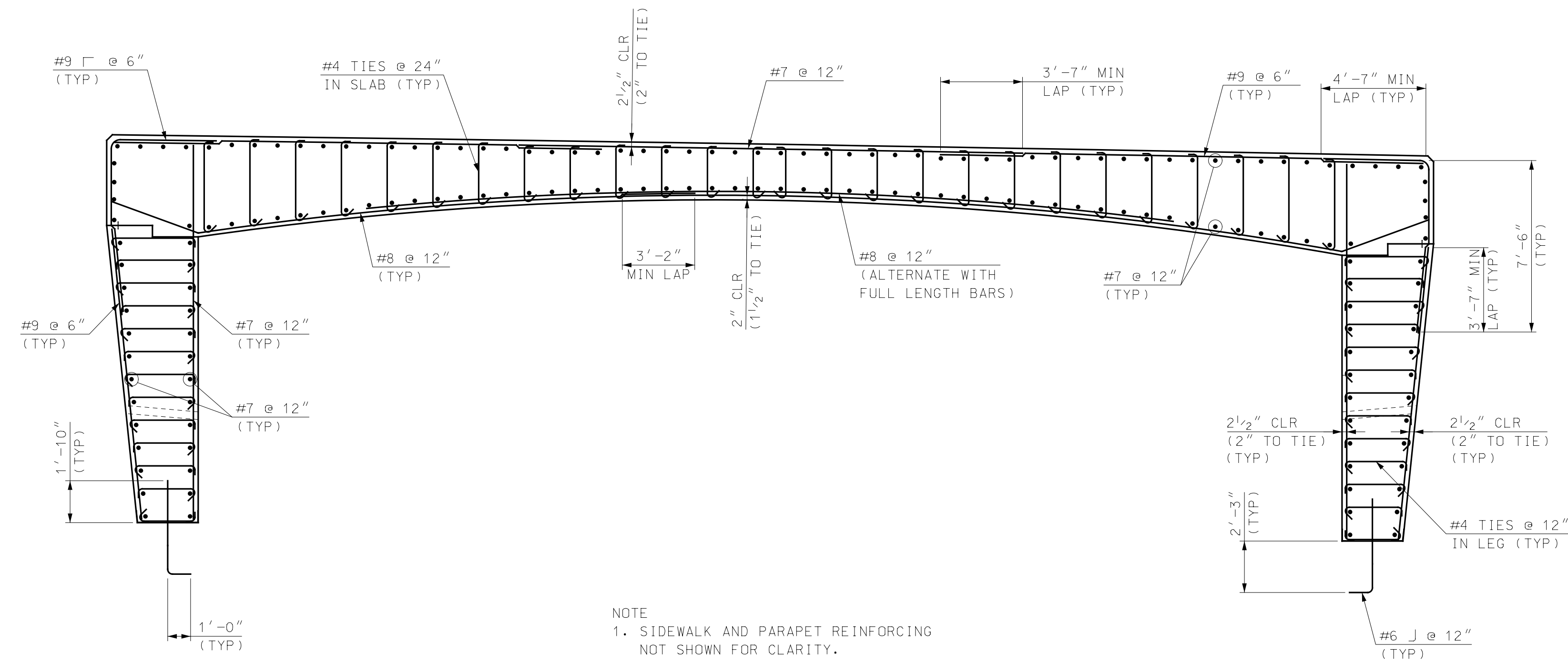
NOTE
1. THE CONTRACTOR SHALL CONSTRUCT AND ADEQUATELY SUPPORT THE PARAPET STONE FACING BEFORE PLACING THE CONCRETE BEHIND THE STONE. TIE STONE MASONRY TO CONCRETE WITH 1"x1/8"x8" LONG CORRUGATED GALVANIZED ANCHORS. SPACE ANCHORS AT 1'-0" O.C. ALONG EACH MORTAR BOND LINE, BUT DO NOT USE LESS THAN ONE ANCHOR PER STONE. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.

PARAPET STONE MASONRY
ATTACHMENT DETAIL
SCALE: 1" = 1'-0"



TYPICAL PARAPET
END ELEVATION
SCALE: $\frac{3}{4}" = 1'-0"$

REV.				DESCRIPTION		DRW	CHKD	BY	DATE	



- NOTES
1. BOTTOM OF RIGID FRAME TOP SLAB SHOWN. OTHER LOCATIONS SIMILAR; SEE LONGITUDINAL REINFORCING SECTION FOR REQUIRED CLEAR COVER.
 2. OPPOSITE END OF TIE SHALL HAVE 90 DEGREE BEND.

- NOTES**
1. ALL REINFORCING STEEL IN THE RIGID FRAME, SIDEWALKS, AND PARAPETS SHALL BE EPOXY AND SHALL BE PAID AS ITEM 544.31.
 2. SEE SHEET 38 FOR DECK REINFORCING PLAN.

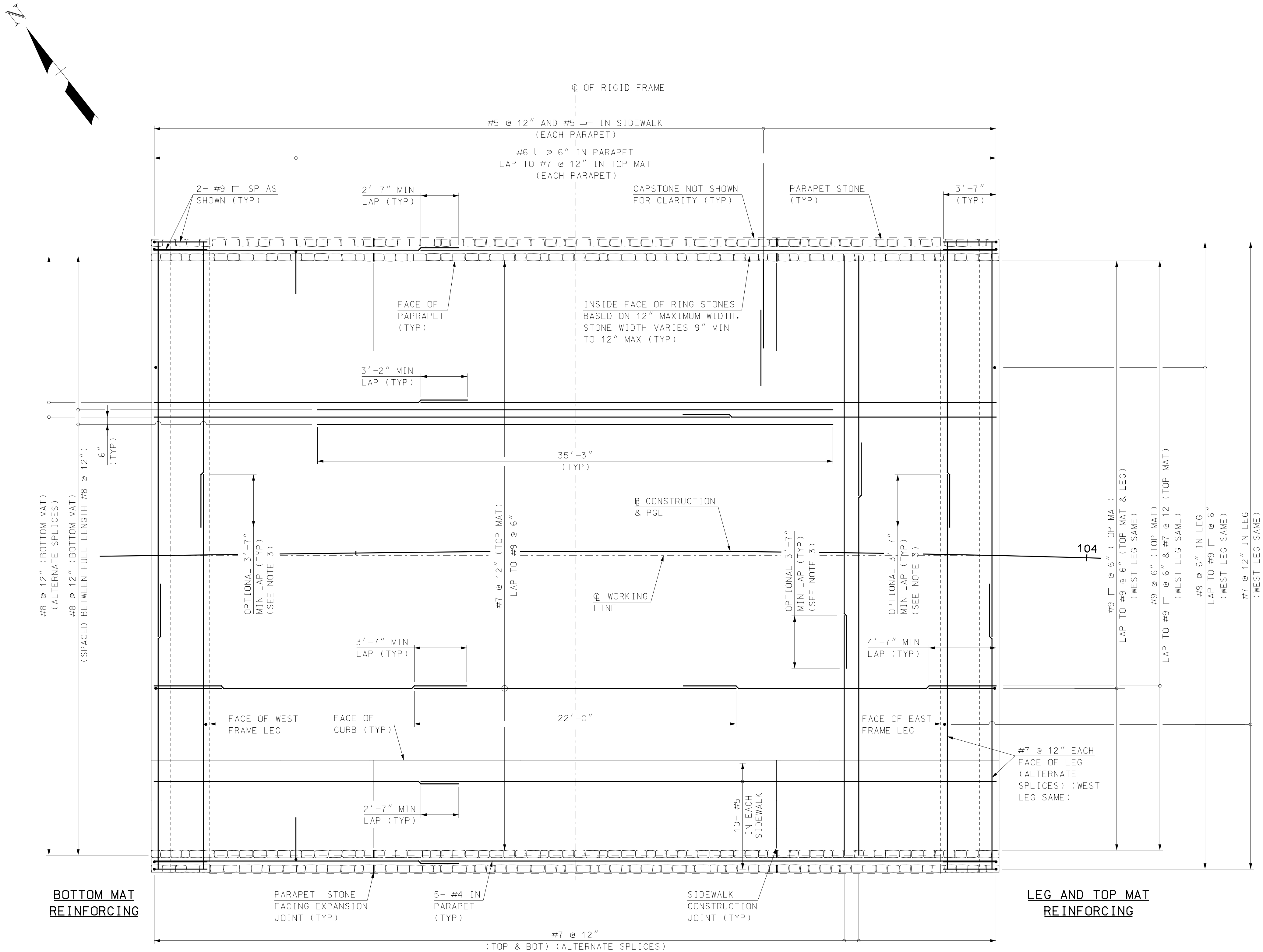
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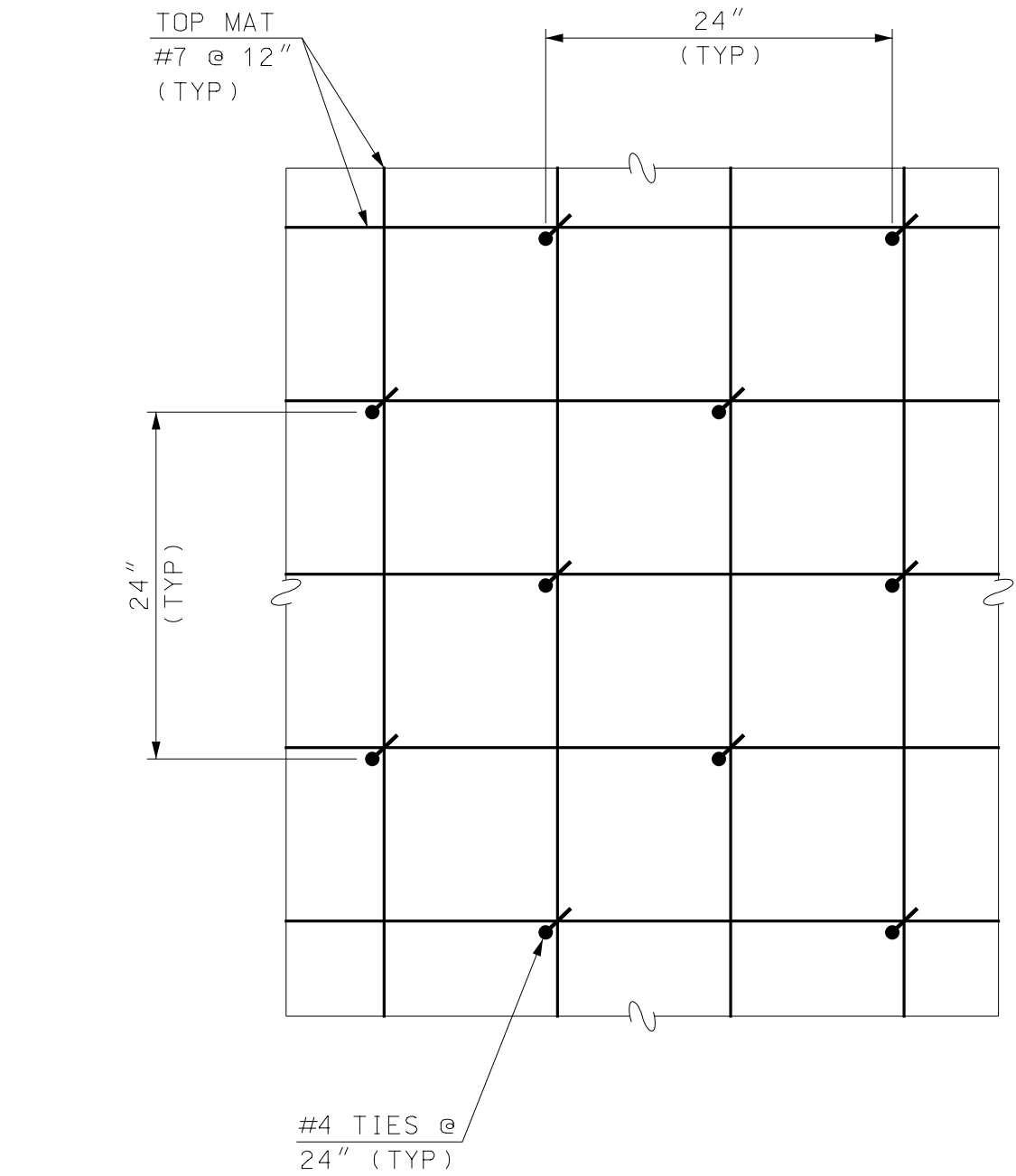
TOWN OF SALEM
SALEM, NEW HAMPSHIRE
ROGE STREET OVER SPICKET RIVER
RIGID FRAME DETAILS (2 OF 3)

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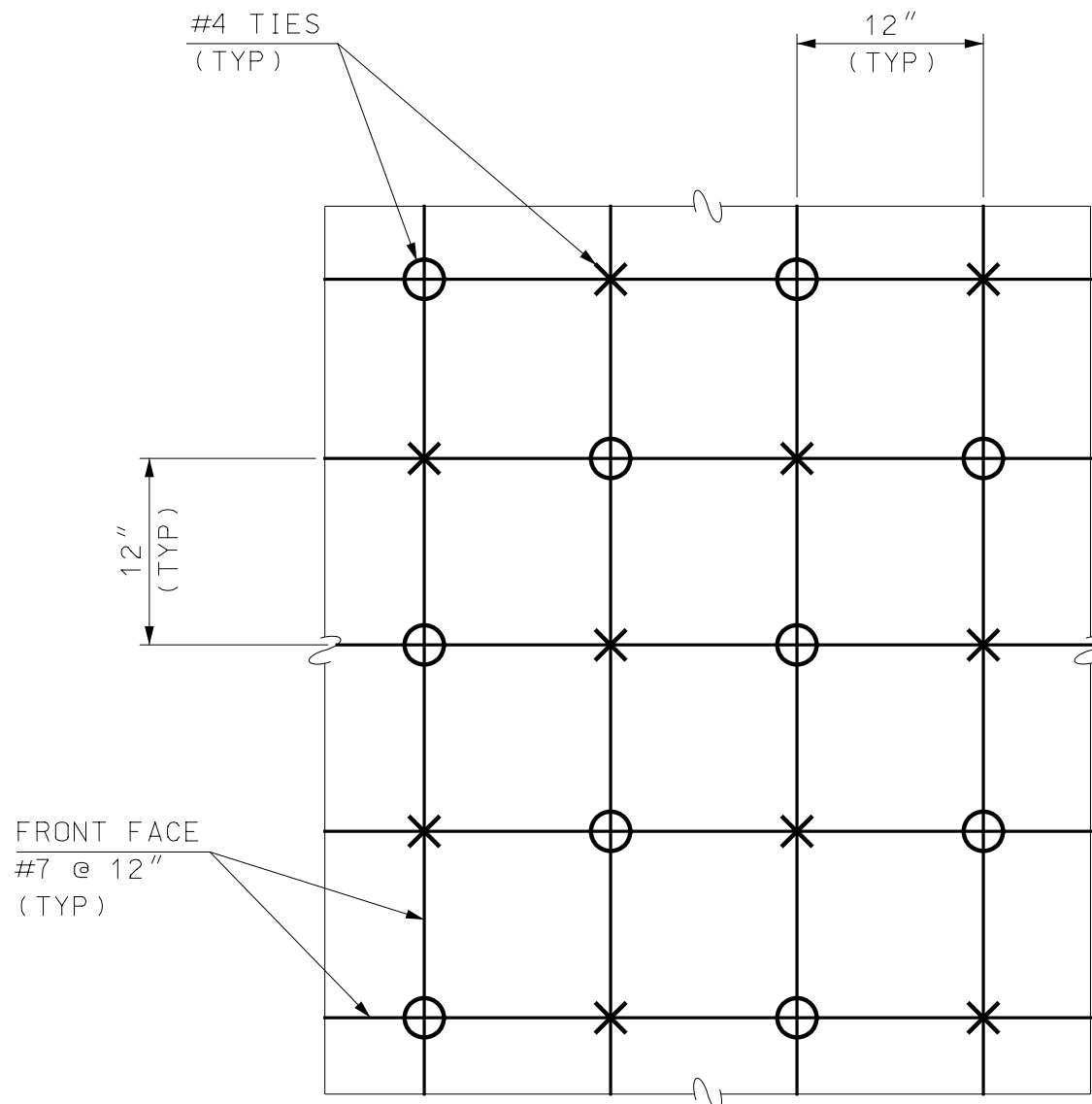


- NOTES
1. TIE BARS NOT SHOWN FOR CLARITY.
 2. ALL REINFORCING STEEL IN THE RIGID FRAME, SIDEWALKS, AND PARAPETS SHALL BE EPOXY AND SHALL BE PAID AS ITEM 544.31.
 3. CONTRACTOR MAY OMIT THE TRANSVERSE #7 REINFORCING BAR SPLICE AND PROVIDE A SINGLE BAR FOR THE RIGID FRAME LEGS AND TOP SLAB TO SUIT THEIR MEANS AND METHODS OF CONSTRUCTION.

DECK REINFORCING PLAN
SCALE: 1/4" = 1'-0"



RIGID FRAME TOP SLAB TIE BAR
LAYOUT PARTIAL PLAN DETAIL
SCALE: 1" = 1'-0"

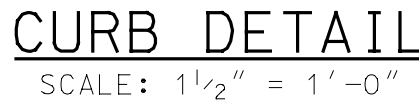


- × 90° LEG AT NEAR SIDE
○ 90° LEG AT FAR SIDE

NOTE
1. FAR FACE REINFORCING
NOTE SHOWN FOR CLARITY.

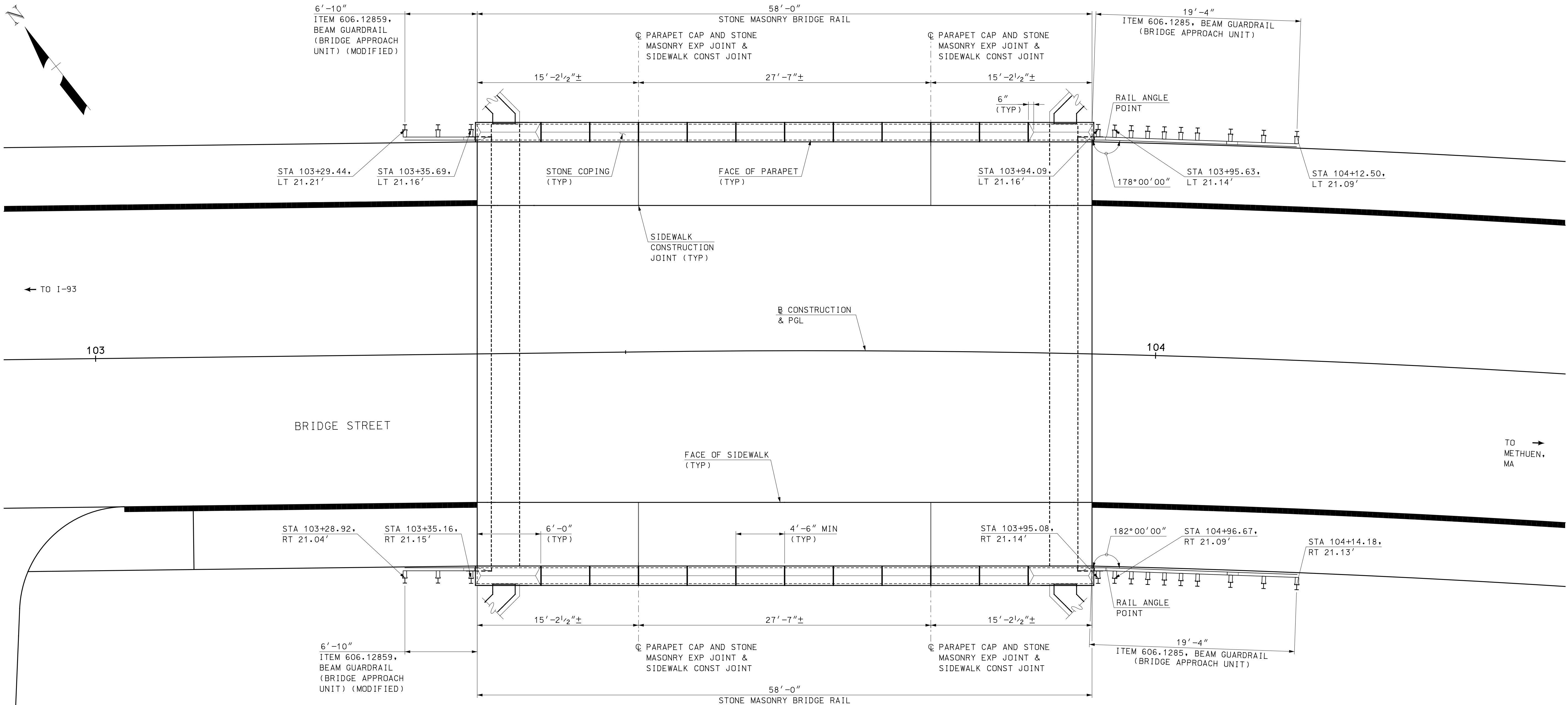
RIGID FRAME LEG TIE BAR LAYOUT
PARTIAL ELEVATION DETAIL
SCALE: 1/2" = 1'-0"

TOWN OF SALEM SALEM, NEW HAMPSHIRE BRIDGE STREET OVER SPICKET RIVER		 150 Dow Street • Manchester, NH 03301 (603) 669-5555 • www.hoyletanner.com		<div><div>HOYLE TANNER</div></div>				<div><div>NOOT BRIDGE NO. 115/097</div><div><div>FILENAME 91810901FR-Detls</div><div>DESIGNED KMW</div></div><div><div>MODEL NAME 91810901FR-Detls3</div><div>DRAWN TAG</div></div><div><div>SCALE</div><div>CHECKED</div></div><div><div>AS SHOWN</div><div>JCR</div></div><div><div>DATE AUGUST 2025</div></div></div>				REV.	DESCRIPTION	DRAWN BY	DATE
PROJECT NO.		19.918109.01		SHEET NO.				38				SHEET 38 OF 54			
TOWN OF SALEM SALEM, NEW HAMPSHIRE BRIDGE STREET OVER SPICKET RIVER		RIGID FRAME DETAILS (3 OF 3)													



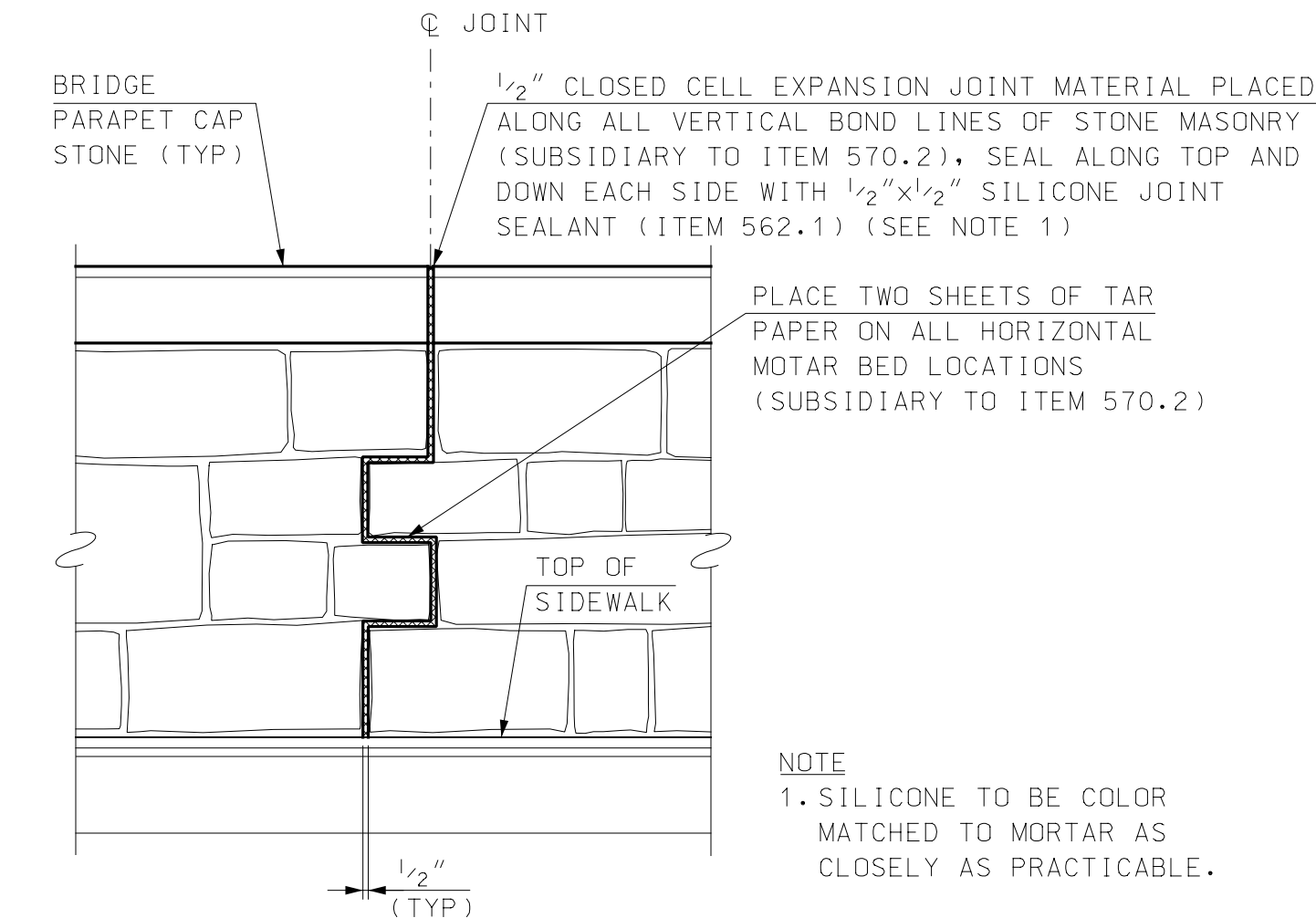
40

8/26/2025 11:42:55 PM K:\PROJECTS\Salem-NH\19_918109_01-Bridge-Street-Spicket-River-Study-TO12-CADD\BRCB-Stle\91810901Railplan.dgn



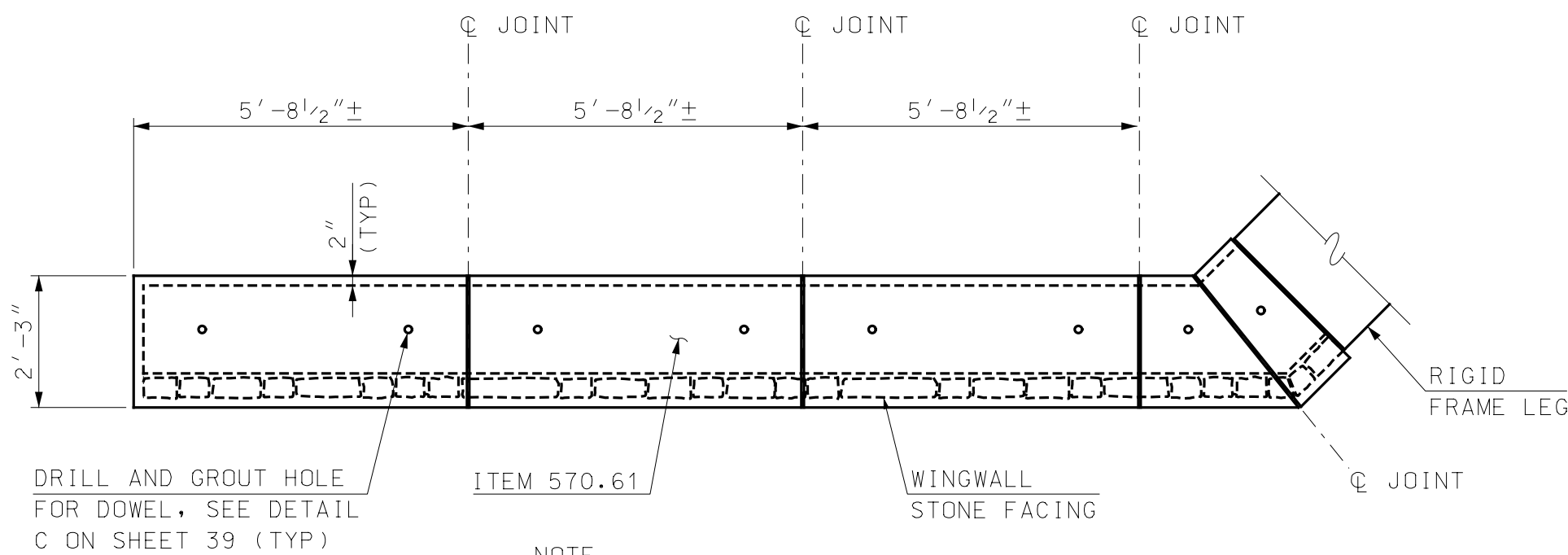
BRIDGE PARAPET WALL AND
APPROACH RAIL LAYOUT PLAN

SCALE: 1" = 5'



PARAPET STONE FACING
EXPANSION JOINT DETAIL

SCALE: 3/4" = 1'-0"



WINGWALL COPING JOINT LAYOUT

SCALE: 3/8" = 1'-0"

BRIDGE AND APPROACH RAIL CONSTRUCTION NOTES

- TOTAL LENGTHS REQUIRED:
ITEM 606.12859, BEAM GUARDRAIL (BRIDGE APPROACH UNIT) (MODIFIED) = 12'-6"
ITEM 606.1285, BEAM GUARDRAIL (BRIDGE APPROACH UNIT) = 38'-8"
- STATIONS AND OFFSETS GIVEN AT FACE OF POST AT POST C.
- APPROACH RAIL ARE 180°00'00" TO PARAPET UNLESS NOTED OTHERWISE.
- APPROACH ROADWAY GUARDRAIL NOT SHOWN ON THIS PLAN, SEE SHEETS 20 AND 21 FOR GUARDRAIL CONSTRUCTION NOTES.

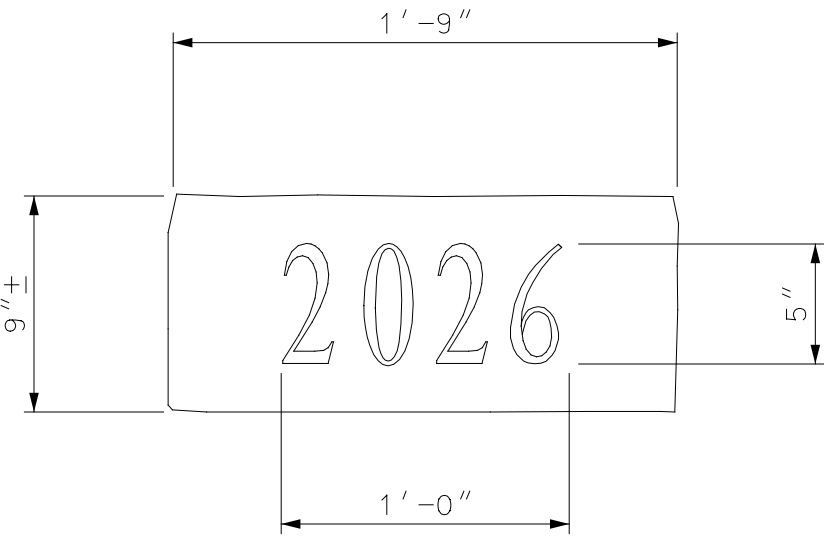
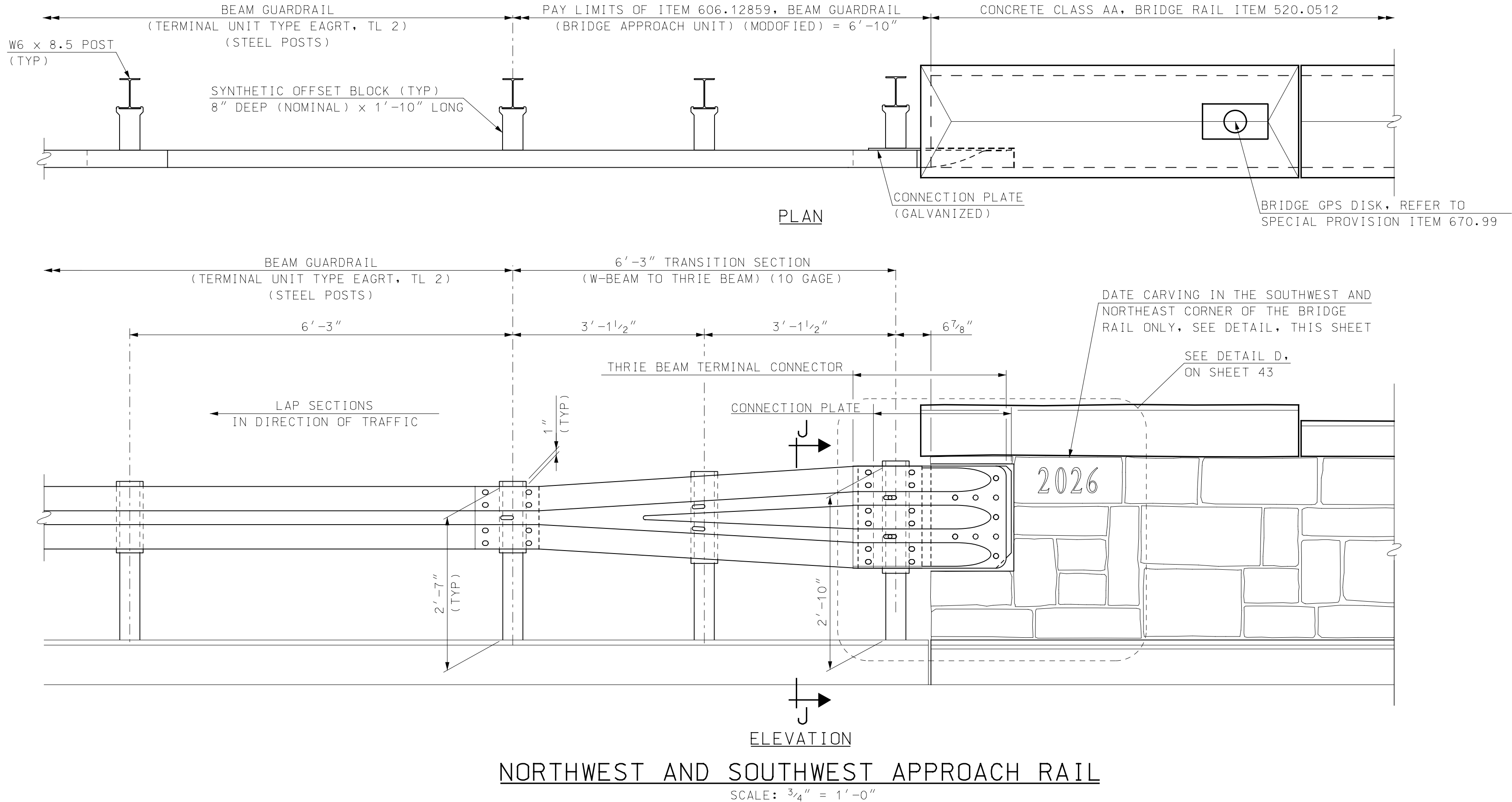
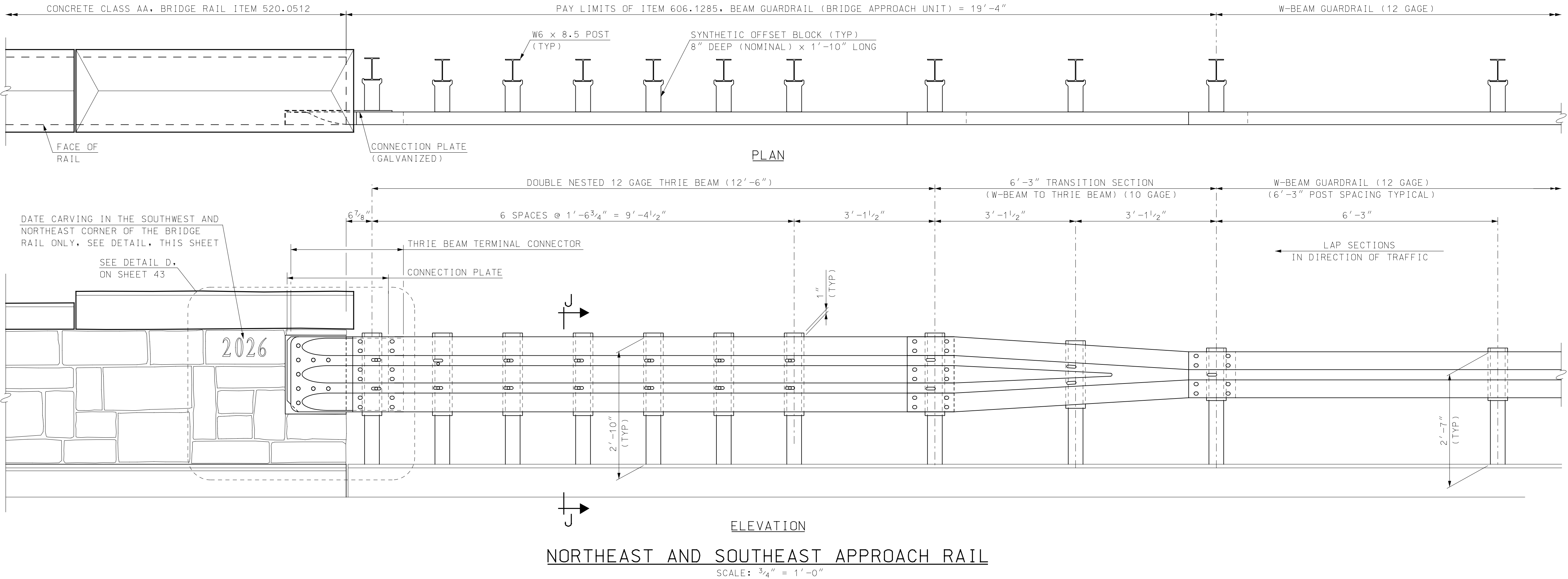
REV.		DESCRIPTION	DATE
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PROJECT NO.		19.918109.01	
SHEET NO.		41	
SHEET 41 OF 54			

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FILENAME	DESIGNED	DATE
91810901Railplan	KMW	
MODEL NAME	DRAWN	
91810901Railplan	TAG	
SCALE	CHECKED	
AS SHOWN	JCR	
		AUGUST 2025

TOWN OF SALEM
SALEM, NEW HAMPSHIRE
BRIDGE STREET OVER SPICKET RIVER
BRIDGE PARAPET WALL AND APPROACH RAIL LAYOUT PLAN



- NOTES
1. DATE SHALL BE CARVED INTO STONE. THE DEPTH OF THE CARVING SHALL BE 1/2". CONTRACTOR SHALL SUBMIT A TEMPLATE OF THE DATE STAMP CARVING ALONG WITH THE QUALIFICATIONS FOR THE FIRM OR SUBCONTRACTOR WHO WILL COMPLETE THE WORK FOR REVIEW AND APPROVAL PRIOR TO COMMENCING WITH THE WORK. ALL COSTS SUBSIDIARY TO ITEM 570.2.
 2. DATE CARVING STONE TO BE LOCATED AT EACH APPROACH END.

DATE CARVING DETAIL

SCALE: 1 1/2" = 1'-0"

NOTE

1. FOR SETION J-J, SEE SHEET 43.

REV.	DESCRIPTION	DRW	CHKD	DATE

FILE NAME	DESIGNED
90810601RailDets	KMW
MODEL NAME	DRAWN
91810801RailDets1	TAG
SCALE	CHECKED
AS SHOWN	JCR
DATE	
AUGUST 2025	

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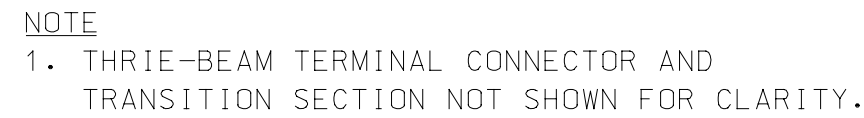
TOWN OF SALEM
SALEM, NEW HAMPSHIRE
BRIDGE STREET OVER SPICKET RIVER
BRIDGE AND APPROACH RAIL DETAILS (1 OF 2)

PROJECT NO. 19.918109.01

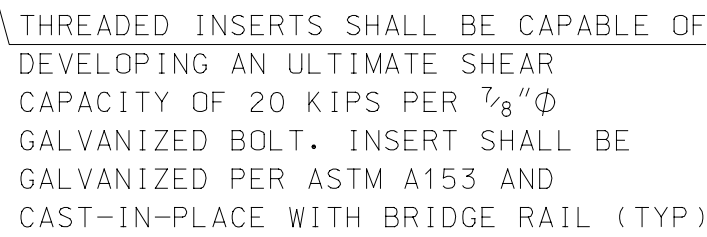
SHEET NO.

42

SHEET 42 OF 54



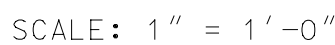
SCALE: $1\frac{1}{2}'' = 1' - 0''$



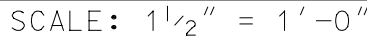
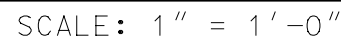
SCALE: $1\frac{1}{2}'' = 1' - 0''$



SCALE: $\frac{3}{4}'' = 1' - 0''$

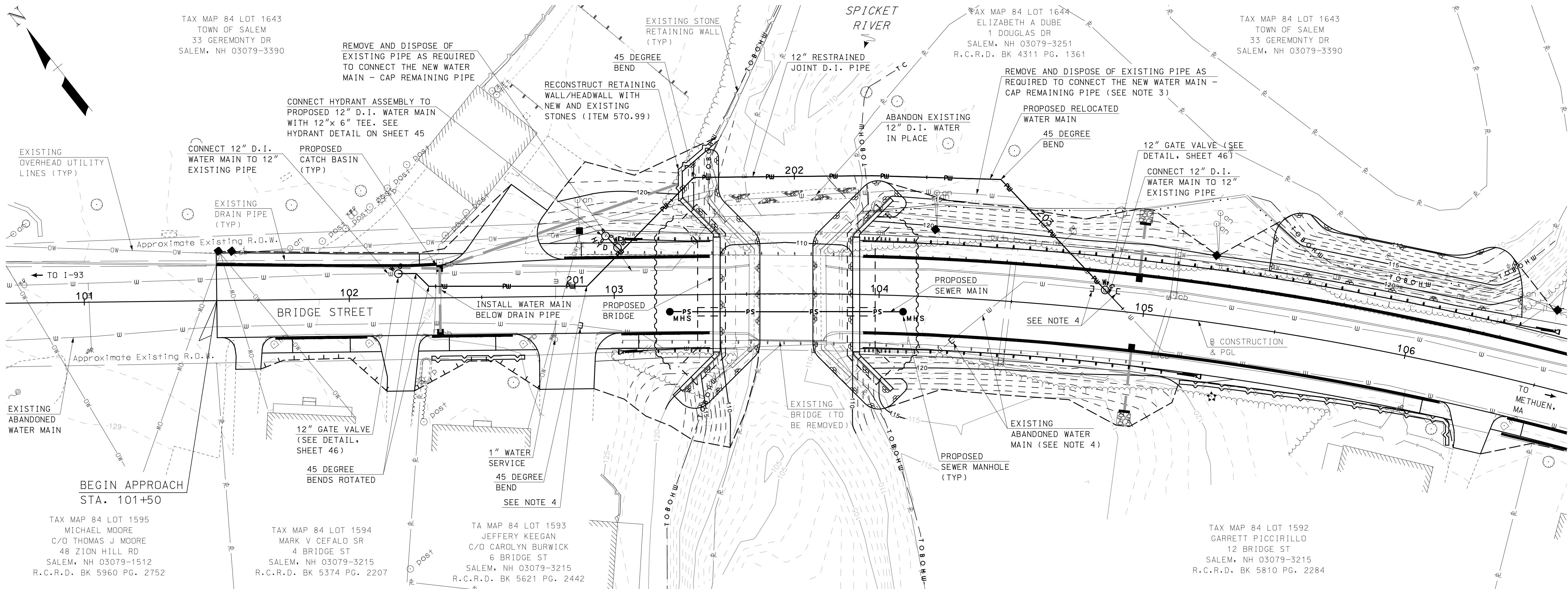


SCALE: 1" = 1'-0"

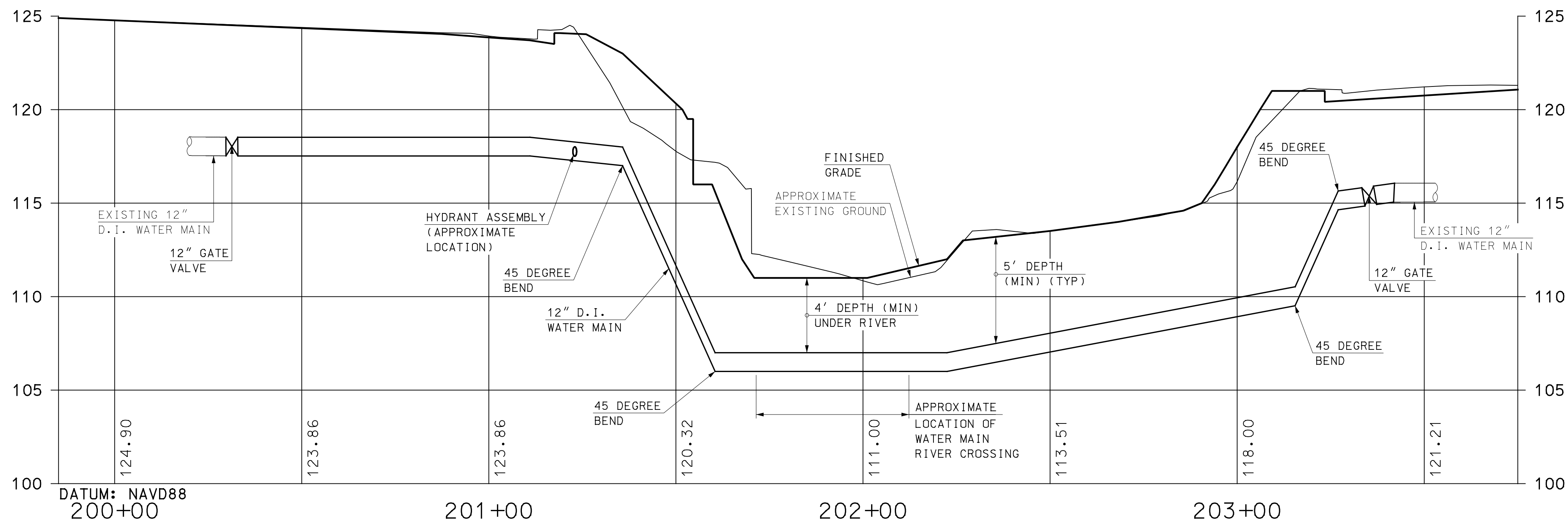


SHEET 43 OF 54

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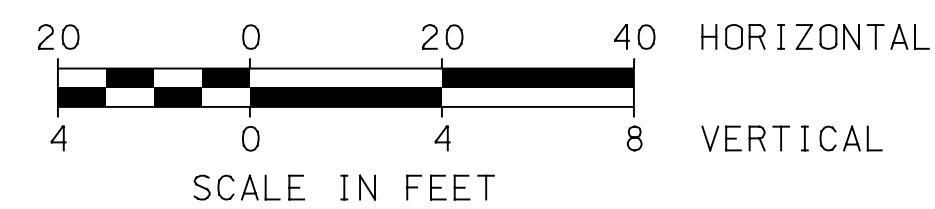
PLAN
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PROFILE

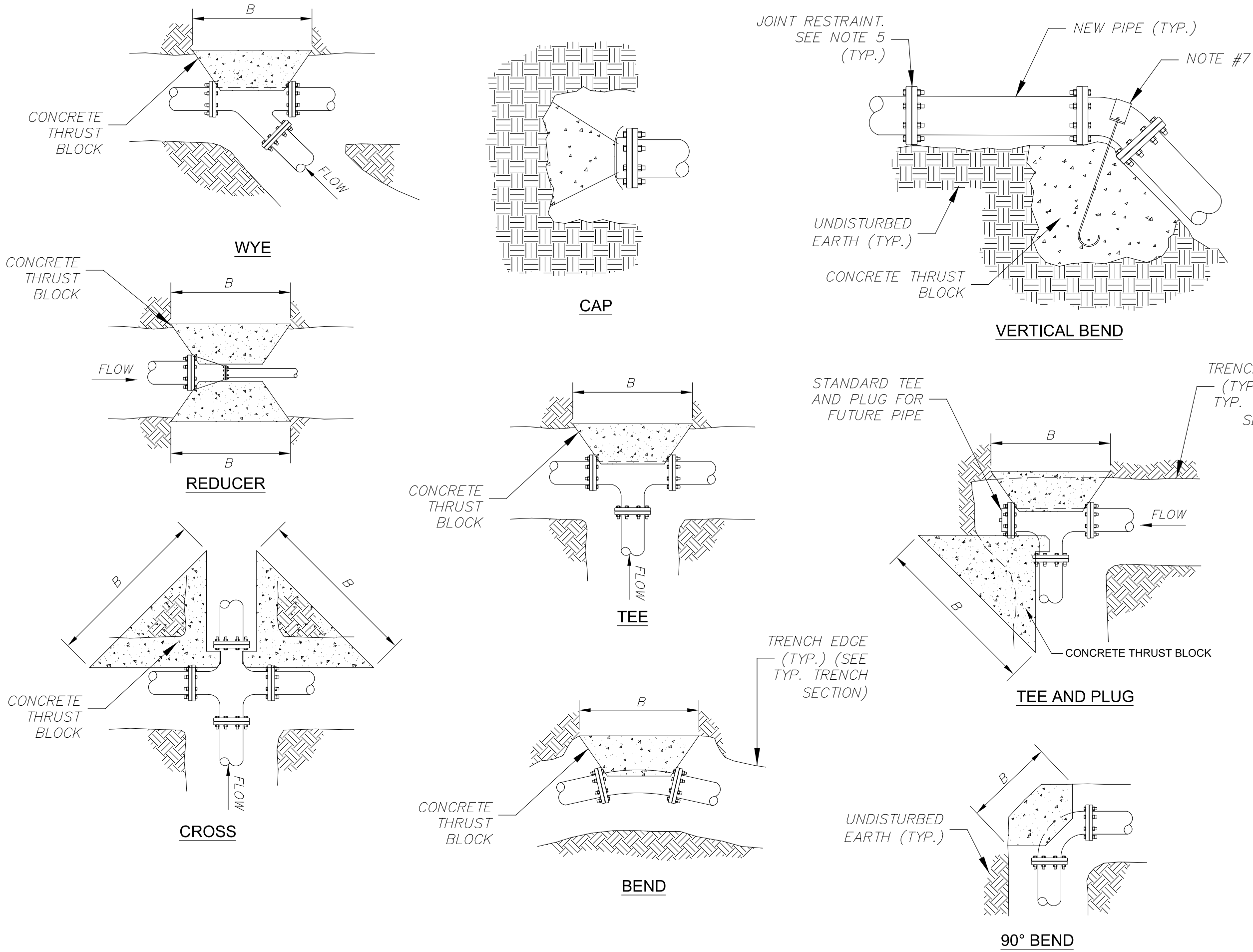
NOTES

1. ALL PROPOSED 12" PIPELINE, FITTINGS, BENDS AND COUPLINGS TO BE RESTRAINED JOINT.
2. ROTATE BENDS AND FITTINGS VERTICALLY AS REQUIRED.
3. EXISTING IN-SERVICE 12" WATER MAIN TO BE REMOVED WITHIN LIMITS OF BRIDGE EXCAVATION AND WITHIN WATER TRENCH LIMITS. CAP ENDS OF WATER MAIN (SUBSIDIARY TO ITEM 611.05212).
4. EXISTING ABANDONED 6" WATER MAIN TO BE REMOVED WITHIN LIMITS OF BRIDGE EXCAVATION, AND CAP ENDS. PORTIONS OF ABANDONED WATER MAIN ENCOUNTERED OUTSIDE BRIDGE EXCAVATION LIMITS IN CONFLICT WITH PROPOSED WORK SHALL BE REMOVED. PORTIONS OF ABANDONED WATER MAIN WITHIN STREAM CHANNEL MAY REMAIN IN PLACE BASED ON CONTRACTOR'S MEANS AND METHODS FOR THE WATER DIVERSION STRUCTURE. ALL REMOVAL PAID AS ITEM 202.43. REMOVAL AND DISPOSAL OF ASBESTOS (ACM) PIPE 0-24" DIAMETER. CUT/CAP WATER MAIN AT REMOVAL LIMITS (SUBSIDIARY TO ITEM 202.43).
5. WATER MAIN WITHIN LIMITS OF REPLACEMENT WILL BE TAKEN OUT OF SERVICE DURING CONSTRUCTION. INSTALLATION OF GATE VALVES SHALL BE COMPLETED IN A PERIOD OF NO LONGER THAN 8 HOURS. TEMPORARY SERVICE TO 6 BRIDGE STREET RESIDENCE WILL BE INSTALLED BY THE TOWN WATER DEPARTMENT. CONTRACTOR TO NOTIFY WATER DEPARTMENT A MINIMUM OF 2 WEEKS IN ADVANCE OF THIS WORK.



TOWN OF SALEM SALEM, NEW HAMPSHIRE BRIDGE STREET OVER SPICKET RIVER WATER MAIN RELOCATION PLAN AND PROFILE		PROJECT NO. 19.918109.01 SHEET NO. 44 SHEET 44 OF 54	
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DATE		AUGUST 2025	

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THRUST BLOCK TABLE

SIZE	TYPE	HORIZONTAL DISTANCE SEE NOTE 1		VERTICAL DISTANCE SEE NOTE 1
		IN SAND OR GRAVEL	IN ROCK	
4"	TEE BRANCH	2'-0"	2'-0"	2'-0"
	90° BEND	2'-0"	2'-0"	2'-0"
	45° BEND	2'-0"	2'-0"	2'-0"
	22 1/2° BEND OR LESS	2'-0"	2'-0"	2'-0"
6"	TEE BRANCH	2'-0"	2'-0"	2'-0"
	90° BEND	2'-6"	2'-0"	2'-6"
	45° BEND	2'-0"	2'-0"	2'-0"
	22 1/2° BEND OR LESS	2'-0"	2'-0"	2'-6"
8"	TEE BRANCH	2'-0"	2'-0"	2'-0"
	90° BEND	3'-0"	2'-0"	3'-0"
	45° BEND	2'-6"	2'-0"	2'-0"
	22 1/2° BEND OR LESS	2'-0"	2'-0"	2'-0"
10"	8x6 REDUCER	2'-0"	2'-0"	2'-0"
	PLUG OR CAP	2'-6"	2'-0"	2'-6"
	TEE BRANCH	3'-0"	2'-0"	3'-0"
	90° BEND	3'-0"	2'-0"	3'-0"
12"	45° BEND	2'-6"	2'-0"	2'-6"
	22 1/2° BEND OR LESS	2'-0"	2'-0"	2'-0"
	TEE BRANCH	4'-0"	2'-0"	3'-0"
	90° BEND	4'-0"	3'-0"	4'-0"
16"	45° BEND	3'-6"	2'-0"	3'-0"
	22 1/2° BEND OR LESS	2'-0"	2'-0"	2'-0"
	TEE BRANCH	4'-0"	3'-0"	4'-6"
	90° BEND	5'-0"	4'-0"	5'-0"
20"	45° BEND	4'-0"	3'-0"	4'-0"
	22 1/2° BEND OR LESS	3'-0"	2'-0"	3'-0"
	TEE BRANCH	5'-0"	3'-0"	4'-0"
	90° BEND	6'-0"	4'-0"	5'-0"
24"	45° BEND	4'-6"	3'-0"	4'-6"
	22 1/2° BEND OR LESS	3'-0"	2'-0"	3'-0"

NOTES:

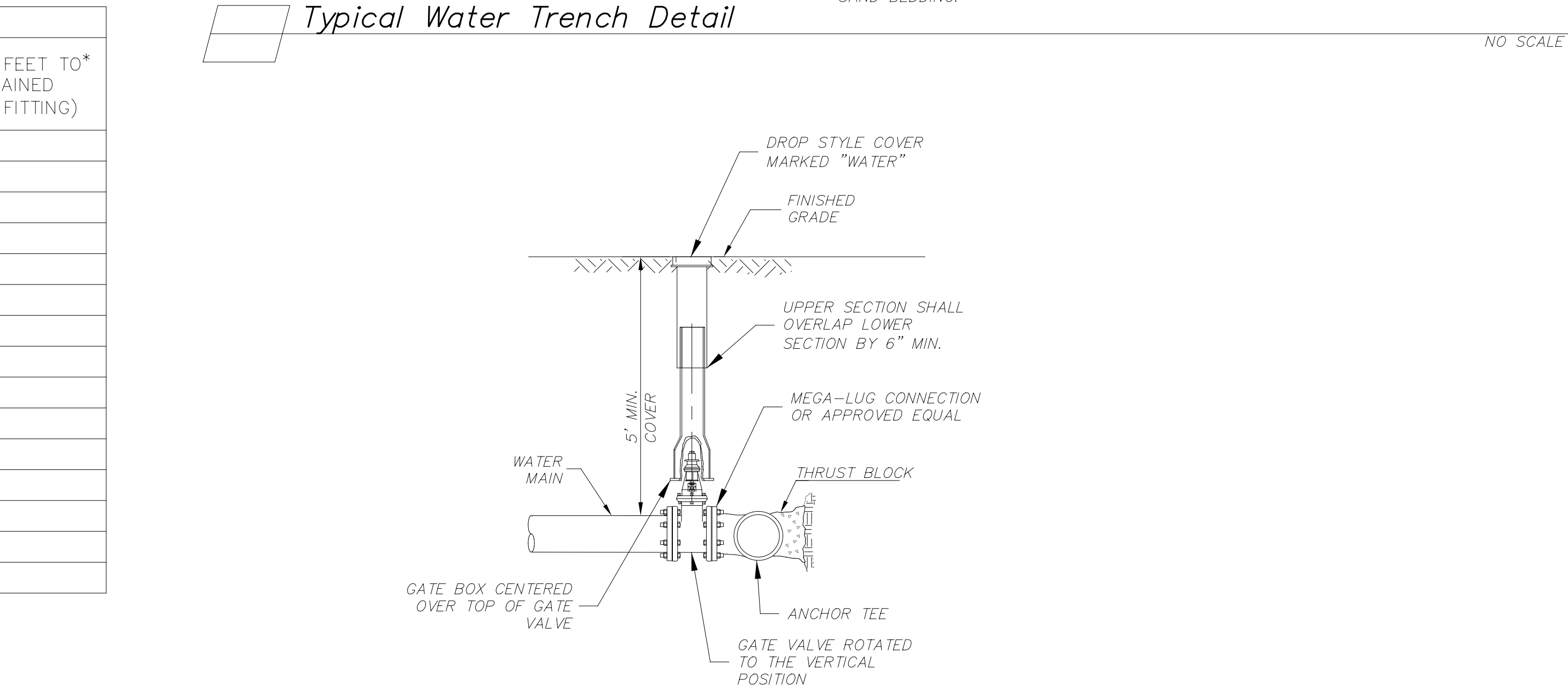
- THRUST BLOCK DIMENSIONS TO BE DETERMINED IN FIELD BY ENGINEER BASED ON PIPE SIZE, WATER PRESSURE AND SOIL TYPE. MINIMUM SIZE SHALL BE 2'x2'x2'.
- PRECAST BLOCKS MAY BE SUBSTITUTED FOR CONCRETE THRUST BLOCKS PROVIDED THEY ARE OF EQUAL SIZE AND BEAR ON UNDISTURBED EARTH. WHERE PRECAST BLOCKS ARE USED ADDITIONAL CONCRETE MUST STILL BE POURED AT THE FITTING TO PROVIDE AN EVEN BEARING SURFACE OVER THE ENTIRE CONTACT AREA. MIN OF (2) 80 POUND BAGS OF CONCRETE SHALL BE USED. ROCKS SHALL NOT BE ACCEPTABLE AS THRUST.
- USE OF JOINT RESTRAINT SYSTEMS SHALL NOT ELIMINATE THRUST BLOCK REQUIREMENTS (WHERE POSSIBLE).
- 8 MIL POLY SHALL BE PLACED BETWEEN CONCRETE AND FITTING IF THRUST BLOCK IS POURED CONCRETE.
- JOINT RESTRAINT: A MINIMUM OF 1 JOINT ON EACH SIDE OF A FITTING SHALL BE RESTRAINED AND ALONG THE BRANCH OF A TEE. SPECIFIC DISTANCES SHALL BE DETERMINED BY THE TOWN OF SALEM WATER DEPARTMENT.
- CONCRETE FOR THRUST BLOCKING SHALL BE CLASS B AS DEFINED IN NHDOT SECTION 520
- WHERE VERTICAL RESTRAINT IS USED ANCHOR RODS SHALL BE 1/2" GALVANIZED STEEL WRAPPED AROUND THE PIPE AND EMBEDDED IN THE CONCRETE.

Typical Thrust Blocking Detail

NO SCALE

Typical Water Trench Detail

NO SCALE



Buried Gate Valve Detail

NO SCALE

WATER TRENCH NOTES:

- REFERENCE TOWN OF SALEM STANDARD SPECIFICATIONS FOR METHOD OF MEASUREMENT AND PAYMENT.
- PAVEMENT REPAIR IN EXISTING ROADWAYS SHALL CONFORM TO STREET OPENING REGULATIONS.
- ALL LOCAL STATE AND FEDERAL SAFETY STANDARDS SHALL BE STRICTLY ADHERED TO.
- NEW ROADWAY CONSTRUCTION SHALL CONFORM TO TOWN OF SALEM SUBDIVISION REQUIREMENTS
- SEE TOWN OF SALEM PERMANENT PAVEMENT REPAIR DETAIL FOR CUTBACK AND GRIND REQUIREMENTS WITHIN EXISTING ROADWAYS.
- BITUMINOUS PAVEMENT, DEPTH EQUAL TO EXISTING PAVEMENT WITH 4" MIN. (1.5" WEARING (1/2" MIX), 3" BASE (3/4" MIX)). PAVEMENT SHALL CONFORM TO NHDOT ITEMS 403.11023 AND 403.11043.
- DAMAGED OR OTHERWISE DEFICIENT PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE
- INSPECTION: FOLLOWING INSTALLATION WATER LINES SHALL BE CLEANED AND VISUALLY INSPECTED AND TESTED ACCORDING TO TOWN OF SALEM SPECIFICATIONS.
- UNSUITABLE MATERIAL & OVER EXCAVATION: ANY EXCAVATION OUTSIDE OF DEFINED PAY LIMIT SHALL BE STRICTLY COORDINATED AND MEASURED WITH THE ENGINEER FOR PAYMENT. ANY MATERIAL REMOVED WITHOUT PRIOR AUTHORIZATION SHALL NOT BE PAID. EXCAVATION AREAS SHALL BE BACKFILLED WITH APPROPRIATE BEDDING MATERIALS. UNSUITABLE REMOVAL AND REPLACEMENT WITH GRANULAR MATERIAL WITHIN TRENCH PAY LIMITS IS SUBSIDIARY.
- MATERIAL SHALL BE REPLACED IN KIND OF WHENEVER POSSIBLE.
- SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL AND ALL ROCKS OVER SIX INCHES IN THE LARGEST DIMENSION, OR ANY MATERIAL WHICH, AS DETERMINED BY THE TOWN OF SALEM DEPARTMENT OF ENGINEERING, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION. SUITABLE MATERIAL SHALL BE PLACED IN 6" LIFTS AND THOROUGHLY COMPACTED.
- COMPACTION: BACKFILL OF THE TRENCHES SHALL BE COMPACTED TO TO 95% MAX. DRY DENSITY UNDER ALL PAVED AREAS AND 92% MAX. DRY DENSITY UNDER OTHER AREAS IN ACCORDANCE WITH NHDOT STANDARD SPECIFICATIONS – SECTION 304.
- IF TRENCH BOTTOM IS DISTURBED THEN CONTRACTOR SHALL COMPACT AS APPROPRIATE.
- WHERE ROCK IS ENCOUNTERED IN TRENCH EXCAVATION. ALLOWABLE PAY LIMIT SHALL BE AS DEFINED IN THE CHART SHOWN IN THIS DETAIL TO 12-INCHES BELOW PIPE.
- BRASS WEDGES SHALL BE INSERTED AT THE JOINTS OF ALL PUSH-ON DUCTILE IRON PIPE. SEE SPECIFICATION FOR PLACEMENT AND NUMBER AT EACH JOINT. (SUBSIDIARY TO PIPE ITEM)
- OUNDING UNDER THE PIPE SHALL BE PROVIDED AT THE TIME OF PIPE INSTALLATION TO ENSURE PROPER PIPE ALIGNMENT, LEVEL TRENCH BOTTOM, AND PROPER DEPTH OF SAND BEDDING.

PAY LIMITS	
TRENCH WIDTH	I.D.
36"	UP TO 12"
I.D. + 24"	12" TO 24"
2 x I.D.	OVER 24"

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TOWN OF SALEM
SALEM, NEW HAMPSHIRE

BRIDGE STREET OVER SPICKET RIVER

WATER MAIN DETAILS (2 OF 3)

PROJECT NO. 19.918109.01

SHEET NO.

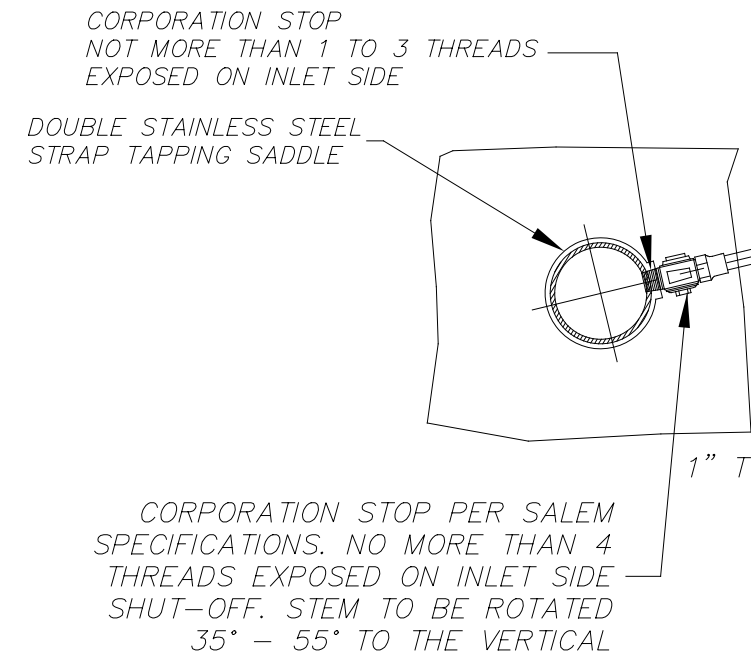
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SHEET 46 OF 54

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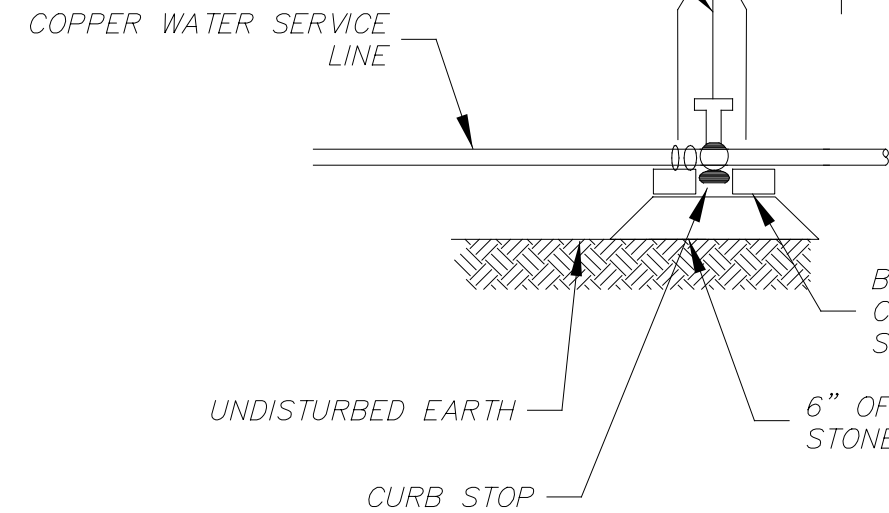
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NO SCALE

NOTES:

5. WATER SERVICE BOXES MUST BE LOCATED BETWEEN THE CURBLINE AND IN FRONT OF THE R.O.W.
6. NEW COPPER LINE SHALL BE CONTINUOUS WITHOUT JOINTS UNTIL BEYOND ROADWAYS AND SIDEWALKS.
7. UNION SHALL BE SUCH THAT IT CONNECTS BETWEEN THE PROPOSED AND EXISTING SERVICE. PROVIDING AND INSTALLING THE UNION (INCLUDING CHANGES IN PIPE SIZE) SHALL BE INCIDENTAL.
8. TRENCH SHALL MEET REQUIREMENTS OF TYPICAL WATER TRENCH DETAIL.
9. LOCATION OF TAPPING VALVE, CURB STOP, AND CORPORATION SHALL BE VERIFIED BY THE TOWN OF SALEM WATER DEPARTMENT PRIOR TO MAKING THE FINAL CONNECTION AND BACKFILLING THE TRENCH. DUAL SWING TIES SHALL BE PROVIDED AS PART OF THE PERMITTING PROCESS.
10. AS-BUILT INFORMATION DEPICTING THE LAYOUT OF WATER SERVICE BETWEEN THE CURB STOP AND THE ENTRANCE TO A STRUCTURE SHALL BE PROVIDED AS PART OF THE PERMITTING PROCESS.

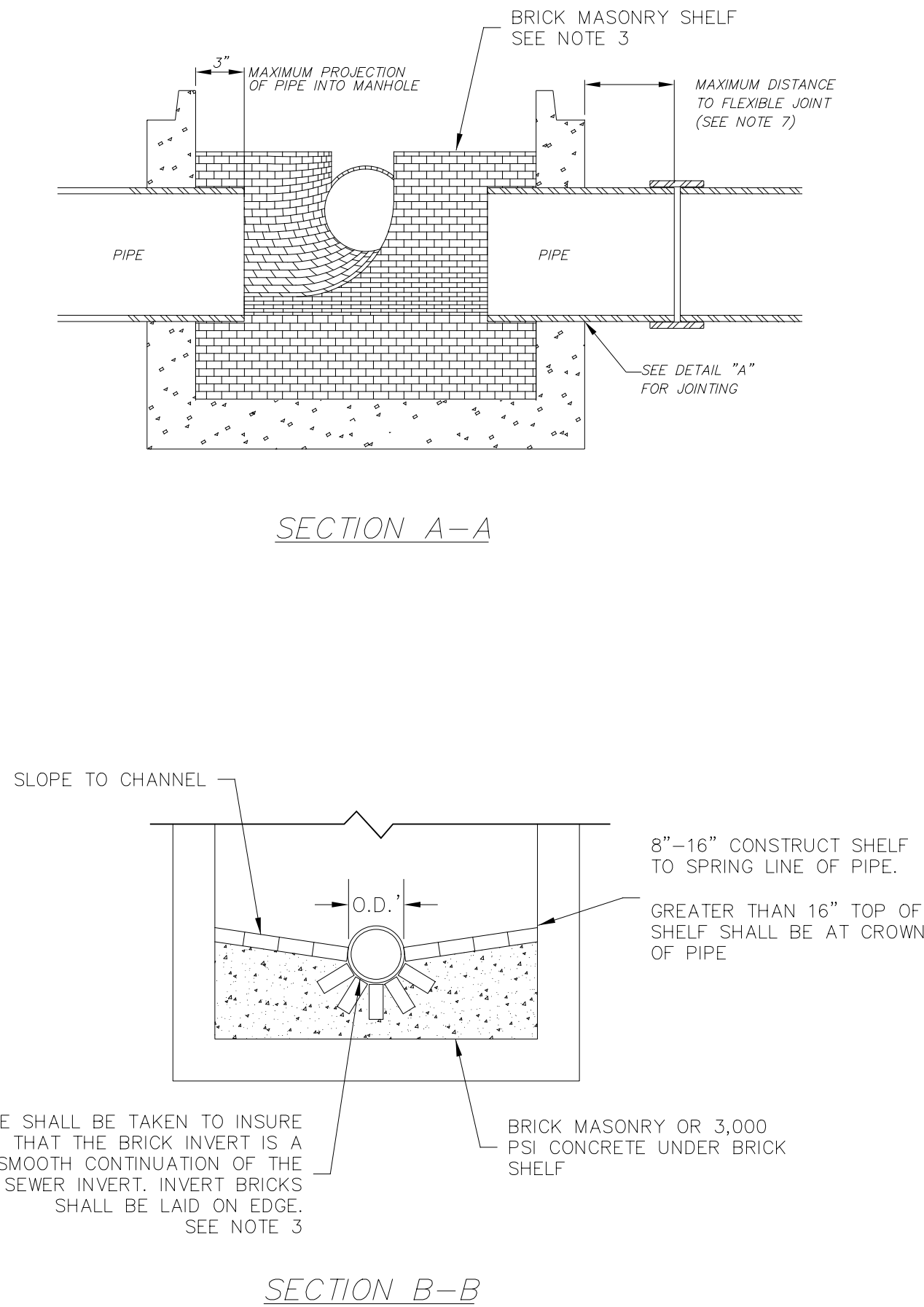


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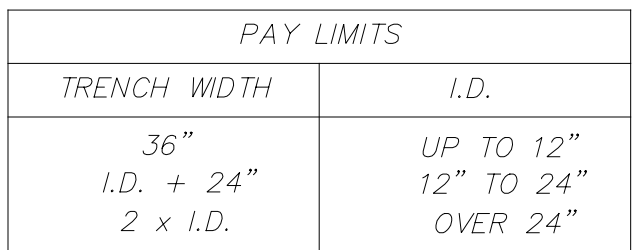
NOTES:

2. WATER SERVICE BOXES
MUST BE LOCATED BEHIND THE
CURBLINE AND IN FRONT OF
THE R.O.W.
3. WHERE CURB BOX IS IN
PAVED AREAS CURB BOX CAP
SHALL BE BELOW GRADE AND
INSTALL A VALVE BOX (TOP
ONLY) PER VALVE BOX
INSTALLATION DETAIL.

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NO SCALE



NO SCALE

11

2. PAVEMENT REPAIR IN EXISTING ROADWAYS SHALL CONFORM TO STREET OPENING REGULATIONS.
3. ALL LOCAL STATE AND FEDERAL SAFETY STANDARDS SHALL BE STRICTLY ADHERED TO.
4. NEW ROADWAY CONSTRUCTION SHALL CONFORM TO TOWN OF SALEM SUBDIVISION REQUIREMENTS
5. SEE TOWN OF SALEM PERMANENT PAVEMENT REPAIR DETAIL FOR CUTBACK AND GRIND REQUIREMENTS WITHIN EXISTING ROADWAYS.
6. BITUMINOUS PAVEMENT, DEPTH EQUAL TO EXISTING PAVEMENT WITH 4" MIN. (1.5" WEARING (1/2" MIX), 2.5" BASE (3/4" MIX)). PAVEMENT SHALL CONFORM TO NHDOT ITEM 403.11.
7. DAMAGED OR OTHERWISE DEFICIENT PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE
8. TESTING: PIPE INSTALLATION SHALL BE SUBJECT TO PRESSURE TESTS AND MANDREL TESTS IN ACCORDANCE WITH TOWN OF SALEM STANDARD SPECIFICATIONS.
9. INSPECTION: FOLLOWING INSTALLATION SEWER LINES SHALL BE CLEANED AND VISUALLY INSPECTED. PIPES SHALL BE TRUE TO LINE AND GRADE PRIOR TO ACCEPTANCE AND USE.
10. UNSUITABLE MATERIAL & OVER EXCAVATION: ANY EXCAVATION OUTSIDE OF DEFINED PAY LIMIT SHALL BE STRICTLY COORDINATED AND MEASURED WITH THE ENGINEER FOR PAYMENT. ANY MATERIAL REMOVED WITHOUT PRIOR AUTHORIZATION SHALL NOT BE PAID. EXCAVATION AREAS SHALL BE BACKFILLED WITH APPROPRIATE BEDDING MATERIALS. REMOVAL OF UNSUITABLES AND REPLACEMENT WITH SUITABLE GRANULAR FILL WITHIN TRENCH PAY LIMITS IS SUBSIDIARY.

REFERENCE TOWN OF SALEM AND NHDES STANDARD SPECIFICATIONS (ENV-WQ 704.10) FOR MANHOLE CONSTRUCTION.

2. LEAKAGE TEST: ALL SEWERS, MANHOLES AND FORCEMAINS SHALL BE TESTED FOR WATER TIGHTNESS BY USE OF LOW PRESSURE AIR TESTS. LOW PRESSURE AIR TESTS SHALL CONFORM TO ASTM C828. WATER EXFILTRATION TESTING SHALL NOT BE ALLOWED.

3. INVERTS AND SHELVES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF THE PIPE AND FLOW. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOW THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY. INVERTS AND SHELVES SHALL BE PLACED AFTER TESTING. ALL BRICK MASONRY FOR SHELF, INVERT AND GRADE ADJUSTMENT SHALL COMPLY WITH MASH TO M91 WITH 3-4% MAX ABSORPTION DURING 5 HOUR BOIL TEST.

4. FRAMES AND COVERS MANHOLE FRAMES AND COVERS SHALL PROVIDE A THIRTY INCH CLEAR OPENING. A 3-INCH (MINIMUM HEIGHT) WORD "SEWER" SHALL BE CAST INTO THE TOP SURFACE.

4a. BRICK FACE WORK SHALL BE LAID CLOSE WITH JOINTS NOT EXCEEDING 1/4". CONCRETE COLLARS ARE NOT ALLOWED.

5. UNSUITABLE MATERIAL & OVER EXCAVATION: PAY LIMITS FOR STRUCTURE INSTALLATION SHALL BE COMPLETE IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS AND METHODS OF STRUCTURE INSTALLATION. CLAIMS FOR OVER EXCAVATION SHALL NOT BE GRANTED. EXCAVATION AREAS SHALL BE BACKFILLED WITH APPROPRIATE BEDDING MATERIALS. REMOVAL OF UNSUITABLES AND REPLACEMENT WITH SUITABLE GRANULAR FILL IS SUBSIDIARY.

6. BEDDING 3/4" CRUSHED STONE CONFORMING TO NHDOT SECTION 703, #67 STONE GRADATION SHALL BE USED FOR BEDDING. WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE ADDITIONAL SCREENED GRAVEL OR CRUSHED STONE 1/2 TO 1-1/2 INCH SHALL BE USED.

7. FLEXIBLE JOINT A FLEXIBLE JOINT MAY BE REQUIRED BASED ON PIPE MATERIAL, PIPE SIZE, AND DIFFERENTIAL SETTLING PROBABILITY. NEED AND LOCATION OF A FLEXIBLE JOINT SHALL BE COORDINATED WITH THE SALEM ENGINEERING DEPARTMENT.

8. MANHOLE STEPS - STEPS ARE NOT ALLOWED

9. PIPE TO MANHOLE JOINTS SHALL BE ELASTOMERIC, RUBBER SLEEVE WITH WATERTIGHT JOINTS AT THE MANHOLE OPENING AND OPENING SURFACES; OR CAST INTO THE WALL AND SECURED WITH STAINLESS STEEL CLAMPS. ELASTOMERIC SEALING RING SHALL FORM A WATER TIGHT SEAL ON THE SURFACE OF THE PIPE BY COMPRESSION OF THE RING. AFTER TESTING NON-SHRINK GROUT SHALL BE PLACED IN THE ANGULAR SPACE BETWEEN THE SEALING BOOT AND PIPE.

10. FOR BITUMASTIC TYPE JOINTS THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY
APPROVED BITUMASTIC: RAM-NEK
KENT SEAL NO. 2 DOUBLE ROLL
ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.

11. MORTAR AND OTHER SEALANTS SHALL CONFORM TO ENV-WQ 704.10 SECTION (K)(11) THRU (15)

12. BACKFILL WITHIN 1-FOOT OF THE STRUCTURE WALL SHALL BE SAND CONFORMING TO NHDOT MATERIAL SPEC ITEM 304.1. REMAINING BACKFILL SHALL CONFORM TO SALEM TYPICAL TRENCH REQUIREMENTS. BACKFILL SHALL BE COMPACTED IN 6" LIFTS AND COMPACTED TO 95% OF THE MODIFIED PROCTOR TEST. CARE SHALL BE TAKEN TO ENSURE THAT NO LARGE STONES ARE WITHIN 12" OF THE OUTSIDE WALL.

13. SEPARATE CONSTRUCTION SPECIFICATIONS ARE ATTACHED OR INCLUDED IN THE CONTRACT DOCUMENTS. THESE STANDARD DRAWINGS ARE NOT COMPLETE WITHOUT THESE SPECIFICATIONS.

11. BACKFILL MATERIAL SHALL BE REPLACED IN KIND WHENEVER POSSIBLE.

12. ROCK STRUCTURE EXCAVATION

12. SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL AND ALL ROCKS OVER SIX INCHES IN THE LARGEST DIMENSION, OR ANY MATERIAL WHICH, AS DETERMINED BY THE TOWN OF SALEM DEPARTMENT OF ENGINEERING, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION. SUITABLE MATERIAL SHALL BE PLACED IN 6" LIFTS AND THOROUGHLY COMPACTED.

13. COMPACTION: BACKFILL OF THE TRENCHES SHALL BE COMPACTED TO 95% MAX. DRY DENSITY UNDER ALL PAVED AREAS AND 92% MAX. DRY DENSITY UNDER OTHER AREAS IN ACCORDANCE WITH NHDOT STANDARD SPECIFICATIONS – SECTION 304.

14. IF TRENCH BOTTOM IS DISTURBED THEN CONTRACTOR SHALL COMPACT AS APPROPRIATE.

15. WATER-LINE SEPARATION: THERE SHALL BE TEN FEET HORIZONTAL SEPARATION BETWEEN SEWER LINE AND WATER MAIN AND 18 INCHES VERTICAL SEPARATION AT CROSSINGS (WATER OVER SEWER).

15. WATER-LINE CROSSINGS: WHENEVER SEWERS MUST CROSS WATER MAINS, THE SEWER PIPE SHALL BE CONSTRUCTED UNDER THE WATER LINE AND BE CLASS 52 DUCTILE IRON FOR A MINIMUM DISTANCE OF 9 FEET EACH SIDE OF CROSSING.

16. CONCRETE ENCASEMENT: IF SPECIFIED, REFERENCE TOWN OF SALEM CONCRETE ENCASEMENT DETAIL FOR PROPER CONCRETE ENCASEMENT.

17. SHORING AND STABILIZING OF TRENCH SIDEWALLS DURING EXCAVATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR ANY TRENCH EXCAVATION BEYOND THE LIMITS OF PAY EXCAVATION INDICATED INCLUDING ROCK OR ROCK STRUCTURE EXCAVATION

NOTE:

1. SEE SHEET 15 FOR FRAME SET DETAIL.

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AS SHOWN	JCR				
DATE					
AUGUST 2025					

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BRIDGE STREET OVER SPICKET RIVER

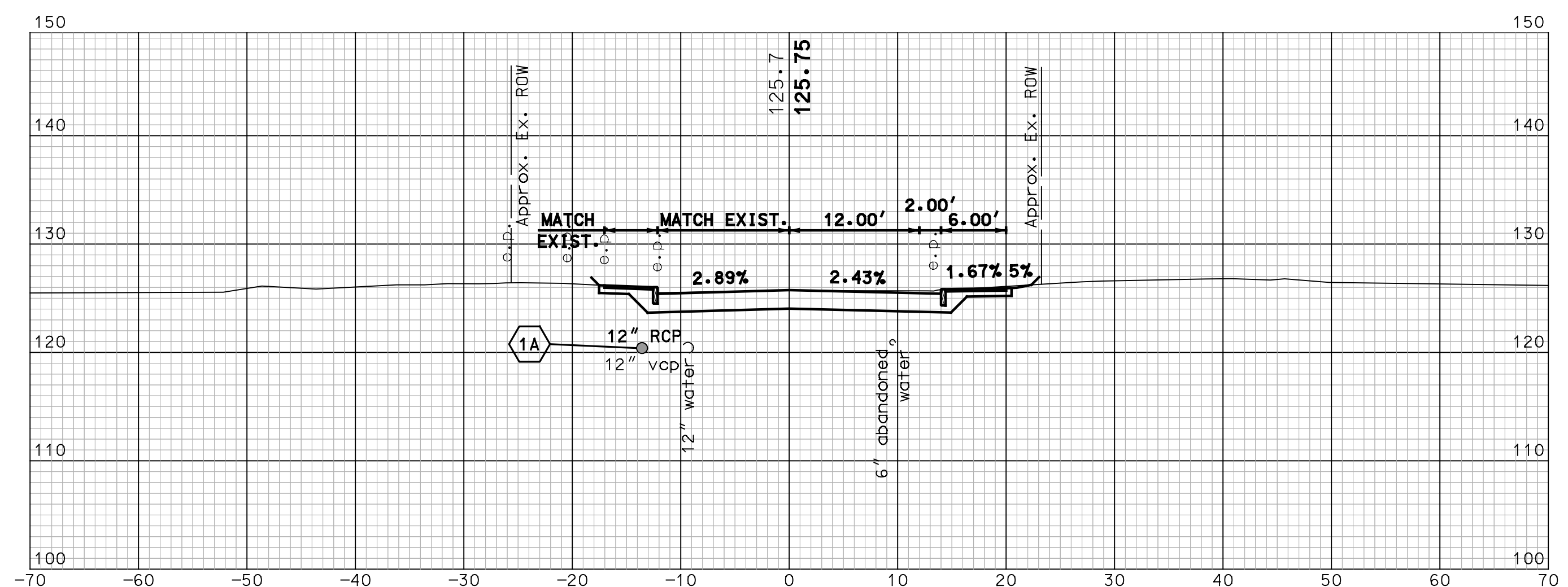
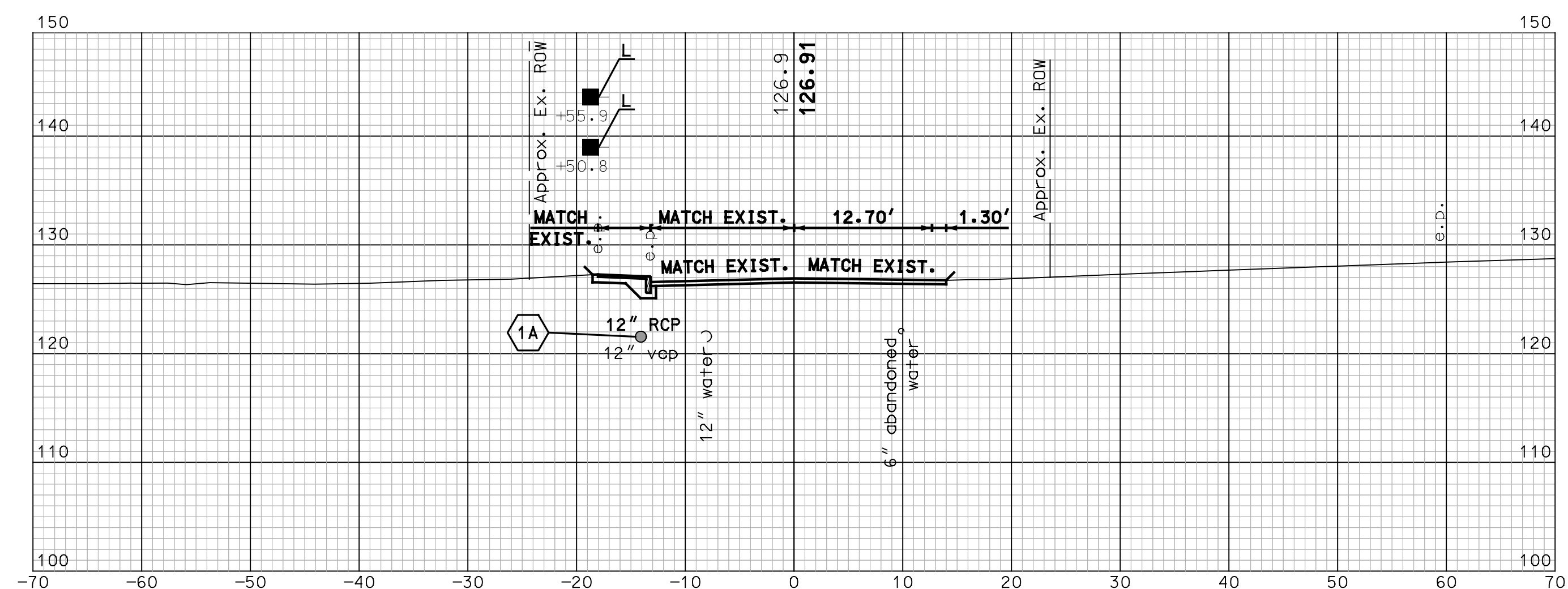
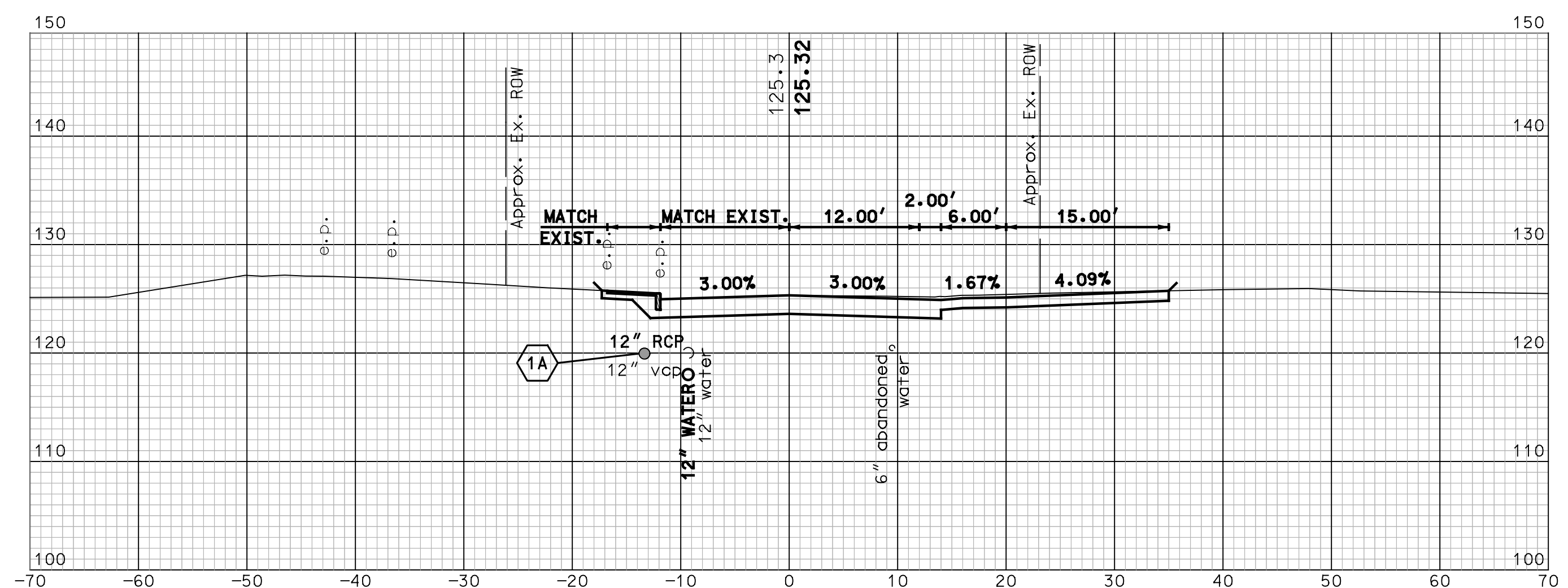
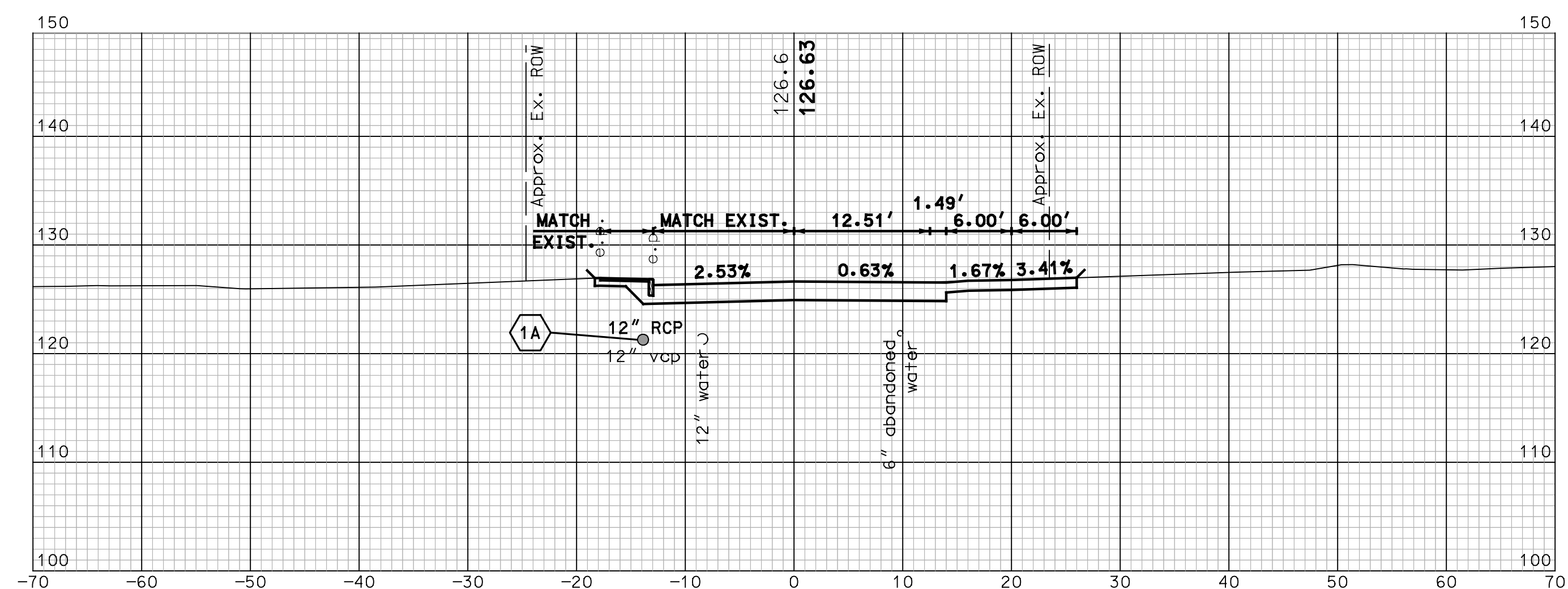
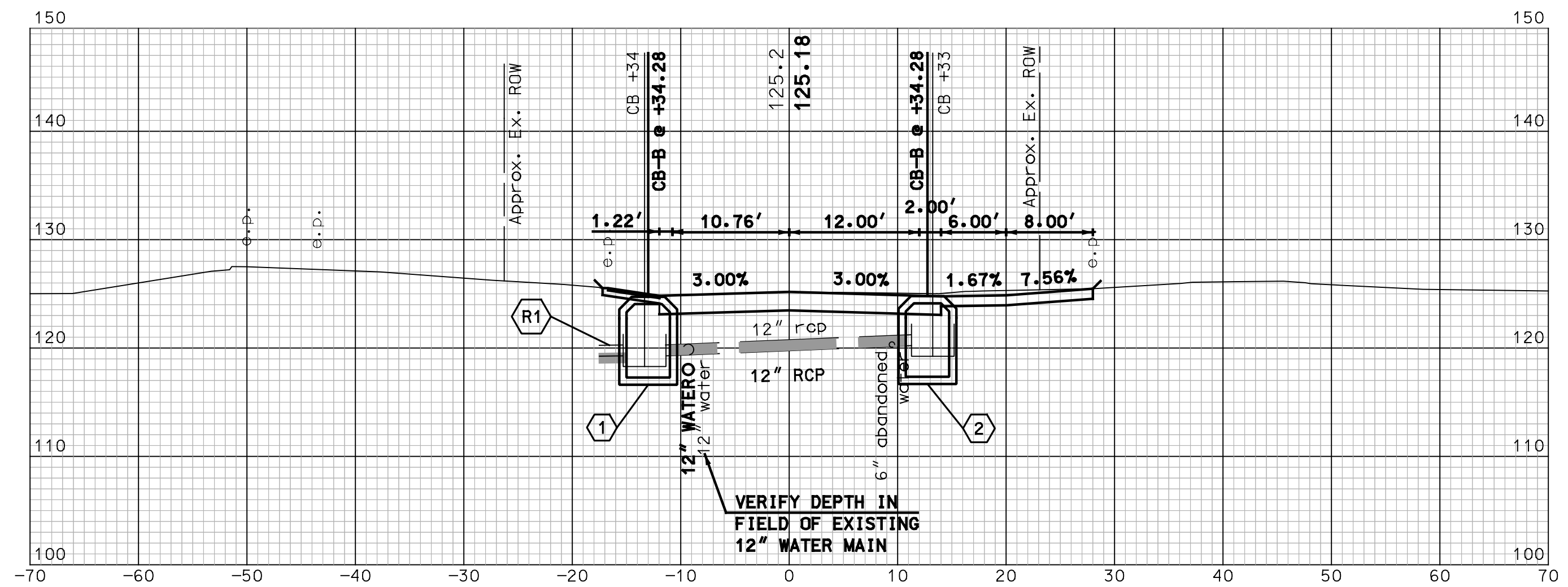
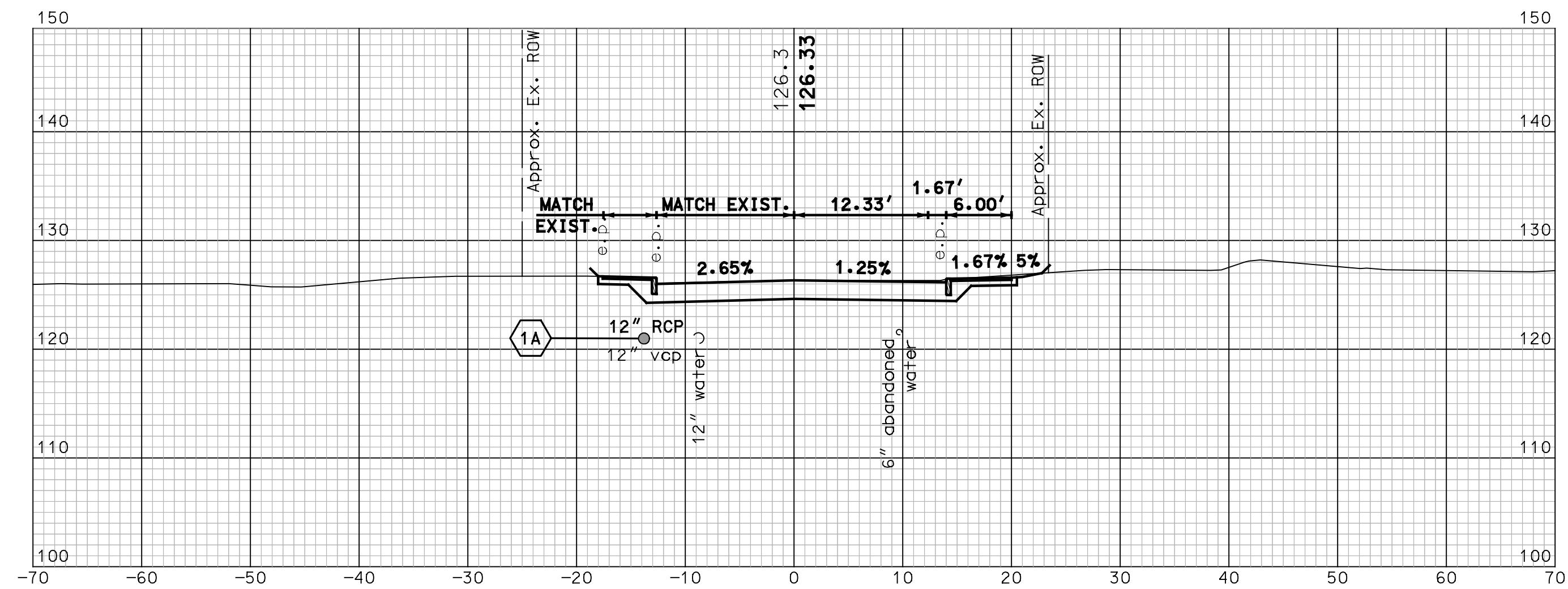
SEWER MAIN DETAILS (2 OF 2)

PROJECT NO. 19.918109.01

SHEET NO.

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SHEET 49 OF 54

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TOWN OF SALEM
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BRIDGE STREET OVER SPICKET RIVER
BRIDGE STREET CROSS SECTIONS (1 OF 5)

SALEM, NEW HAMPSHIRE

BRIDGE STREET OVER SPICKET RIVER

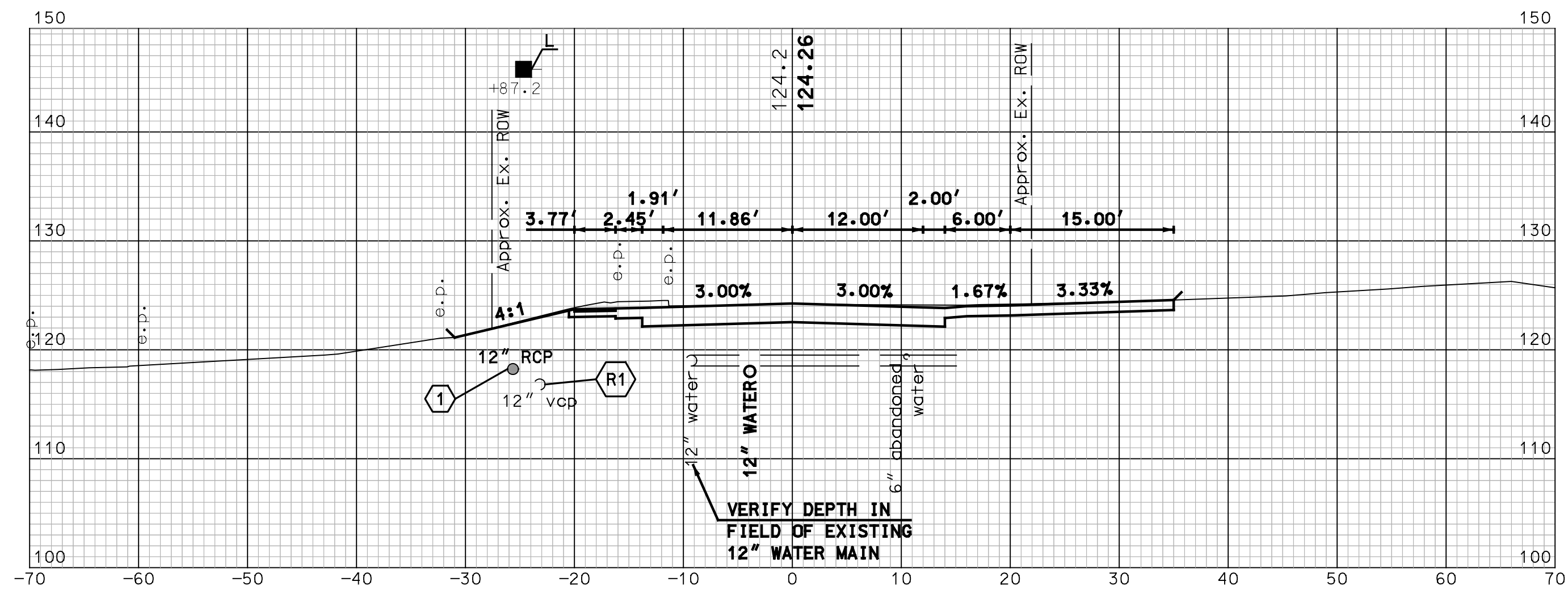
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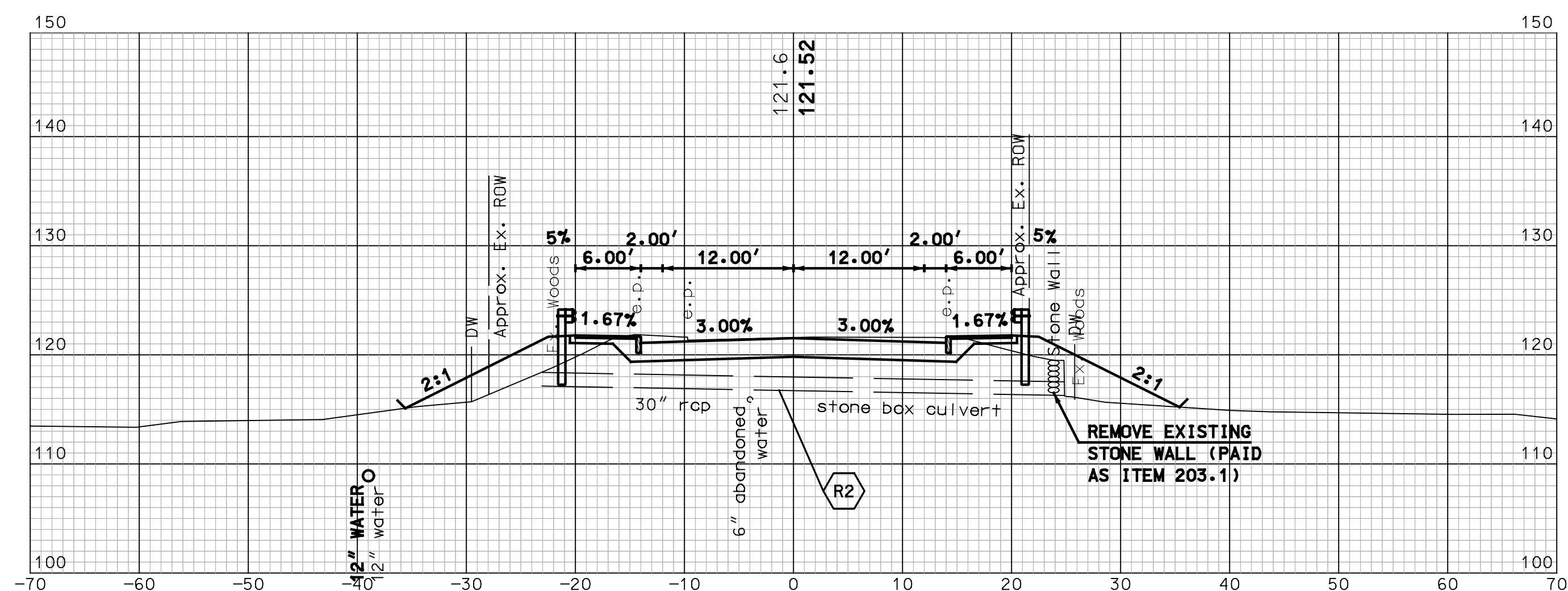
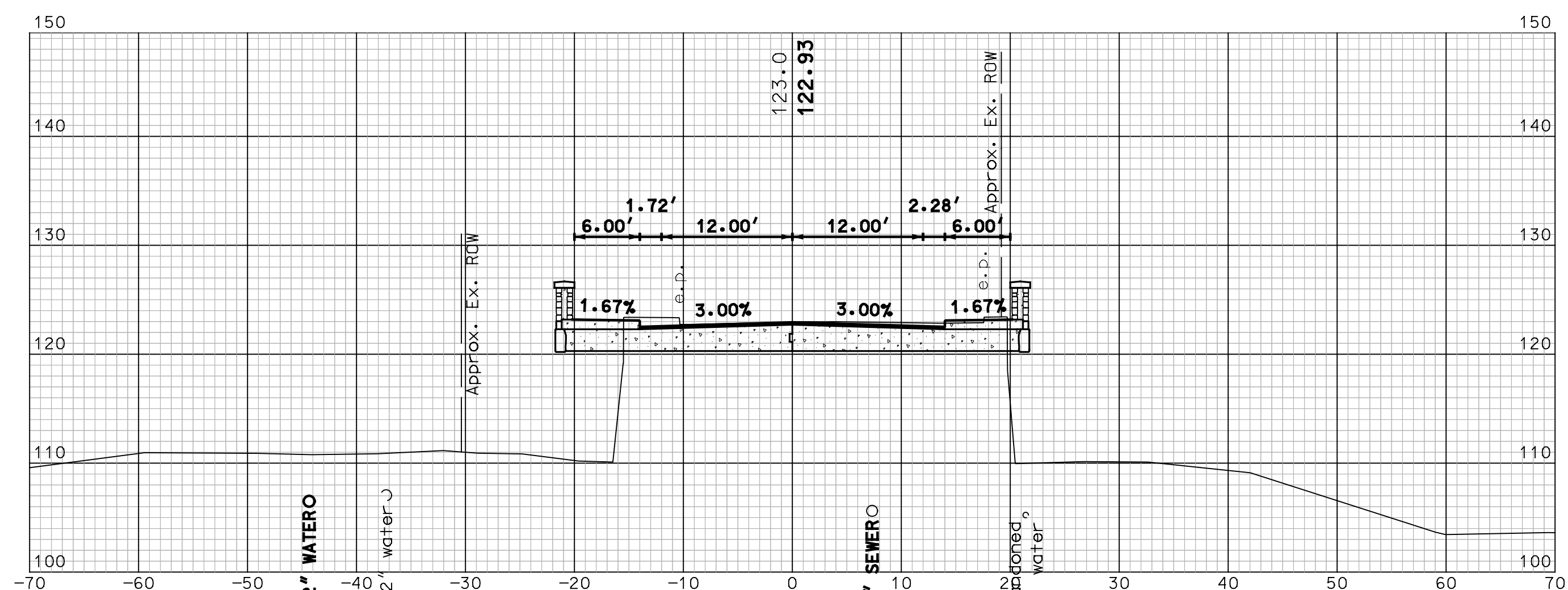
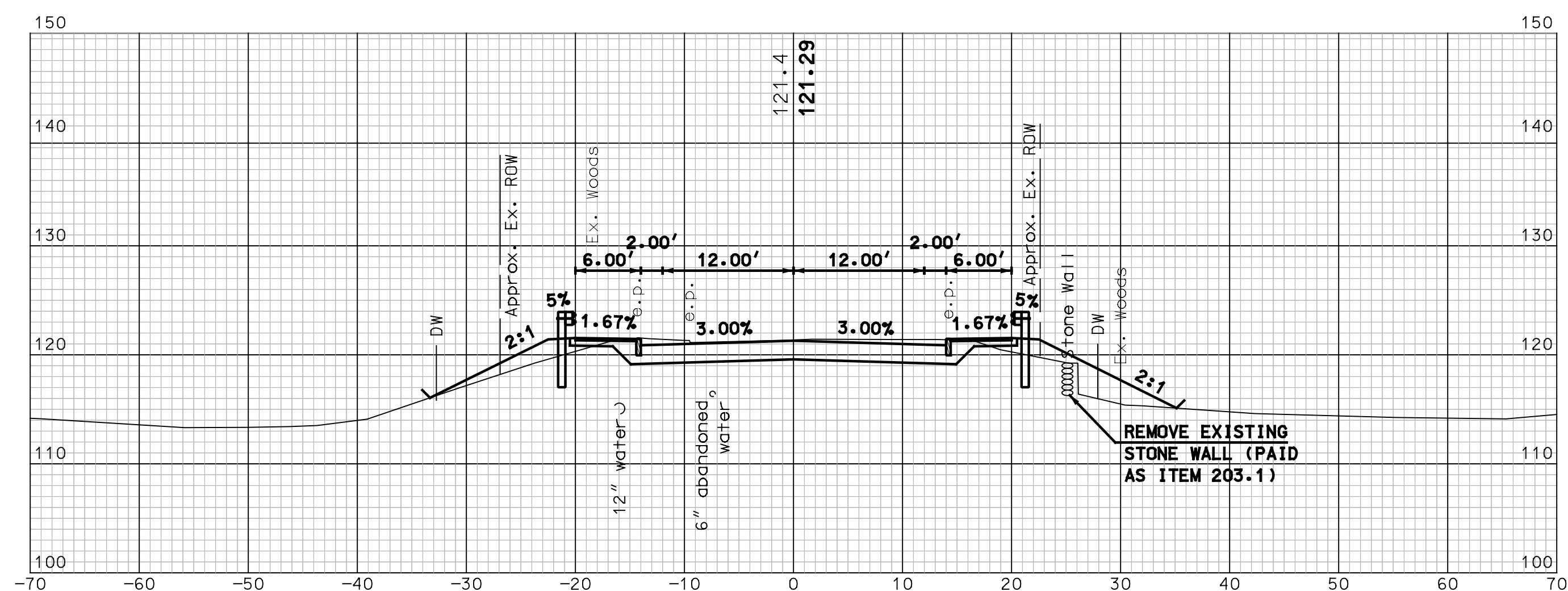
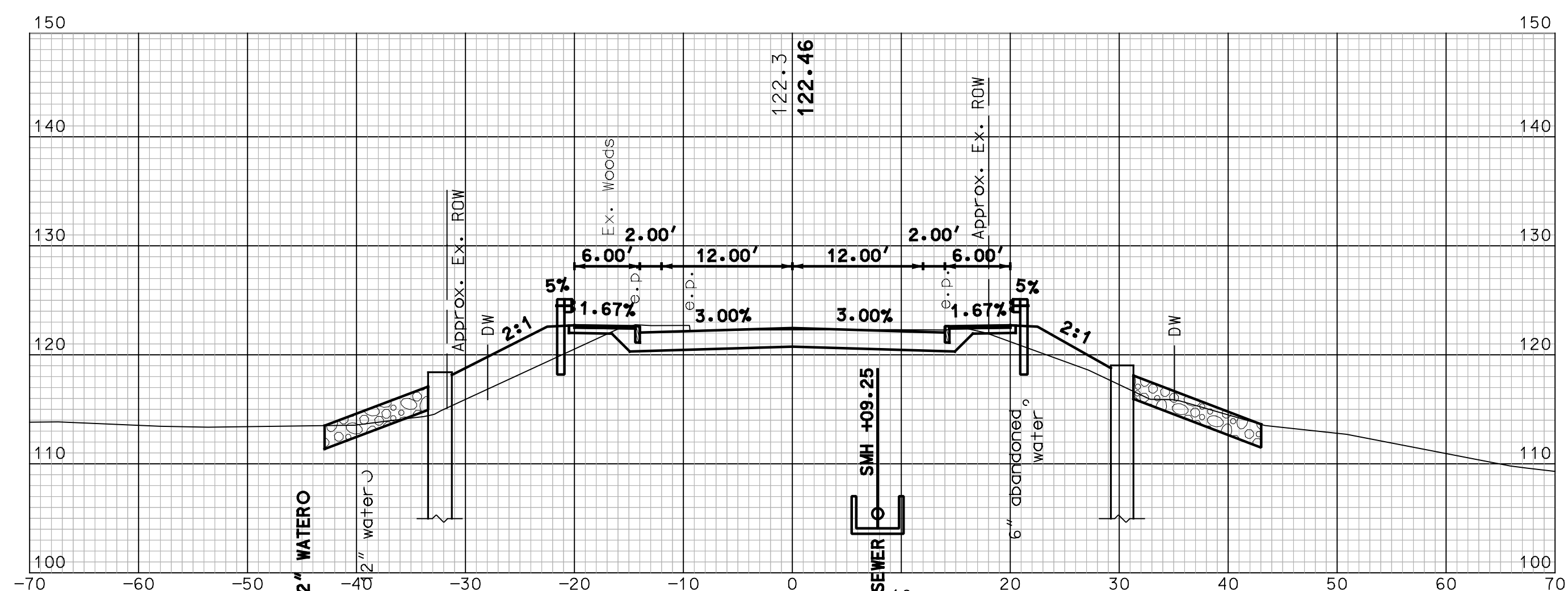
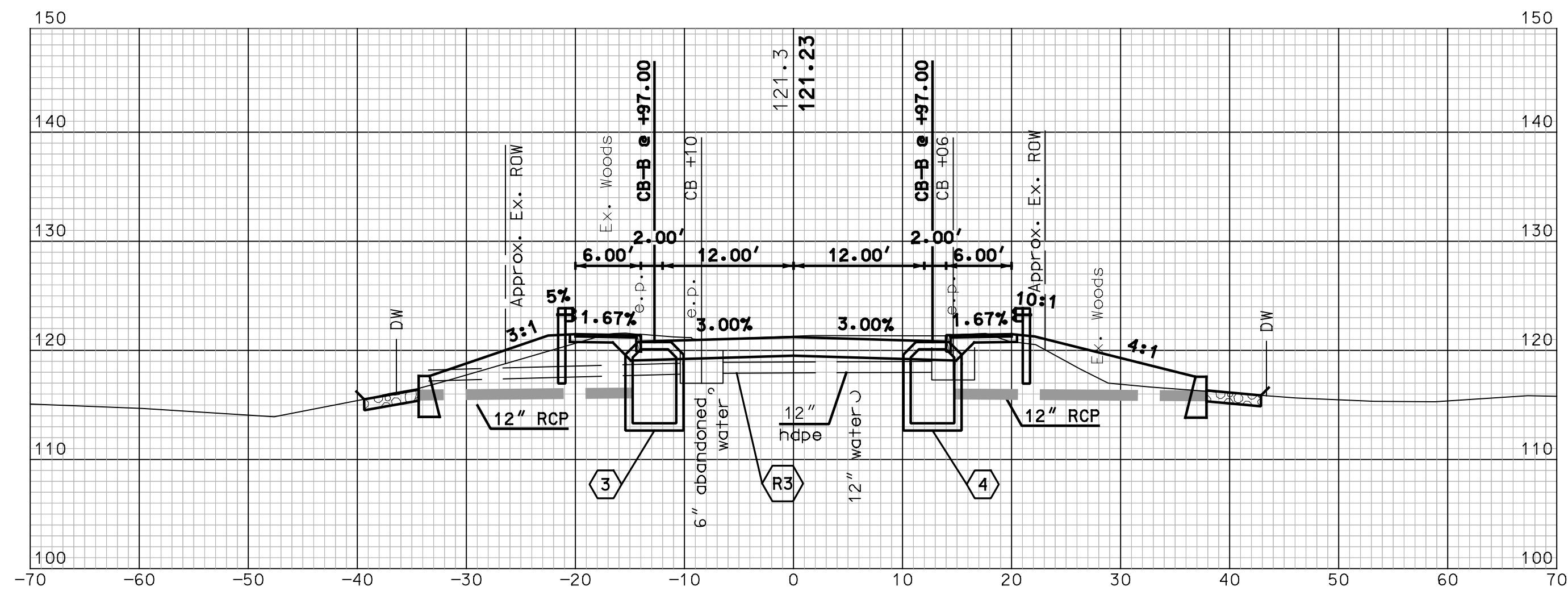
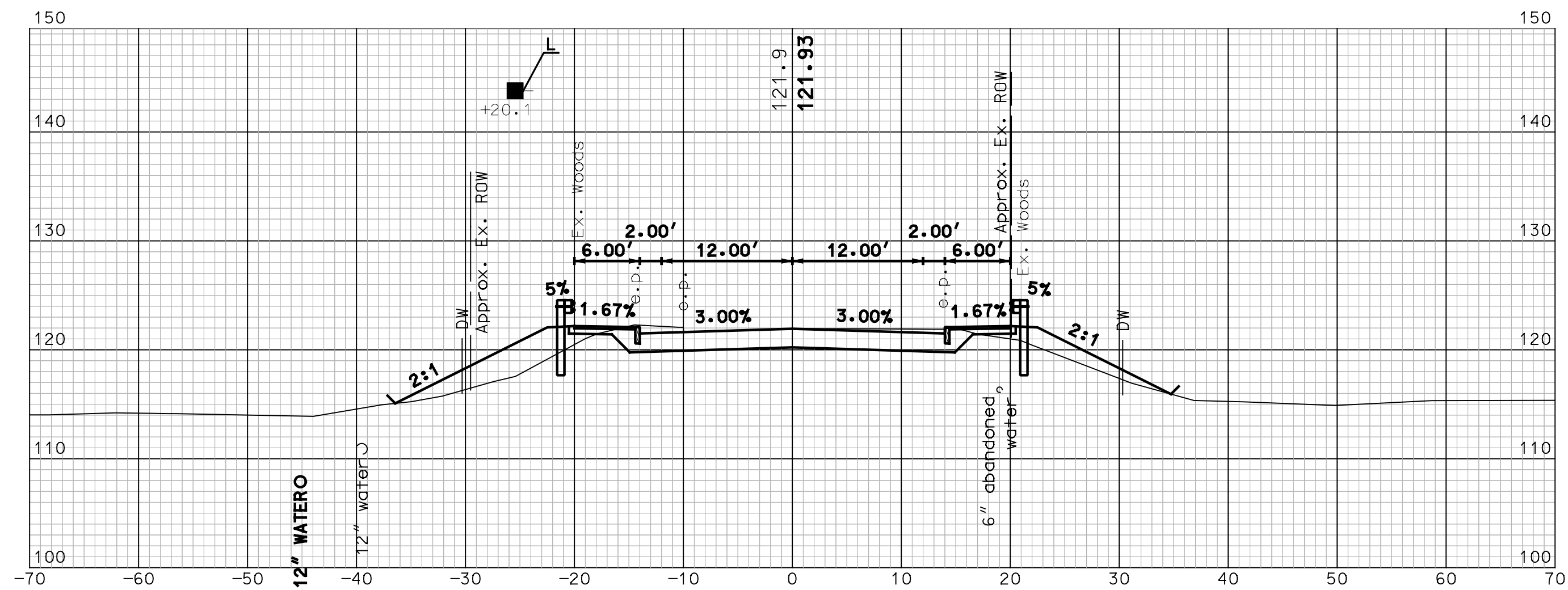
PROJECT NO. 19.918109.01

SHEET NO.

50

SHEET 50 OF 54



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SALEM, NEW HAMPSHIRE
BRIDGE STREET OVER SPICKET RIVER
BRIDGE STREET CROSS SECTIONS (3 OF 5)

SALEM, NEW HAMPSHIRE

BRIDGE STREET OVER SPICKET RIVER

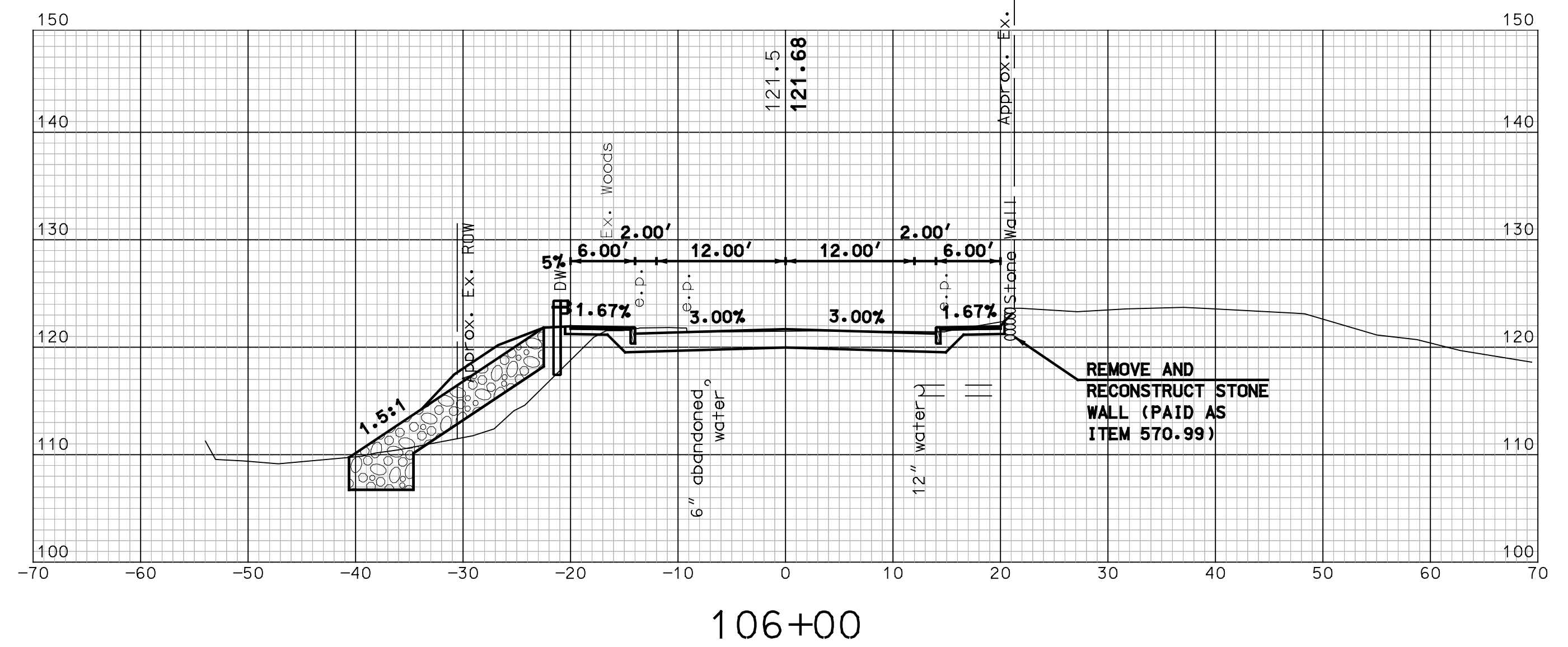
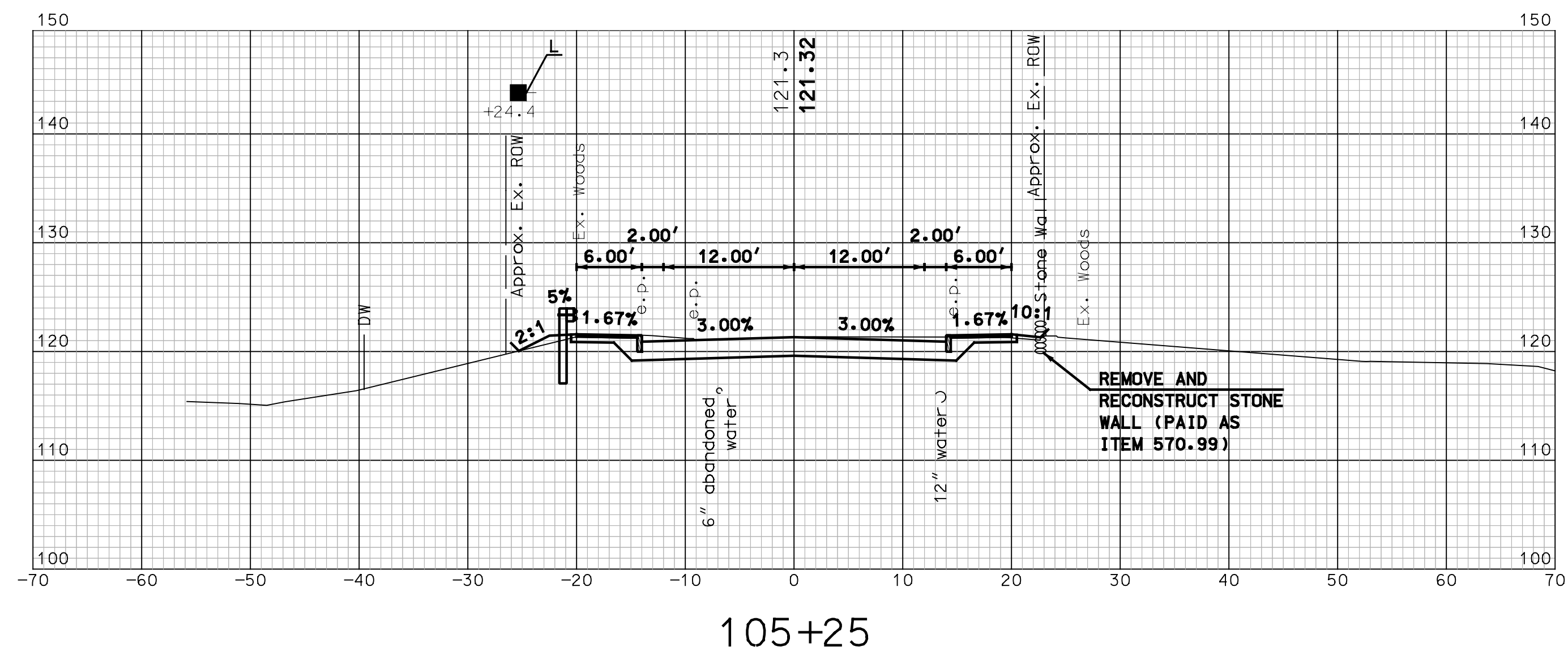
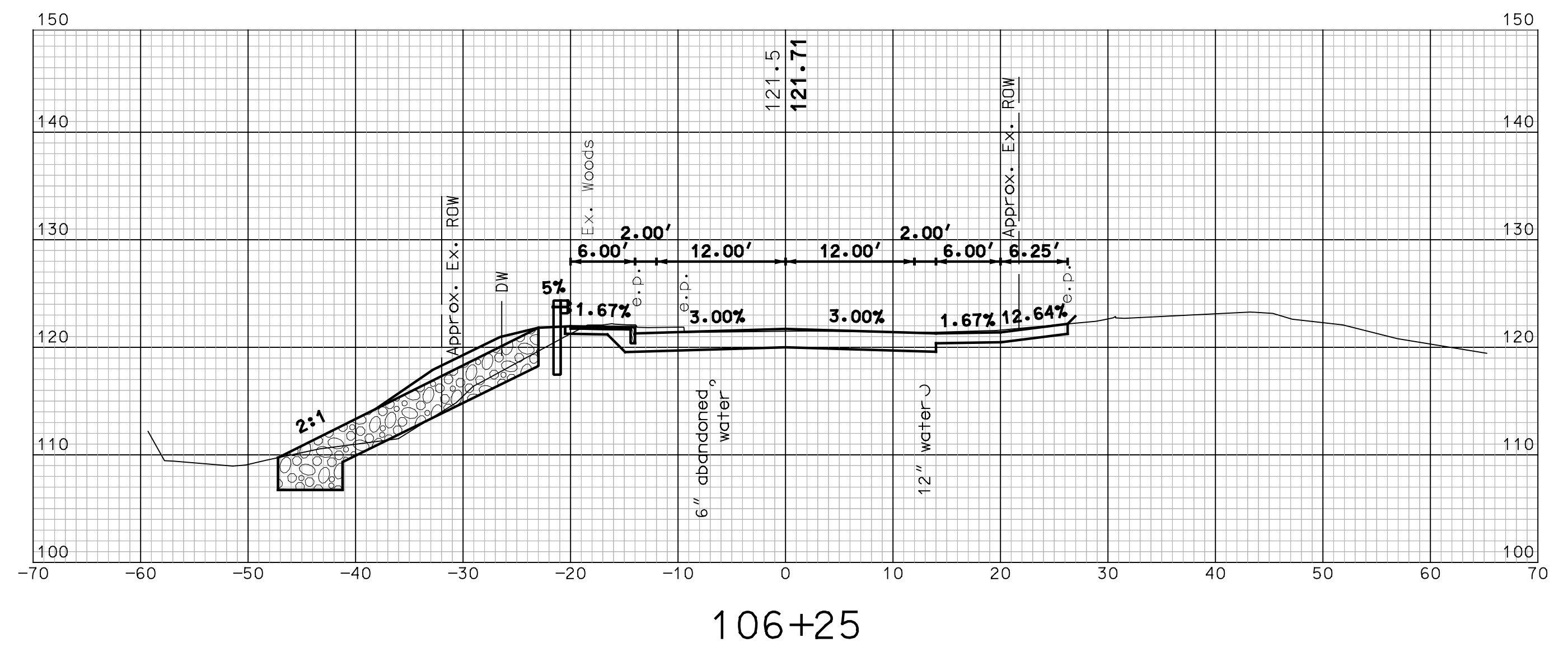
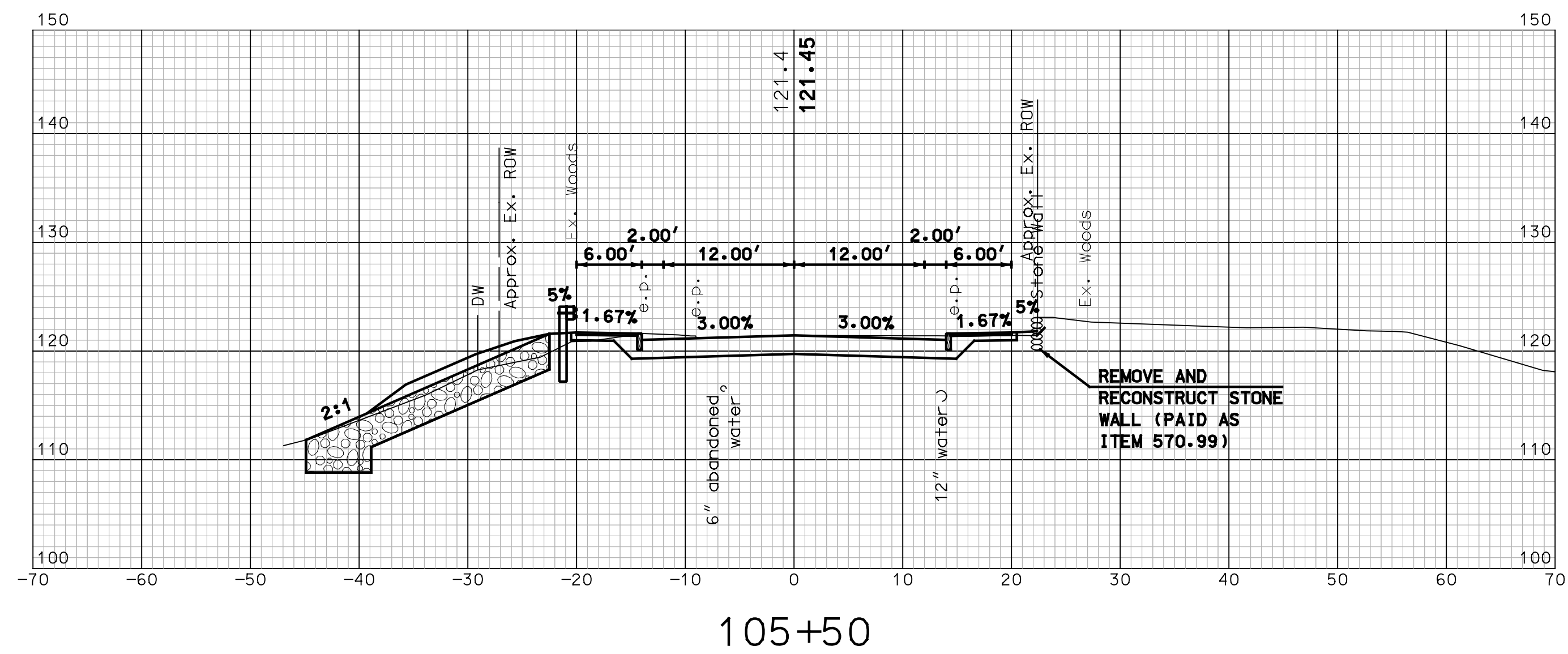
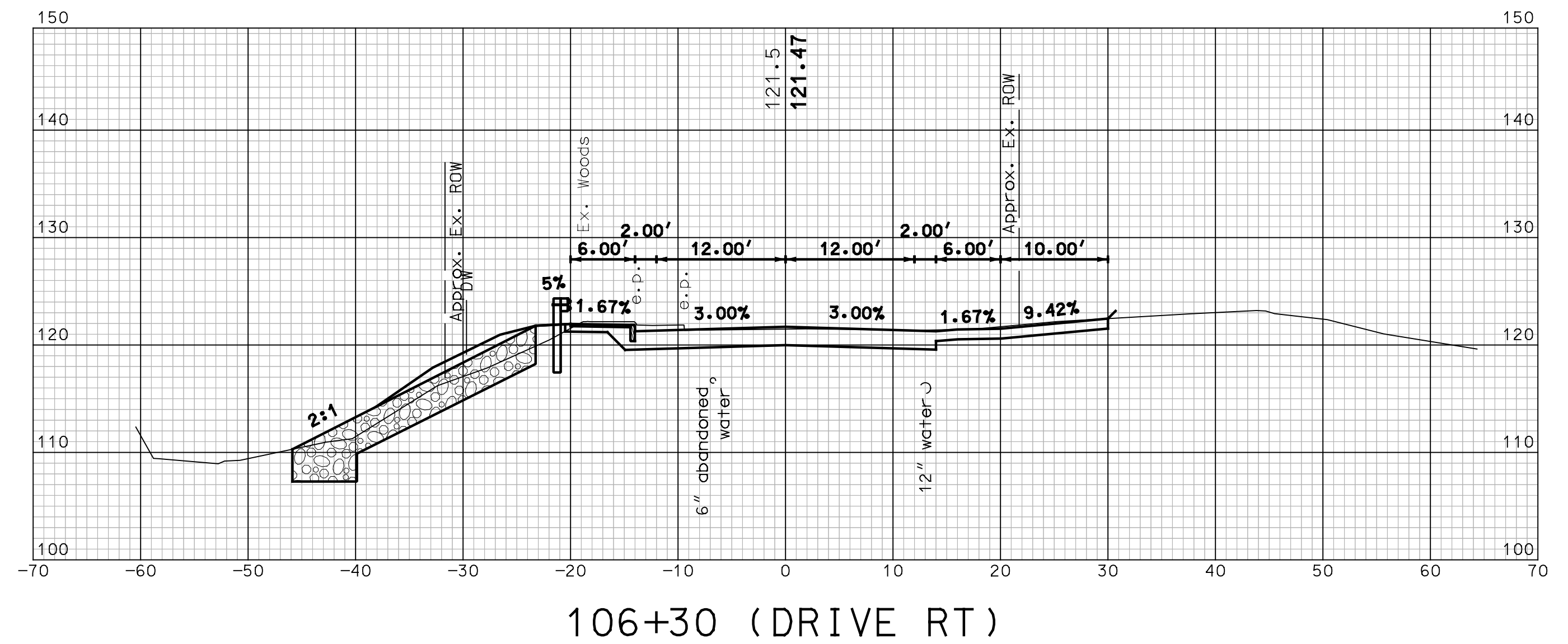
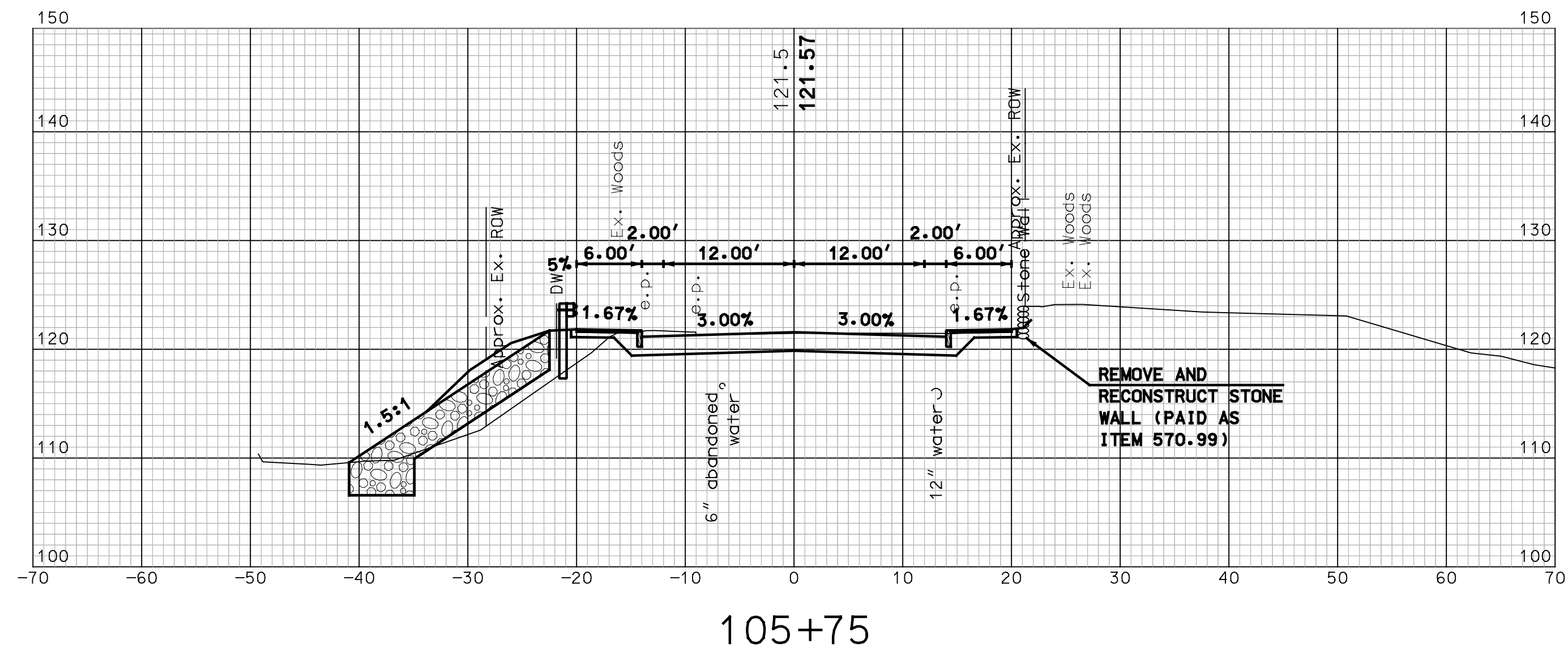
BRIDGE STREET CROSS SECTIONS (3 OF 5)

PROJECT NO.	19.918109.0
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SHEET NO.

52

SHEET 52 OF 54



INSTRUMENT NO.	FILE NAME	DESIGNED	REV.	DESCRIPTION	BY	DATE
115093	9181000.XSD	KMW				
	MODEL NAME	DRAWN				
	XSD4	KMW				
	SCALE	CHECKED				
	AS SHOWN	SBH				

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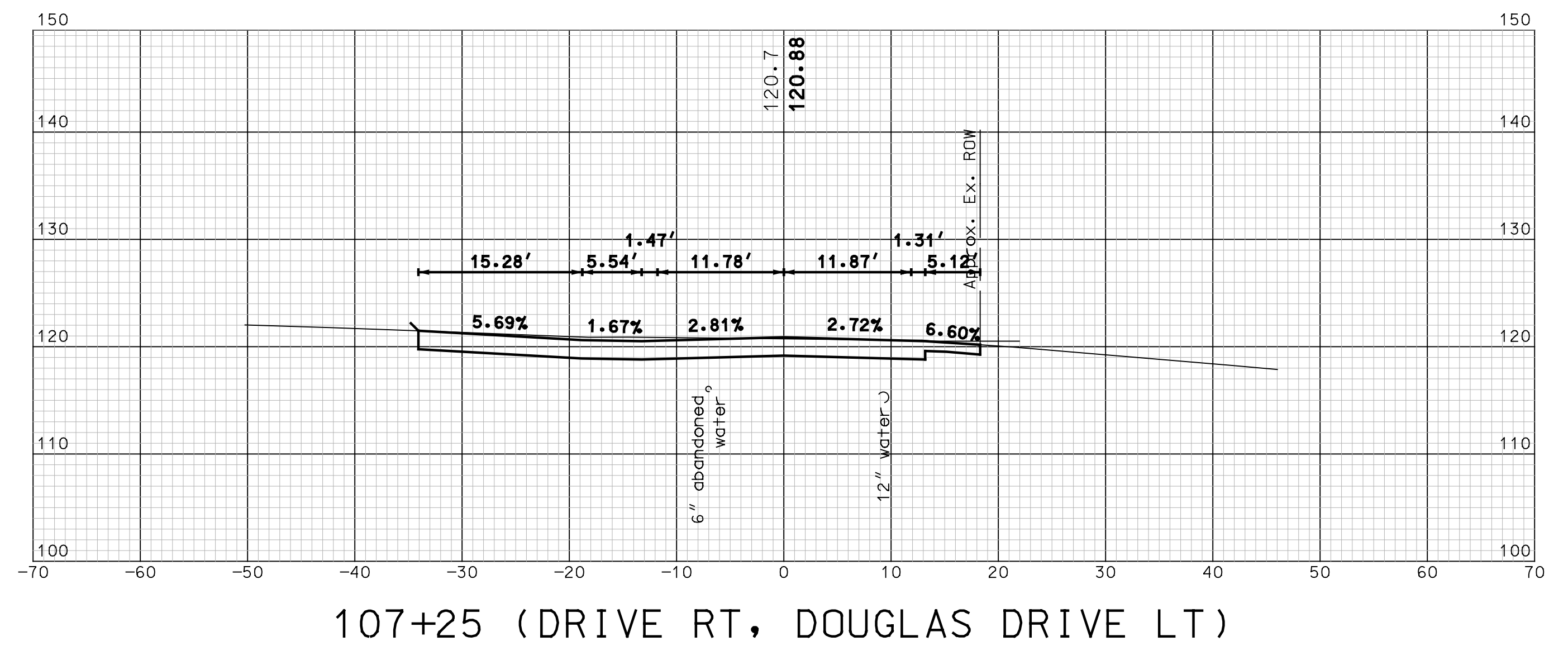
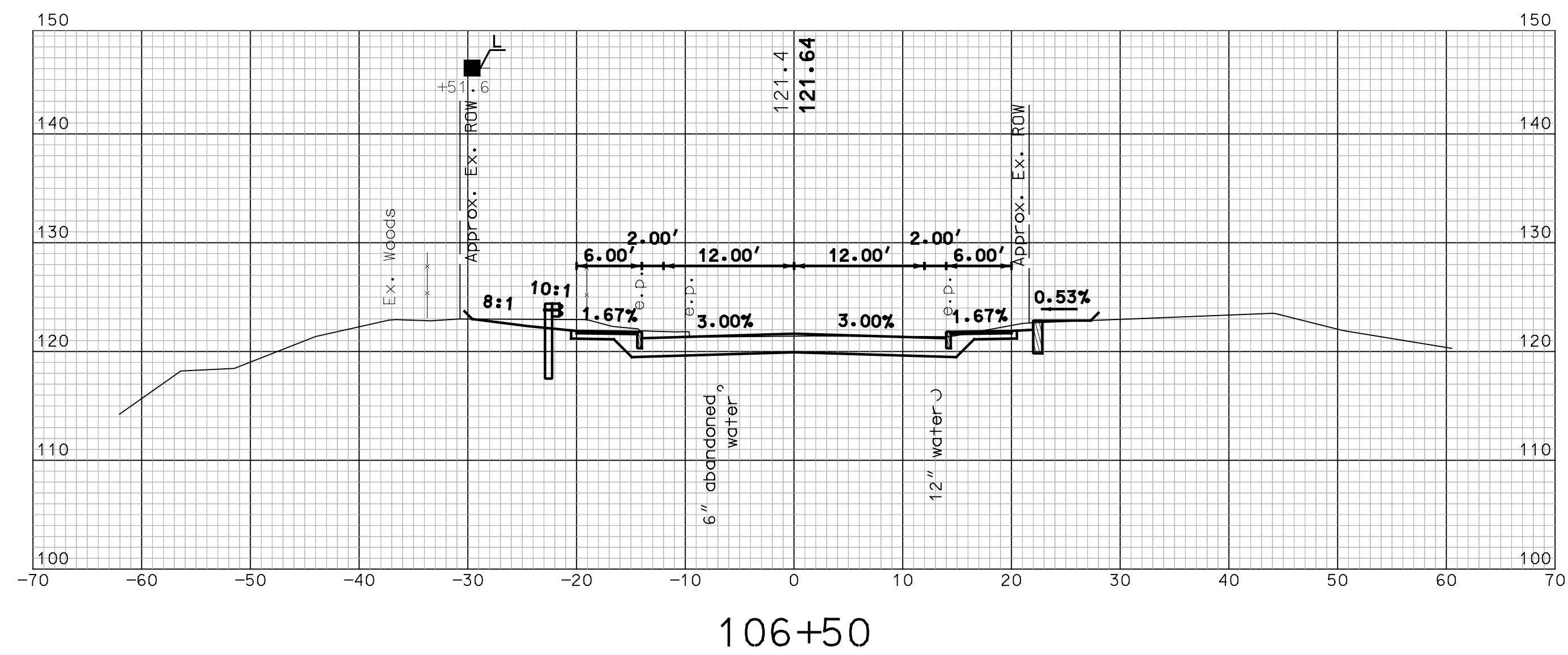
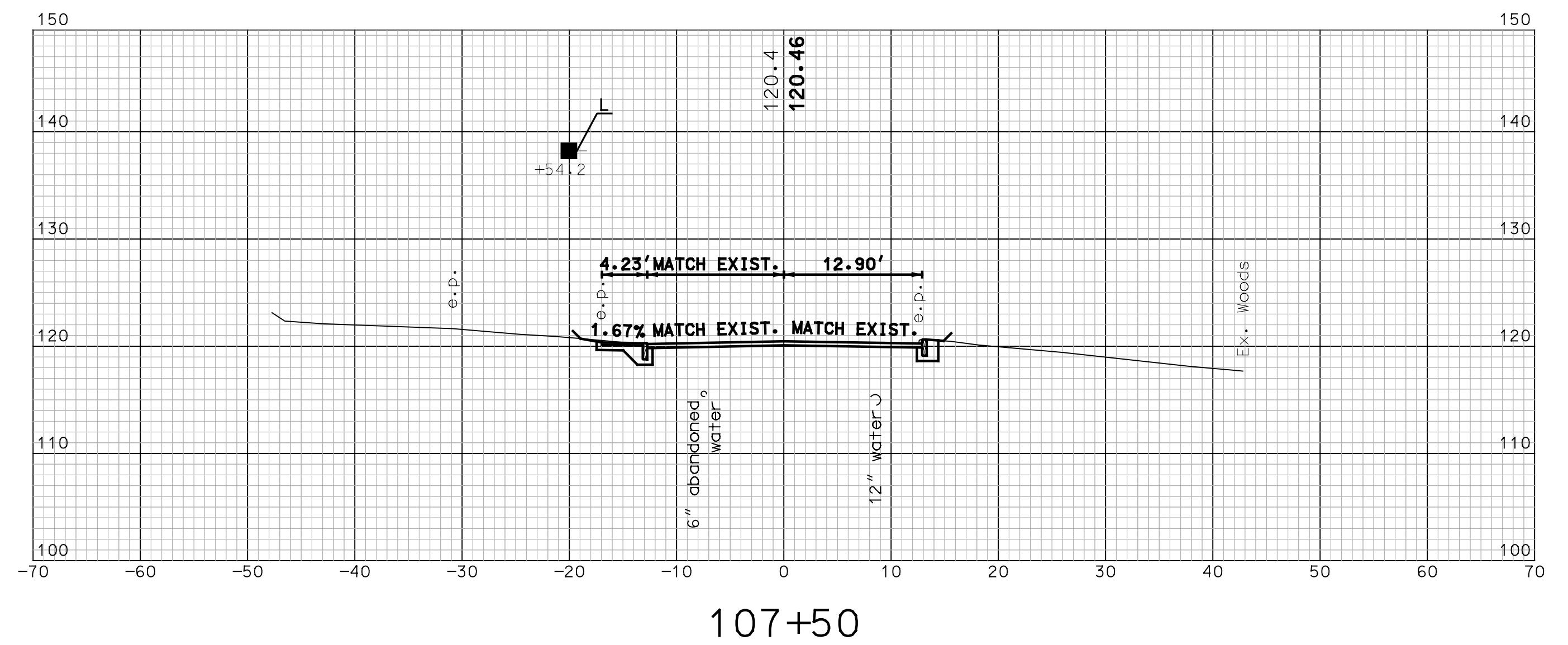
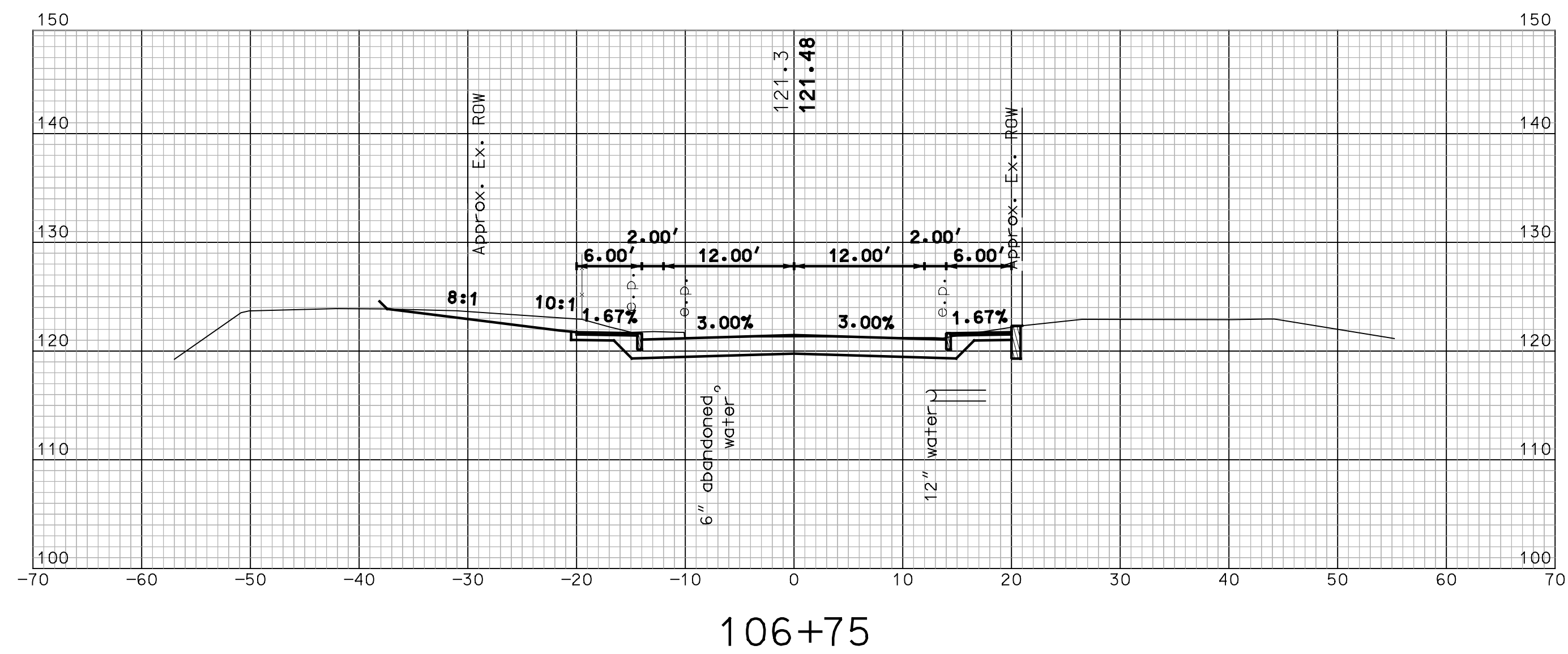
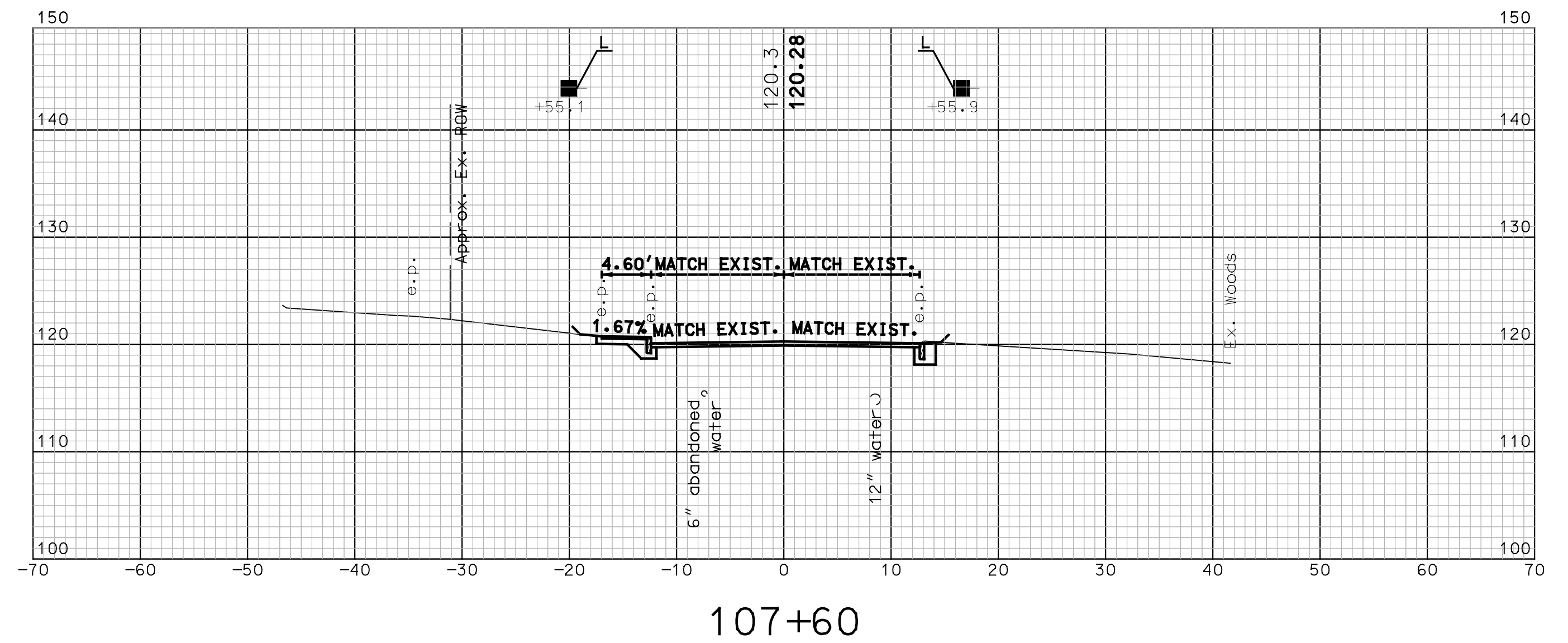
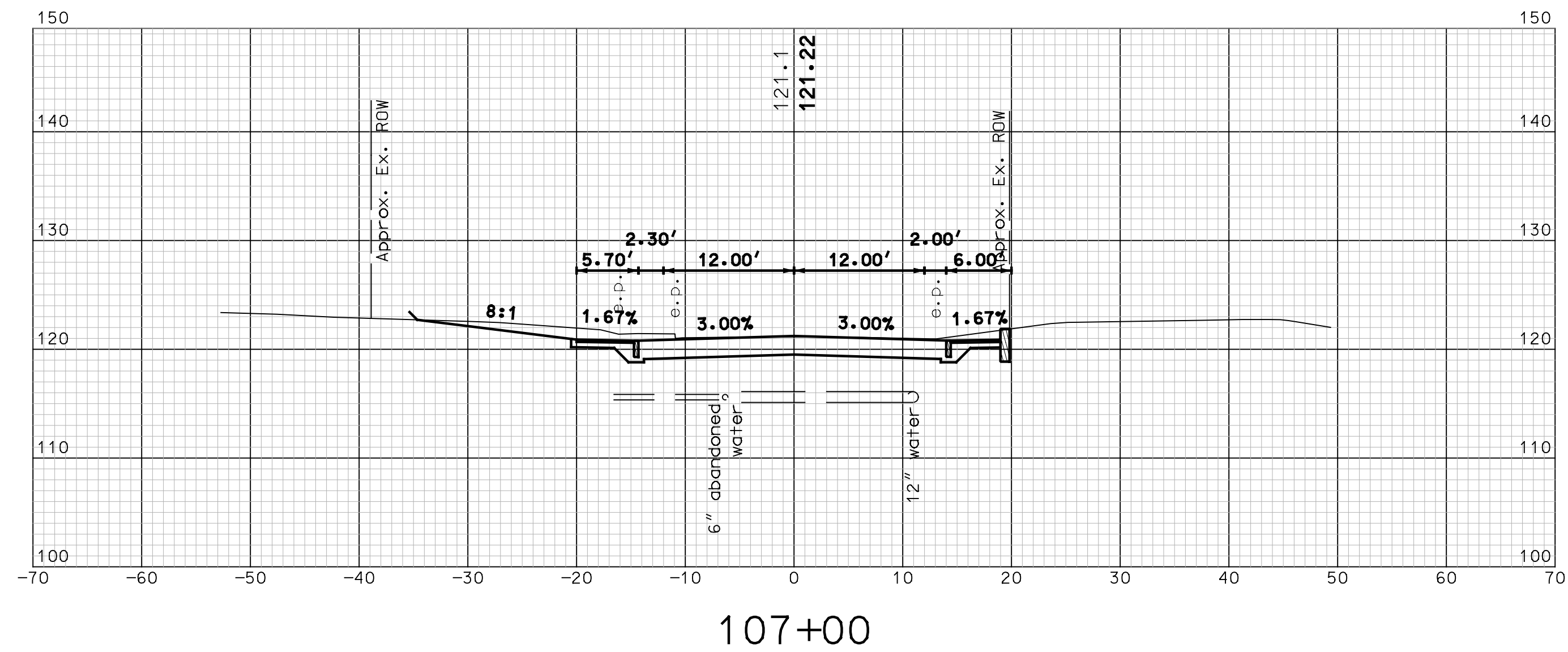
TOWN OF SALEM
SALEM, NEW HAMPSHIRE
BRIDGE STREET OVER SPICKET RIVER
BRIDGE STREET CROSS SECTIONS (4 OF 5)

PROJECT NO.	19.918109.01
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SHEET NO.

53

SHEET 53 OF 54



INSTRUMENT NO.	FILE NAME	DESIGNED	REV.	DESCRIPTION	BY	DATE
115093	9181000.XSD	KMW				
	MODEL NAME	DRAWN				
	X505	KMW				
	SCALE	CHECKED				
	AS SHOWN	SBH				

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BRIDGE STREET CROSS SECTIONS (5 OF 5)

PROJECT NO.	19.918109.01
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SHEET NO. _____

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SHEET 54 OF 54