

TOWN OF SALEM
SALEM, NEW HAMPSHIRE

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)

AUGUST 2025



TOWN MANAGER

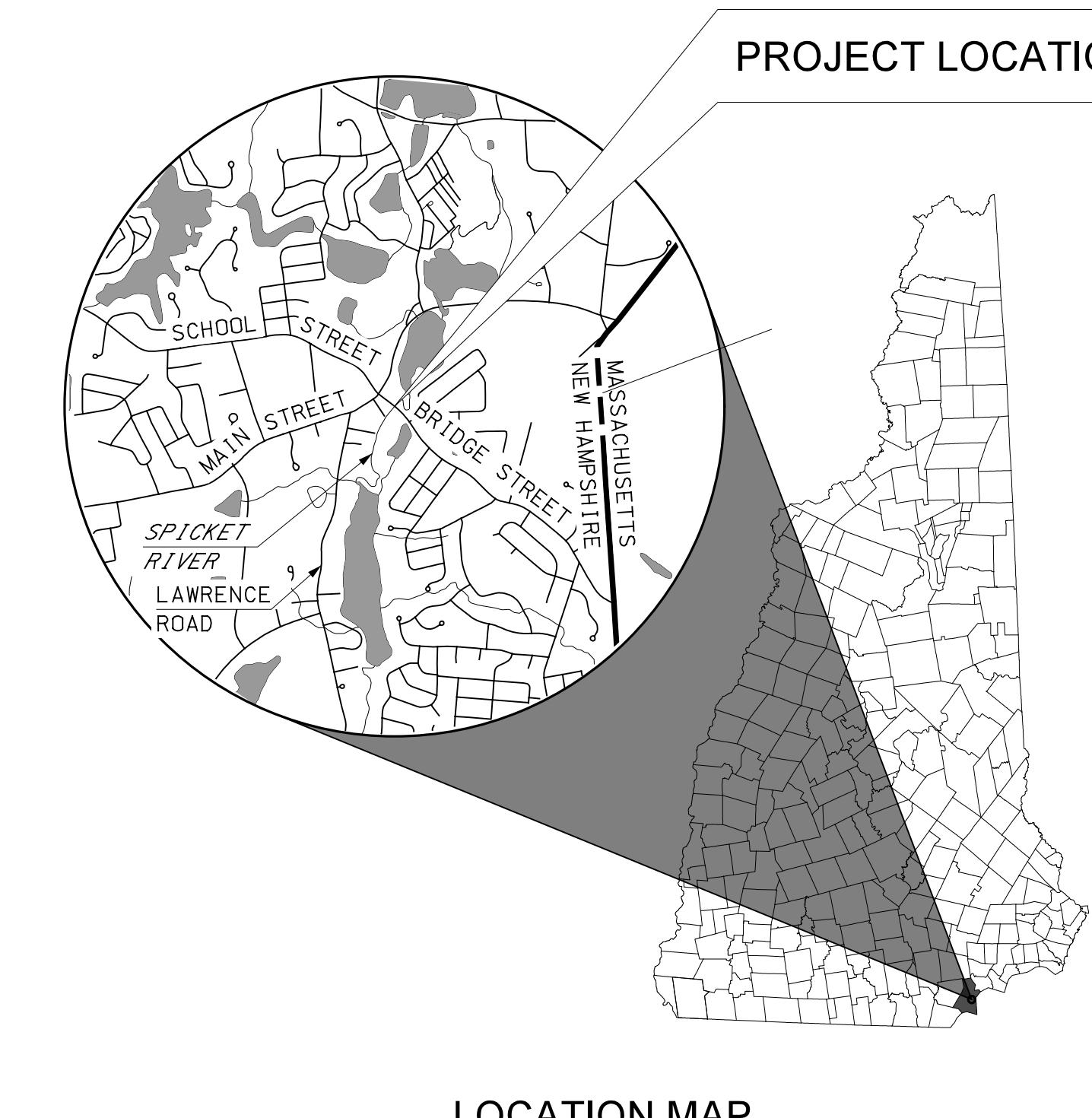
JOSEPH R. DEVINE

DIRECTOR OF MUNICIPAL SERVICES

WAYNE S. AMARAL

CAPITAL PROJECTS ENGINEER

JAMES A. DANIS, P.E.



LOCATION MAP

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

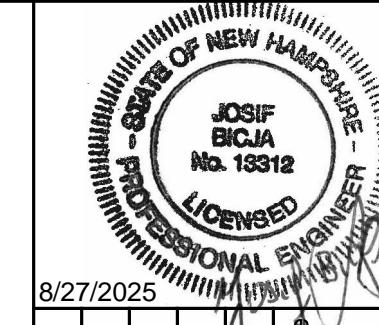
TITLE SHEET

PROJECT NO. 19.918109.01

SHEET NO.

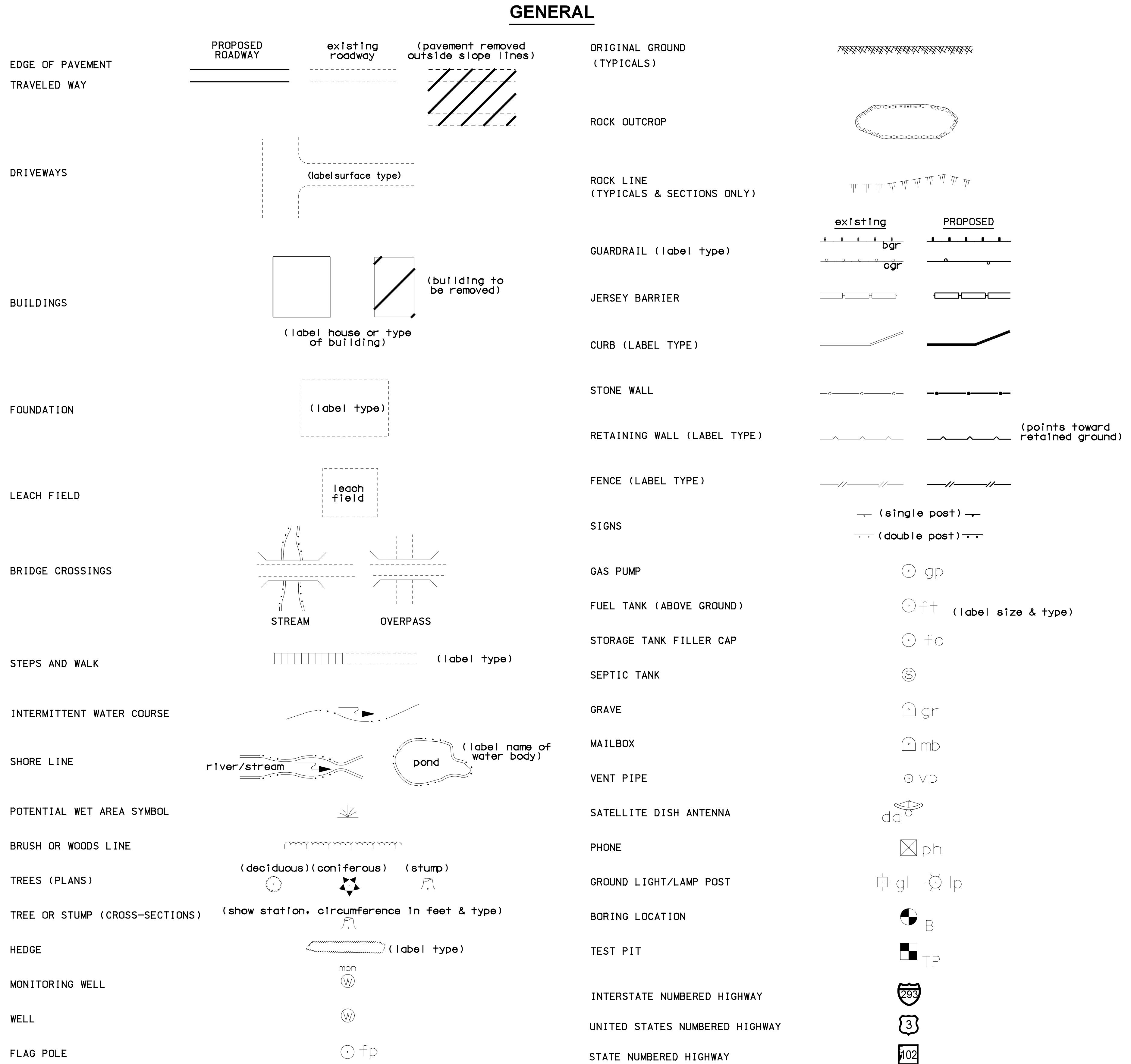
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SHEET 1 OF 54

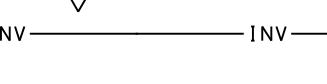


8/27/2025

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SHORELAND - WETLAND

PUB2E	
- - - DW - - -	DW - - - DW - - -
----- OHW -----	----- OHW -----
----- TOB -----	----- TOB -----
----- TOBOHW -----	----- TOBOHW -----
----- NHW -----	----- NHW -----
----- WBF -----	----- WBF -----
- - - PWET - - -	PWET - - - PWET - - -
----- PWET100 -----	----- PWET100 -----
----- NJDA -----	----- NJDA -----
- - - CDL - - -	CDL - - -
----- TBZ -----	----- TBZ -----
----- DTBZ -----	----- DTBZ -----
----- HOTL -----	----- HOTL -----
----- MHW -----	----- MHW -----
----- MLW -----	----- MLW -----
----- VP ----- VP ----- VP ----- VP -----	----- VP ----- VP ----- VP ----- VP -----
SAS - - - SAS - - - SAS	SAS - - - SAS - - - SAS
REF - - - REF - - - REF	REF - - - REF - - - REF
----- WB50 -----	----- WB50 -----
----- NWB150 -----	----- NWB150 -----
----- PS250 -----	----- PS250 -----
I.S.  I.S.	I.S.  I.S.
----- INV ----- INV ----- INV	----- INV ----- INV ----- INV



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

STANDARD SYMBOLS SHEET (1 OF 2)

PROJECT NO. 19.918109.01

SHEET NO.

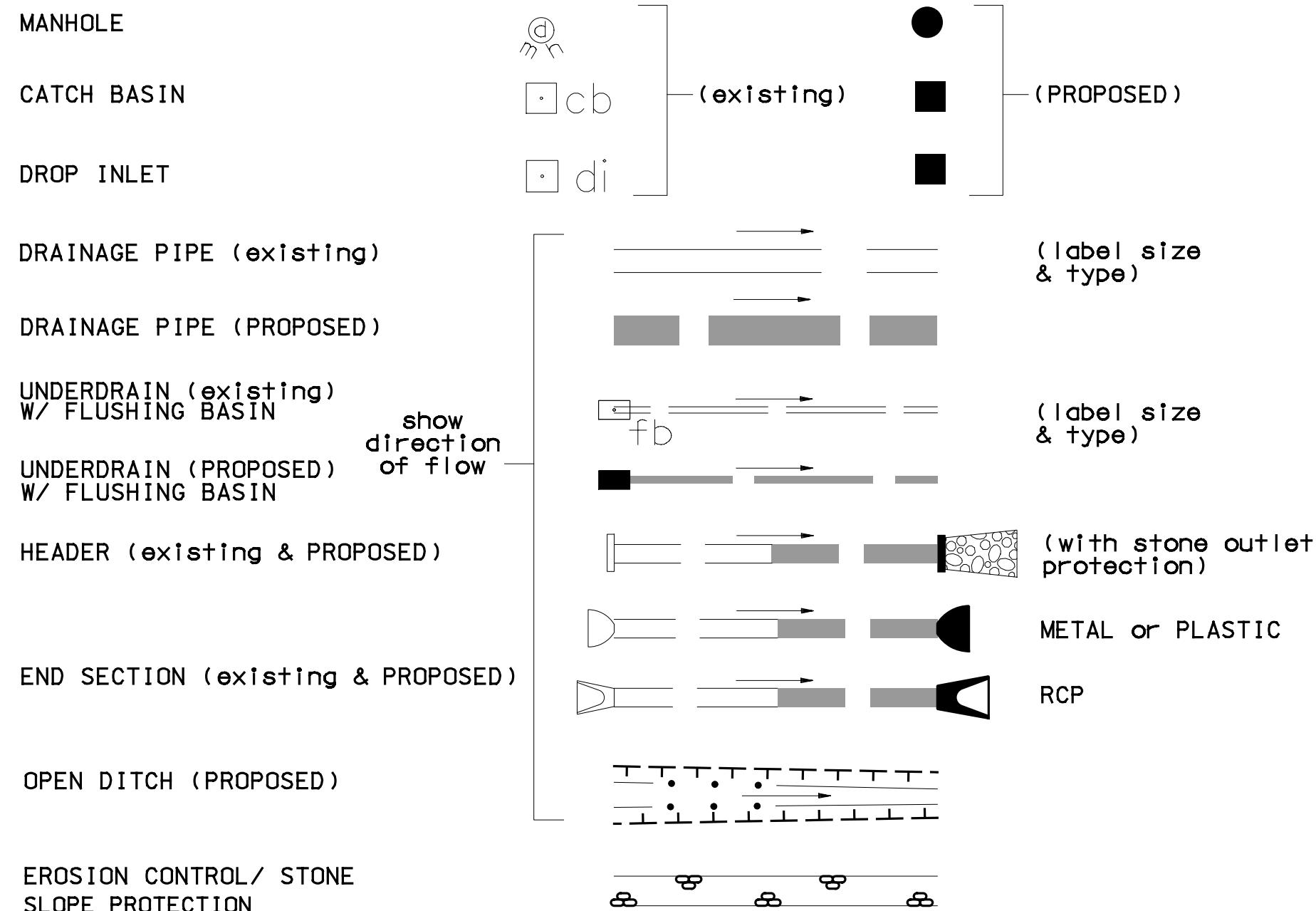
2

SHEET 2 OF 54

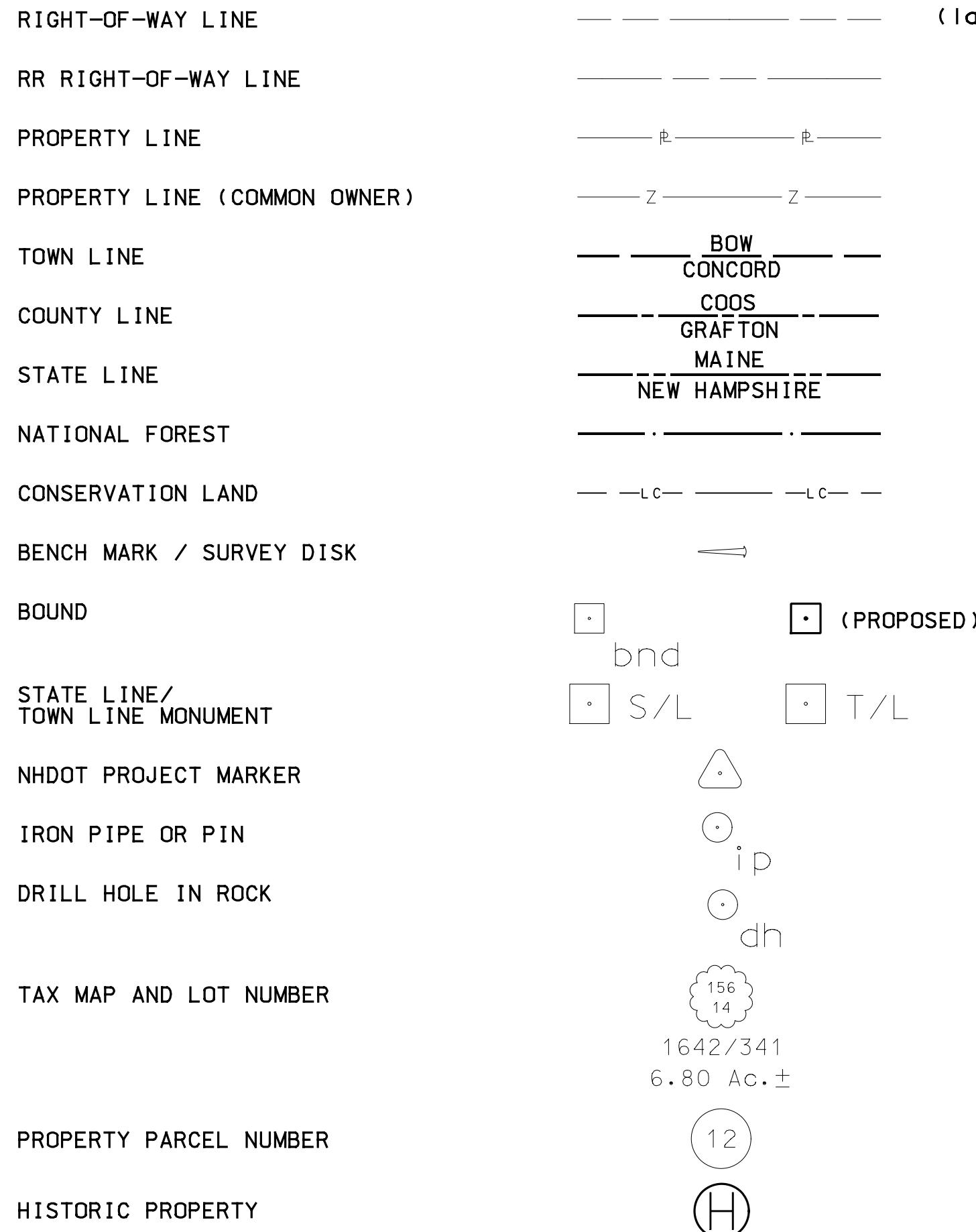
NOTE

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

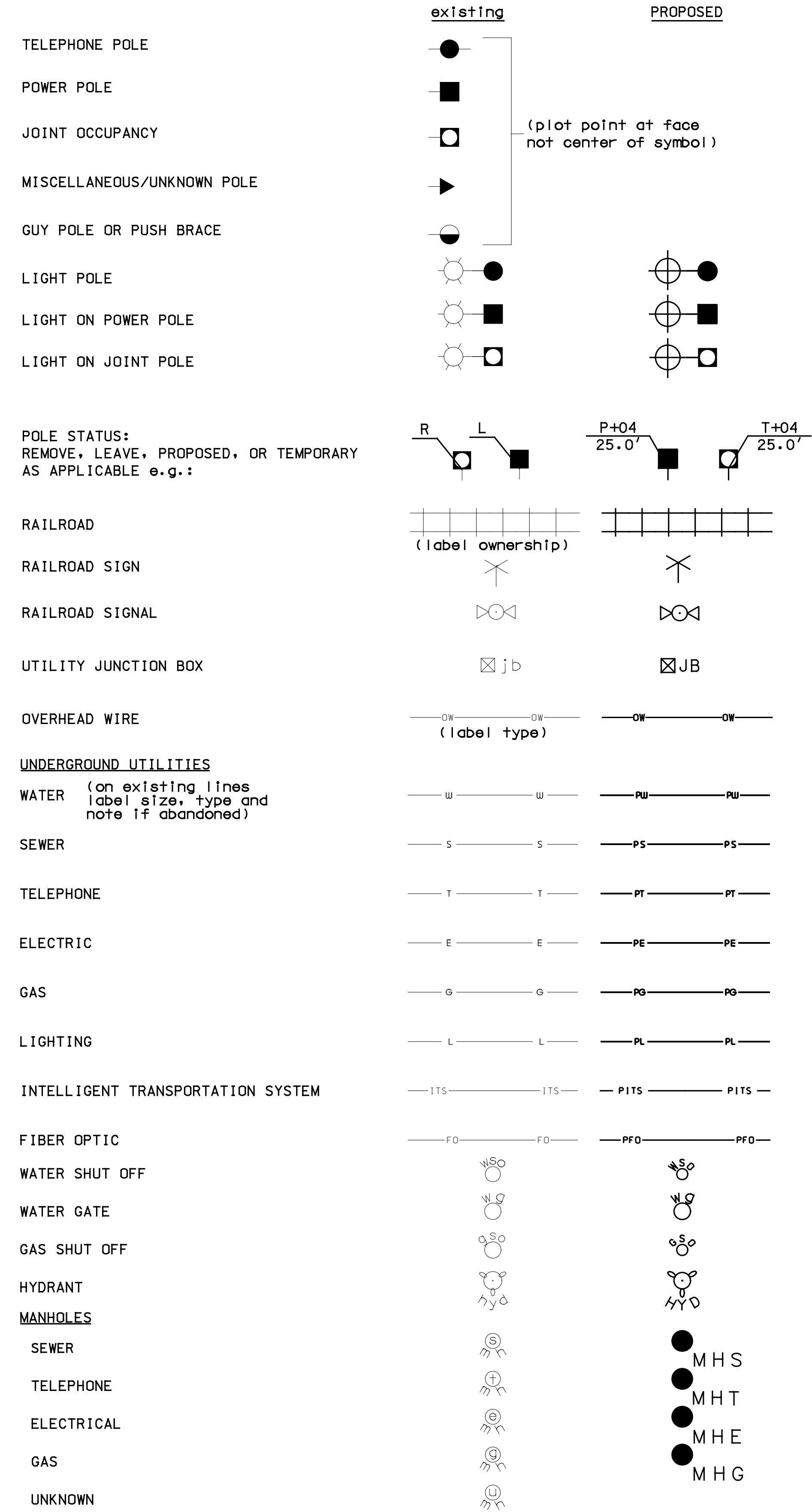
DRAINAGE



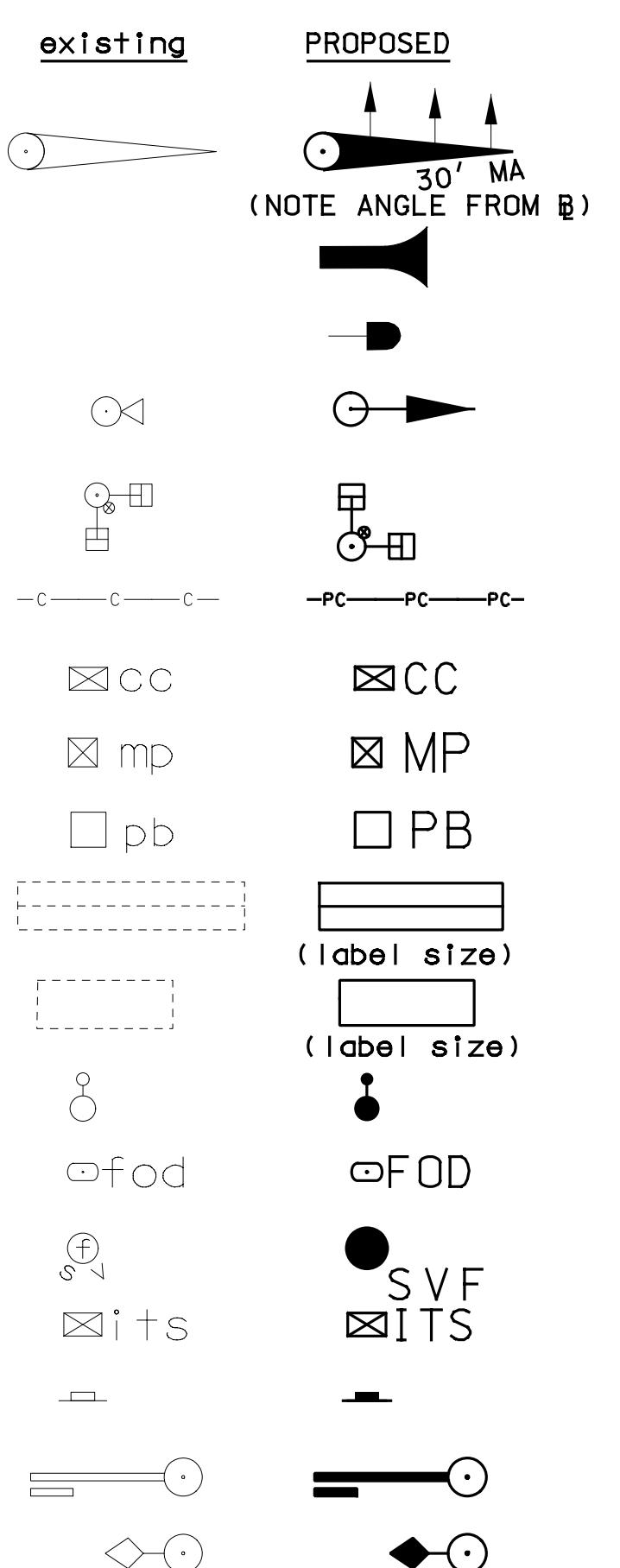
BOUNDARIES / RIGHT-OF-WAY



UTILITIES



TRAFFIC SIGNALS / ITS



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

STANDARD SYMBOLS SHEET (2 OF 2)

NOTE

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

3

SHEET 3 OF 54

GENERAL NOTES

- ALL WORK SHALL CONFORM TO ALL FEDERAL, STATE AND LOCAL CODES, REGULATIONS AND STANDARDS AND THE MORE STRINGENT SHALL GOVERN.
- THE GENERAL CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS AND COORDINATION OF OTHER TRADES.
- 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.
- 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.
- ANY DISCREPANCIES BETWEEN THESE DRAWINGS AND EXISTING CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY, BEFORE PROCEEDING WITH THE WORK.
- 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.
- 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.
- 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.

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

- 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.
- 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.
- ALL STORMWATER, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE LOCATED WITHIN THE TEMPORARY AND PERMANENT EASEMENT AREAS SHOWN ON THE EASEMENT PLAN.
- PERFORM ALL WORK DURING LOW FLOW PERIODS. ALL WORK SHALL BE PERFORMED WITHIN THE IMPACT AREAS AS PERMITTED BY NHDES.
- 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:

- 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

- FOR WORKING POINTS LAYOUT, SEE SHEET 16.
- 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.
- 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.
- THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION.
- WATER LEVEL MAY VARY FROM THAT SHOWN.
- 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.
- 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 COMPAKTED TO NOT LESS THAN 95 PERCENT OF MAXIMUM DENSITY. THE COMPAKCTION WILL BE TESTED AT FREQUENCIES DETERMINED IN THE FIELD BY THE ENGINEER.
- 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

- 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
- THE SURVEY CONSISTED OF 3 SHEETS TITLED:
EXISTING CONDITIONS PLAN FOR HOYLE, TANNER & ASSOCIATES, INC.
OF BRIDGE STREET BRIDGE OVER SPICKET RIVER SALEM, NH
- WETLAND RESOURCES WITHIN THE SURVEY AREA WERE DELINEATED BY:
THOMAS E. SOKOLOSKI, CWS NO. 127
- DATUM USED FOR THESE DRAWINGS IS AS FOLLOWS:
VERTICAL – NAVD88
HORIZONTAL – NAD83(2011)/NHSP(2800)

HYDRAULIC DATA

- DRAINAGE AREA: 48.2 SQUARE MILES
- DESIGN FLOOD: Q50
- Q50 VELOCITY: 4.0 FPS
Q100 VELOCITY: 4.6 FPS
- Q50 FLOOD ELEVATION: 117.1 FT
Q100 FLOOD ELEVATION: 117.7 FT
- Q50 FLOOD FLOW: 1300 CFS
Q100 FLOOD FLOW: 1600 CFS
- BRIDGE WATERWAY OPENING: 525 SF
- BRIDGE WATERWAY OPENING BELOW THE Q50 FLOOD ELEVATION: 400 SF

WORK AREA NOTES

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

- DESIGN LOADING: HL-93
- DESIGN SPEED: 30 MPH
- DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN METHOD (LRFD)
- 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.

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.

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)

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: RIGID FRAME AND SIDEWALKS (ON BRIDGE):
ITEM 520.12, CONCRETE CLASS A, ABOVE FOOTINGS (F)
3,000 PSI (AT 28 DAYS)

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

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

UTILITY COORDINATION

- 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

- 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

- 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.

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

- 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.

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

HOYLE
TANNER

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PROJECT NOTES (1 OF 2)

4

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 645.002, 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 COMPAKTED 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 2 1/2" 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 ON 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 697.11, 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 ASHTOM31 SHALL BE USED FOR THE FOOTINGS AND WINGWALLS (ALL COSTS INCLUDED IN ITEM 544.3).
2. REINFORCING CONFORMING TO ASHTOM 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 3/4".
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, PEEL 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 538.3, 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 CONTRACTOR'S 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.

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

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NHDOT BRIDGE NO	REV.	DESCRIPTION	DRW/CHKD BY	DATE	
			DESIGNED BY	DRAWN BY	
115/097			91.810901_PinNotes	91.810901_PinNotes2	JCR AUGUST 2026

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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	EAGRIT 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

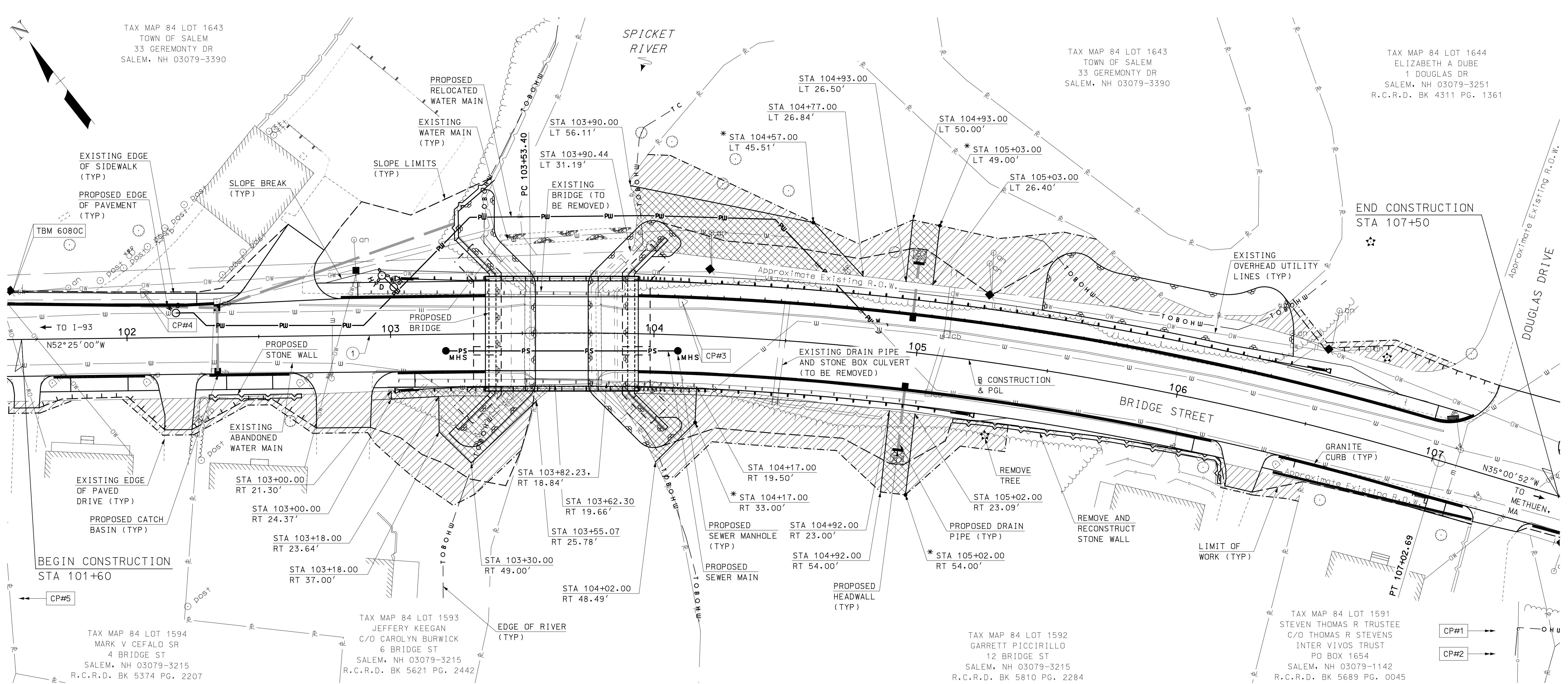
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
604.324	DRAINAGE MANHOLES, 4-FOOT DIAMETER	U	1
606.012	W6X9 STEEL POST REPLACEMENTS FOR BEAM GUARDRAIL POSTS	EA	15
606.0122	W6X9 STEEL POST ASSEMBLIES FOR BEAM GUARDRAIL POSTS	EA	15
606.12551	BEAM GUARDRAIL (TERMINAL UNIT TYPE EAGRIT, TL2 - 25') (STEEL POST)	U	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
615.0304	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

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BRIDGE STREET OVER SPICKET RIVER																															
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<table border="1"> <tr> <td>ITEM NO.</td> <td>REV.</td> <td>DESCRIPTION</td> <td>DRW/CHKD BY</td> </tr> <tr> <td>115/097</td> <td></td> <td></td> <td>DATE</td> </tr> <tr> <td>91181091PrjNotes</td> <td></td> <td></td> <td></td> </tr> <tr> <td>91181091PrjNotes3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>91181091PrjNotes3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>AS SHOWN</td> <td>JCR</td> <td></td> <td></td> </tr> <tr> <td>DATE</td> <td>AUGUST 2025</td> <td></td> <td></td> </tr> </table>				ITEM NO.	REV.	DESCRIPTION	DRW/CHKD BY	115/097			DATE	91181091PrjNotes				91181091PrjNotes3				91181091PrjNotes3				AS SHOWN	JCR			DATE	AUGUST 2025		
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PROJECT NO.	19.918109.01																														
SHEET NO.	6																														
SHEET 6 OF 54																															



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19.918109.01
SUMMARY OF QUANTITIES



EXISTING EASEMENT AREA PLAN

SCALE: 1" = 20'

VERTICAL CONTROL (TBM) TABLE

VERTICAL CONTROL (TBM) TABLE				
NUMBER	ELEVATION	STATION & OFFSET	DESCRIPTION	
TBM 60800	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

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

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, LT 41.19'	R.S.S.

CURVE NO. 1

P I	=	105+29.40
N	=	105176.09874
E	=	1109708.50283
Δ	=	17° 24' 08.57"
T	=	176.00'
R	=	1150.00'
L	=	349.29'
Σ	=	17.70'

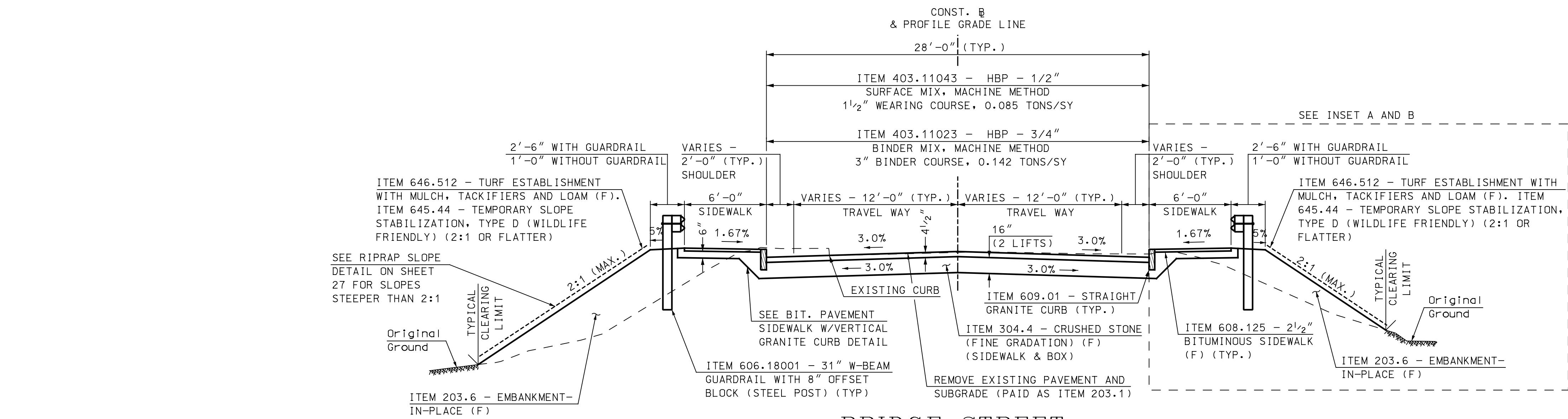
* RESET 5/8" REBAR W/ID CAP IF DISTURBED
DURING CONSTRUCTION (ITEM 622.55).

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

The diagram consists of two horizontal rectangular boxes. The top box contains the text 'TEMPORARY EASEMENT' and is filled with diagonal hatching. The bottom box contains the text 'PERMANENT EASEMENT' and is filled with cross-hatching.

7

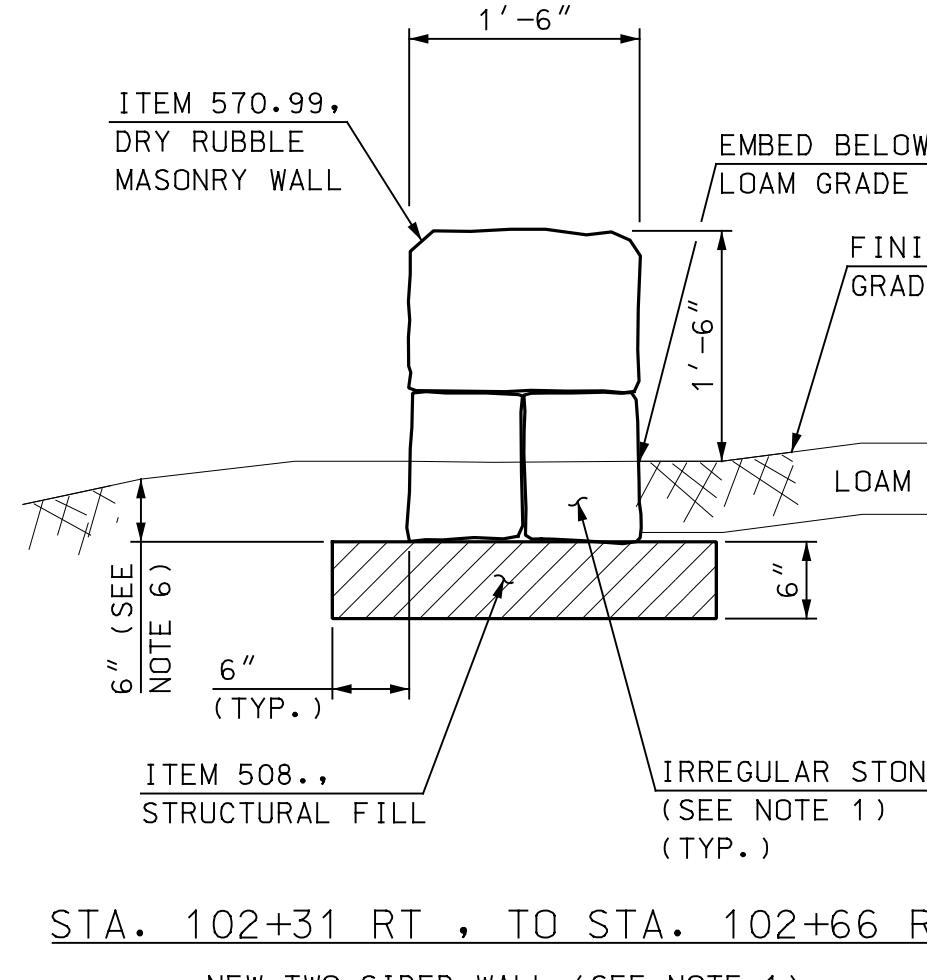


BRIDGE STREET

STA. 101+60 TO STA. 103+36 (BRIDGE)

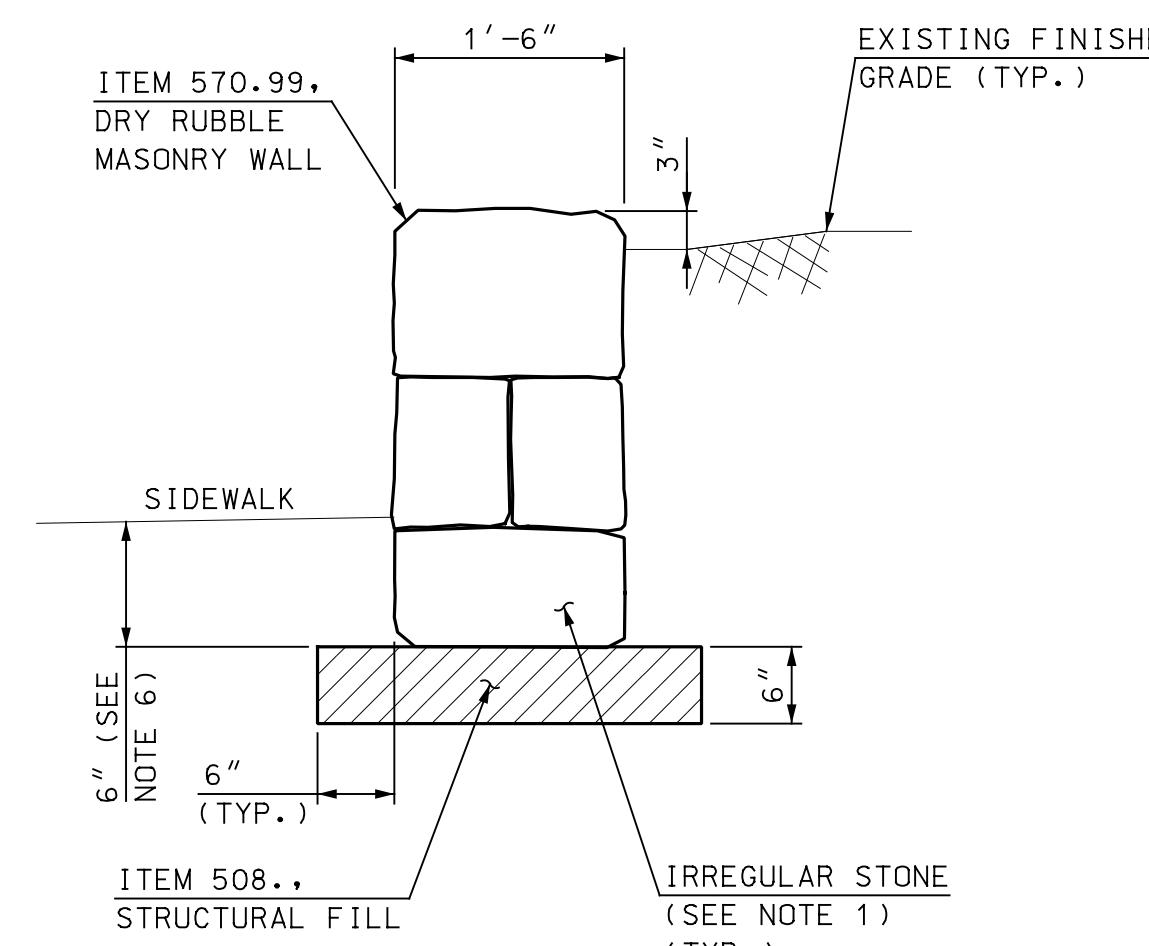
STA. 103+94 (BRIDGE) TO STA. 107+50

NOT TO SCALE



STA. 102+31 RT, TO STA. 102+66 RT

NEW TWO SIDED WALL (SEE NOTE 1)



STA. 105+17 RT, TO STA. 106+24 RT

RECONSTRUCT WALL (SEE NOTE 5)

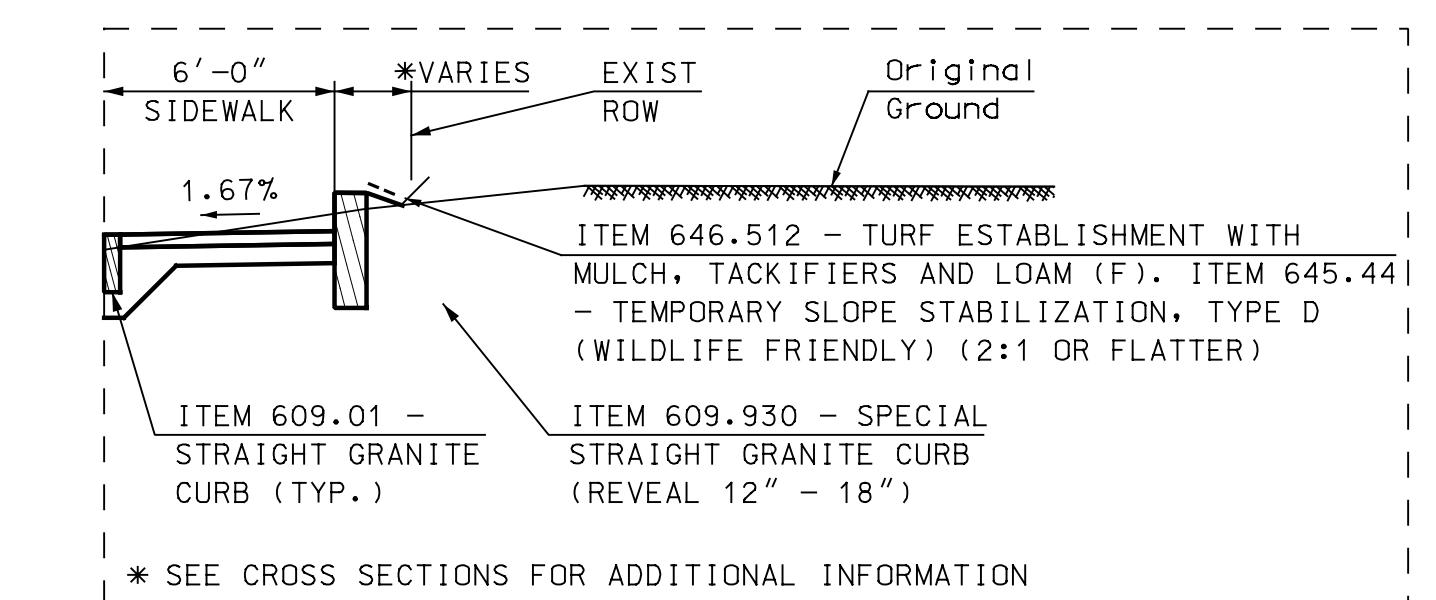
TYPICAL STONE WALL DETAIL

(ITEM 570.99, DRY RUBBLE MASONRY WALL)

NOT TO SCALE

NOTES

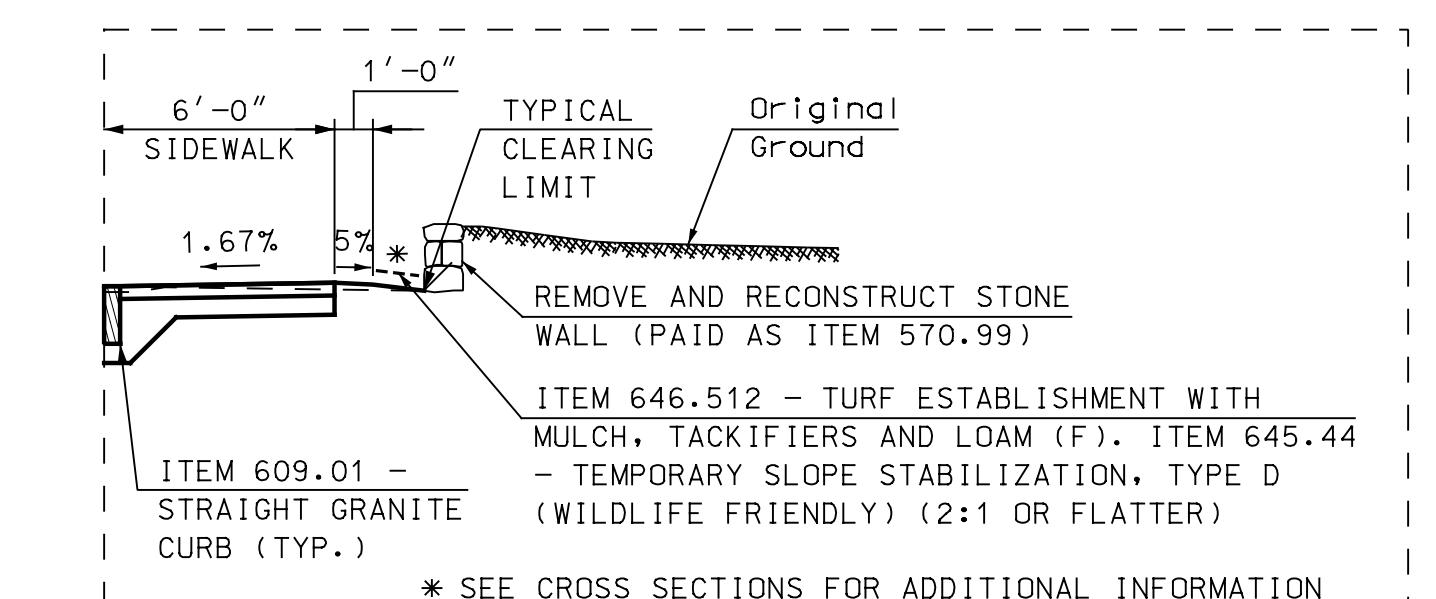
- STONE WALL SHALL CONSIST OF IRREGULAR STONES WITH MINIMUM SIZE OF 6" X 6" AND MAXIMUM SIZE OF 24" X 18" PLACED IN IRREGULAR AND RANDOM PATTERN. MAXIMUM JOINT WIDTH BETWEEN STONES SHALL BE 2".
- SEE SPECIAL PROVISIONS FOR SECTION 570 - STONE MASONRY FOR ADDITIONAL DETAILS.
- STONE WALL SHALL BE "MASON" QUALITY. POOR OR MEDIOCRE WORKMANSHIP BY UNQUALIFIED PERSONNEL WILL NOT BE ACCEPTED.
- CONTRACTOR SHALL SUBMIT STONE SAMPLE FOR APPROVAL PRIOR TO ORDERING MATERIAL.
- CONTRACTOR SHALL REMOVE AND RECONSTRUCT EXISTING STONE AND SUPPLEMENT ADDITIONAL STONE AS NEEDED TO MATCH EXISTING STONE COLOR AND SIZE. MAXIMUM JOINT WIDTH BETWEEN STONES SHALL BE 2".
- STONE WALL EMBEDMENT SHALL REPLICATE EXISTING CONDITIONS BUT SHALL NOT BE LESS THAN 6" BELOW GRADE.
- DISTURBED AREAS BEYOND SLOPE LIMITS SHOWN ON THE PLANS SHALL BE RESTORED WITH LOAM, SEED AND MULCH BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.



* SEE CROSS SECTIONS FOR ADDITIONAL INFORMATION

INSET A

STA. 106+41 RT TO STA. 107+17 RT



* SEE CROSS SECTIONS FOR ADDITIONAL INFORMATION

INSET B

STA. 105+17 RT TO STA. 106+24 RT

NOTES:

- COMPACT SUBGRADE (SUBSIDIARY TO ITEM 214.) PRIOR TO PLACING PAVEMENT COURSES.
- ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED TO ALL LONGITUDINAL HOT BITUMINOUS PAVEMENT JOINTS, AND BETWEEN HOT BITUMINOUS PAVEMENT COURSES (INCIDENTAL).
- BREAK SHOULDER AT 1'-0" OFF OF THE EDGE OF SIDEWALK (OR PAVEMENT WHERE THERE IS NO SIDEWALK) IF THERE IS NO GUARDRAIL. BREAK SHOULDER 2'-6" OFF FACE OF GUARDRAIL.
- CLEARING AND GRUBBING SHALL BE PAID AS ITEM 201.1.
- SEE BRIDGE TYPICAL FOR ADDITIONAL INFORMATION.

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SALEM, NEW HAMPSHIRE
BRIDGE STREET OVER SPICKET RIVER

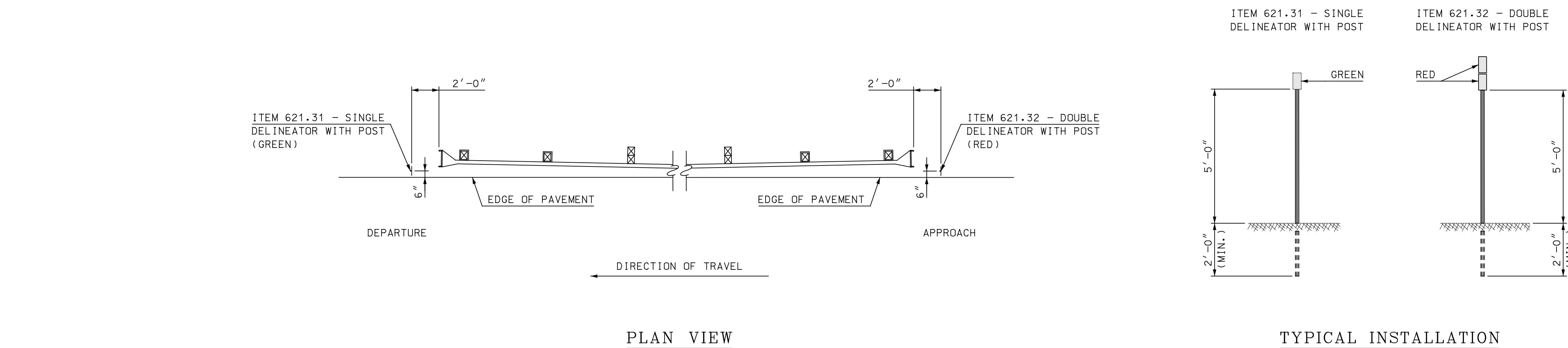
ROADWAY TYPICAL SECTION AND DETAILS

NHOT BRIDGE NO.	REV.	DESCRIPTION	DRW/CHKD BY	DATE
115/097				

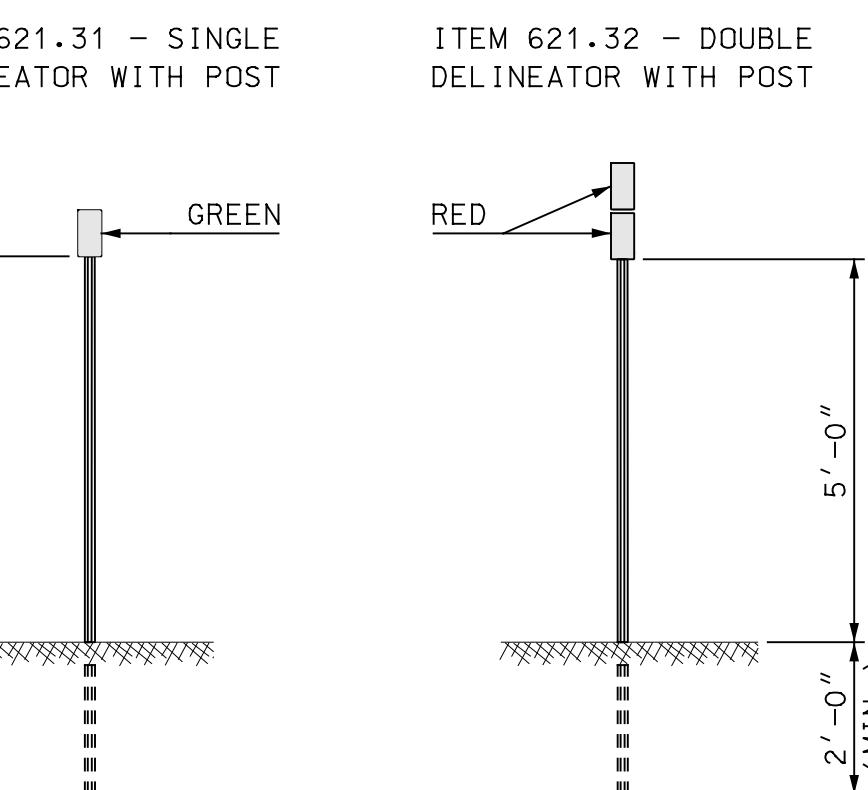
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PROJECT NO. 19.918109.01

SHEET NO. 8



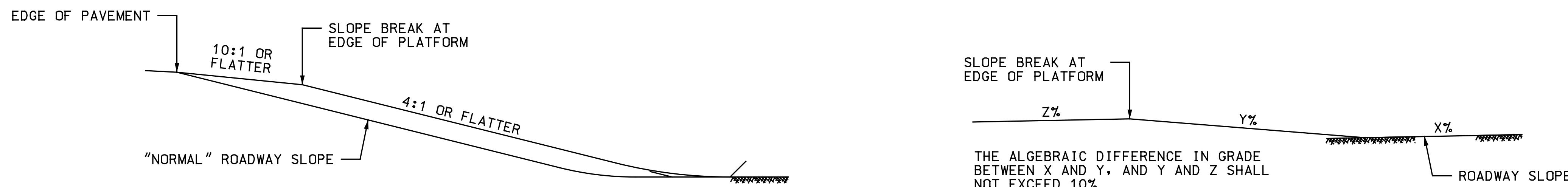
PLAN VIEW



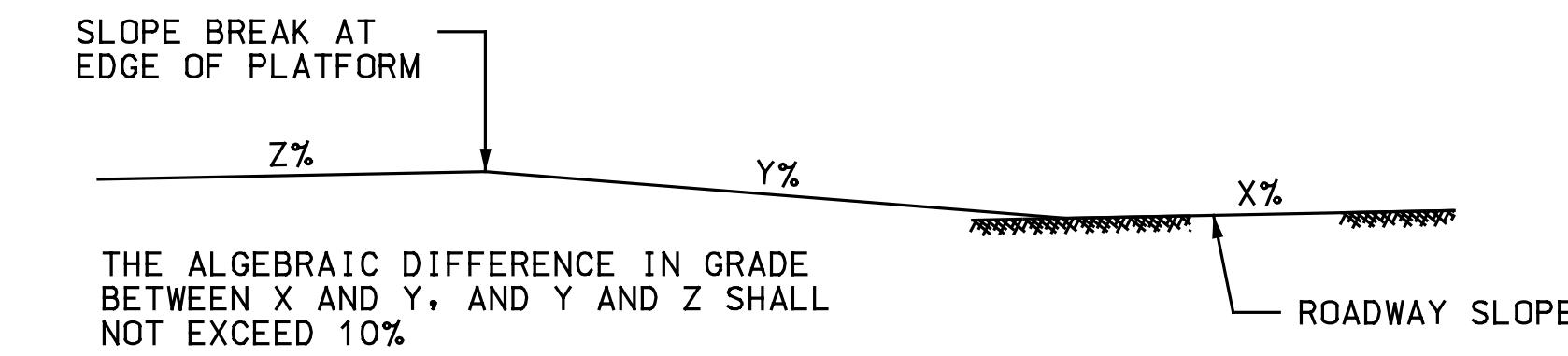
TYPICAL INSTALLATION

TERMINAL UNIT DELINEATION

NOT TO SCALE

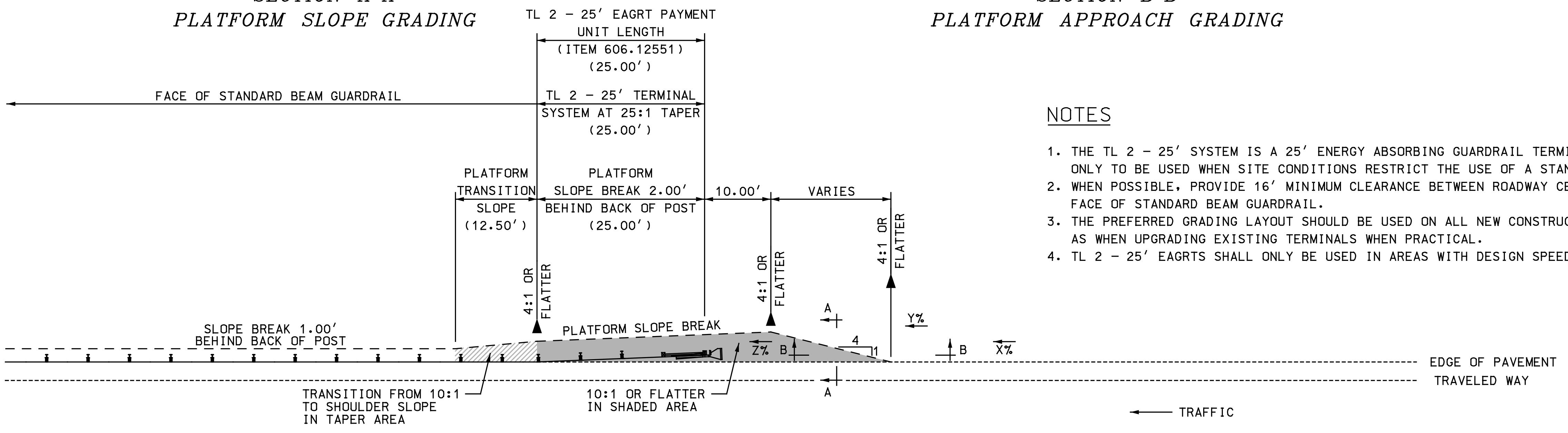


SECTION A-A
PLATFORM SLOPE GRADING



SECTION B-B
PLATFORM APPROACH GRADING

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



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

NHDOT BRIDGE NO.	REV.	DESCRIPTION	DRW/CHKD BY	DATE
115/097				
FILE NAME 91810901D0	DESIGNED KMW			
MODEL NAME D101	DRAWN KMW			
SCALE AS SHOWN	CHECKED SBH			
DATE AUGUST 2025				

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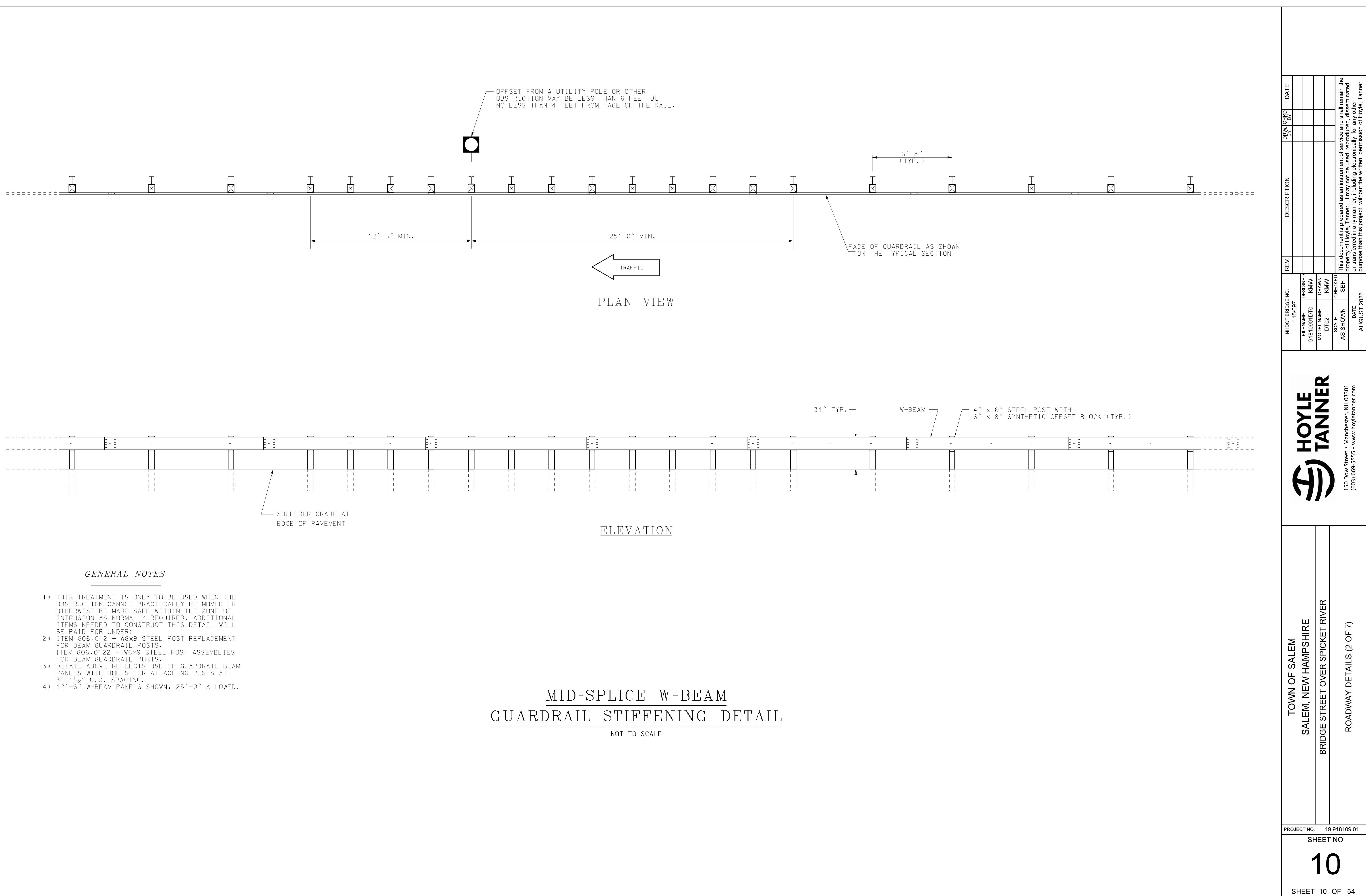
TOWN OF SALEM
SALEM, NEW HAMPSHIRE
BRIDGE STREET OVER SPICKET RIVER

ROADWAY DETAILS (1 OF 7)

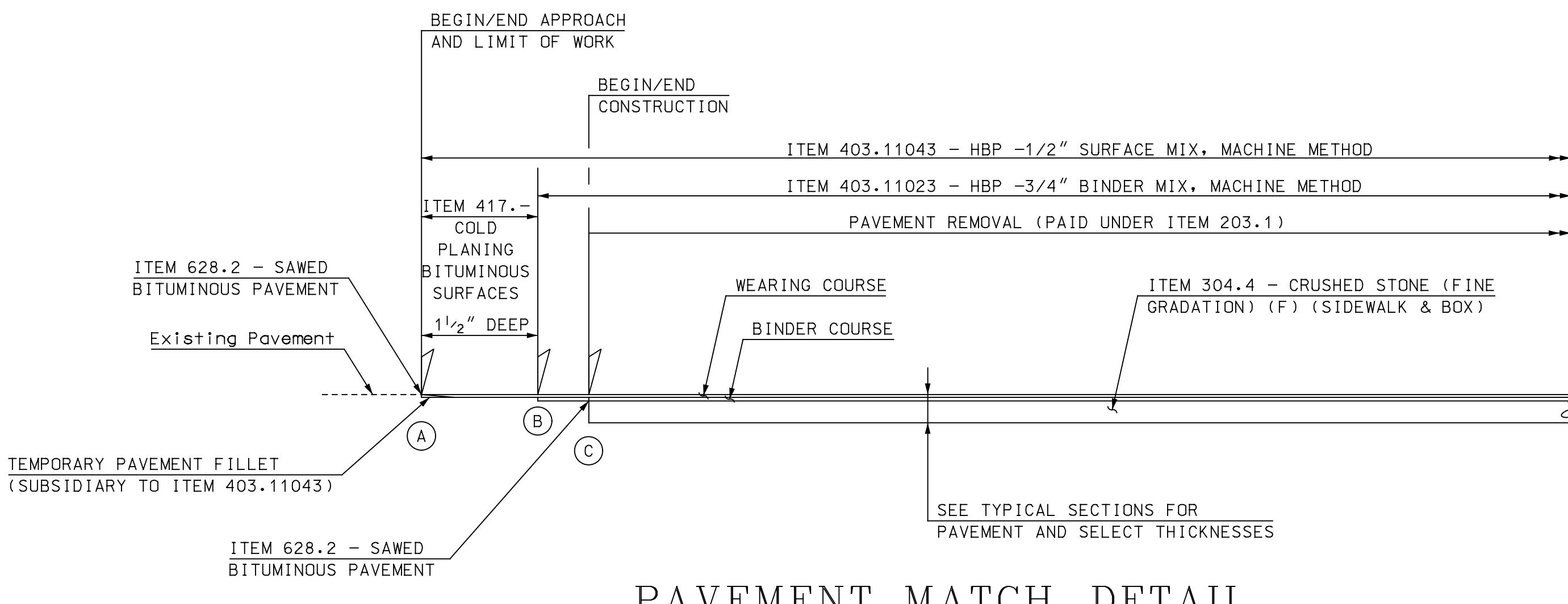
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8/26/2025
11:26:32 PM
K1_PROJECTS/Salem-NH/19_918109_01-Bridge-Street-Spicket-River-Study-T012-CADD/PnCuSheet91810901D0.dgn

PROJECT NO. 19.918109.01
SHEET NO. 9
SHEET 9 OF 54

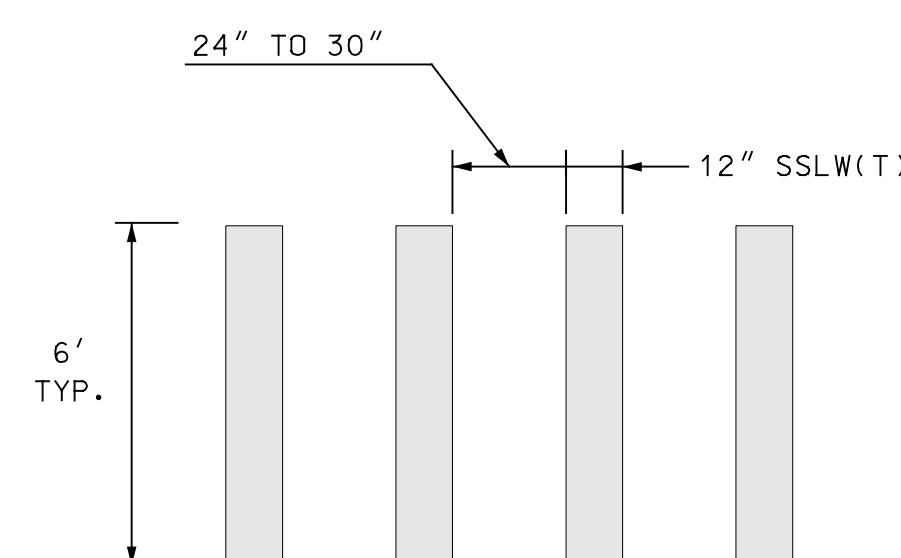


STATION			
LOCATION	WEARING	BINDER	
BRIDGE STREET - BEGIN APPROACH	(A) 101+50	(B) 101+55	CRUSHED STONE
BRIDGE STREET - END APPROACH	107+60	107+55	107+50



PAVEMENT MATCH DETAIL

NOT TO SCALE

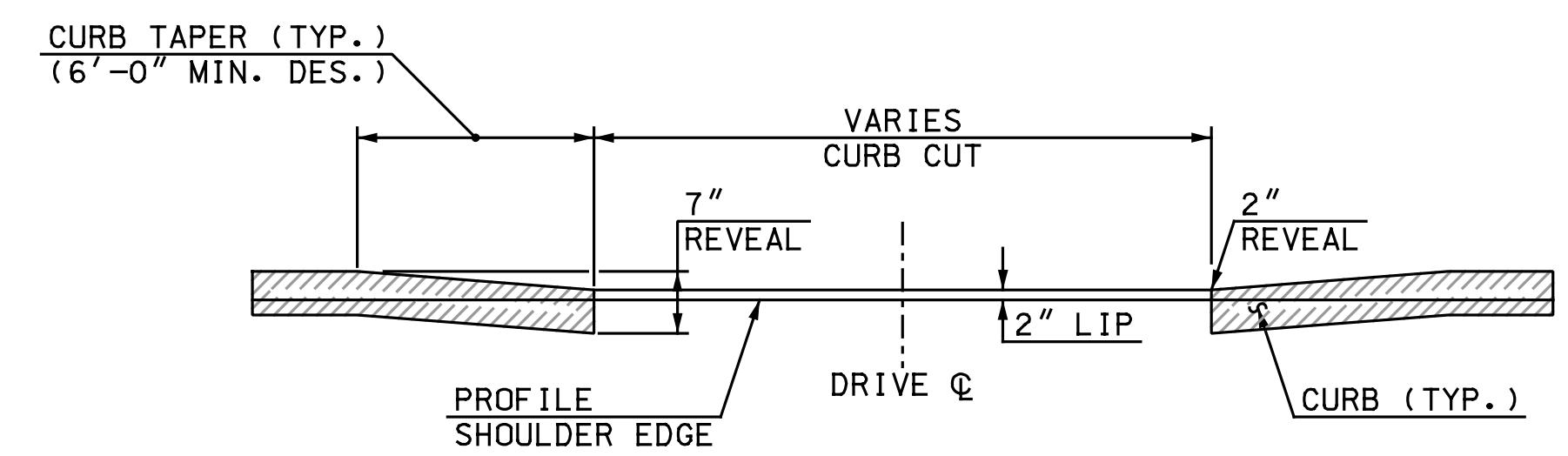
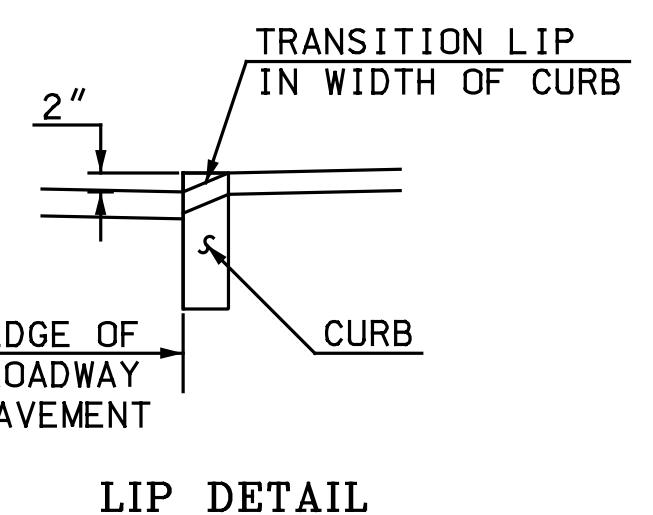
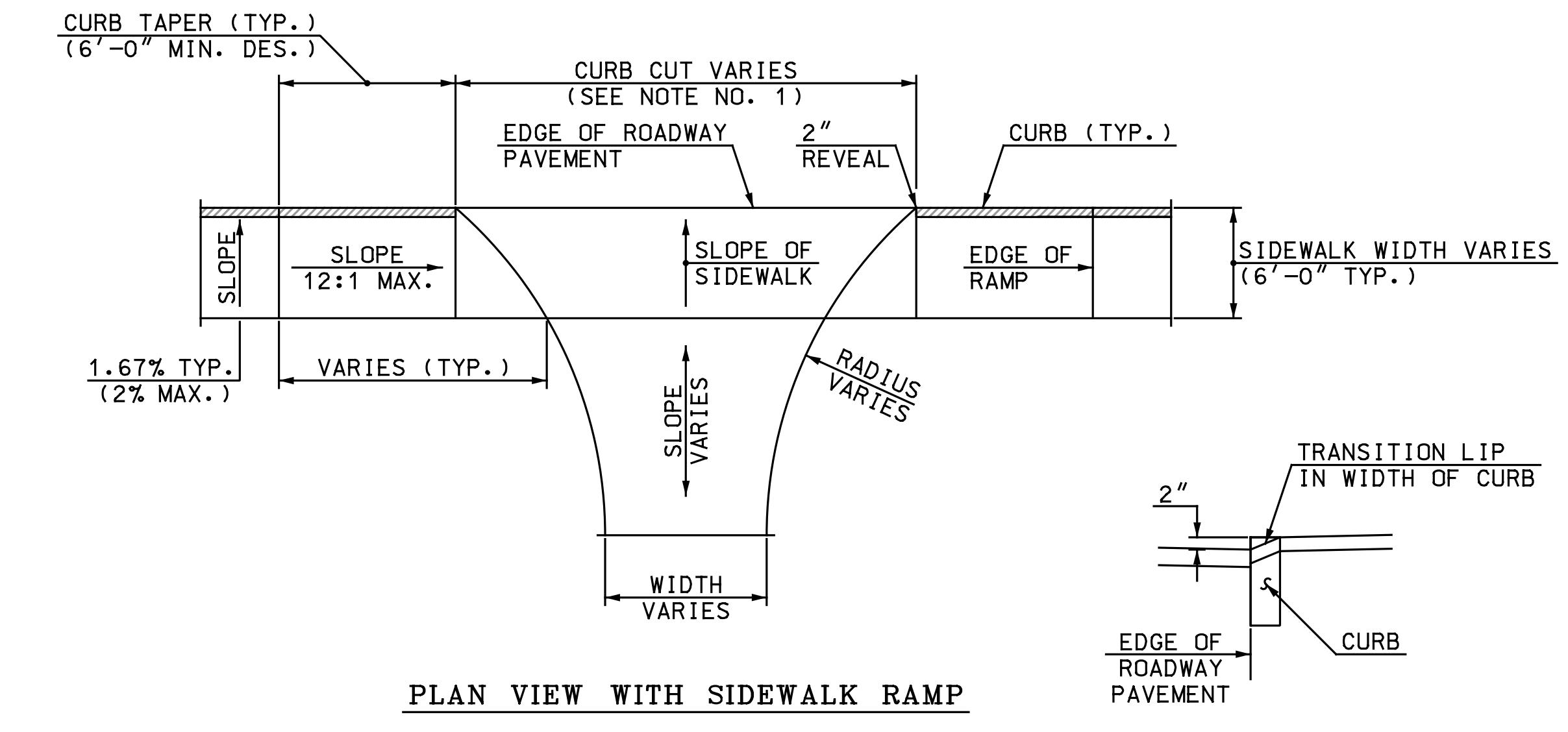


NOTES:

1. STOP LINES ARE 12" SSLW(T) (ITEM 632.3112).
2. TRANSVERSE CROSSWALK LINES SHALL BE THERMOPLASTIC, NOT LESS THAN 6' WIDE AND NOT LESS THAN 2' APART.
3. SPACING FOR THE CONTINENTAL BLOCK MARKINGS SHALL BE UNIFORM FOR EACH INDIVIDUAL CROSSWALK BUT CAN BE MODIFIED FOR ONE CROSSWALK TO THE NEXT TO ELIMINATE A CROSSWALK MARKING DIRECTLY IN THE WHEELPATH.

CONTINENTAL BLOCK MARKING DETAIL

NOT TO SCALE



END VIEW

NOTE:

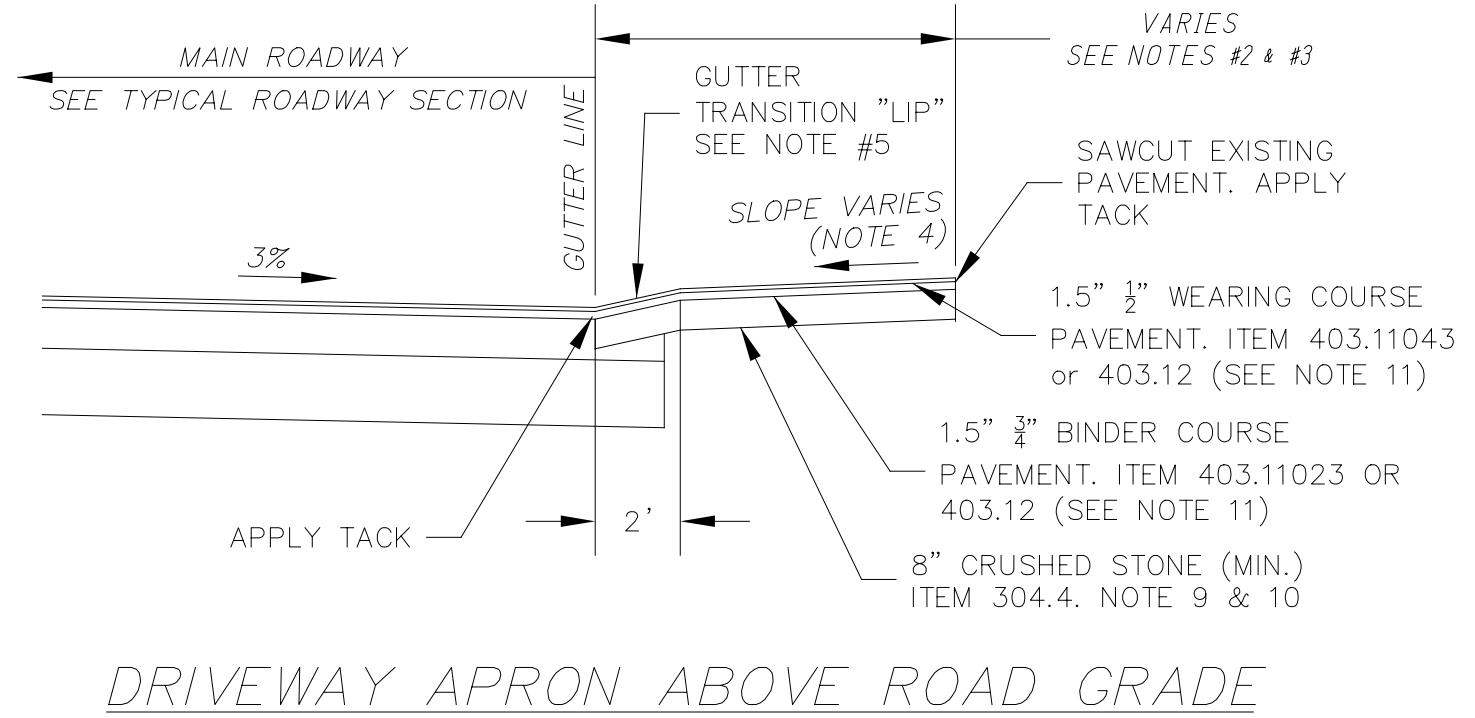
1. REFER TO PAVEMENT LAYOUT PLANS AND CROSS-SECTIONS FOR DRIVEWAY LENGTHS, WIDTHS, RADII, CURB CUTS, GRADES AND PAVEMENT & BASE COURSE DEPTHS

TYPICAL URBAN CURBED DRIVE

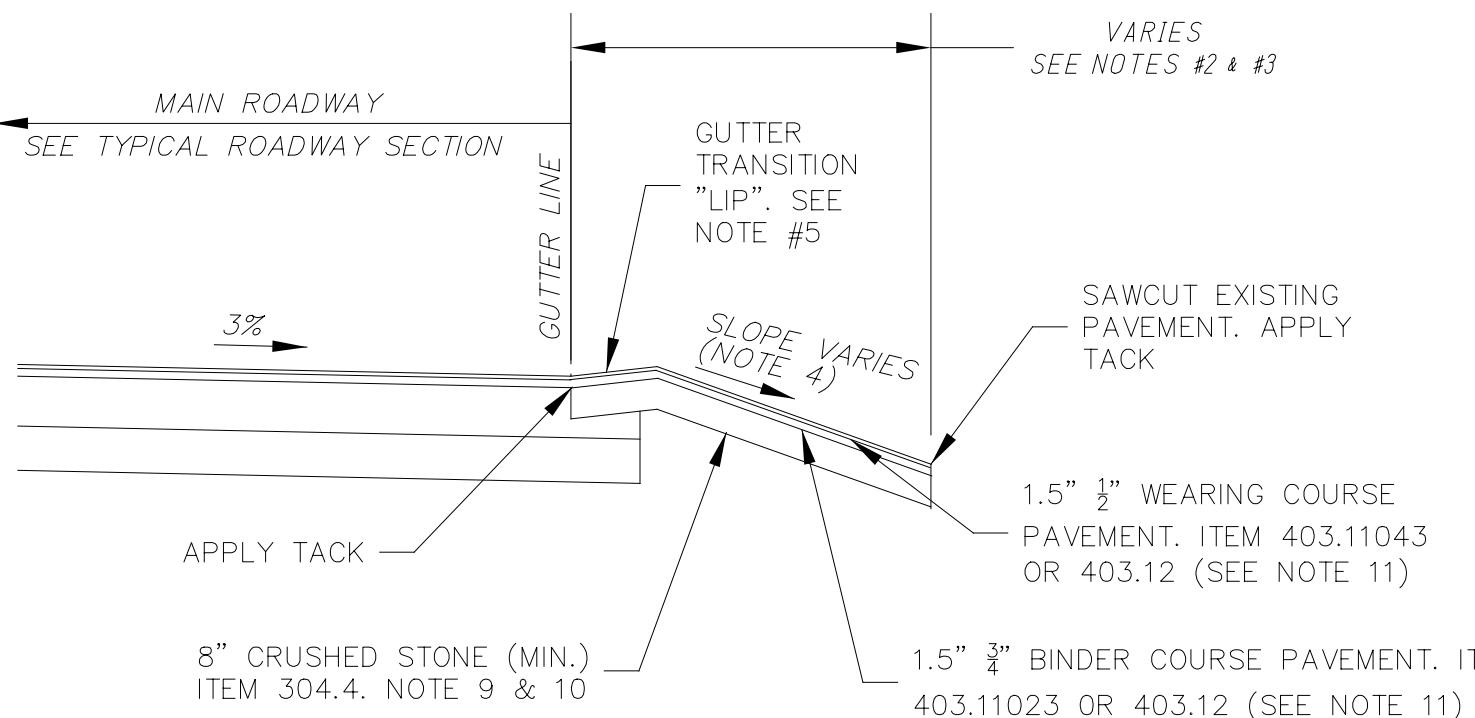
PROJECT NO.	19.918109.01	DESCRIPTION	DRW/CHKD BY	DATE
FILE NAME	91810901D0	DESIGNED		
MODEL NAME	DT03	DRAWN		
SCALE	AS SHOWN	CHECKED		
DATE	AUGUST 2026	SBH		

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BRIDGE STREET OVER SPICKET RIVER
ROADWAY DETAILS (3 OF 7)

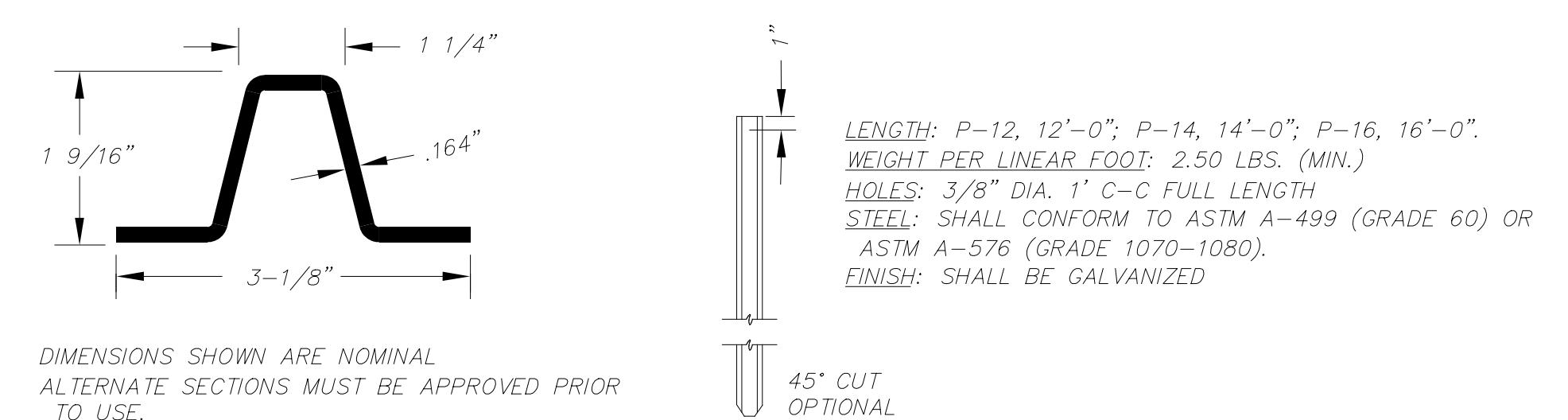


DRIVEWAY APRON ABOVE ROAD GRADE



DRIVEWAY APRON BELOW ROAD GRADE

Typical Driveway Apron Profile Detail



DIMENSIONS SHOWN ARE NOMINAL
ALTERNATE SECTIONS MUST BE APPROVED PRIOR
TO USE.

NOTES:

1. SIGN CONSTRUCTION AND INSTALLATION SHALL MEET THE REQUIREMENTS OF NHDOT ITEM 615.
2. POSTS AND SIGNS SHALL BE BREAKAWAY CONSTRUCTION WITH STAINLESS STEEL HARDWARE. NYLON WASHERS SHALL BE PLACED AGAINST THE SIGN SURFACE.
3. POSTS SHALL BE PLUMB; ANY POST BENT OR OTHERWISE DAMAGED SHALL BE REMOVED AND PROPERLY REPLACED. POSTS MAY BE SET OF DRIVEN.
4. WHEN POSTS ARE SET, HOLES SHALL BE DUG TO THE PROPER DEPTH; AFTER INSERTING POSTS, THE HOLES SHALL BE BACK FILLED WITH SUITABLE MATERIAL IN LAYERS NOT TO EXCEED 6" DEEP AND THOROUGHLY COMPACTED, CARE BEING TAKEN TO PRESERVE THE ALIGNMENT OF THE POST.
5. WHEN POSTS ARE DRIVEN, A SUITABLE DRIVING CAP SHALL BE USED AND AFTER DRIVING THE TOP OF THE POST SHALL HAVE SUBSTANTIALLY THE SAME CROSS- SECTIONAL DIMENSION AS THE BODY OF THE POST; BATTERED HEADS WILL NOT BE ACCEPTED.
6. POSTS SHALL NOT BE DRIVEN WITH THE SIGN ATTACHED TO THE POST.
7. SIGNS SHALL BE ERECTED IN CONFORMANCE WITH THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", CURRENT EDITION.
8. WHEN SIGN IS IN PLACE NO PART OF POST SHALL EXTEND ABOVE THE SIGN.
9. EXISTING SIGN REMOVAL & DISPOSAL SHALL BE CONSIDERED INCIDENTAL.

NO SCALE

NOTES:
1. REFERENCE PROJECT SPECIFICATIONS FOR MEASUREMENT AND PAYMENT.

2. UNLESS OTHERWISE NOTED HORIZONTAL DIMENSION FOR DRIVEWAYS SHALL BE GOVERNED BY MAXIMUM SLOPE REQUIREMENTS AND AS DIRECTED BY THE ENGINEER. ANY DIMENSION GREATER THAN 5-FEET SHALL BE COORDINATED WITH THE ENGINEER FIRST. ANY AREA NOT PRE-APPROVED BY THE ENGINEER SHALL NOT BE PAID.

3. UNLESS OTHERWISE NOTED TOTAL HORIZONTAL DIMENSION OF GRAVEL DRIVE APRONS SHALL BE 5-FEET WITH A MAXIMUM OF 2-FEET BEING PAVED. THE REMAINING DISTANCE SHALL BE CRUSHED GRAVEL.

4. MAXIMUM 6% SLOPE FOR DRIVEWAY APRONS MAY BE MODIFIED ONLY AS DIRECTED BY THE ENGINEER BASED ON FIELD CONDITIONS.

4a. WHERE SIDEWALK CROSSES A DRIVEWAY THEN THE SIDEWALK CROSS SLOPE SHALL BE RETAINED FOR THE WIDTH OF THE SIDEWALK BEFORE TRANSITION TO THE DRIVEWAY SLOPE.

5. GUTTER TRANSITION ("LIP"): ALL DRIVEWAYS SHALL RECEIVE A GUTTER TRANSITION WITH AN INCLINE OF 1-2 INCHES IN 2-FEET FROM THE EDGE OF PAVEMENT. NO ADDITIONAL COMPENSATION SHALL BE GRANTED FOR TRANSITIONS. ELEVATION OF LIPS SHALL BE AS DIRECTED BASED ON FIELD CONDITIONS.

6. TACK COAT SHALL BE APPLIED TO THE JOINTS, BETWEEN COURSES AND AS DIRECTED AND SHALL BE SUBSIDIARY TO UNIT ITEM COST.

7. GRAVELS SHALL BE COMPACTED TO 95% MODIFIED PROCTOR.

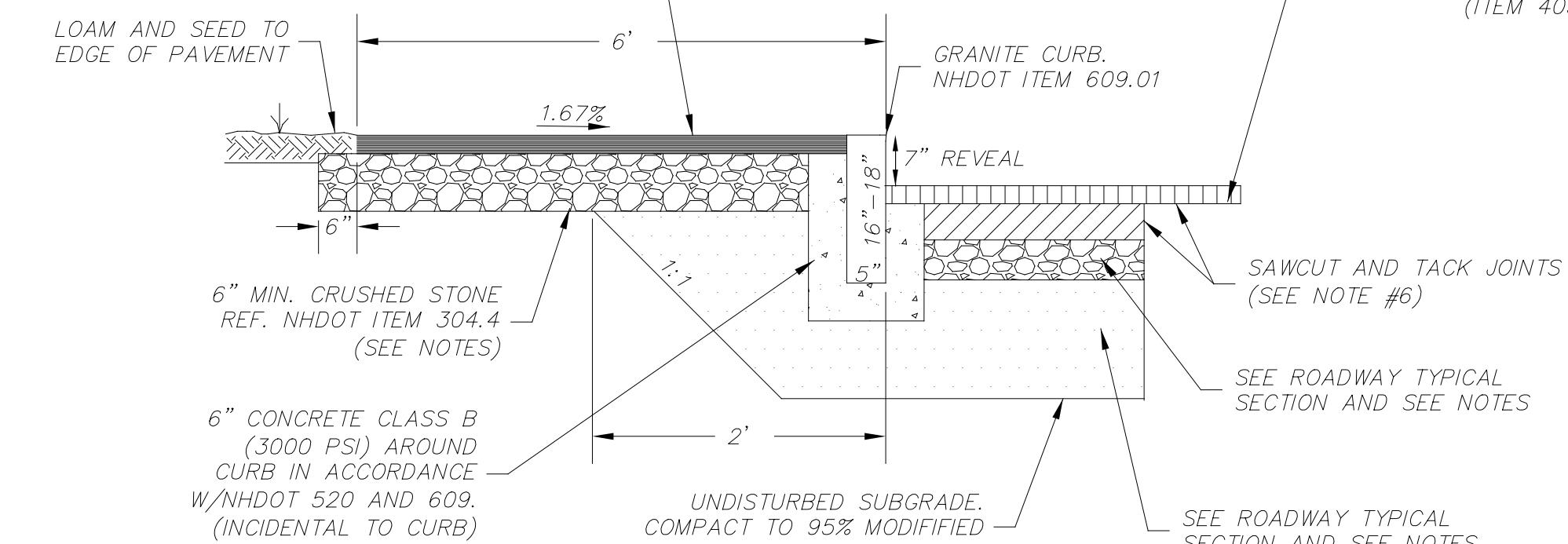
8. SUB-BASE SHALL BE COMPACTED AS NEEDED AND/OR AS DIRECTED.

9. WHERE RECLAIM IS PERMITTED IN-LIEU OF 304.4 EXCESS RECLAIM OR RECLAIM PROVIDED BY OWNER SHALL BE PAID AS 203.6. HAULING AND HANDLING SHALL BE INCIDENTAL.

10. WHERE EXISTING GRAVELS ARE DETERMINED TO BE SUITABLE IN PLACE BY THE ENGINEER THEN NO EXCAVATION OR GRAVEL REPLACEMENT SHALL OCCUR. APRON PREP SHALL BE INCIDENTAL. ADDITIONAL GRAVEL SHIM TO MEET ROAD GRADES SHALL BE PAID UNDER 304.4 OR 203.6.

11. WHERE DRIVEWAYS ARE PAVED WITH A PAVER PAY ITEM SHALL BE 403.11 (MACHINE METHOD).

2.5" MIN BITUMINOUS PAVEMENT SIDEWALK
REF. NHDOT 403.1 (SEE NOTES)
1" 3/8" WEARING COURSE
1.5" 1/2" BINDER COURSE



SEE ROADWAY TYPICAL SECTION AND SEE NOTES

NOTES:

1. REFERENCE NHDOT MATERIAL SPECIFICATIONS. ALL MATERIALS SHALL CONFORM TO APPLICABLE NHDOT ITEM NUMBER MATERIAL SPECIFICATIONS.

2. ALL GRAVELS TO BE COMPACTED TO 95% MODIFIED PROCTOR.

3. FOR EXISTING ROADWAY CONSTRUCTION GRAVEL AND PAVEMENT DEPTHS SHALL BE MINIMUM SPECIFIED OR MATCH THE EXISTING, WHICHEVER IS GREATER. WHERE NECESSARY TO WIDEN THE GRAVEL BOX FOR THE CURB THE GRAVEL DEPTHS SHALL BE MINIMUM SPECIFIED OR MATCH THE EXISTING, WHICHEVER IS GREATER TO PAY LIMITS.

4. SIDEWALK TO BE PAID COMPLETE IN PLACE PER UNIT AREA OF PAVEMENT, CURB, CUT/FILLS, AND SIDEWALK GRAVELS SHALL BE PAID UNDER RESPECTIVE ITEM NUMBERS.

5. SIDEWALK CROSS SLOPE NOT TO EXCEED 2% IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT

6. IF SIDEWALK IS INSTALLED IN AN EXISTING ROADWAY CONDITION THEN SAWCUT, GRIND AND OVERLAY OF THE EXISTING PAVEMENT SHALL APPLY.

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BRIDGE STREET OVER SPICKET RIVER
ROADWAY DETAILS (4 OF 7)

PROJECT NO. 19.918109.01

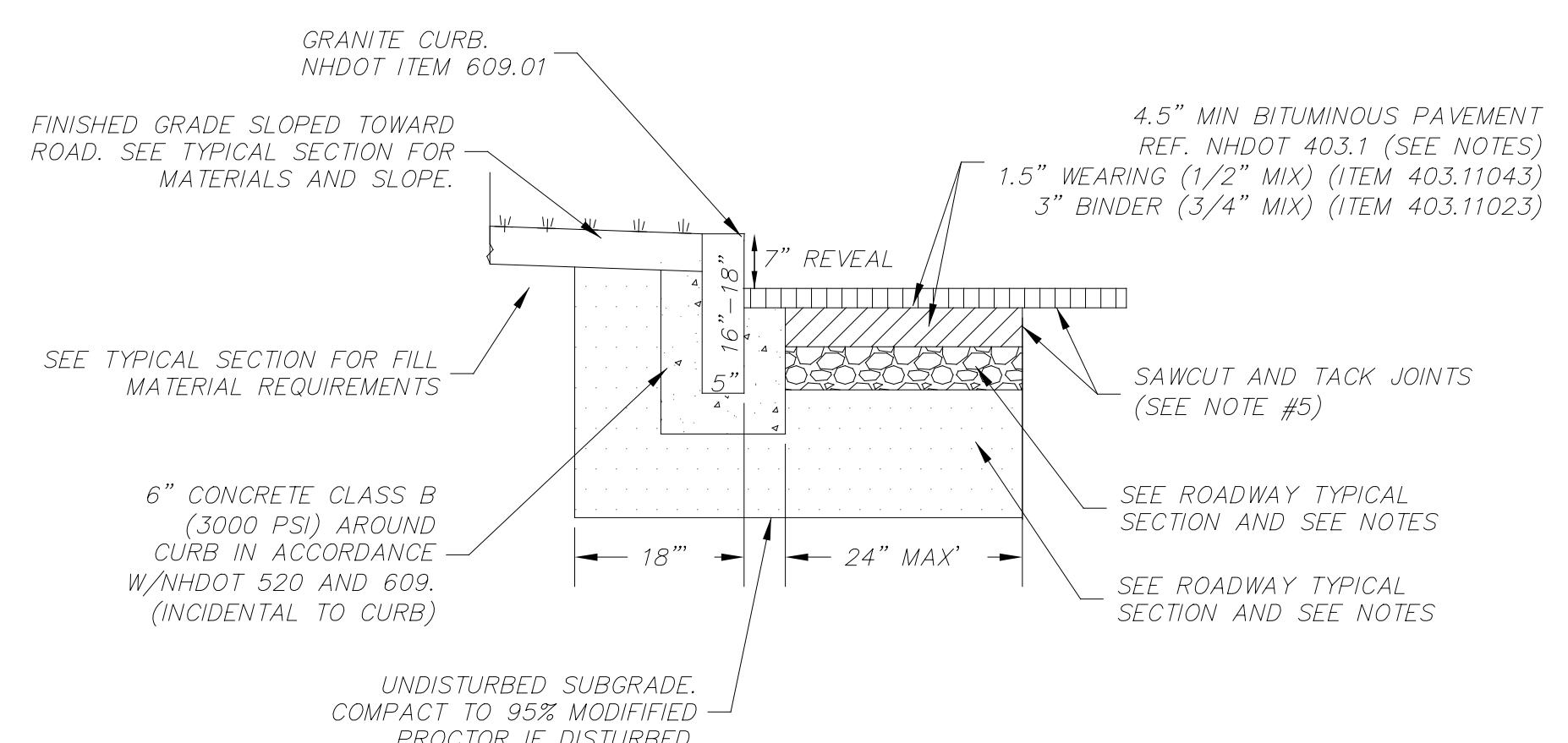
SHEET NO.

12

SHEET 12 OF 54

Sign Post

NO SCALE



NOTES:

1. REFERENCE NHDOT MATERIAL SPECIFICATIONS. ALL MATERIALS SHALL CONFORM TO APPLICABLE NHDOT ITEM NUMBER MATERIAL SPECIFICATIONS.

2. ALL GRAVELS TO BE COMPACTED TO 95% MODIFIED PROCTOR.

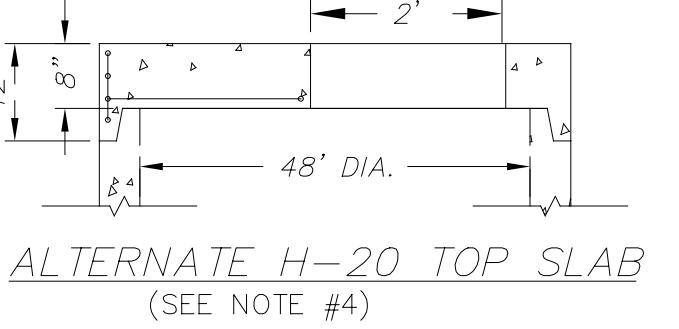
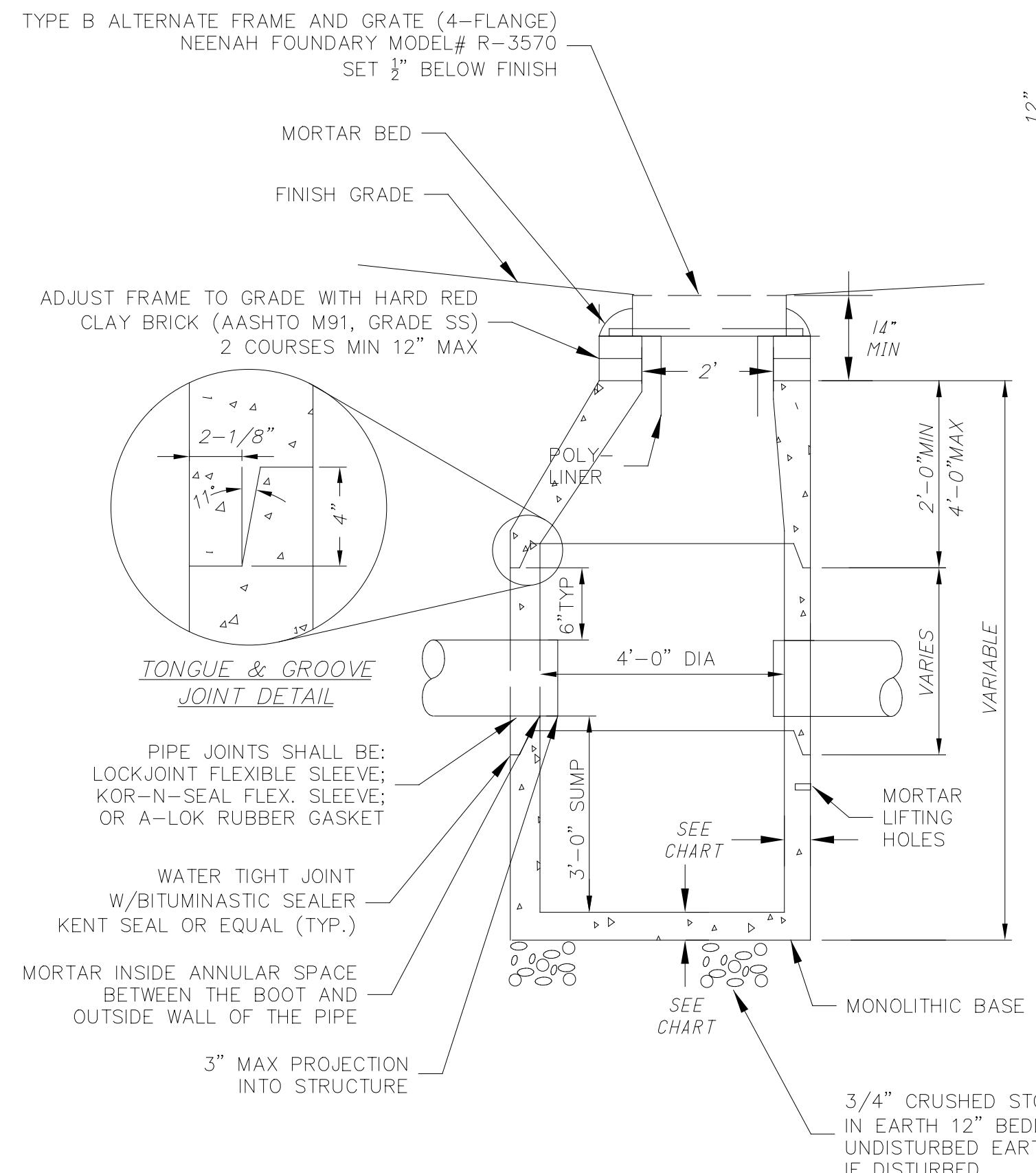
3. FOR EXISTING ROADWAY CONSTRUCTION GRAVEL AND PAVEMENT DEPTHS SHALL BE MINIMUM SPECIFIED OR MATCH THE EXISTING, WHICHEVER IS GREATER. WHERE NECESSARY TO WIDEN THE GRAVEL BOX FOR THE CURB THE GRAVEL DEPTHS SHALL BE MINIMUM SPECIFIED OR MATCH THE EXISTING, WHICHEVER IS GREATER TO PAY LIMITS.

4. CURB TO BE PAID PER UNIT LENGTH COMPLETE IN PLACE INCLUDING EXCAVATION, GRAVEL BASE, MORTAR JOINTS, AND CONCRETE FOUNDATION, PAVEMENT, ROAD BED GRAVELS AND CUT/FILLS OUTSIDE OF CURB TEMPLATE SHALL BE PAID UNDER RESPECTIVE ITEM NUMBERS.

5. IF CURB IS INSTALLED IN AN EXISTING ROADWAY CONDITION THEN SAWCUT, PAVEMENT REMOVAL, GRIND AND OVERLAY OF THE EXISTING PAVEMENT SHALL APPLY.

Vertical Granite Curb

NO SCALE

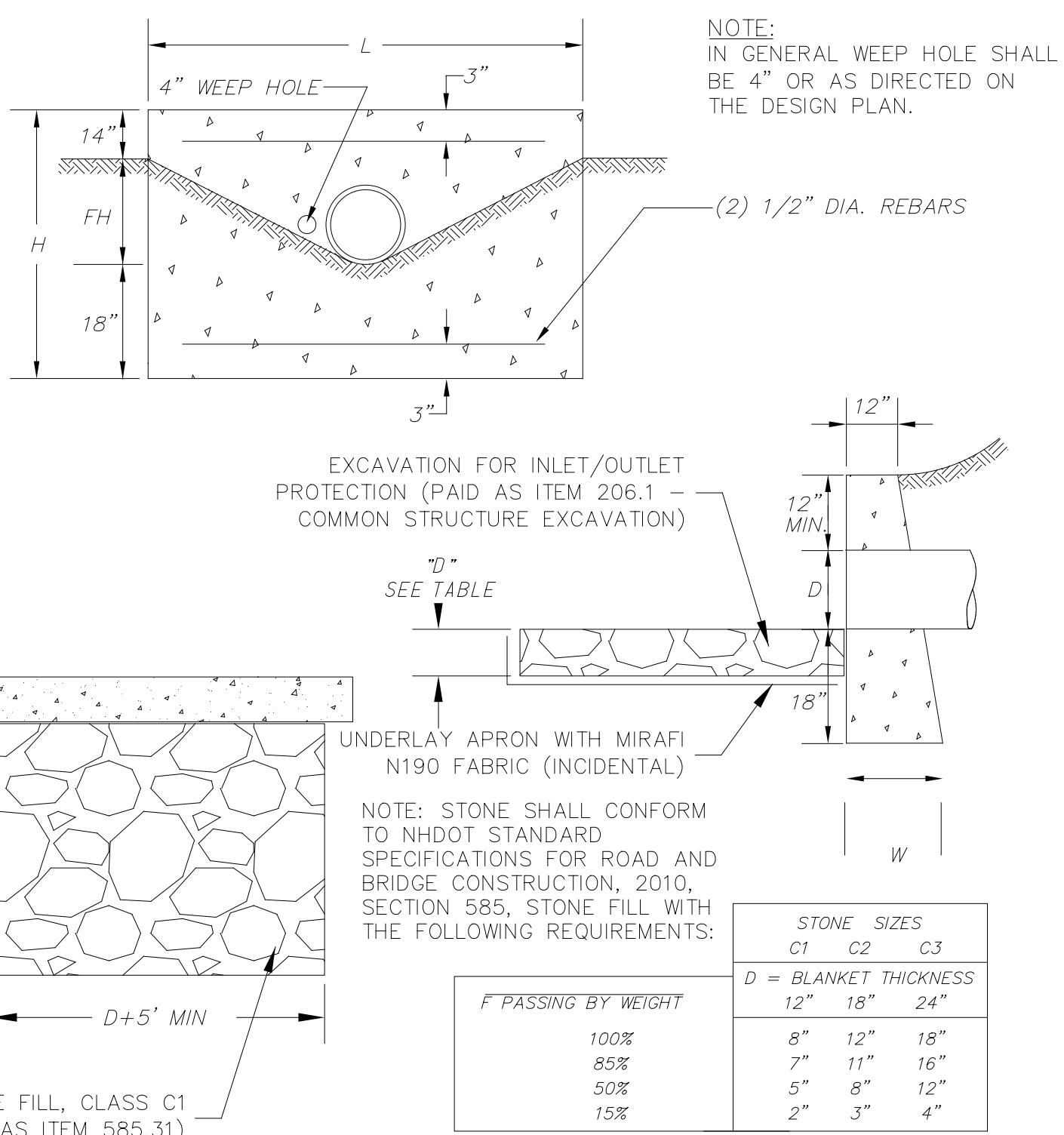


DIAMETER	WALL THICKNESS MIN.	FLOOR THICKNESS MIN.
4'	5"	6"
5'	6"	8"
6'	7"	8"
7'	8"	10"
8'	9"	10"

CB NOTES:

1. REFERENCE DRAINAGE NOTES, NHDOT SECTION 604, AND TOWN OF SALEM SUPPLEMENTAL SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
2. SEPARATE CONSTRUCTION SPECIFICATIONS ARE ATTACHED OR INCLUDED IN THE CONTRACT DOCUMENTS. THESE STANDARD DRAWINGS ARE NOT COMPLETE WITHOUT SPECIFICATIONS.

D MAS.PER STD.HDR. CU.YD.	STEEL PER STD. HDR.LB.	LENGTH OF BARS	L				H		FH		W	
			L	H	FH	W						
12	0.61	9	3'-2"	3'-6"	0'-10"	1'-10.5"						
15	0.85	11	3'-10"	4'-6"	3'-9"	1'-1"	1'-11.25"					
18	1.13	14	5'-2"	5'-6"	4-0	1-4	2-0					
24	1.78	20	7-2	7-6	4-6	1-10	2-1.5					
36	3.53	31	11-2	11-6	5-6	2-10	2-4.5					



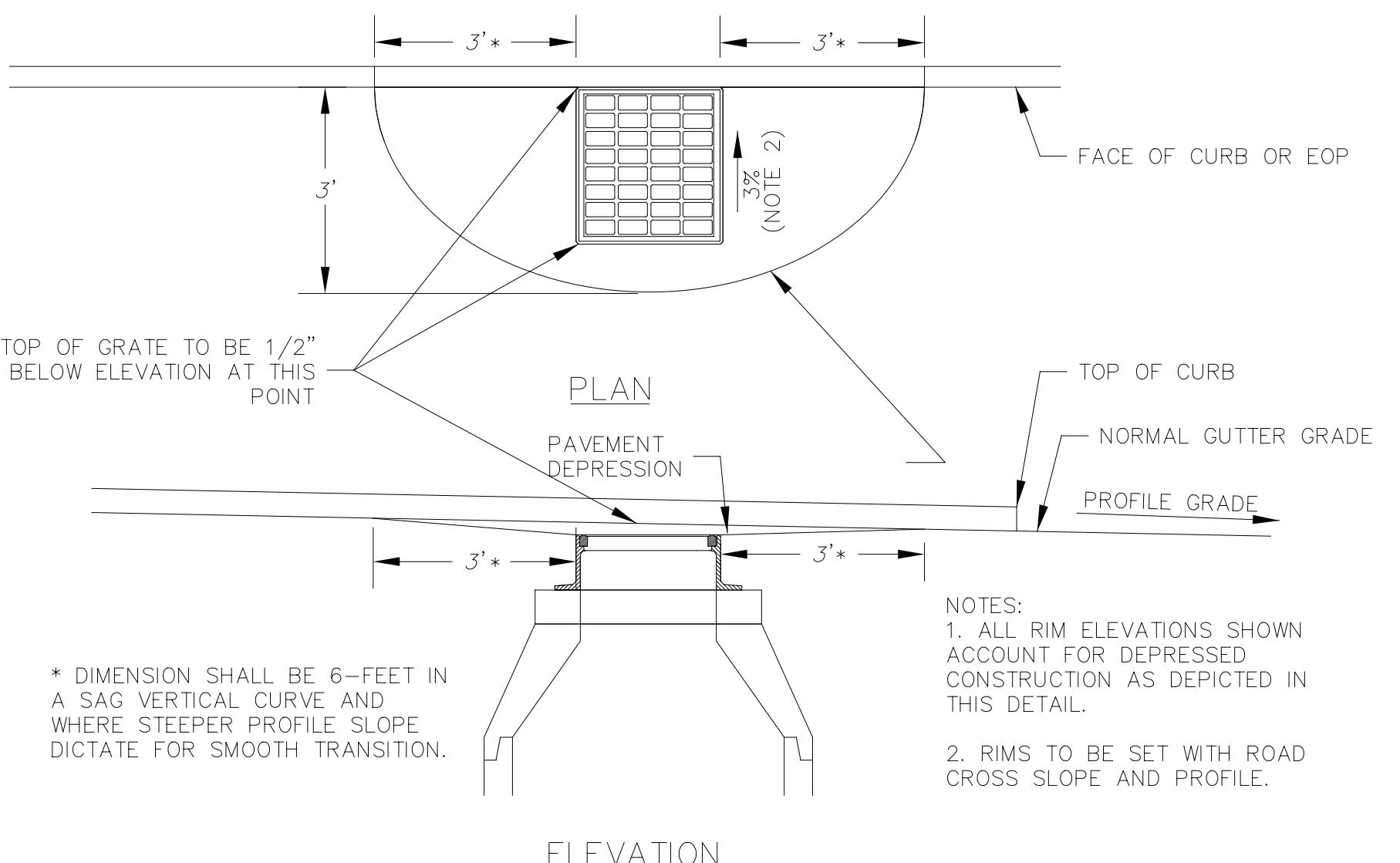
NOTE: ALL STONE TO BE SIZE "C1" EXCEPT WHERE NOTED.

GENERAL DRAIN STRUCTURE NOTES:

1. REFERENCE NHDOT SECTION 604 AND TOWN OF SALEM SUPPLEMENTAL SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
2. SEPARATE CONSTRUCTION SPECIFICATIONS ARE ATTACHED OR INCLUDED IN THE CONTRACT DOCUMENTS. THESE STANDARD DRAWINGS ARE NOT COMPLETE WITHOUT SPECIFICATIONS.
3. ALL STRUCTURE COMPONENTS INCLUDING CASTING ASSEMBLIES WILL BE INSPECTED FOR ACCEPTABILITY. REJECTED MATERIALS SHALL BE REMOVED FROM THE SITE.
4. **FLAT TOP OPTION:** FOR STRUCTURES WITH A DIAMETER GREATER THAN 4 FEET THE DIAMETER MAY BE CONSTANT FROM TOP TO BOTTOM WITH A FLAT TOP LID OR A RISER SECTION THAT REDUCES FROM THE LARGER DIAMETER TO THE STANDARD 4' ECCENTRIC CONE SECTION.
5. **ADJUSTMENT BRICK** SHALL CONFORM TO AASHTO M32, GRADE SS SEWER BRICK. MAX ABSORPTION SHALL BE 3%-4% DURING THE 5-HOUR BOIL TEST.
6. **BRICK FACE WORK** SHALL BE LAID CLOSE WITH JOINTS NOT EXCEEDING 1/4". JOINTS SHALL BE FILLED AND POINTED. CONCRETE COLLARS ARE NOT ALLOWED.
7. **CB AND DI GRATES** IN PAVED AREAS SHALL BE SET ACCORDING TO THE STANDARD SALEM PAVEMENT DEPRESSION DETAIL.
8. **INVERTS** SHALL BE CONSTRUCTED USING GRADE SS SEWER BRICK (SEE ADJUSTMENT BRICK ABOVE). POURED AND SHAPED CONCRETE INVERTS SHALL NOT BE ALLOWED.
9. **DOUBLE GRATES:** WHERE DOUBLE GRATES ARE NEEDED A 5-FOOT MIN. DIAMETER STRUCTURE WITH FLAT TOP LID SHALL BE USED. DOUBLE GRATE SHALL BE EJ MODEL #OMA52000066.
10. **BEDDING** 3/4" CRUSHED STONE CONFORMING TO NHDOT ITEM 304.4 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.
11. 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. NON-SHRINK GROUT SHALL BE PLACED IN THE ANNUAL SPACE BETWEEN THE SEALING BOOT AND PIPE.
12. **CORE SPACING:** ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 12" OF OUTSIDE SURFACE BETWEEN CORE HOLES, NO MORE THAN 75% OF A HORIZONTAL CROSS SECTION SHALL BE CORE HOLES AND CORE HOLES SHOULD BE 6" TYPICAL FROM JOINTS BUT IN NO CASE CLOSER THAN 3" AS APPROVED.
13. THE CORE HOLE SHALL NOT BE CLOSER THAN 3" TO JOINTS WITH USE OF AN ELASTOMERIC BOOT CONNECTOR. ELASTOMERIC BOOT CONNECTORS FOR INVERTS SHALL NOT BE ALLOWED IN SHALLOW TRENCHES (LESS THAN 3.5 FEET RIM TO INVERT).
14. **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. FIELD CORES SHALL BE INCIDENTAL UNLESS SPECIFICALLY PROVIDED FOR.
15. OUTSIDE EDGES OF THE OUTLET PIPE SHALL PROJECT NO MORE THAN 3" BEYOND THE INSIDE WALL OF THE STRUCTURE.
16. LIFTING HOLES SHALL BE FILLED WITH MORTAR.
17. **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 ARE SUBSIDARY.
18. **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 COMPAKTED IN 6" LIFTS.
19. **STEPS** ARE NOT ALLOWED.
20. **CASINGS** CASINGS SHALL BE EVEN-GRAINED CAST IRON, SMOOTH AND FREE FROM SCALE, LUMPS, BLISTERS, SAND HOLES AND DEFECTS. CONTACT SURFACES OF FRAMES AND GRATES SHALL BE MACHINED AT THE FOUNDRY TO PREVENT ROCKING OF COVERS IN ANY ORIENTATION. 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 BITUMINOUS CURB OR NO CURBING SHALL BE 4-FLANGED.
21. ALL STRUCTURES SHALL BE H20 LOAD RATED.
22. ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C-478. ALL REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615) GRADE 60, AND SHALL MEET THE REQUIREMENTS OF SECTION 544 REINFORCING STEEL OF THE NHDOT STANDARD SPECS.
23. CONE SECTIONS SHALL BE ECCENTRIC. WHERE PIPE CORE WOULD OTHERWISE ENTER INTO THE CONE SECTION AN H-20 LOAD RATED FLAT TOP ECCENTRIC LID MAY BE USED.
24. CIRCUMFERENTIAL REINFORCEMENT REQUIREMENTS SHALL CONFORM TO THE LATEST ASTM A185 SPECIFICATIONS.
25. ALL SECTIONS SHALL BE CONCRETE CLASS AA (4000 PSI).
26. CIRCUMFERENTIAL REINFORCEMENT SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
27. EACH COMPONENT OF THE SHIP LAP JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER L.F.

Precast Reinforced Catch Basin

NO SCALE

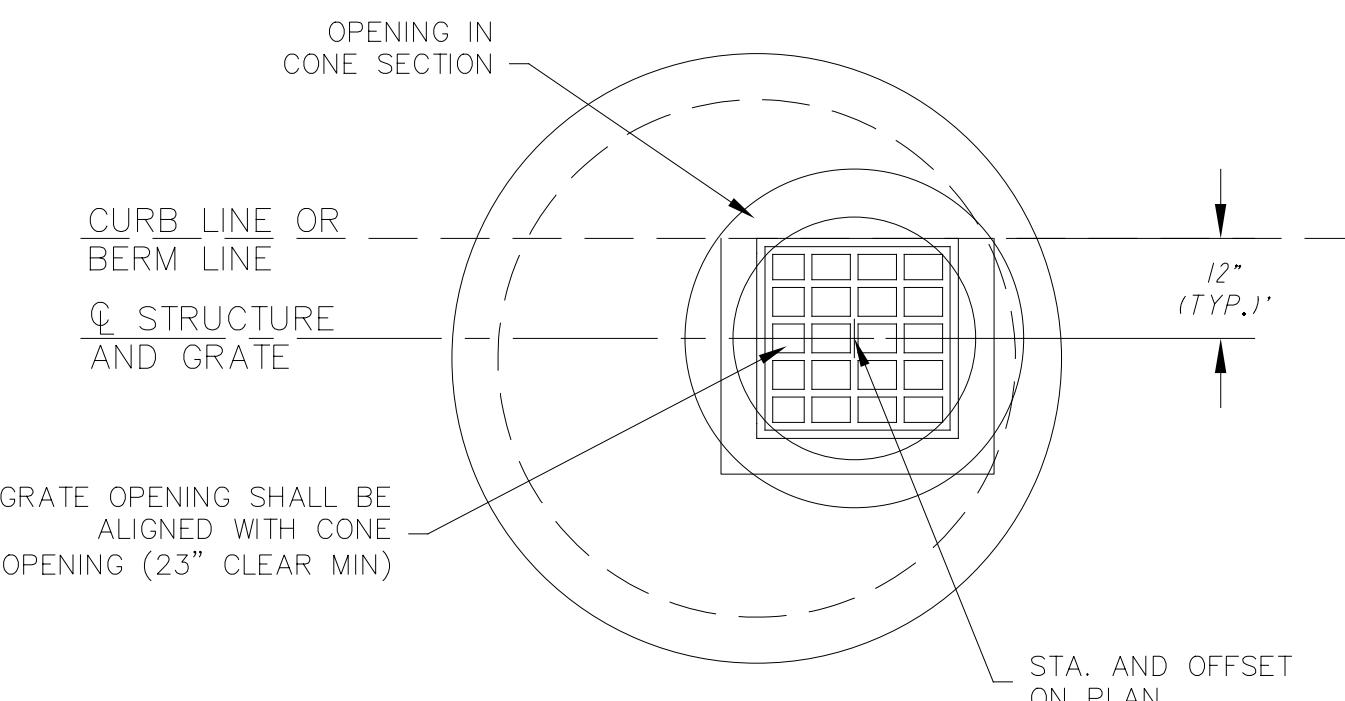


Standard Salem Pavement Depression Detail

NO SCALE

NOTE:

1. IF SITE CONDITIONS DO NOT ALLOW FOR SETTING CATCH BASINS AS SHOWN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO SETTING STRUCTURE.
2. CONTRACTOR SHALL VERIFY ALL STRUCTURE LOCATIONS PRIOR TO LAYING PIPE.
3. ALL CB RIMS (SINGLE AND DOUBLE) AGAINST GRANITE CURBING SHALL BE 3-FLANGED. ALL CB RIMS NOT AGAINST GRANITE CURBING SHALL BE 4-FLANGED.



Casting Placement at Curblane Detail

NO SCALE

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TOWN OF SALEM
SALEM, NEW HAMPSHIRE
BRIDGE STREET OVER SPICKET RIVER
ROADWAY DETAILS 6 (OF 7)

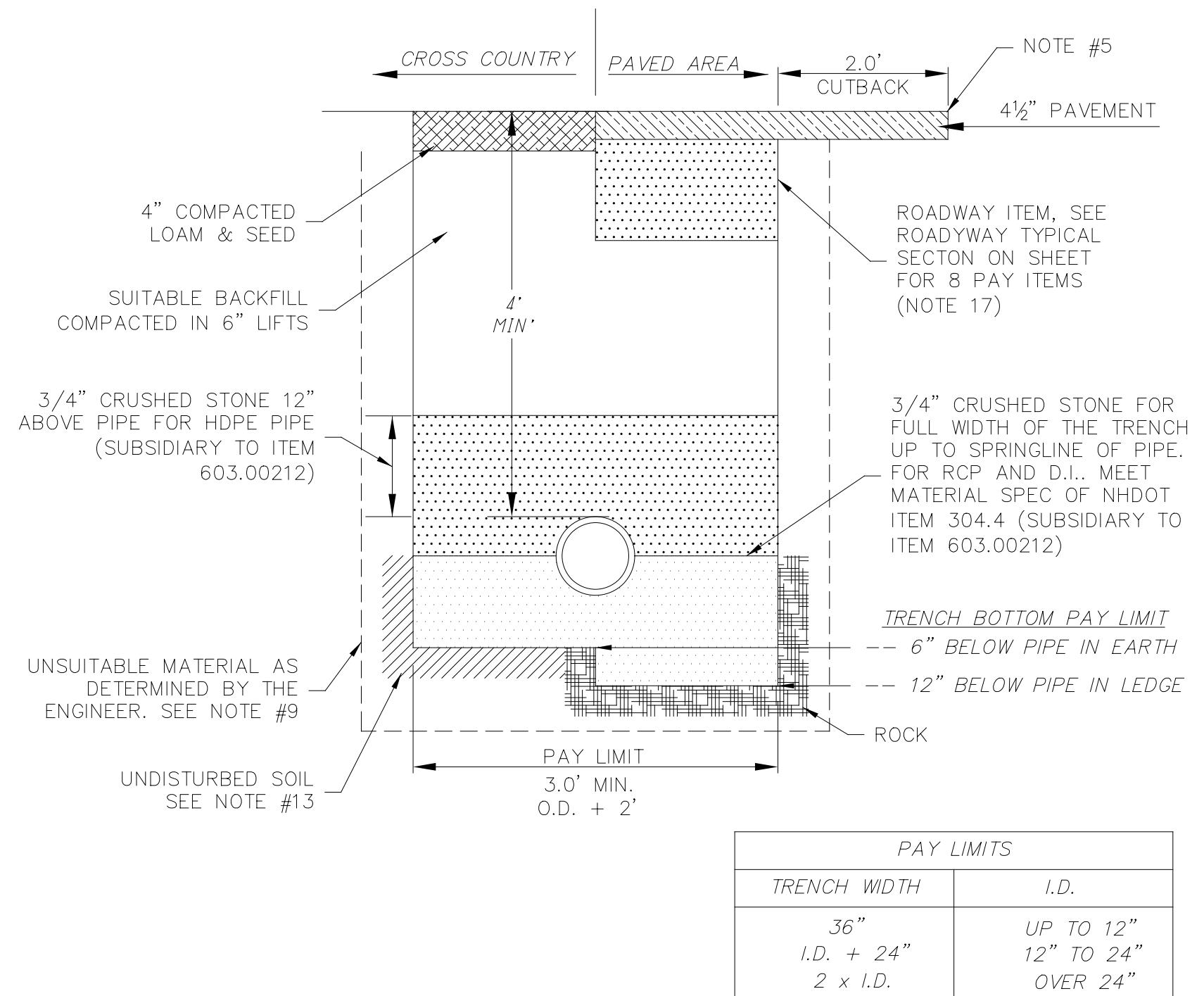
PROJECT NO. 19.918109.01

SHEET NO.

14

SHEET 14 OF 54

DRAINAGE TRENCH NOTES:



Typical Drain Trench Detail

- REFERENCE NHDOT SECTION 604 AND TOWN OF SALEM SUPPLEMENTAL SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
- 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.
- 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.
- BITUMINOUS PAVEMENT, DEPTH EQUAL TO EXISTING PAVEMENT WITH 4.5" MIN. (1.5" OF 1" WEARING, 3" OF 3" BINDER). PAVEMENT SHALL CONFORM TO NHDOT ITEM 403.11.
- DAMAGED OR OTHERWISE DEFICIENT PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
- INSPECTION: FOLLOWING INSTALLATION DRAIN LINES SHALL BE CLEANED AND VISUALLY INSPECTED. PIPES SHALL BE TRUE TO LINE AND GRADE PRIOR TO ACCEPTANCE AND USE.
- UNSUBSTANTIAL 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.
- MATERIAL SHALL BE REPLACED IN KIND 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 COMPAKTED.
- COMPACTION: BACKFILL OF THE TRENCHES SHALL BE COMPAKTED 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.
- 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.
- 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.
- 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.
- PAYMENT OF 304.4 SHALL BE PART OF ROADWAY BOX EXCAVATION AFTER DRAINAGE INSTALLATION. NO SEPARATE PAYMENT SHALL BE MADE DURING TRENCH ACTIVITIES.

HOYLE TANNER

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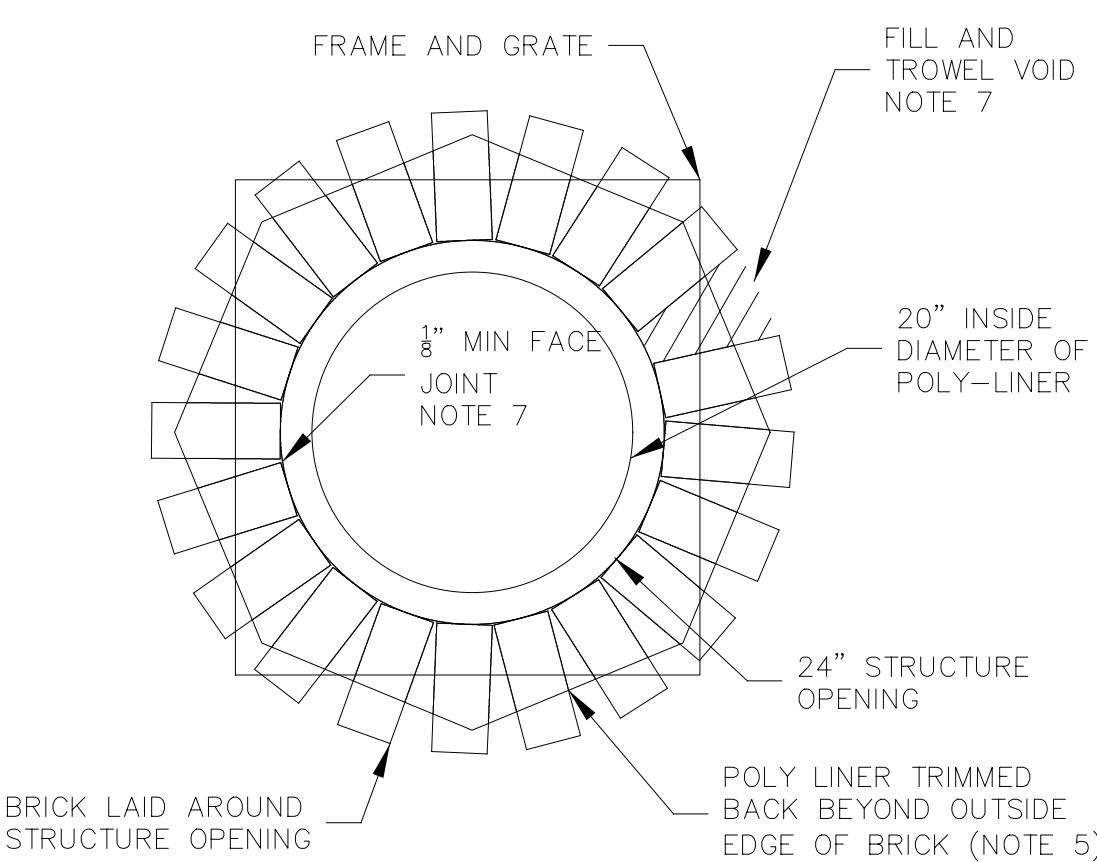
TOWN OF SALEM
SALEM, NEW HAMPSHIRE
BRIDGE STREET OVER SPICKET RIVER
ROADWAY DETAILS (7 OF 7)

PROJECT NO. 19.918109.01

SHEET NO.

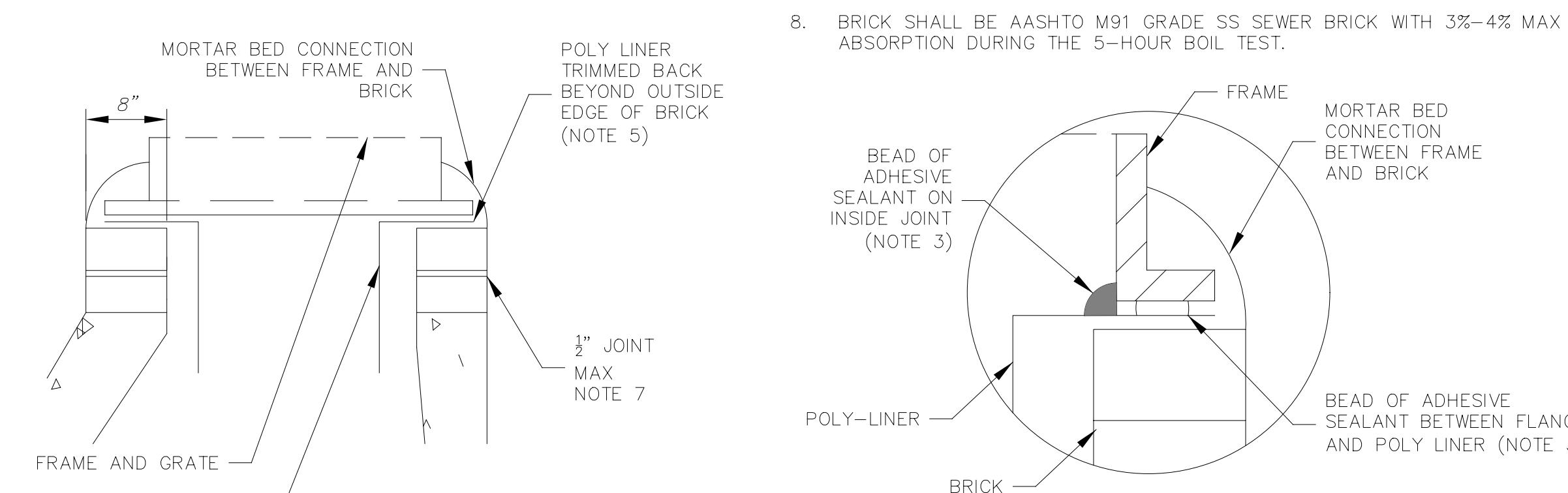
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SHEET 15 OF 54



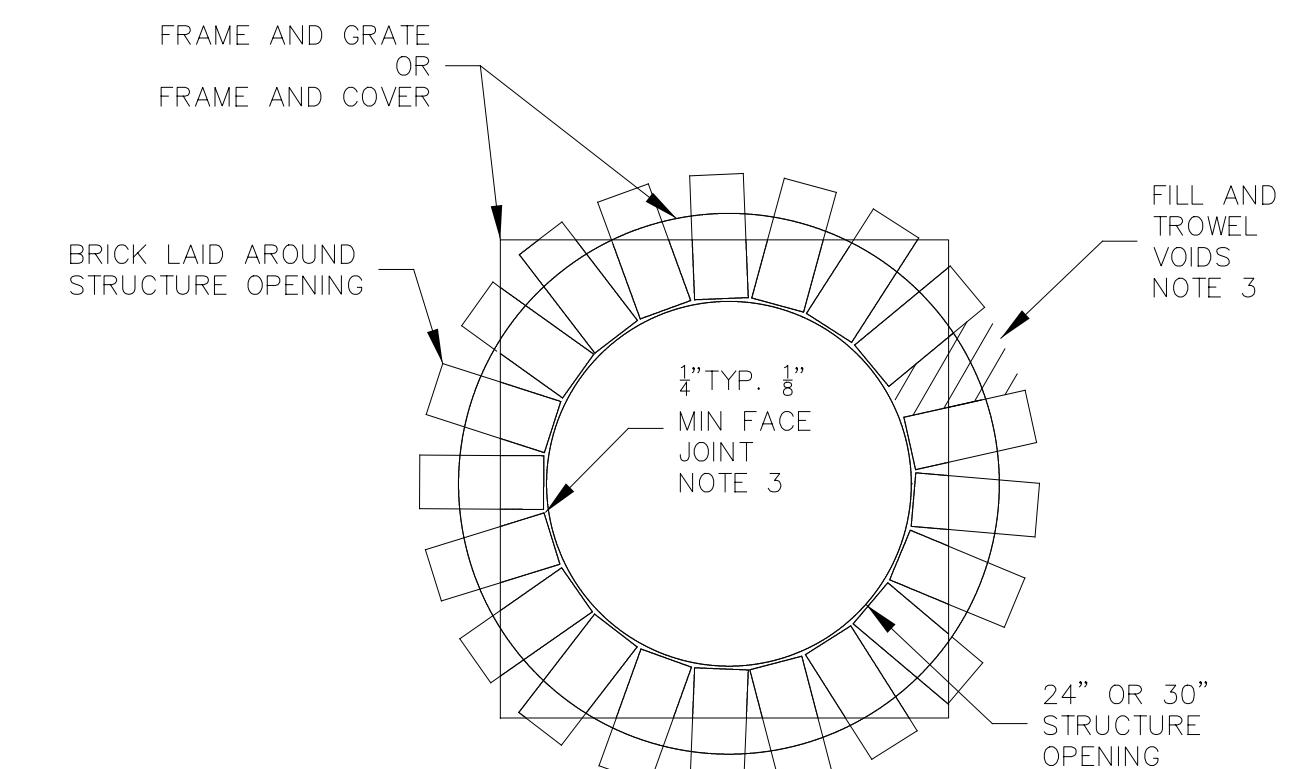
NOTES:

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



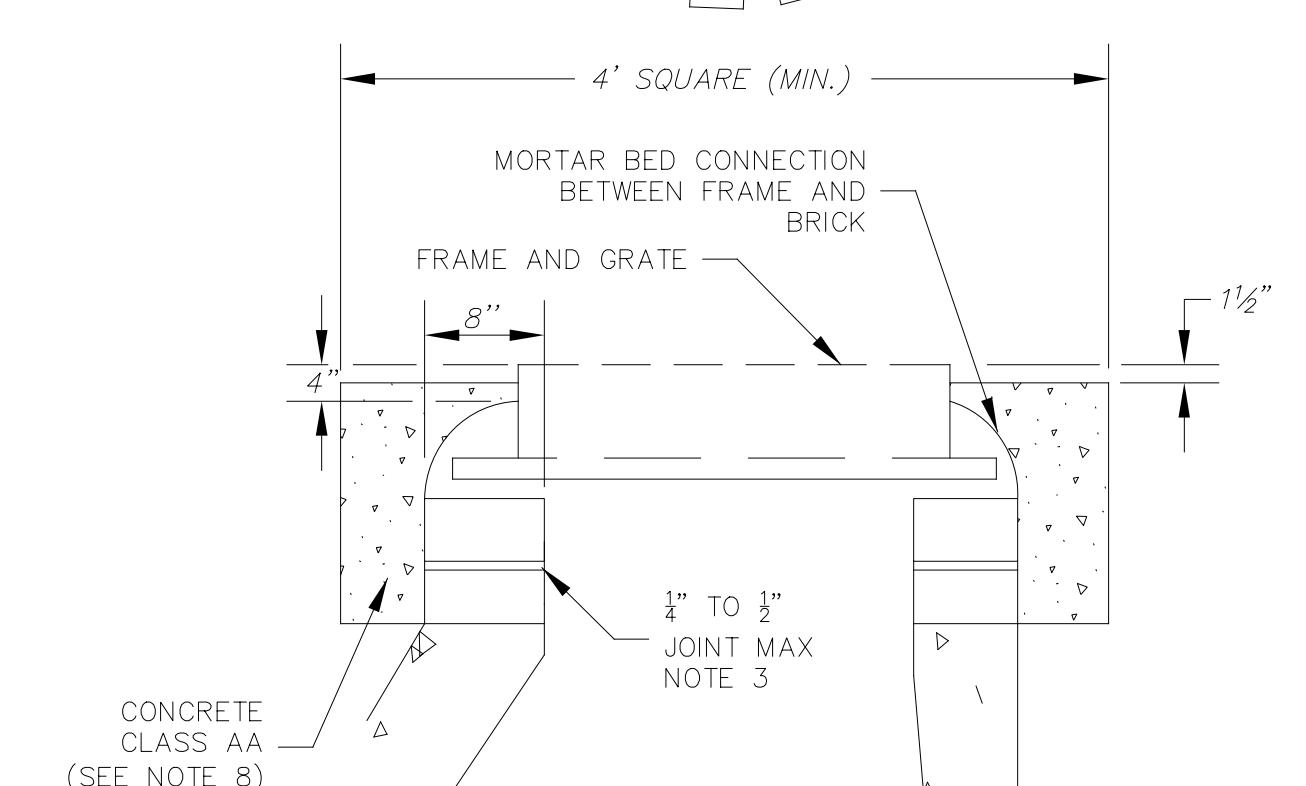
Poly-Liner Detail

NO SCALE



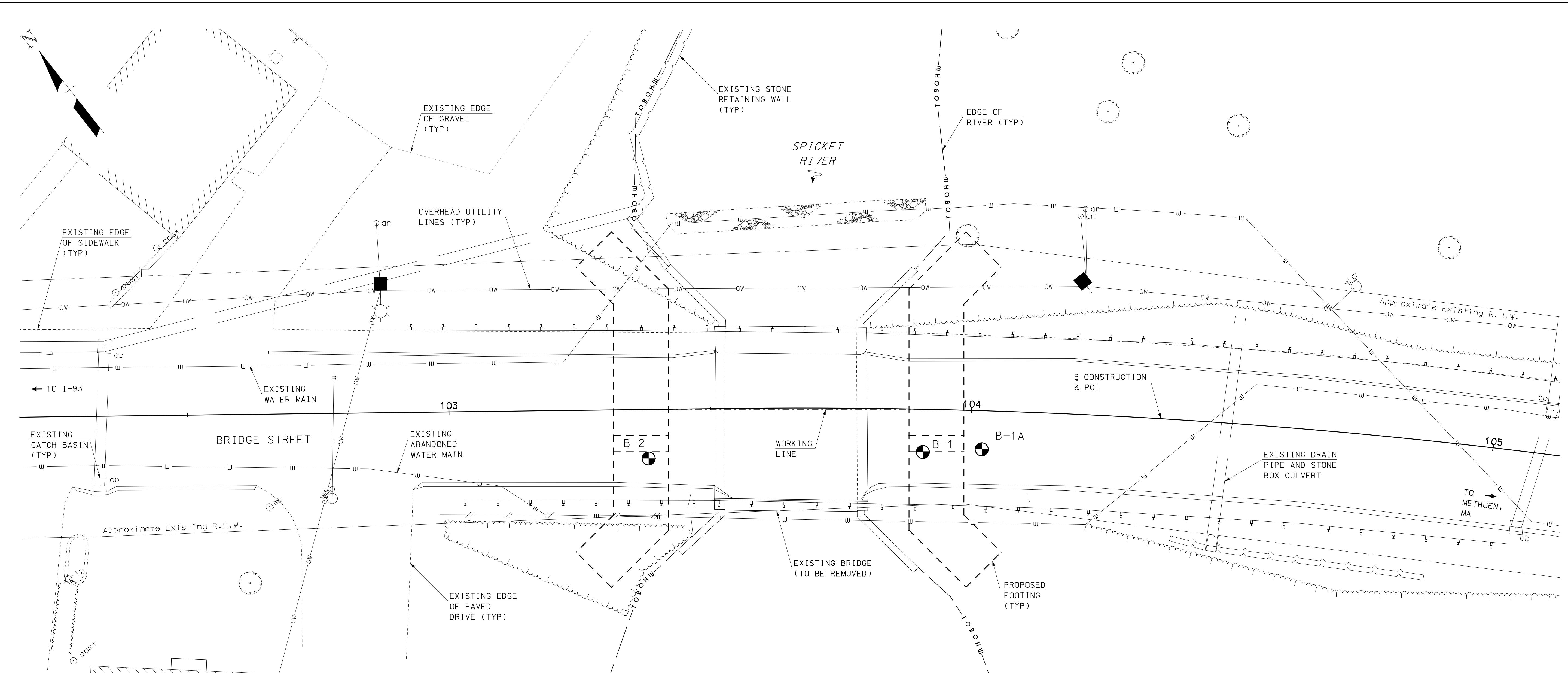
NOTES:

- 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.).
- PLACE MORTAR TO 4" BELOW THE TOP OF GRATE ELEVATION (SUBSIDIARY TO STRUCTURE ITEM).
- 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 $\frac{1}{8}$ ".
- DO NOT PLASTER OR MORTAR OVER BRICK WORK. ALL JOINTS SHALL BE CLEAN AND PROPERLY POINTED.
- BRICK SHALL BE AASHTO M91 GRADE SS SEWER BRICK WITH 3%-4% MAX ABSORPTION DURING THE 5-HOUR BOIL TEST. CONCRETE GRADE RINGS SHALL NOT BE ALLOWED.
- DMH & SEWER FRAME AND COVER SHALL BE NEENAH MODEL #R-1743. DMH SHALL READ "DRAIN", SMH SHALL READ "SEWER", CB FRAME AND GRATE SHALL BE NEENAH MODEL #R-3570. DOUBLE GRATES SHALL BE EJ MODEL #OMA552000066.
- ALL CATCH BASIN FRAMES (SINGLE AND DOUBLE) INSTALLED AT GRANITE CURBING LOCATIONS SHALL BE 3-FLANCED. ALL CATCH BASIN FRAMES (SINGLE AND DOUBLE) INSTALLED WITH NO CURBING SHALL BE 4-FLANCED.
- PLACE CLASS AA CONCRETE TO 2" BELOW THE TOP OF GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURE).



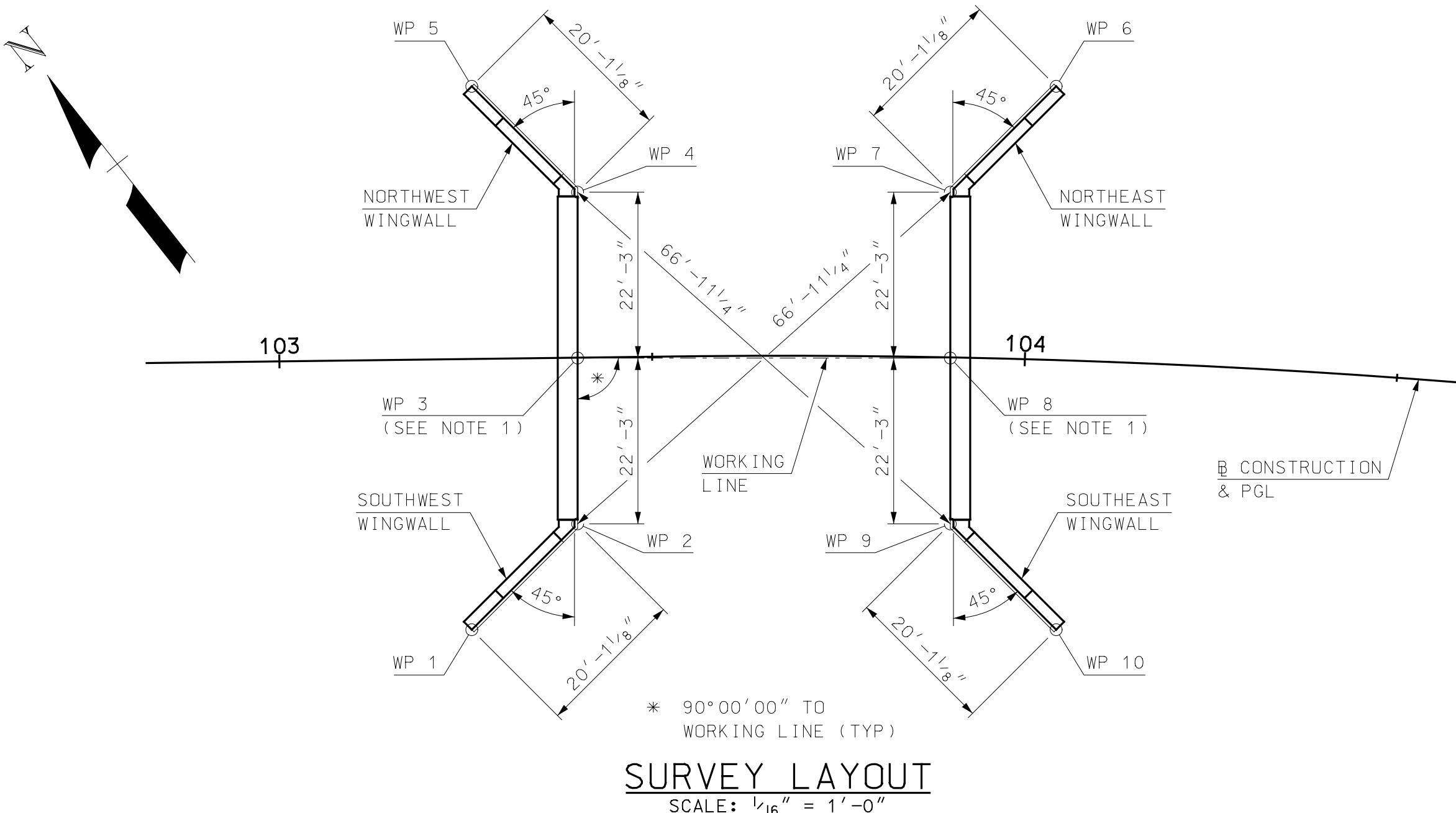
Frame Set Detail (SMH, DMH or CB)

NO SCALE



BORING LOCATION PLAN

SCALE: 1" = 10'



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

NOTE

1. WORKING POINTS 3 AND 8 STATIONS AND DIMENSIONS ARE GIVEN AT THE INTERSECTION OF THE WORKING LINE AND THE FRONT FACE OF RIGID FRAME LEG.

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

BORING NOTES

1. BORINGS INDICATED BY CIRCLE WERE MADE BY S.W. COLE EXPLORATIONS, LLC. ON JANUARY 15, JANUARY 23 AND JANUARY 24, 2020. REFER TO THE TEST BORING LOGS FOR DRILLER AND SAMPLING DATA INFORMATION.
2. BORINGS ARE FOR DESIGN PURPOSES, SHOWING CONDITIONS AT BORING POINTS ONLY, AND DO NOT NECESSARILY INDICATE MATERIAL TO BE ENCOUNTERED DURING CONSTRUCTION.
3. WATER ELEVATIONS INDICATED BY VERTICALLY SLASHED LINES WERE MEASURED AT THE TIME OF EXPLORATION. THE WATER LEVELS ENCOUNTERED DURING CONSTRUCTION MAY VARY CONSIDERABLY, DUE TO PREVAILING CLIMATE, RAINFALL OR OTHER FACTORS.
4. THE SURFACE ELEVATION, IF INDICATED ON EACH BORING LOG, IS THE ELEVATION OF THE EXISTING GROUND AT THE TIME THE BORING WAS TAKEN.

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

BORING LOCATION PLAN AND SURVEY LAYOUT

PROJECT NO. 19.918109.01

SHEET NO.

16

SHEET 16 OF 54

BORING LOG																																																															
BORING NO.: B-1 SHEET: 1 of 1 PROJECT NO. 19-27 DATE START: 1/15/2020 LOCATION: Bridge Street over Spicket River, Salem, NH																																																															
Drilling Information																																																															
LOCATION: See Exploration Location Plan			ELEVATION (FT): N/A			TOTAL DEPTH (FT): 10.3			LOGGED BY: Corey Culligan																																																						
DRILLING CO.: S. W. Cole Explorations, LLC			DRILLER: Brett Raiche			DRILLING METHOD: Cased Boring																																																									
RIG TYPE: Truck Mounted Diedrich D-50			AUGER ID/OD: N/A / N/A			SAMPLER: Standard Split-Spoon																																																									
HAMMER TYPE: Automatic / Automatic			HAMMER WEIGHT (lbs): 140 / 140			CASING ID/OD: 4 in / 4 1/2 in			CORE BARREL: N/A																																																						
HAMMER EFFICIENCY FACTOR:			HAMMER DROP (inch): 30 / 30																																																												
WATER LEVEL DEPTHS (ft):			No free water observed.																																																												
GENERAL NOTES:																																																															
KEY TO NOTES AND SYMBOLS: Water Level D = Split Spoon Sample Pen. = Penetration Length WOR = Weight of Rods S _v = Field Vane Shear Strength, kips/sq.ft. <input checked="" type="checkbox"/> At time of Drilling U = Thin Walled Tube Sample Rec. = Recovery Length WOH = Weight of Hammer q _u = Unconfined Compressive Strength, kips/sq.ft. <input checked="" type="checkbox"/> At Completion of Drilling R = Rock Core Sample bpf = Blows per Foot RQD = Rock Quality Designation Ø = Friction Angle (Estimated) <input checked="" type="checkbox"/> After Drilling V = Field Vane Shear mpf = Minute per Foot PID = Photoionization Detector N/A = Not Applicable																																																															
SAMPLE INFORMATION <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Elev. (ft)</th> <th>Depth (ft)</th> <th>Casing Pen. (bpf)</th> <th>Sample No.</th> <th>Type</th> <th>Depth (ft)</th> <th>Pen./Rec. (in)</th> <th>Blow Count or RQD</th> <th>Field / Lab Test Data</th> <th>Graphic Log</th> <th>Sample Description & Classification</th> <th>H₂O Depth</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>10</td> <td>34</td> <td>1D</td> <td>0-2</td> <td>24/8</td> <td>8-10-8-6</td> <td></td> <td></td> <td></td> <td>Loose to medium dense, brown SAND some silt some gravel (FILL)</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>2D</td> <td>5-7</td> <td>24/6</td> <td>1-1-2-3</td> <td></td> <td></td> <td></td> <td>Obstruction at approximately 7'</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Auger Refusal at 10.3 feet Cobble or Boulder. Boring location offset</td> <td></td> <td></td> </tr> </tbody> </table>												Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks	5	10	34	1D	0-2	24/8	8-10-8-6				Loose to medium dense, brown SAND some silt some gravel (FILL)						2D	5-7	24/6	1-1-2-3				Obstruction at approximately 7'													Auger Refusal at 10.3 feet Cobble or Boulder. Boring location offset		
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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																																																															

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LOCATION: See Exploration Location Plan			ELEVATION (FT): N/A			TOTAL DEPTH (FT): 20.4			LOGGED BY: Corey Culligan																																																																			
DRILLING CO.: S. W. Cole Explorations, LLC			DRILLER: Corey Culligan			DRILLING METHOD: Cased Boring																																																																						
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GENERAL NOTES:																																																																												
KEY TO NOTES AND SYMBOLS: Water Level D = Split Spoon Sample Pen. = Penetration Length WOR = Weight of Rods S _v = Field Vane Shear Strength, kips/sq.ft. <input checked="" type="checkbox"/> At time of Drilling U = Thin Walled Tube Sample Rec. = Recovery Length WOH = Weight of Hammer q _u = Unconfined Compressive Strength, kips/sq.ft. <input checked="" type="checkbox"/> At Completion of Drilling R = Rock Core Sample bpf = Blows per Foot RQD = Rock Quality Designation Ø = Friction Angle (Estimated) <input checked="" type="checkbox"/> After Drilling V = Field Vane Shear mpf = Minute per Foot PID = Photoionization Detector N/A = Not Applicable																																																																												
SAMPLE INFORMATION <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Elev. (ft)</th> <th>Depth (ft)</th> <th>Casing Pen. (bpf)</th> <th>Sample No.</th> <th>Type</th> <th>Depth (ft)</th> <th>Pen./Rec. (in)</th> <th>Blow Count or RQD</th> <th>Field / Lab Test Data</th> <th>Graphic Log</th> <th>Sample Description & Classification</th> <th>H₂O Depth</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>10</td> <td>34</td> <td>1D</td> <td>0-2</td> <td>24/8</td> <td>8-10-8-6</td> <td></td> <td></td> <td></td> <td>Medium dense, brown SAND some silt some gravel (FILL)</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>2D</td> <td>5-7</td> <td>24/6</td> <td>1-1-2-3</td> <td></td> <td></td> <td></td> <td>Obstruction at approximately 7'</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Obstruction at approximately 9.5'</td> <td></td> <td></td> </tr> <tr> <td></td> <td>10.0 Very dense to medium dense, gravelly SAND some silt</td> <td></td> <td></td> </tr> </tbody> </table>												Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks	5	10	34	1D	0-2	24/8	8-10-8-6				Medium dense, brown SAND some silt some gravel (FILL)						2D	5-7	24/6	1-1-2-3				Obstruction at approximately 7'													Obstruction at approximately 9.5'													10.0 Very dense to medium dense, gravelly SAND some silt		
Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H ₂ O Depth	Remarks																																																																
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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																																																																												

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TOWN OF SALEM
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BRIDGE STREET OVER SPICKET RIVER

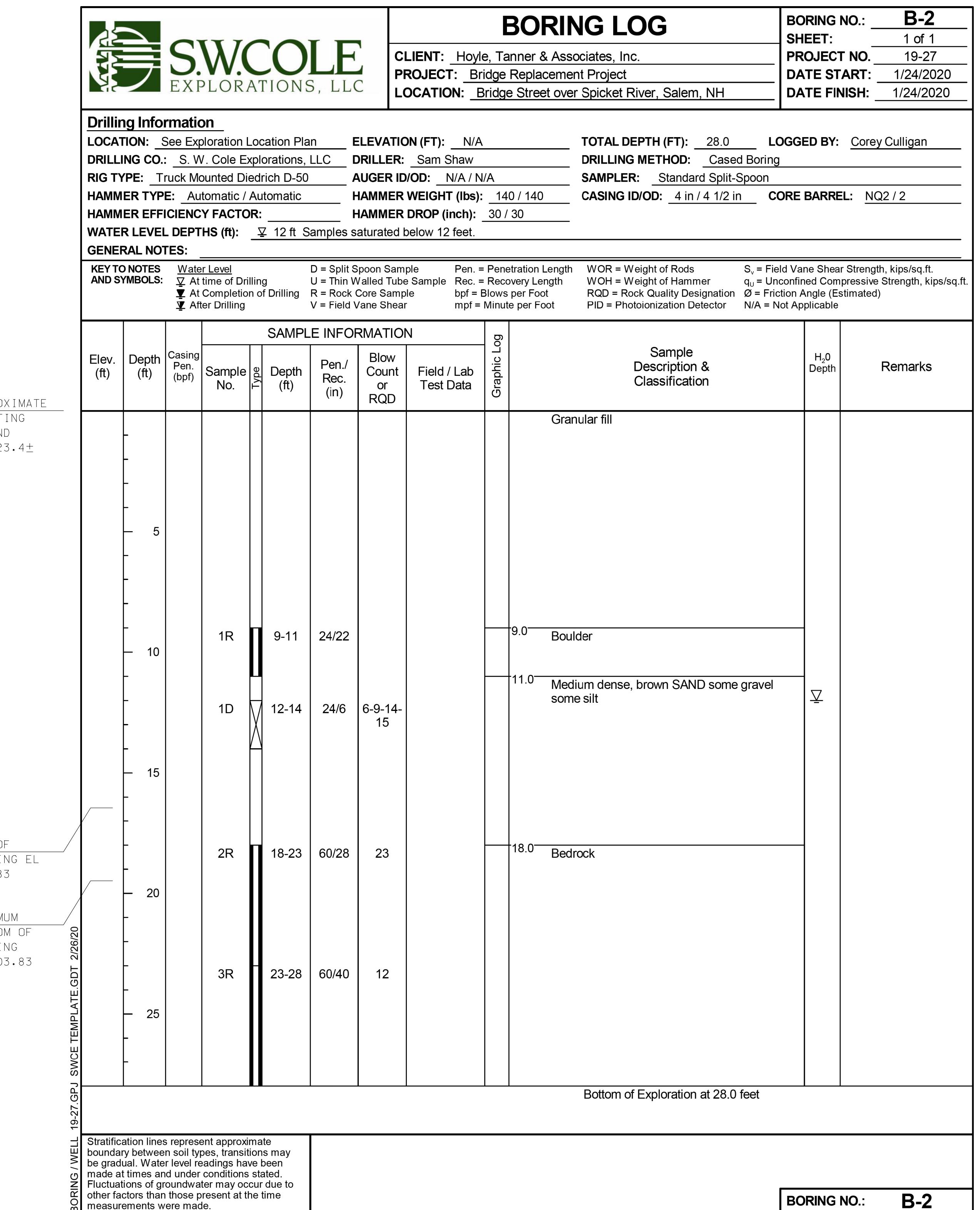
BORING LOGS (1 OF 2)

PROJECT NO. 19.918109.01

SHEET NO.

17

SHEET 17 OF 54

APPROXIMATE
EXISTING
GROUND
EL 123.4±BORING LOGS
NOT TO SCALE

NHDT BRIDGE NO.	115/097	REV.	DESCRIPTION	DRW/CHKD BY	DATE
FILENAME	91810901Borings	DESIGNED			
MODEL NAME	91810901Borings2	DRAWN			
SCALE	91810901Borings2	TAG			
AS SHOWN	JCR	CHECKED			
DATE	AUGUST 2025				
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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



DETOUR ROUTE LENGTH = 4.5 MILES ±
DETOUR ROUTE PLAN

TRAFFIC CONTROL NOTES

NOT TO SCALE

- (1) TRAFFIC CONTROL DEVICES SHALL CONFORM TO SECTION 619 OF THE NHDOT STANDARD SPECIFICATIONS, AND THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AS PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION AND ADOPTED BY THE COMMISSIONER OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION. SIGNS SHALL ALSO CONFORM TO USDOT STANDARD HIGHWAY SIGNS AND NHDOT CONSTRUCTION SIGN STANDARDS.
- (2) THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING, ERECTING AND MAINTAINING PERMANENT CONSTRUCTION SIGNS AND WARNING DEVICES AS LISTED ON THE PLANS, AND SHALL ALSO BE RESPONSIBLE FOR SUPPLYING, ERECTING AND MAINTAINING ALL OPERATIONAL SIGNS AND WARNING DEVICES FOR HIS PLANNED METHODS OF OPERATION IN CONFORMANCE WITH THE MUTCD.
- (3) TRAFFIC CONTROL DEVICES SHALL BE REMOVED, AND SIGNS SHALL BE COVERED OR REMOVED, WHEN THEY NO LONGER APPLY TO THE EXISTING CONDITIONS.
- (4) PLYWOOD SUBSTRATE FOR CONSTRUCTION SIGNS SHALL CONFORM TO SECTION 619, AND FLAT ALUMINUM SHEETS SHALL CONFORM TO SECTION 615 OF THE NHDOT STANDARD SPECIFICATIONS.
- (5) DETOURS INVOLVING THE ROUTING OF TRAFFIC OVER ROADS OUTSIDE THE LIMITS OF THE PROJECT SHALL BE MARKED AND MAINTAINED BY THE CONTRACTOR (UNLESS OTHERWISE NOTED). THE CONTRACTOR SHALL BE REQUIRED TO ERECT AND MAINTAIN ANY REQUIRED SIGNS AND WARNING DEVICES AT THE BEGINNING AND END OF THE WORK AND AT INTERSECTING ROADWAYS. THE LOCATION AND POSITION OF THESE SIGNS AND WARNING DEVICES SHALL BE AS APPROVED BY THE ENGINEER. THE CONTRACTOR MAY ALSO BE REQUIRED TO UNCOVER, COVER AND OTHERWISE MAINTAIN DETOUR SIGNS SUPPLIED BY OTHERS.
- (6) WORK ON THE PROJECT, OR ANY SEPARATE ACTIVITY THEREIN, SHALL NOT START UNTIL ALL THE REQUIRED SIGNS AND WARNING DEVICES ARE INSTALLED AND APPROVED BY THE ENGINEER.
- (7) SIGN LOCATIONS SHOWN ON THESE STANDARDS ARE RECOMMENDED AND MAY BE ADJUSTED AS DETERMINED BY THE ENGINEER IN THE FIELD. TYPICAL LAYOUTS SHOWN ARE NOT TO SCALE.
- (8) THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE THE ENGINEER WITH CERTIFICATION THAT ALL THE SIGNS AND WARNING DEVICES USED ON THE PROJECT MEET THE SPECIFICATIONS.
- (9) THE USE OF CONSTRUCTION SIGNS AND WARNING DEVICES NOT SHOWN ON THESE STANDARDS OR MUTCD, UNLESS APPROVED BY THE ENGINEER, SHALL BE PROHIBITED.
- (10) ALL COSTS FOR TRAFFIC CONTROL DEVICES, INCLUDING PLACEMENT, RELOCATION AND REMOVAL OF SIGNS SHALL BE INCLUDED IN ITEM 619.1, MAINTENANCE OF TRAFFIC.
- (11) THE CONTRACTOR SHALL MAINTAIN SAFE, CONTINUOUS ACCESS TO ALL PROPERTIES ADJACENT TO THE PROJECT LOCATION.
- (12) THE CONTRACTOR SHALL COORDINATE THEIR EFFORTS WITH ADJACENT CONSTRUCTION PROJECTS.
- (13) THE CONTRACTOR SHALL PROVIDE THREE (3) PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) (PAID AS ITEM 619.25) TO BE IN PLACE FROM TWO WEEKS PRIOR TO CLOSING BRIDGE STREET TO TRAFFIC THROUGH THE DURATION OF CONSTRUCTION. SIGNS PROVIDED SHALL BE LOCATED AND SHALL DISPLAY TEXT AS DIRECTED BY THE ENGINEER.
- (14) ADDITIONAL/SUPPLEMENTAL SIGNS MAY BE REQUIRED BEYOND WHAT IS SHOWN ON THIS PLAN. ANY ADDITIONAL SIGNS, BARRICADES, BARRIERS, ETC, SHALL BE CONSIDERED INCIDENTAL TO ITEM 619.1.

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

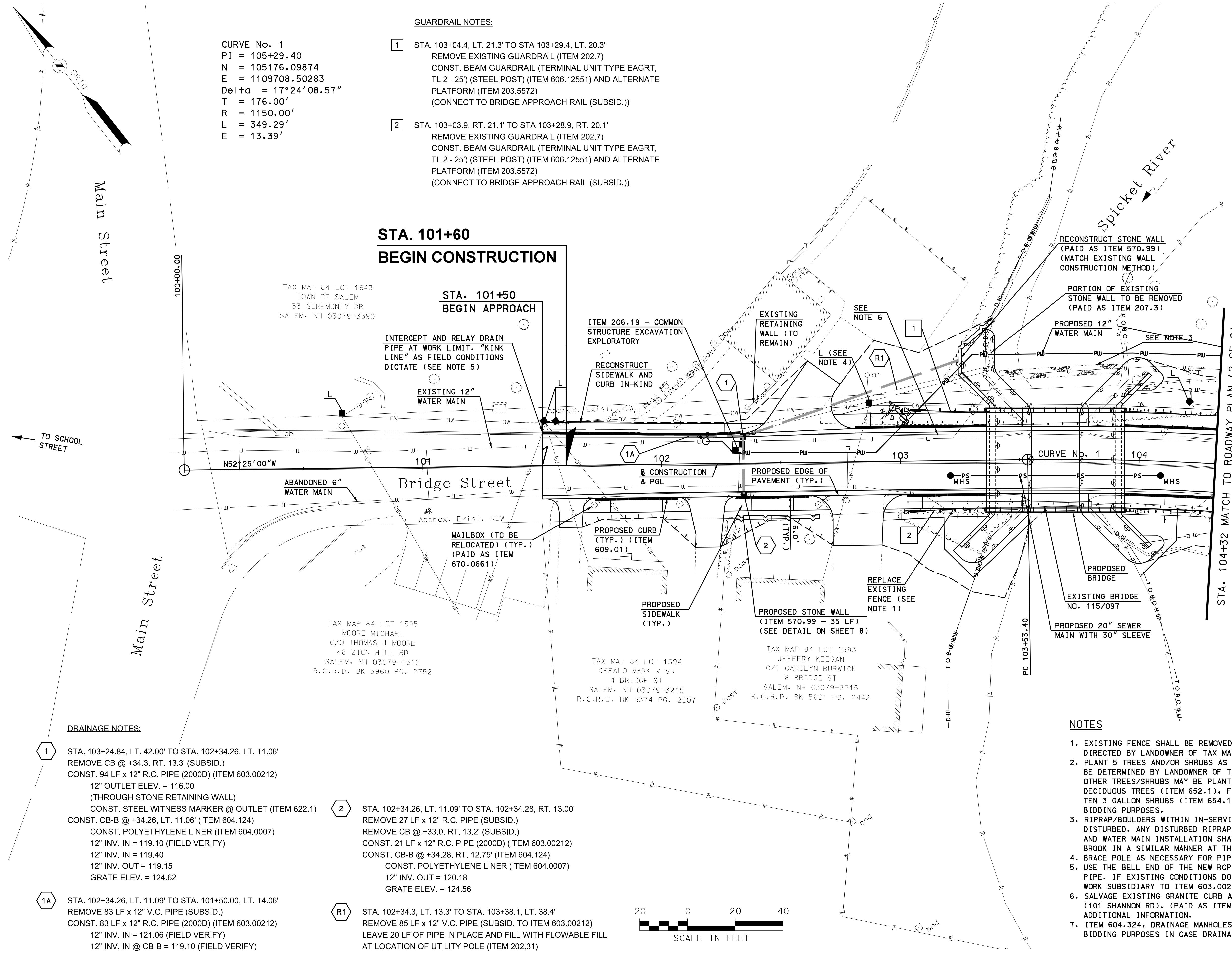
LEGEND

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

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TOWN OF SALEM
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BRIDGE STREET OVER SPICKET RIVER
DETOUR PLAN

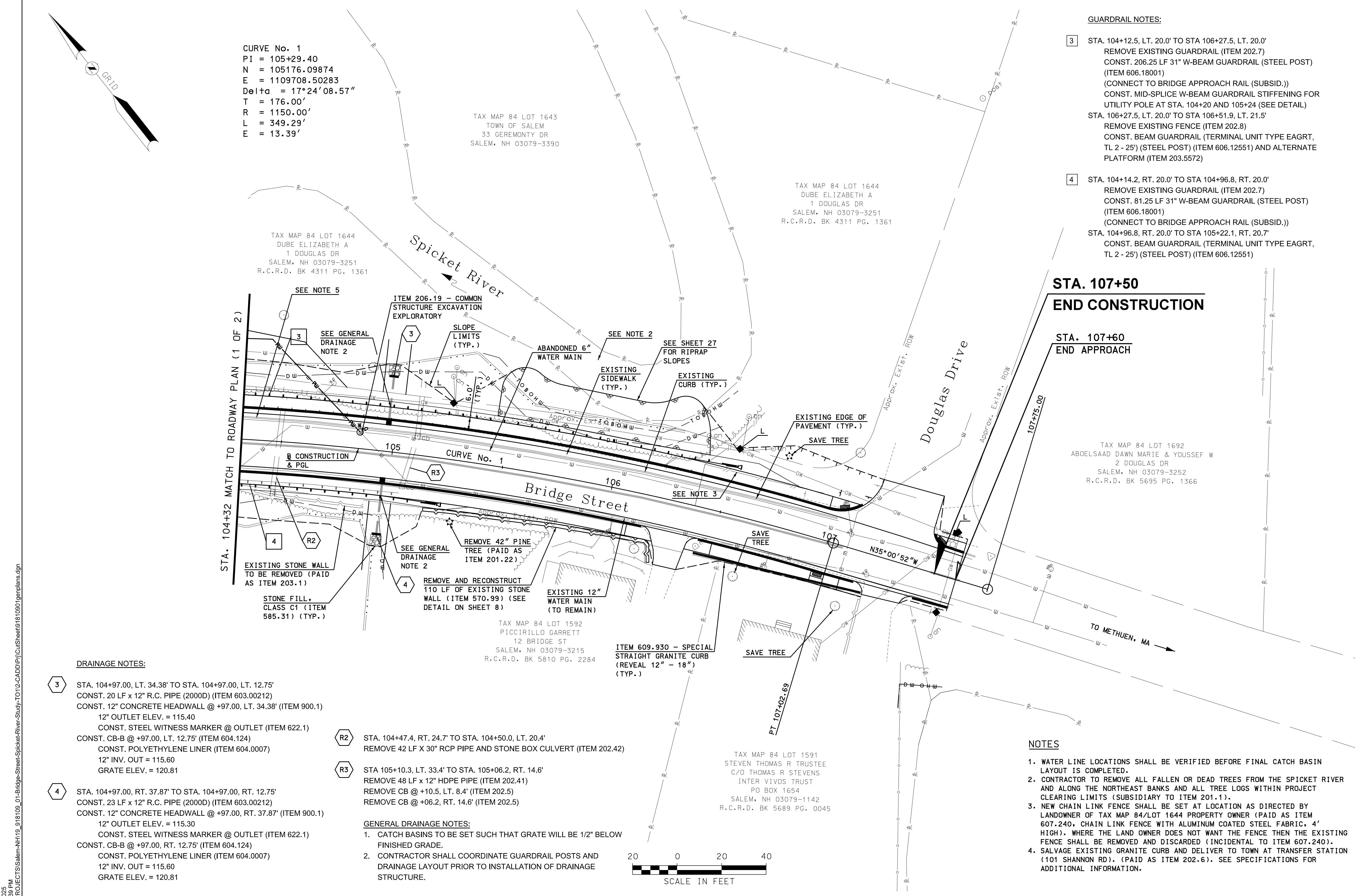
PROJECT NO. 19.918109.01
SHEET NO. 19

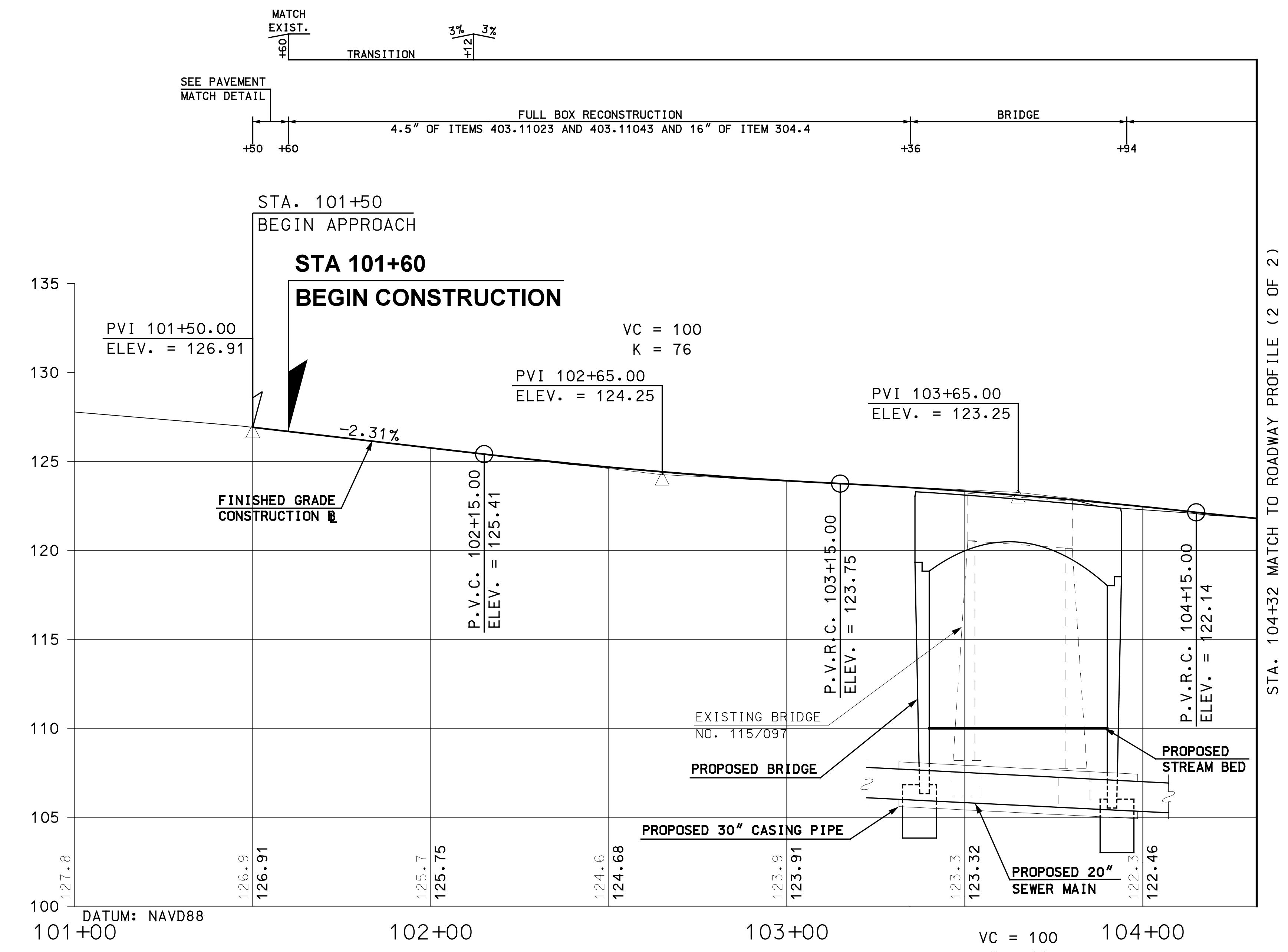


STA. 104+52 MATCH TO ROADWAY PLAN (2 OF 2)

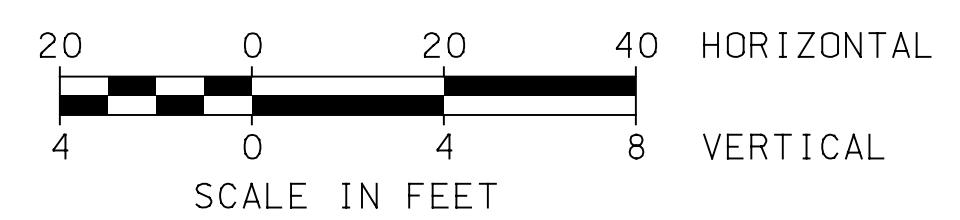
HOYLE TANNER					
TOWN OF SALEM SALEM, NEW HAMPSHIRE BRIDGE STREET OVER SPICKET RIVER ROADWAY PLAN (1 OF 2)					
PROJECT NO. 19.918109.01					
NDOT BRIDGE NO.	REV.	DESCRIPTION	DRW/CHKD BY	DATE	
115/097					
FILE NAME 91810901genplans					
MODEL NAME GEN1					
DRAWN SCALE					
CHECKED AS SHOWN					
SBH DATE AUGUST 2025					

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BRIDGE STREET PROFILE



TOWN OF SALEM		SALEM, NEW HAMPSHIRE		PROJECT NO. 19.918109.01	
BRIDGE STREET OVER SPICKET RIVER		ROADWAY PROFILE (1 OF 2)		SHEET NO. 22	
NHDOT BRIDGE NO 115/097	REV.	DESCRIPTION	DRW/CHKD BY	DATE	
FILENAME 91810901proplans					
MODEL NAME PRO1					
SCALE AS SHOWN					
DATE AUGUST 2025					
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ROADWAY PROFILE (1 OF 2)

PROJECT NO.

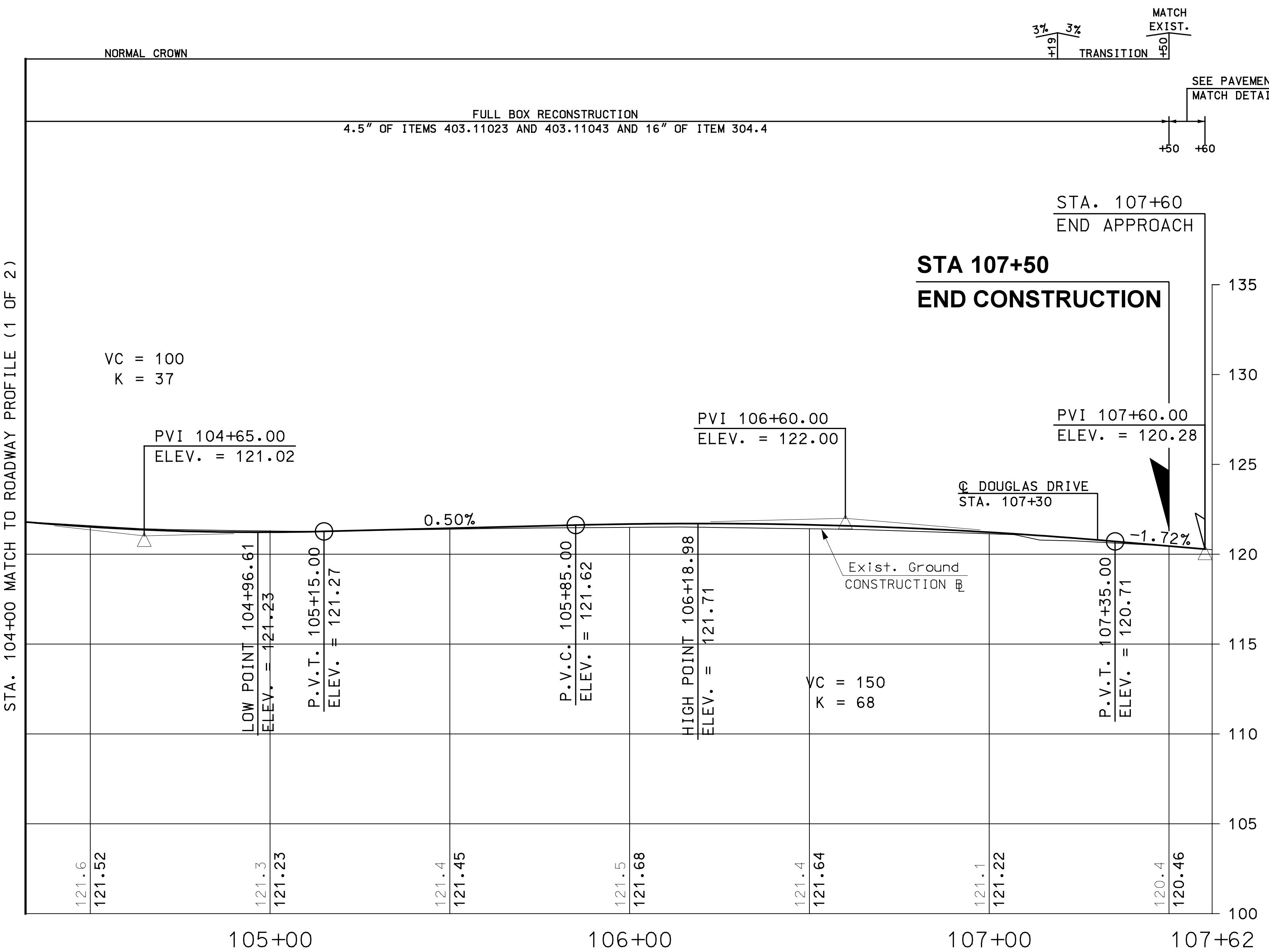
19.918109.01

SHEET NO.

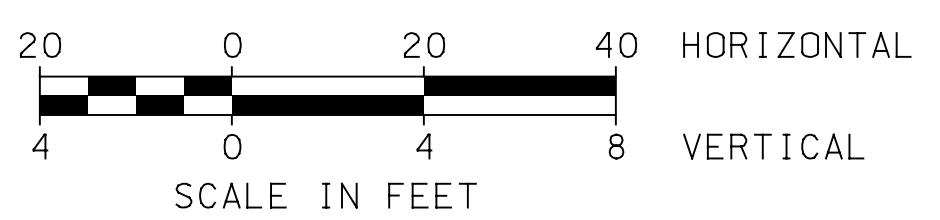
22

SHEET 22 OF 54

STA. 104+00 MATCH TO ROADWAY PROFILE (1 OF 2)



BRIDGE STREET PROFILE



23

SHEET 23 OF 54

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

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NH DOT BRIDGE NO.		REV.	DESCRIPTION	DRW/CHKD BY	DATE
91810901	115/097				
FILENAME					
91810901proplans					
MODEL NAME					
PRO2					
SCALE					
AS SHOWN					
SBH					
DATE					
AUGUST 2025					

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CURBING (WEST)					
ITEM NO.	MARK NO.	RADIUS	609.01 STRAIGHT GRANITE CURB	609.930 SPECIAL STRAIGHT GRANITE CURB (REVEAL 12"-18")	NOTES
DESCRIPTION	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+33.1, LT. 12.3 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	

Street

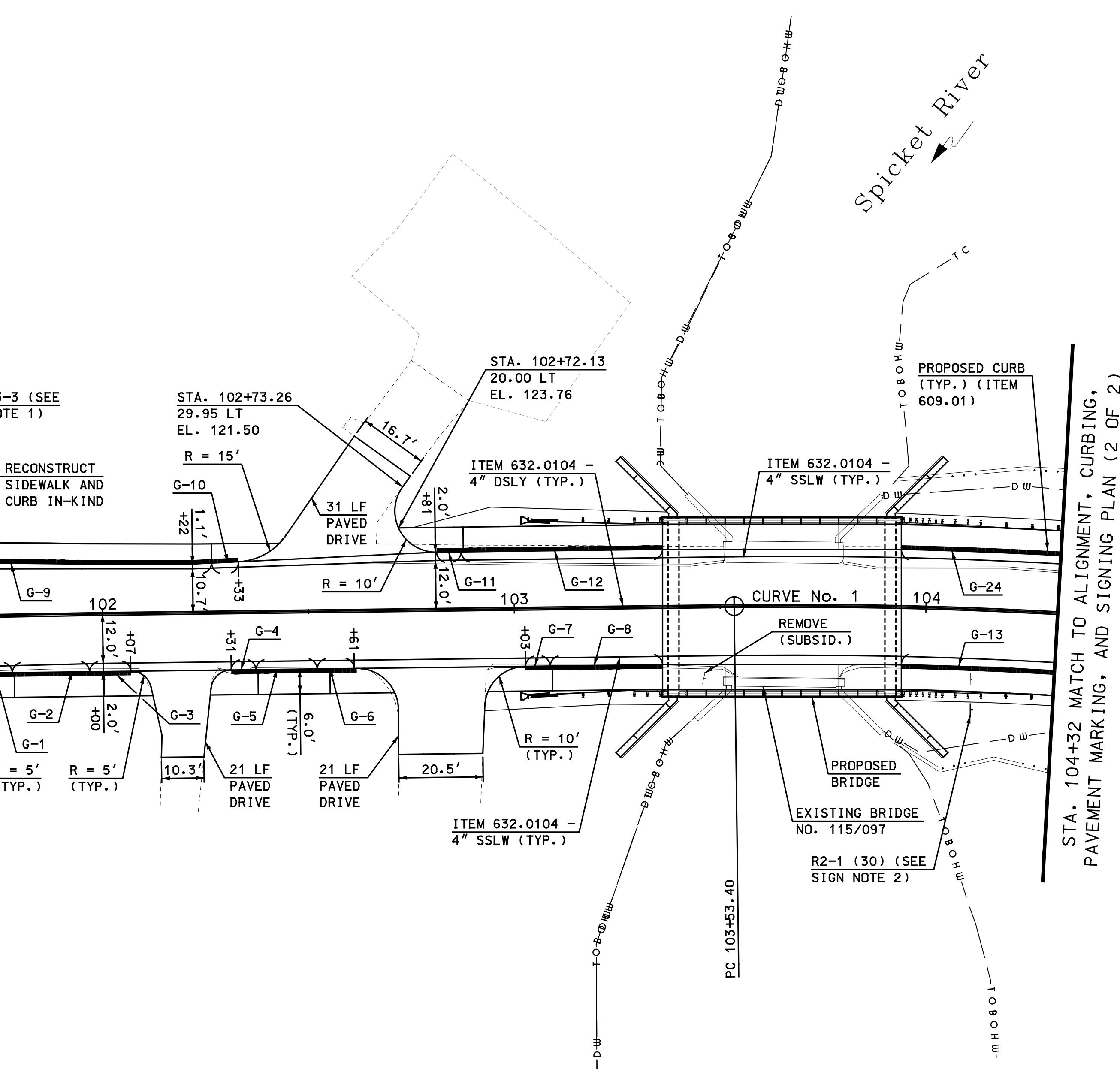
100+00.00

101

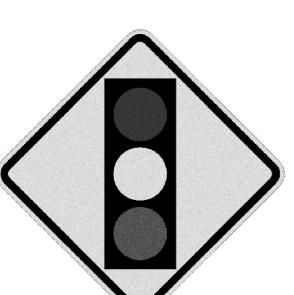
**STA. 101+60
BEGIN CONSTRUCTION**

**STA. 101+50
BEGIN APPROACH**

CURVE No. 1
PI = 105+29.40
N = 105176.09874
E = 1109708.50283
Delta = 17°24'08.57"
T = 176.00'
R = 1150.00'
L = 349.29'
E = 13.39'



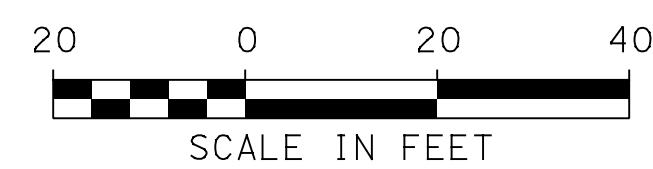
STA. 104+53.40 MATCH TO ALIGNMENT, CURBING,
PAVEMENT MARKING, AND SIGNING PLAN (2 OF 2)



SIGN NOTES:

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

2. REMOVE EXISTING SIGN (SUBSID.). CONST. R2-1 (30) (24" x 30") SIGN (PAID AS ITEM 615.0301) AT STA. 104+11, RT.



NH DOT BRIDGE NO 115/097	REV.	DESCRIPTION	DRW/CHKD BY	DATE
FILENAME 91810901crplans	DRAWN			
MODEL NAME CRB1	DRAWN			
SCALE AS SHOWN	CHECKED			
DATE AUGUST 2025	SBH			

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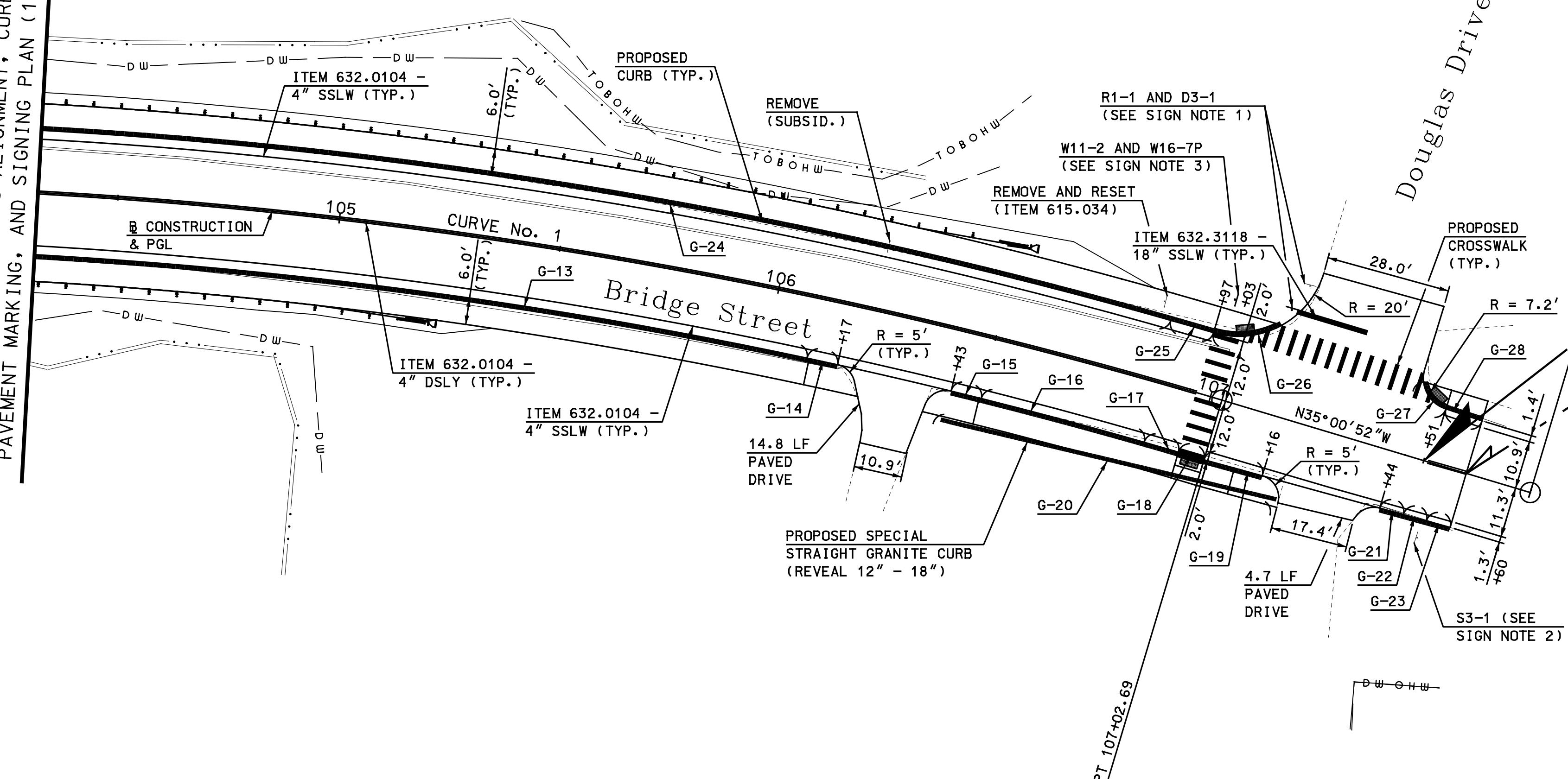
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**TOWN OF SALEM
SALEM, NEW HAMPSHIRE**
BRIDGE STREET OVER SPICKET RIVER
**ALIGNMENT, CURBING, PAVEMENT
MARKING, AND SIGNING PLAN (1 OF 2)**

PROJECT NO. 19.918109.01
SHEET NO.

24

SHEET 24 OF 54

STA. 104+32 MATCH TO ALIGNMENT, CURBING,
PAVEMENT MARKING, AND SIGNING PLAN (1 OF 2)

CURVE No. 1
 PI = 105+29.40
 N = 105176.09874
 E = 1109708.50283
 Delta = 17°24'08.57"
 T = 176.00'
 R = 1150.00'
 L = 349.29'
 E = 13.39'

CURBING (EAST)

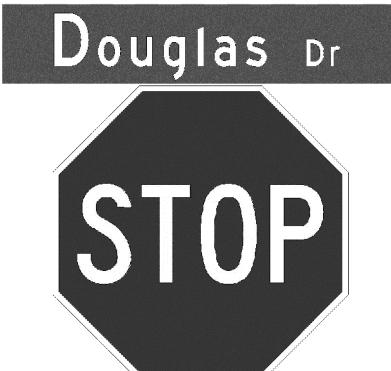
ITEM NO.	MARK NO.	RADIUS	STRAIGHT GRANITE CURB	609.01 609.930	SPECIAL STRAIGHT GRANITE CURB (REVEAL 12"-18")	NOTES
DESCRIPTION	UNIT	FT	LF	LF		
STA. 103+94.3, RT. 14.0 TO STA. 106+10.0, RT. 14.0	G-13	1136.0	215.7		7" REVEAL	
STA. 106+10.0, RT. 14.0 TO STA. 106+16.5, RT. 14.0	G-14	1136.0	6.5		7" TO 2" REVEAL	
STA. 106+43.1, RT. 14.0 TO STA. 106+49.6, RT. 14.0	G-15	1136.0	6.5		2" TO 7" REVEAL	
STA. 106+49.6, RT. 14.0 TO STA. 106+90.1, RT. 14.0	G-16	1136.0	40.5		7" REVEAL	
STA. 106+90.1, RT. 14.0 TO STA. 106+96.6, RT. 14.0	G-17	1136.0	6.5		7" TO 1/4" REVEAL	
STA. 106+96.6, RT. 14.0 TO STA. 107+02.7, RT. 14.0	G-18	1136.0	6.1		1/4" REVEAL	
STA. 107+02.7, RT. 14.0 TO STA. 107+16.3, RT. 13.7	G-19		13.6		1/4" TO 2" REVEAL	
STA. 106+40.9, RT. 20.7 TO STA. 107+20.4, RT. 17.9	G-20			79.5	REVEAL VARIES 12" TO 18"	
STA. 107+43.6, RT. 13.1 TO STA. 107+50.1, RT. 12.9	G-21		6.5		2" TO 7" REVEAL	
STA. 107+50.1, RT. 12.9 TO STA. 107+53.5, RT. 12.8	G-22		3.4		7" REVEAL	
STA. 107+53.5, RT. 12.8 TO STA. 107+60.0, RT. 12.7	G-23		6.5		7" TO 0" REVEAL	
STA. 103+93.7, LT. 14.0 TO STA. 106+90.1, LT. 14.0	G-24	1164.0	300.0		7" REVEAL	
STA. 106+90.1, LT. 14.0 TO STA. 106+96.6, LT. 14.0	G-25	1164.0	6.5		7" TO 1/4" REVEAL	
STA. 106+96.6, LT. 14.0 TO STA. 107+10.7, LT. 20.0	G-26	20.0	15.8		1/4" REVEAL	*
STA. 107+44.9, LT. 17.0 TO STA. 107+51.5, LT. 12.6	G-27	7.2	8.3		1/4" REVEAL	*
STA. 107+51.5, LT. 12.6 TO STA. 107+60.0, LT. 12.3	G-28		8.5		1/4" TO EXISTING REVEAL	
SUBTOTAL (EAST)			650.9	79.5		
SUBTOTAL (WEST)			236.0	0.0		
ROUNDING			13.1	0.5		
TOTAL			900	80		

* PAY AS STRAIGHT GRANITE CURB ITEM 609.01

20 0 20 40
SCALE IN FEET

SIGN NOTES:

1. REMOVE EXISTING SIGNS (SUBSID.). CONST. R1-1 (30" x 30") AND D3-1 (45" x 9") SIGNS (PAID AS ITEM 615.0301 AND 615.0601, RESPECTIVELY) AT STA. 107+14, LT 24'.
2. REMOVE EXISTING SIGN (SUBSID.). CONST. S3-1 (36" x 36") SIGN (PAID AS ITEM 615.0301) AT STA. 107+53, RT.
3. CONST. W11-2 (30" x 30") AND W16-7P (24" x 12") SIGNS (PAID AS ITEM 615.0301 AND 615.0601, RESPECTIVELY) 107+00, LT.



STA. 107+50
END CONSTRUCTION

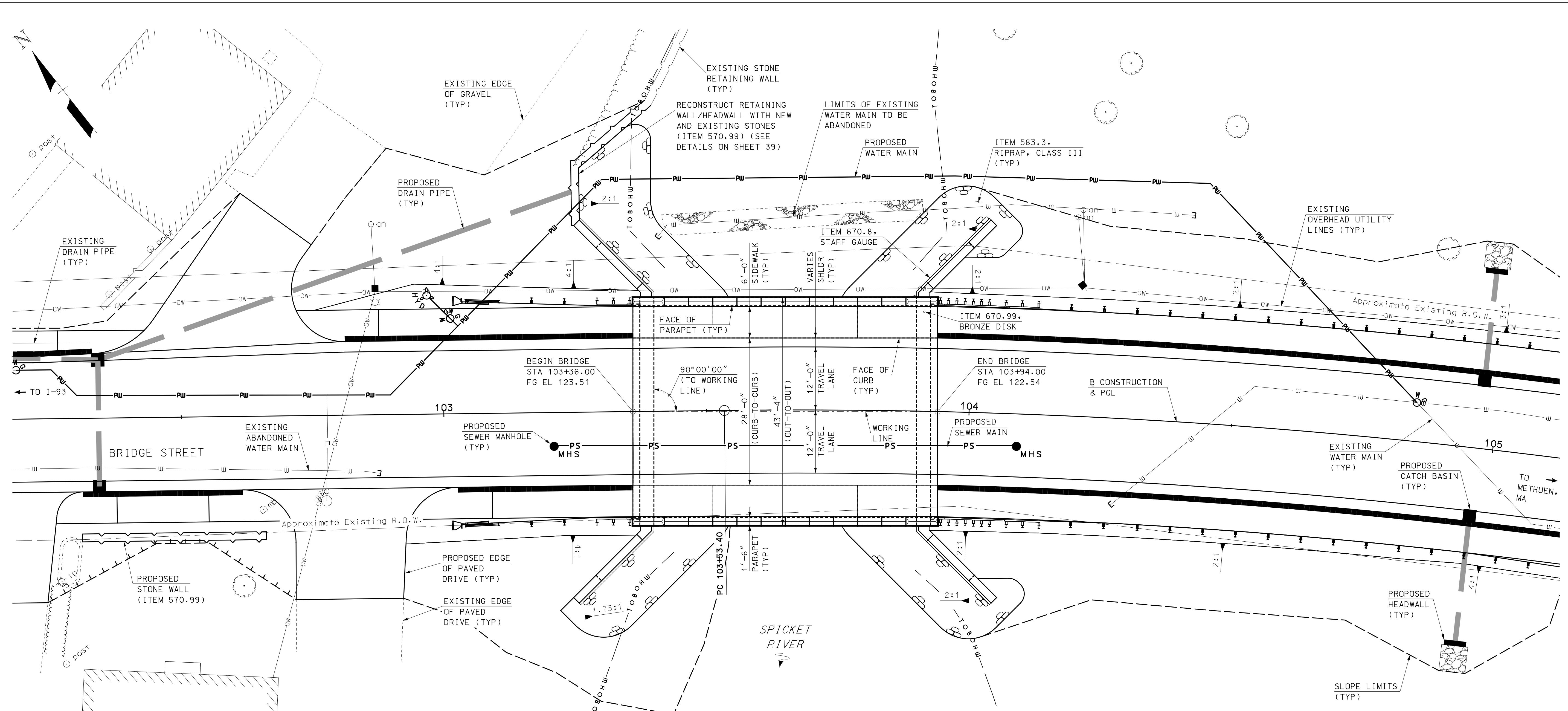
STA. 107+60
END APPROACH

NH DOT BRIDGE NO 115/097	REV.	DESCRIPTION	DRW/CHKD BY	DATE
FILENAME 91810901crpdocs	DESIGNED			
MODEL NAME CR82	DRAWN			
SCALE AS SHOWN	CHECKED			
DATE AUGUST 2025	SBH			

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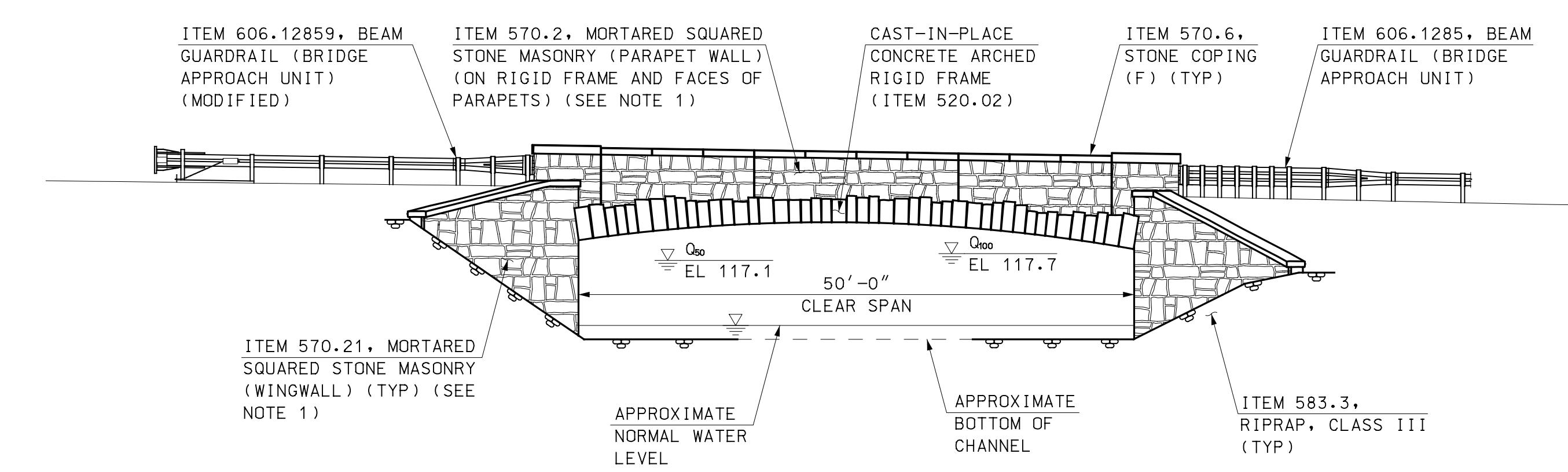
**TOWN OF SALEM
SALEM, NEW HAMPSHIRE**
BRIDGE STREET OVER SPICKET RIVER
ALIGNMENT, CURBING, PAVEMENT
MARKING, AND SIGNING PLAN (2 OF 2)

PROJECT NO. 19.918109.01
SHEET NO. 25
SHEET 25 OF 54



GENERAL PLAN

SCALE: 1" = 1



ELEVATION

SCALE: 1" = 1'

NOTE

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

26

PAGE 26 OF 54

NHDOT BRIDGE NO.		REV.	DESCRIPTION	BY	DATE
FILENAME	DESIGNED				
91810901Genplan	KMW				
MODEL NAME	DRAWN				
91810901Genplan	TAG				
SCALE	CHECKED				
AS SHOWN	JCR				
DATE					
	AUGUST 2025				

2025
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SALEM, NEW HAMPSHIRE
GE STREET OVER SPICKET RIVER
GENERAL PLAN AND ELEVATION

TAX MAP 84 LOT 1643
TOWN OF SALEM
33 CEREMONTY DR
SALEM, NH 03079-3390

TAX MAP 84 LOT 1643
TOWN OF SALEM
33 GEREMONTY DR
SALEM, NH 03079-3390

TAX MAP 84 LOT 1595
MICHAEL MOORE
C/O THOMAS J MOORE
48 ZION HILL RD
SALEM, NH 03079-1512
R.C.R.D. BK 5960 PG. 2752

TAX MAP 84 LOT 1594
MARK V CEFALO SR
4 BRIDGE ST
SALEM, NH 03079-3215
R.C.R.D. BK 5374 PG. 220

TA MAP 84 LOT 1593
JEFFERY KEEGAN
C/O CAROLYN BURWICK
6 BRIDGE ST
SALEM, NH 03079-3215
R.C.R.D. BK 5621 PG. 244

TAX MAP 84 LOT 1592
GARRETT PICCIRILLO
12 BRIDGE ST
SALEM, NH 03079-3215
R C B D BK 5810 PG 2284

SITE PLAN

SCALE: 1" ≈ 20'

Technical drawing illustrating the cross-section of a wingwall riprap detail. The drawing shows a vertical wingwall on the left and a sloped area protected by riprap. Key dimensions and labels include:

- BACK FACE OF WINGWALL**: A vertical line on the left.
- LIMIT AS SHOWN ON PLAN**: A horizontal dimension line at the top.
- SUITABLE FILL (SUBSIDIARY TO ITEM 209.201)**: A label for the fill material.
- ITEM 583.3 (2'-0" THICK)**: A label for the thickness of the fill.
- ITEM 593.411**: A label for the riprap material.
- PAY LIMITS OF ITEM 207.3 (TYP)**: A label for the pay limits of the riprap.
- TOE OF ST SLOPE**: A label for the toe of the slope.
- APP BOT CHA**: A label for the application bottom chain.
- 2' - 6"**: A horizontal dimension at the bottom.
- 2' 6" 9"**: A vertical dimension on the right.
- 1**: A vertical dimension line on the right.
- 7'-0" 0"**: A dimension line with a break.

RIPRAP SLOPE DETAIL

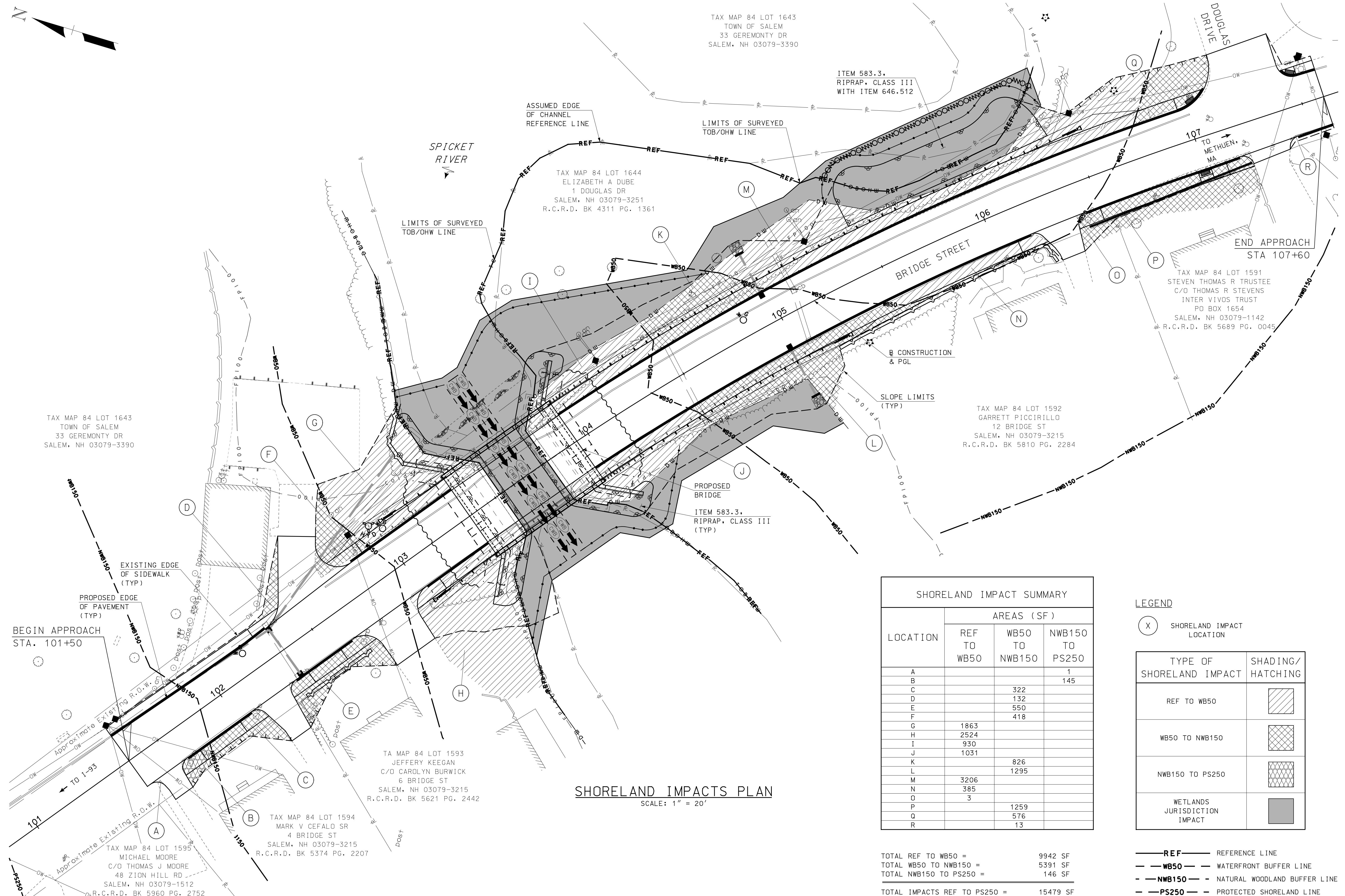
(STA 105+44.50 LT TO STA 106.39.77 LT)
NOT TO SCALE

NOTE

1. 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.

DATA SHOWING LIMITS OF MATERIAL AND ESTABLISHMENT

27

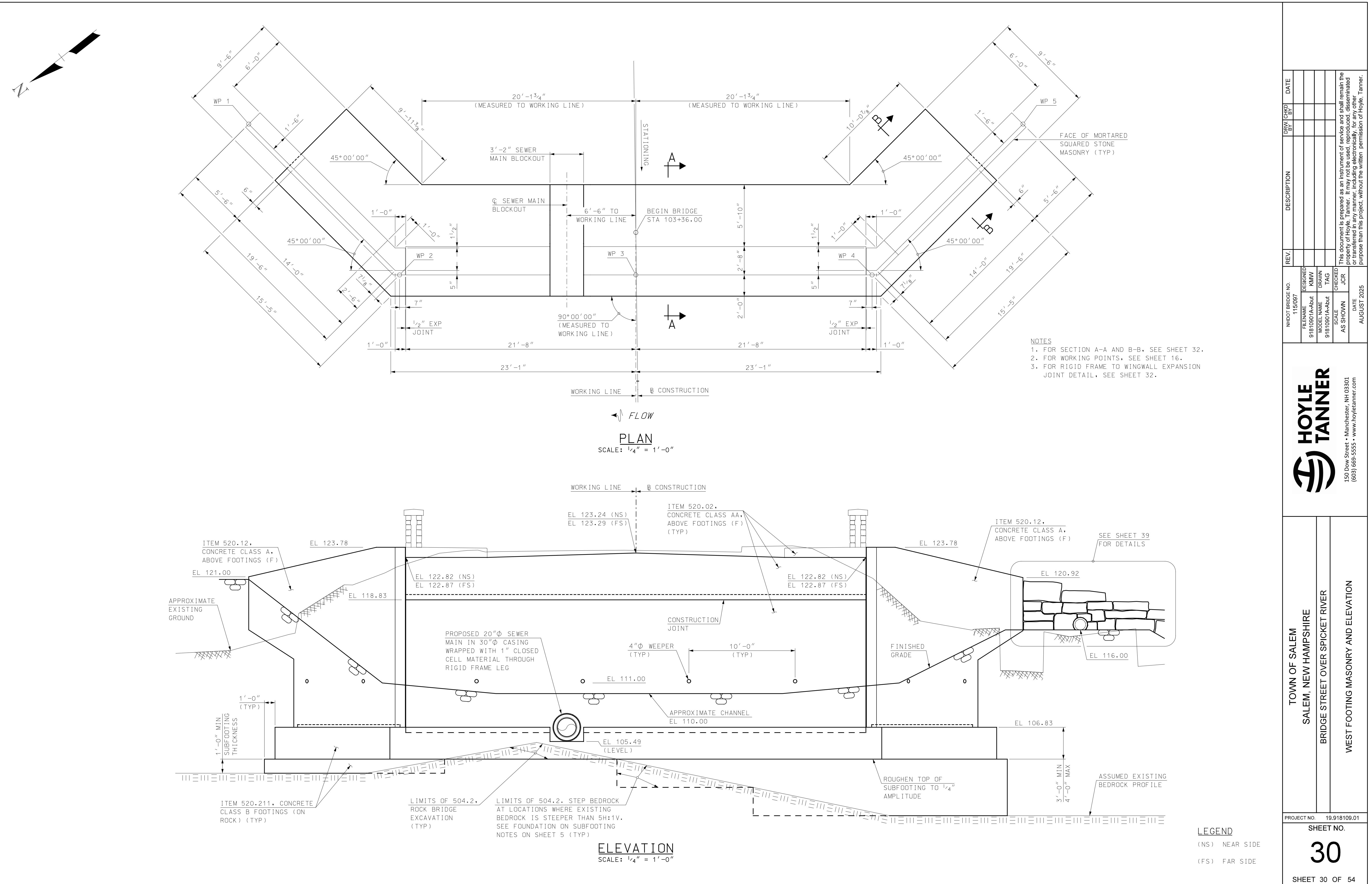


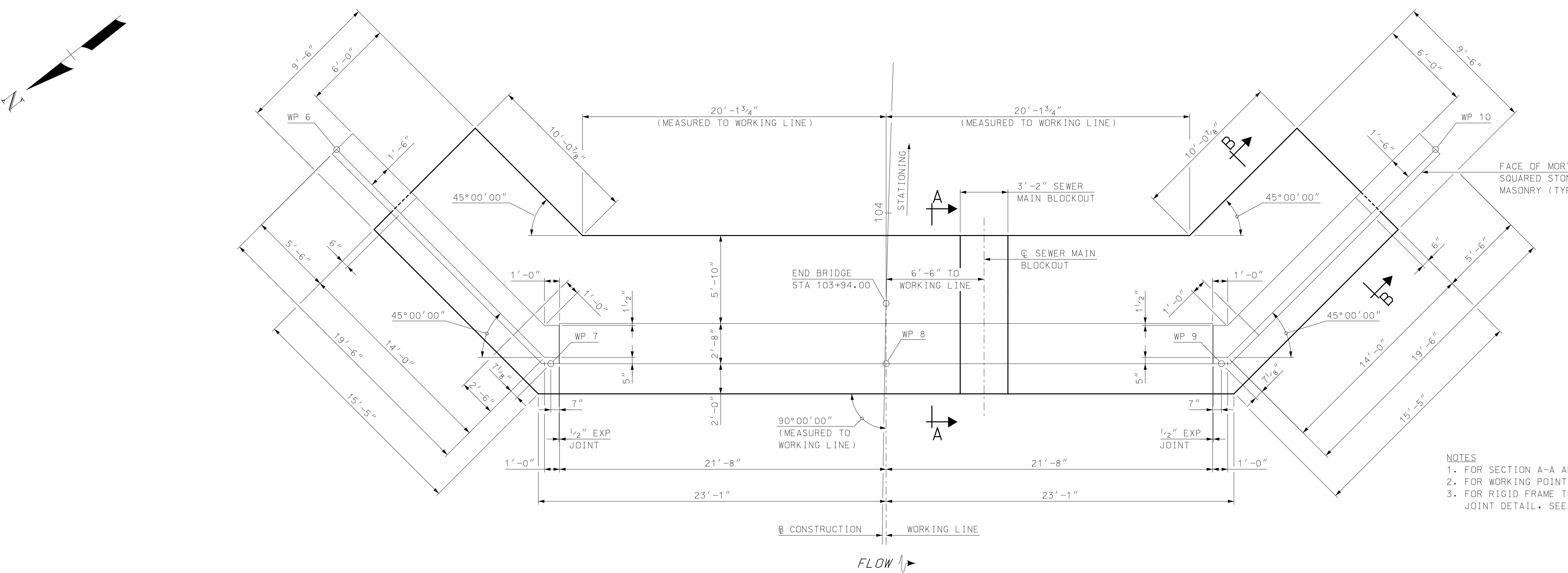
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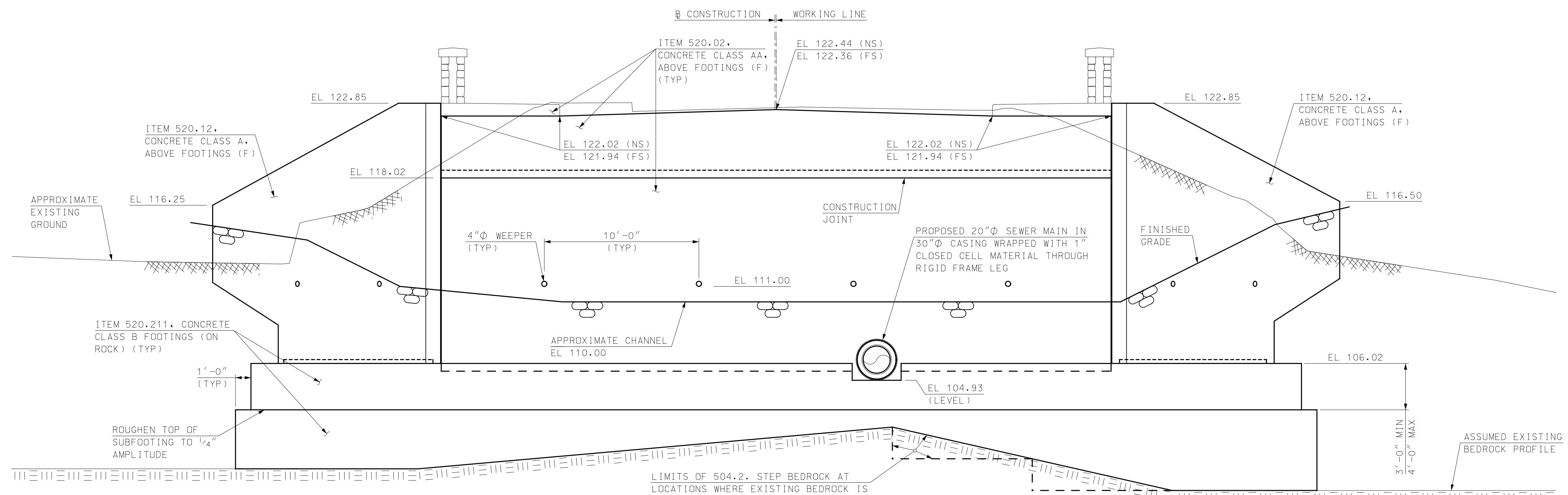
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TES
FOR SECTION A-A AND B-B, SEE SHEET 32.
FOR WORKING POINTS, SEE SHEET 16.
FOR RIGID FRAME TO WINGWALL EXPANSION
JOINT DETAIL, SEE SHEET 32.



ELEVATION

LEGEND

SHEET 31 OF 54

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TOWN OF SALEM
SALEM, NEW HAMPSHIRE
BRIDGE STREET OVER SPICKET RIVER
EAST FOOTING MASONRY AND ELEVATION

AS | FLOORING MASONRY AND ELEVATION

PROJECT NO. 10-018100-01

00.01

SHEET NO.

09.01

21

31

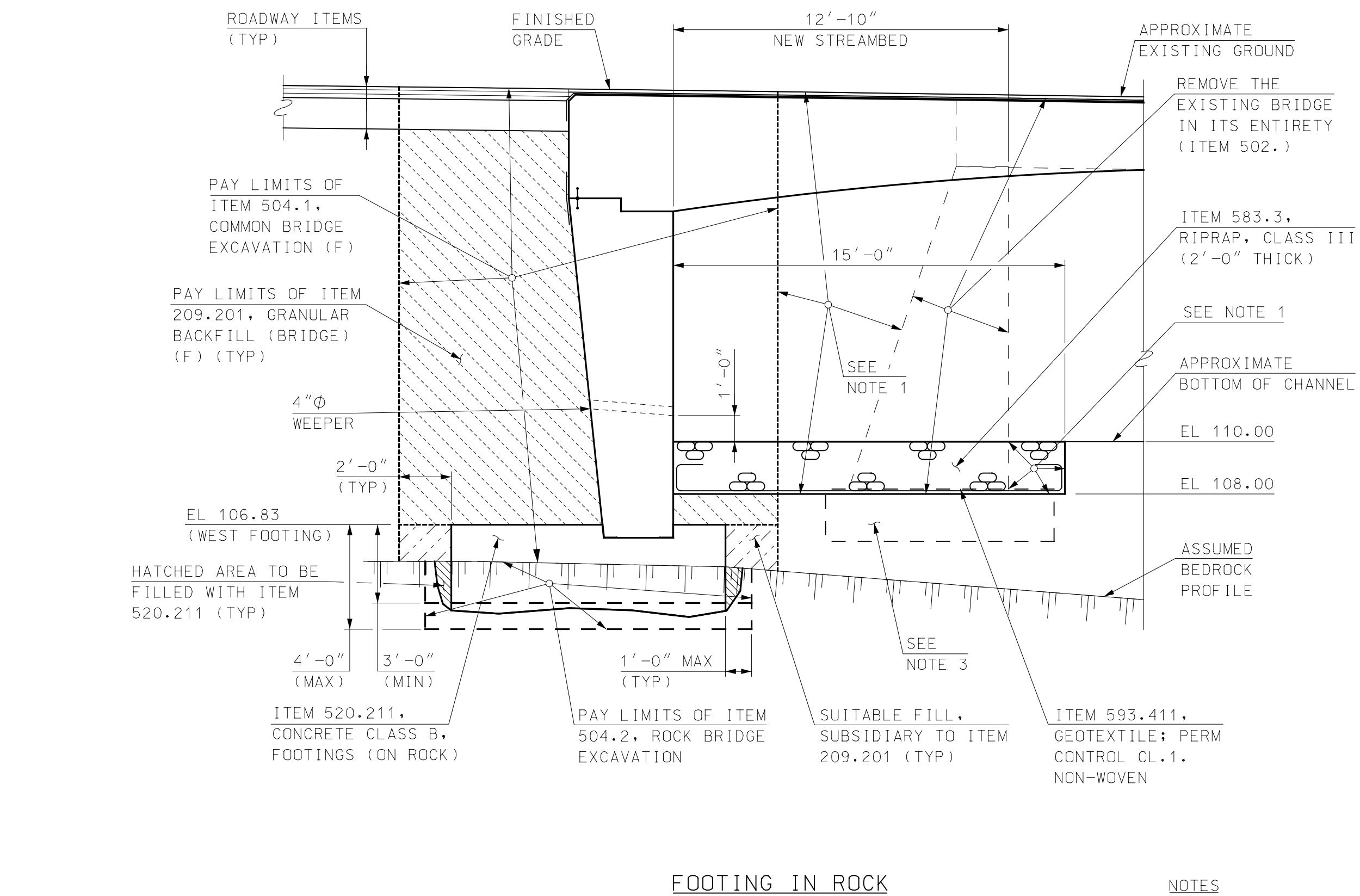
1

SHEET 31 OF 54

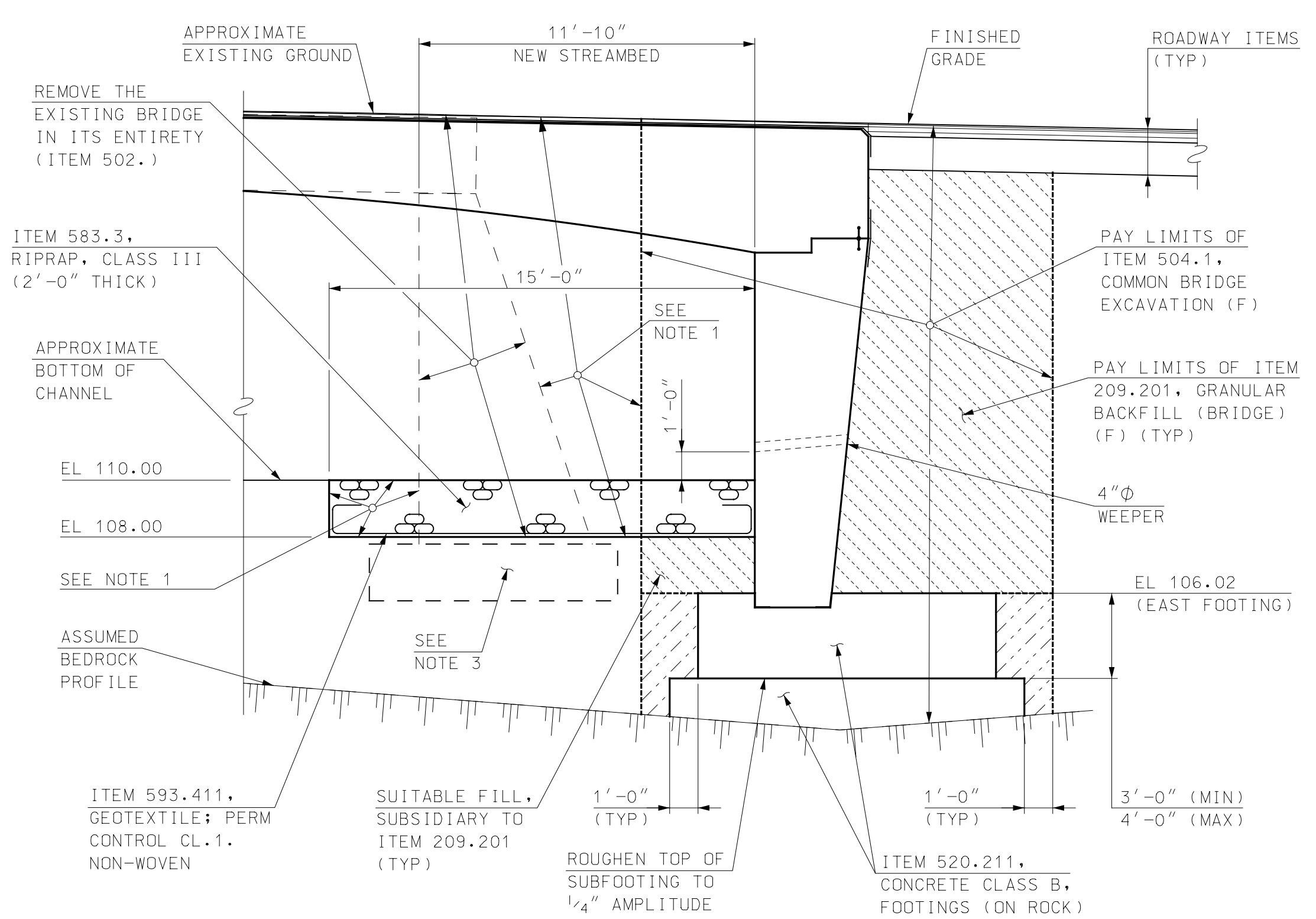
54

11. *What is the name of the author of the book?*

10



FOOTING IN ROCK



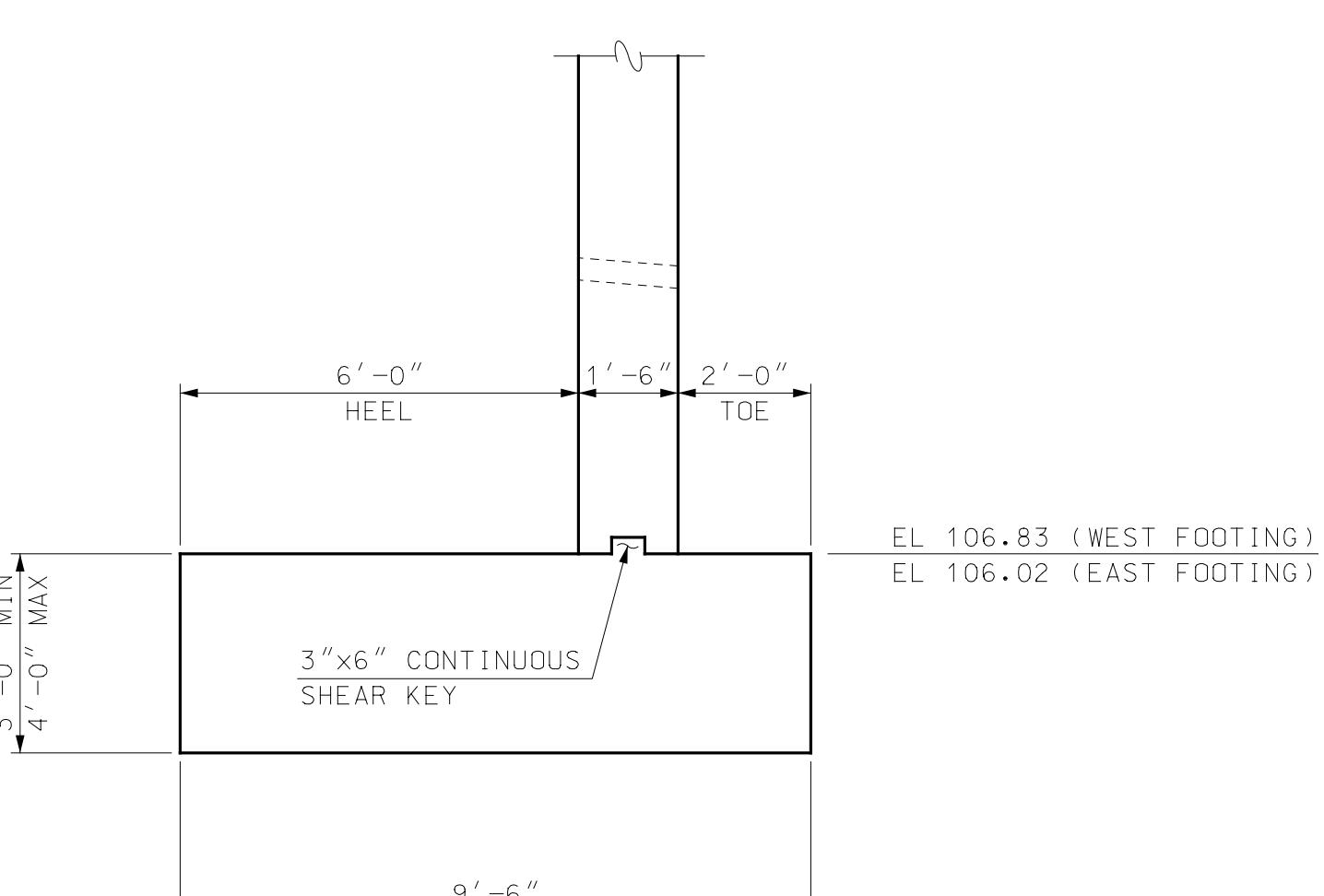
FOOTING ON SUBFOOTING

NOTES

1. PAY LIMITS OF ITEM 207.3, UNCLASSIFIED CHANNEL EXCAVATION.
2. THE BEDROCK PROFILE SHOWN IS BASED ON THE BORING LOGS PROVIDED ON SHEETS 17 AND 18 AND FROM BRIDGE WIDENING DESIGN DRAWINGS, NH DOT PROJECT NO. S-374B AS IDENTIFIED IN THE GENERAL NOTES ON SHEET 4. IT IS LIKELY THAT SECTIONS OF ROCK REMOVAL (ITEM 504.2) AND CONCRETE SUBFOOTING (ITEM 520.211) WILL BE REQUIRED FOR EACH FOOTING.
3. REMOVE SUBSTRUCTURE TO ELEVATION 108.00. IF ADDITIONAL SUBSTRUCTURE REMOVAL IS REQUIRED BELOW ELEVATION 108.00 FOR CONSTRUCTABILITY, REPLACE WITH ITEM 583.3, RIPRAP, CLASS III.
4. FOR SEWER MAIN BLOCKOUT DETAILS, SEE SHEET 48.

TYPICAL EARTHWORK SECTIONS

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



SECTION A-A

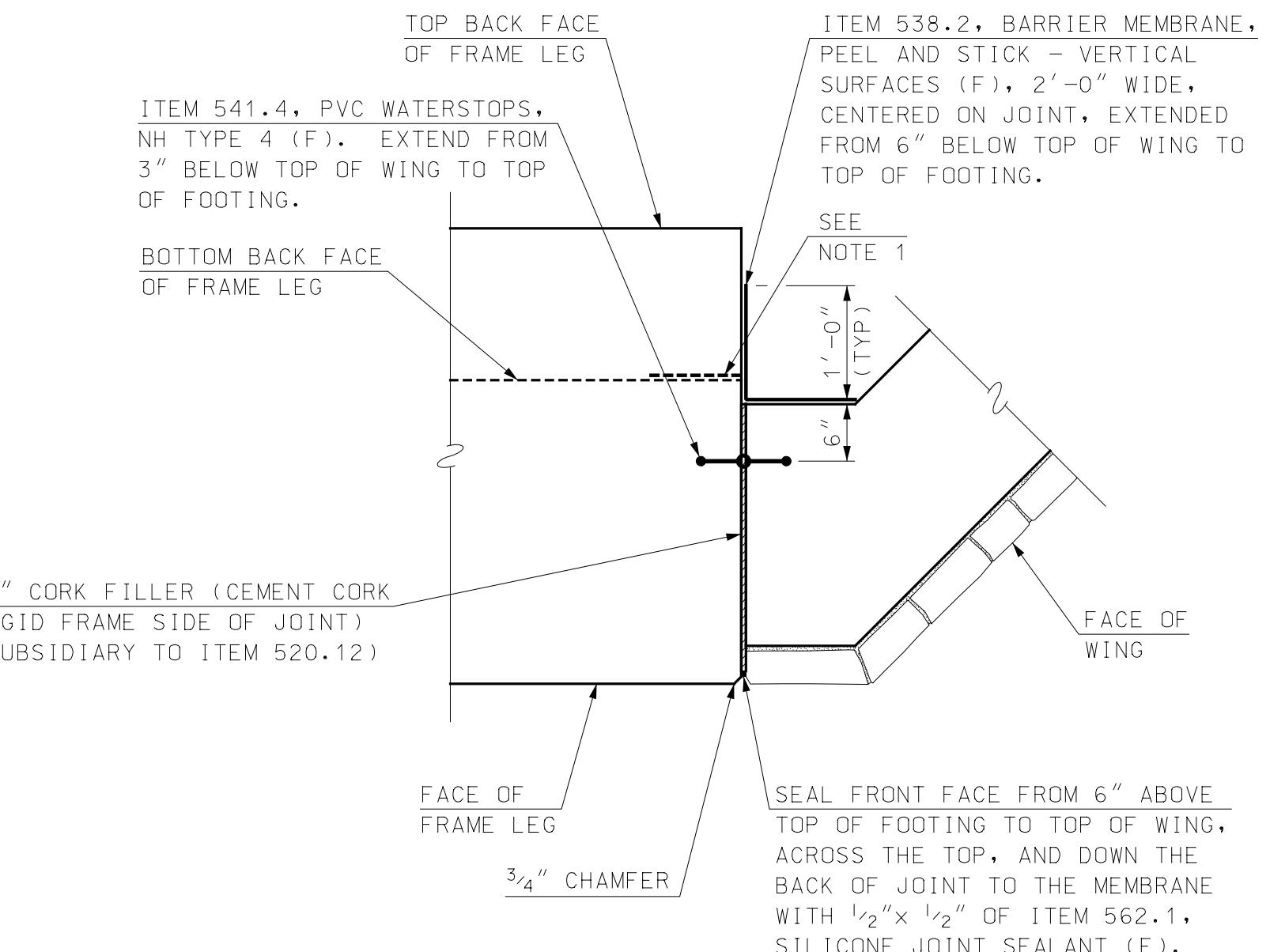
SCALE: $\frac{3}{8}'' = 1'-0''$

NOTES

1. FOR LOCATION OF SECTION A-A AND B-B, SEE SHEET 30 OR 31.
2. ELASTOMERIC COMPOUND SHALL BE PLACED AT FACE AND BACK OF RIGID FRAME LEG AND BELOW FRAME LEG AS SHOWN ABOVE AND SHALL MEET OR EXCEED THE REQUIREMENTS OF AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, SECTION 18.2 - ELASTOMERIC BEARINGS.

SECTION B-B

SCALE: $\frac{3}{8}'' = 1'-0''$



NOTE

1. AT LOCATIONS WHERE FRAME LEG TO WINGWALL INTERFACE IS LESS THAN 1'-0" CONTRACTOR SHALL WRAP MEMBRANE AROUND TO BACK FACE OF FRAME LEG.

EXPANSION JOINT DETAIL

(RIGID FRAME LEG TO WINGWALL)

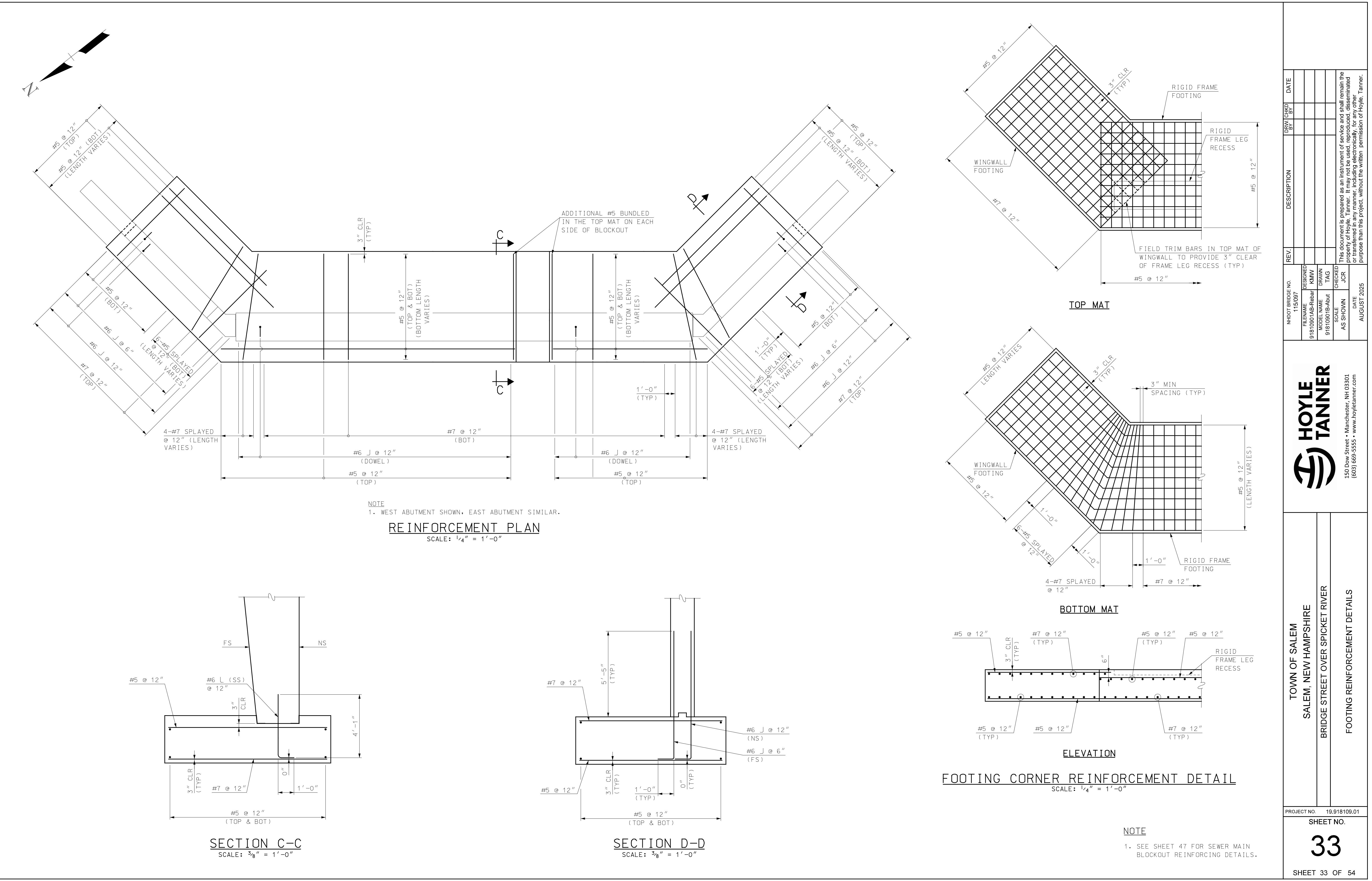
SCALE: $\frac{3}{4}'' = 1'-0''$

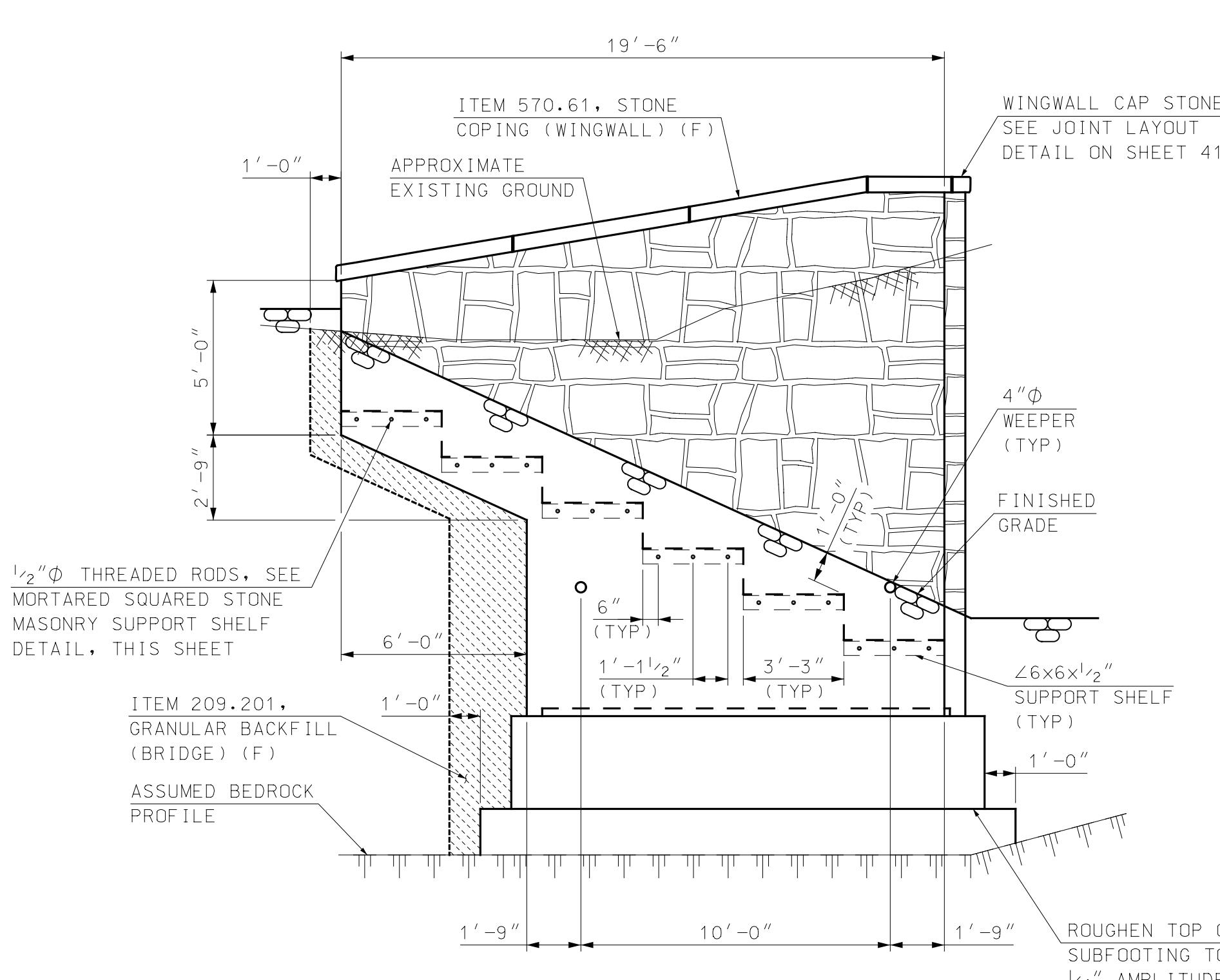
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BRIDGE STREET OVER SPICKET RIVER
FOOTING MASONRY DETAILS

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PROJECT NO. 19.918109.01
SHEET NO. 32

SHEET 32 OF 54



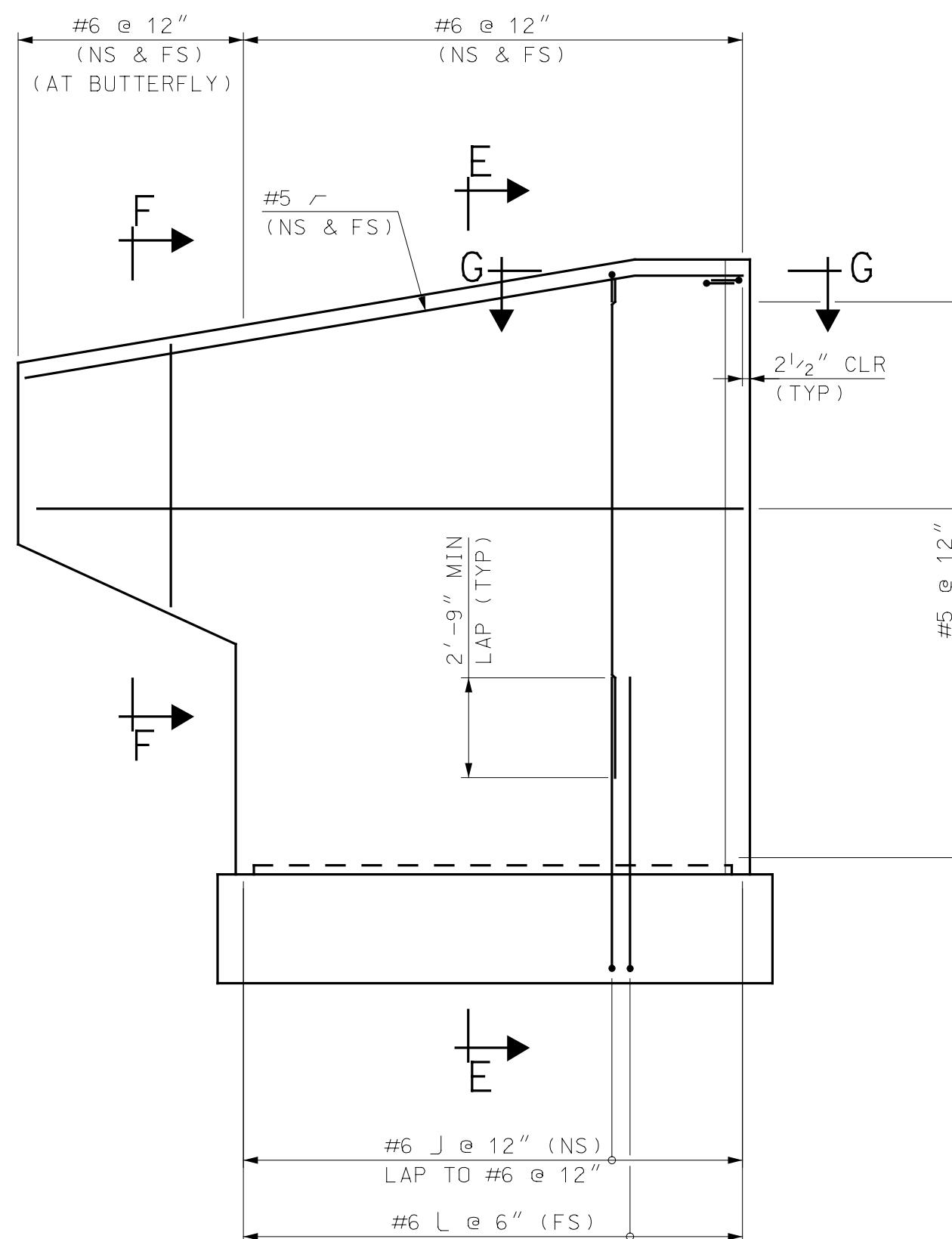


NOTES

1. SOUTHWEST WINGWALL SHOWN, SOUTHEAST, NORTHWEST AND NORTHEAST WINGWALL SIMILAR.
2. FOR WINGWALL ELEVATIONS, SEE SHEETS 30 AND 31.

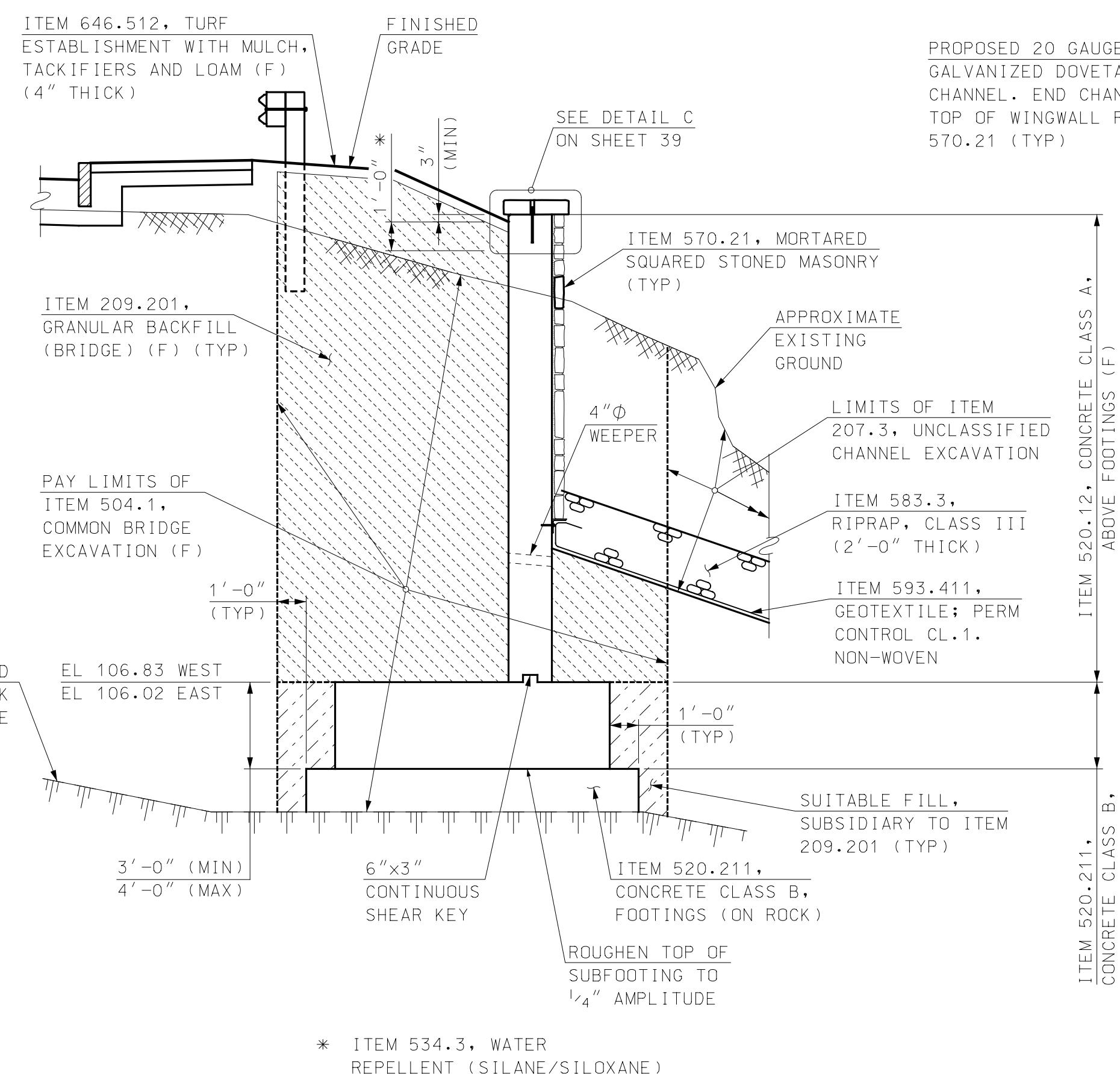
SCALE: $\frac{1}{4}'' \equiv 1'-0''$

SCALE: $\frac{1}{4}'' = 1'$

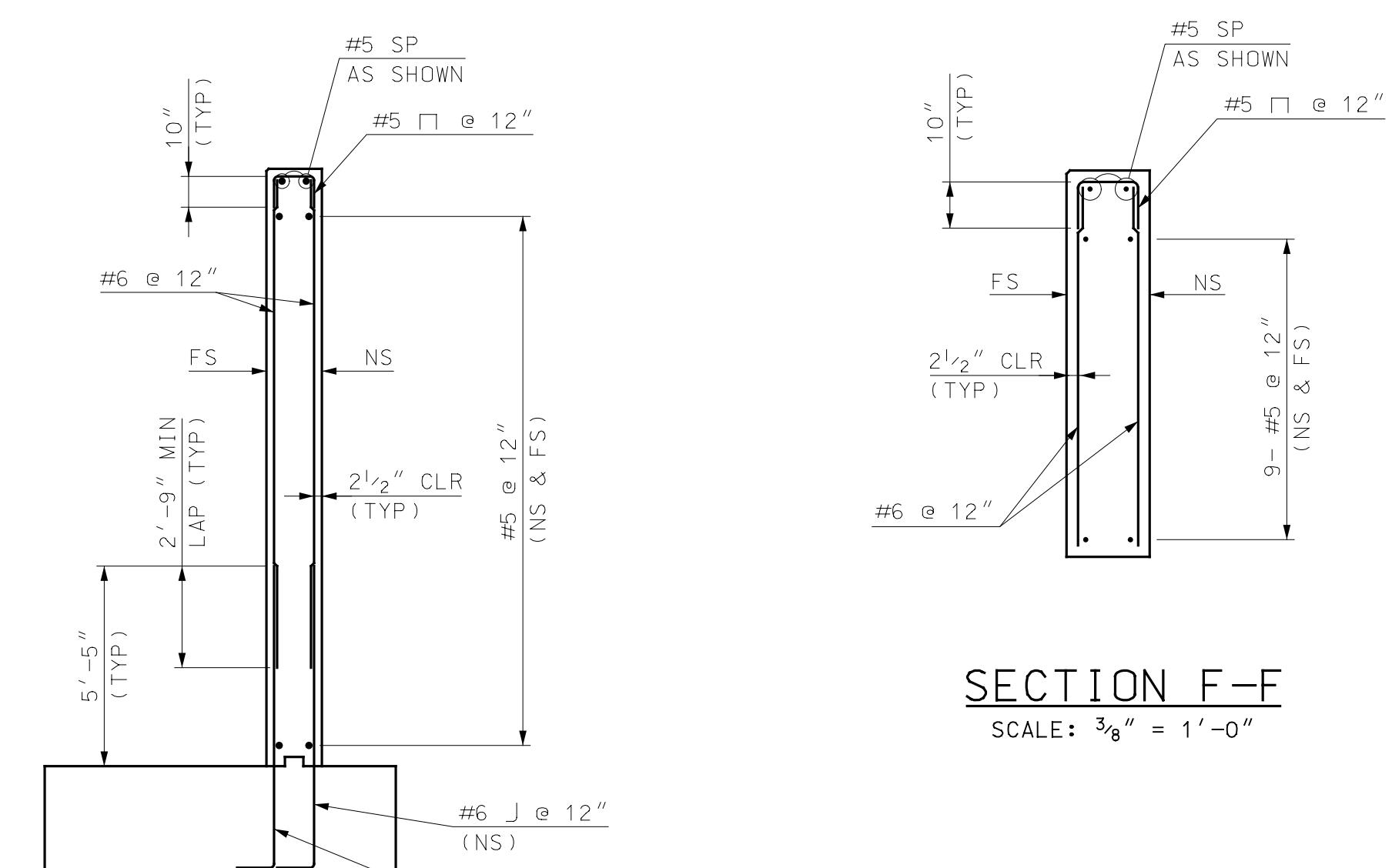


NOTE
1. FOR FOOTING REINFORCEMENT, SEE SHEET 33.

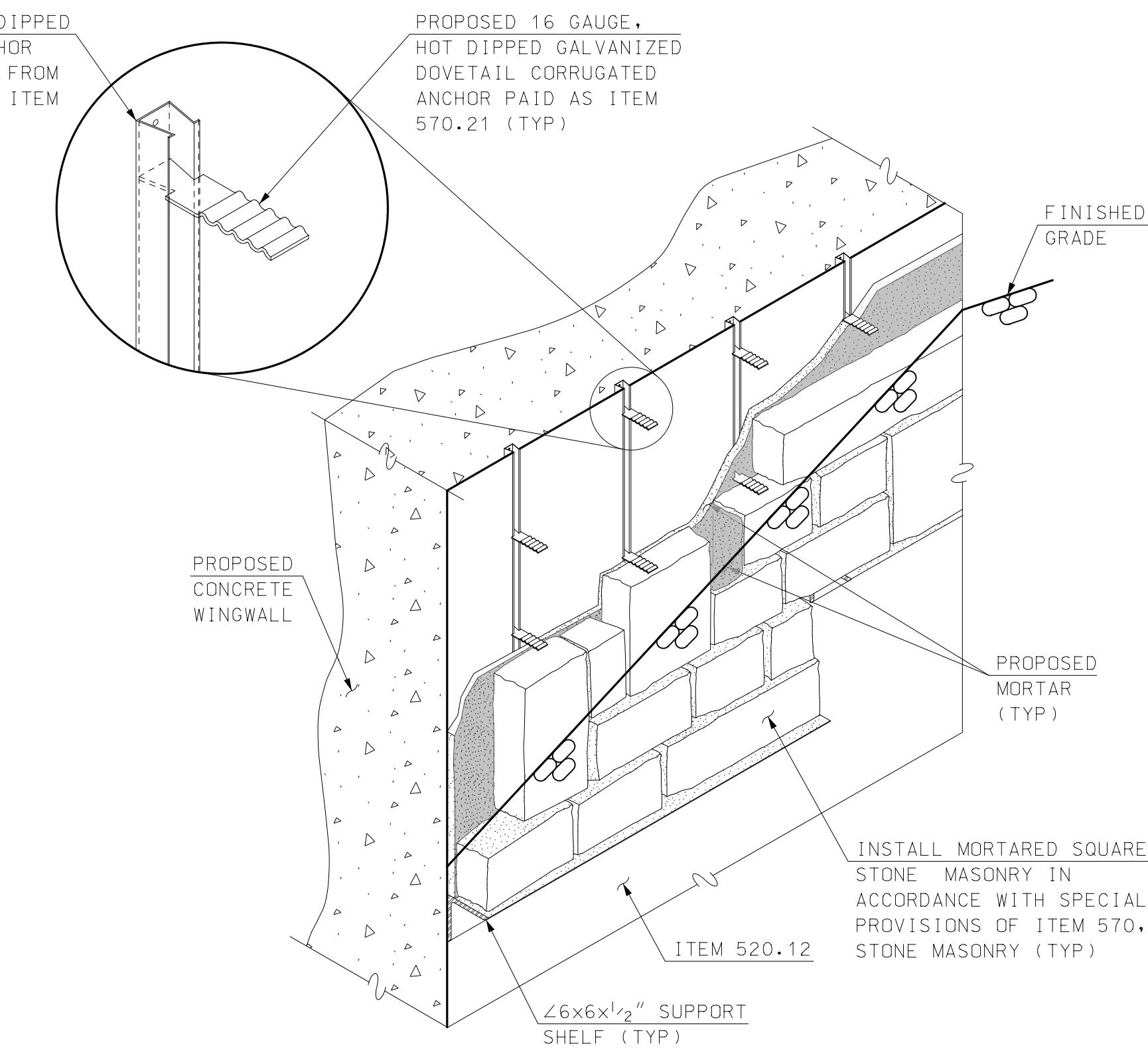
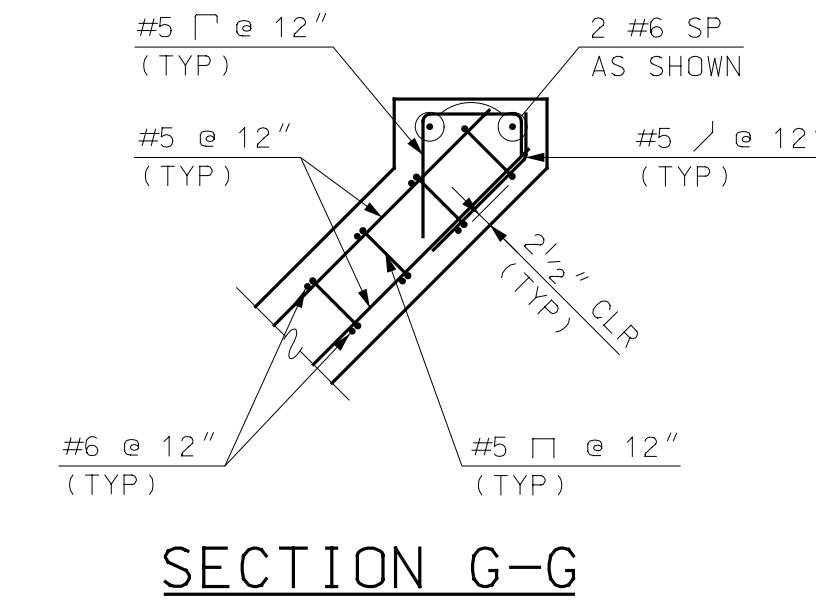
WINGWALL REINFORCEMENT ELEVATION
SCALE: 1/8" = 1'-0"



NGWALL TYPICAL SECTION



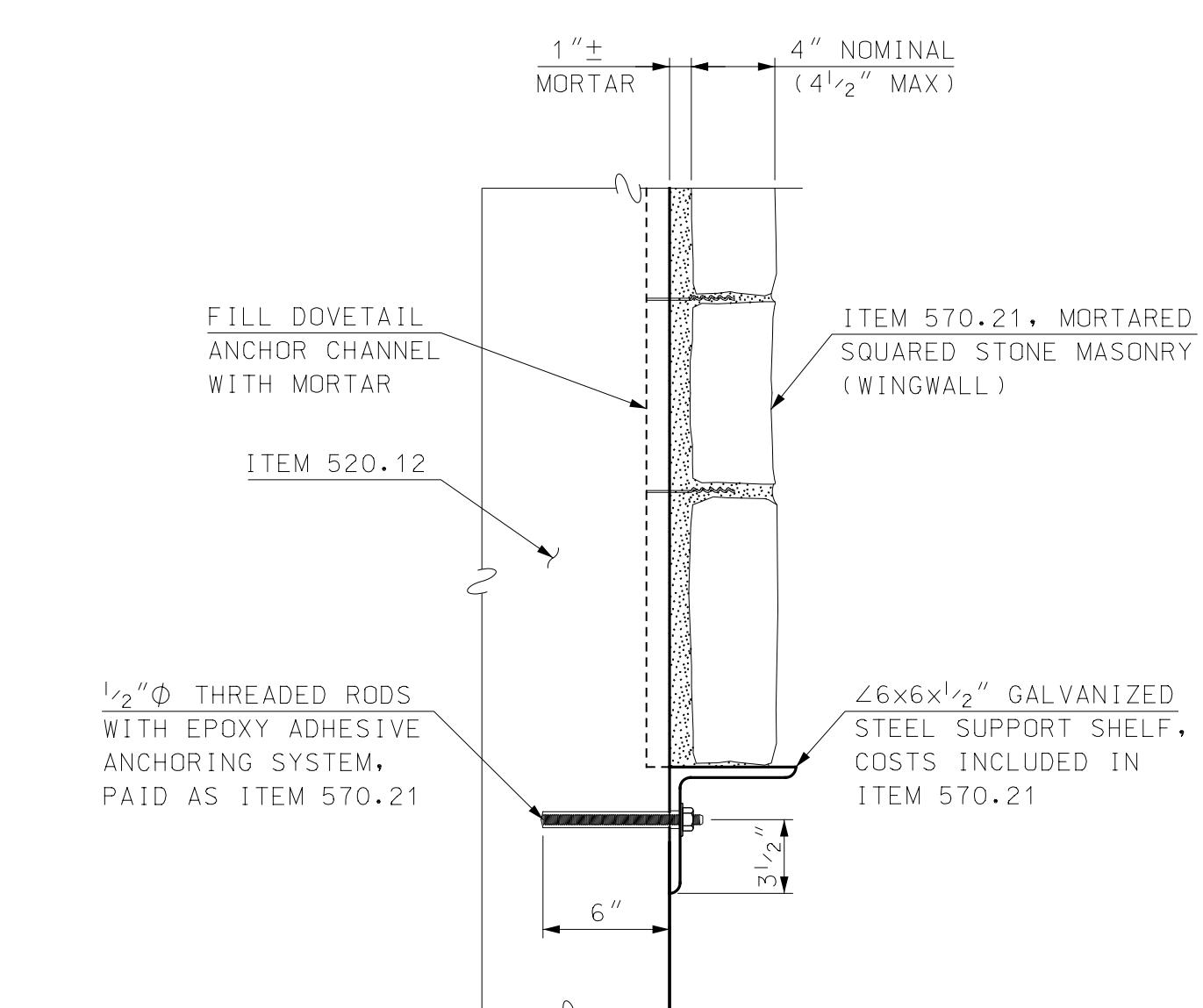
NOTE
1. FOR FOOTING REINFORCEMENT, SEE SHEET 3



NOTES

1. DOVETAIL CHANNEL SPACED AT 16" MAX ON CENTER HORIZONTALLY. DOVETAIL CORRUGATED ANCHORS SHALL BE PLACED VERTICALLY IN EACH HORIZONTAL MORTAR BED BETWEEN ADJACENT STONES.
2. DOVETAIL ANCHOR CHANNELS IN CONCRETE SHALL BE POSITIONED SUCH THAT THEY ARE LOCATED BETWEEN VERTICAL REINFORCING STEEL. DOVETAIL ANCHOR CHANNEL SHALL NOT BE LOCATED AT A VERTICAL REINFORCING BAR.
3. SEE SPECIAL PROVISIONS OF SECTION 570 FOR ADDITIONAL INFORMATION.

PROPOSED WINGWALL STONE FACING ATTACHMENT DETAIL



MORTARED SQUARED STONE MASONRY SUPPORT SHELF DETAIL

The logo for Hoyle Tanner is displayed vertically. It features a stylized, bold 'H' and 'T' intertwined at the bottom, with the letters 'HOYLE' and 'TANNER' stacked vertically above them in a large, bold, sans-serif font.

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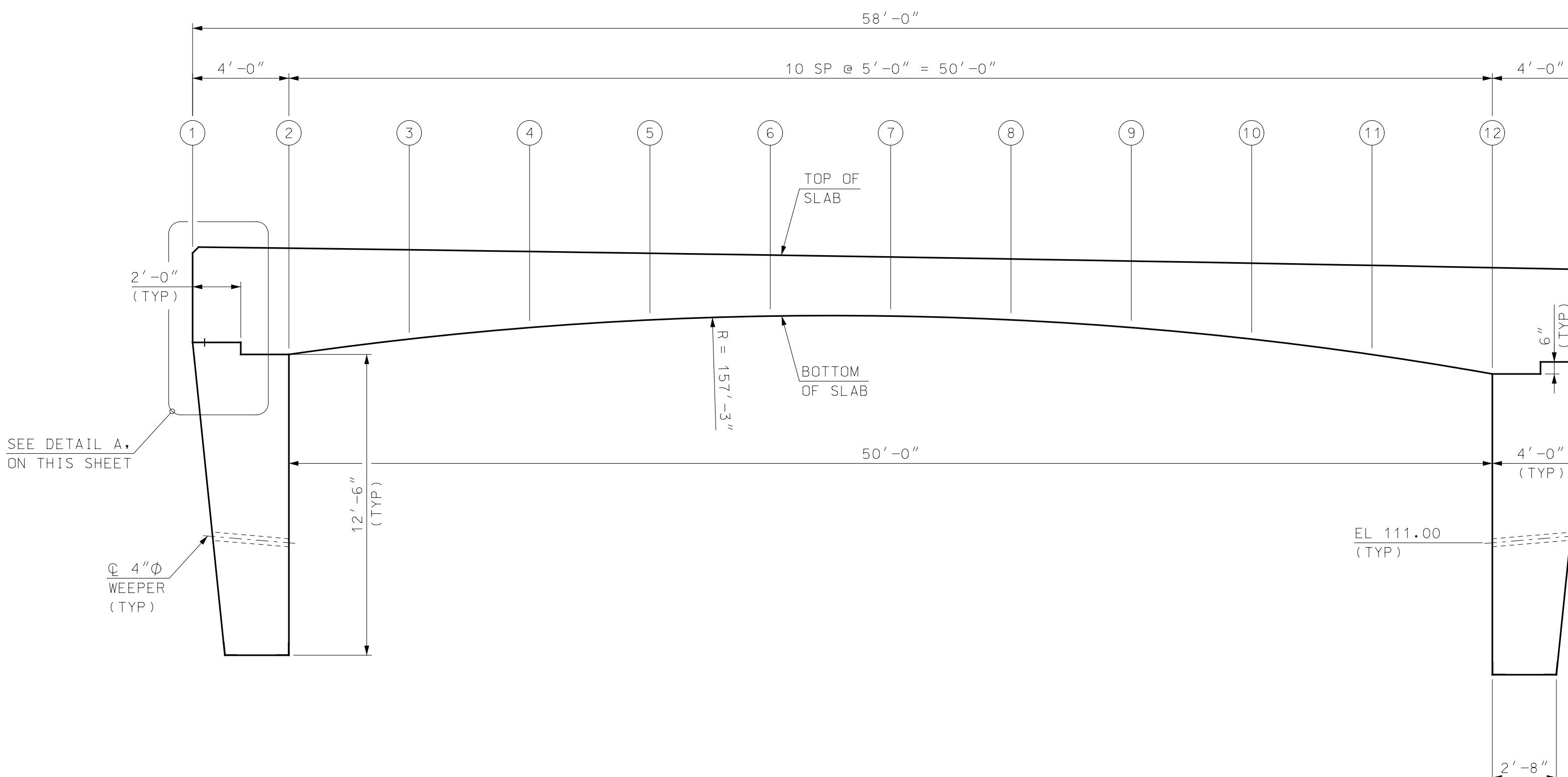
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SALEM, NEW HAMPSHIRE

BRIDGE STREET OVER SPICKET RIVER

WINGWALL MASONRY AND REINFORCEMENT DETAILS

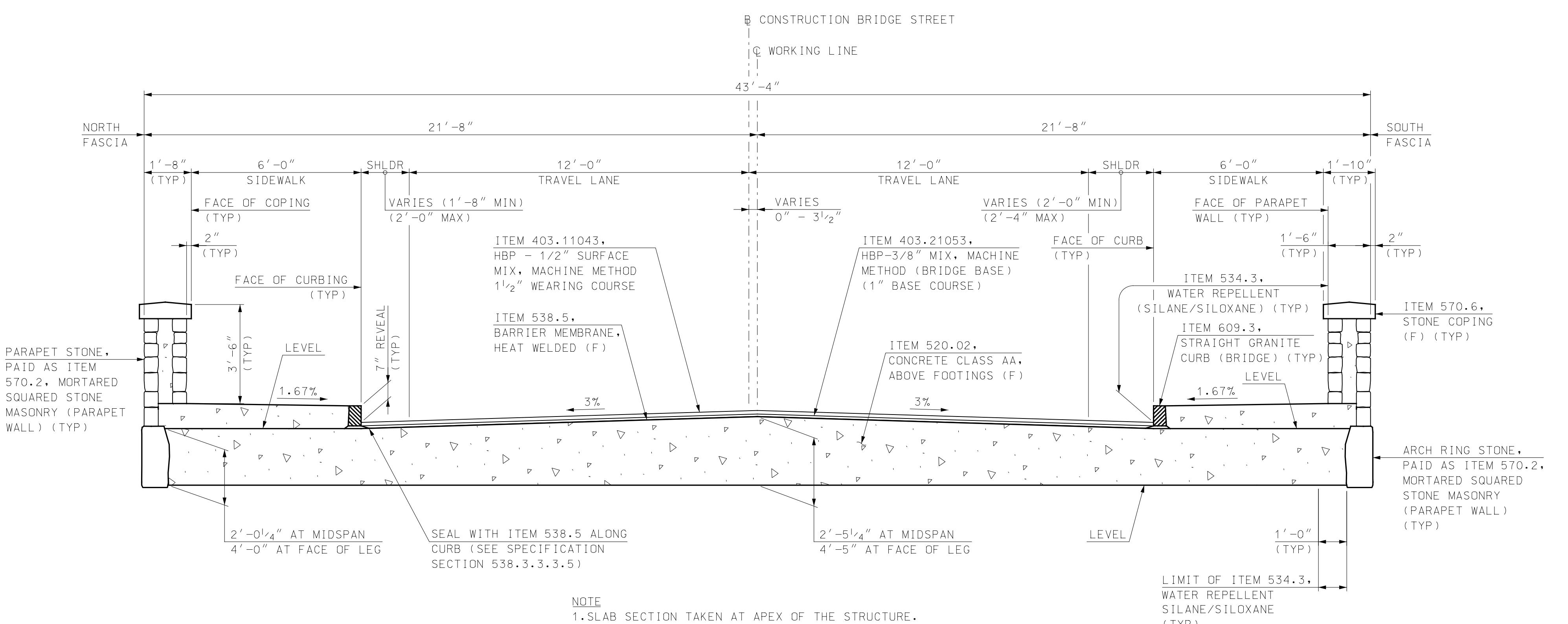
PROJECT NO. 10-018100-01

34



TYPICAL LONGITUDINAL SECTION

SCALE: $1/4'' = 1'-0''$



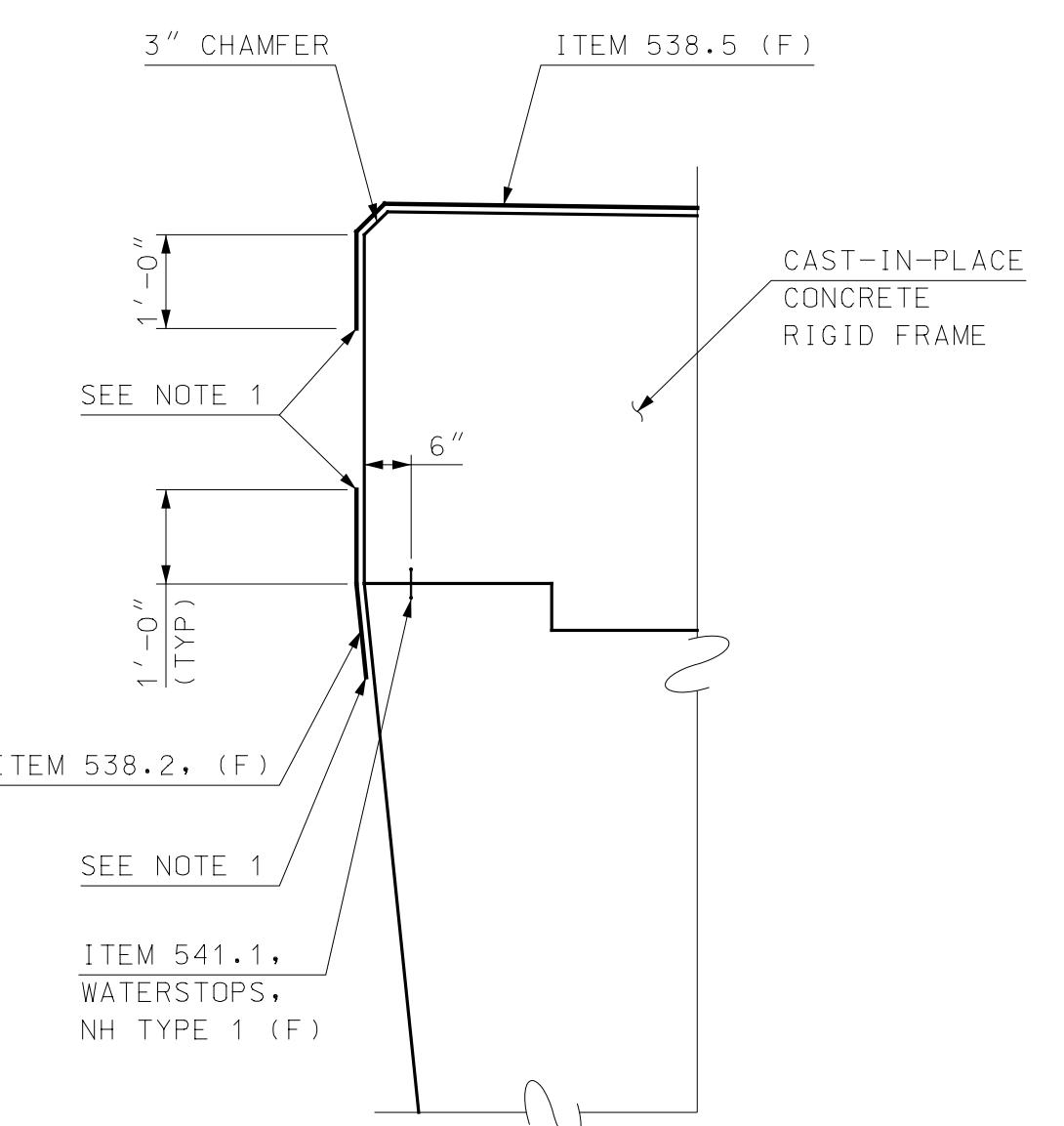
TYPICAL BRIDGE SECTION

SCALE: $\frac{3}{8}'' = 1'-0''$

POINT	TOP OF SLAB ELEVATIONS			BOTTOM OF SLAB ELEVATIONS
	NORTH FASCIA AND LT CURB	WORKING LINE	SOUTH FASCIA AND RT CURB	
1	122.87	123.29	122.87	
2	122.82	123.24	122.82	118.83
3	122.76	123.18	122.76	119.48
4	122.70	123.12	122.70	119.96
5	122.63	123.05	122.63	120.29
6	122.56	122.98	122.56	120.46
7	122.48	122.90	122.48	120.46
8	122.40	122.82	122.40	120.30
9	122.31	122.73	122.31	119.97
10	122.21	122.63	122.21	119.48
11	122.12	122.54	122.12	118.83
12	122.02	122.44	122.02	118.02
13	121.94	122.36	121.94	

NOTE

1. RIGID FRAME POINTS 1 THROUGH 13 ELEVATIONS INCLUDE CAMBER TO ACCOUNT FOR INSTANTANEOUS AND LONG TERM DEFLECTIONS. THE TOTAL DEFLECTION WAS COMPUTED BY MULTIPLYING THE INSTANTANEOUS DEFLECTION BY A FACTOR OF 2. ELEVATIONS PROVIDED SHALL BE ACHIEVED AFTER TEMPORARY SHORING HAS DEFLECTED AND BEFORE THE SHORING IS REMOVED. CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE DEFLECTION OF THE TEMPORARY SHORING.



OTE

- SEAL EDGE OF MEMBRANE WITH AN APPROVED MASTIC MATERIAL FROM THE LATEST NHDOT QUALIFIED PRODUCTS LIST.

DETAIL A

ALE. 2 - 1 - 0

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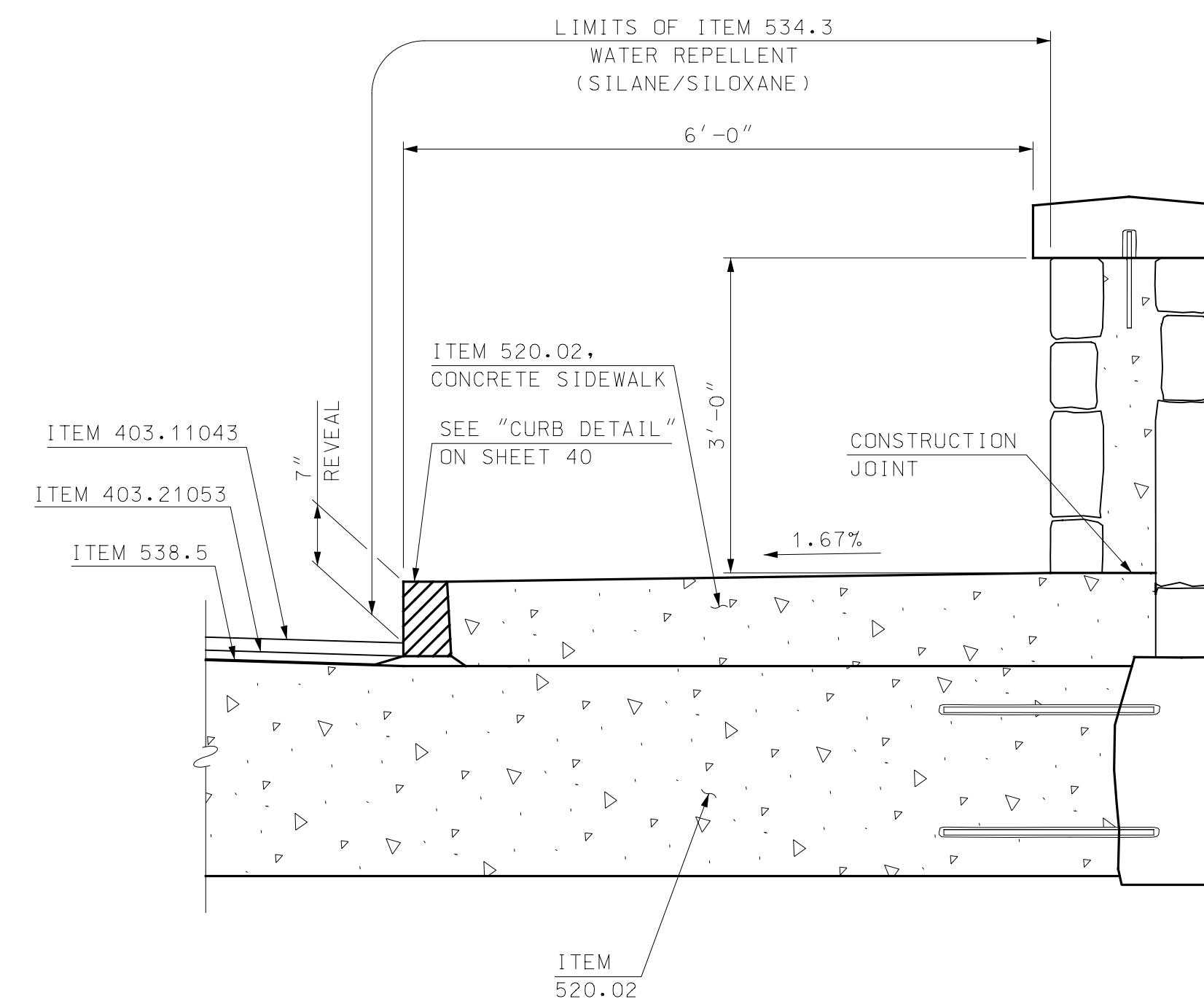
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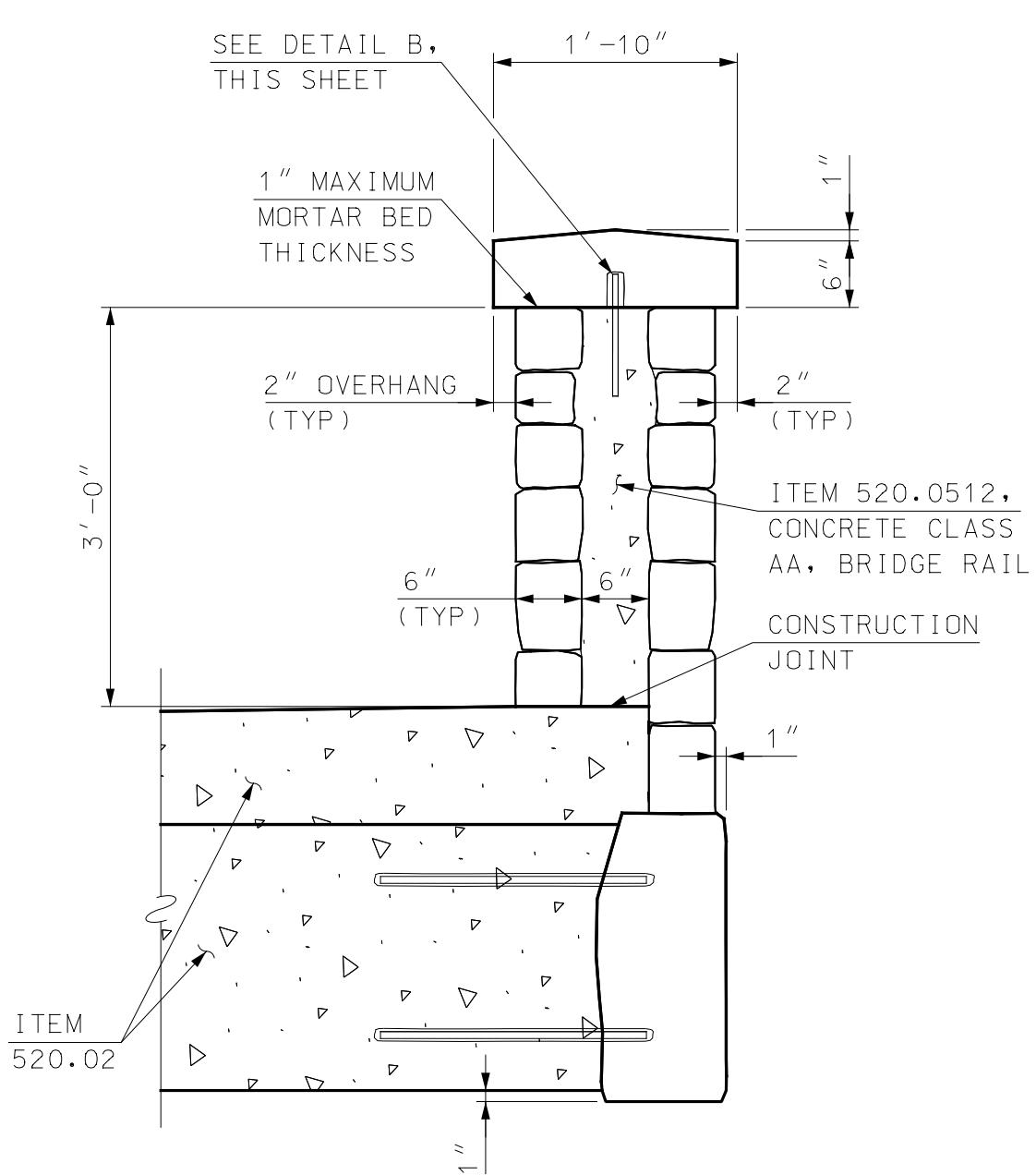
RIGID FRAME TYPICAL SECTIONS AND DETAILS

PROJECT NO. 10018100

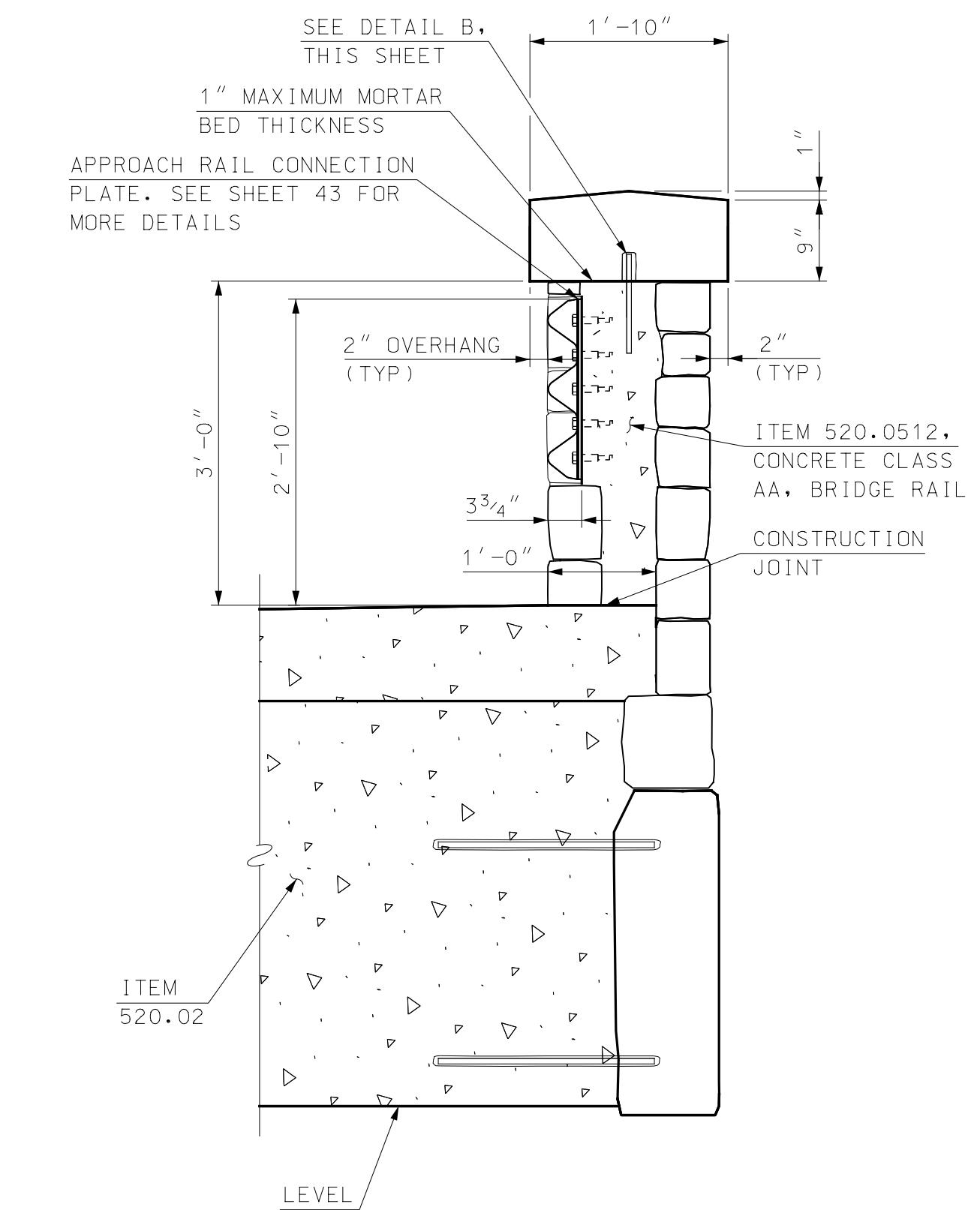
5



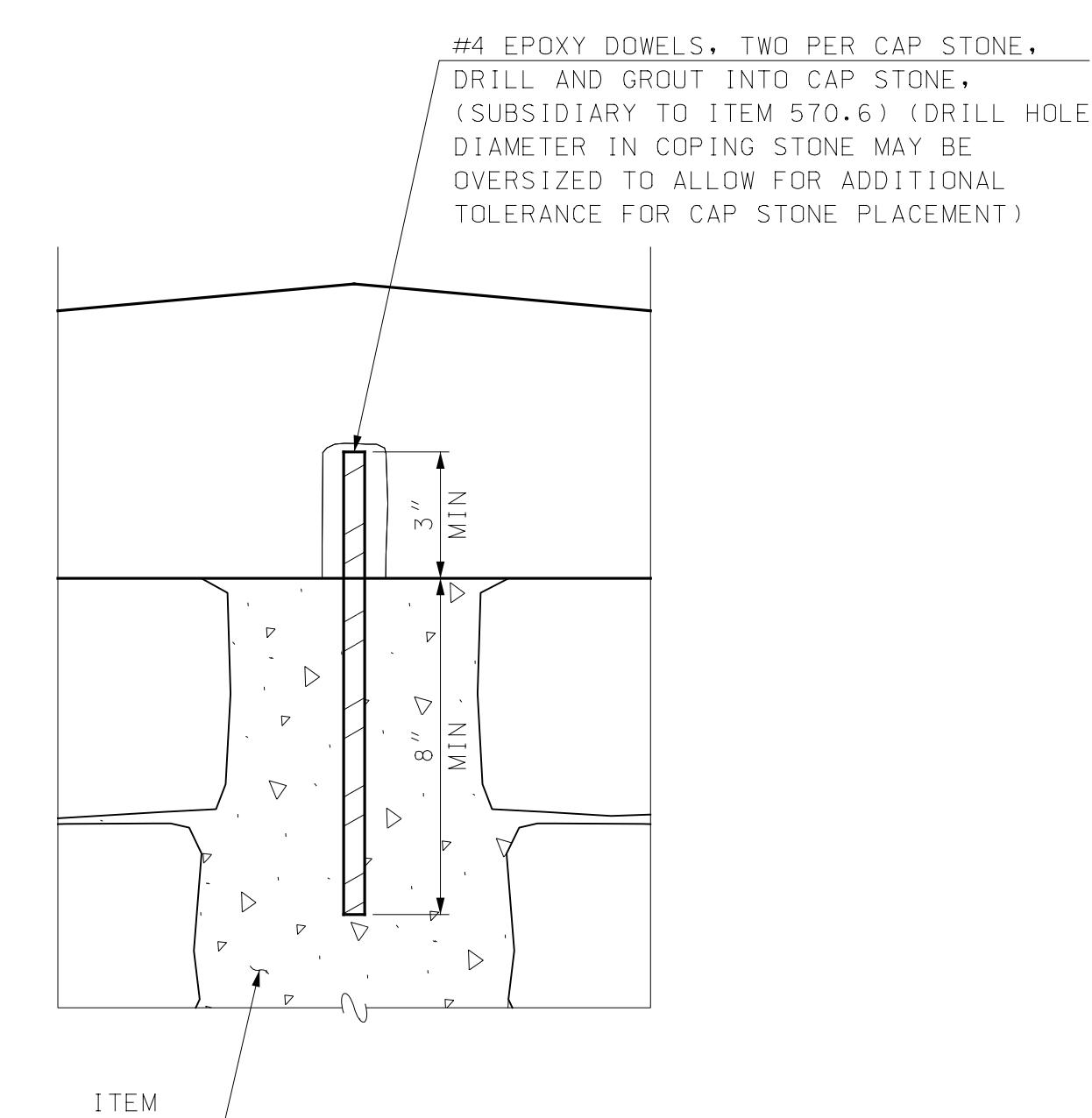
SIDEWALK MASONRY SECTION
SCALE: $\frac{3}{4}'' = 1'-0''$



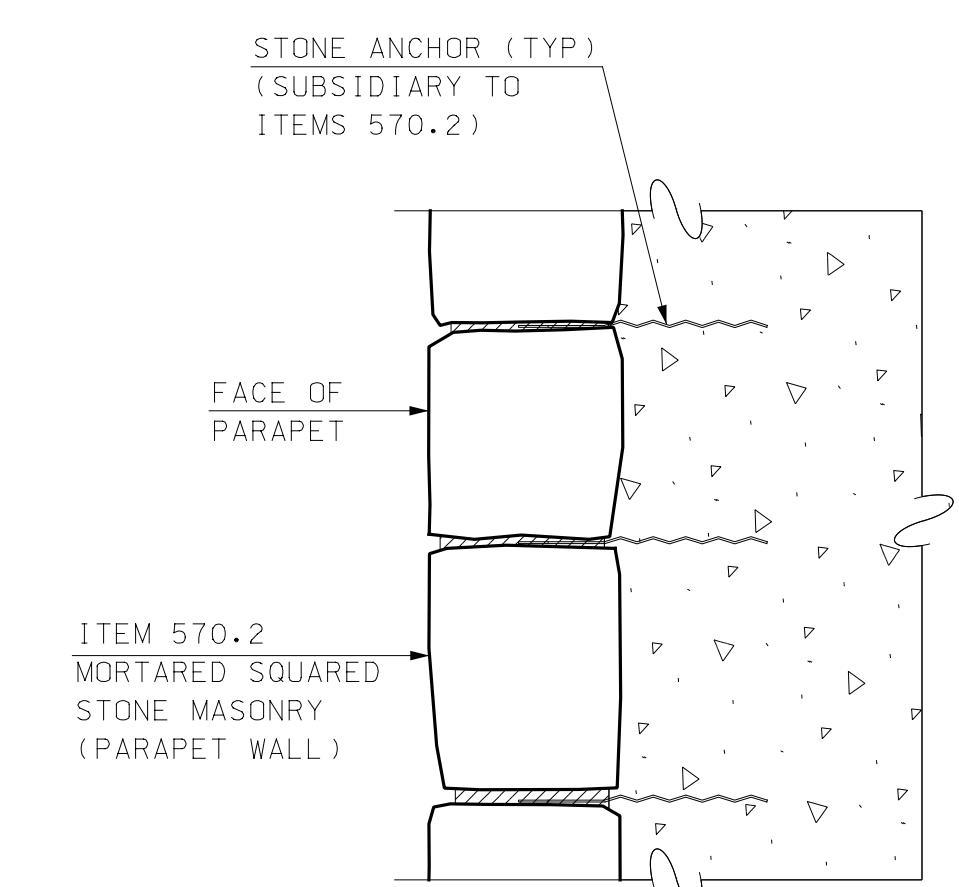
TYPICAL PARAPET SECTION
SCALE: $\frac{3}{4}'' = 1'-0''$



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

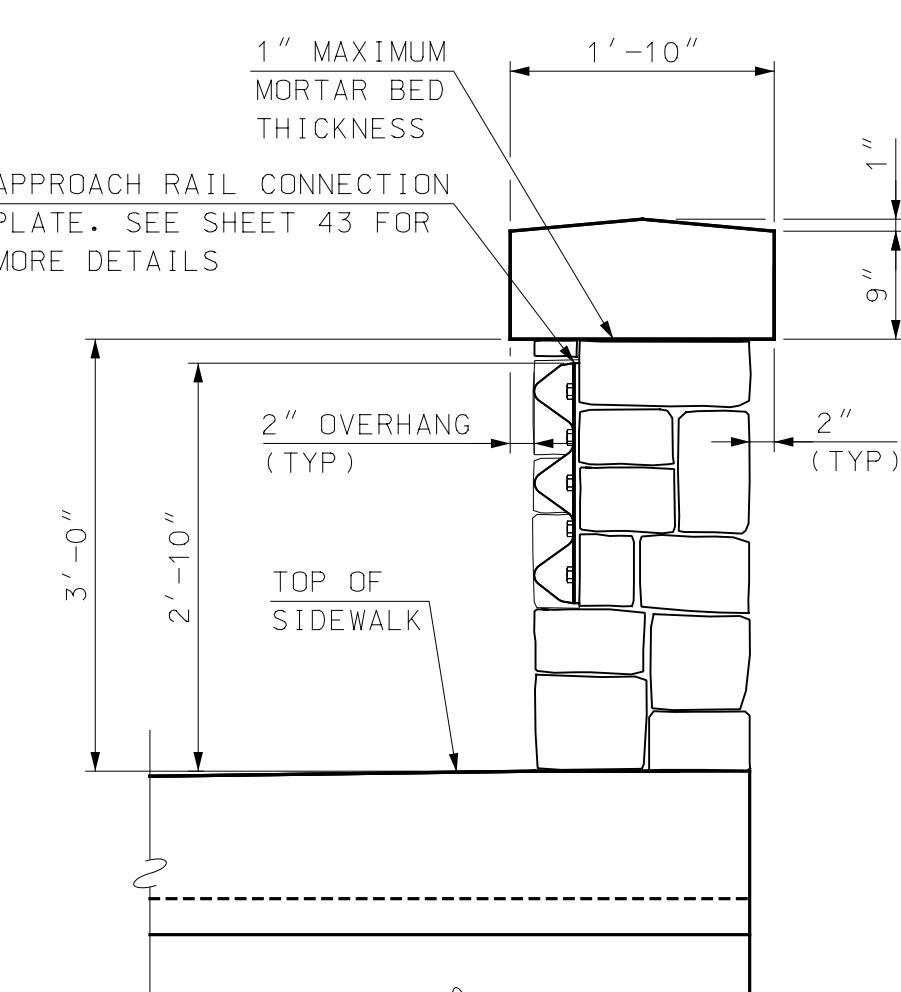


DETAIL B
SCALE: $3'' = 1'-0''$



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" x 1/8" x 8" 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: $\frac{3}{4}'' = 1'-0''$

NHDT BRIDGE NO.	REV.	DESCRIPTION	DRW. CHKD BY	DATE
115/097				
91810901FR-Dets				
91810901FR-Dets1				

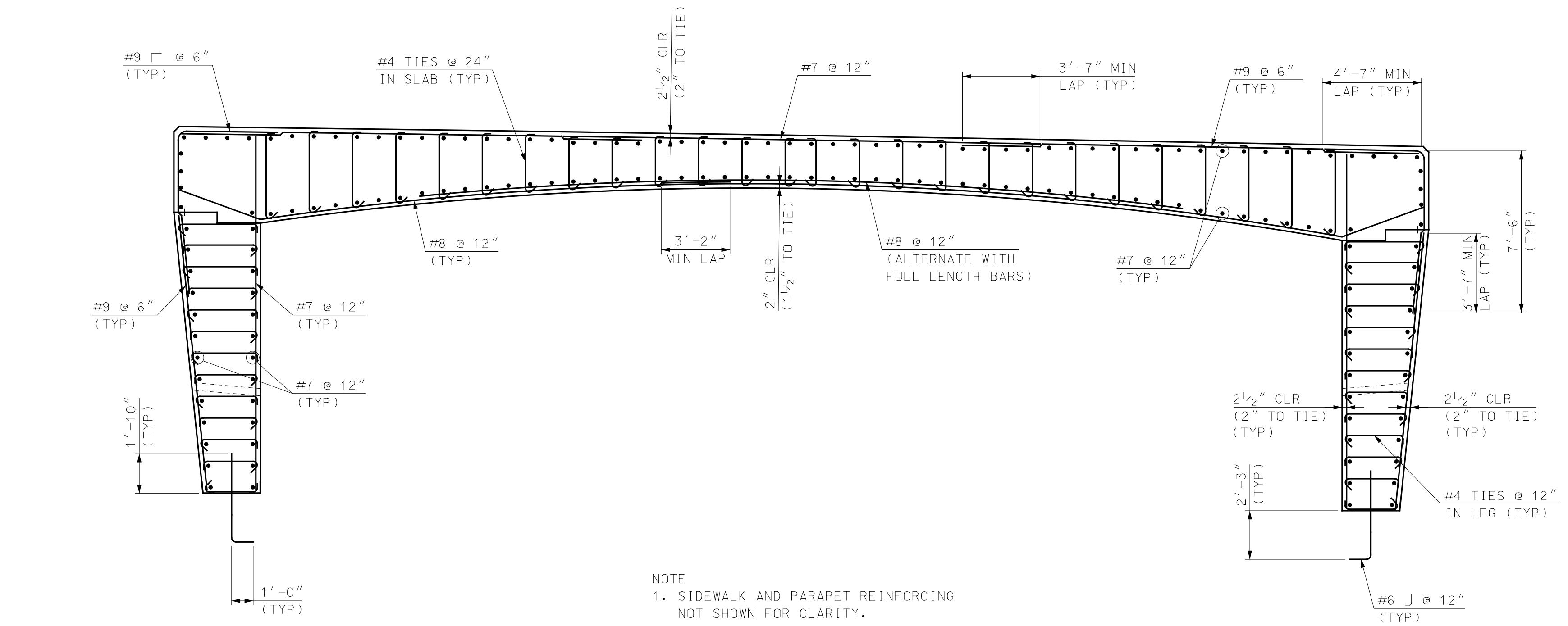
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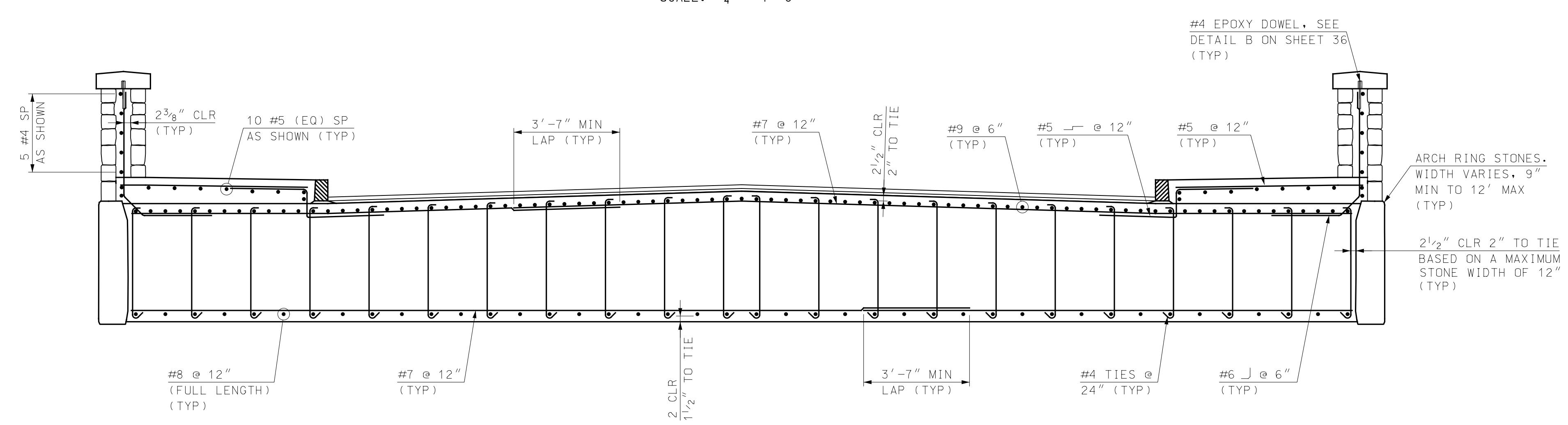
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BRIDGE STREET OVER SPICKET RIVER
RIGID FRAME DETAILS (1 OF 3)

PROJECT NO. 19.918109.01

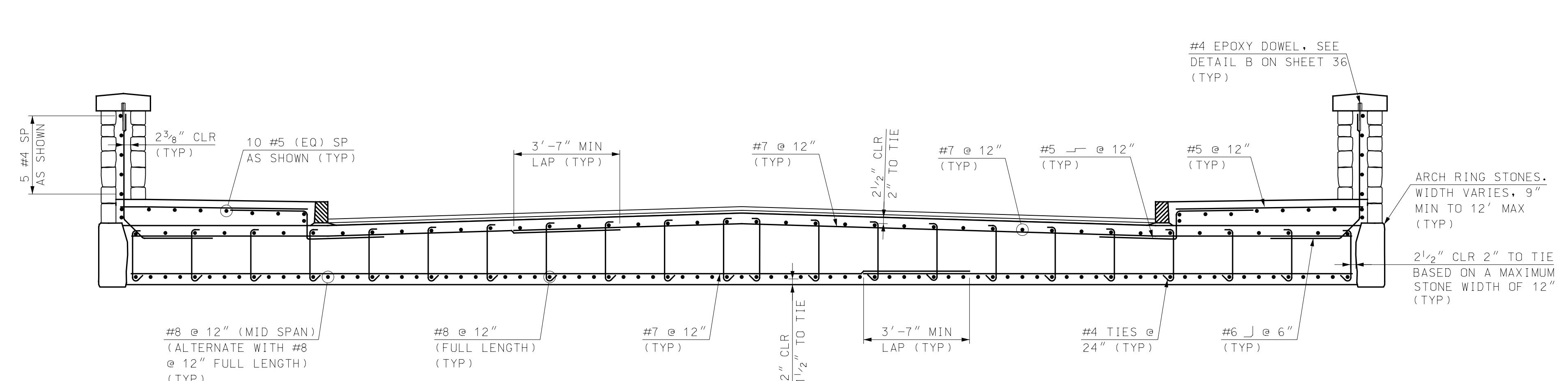
SHEET NO.



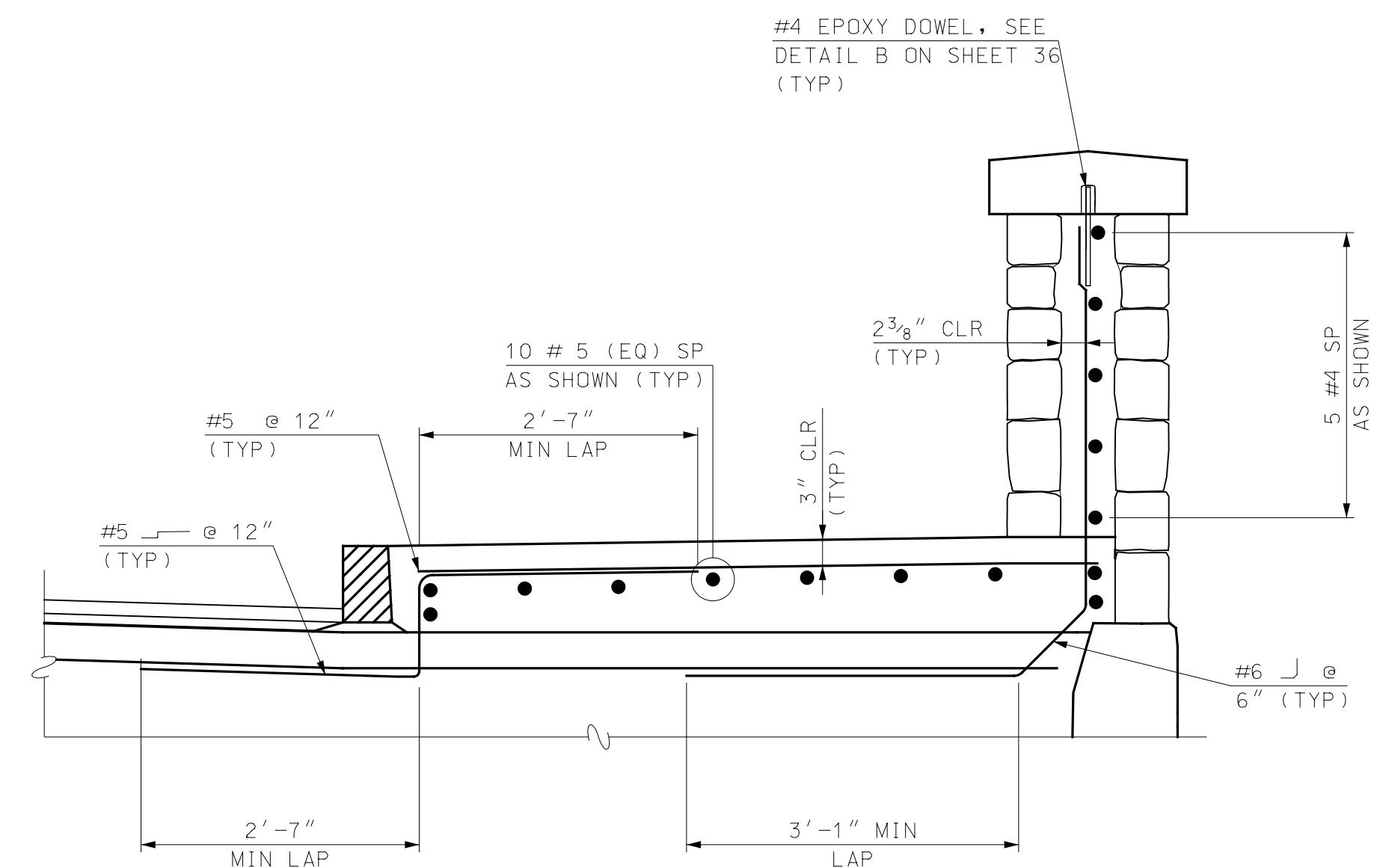
LONGITUDINAL REINFORCING STEEL SECTION
SCALE: 1/4" = 1'-0"



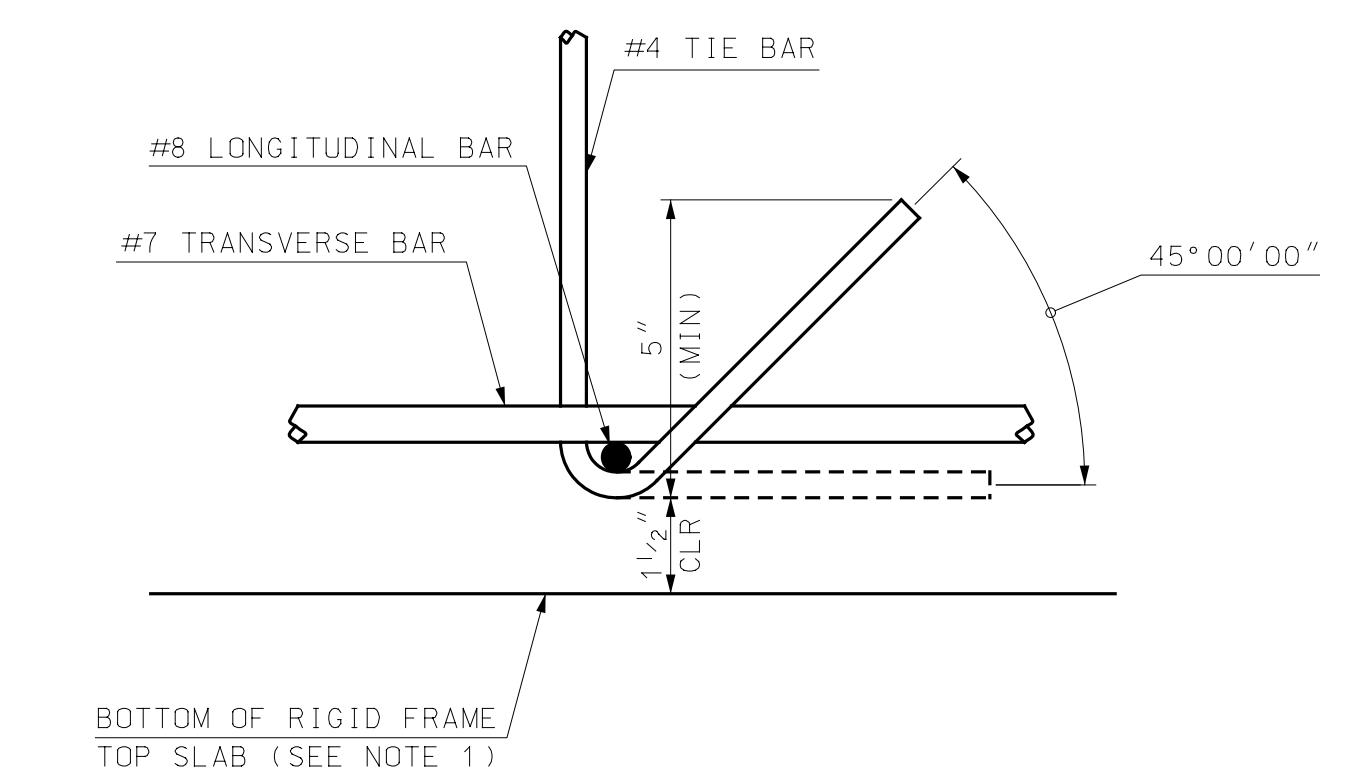
AT FACE OF RIGID FRAME LEG



AT MIDSPAN
TRANSVERSE REINFORCING SECTIONS
SCALE: 3/8" = 1'-0"



PARAPET AND SIDEWALK
REINFORCING SECTION
SCALE: 3/8" = 1'-0"



TYPICAL TIE BAR DETAIL
NOT TO SCALE

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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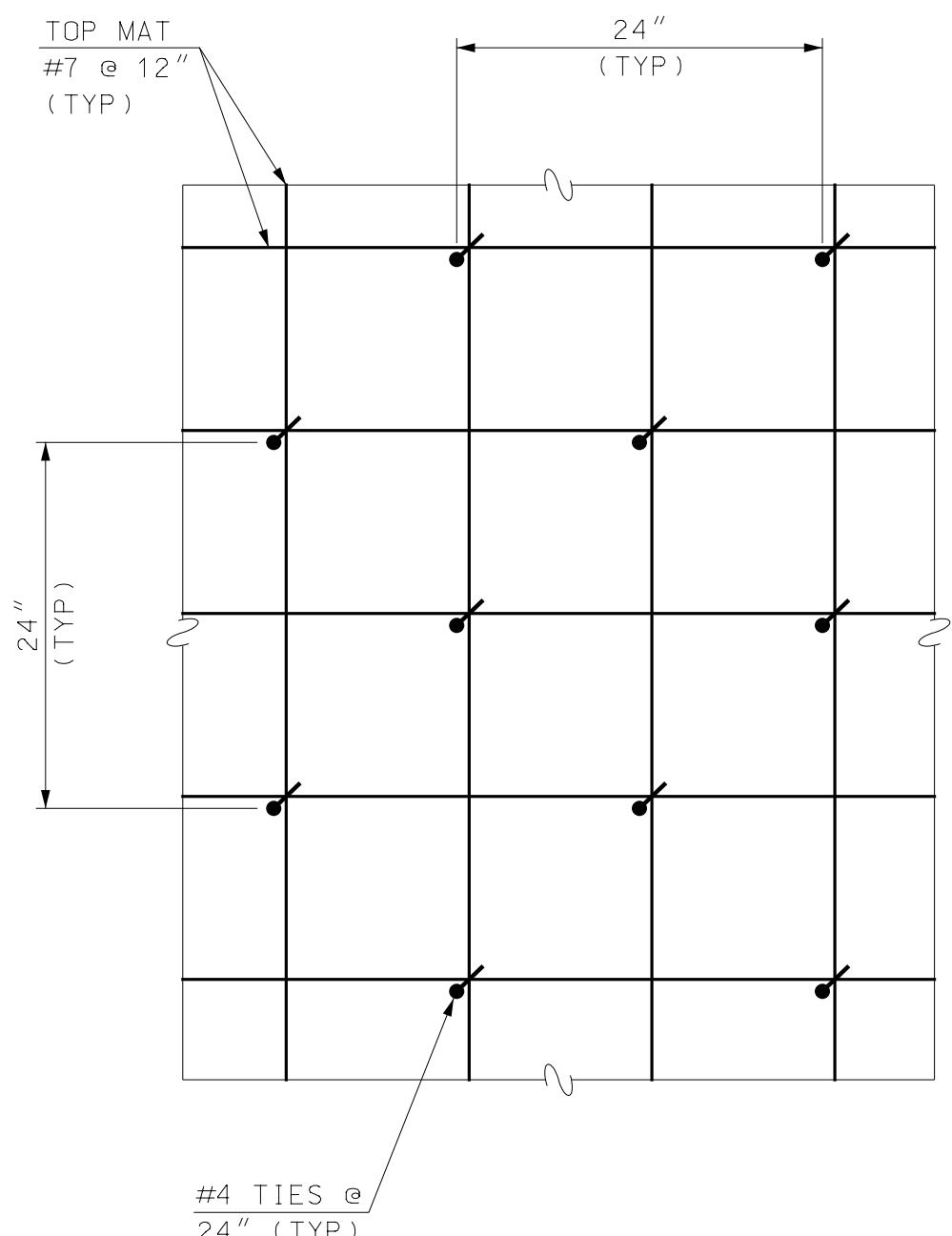
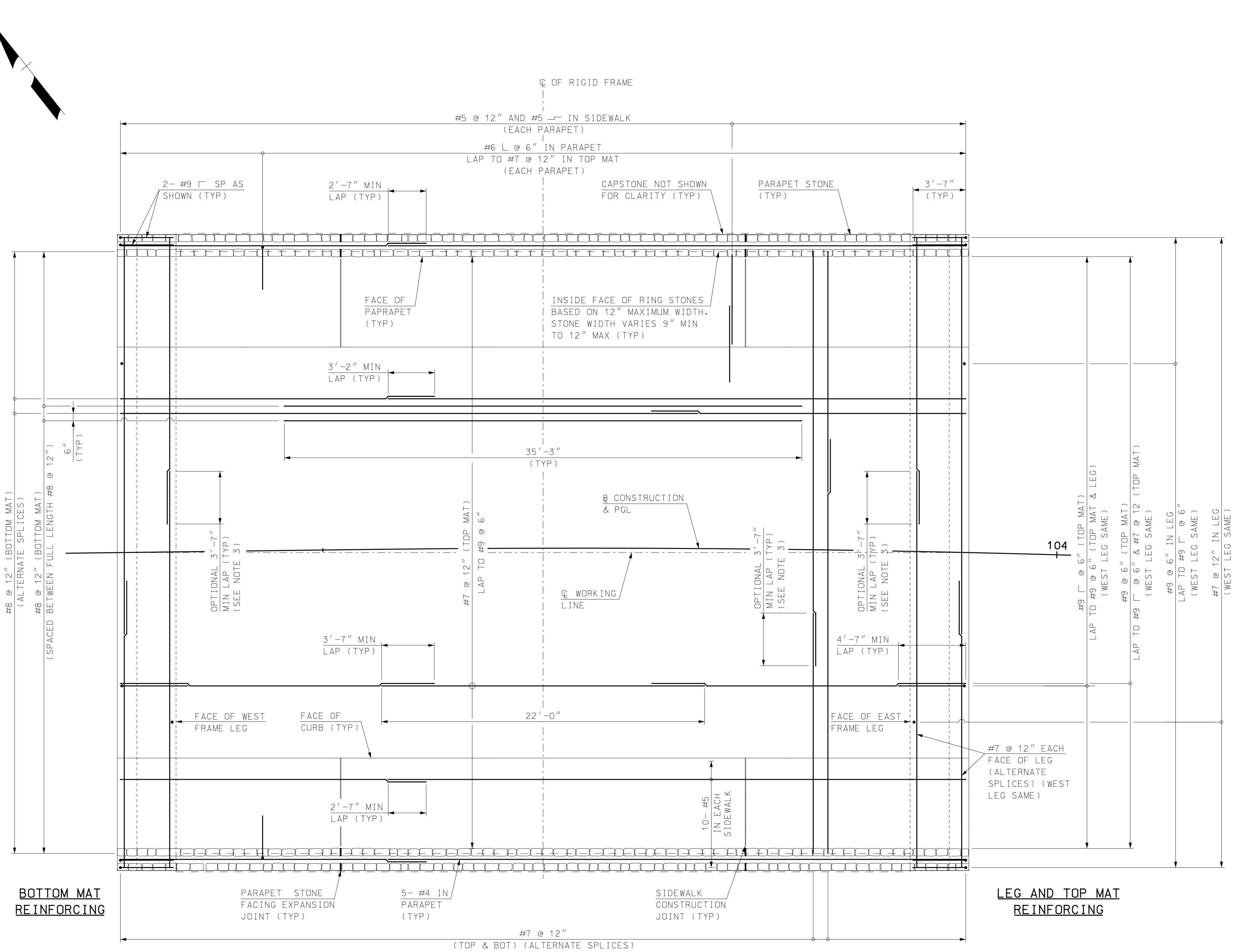
TOWN OF SALEM
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BRIDGE STREET OVER SPICKET RIVER
RIGID FRAME DETAILS (2 OF 3)

PROJECT NO. 19.918109.01

SHEET NO.

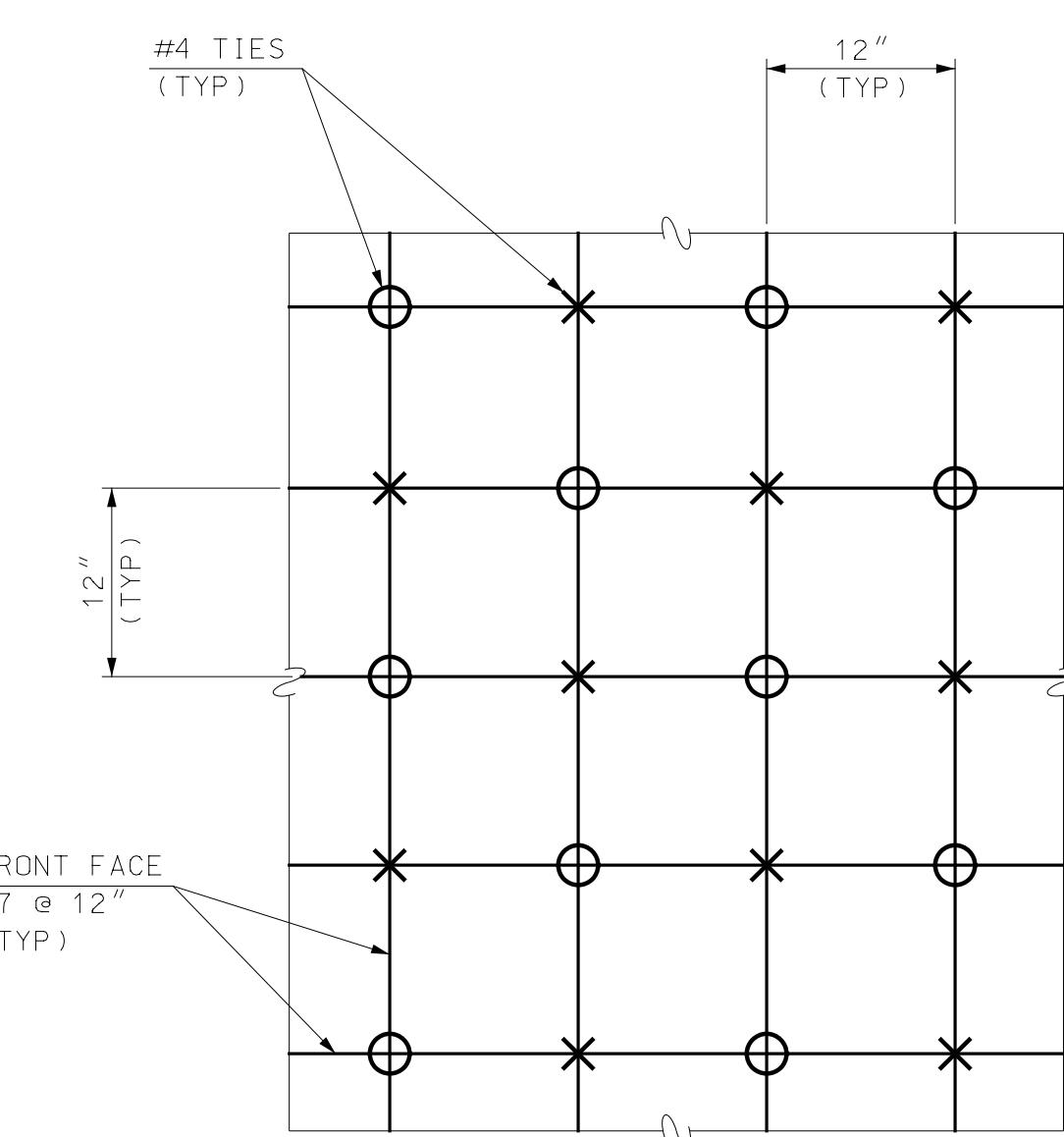
37

SHEET 37 OF 54



RIGID FRAME TOP SLAB TIE BAR LAYOUT PARTIAL PLAN DETAIL

SCALE: 1" = 1'-0"



X 90° LEG AT NEAR SIDE

O 90° LEG AT FAR SIDE

NOTE
1. FAR FACE REINFORCING
NOTE SHOWN FOR CLARITY.

RIGID FRAME LEG TIE BAR LAYOUT PARTIAL ELEVATION DETAIL

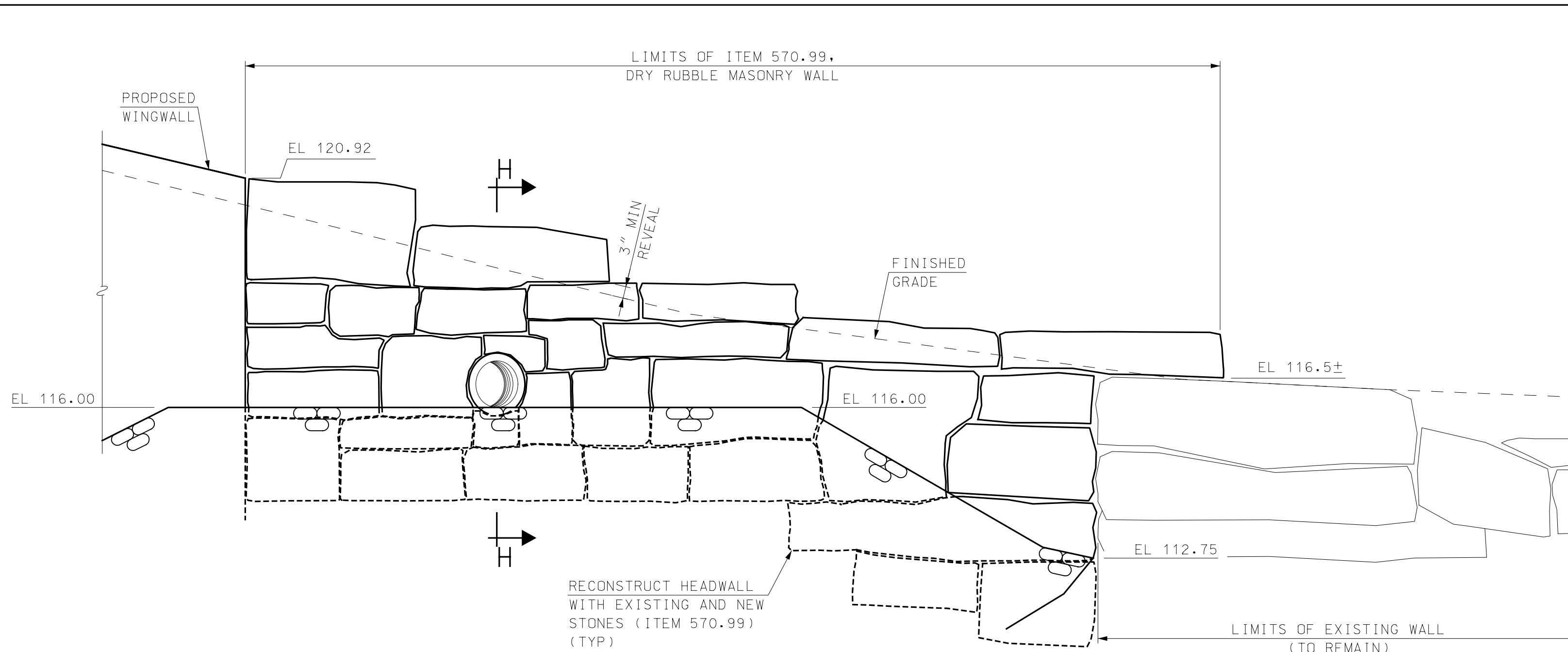
SCALE: $1/2'' = 1'-0''$

PROJECT NO.	19.918109.01	REV.	DESCRIPTION	DRW. CHKD BY	DATE
FILE NAME	9181091FR-Dets	DESIGNED	KMW		
MODEL NAME	9181091FR-Dets3	DRAWN			
SCALE		CHECKED	JCR		
AS SHOWN		DATE			
	AUGUST 2025				

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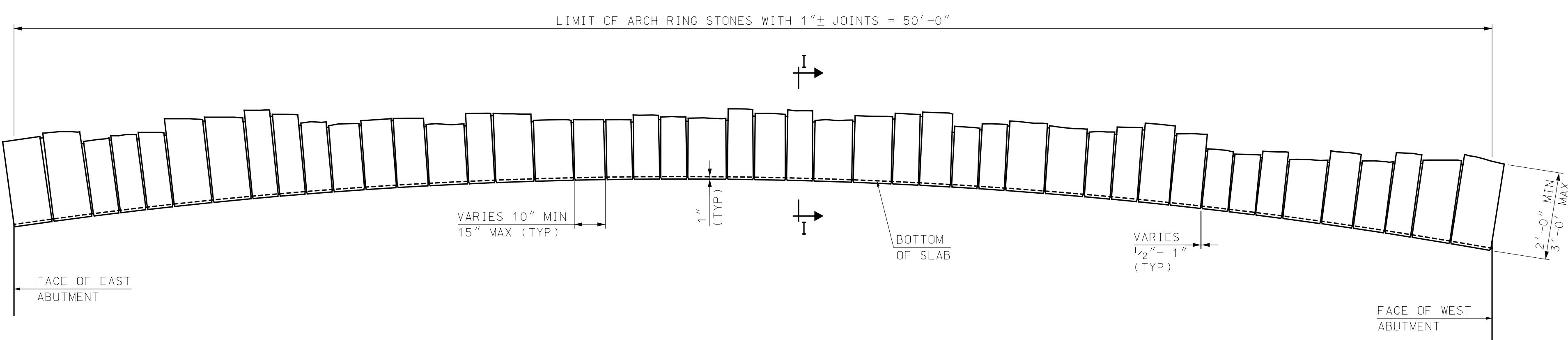
TOWN OF SALEM
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BRIDGE STREET OVER SPICKET RIVER

RIGID FRAME DETAILS (3 OF 3)



NORTHWEST RETAINING WALL ELEVATION

SCALE: $1/2'' = 1'$



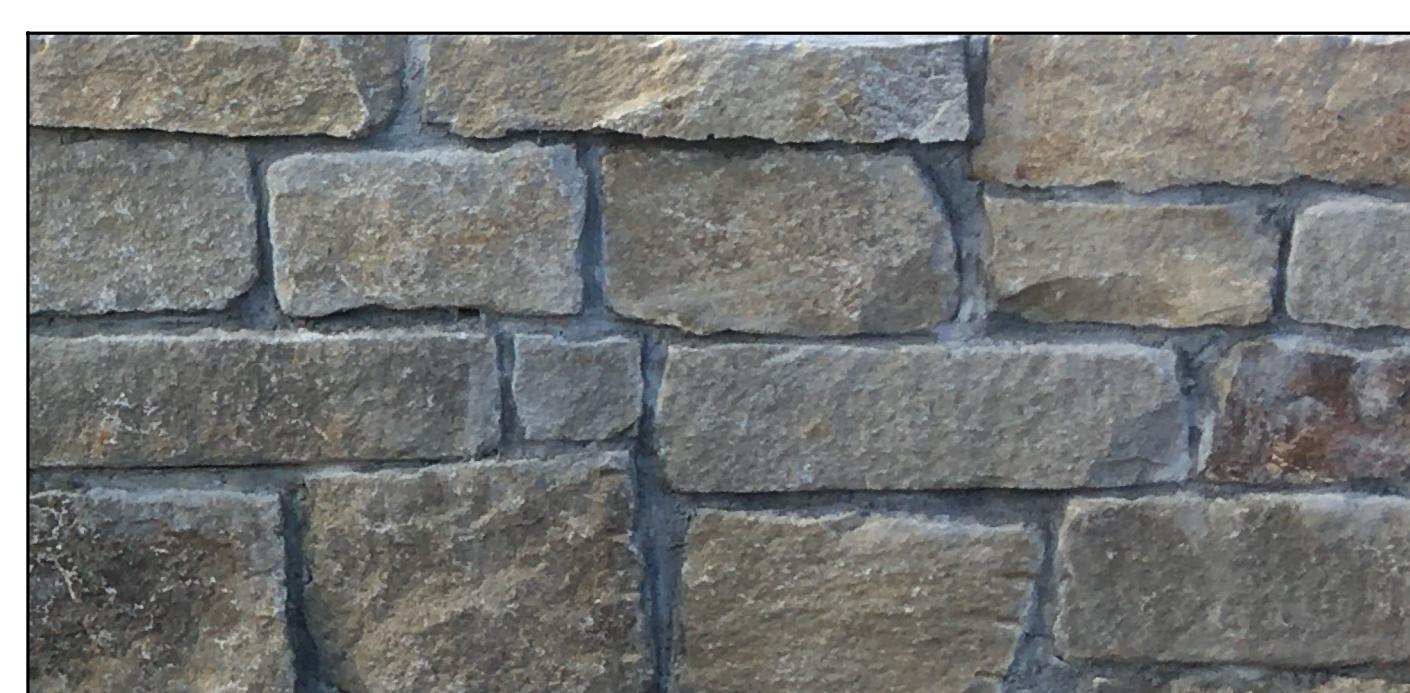
ARCH RING STONE LAYOUT

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



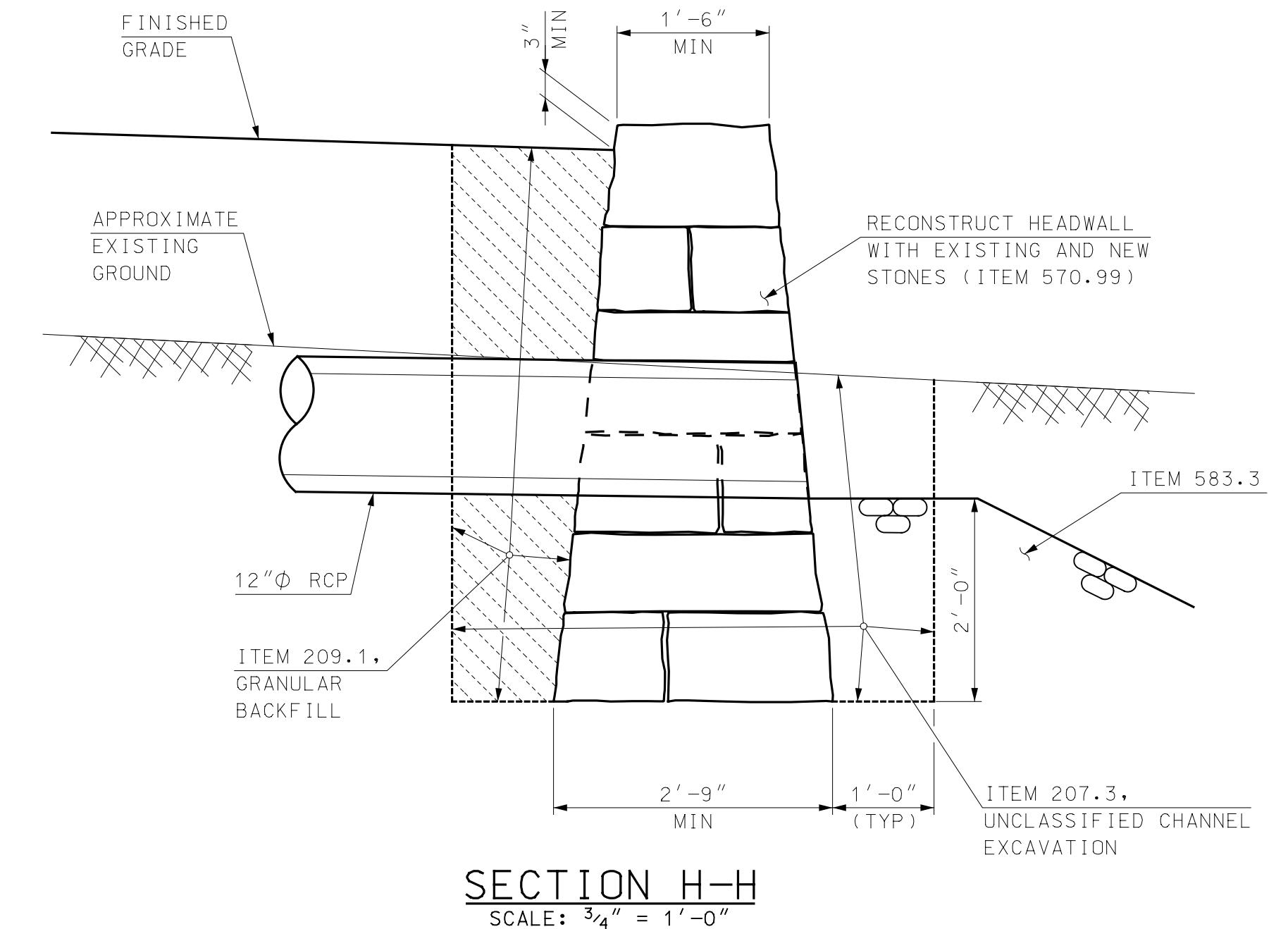
STONE COLOR AND TEXTURE SAMPLE PHOTO
NOT TO SCALE

NOT TO SCALE



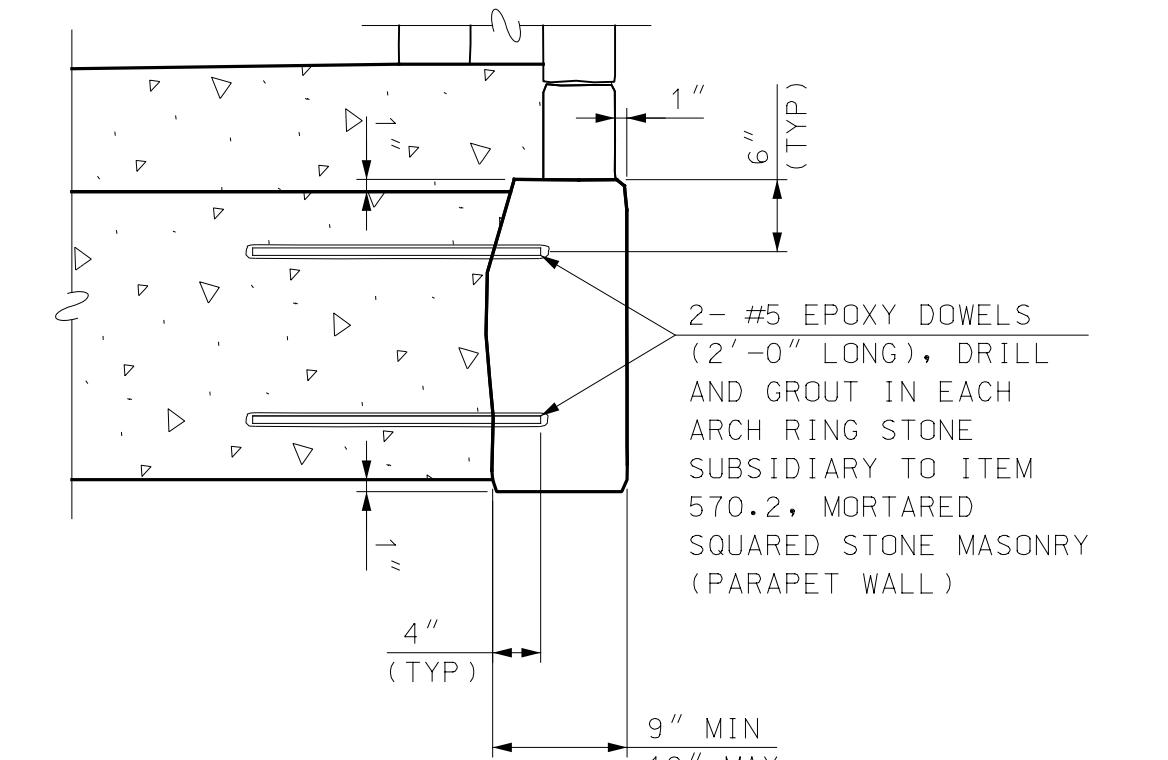
STONE FACING SAMPLE PHOTO
NOT TO SCALE

NOT TO SCALE



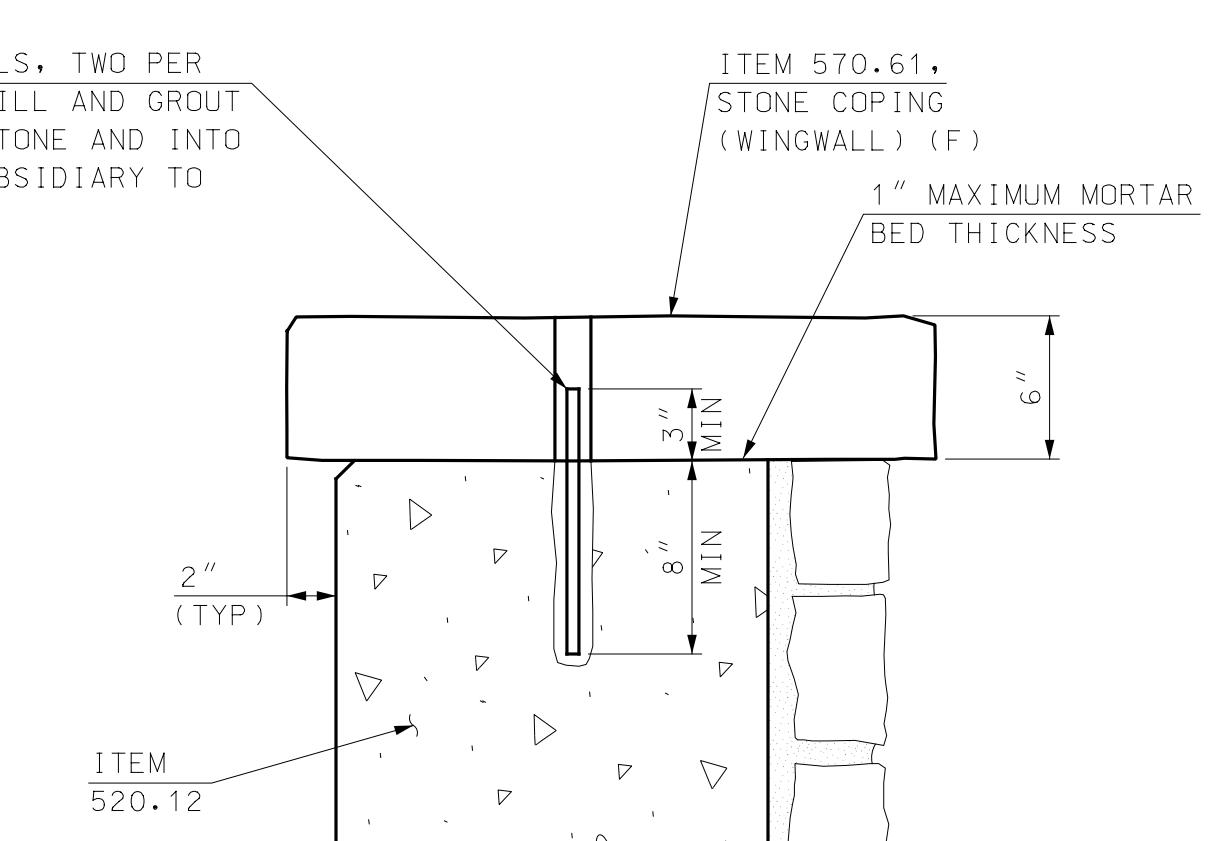
SECTION H-H

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



SECTION I-I

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



DETAIL C

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

SHEET NOTE

1. SEE MORTARED SQUARED STONE MASONRY NOTES ON SHEET 5 FOR NOTES THAT APPLY TO THE REQUIRED SHAPE, SIZE, TEXTURE, AND COLOR.

NHDOT BRIDGE NO. 115/097		REV.	DESCRIPTION	DRW. BY	CHKD BY	DATE
FILENAME 91810901MiscDtls	DESIGNED KMW					
MODEL NAME 91890101MiscDtls	DRAWN TAG					
SCALE AS SHOWN	CHECKED JCR					
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		DATE	AUGUST 2025			

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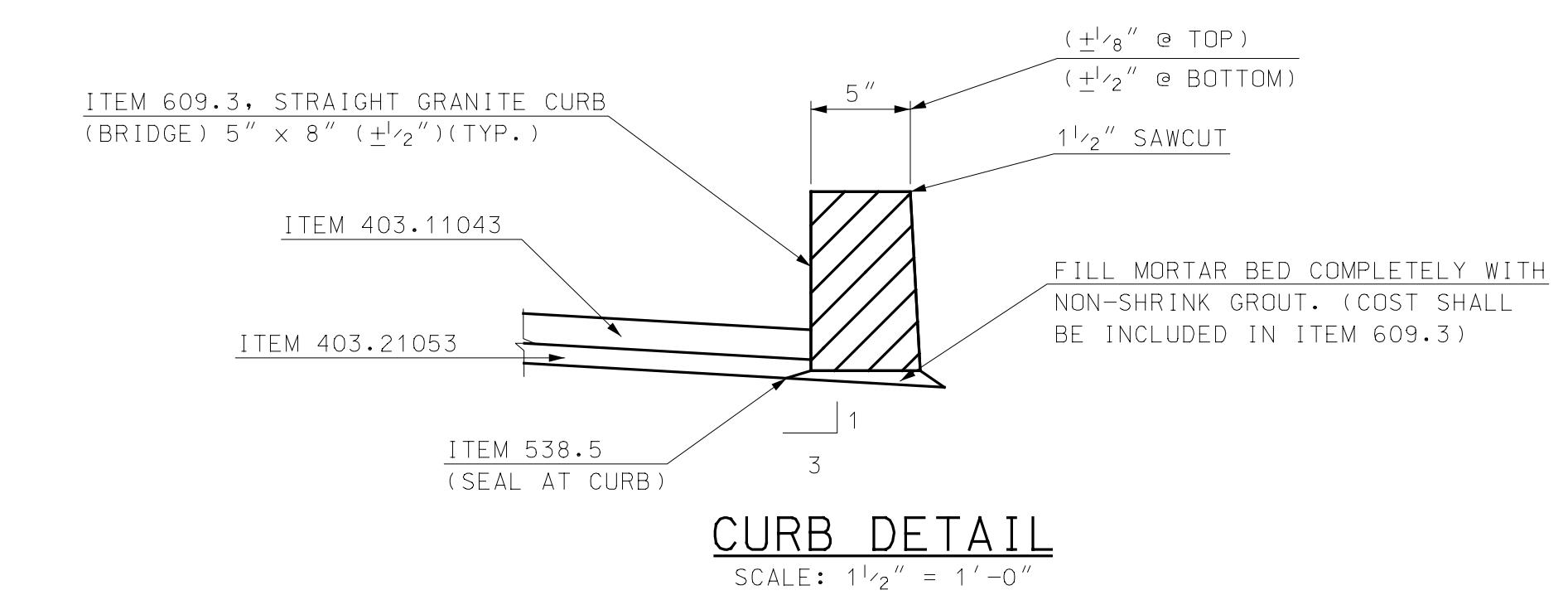
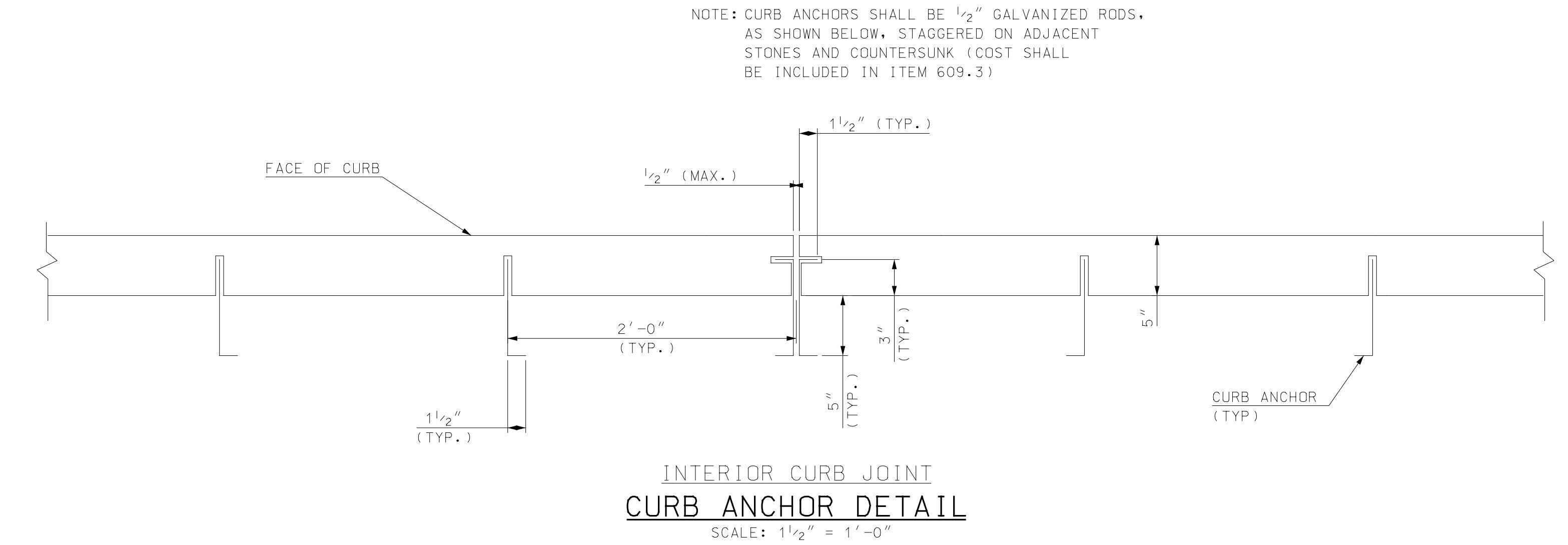
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SCATTERED DETAILS (1 OF 2)

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**TOWN OF SALEM
SALEM, NEW HAMPSHIRE**

BRIDGE STREET OVER SPICKET RIVER

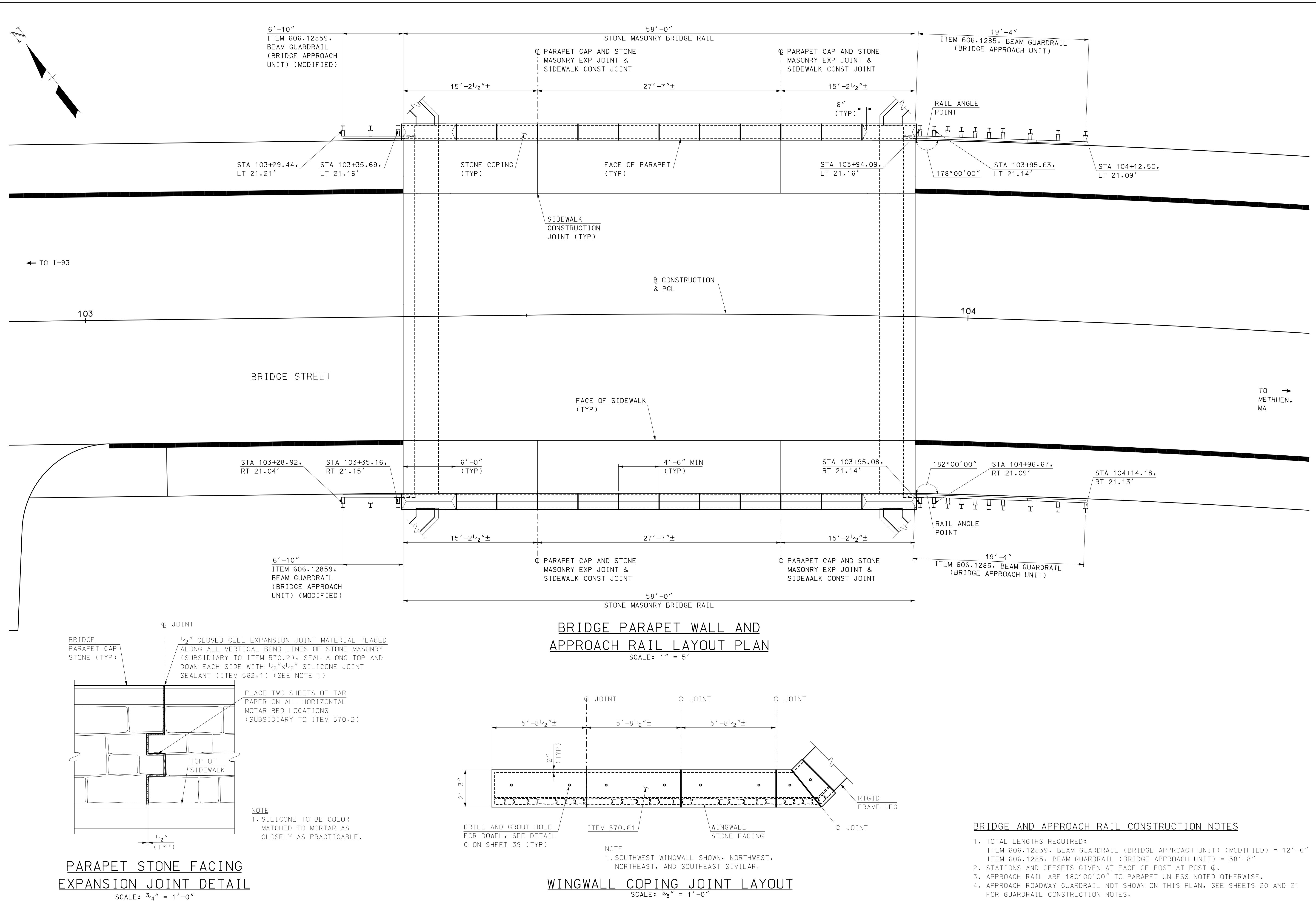
MISCELLANEOUS DETAILS (2 OF 2)

PROJECT NO. 19.918109.01

SHEET NO. 40

SHEET 40 OF 54

NH DOT BRIDGE NO. 115/097
REV. 1
DESCRIPTION
DRAWN BY KMW DATE
DESIGNED BY KMW
FILE NAME 9181091MiscDets
MODEL NAME 9181091MiscDets
DRAWN TAG
CHECKED JCR
SCALE AS SHOWN
DATE AUGUST 2025
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The logo for Hoyle Tanner is displayed vertically. At the bottom is a large, bold, black 'HT' monogram. Above the monogram, the word 'HOYLE' is written in a bold, black, sans-serif font, and above that, the word 'TANNER' is also written in a bold, black, sans-serif font, with a thin horizontal line separating the two words.

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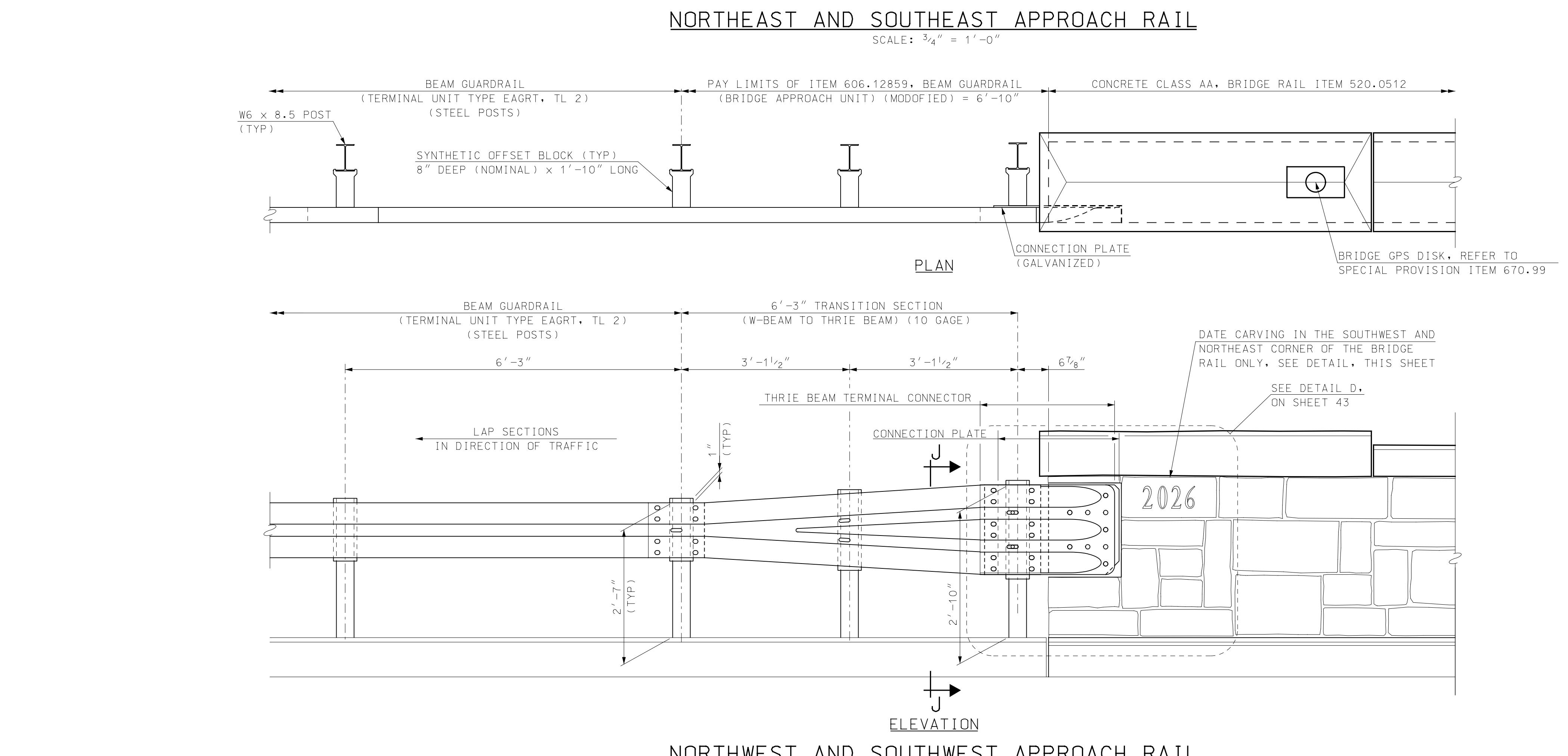
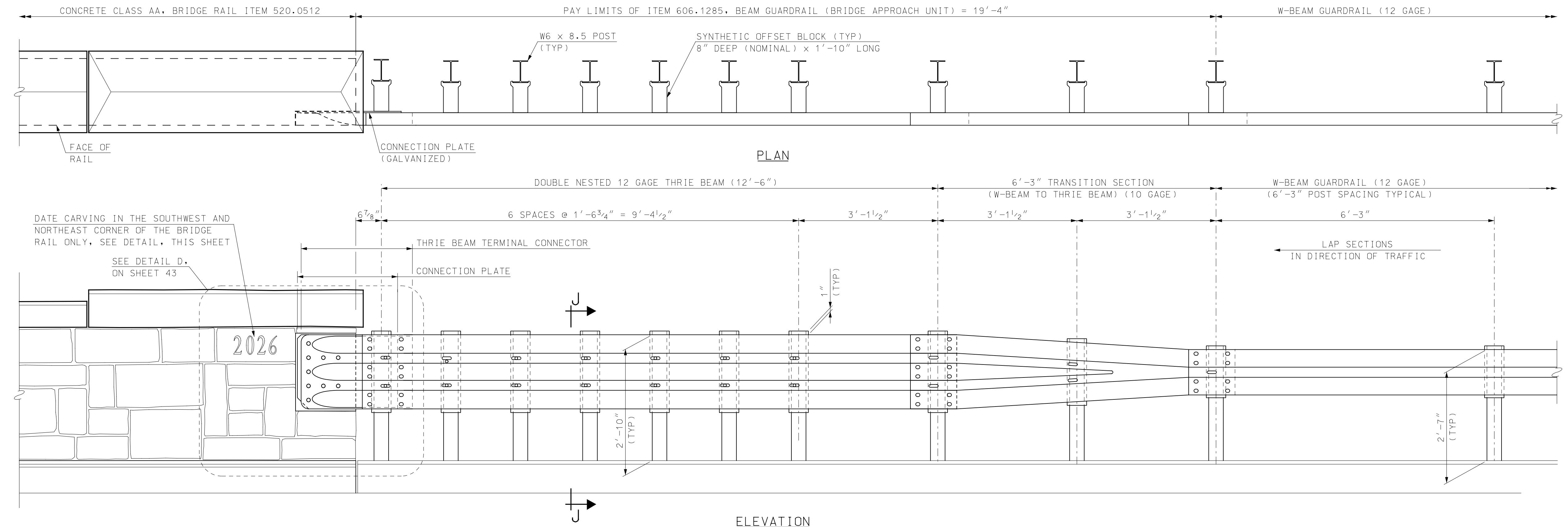
**TOWN OF SALEM
SALEM, NEW HAMPSHIRE**

BRIDGE PARAPET WALL AND APPROACH RAIL LAYOUT PLAN

PROJECT NO. 10-018100-01

41

HEET 41 OF 54



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 SECTION J-J, SEE SHEET 43.

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TOWN OF SALEM
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BRIDGE STREET OVER SPICKET RIVER

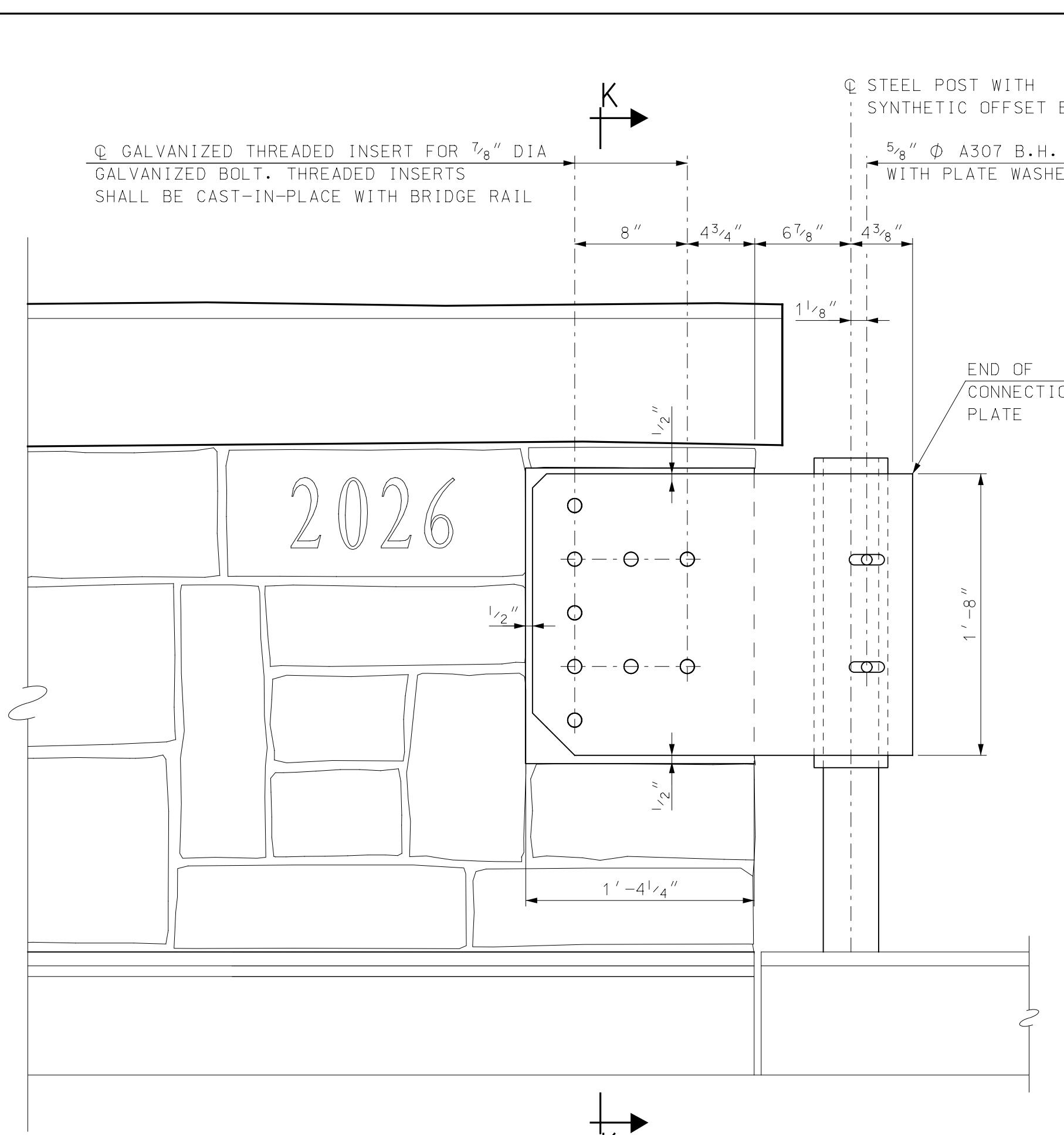
BRIDGE AND APPROACH RAIL DETAILS (1 OF 2)

PROJECT NO. 19.918109.01

SHEET NO.

42

SHEET 42 OF 54



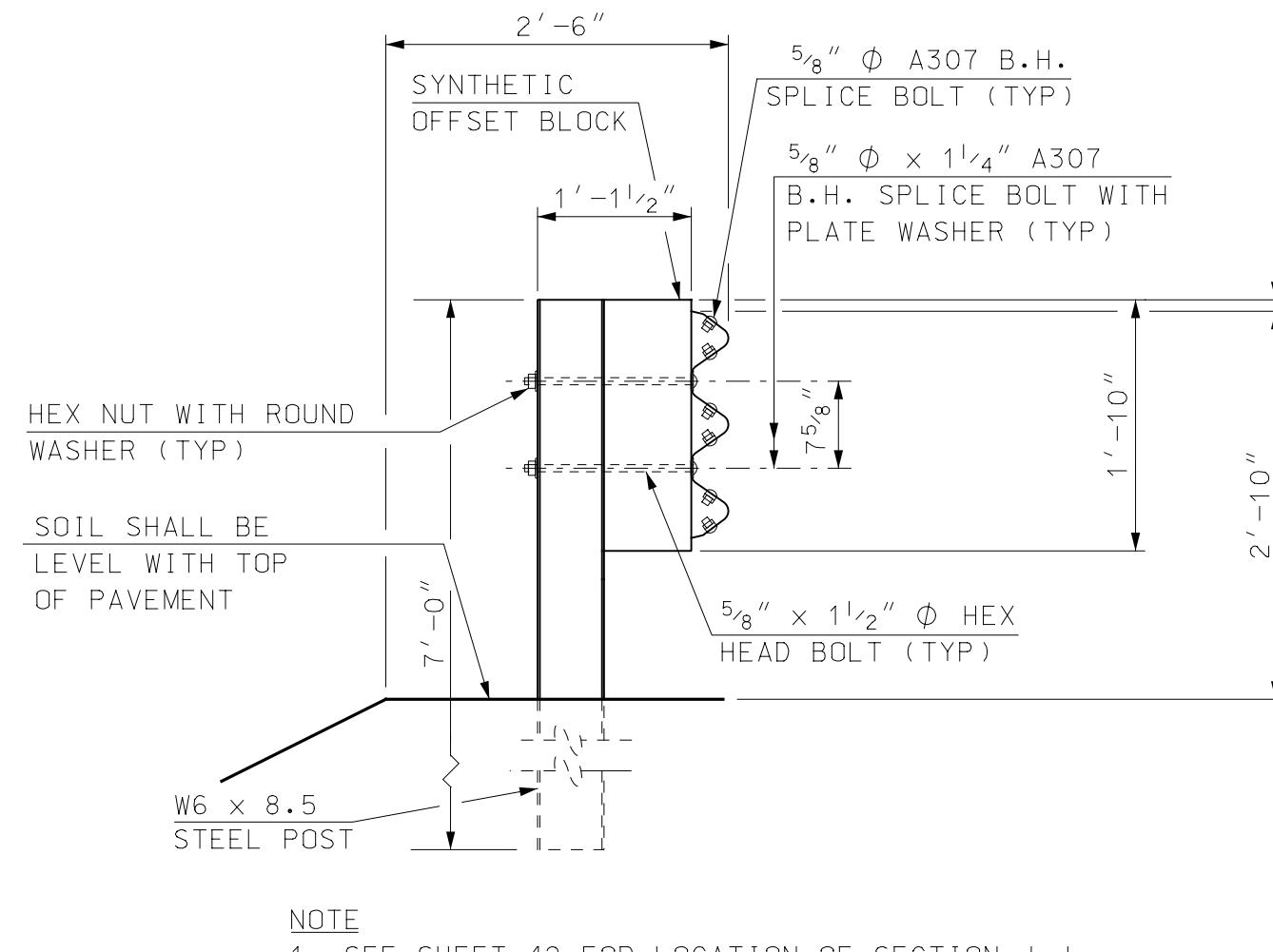
NOTE
1. THRIE-BEAM TERMINAL CONNECTOR AND
TRANSITION SECTION NOT SHOWN FOR CLARITY.

DETAIL D

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

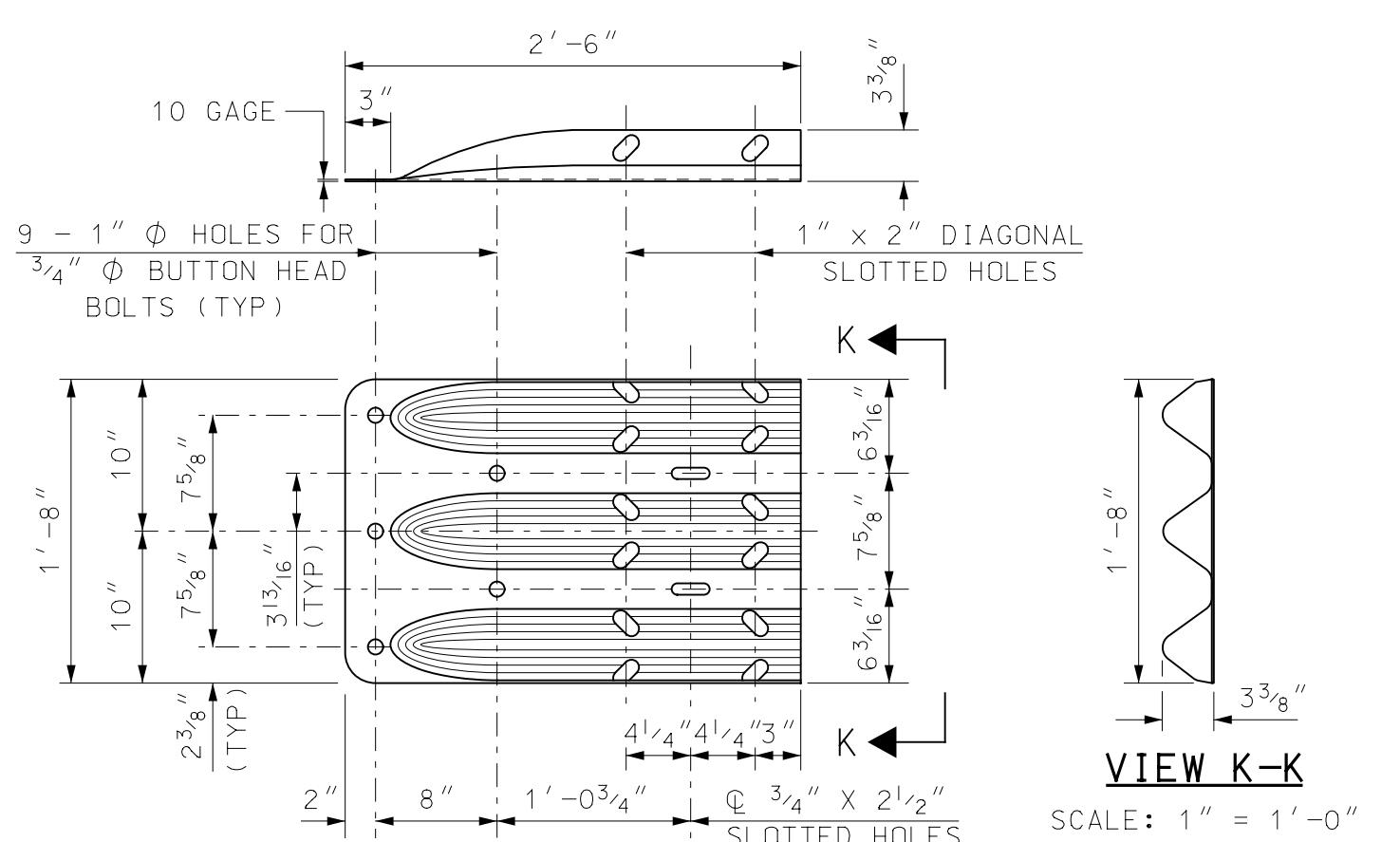
SECTION K-K

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



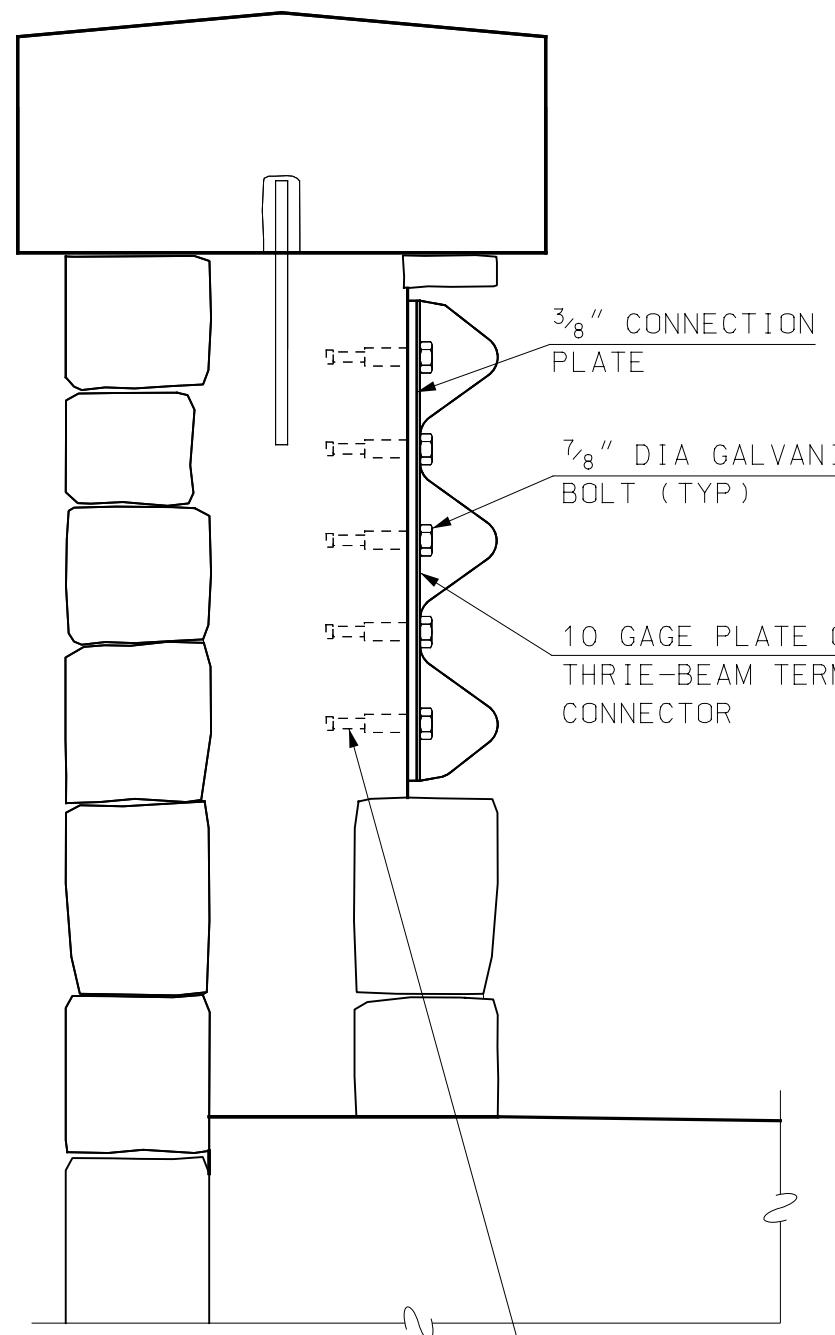
SECTION J-J (POST RAIL ASSEMBLY)

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

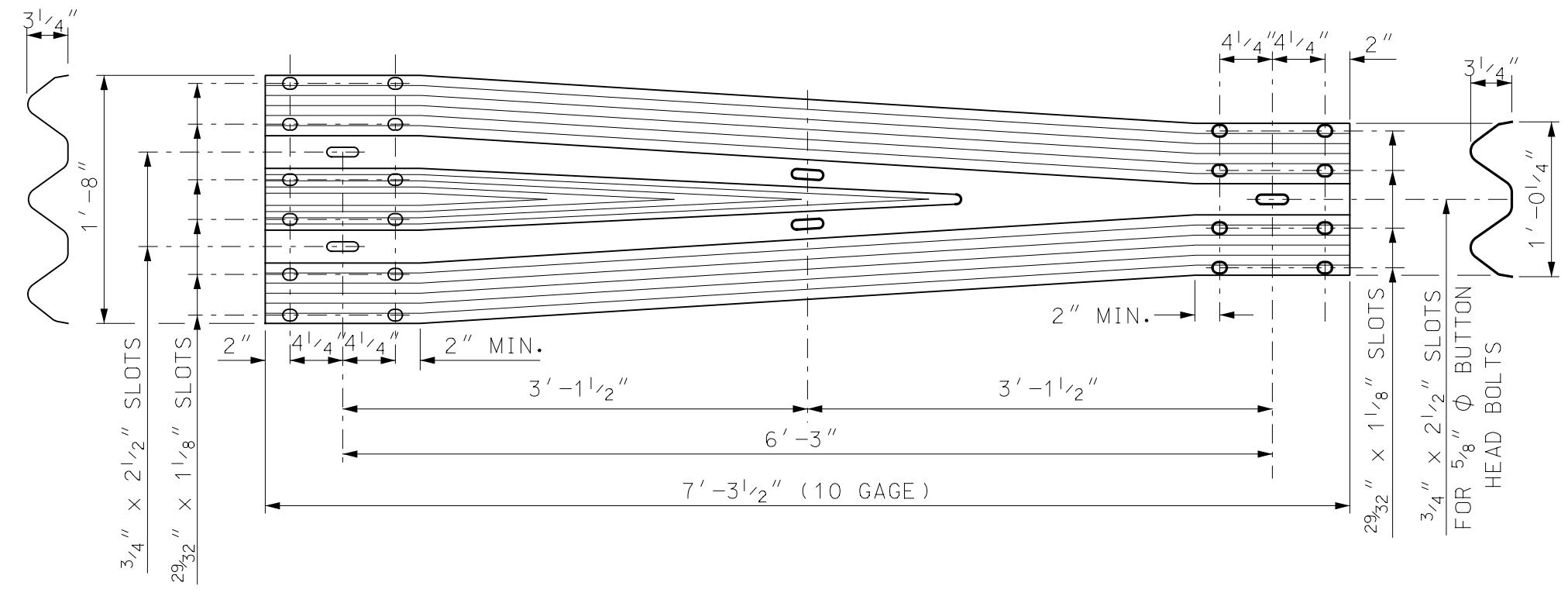


THRIE-BEAM TERMINAL CONNECTOR

SCALE: 1" = 1' - 0"



THREADED INSERTS SHALL BE CAPABLE OF
DEVELOPING AN ULTIMATE SHEAR
CAPACITY OF 20 KIPS PER 7/8" DIA
GALVANIZED BOLT. INSERT SHALL BE
GALVANIZED PER ASTM A153 AND
CAST-IN-PLACE WITH BRIDGE RAIL (TYP)



THRIE-BEAM TO W-BEAM TRANSITION SECTION

SCALE: 1" = 1' - 0"

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TOWN OF SALEM
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BRIDGE STREET OVER SPICKET RIVER

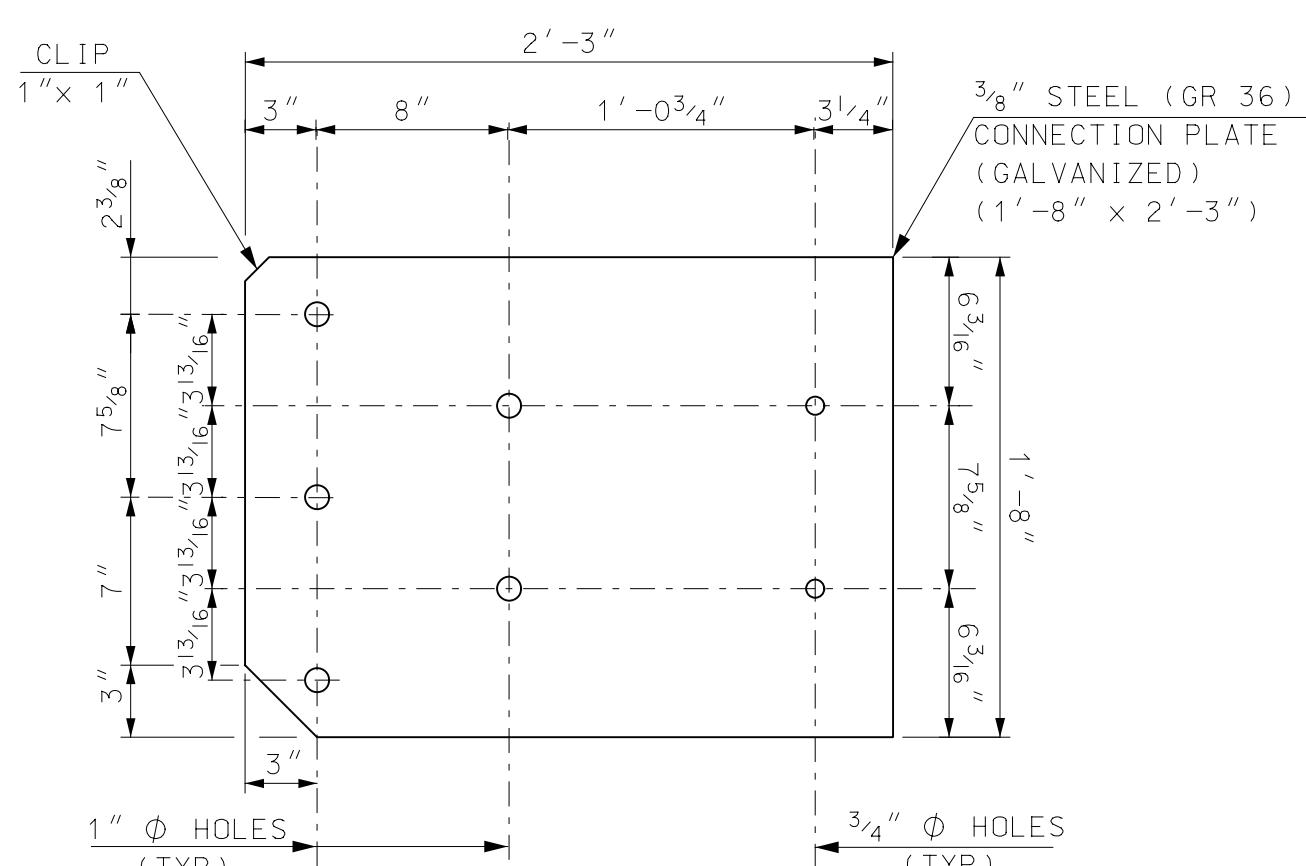
BRIDGE AND APPROACH RAIL DETAILS (2 OF 2)

PROJECT NO. 19.918109.01

SHEET NO.

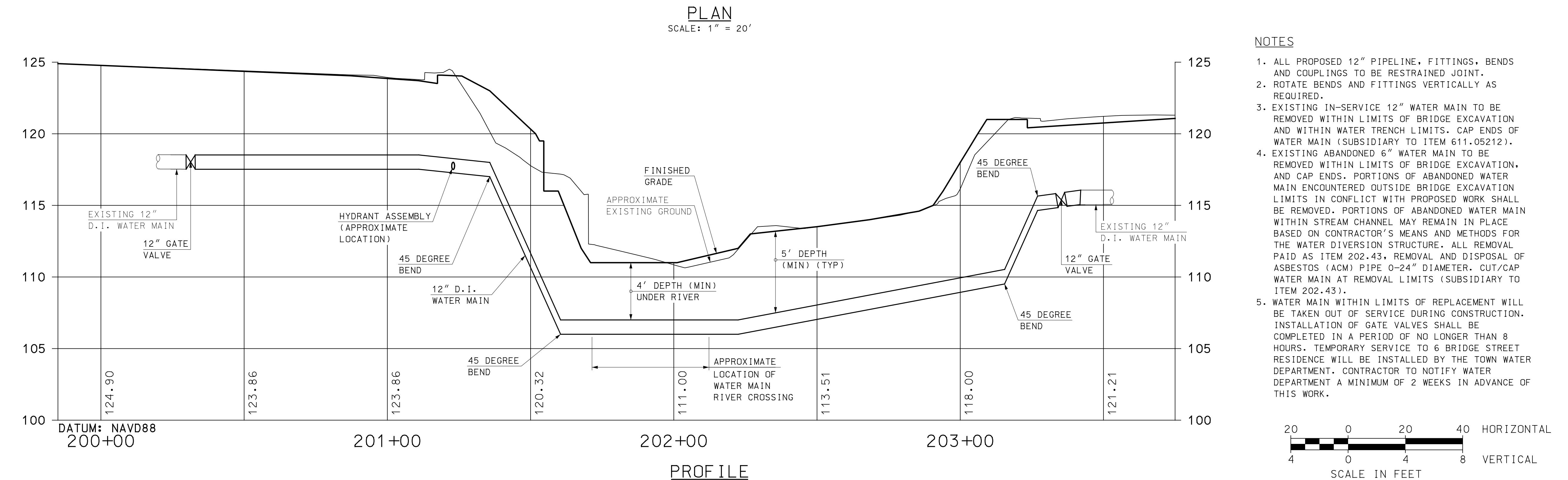
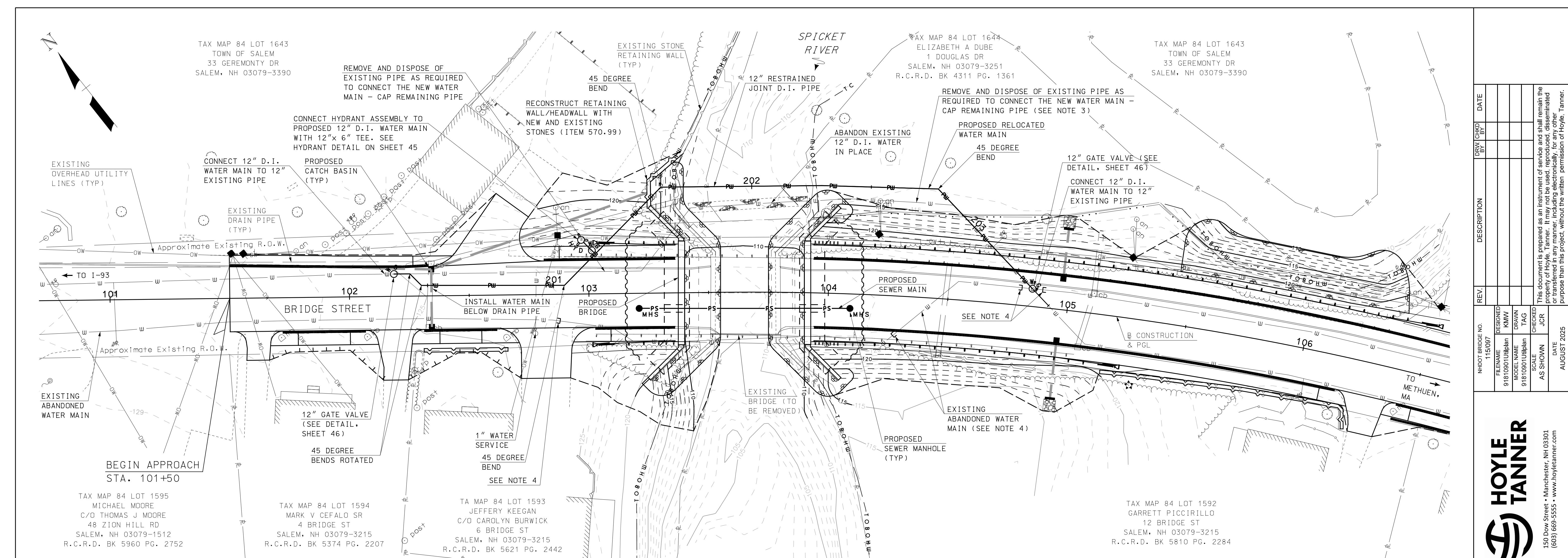
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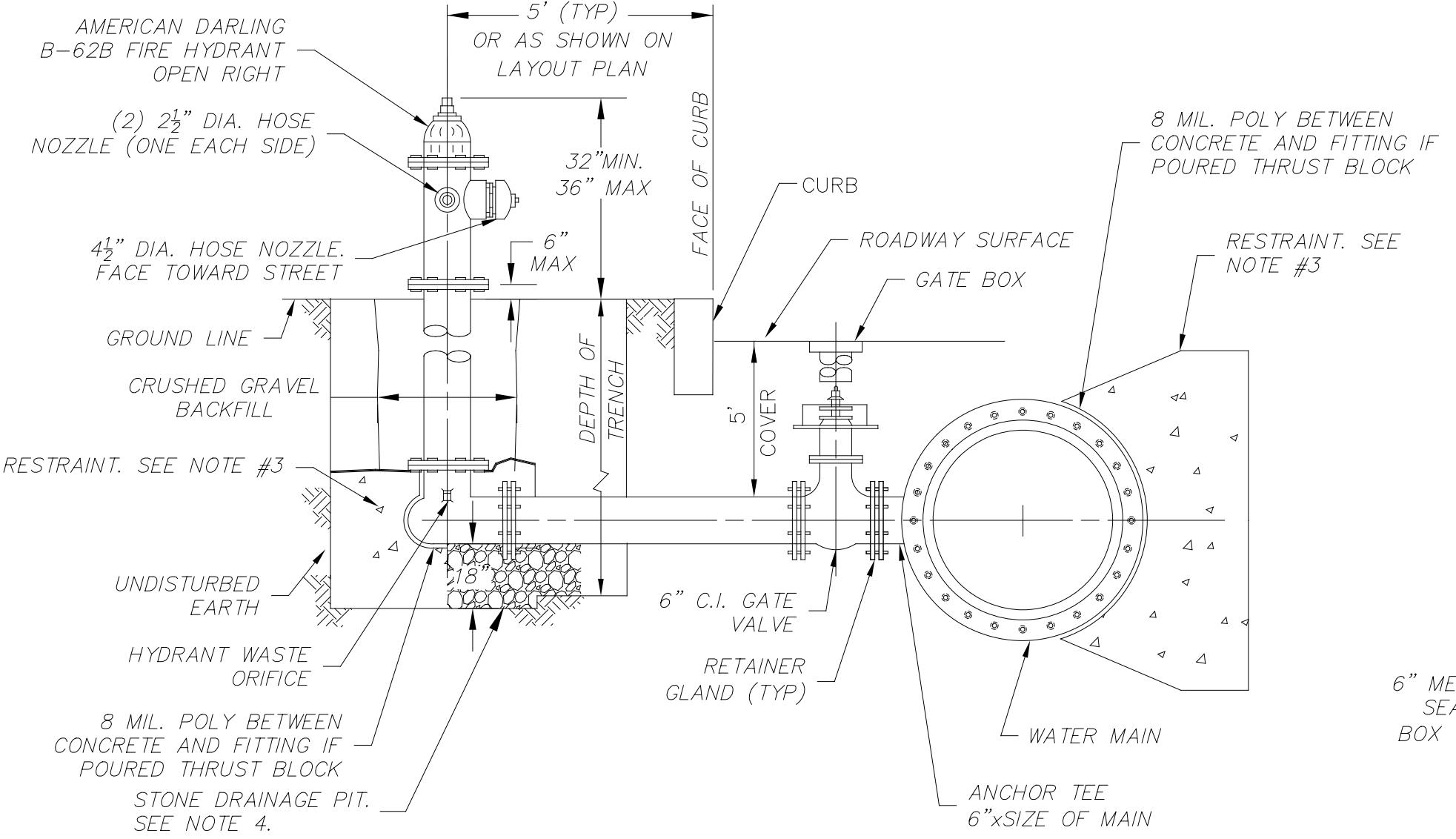
SHEET 43 OF 54



CONNECTION PLATE

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

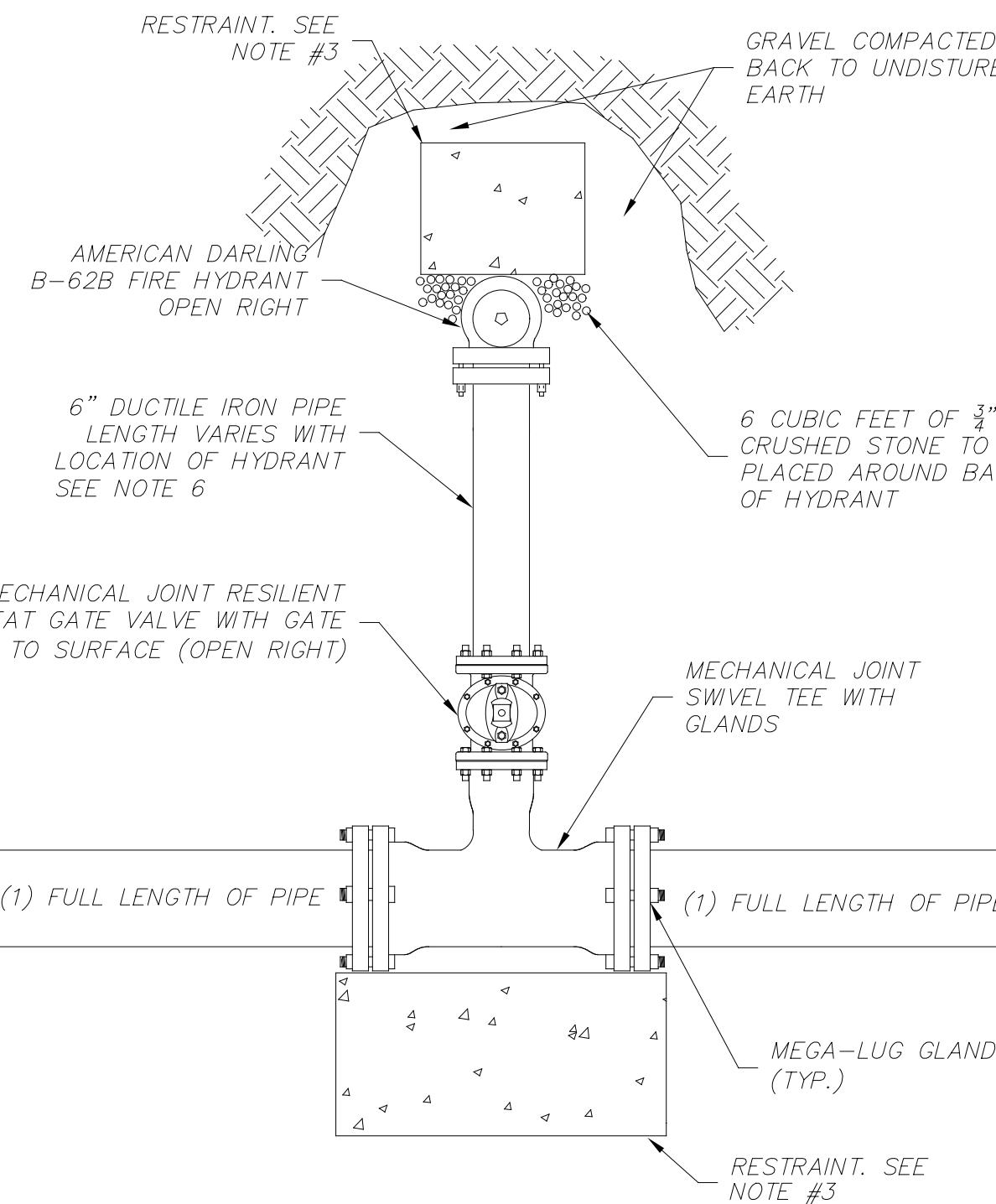




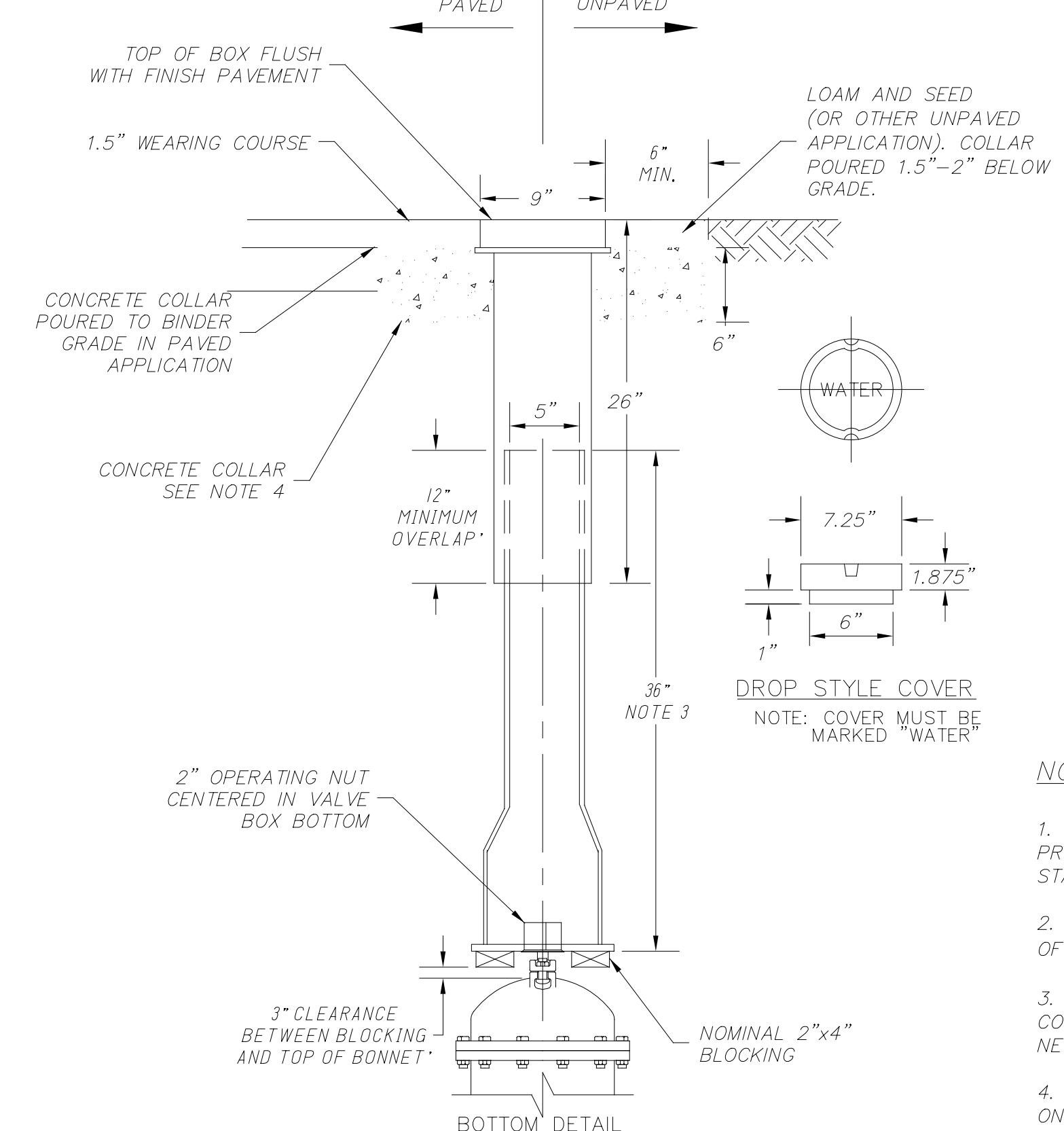
NOTES:

1. ALL MATERIAL AND INSTALLATION PROCEDURES WILL CONFORM TO TOWN OF SALEM TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTHS OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. PROVIDE MIN 2'X2'X4' PRECAST OR POURED CONCRETE THRUST BLOCK AGAINST UNDISTURBED EARTH - SIZE TO BE BASED ON SIZE OF FITTING AND PRESSURE IN WATER MAIN. WHERE PRECAST BLOCKS ARE USED ADDITIONAL CONCRETE MUST STILL BE POURED AT THE FITTING (MIN 2 80LB BAGS) TO PROVIDE AN EVEN BEARING SURFACE OVER THE ENTIRE CONTACT AREA. USE 8 MIL POLY BETWEEN POURED CONCRETE AND FITTINGS. ROCKS SHALL NOT BE USED AS THRUST BLOCKS.
4. 6 CUBIC FEET MIN. OF 3/4" CRUSHED STONE TO BE PLACED AROUND BASE OF HYDRANT TO 12" OVER DRAIN PORT. COVER WITH FABRIC. DEPTH OF PIT SHALL BE DICTATED BY THE PERVERIOUSNESS OF SURROUNDING SOIL. SEE SPECIFICATIONS.
5. ALL JOINTS SHALL BE RESTRAINED.
6. HYDRANT BRANCH PIPE SHALL BE A SINGLE PIECE WITH NO JOINTS UNLESS SPECIFICALLY AUTHORIZED BY THE SALEM WATER DEPARTMENT. SERVICE STUBS GREATER THAN 18-FEET SHALL HAVE RESTRAINED JOINTS.

Typical Hydrant Installation



Typical Gate Box Installation



NOTES:

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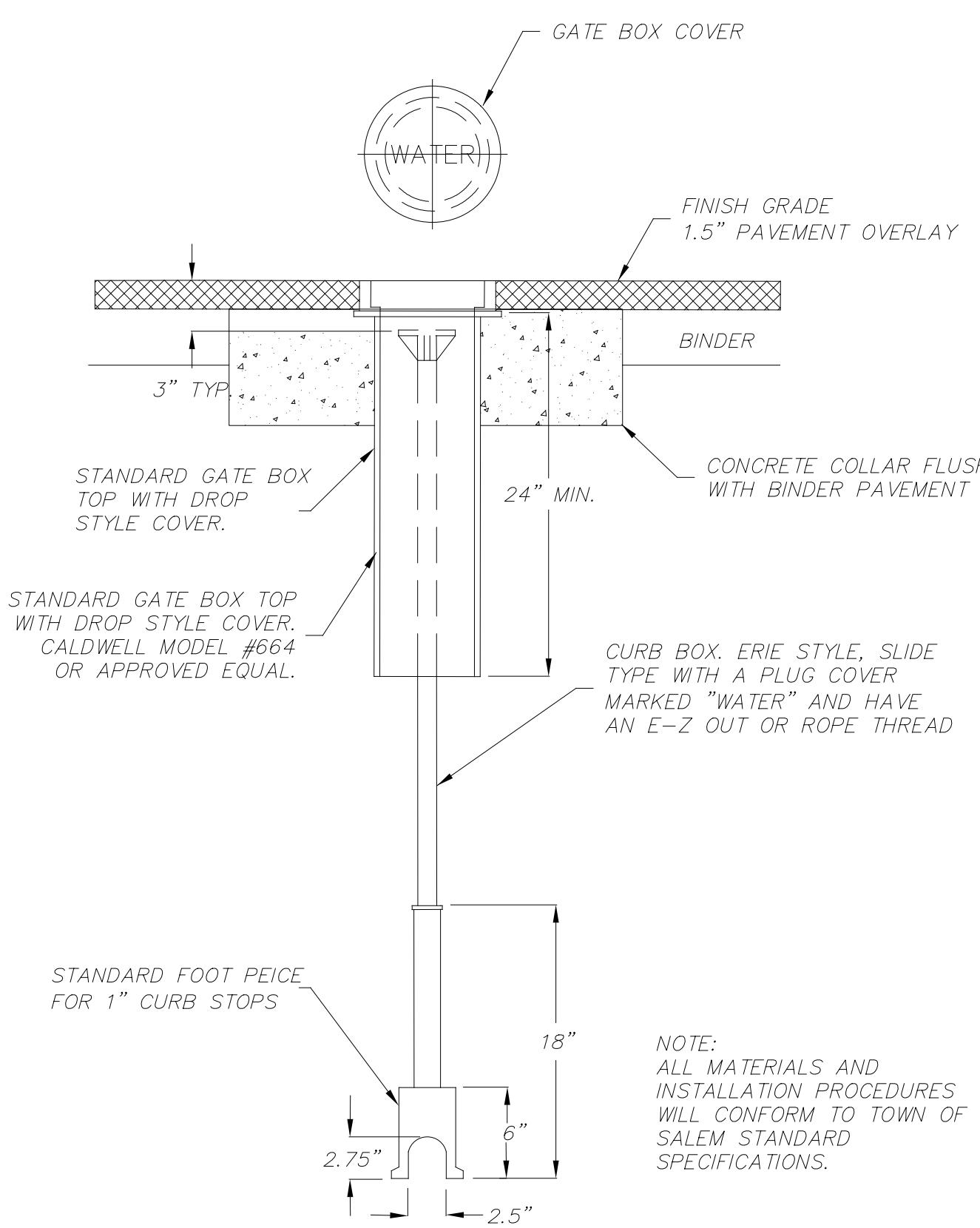
TOWN OF SALEM
SALEM, NEW HAMPSHIRE
BRIDGE STREET OVER SPICKET RIVER
WATER MAIN DETAILS (1 OF 3)

PROJECT NO. 19.918109.01

SHEET NO.

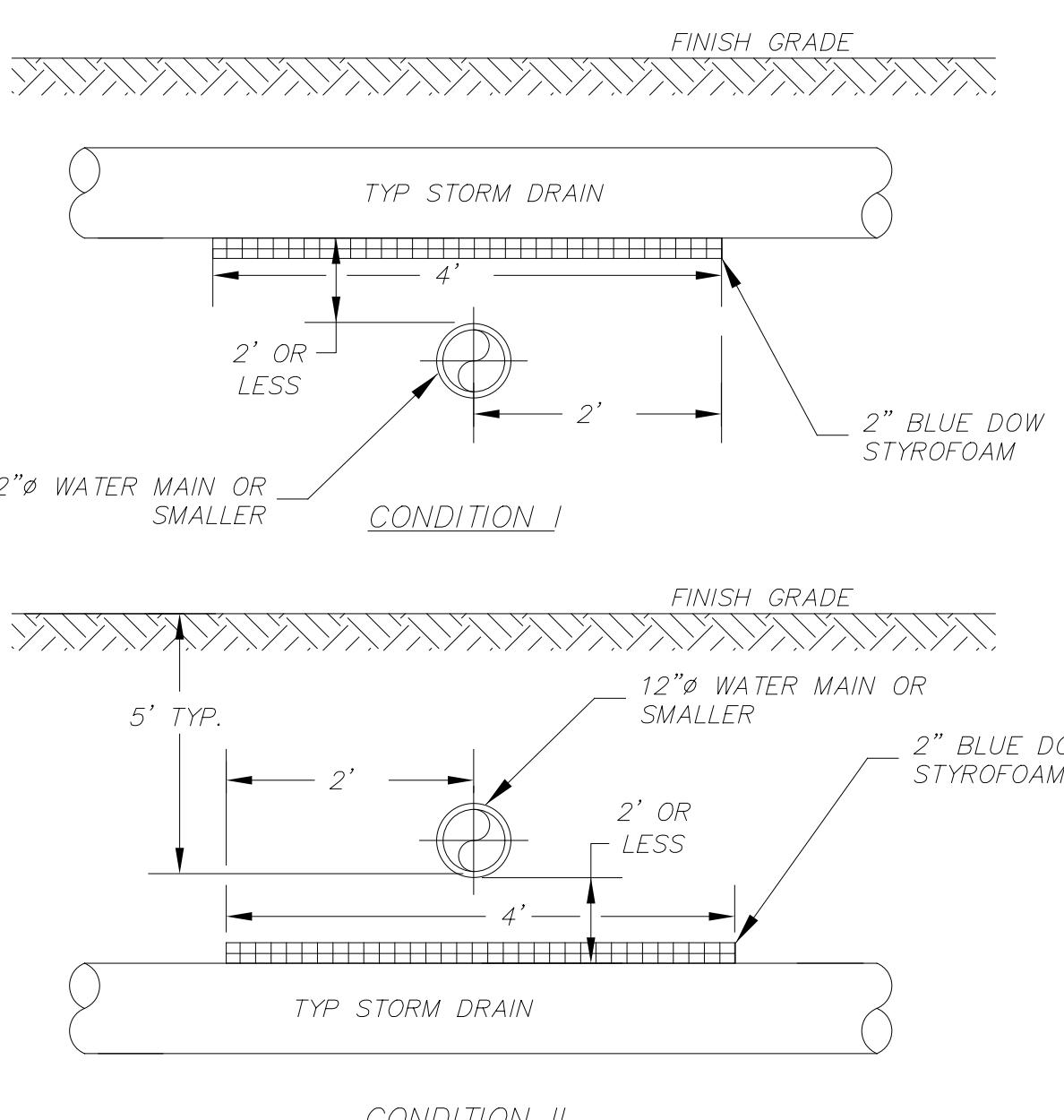
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SHEET 45 OF 54



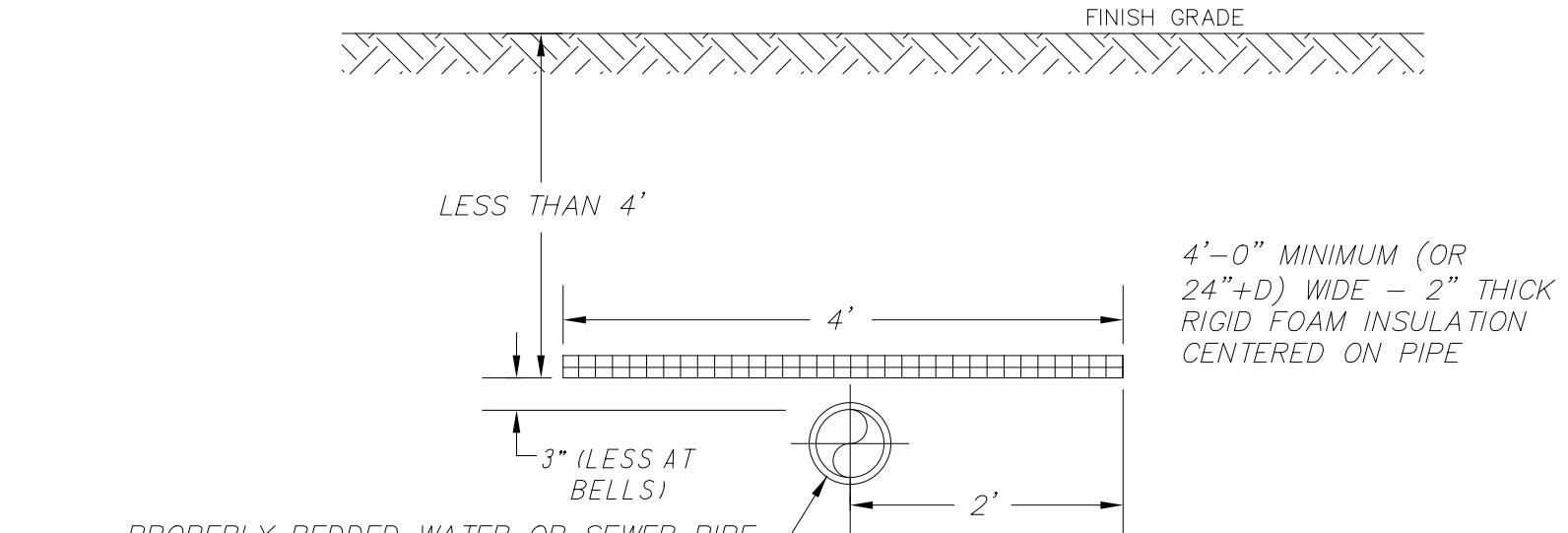
Typical Water Service Box in Paved Areas

N.T.S.



Water Main Crossing Detail

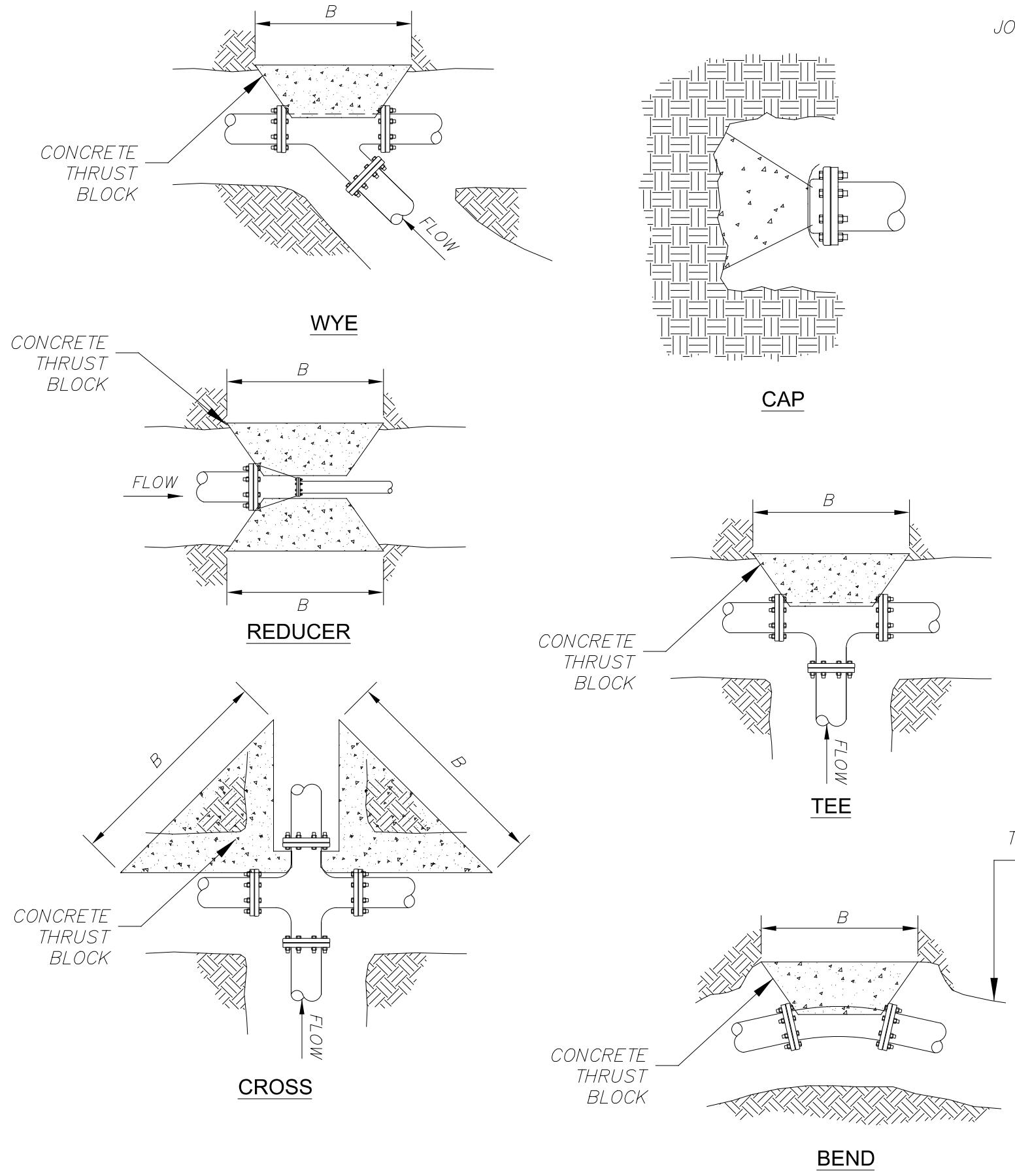
NO SCALE



NOTES:

Water or Sewer Main Insulation Detail

NO SCALE

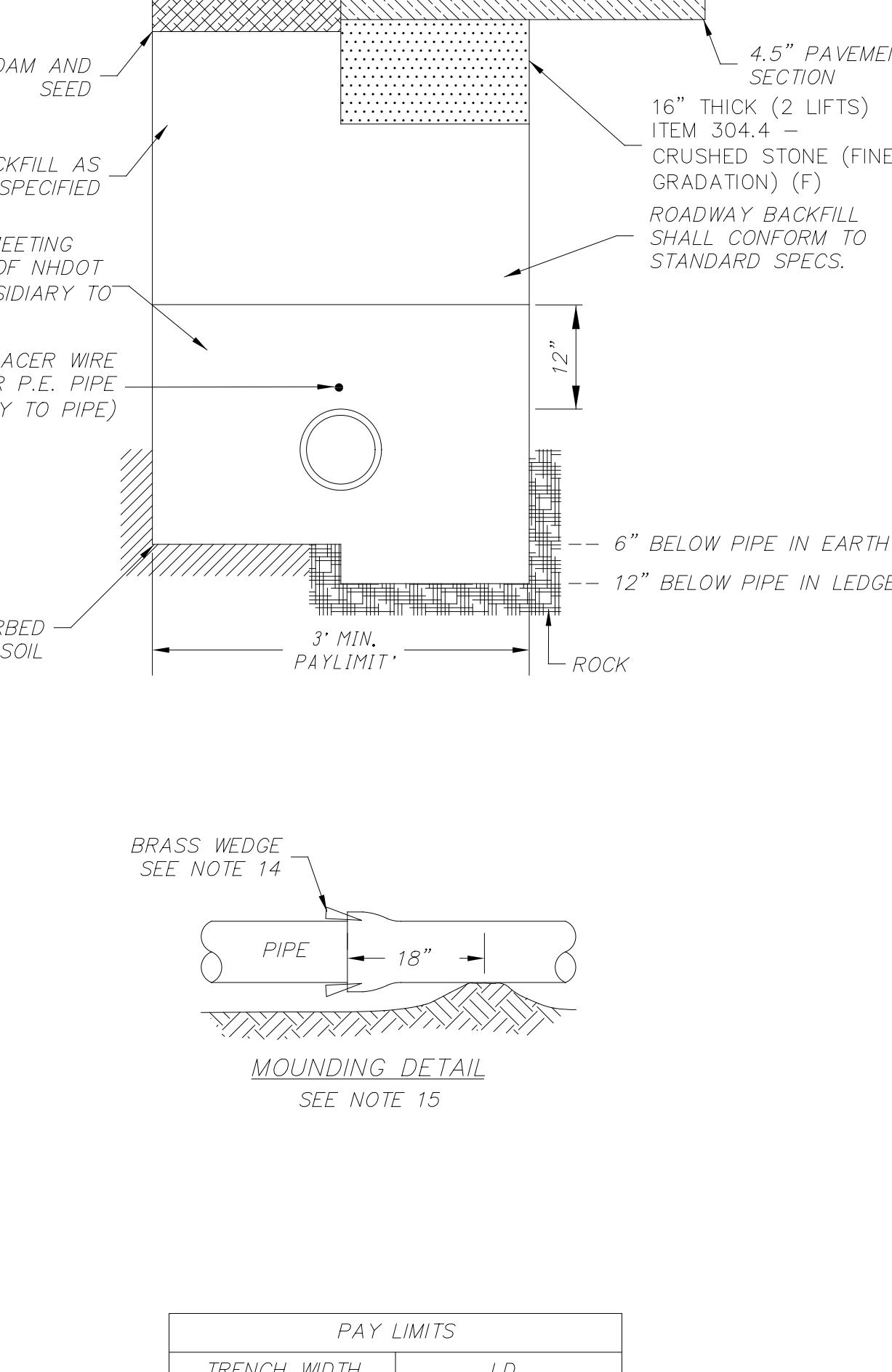
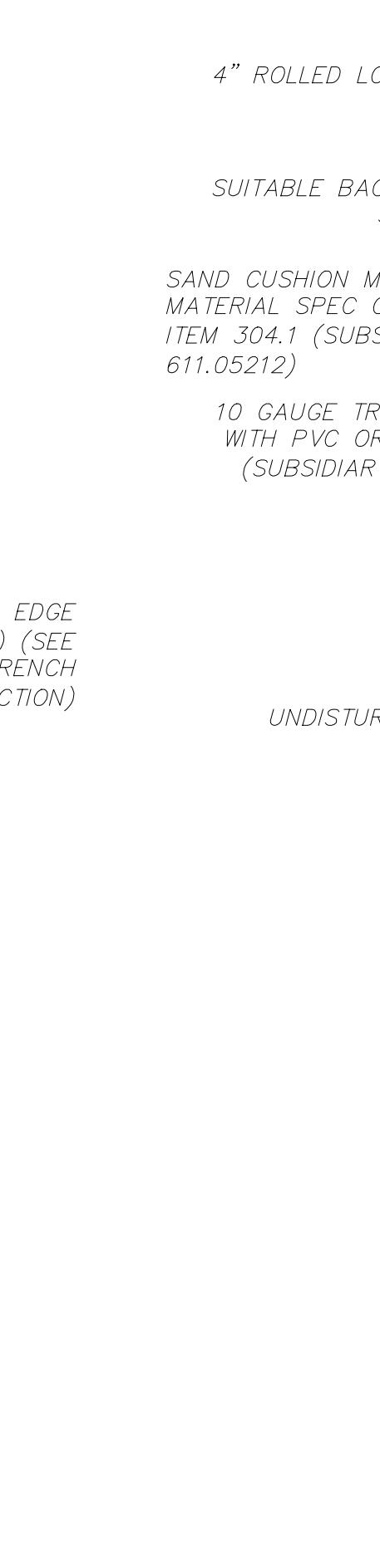
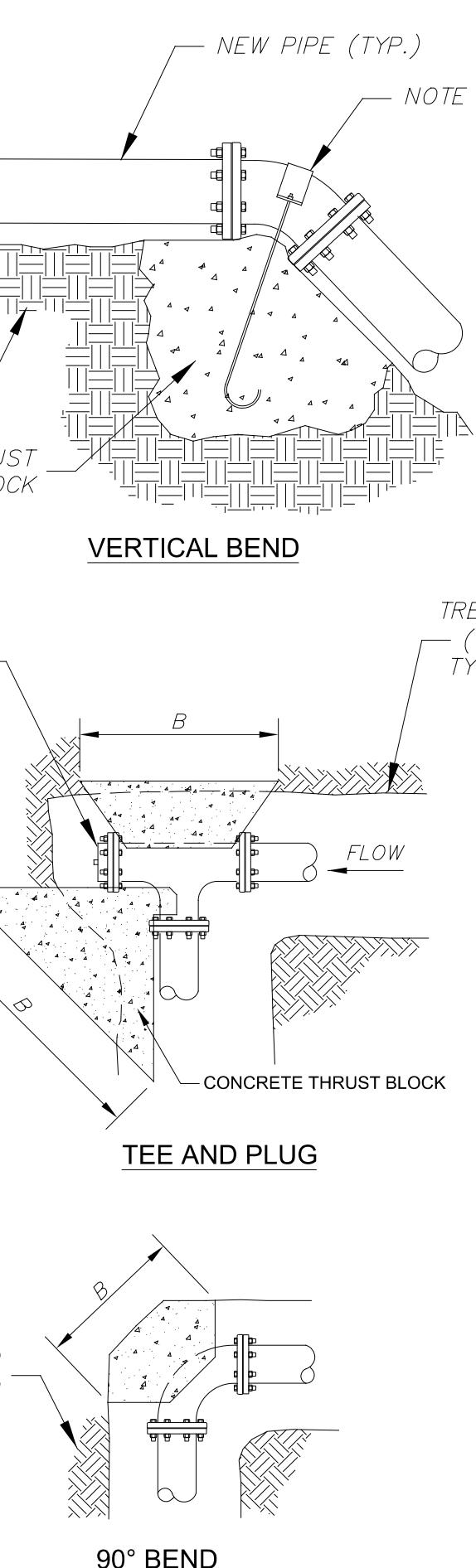


NOTES:

1. 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'.
2. 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.
3. USE OF JOINT RESTRAINT SYSTEMS SHALL NOT ELIMINATE THRUST BLOCK REQUIREMENTS (WHERE POSSIBLE).
4. 8 MIL POLY SHALL BE PLACED BETWEEN CONCRETE AND FITTING IF THRUST BLOCK IS POURED CONCRETE.
5. 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.
6. CONCRETE FOR THRUST BLOCKING SHALL BE CLASS B AS DEFINED IN NHDOT SECTION 520.
7. WHERE VERTICAL RESTRAINT IS USED ANCHOR RODS SHALL BE 1/2" GALVANIZED STEEL WRAPPED AROUND THE PIPE AND EMBEDDED IN THE CONCRETE.

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"
6"	22 1/2° BEND OR LESS	2'-0"	2'-0"	2'-0"
	TEE BRANCH	2'-0"	2'-0"	2'-0"
	90° BEND	2'-6"	2'-0"	2'-6"
8"	45° BEND	2'-0"	2'-0"	2'-0"
	22 1/2° BEND OR LESS	2'-0"	2'-0"	2'-6"
	PLUG OR CAP	2'-0"	2'-0"	2'-0"
10"	TEE BRANCH	2'-6"	2'-0"	2'-6"
	90° BEND	3'-0"	2'-0"	3'-0"
	45° BEND	2'-6"	2'-0"	2'-6"
12"	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"
20"	90° BEND	5'-0"	3'-0"	5'-0"
	45° BEND	4'-6"	3'-0"	4'-6"
	22 1/2° BEND OR LESS	3'-0"	2'-0"	3'-0"



WATER TRENCH NOTES:

1. REFERENCE TOWN OF SALEM STANDARD SPECIFICATIONS FOR METHOD OF MEASUREMENT AND PAYMENT.
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), 3" BASE (3/4" MIX)). PAVEMENT SHALL CONFORM TO NHDOT ITEMS 403.11023 AND 403.11043.
7. DAMAGED OR OTHERWISE DEFICIENT PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
8. INSPECTION: FOLLOWING INSTALLATION WATER LINES SHALL BE CLEANED AND VISUALLY INSPECTED AND TESTED ACCORDING TO TOWN OF SALEM SPECIFICATIONS.
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. UNSUITABLE REMOVAL AND REPLACEMENT WITH GRANULAR MATERIAL WITHIN TRENCH PAY LIMITS IS SUBSIDIARY.
10. MATERIAL SHALL BE REPLACED IN KIND OF 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 COMPAKTED.
12. COMPACTION: BACKFILL OF THE TRENCHES SHALL BE COMPAKTED 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. 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.
15. 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)
16. MOUNDING 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.

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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

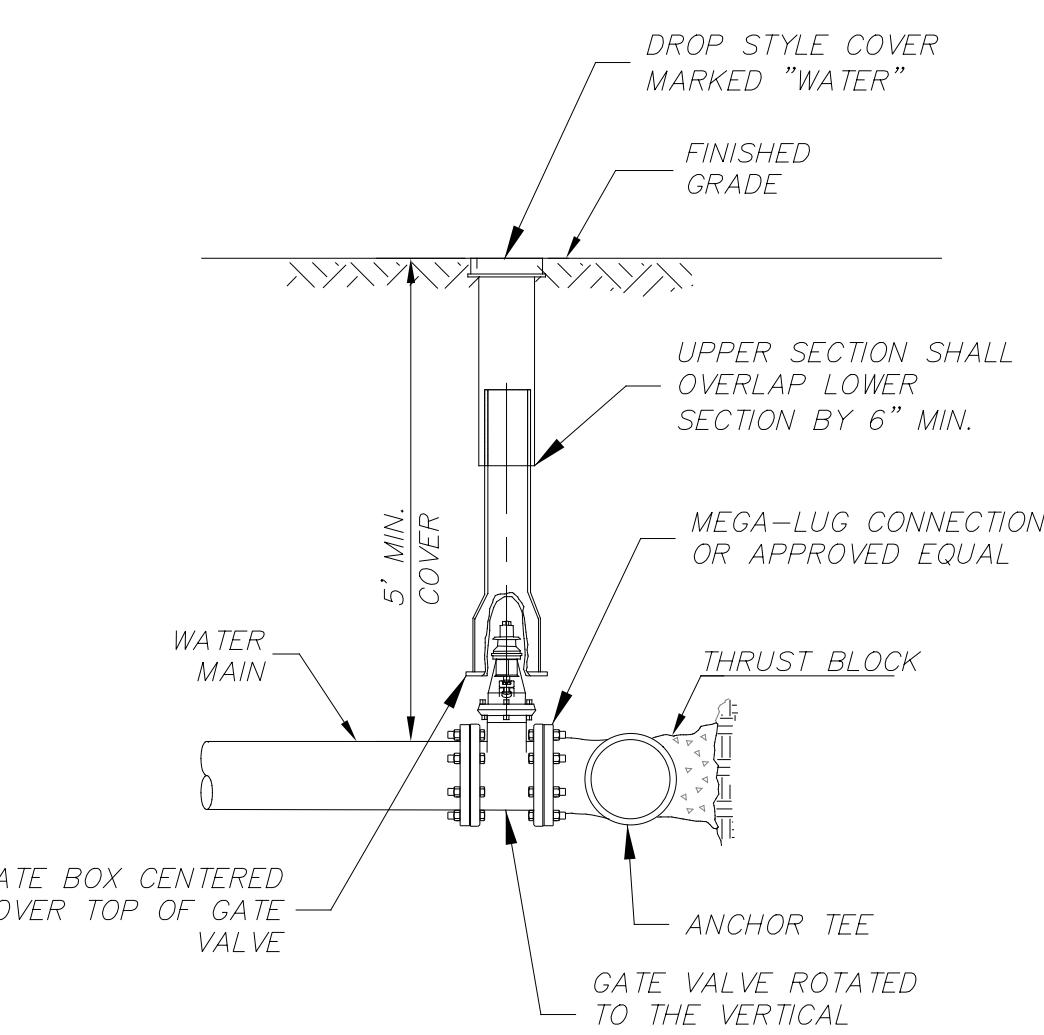
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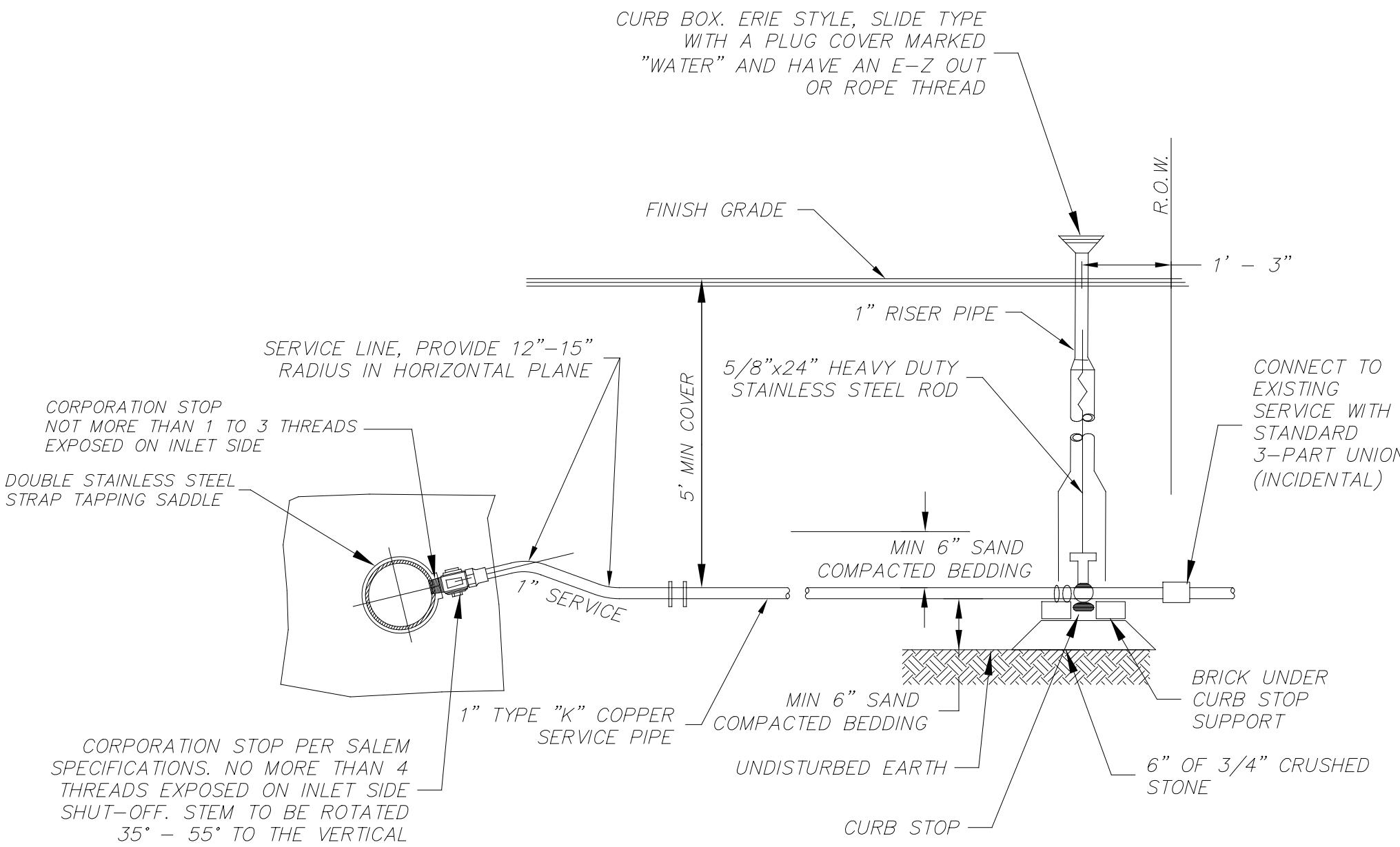
SHEET 46 OF 54

LIMITS OF RESTRAINED JOINTS		
FITTING	MIN. LINEAR FEET TO* BE RESTRAINED (DIST FROM FITTING)	
8" x 8" TEE	46	
8" x 6" TEE	28	
8" x 45° HOR. BEND	28	
8" x 22.5° HOR. BEND	12	
8" x 11.25° HOR. BEND	6	
8" x 22.5° VER. BEND UP	12	
6" x 22.5° VER. BEND UP	9	
8" x 22.5° VER. BEND DOWN	25	
6" x 22.5° VER. BEND DOWN	19	
6" x 45° HOR. BEND	22	
6" x 22.5° HOR. BEND	9	
6" x 11.25° HOR. BEND	4	
8" x 6" REDUCER	25	
8" PLUG/CAP	59	
6" PLUG/CAP	46	

Typical Water Trench Detail



Buried Gate Valve Detail

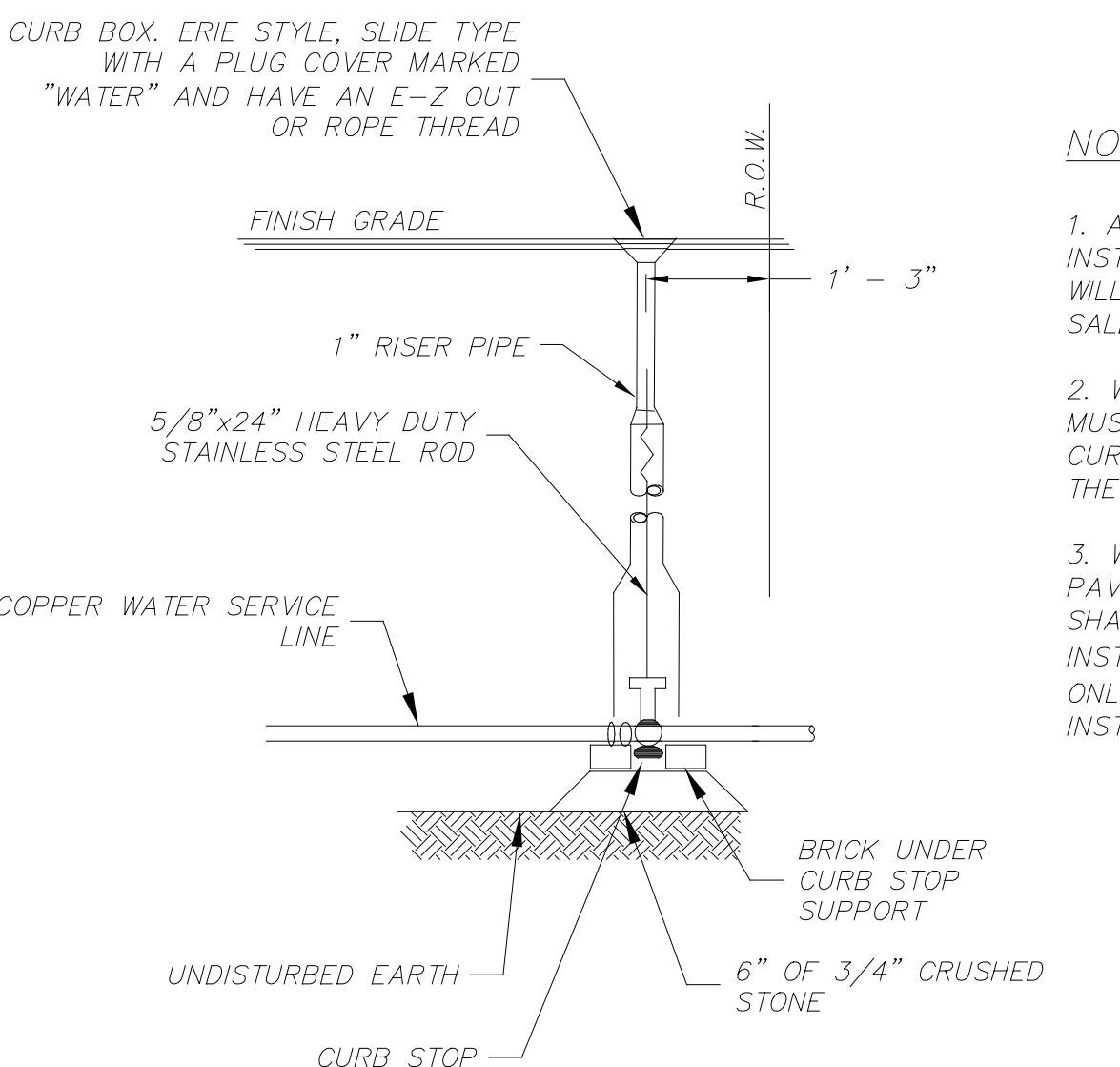


Typical Salem 1in Water Service Installation

NO SCALE

NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TOWN OF SALEM SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. BEDDING MATERIAL SHALL BE COURSE SAND CONFORMING TO NHDOT 304.1 MATERIAL SPECIFICATION.
4. IF WATER MAIN IS PVC OR TRANSITE, A DOUBLE STAINLESS STEEL STRAP TAPPING SADDLE MUST BE USED TO CONNECT THE CORPORATION TO THE WATER MAIN.
5. WATER SERVICE BOXES MUST BE LOCATED BEHIND 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.



Typical Curb Box Installation

NO SCALE

NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TOWN OF SALEM SPECIFICATIONS.
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.

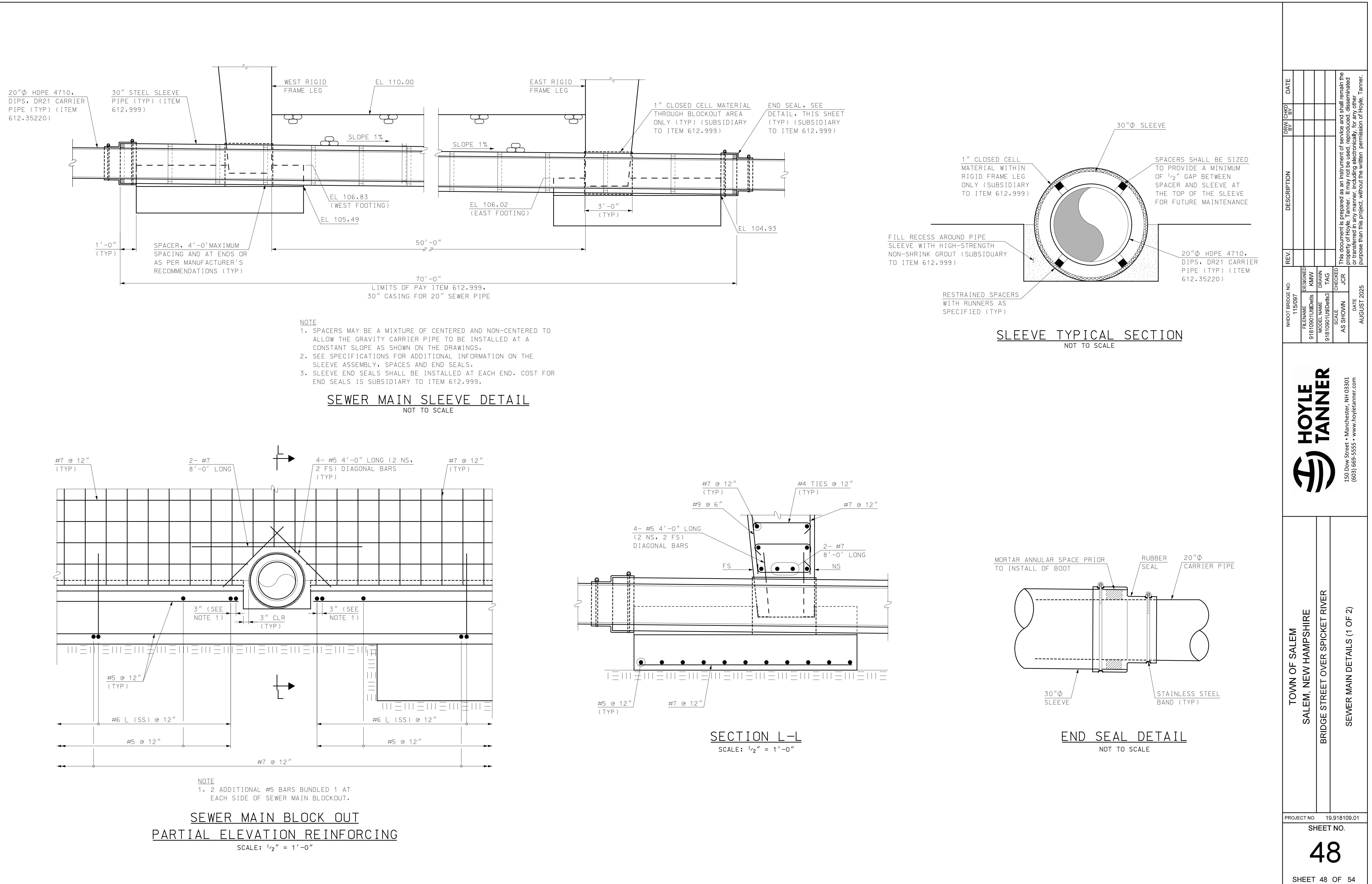
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AS SHOWN				
JCR				
DATE				
AUGUST 2025				

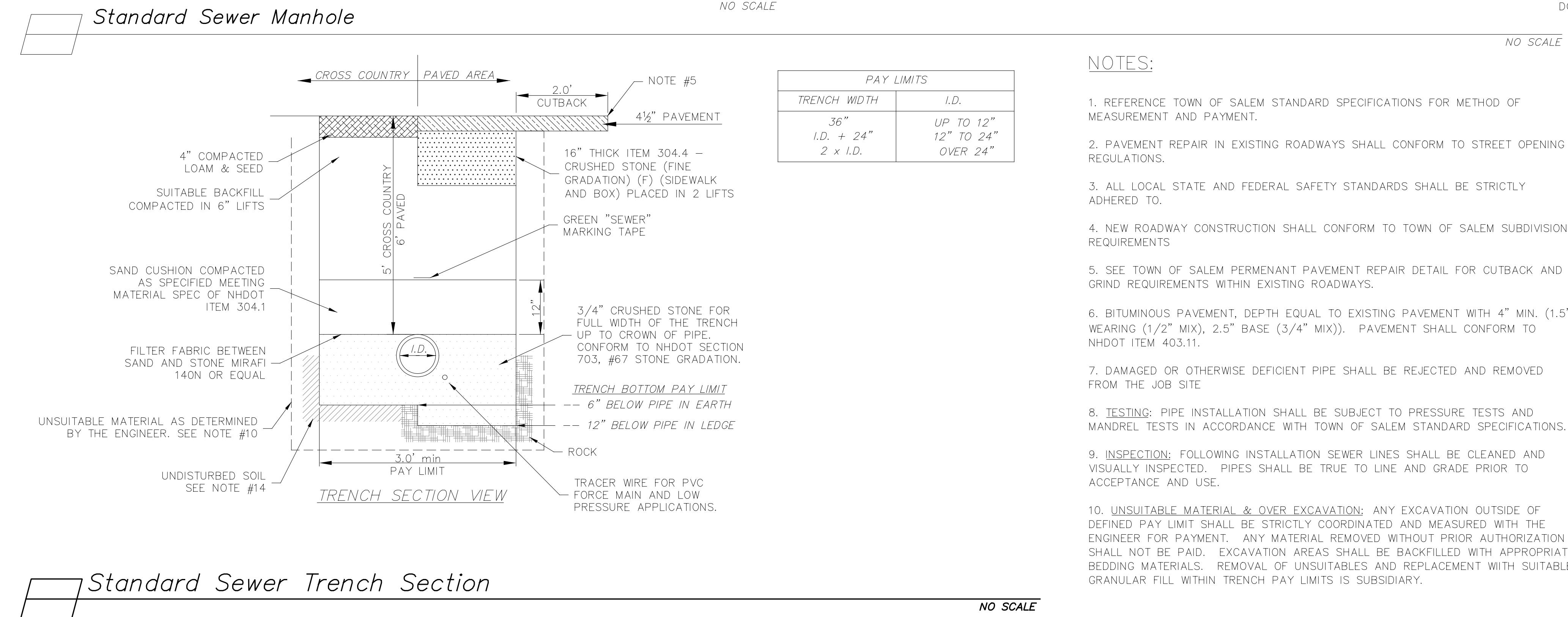
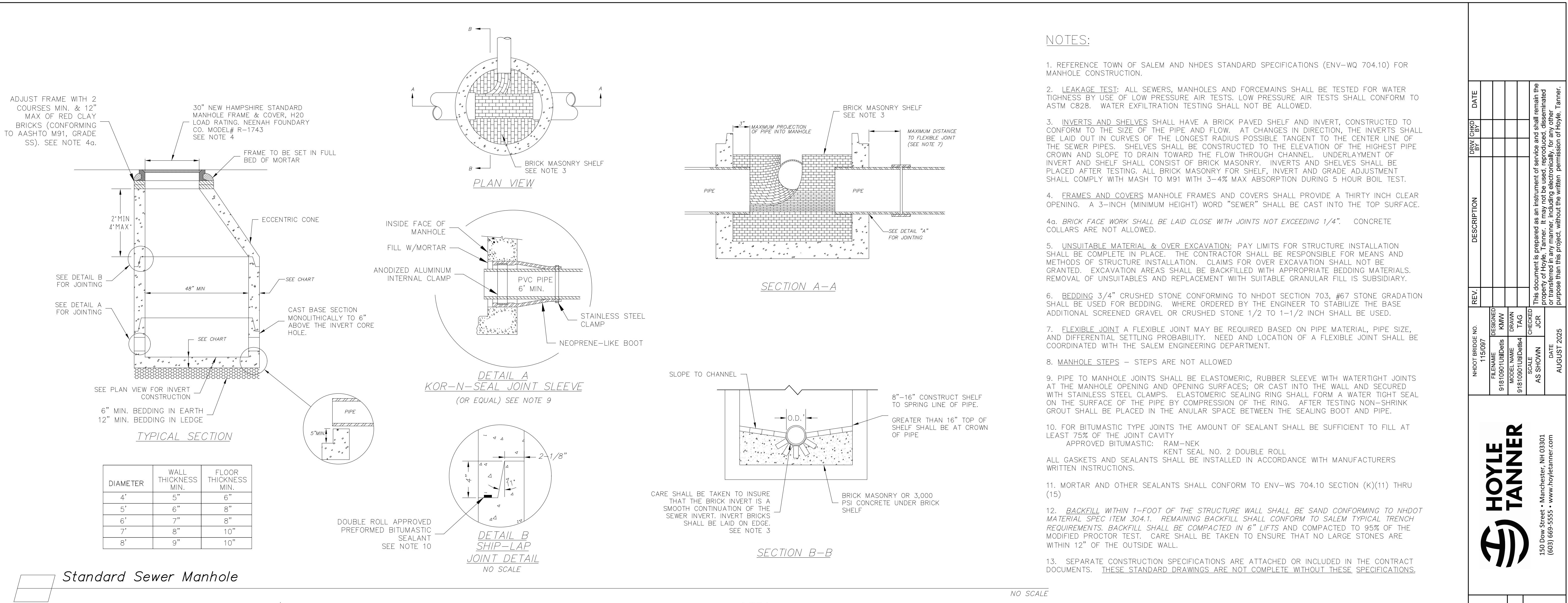
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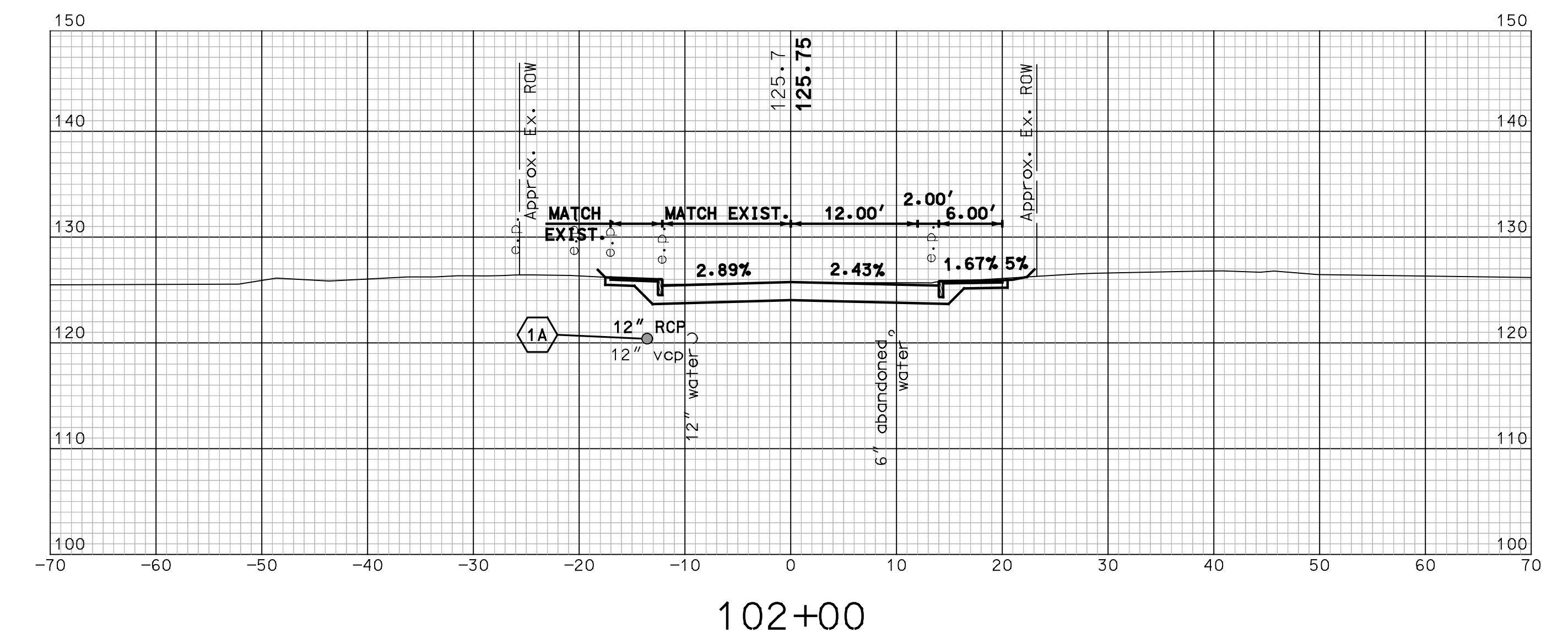
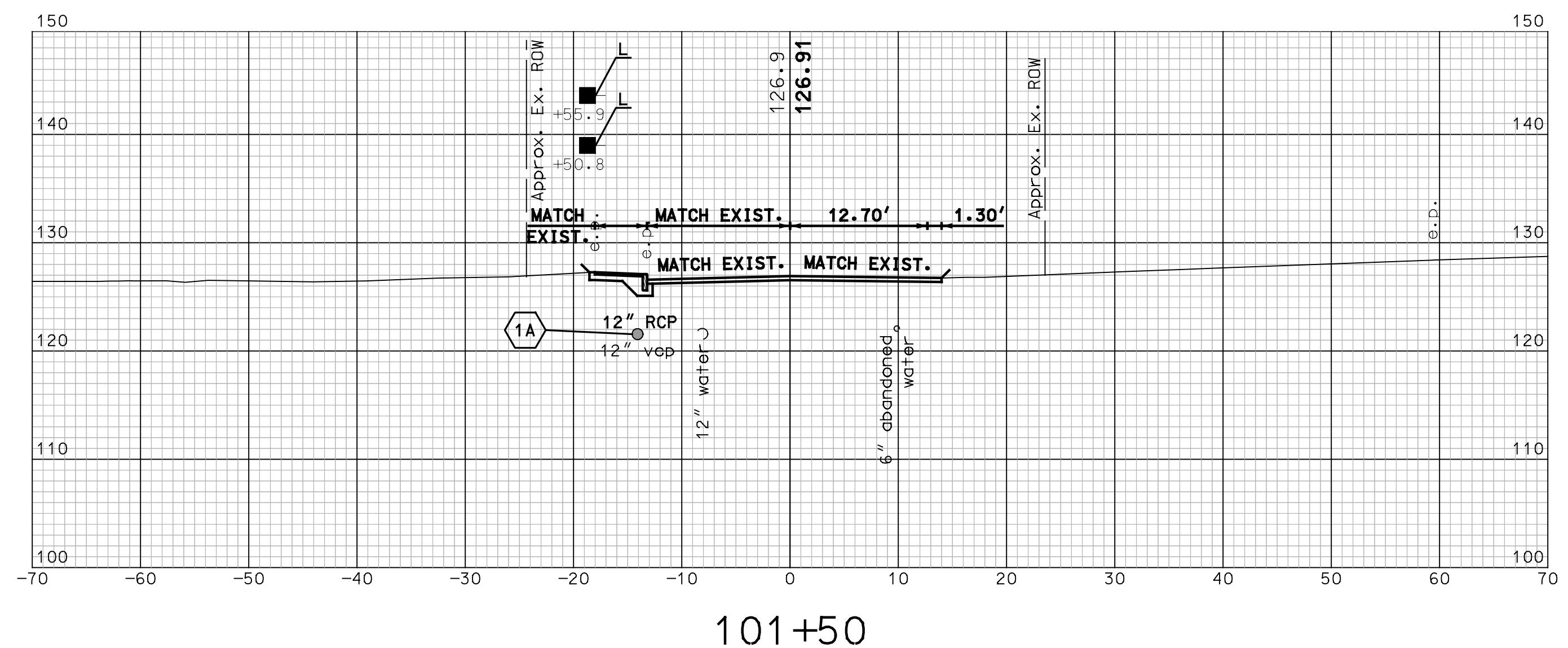
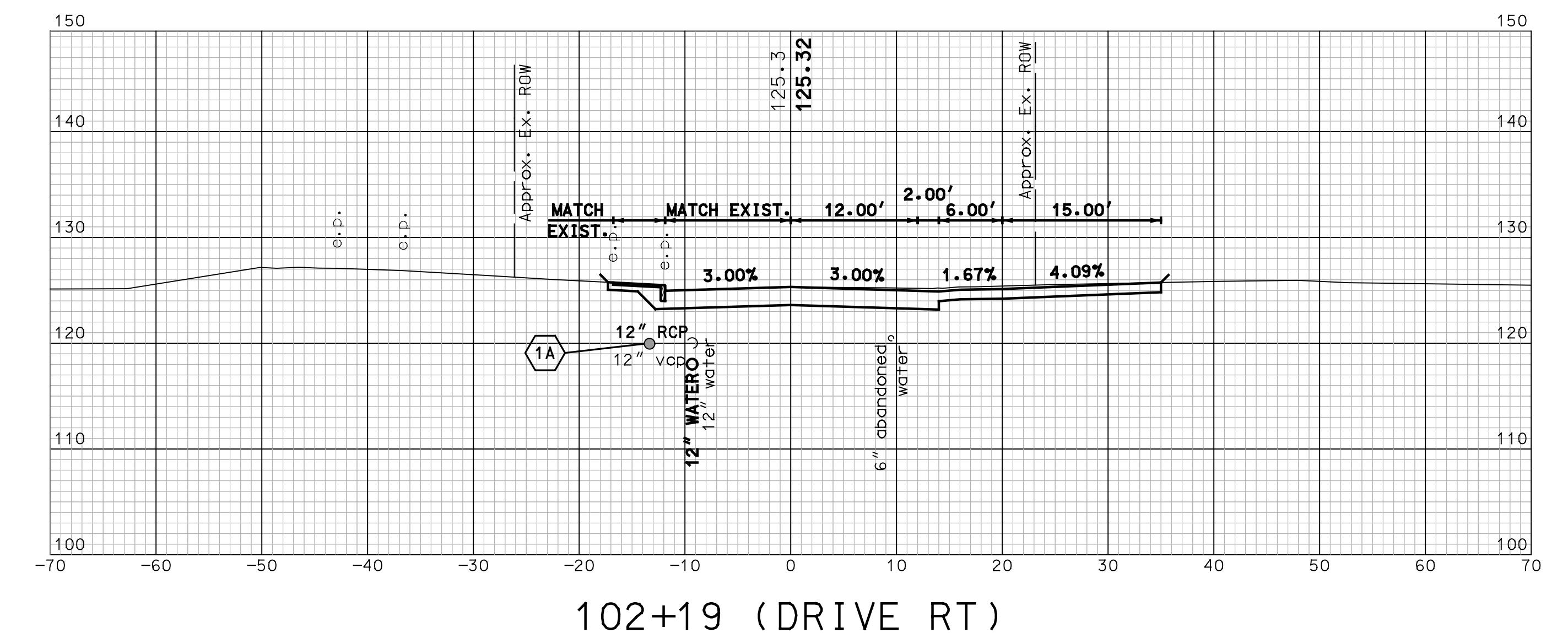
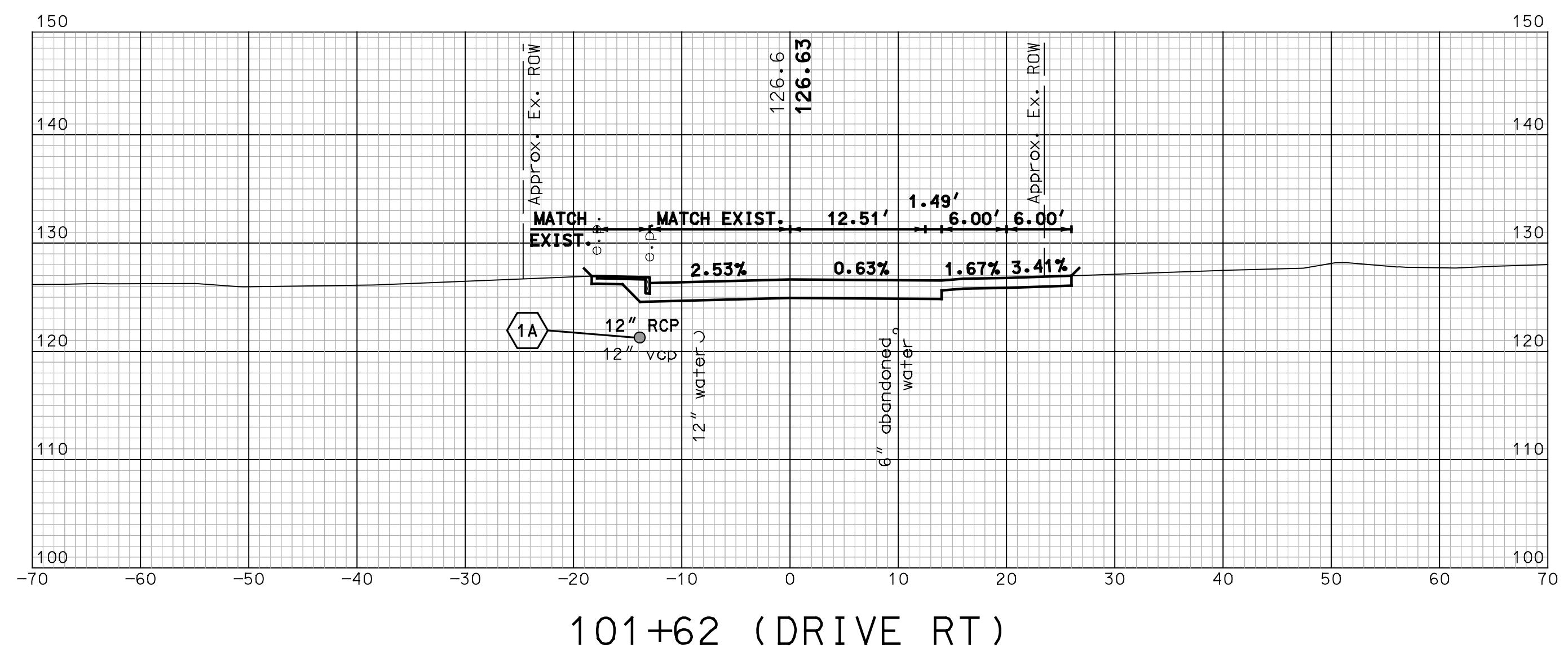
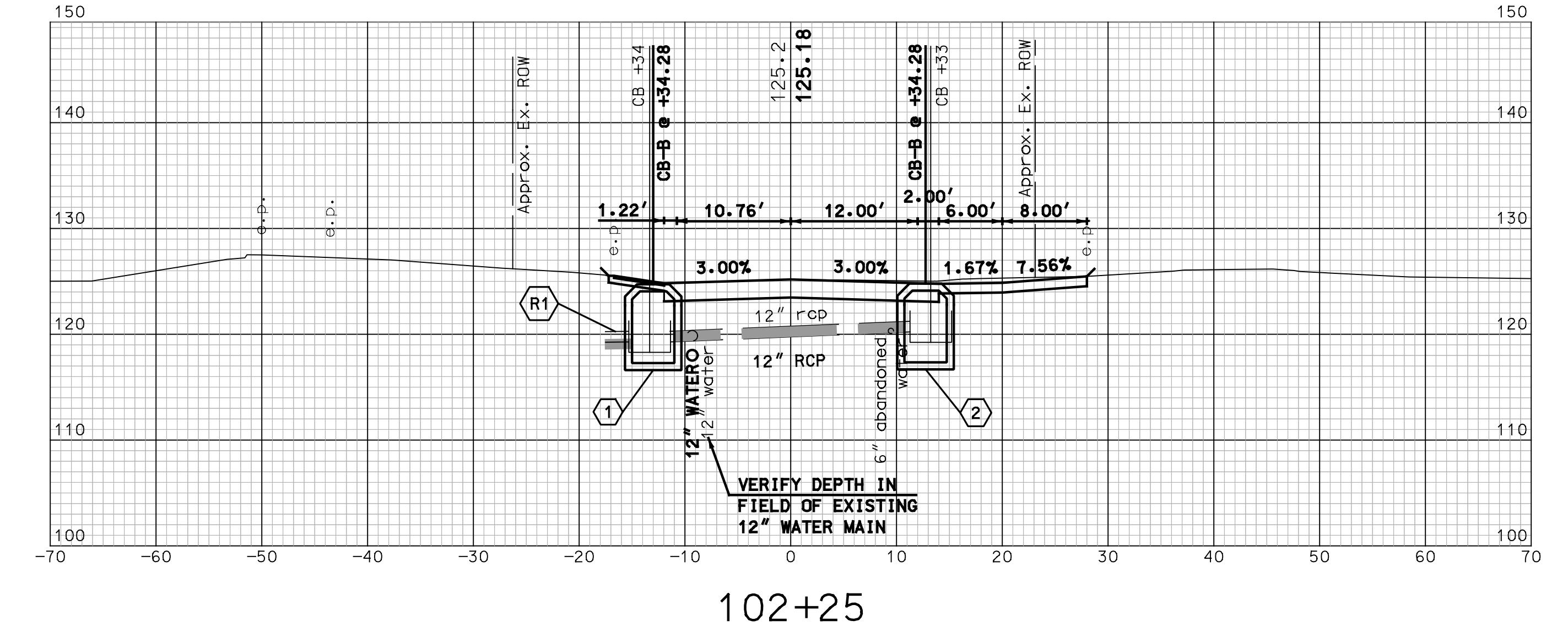
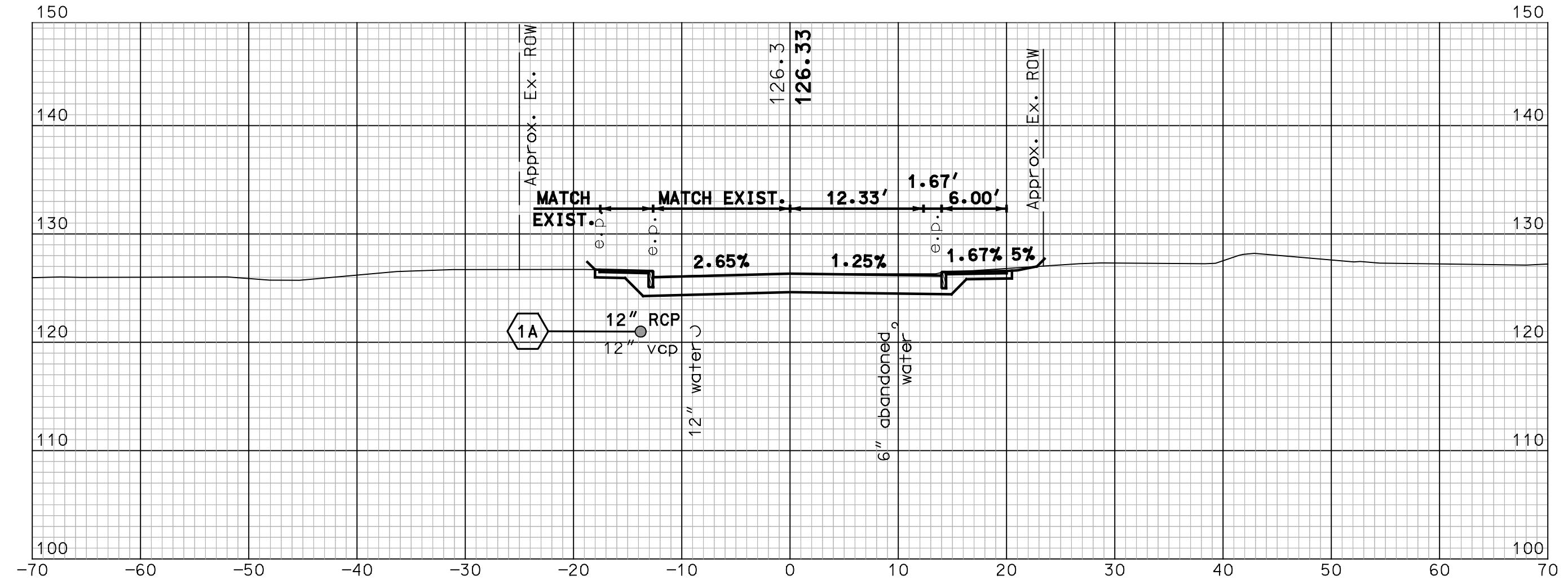
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19.918109.01
PROJECT NO. WATER MAIN DETAILS (3 OF 3)





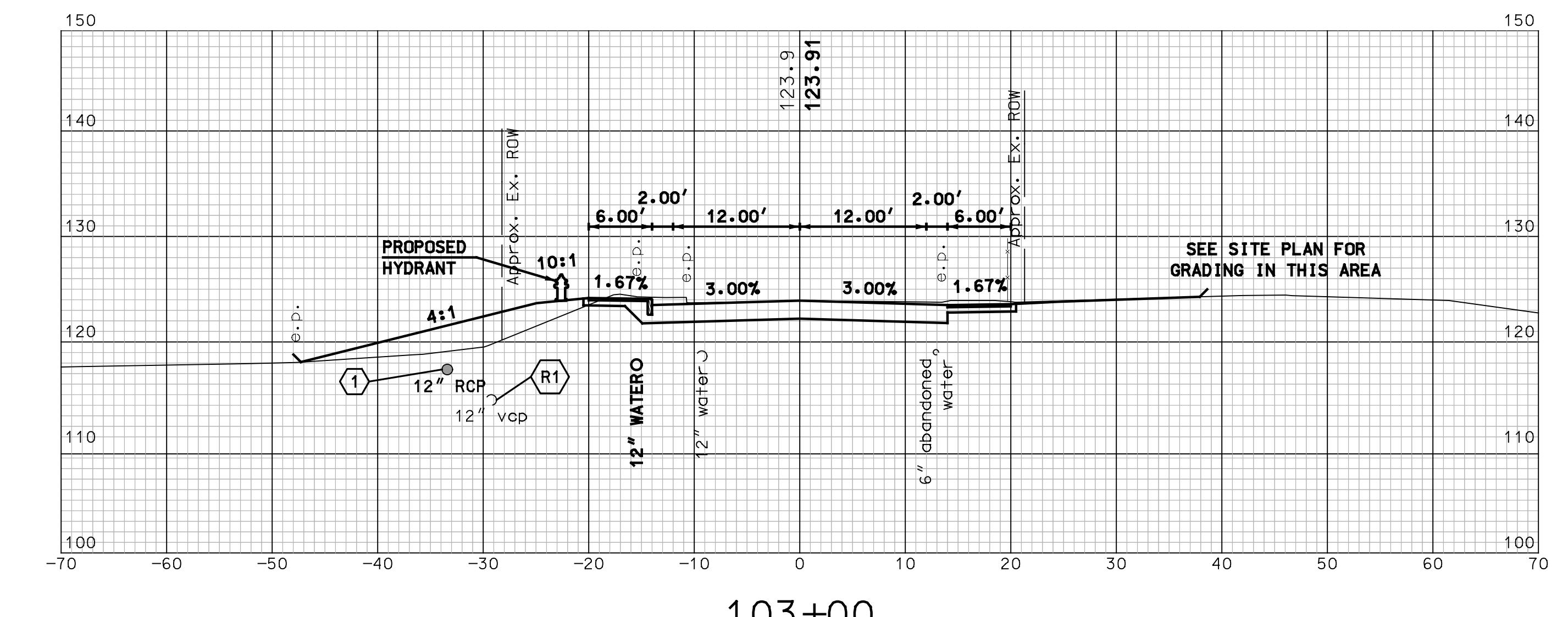
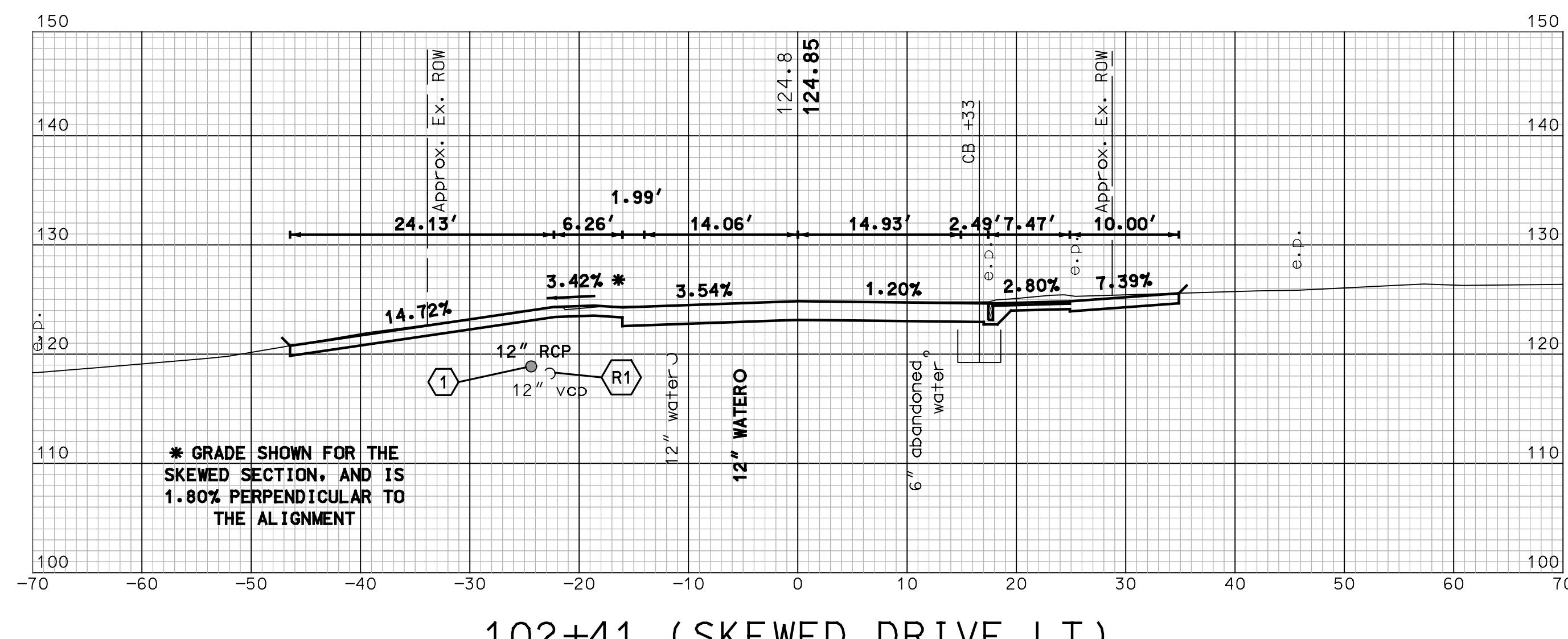
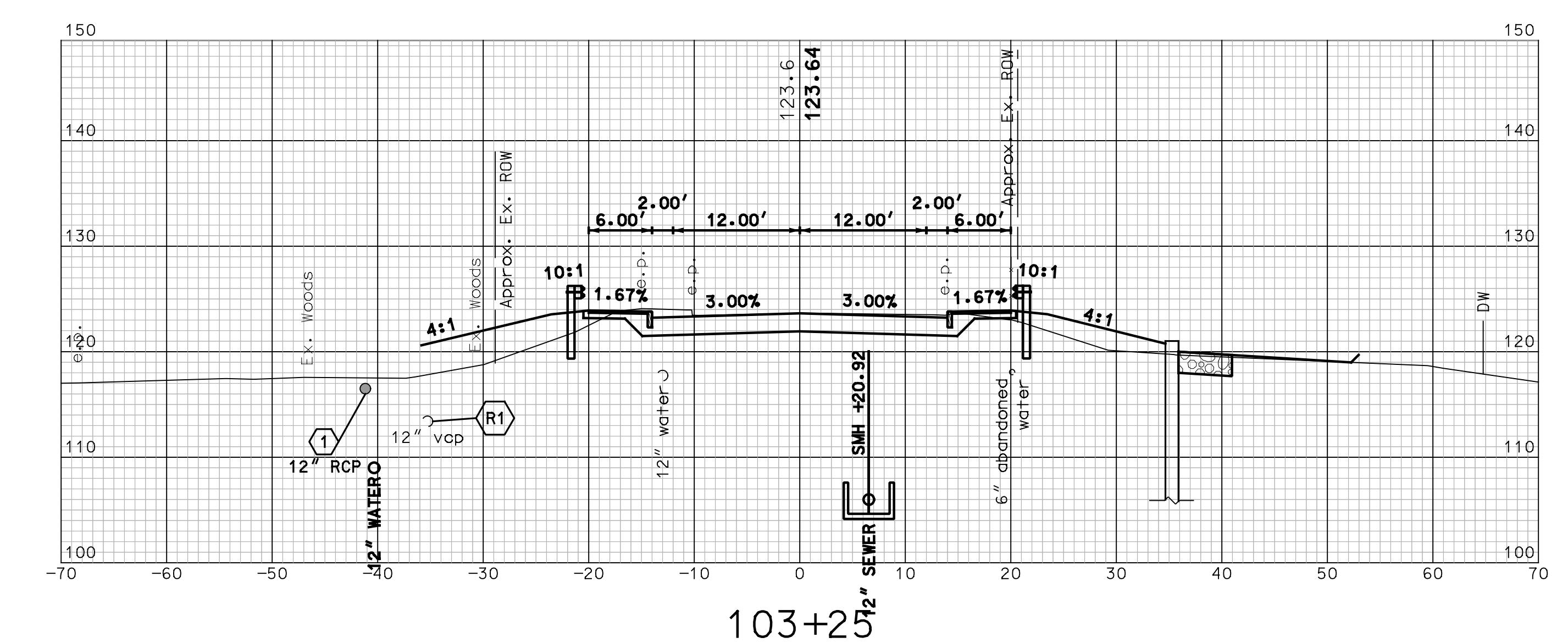
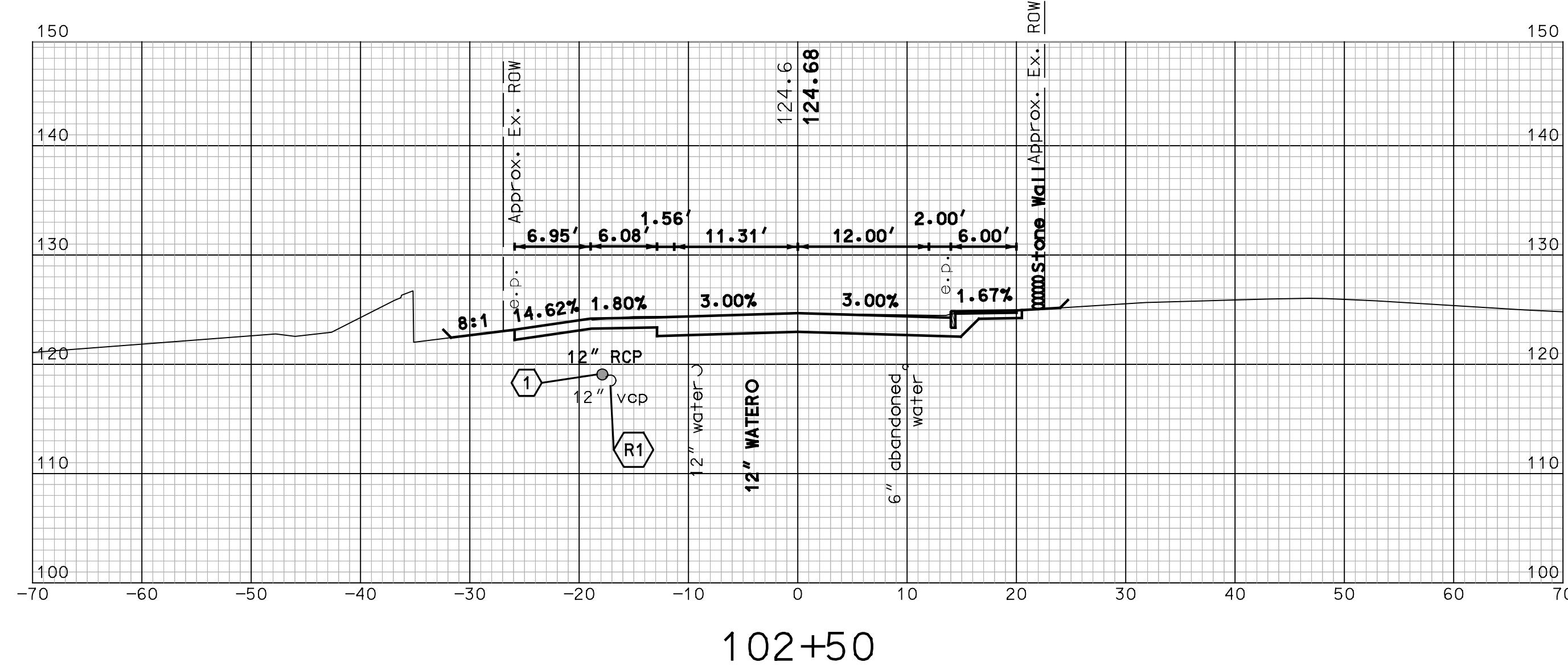
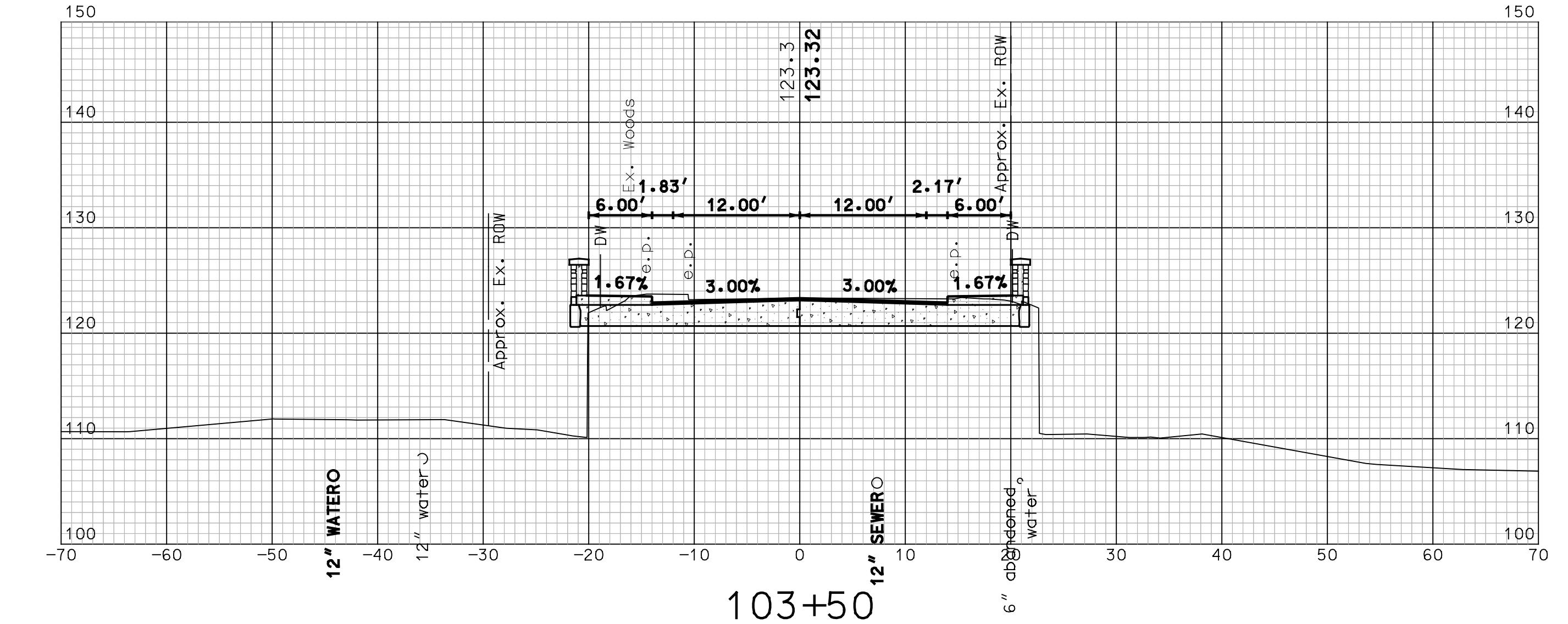
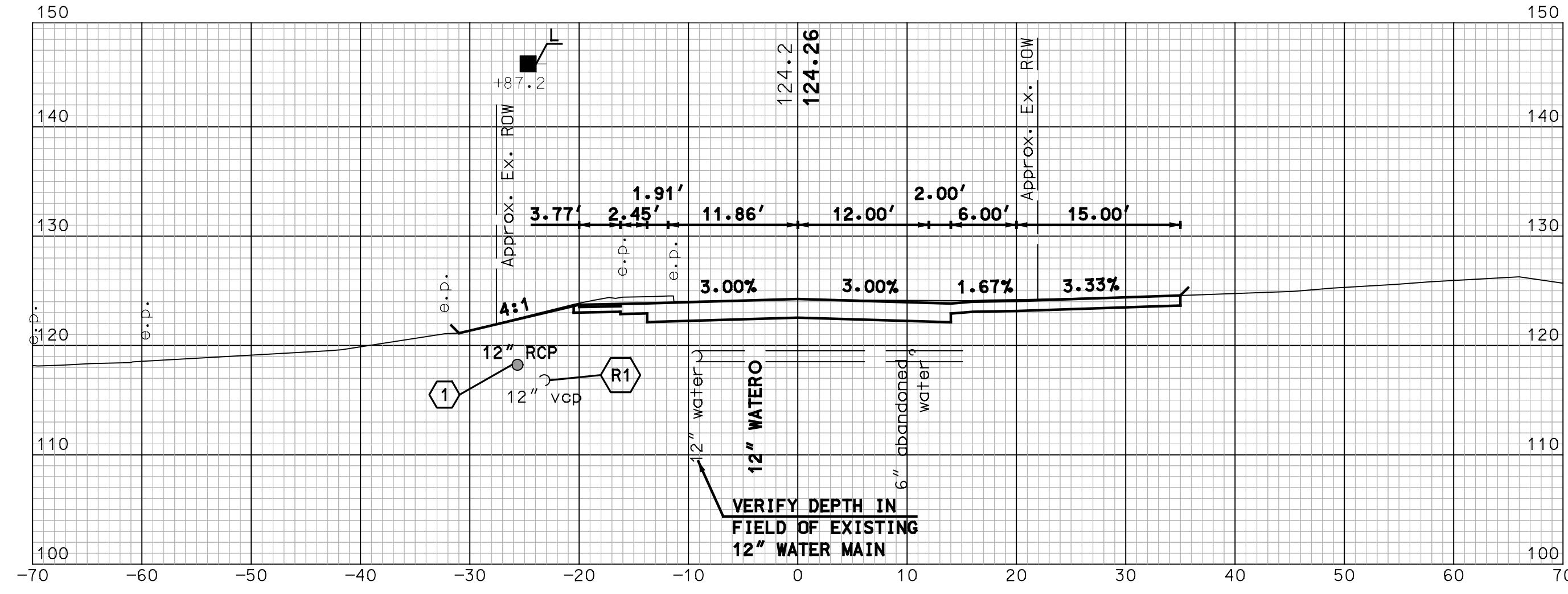


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AS SHOWN						
SBH						
DATE						
AUGUST 2025						

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

PROJECT NO. 19.918109.01
SHEET NO. 50
SHEET 50 OF 54



HOYLE TANNER		NH DOT BRIDGE NO. 115/097	REV.	DESCRIPTION	DRW. CHKD BY	DATE
FILENAME 91910961X50	DESIGNED KMW					
MODEL NAME X502	DRAWN KMW					
SCALE AS SHOWN	CHECKED SBH					
	DATE AUGUST 2025					
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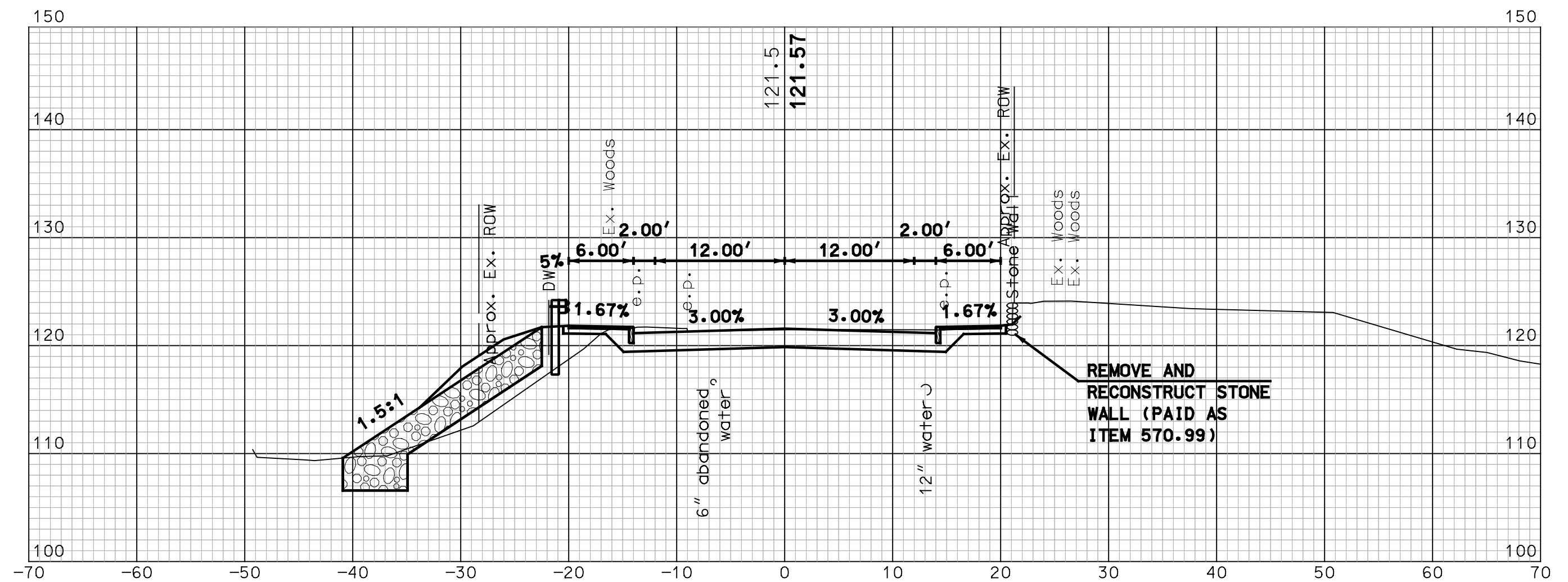
150 Dow Street • Manchester, NH 03301

(603) 669-5555 • www.hoyletanner.com

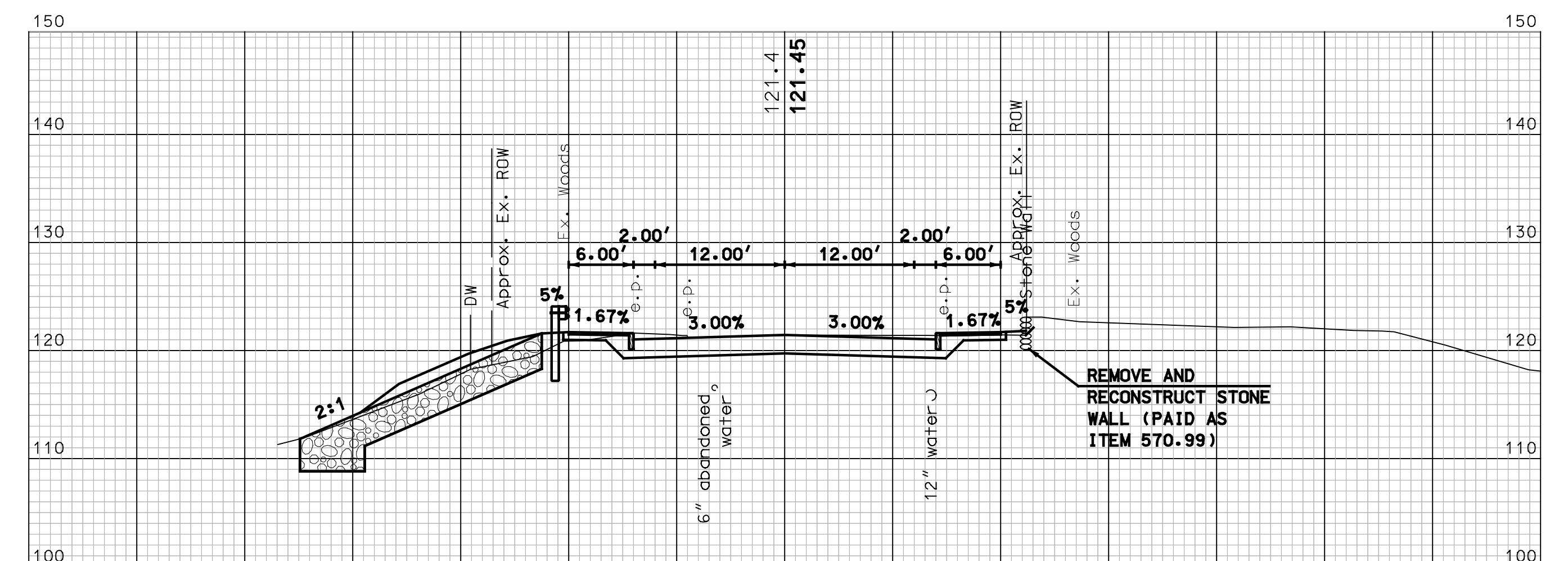
TOWN OF SALEM
SALEM, NEW HAMPSHIRE
BRIDGE STREET OVER SPICKET RIVER
BRIDGE STREET CROSS SECTIONS (2 OF 5)

PROJECT NO. 19.918109.01
SHEET NO. 51

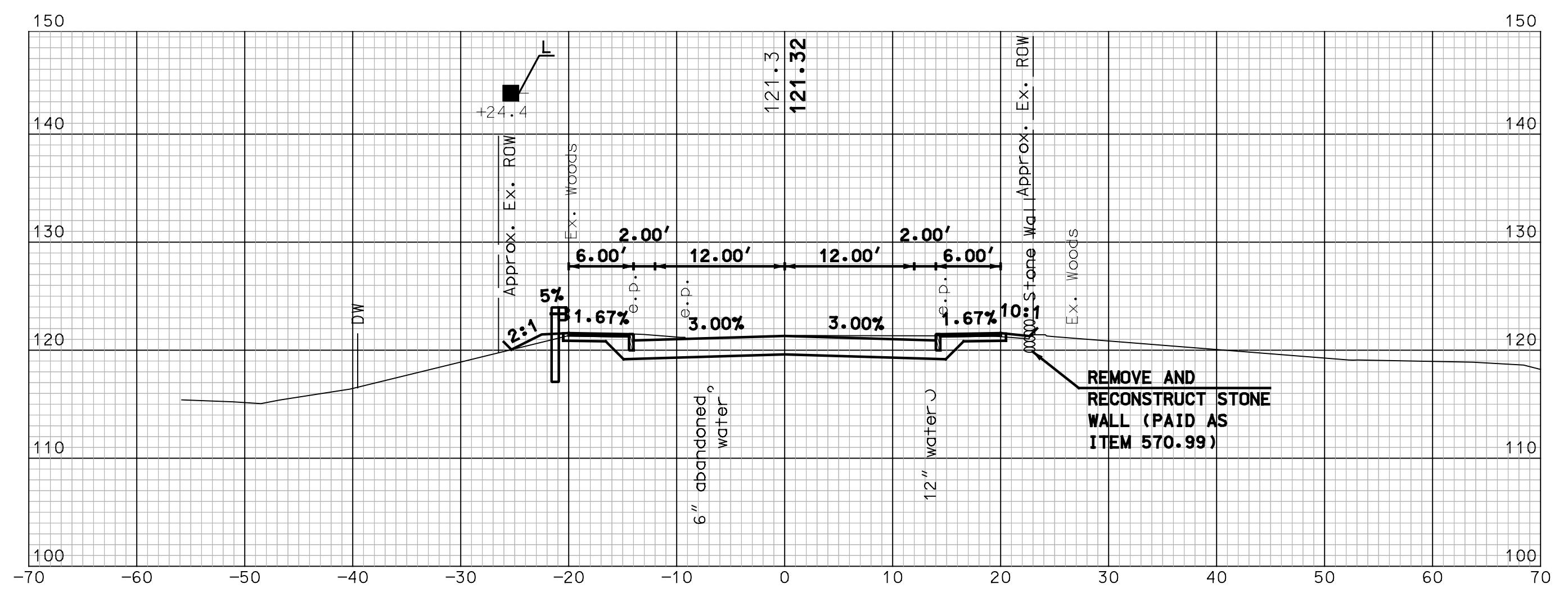
SHEET 51 OF 54



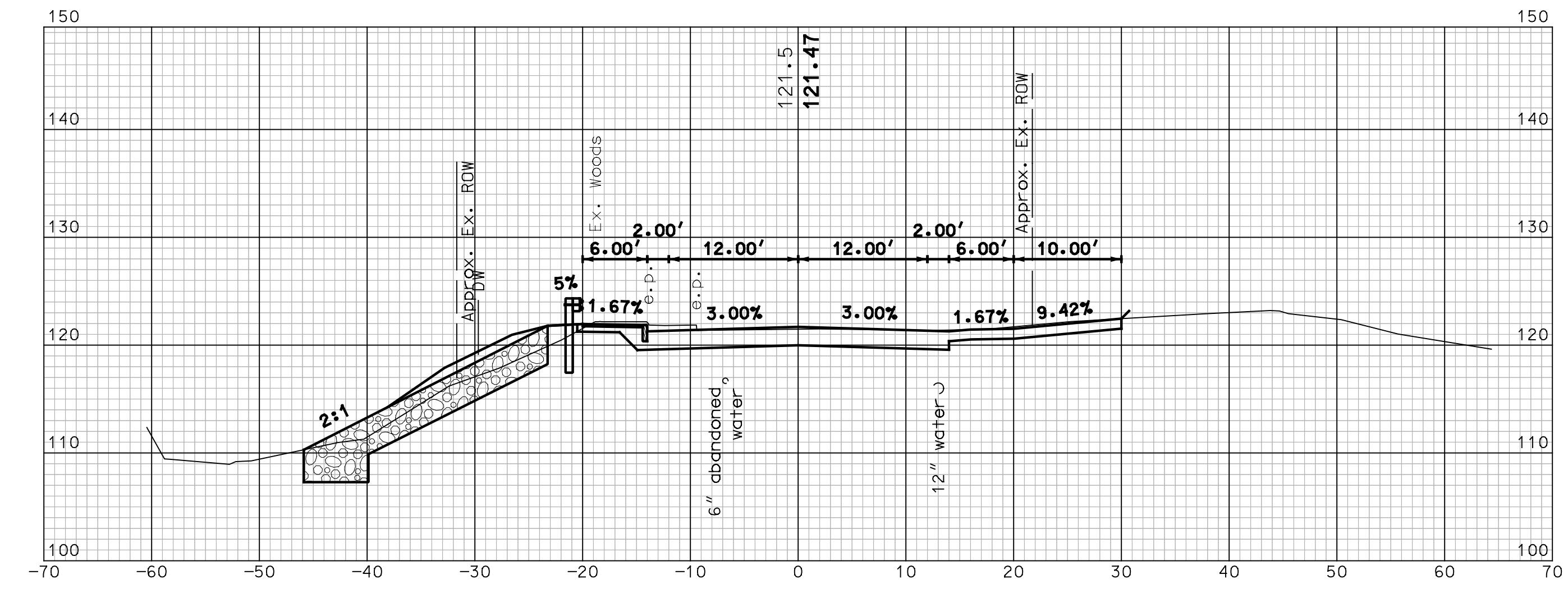
105+75



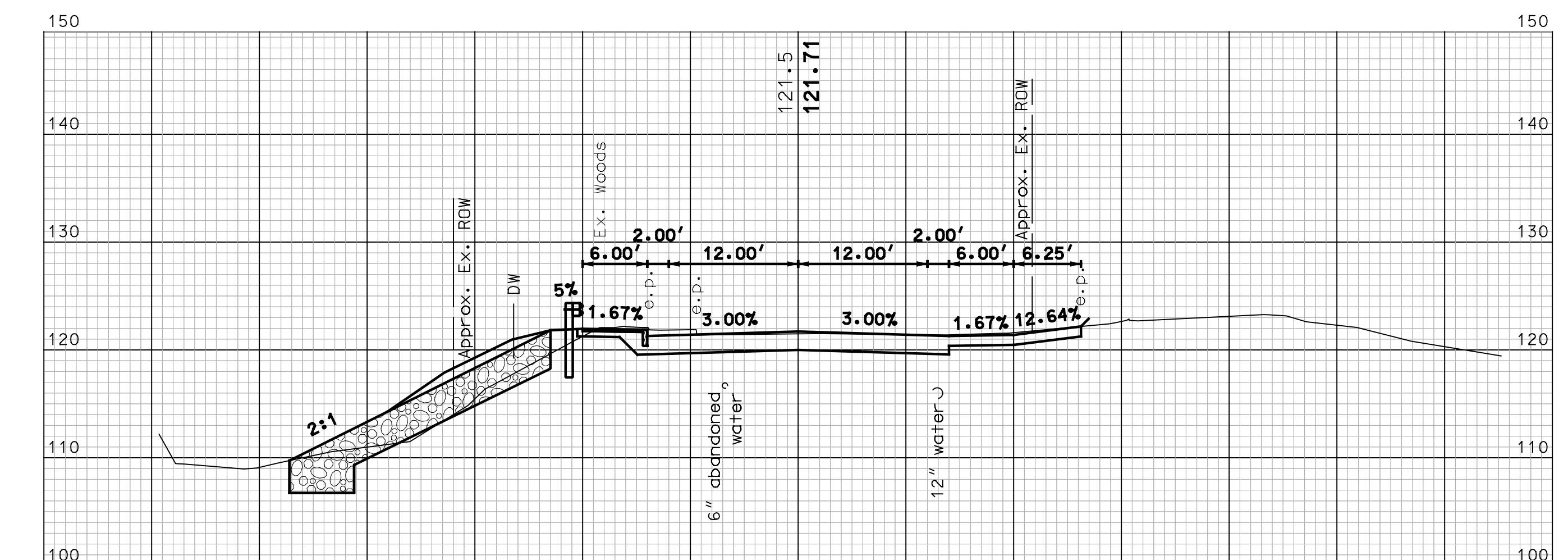
105+50



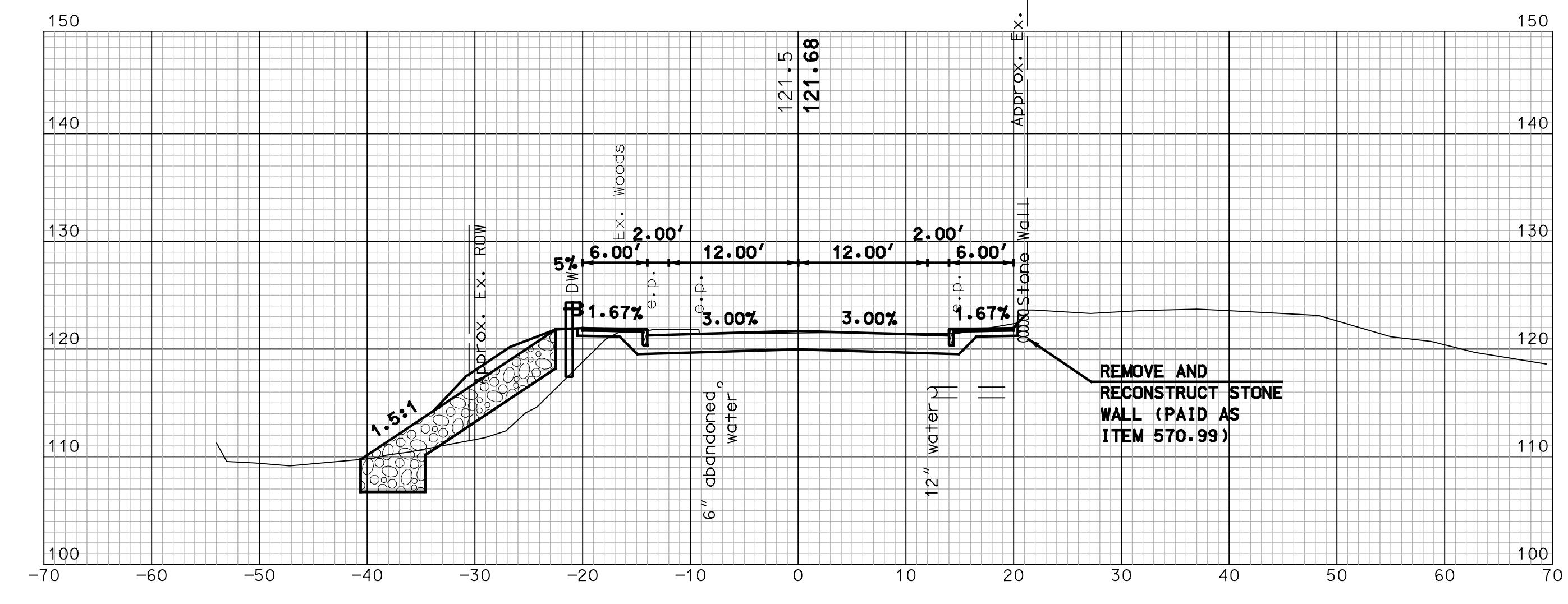
105+25



106+30 (DRIVE RT)



106+25



106+00

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לעומת מילויים נומינטיביים כמשמעותי של מילים

TOWN OF SALEM
SALEM, NEW HAMPSHIRE
BRIDGE STREET OVER SPICKET R.

DGE STREET CROSS SECTIONS

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NHDOT BRIDGE NO. 115097		REV.	DESCRIPTION	DRW. BY	CHKD BY	DATE
FILENAME	DESIGNED					
91810901XS0	KMW					
MODEL NAME	DRAWN					
XS04	KMW					
SCALE	CHECKED					
AS SHOWN	SBH					
DATE						
AUGUST 2025						

