

Town Of Madbury, New Hampshire

Nute Road

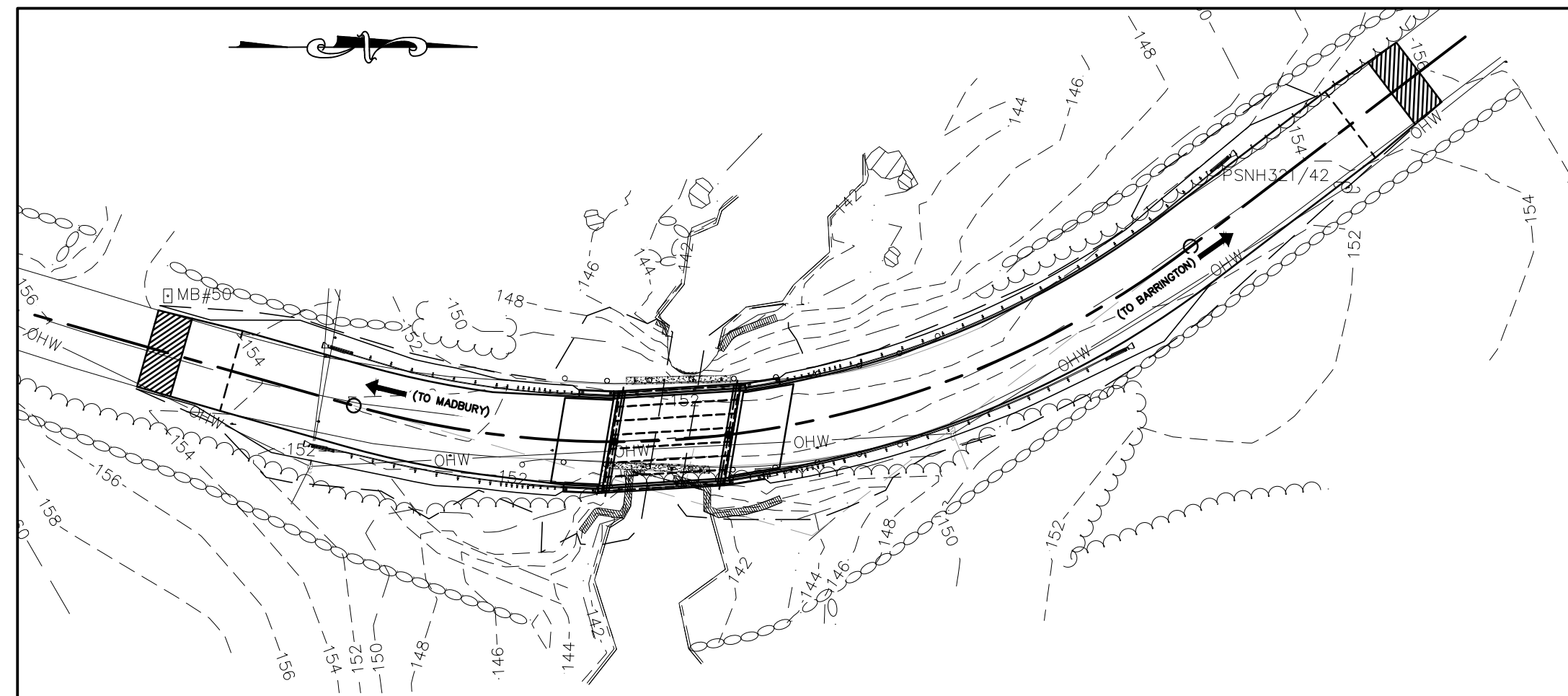
Bellamy River Crossing Replacement

Bridge No. 056/072

Final Design
Issued for Review
July 2020

NHDOT Project No. 24226

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Site Overview

Scale: 1" = 40'

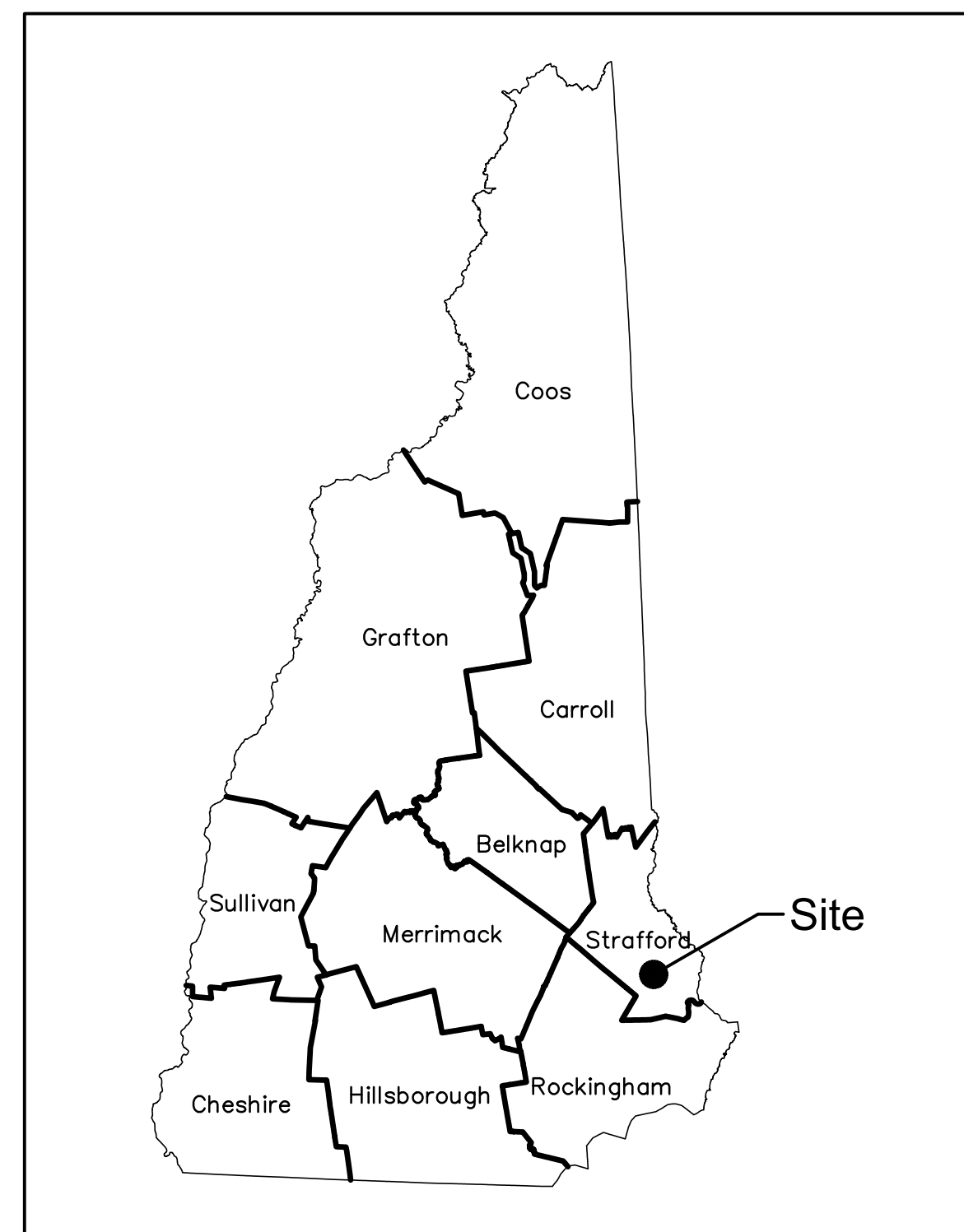
Prepared For:
Town of Madbury
13 Town Hall Road
Madbury, New Hampshire 03823

Prepared By:

CMA
ENGINEERS

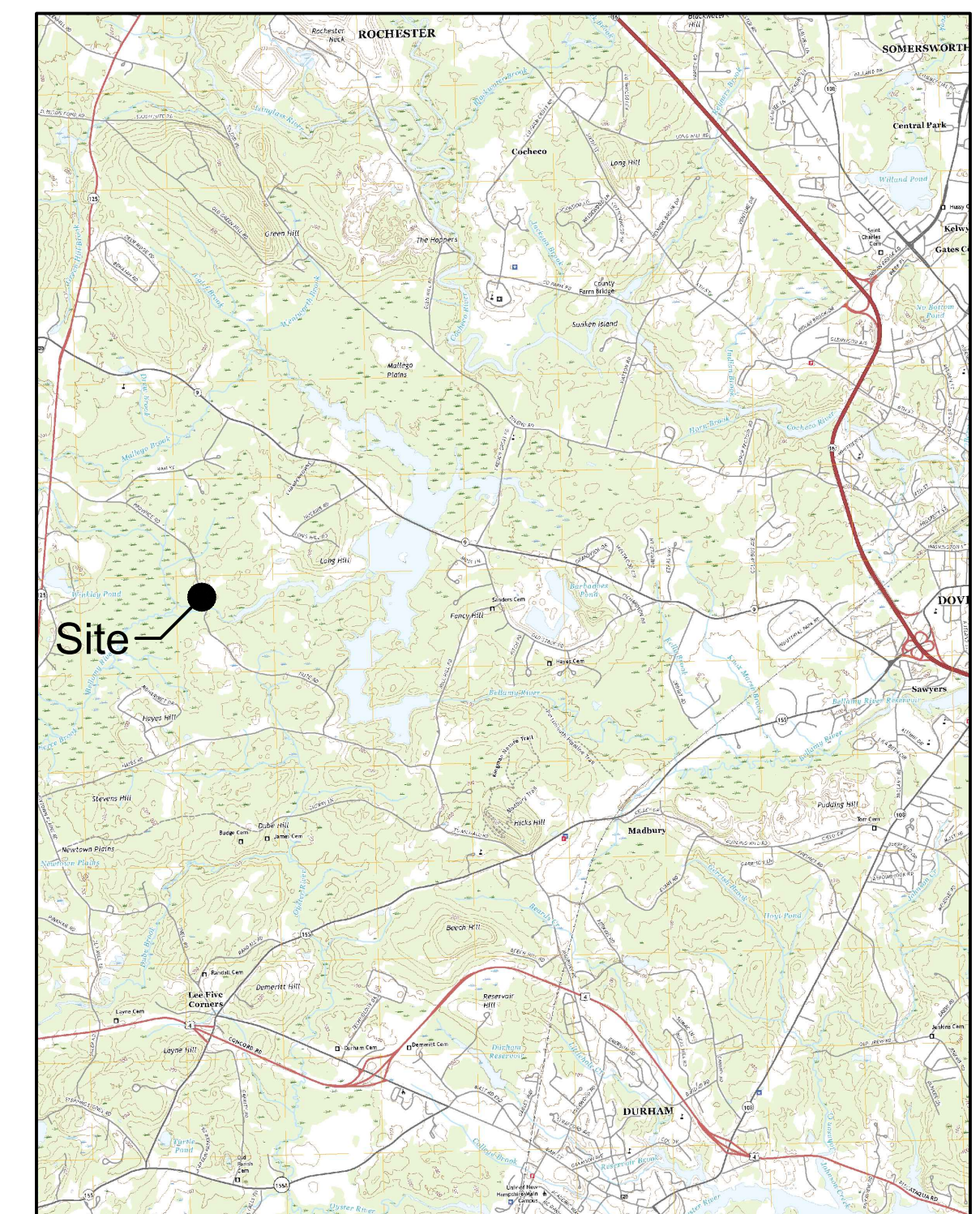
CIVIL/ENVIRONMENTAL/STRUCTURAL

Portsmouth, NH • Manchester, NH • Portland, ME
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Locus Plan

NTS



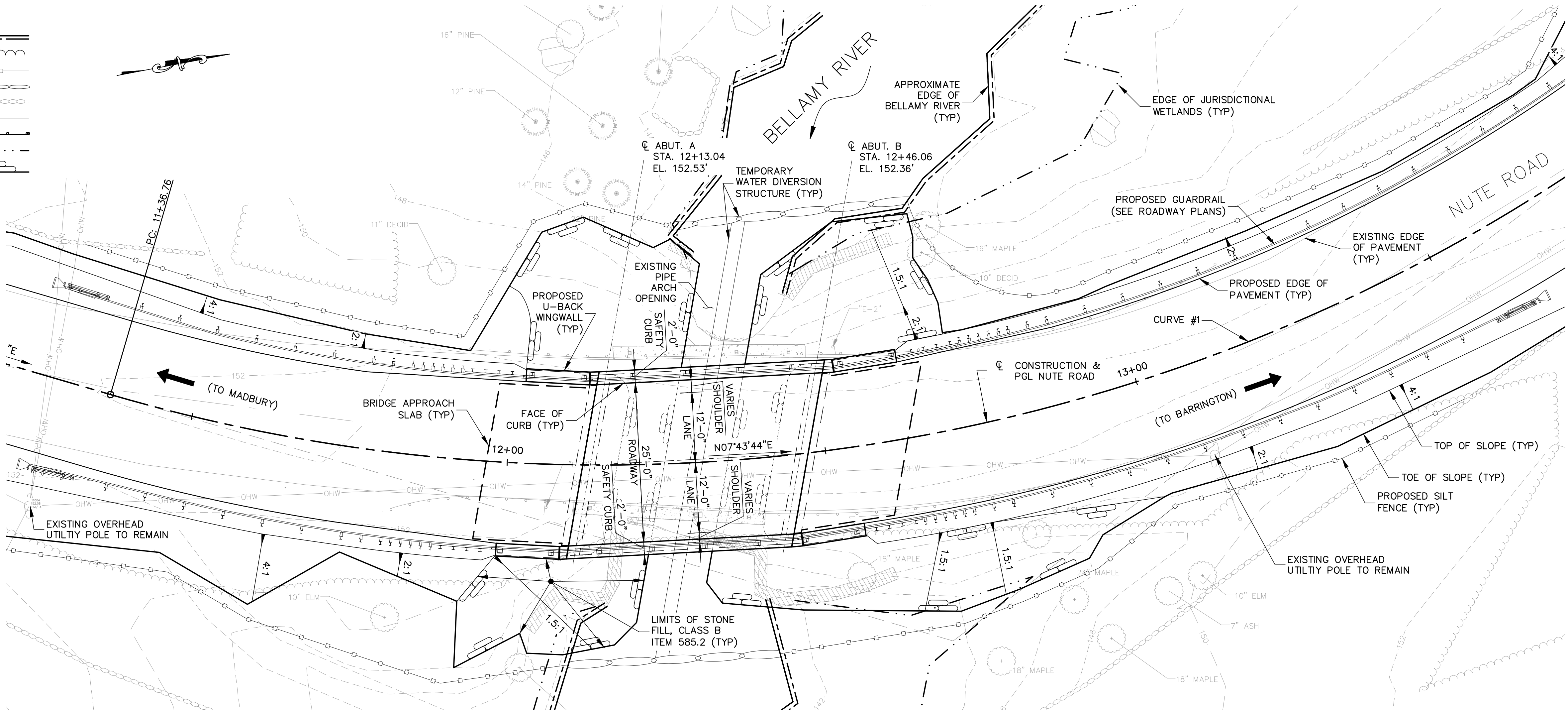
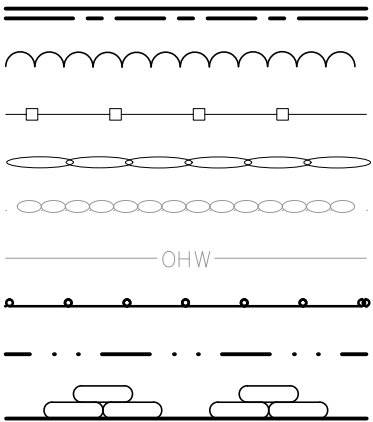
Project Location

Scale: 1" = 1 mile

NOT FOR CONSTRUCTION

LEGEND

EDGE OF RIVER
TREE LINE
SILT FENCE
WATER DIVERSION STRUCTURE
EXISTING STONE WALL
EXISTING OVERHEAD ELECTRIC
GUARDRAIL
WETLANDS
STONE FILL



General Plan
Scale: 1"=10'-0"

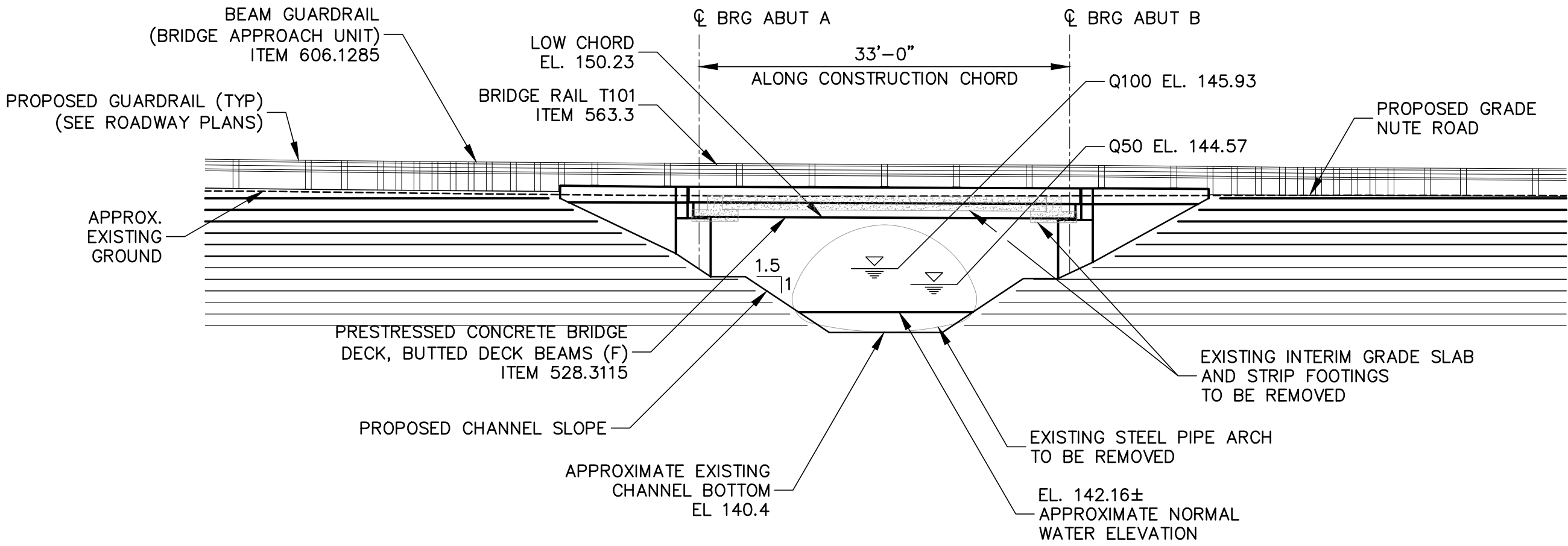
HYDRAULIC DATA (PROPOSED STRUCTURE)

SUBSTRUCTURE AND HYDRAULIC OPENING DESIGN:
DESIGN FLOOD: 830 CFS (100 YEAR)
DESIGN VELOCITY: 8.09 FT/SEC
DESIGN FLOOD ELEVATION: 145.93 FT (100 YEAR)

SUPERSTRUCTURE LOW CHORD DESIGN:
DESIGN FLOOD: 501 CFS (50 YEAR)
DESIGN VELOCITY: 7.52 FT/SEC
DESIGN FLOOD ELEVATION: 144.57 FT (50 YEAR)

CURVE #1
NUTE ROAD

PI STA = 12+74.40
N = 251775.08
E = 1168120.70
Δ = 53°10'32"
T = 137.637'
R = 275.00'
L = 255.23'
E = 32.52'



Elevation
Scale: 1"=10'-0"

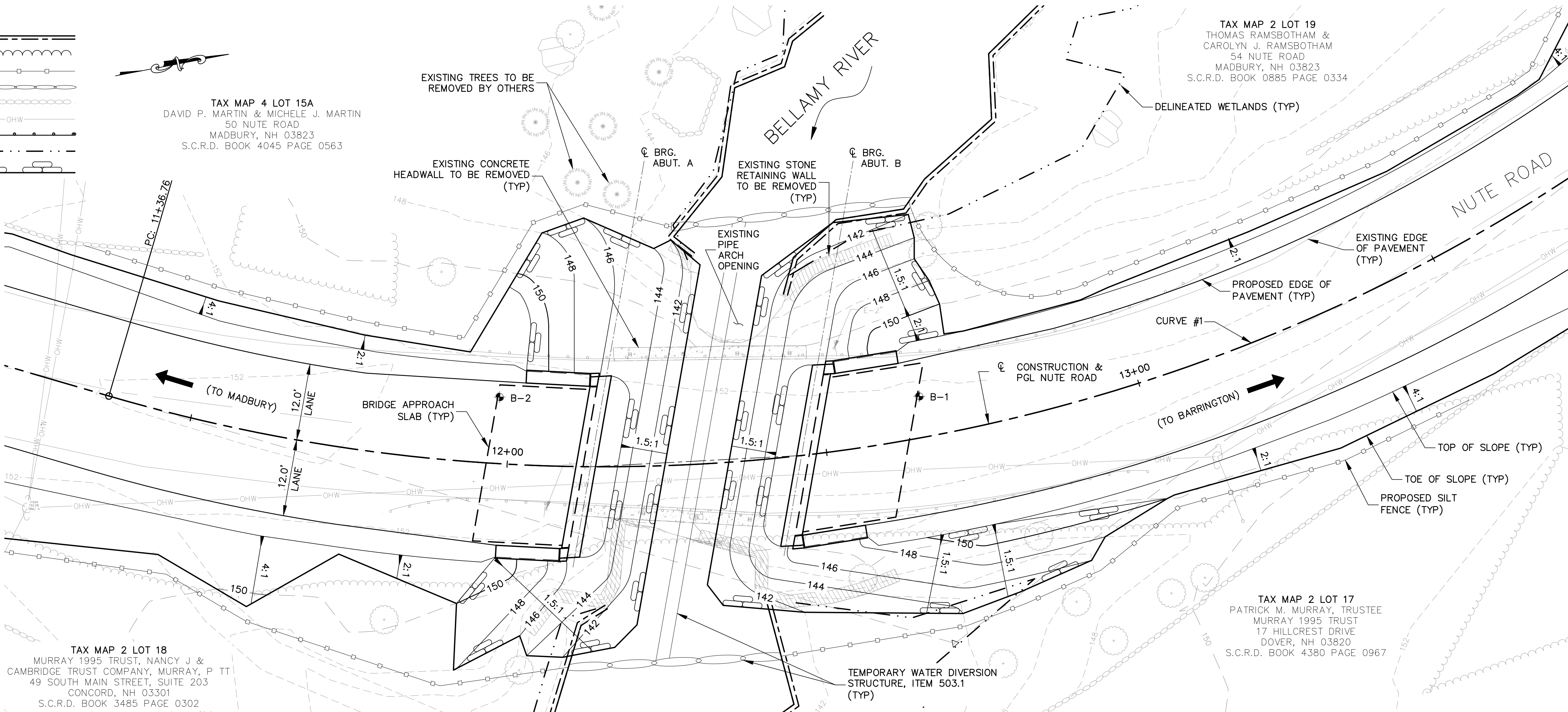
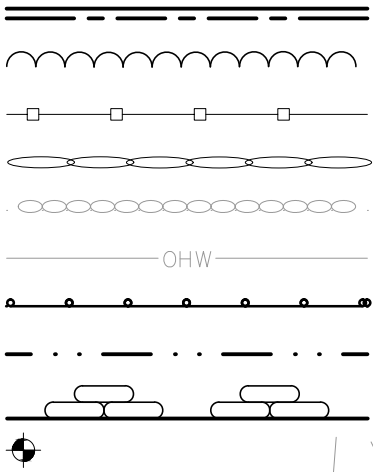
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CMA ENGINEERS Civil/Environmental/Structural		Portsmouth, NH 603/431-6196 Manchester, NH 603/627-0708 Portland, ME 207/541-4223		c m a e n g i n e e r s . c o m	
designed by: LBK	drawn by: TMA	approved by: ---	date: July 2020	project no: 1162	checked by: ---
Town of Madbury, New Hampshire		Nute Road		Bellamy River Crossing Replacement	
				General Plan & Elevation	
drawing no.		BR-1		sheet: 2 of 23	
				date	
				revision	
				no.	
				A	
				B	
				PS&E Set Issued for Review	
				07/2020	
				LBK	
				04/2020	
				LBK	
				by	

NOT FOR CONSTRUCTION

LEGEND

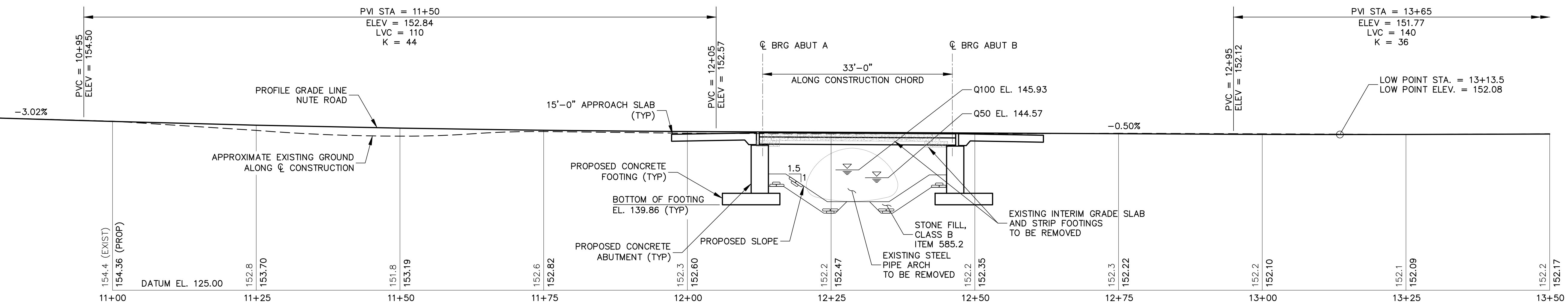
- EDGE OF RIVER
- TREE LINE
- SILT FENCE
- WATER DIVERSION STRUCTURE
- EXISTING STONE WALL
- EXISTING OVERHEAD ELECTRIC GUARDRAIL
- WETLANDS
- STONE FILL
- BORING



Bridge Site Plan

Scale: 1"=10'

NOTE:
BRIDGE SITE PLAN IS SHOWN AT A SCALE TO SHOW FEATURES RELEVANT TO THE BRIDGE AREA, OTHER ROADWAY FEATURES ARE SHOWN ON ROADWAY PLAN ON DRAWING RW-2.



Profile

Scale: 1"=10'-0"

NOT FOR CONSTRUCTION

designed by: LBK		drawn by: TMA		approved by: ---	
date: July 2020		project no: 1162		checked by: ---	
scale: 0 10' 20'		Scale: 1" = 10'			
Town of Madbury, New Hampshire					
Nute Road					
Bellamy River Crossing Replacement					
Site Plan & Profile					
drawing no. BR-2					
sheet: 3 of 23					

CMA ENGINEERS Civil/Environmental/Structural		Portland, ME 207/541-4223	
Portsmouth, NH 603/431-6196		Manchester, NH 603/627-0708	
PS&E Set Issued for Review		Issued for Review	
07/2020		04/2020	
LBK		LBK	
by		date	

Structure Notes:

1)	DESIGN LOADING:	HL-93
2)	DESIGN METHOD:	LOAD AND RESISTANCE FACTOR DESIGN METHOD (LRFD).
3)	SPECIFICATIONS:	AASHTO LRFD 2017. NHDOT 2016 STANDARD SPECIFICATIONS AS AMENDED.
4)	FOUNDATION DATA:	CONCRETE ABUTMENTS SUPPORTED ON SPREAD FOOTINGS, ALLOWABLE BEARING PRESSURE 2 KSF, MINIMUM FROST DEPTH 6.0 FT PERPENDICULAR BETWEEN NEAREST GRADE AND BOTTOM OF FOOTING.
5)	REINFORCING STEEL:	AASHTO M31 (ASTM A615) GRADE 60. REINFORCING STEEL IN THE DECK OVERLAY, DECK BEAMS, APPROACH SLABS, AND BRUSH CURBS SHALL BE EPOXY COATED.
6)	CONCRETE:	BRIDGE DECK OVERLAY, CURBS, WINGWALL COPINGS AND APPROACH SLABS = 4 KSI ABUTMENTS AND WINGWALLS = 3 KSI FOOTINGS = 3 KSI PRESTRESSED DECK BEAMS = 6 KSI, RELEASE = 4.8 KSI
7)	POST-TENSIONING STEEL:	0.6" Ø SEVEN-WIRE STRAND CONFORMING TO AASHTO M203 (ASTM A416) GRADE 270, LOW RELAXATION.
8)	PRESTRESSING STEEL:	0.6" Ø SEVEN-WIRE STRAND CONFORMING TO AASHTO M203 (ASTM A416) GRADE 270, LOW RELAXATION.
9)	SEISMIC PERFORMANCE ZONE 1:	A = 0.1
10)	ALL EXISTING BRONZE DISCS REPRESENTING STATE BENCHMARKS OR SURVEY TRIANGULATION POINTS INVOLVING DISTURBING A BRONZE DISK, SUFFICIENTLY IN ADVANCE OF THE WORK TO PERMIT THE TOWN, STATE OR AGENCY HAVING JURISDICTION TO TEMPORARILY RELOCATE THE AFFECTED MARKER.	MUST NOT BE DISTURBED. WHEN THE WORK CALLED FOR INVOLVES DISTURBING A BRONZE DISK, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN ADVANCE OF THE WORK TO PERMIT THE TOWN, STATE OR AGENCY HAVING JURISDICTION TO TEMPORARILY RELOCATE THE AFFECTED MARKER.
11)	MAINTENANCE OF TRAFFIC:	ROAD CLOSURE AND DETOUR; SEE ROADWAY SHEET RW-3.
12)	FOR STRUCTURE LAYOUT SEE BRIDGE SHEET BR-4.	

Bridge Removal Notes:

- 1) PLANS OF THE EXISTING STEEL PIPE ARCH AND THE INTERIM REPAIR INSTALLED IN 2012 ARE INCLUDED IN THE CONTRACT DOCUMENTS. THIS REPAIR INCLUDED THE INSTALLATION OF TWO GRADE BEAM FOOTINGS PERPENDICULAR TO THE ROAD WHICH SUPPORT A SLAB ON GRADE SPANNING OVER THE CULVERT.
- 2) ITEM 502, REMOVAL OF EXISTING BRIDGE STRUCTURE, SHALL INCLUDE REMOVAL OF THE ENTIRE CORRUGATED METAL PIPE ARCH, CONCRETE HEADWALLS, STONE MASONRY RETAINING WALLS AND CUTOFF WALLS, AND 2012 INTERIM REPAIR STRUCTURES (GRADE BEAMS AND SLAB) AS DESCRIBED WITHIN THESE PLANS. SEE SPECIAL CONDITIONS FOR MATERIALS TO BE SALVAGED TO THE TOWN. ALL OTHER EXISTING BRIDGE MATERIALS SHALL BECOME PROPERTY OF THE CONTRACTOR.


Water Diversion Structure Notes:

- 1) ITEM 503.1, WATER DIVERSION STRUCTURES, MAY BE REQUIRED FOR REMOVAL OF THE EXISTING STRUCTURE AND THE CONSTRUCTION OF THE ABUTMENTS DURING HIGH FLOW CONDITIONS. THE CONTRACTOR SHALL SUBMIT THE DIVERSION STRUCTURE TYPE, DESIGN, AND PROPOSED METHOD OF CONSTRUCTION TO THE ENGINEER IN ACCORDANCE WITH SECTION 105.02 OF THE NHDOT STANDARD SPECIFICATIONS. WATER DIVERSION STRUCTURE SUBMITTALS SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE.
- 2) WATER DIVERSION STRUCTURE LIMITS SHOWN ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE THE REQUIRED LIMITS, IN ACCORDANCE WITH THE ENVIRONMENTAL PERMIT, TO MAINTAIN A DEWATERED AND ADEQUATELY SUPPORTED EXCAVATION DURING THE CONSTRUCTION.
- 3) ALL COSTS FOR DESIGN, INSTALLATION AND REMOVAL OF WATER DIVERSION STRUCTURES SHALL BE INCLUDED IN ITEM 503.1.
- 4) CONTROL OF WATER WITHIN THE COFFERDAMS SHALL BE CONDUCTED IN SUCH A MANNER AS TO PREVENT DISTURBANCE OF THE BEARING SOIL. PUMPING AREAS SHALL BE LOCATED OUTSIDE THE FOOTING SUPPORT LIMITS AND PROPERLY FILTERED TO PREVENT THE PUMPING OF FINES.
- 5) ANY FOUNDATION SOIL WEAKENED AS A RESULT OF INSUFFICIENT CARE TAKEN IN MAINTAINING A DEWATERED CONDITION SHALL BE REMOVED AND REPLACED WITH STRUCTURAL FILL AT THE EXPENSE OF THE CONTRACTOR.
- 6) DEWATERING SHALL BE CONTINUOUS UNTIL SUBSTRUCTURES ARE BACKFILLED TO THE ELEVATIONS OF THE SURROUNDING WATER TABLE, UNLESS NOTED OTHERWISE.

Natural River Bed Material Notes:

- 1) THE INTENT OF THE NATURAL RIVER MATERIAL IS TO SIMULATE THE SURFACE CONDITION OF THE EXISTING RIVER PRIOR TO CONSTRUCTION. SURFACE ROUGHNESS, PERMEABILITY, AND PARTICLE SIZE AND DISTRIBUTION SHOULD ALL BE ADDRESSED AS PART OF THIS WORK.
- 2) ANY EXCAVATED NATURAL RIVER MATERIAL SHALL BE SEPARATED FROM OTHER EXCAVATED MATERIAL, AND STOCKPILED FOR USE LATER IN THE PROJECT.
- 3) IF IMPORTING MATERIAL IS REQUIRED, CONTRACTOR SHALL FIND A WELL-GRADED MATERIAL TO ROUGHLY MATCH THE MATERIAL FOUND UP AND DOWNSTREAM OF THE PROPOSED CONSTRUCTION. ALL STONES SHALL BE ROUND, WITHOUT FRACTURES, AND WASHED IN WITH SILTY FINE MATERIAL. THE RIVER MATERIAL SHALL NOT ALLOW FOR SUBSURFACE FLOW. ALL COSTS FOR DELIVERY, STOCKPILING, AND PLACEMENT OF THIS MATERIAL SHALL BE SUBSIDIARY TO NHDOT ITEM 585.2.

Boring Notes:

- 1) BORINGS INDICATED THAT  WERE MADE BY SOIL EXPLORATION CORP. IN AUGUST 2018. BLOW COUNTS SHOWN ARE THE NUMBER OF BLOWS REQUIRED TO DRIVE A 2" O.D. STANDARD SPLIT SPOON SAMPLER 6", USING A 140LB WEIGHT FALLING 30".
- 2) BORINGS ARE FOR DESIGN PURPOSES ONLY, SHOWING CONDITIONS AT THE BORING POINTS ONLY, AND DO NOT NECESSARILY INDICATE MATERIAL TO BE ENCOUNTERED DURING CONSTRUCTION.
- 3) GROUNDWATER LEVELS NOTED, IF ANY, WERE MEASURED AT THE TIME OF EXPLORATION. THE WATER LEVELS ENCOUNTERED DURING CONSTRUCTION MAY VARY CONSIDERABLY DUE TO PREVAILING CLIMATE, RAINFALL, OR OTHER FACTORS.

Precast Deck Beam Notes:

- 1) THE CONCRETE COMPRESSIVE STRENGTH OF THE PRECAST DECK BEAM UNITS SHALL BE 4800 PSI AT RELEASE AND 6000 PSI AT 28 DAYS.
- 2) PRESTRESSING STEEL SHALL BE 0.6" Ø UNCOATED SEVEN-WIRE STRAND CONFORMING TO AASHTO M203 (ASTM A416) GRADE 270 LOW RELAXATION. ALL STRANDS SHALL BE PRE-TENSIONED TO 43.9 KIPS PER STRAND (75% INITIAL PULL).
- 3) POST-TENSIONING STRANDS SHALL BE COMPLETELY COATED WITH A CORROSION PREVENTATIVE COATING SUCH AS FLO-GUARD, AS MANUFACTURED BY INSTEEL INDUSTRIES, INC., SANDERSON, FL., OR POLYSTRAND, AS MANUFACTURED BY LANGTENDONS, INC., TOUGHKEMAMON, PA., OR AN APPROVED EQUAL. IF THE FLO-GUARD COATING SYSTEM IS SUPPLIED, GROUT SHALL BE EXCLUDED FROM THE LATERAL POST-TENSIONING DUCTS DURING GROUTING OF THE SHEAR KEYS BETWEEN THE BEAMS. THE CONTRACTOR'S PROPOSED METHOD FOR EXCLUDING THE GROUT FROM THE POST-TENSIONING DUCTS SHALL BE SUBMITTED WITH THE SHOP DRAWINGS. POST-TENSIONING ANCHORAGE SYSTEM SHALL BE MONO-STRAND CORROSION PROTECTION SYSTEM AS MANUFACTURED BY HAYES INDUSTRIES, INC., HOUSTON TEXAS OR APPROVED EQUAL.
- 4) TRANSVERSE POST-TENSIONING OF THE PRECAST DECK BEAMS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 528 OF THE STANDARD SPECIFICATIONS.
- 5) ALL REINFORCING STEEL FOR THE SUPERSTRUCTURE SHALL CONFORM TO AASHTO M31 (ASTM A615) GRADE 60 AND SHALL BE EPOXY COATED.
- 6) THE PRECAST DECK BEAM REINFORCING STEEL SHALL HAVE A MINIMUM CLEAR COVER OF 1 1/2" UNLESS OTHERWISE NOTED.
- 7) THE COST OF PRESTRESSING STRANDS, POST-TENSIONING STRANDS AND ANCHORAGES, AND REINFORCING STEEL CAST INTO THE PRECAST DECK BEAM UNITS SHALL BE SUBSIDIARY TO ITEM 528.3115. ALL OTHER STEEL IN THE SUPERSTRUCTURE SHALL BE PAID UNDER ITEMS 544.3 AND 544.31.
- 8) LIFTING DEVICES SHALL BE WITHIN 24" OF EACH END OF THE PRECAST DECK BEAM UNITS. COST SHALL BE SUBSIDIARY TO ITEM 528.3115.
- 9) 1" Ø DRAINS SHALL BE PROVIDED AT THE THE LOW END OF ALL DECK BEAM VOIDS.
- 10) THE DECK BEAM SHEAR KEYS SHALL BE BLAST CLEANED PRIOR TO SHIPPING.
- 11) THE TOP SURFACE OF THE DECK BEAMS SHALL BE RAKED TRANSVERSELY TO A 1/4" AMPLITUDE.
- 12) DRILLING INTO THE DECK BEAMS SHALL NOT BE ALLOWED.
- 13) DIFFERENTIAL CAMBER (AT ERECTION) BETWEEN ADJACENT MEMBERS SHALL BE LIMITED TO 1". VALUES FOR MIDSPAN CAMBER AT TRANSFER SHALL BE DETAILED ON THE SHOP DRAWINGS.
- 14) PROVIDE INSERTS TO SUPPORT THE CONTRACTOR'S OVERHANG BRACKETS IN THE TOP SLAB ON EXTERIOR UNITS AT THE SPACING REQUESTED BY THE GENERAL CONTRACTOR. INSERTS SHALL BE SHOWN ON THE SHOP DRAWINGS. ALL COSTS SHALL BE SUBSIDIARY TO ITEM 528.3115.

Bridge Deck Notes:

- 1) CONCRETE MIXES SHALL BE AS FOLLOWS:

CAST-IN-PLACE OVERLAY: ITEM 520.7002,
CONCRETE BRIDGE DECK (QC/QA) (F)

BRUSH CURBS: ITEM 520.02,
CONCRETE CLASS AA, ABOVE FOOTINGS (F)
- 2) CONCRETE OVERLAY FINISHING SHALL MEET THE REQUIREMENTS OF 520.3.9.2 UNLESS OTHERWISE APPROVED IN WRITING BY THE ENGINEER.
- 3) THE CONTRACTOR SHALL NOT DRILL INTO THE PRECAST DECK BEAMS UNLESS APPROVED IN WRITING BY THE ENGINEER.
- 4) ALL REINFORCEMENT IN THE BRIDGE DECK OVERLAY AND BRUSH CURBS SHALL BE EPOXY COATED AND SHALL BE PAID AS ITEM 544.31, REINFORCING STEEL, EPOXY COATED (CONTRACTOR DETAILED).
- 5) ALL REINFORCING SHALL BE 2 ½" FROM CONCRETE SURFACES, UNLESS OTHERWISE NOTED.

Approach Slab Notes:

- 1) ALL CONCRETE FOR THE APPROACH SLABS SHALL BE ITEM 520.03, CONCRETE CLASS AA, APPROACH SLABS (F).
- 2) ALL REINFORCEMENT IN THE APPROACH SLABS SHALL BE EPOXY COATED AND SHALL BE PAID AS ITEM 544.31, REINFORCING STEEL, EPOXY COATED (CONTRACTOR DETAILED).
- 3) ALL REINFORCING SHALL BE 2 ½" FROM CONCRETE SURFACES, UNLESS OTHERWISE NOTED.
- 4) FILL SPACE BETWEEN APPROACH SLAB AND WINGWALL OR ROADWAY CURB WITH ITEM 520.01. CONCRETE FILL SHALL BE A MINIMUM DEPTH OF 6 INCHES.
- 5) APPROACH SLABS SHALL BE PLACED AFTER THE CONCRETE DECK OVERPOUR HAS BEEN CONSTRUCTED.
- 6) APPROACH SLABS FOR BOTH ABUTMENTS SHALL BE CAST 2 8" BELOW FINISHED GRADE AT THE APPROACH SLAB SEATS.

Elastomeric Bearing Notes:

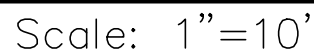
- 1) ELASTOMERIC BEARING PADS SHALL BE VIRGIN NATURAL RUBBER, HARDNESS (SHORE "A" DUROMETER) OF 60, GRADE 4.
- 2) ELASTOMERIC BEARINGS SHALL BE PAID AS ITEM 548.11, ELASTOMERIC BEARING PADS (F).
- 3) DESIGN SERVICE LOADS PER BEARING: (DESIGN METHOD A)
MAX DEAD LOAD: 16.0 KIP
MAX LIVE LOAD: 40.7 KIP
- 4) ANCHOR DOWELS SHALL BE GALVANIZED AFTER FABRICATION AND CONFORM TO AASHTO M232 (ASTM A153).
- 5) THE FABRICATOR SHALL CLEARLY MARK THE BEARING ASSEMBLIES TO ENSURE PROPER ORIENTATION IN THE FIELD.

Abutment and Wingwall Notes:

- 1) THE CONTRACTOR SHALL BE REQUIRED TO PLACE ALL CONCRETE IN THE DRY, DEWATERING, AS REQUIRED, SHALL BE CONTINUOUS UNTIL THE ABUTMENTS AND WINGWALLS ARE BACKFILLED TO THE ELEVATION OF THE SURROUNDING WATER TABLE, UNLESS DIRECTED OTHERWISE.
- 2) ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED $\frac{3}{4}$ " EXCEPT AS NOTED.
- 3) CONCRETE MIXES SHALL BE AS FOLLOWS:

FOOTINGS:	ITEM 520.213, CONCRETE CLASS B, FOOTINGS (ON SOIL) (F)
ABUTMENT AND WINGWALL STEMS:	ITEM 520.12, CONCRETE CLASS A, ABOVE FOOTINGS (F)
CHEEK WALLS AND WINGWALL COPINGS:	ITEM 520.02, CONCRETE CLASS AA, ABOVE FOOTINGS (F)
- 4) ITEM 538.2, BARRIER MEMBRANE, PEEL AND STICK – VERTICAL SURFACES (F), SHALL BE PLACED OVER THE ABUTMENT–WINGWALL VERTICAL CONSTRUCTION JOINT, 1'-0" ON EACH SIDE OF THE JOINT.
- 5) ITEM 534.3, WATER REPELLENT (SILANE–SILOXANE), SHALL BE APPLIED TO THE ENTIRE BRIDGE SEAT, INCLUDING THE BEARING PEDESTAL SURFACES AND ALL EXPOSED SURFACES ON BOTH ABUTMENTS AND ALL WINGWALLS TO 1'-0" BELOW THE FILL LINE.
- 6) ALL STEEL REINFORCING IN THE ABUTMENTS AND WINGWALLS SHALL BE PAID UNDER ITEMS 544.3 – REINFORCING STEEL, (CONTRACTOR DETAILED), AND 544.31 – REINFORCING STEEL, EPOXY COATED (CONTRACTOR DETAILED).
- 7) ALL REINFORCING SHALL BE A MINIMUM OF 2 $\frac{1}{2}$ " FROM CONCRETE SURFACES, UNLESS NOTED OTHERWISE.

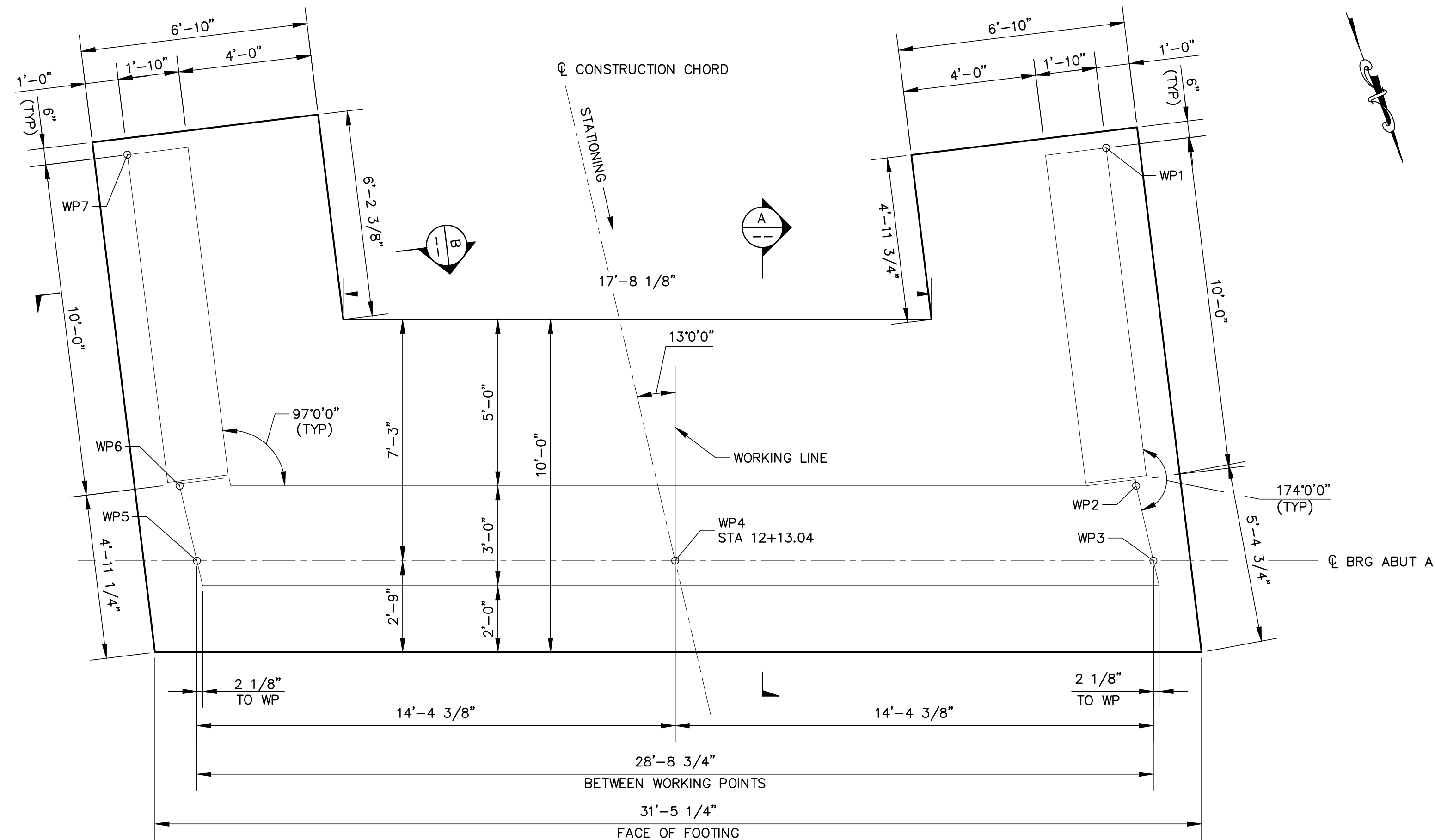
<div>Town of Madbury, New Hampshire</div> <div>Nute Road</div> <div>Bellamy River Crossing Replacement</div> <div>Bridge Notes</div>		date: July 2020	designed by: LBK	<div><div>CMA ENGINEERS</div><div>CIVIL/ENVIRONMENTAL/STRUCTURAL</div><div>Portsmouth, NH • Manchester, NH • Portland, ME 603/431-6196 603/627-0708 207/541-4223</div><div>c m a e n g i n e e r s . c o m</div></div>					
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		checked by: ---	approved by: ---						
		scale: N/A							
drawing no. BR-3									
sheet: 4 of 23									



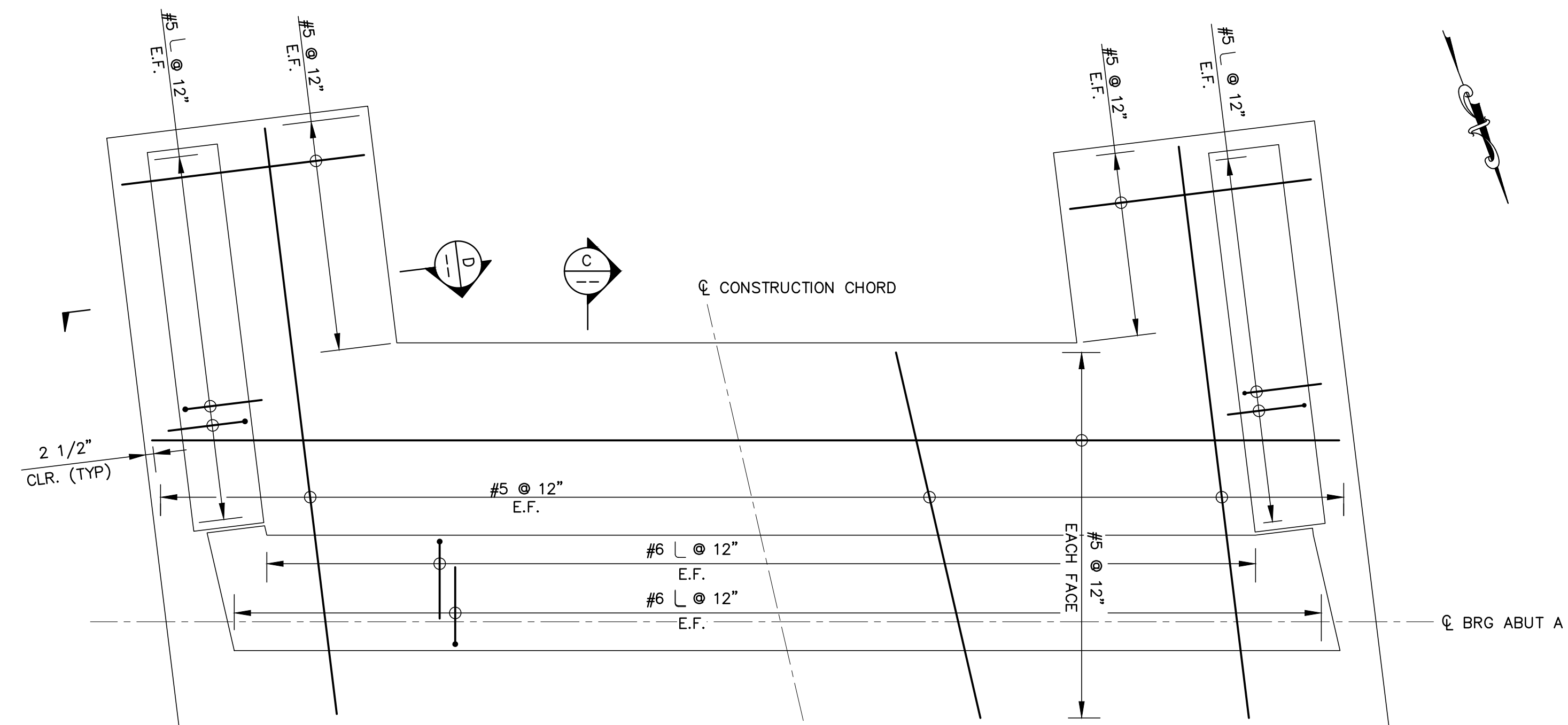
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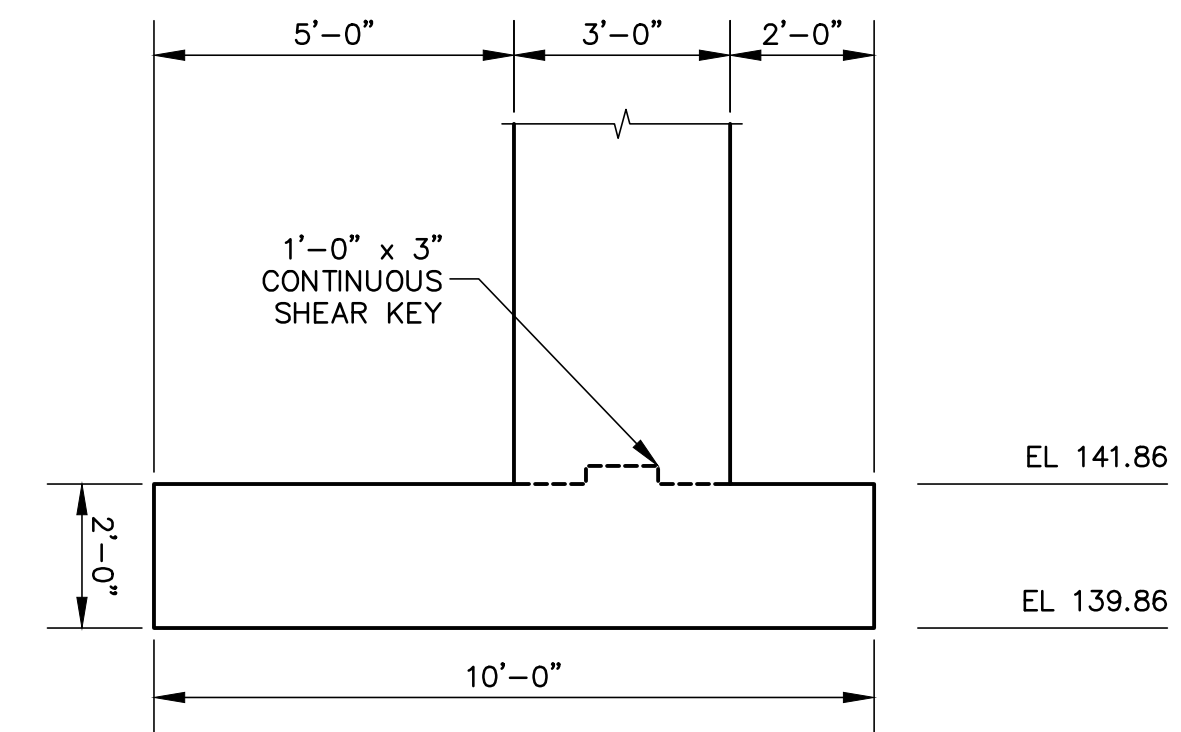
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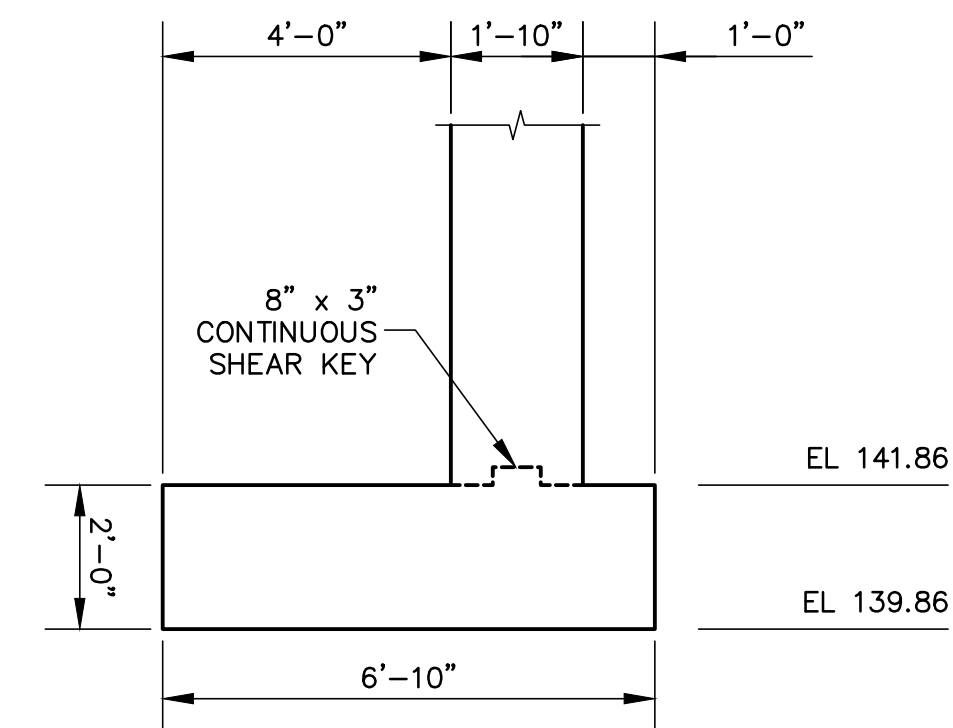
Abutment A Footing Plan
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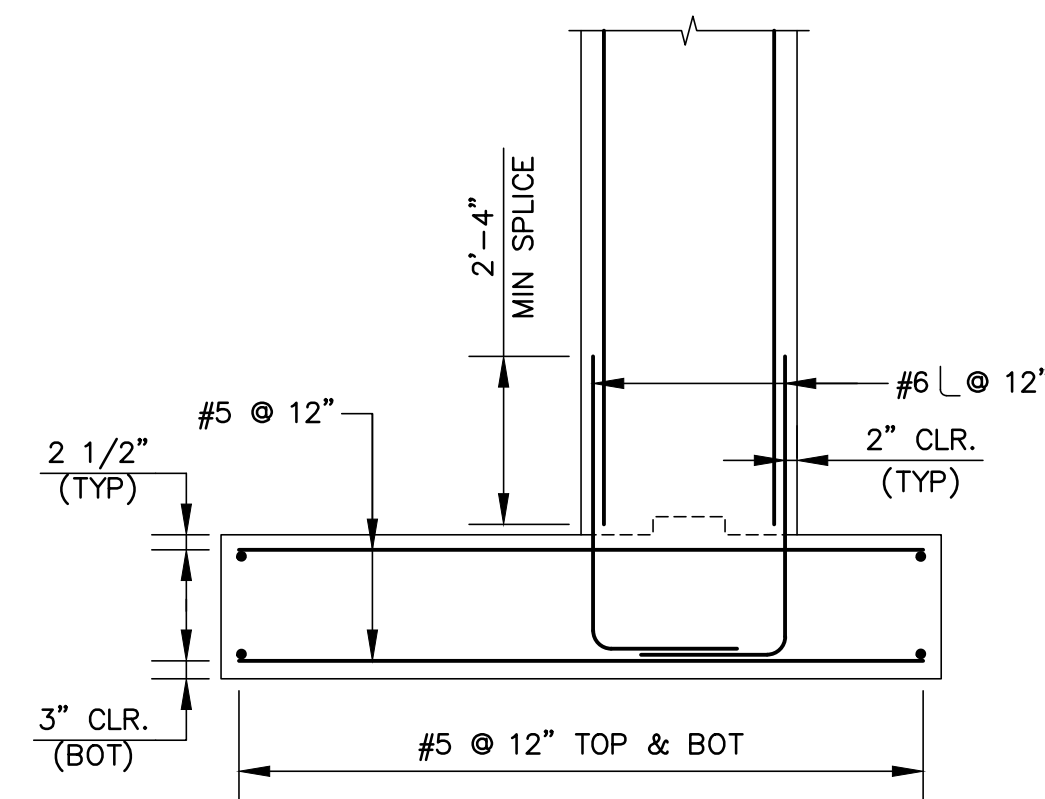
Typical Abutment Footing Reinforcement
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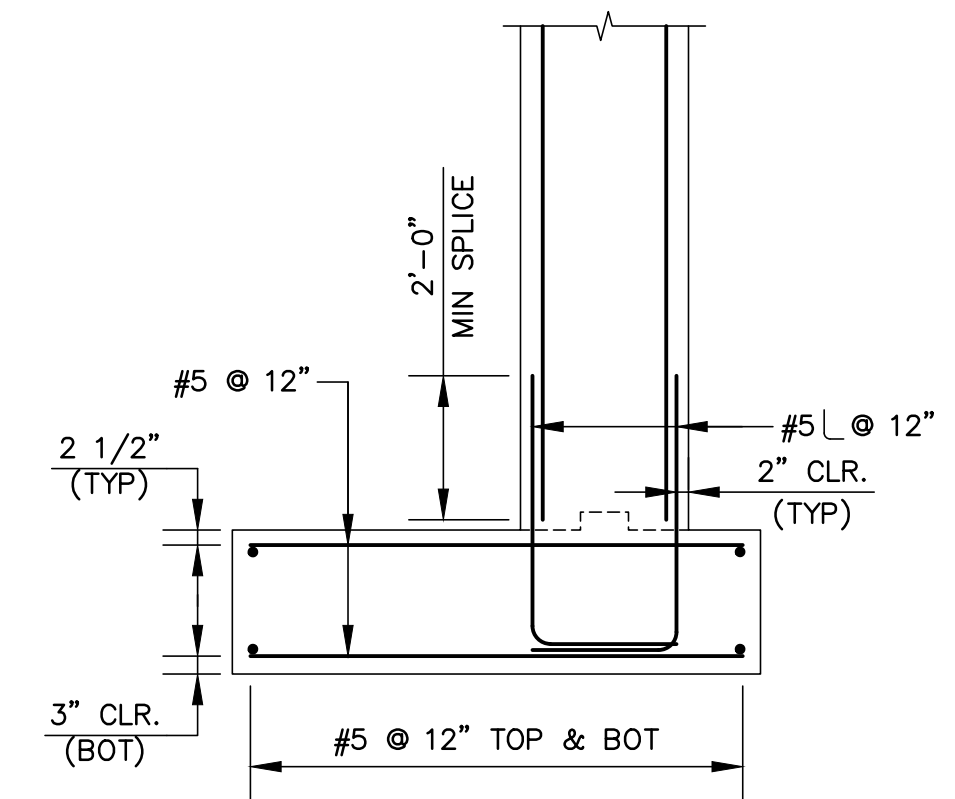
Section A
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Section B
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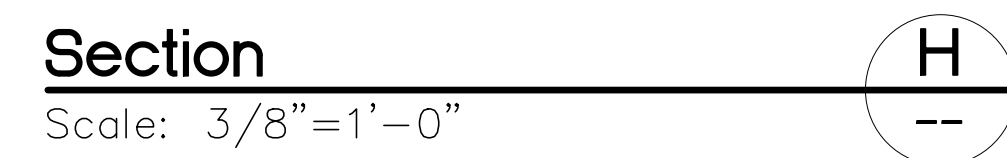
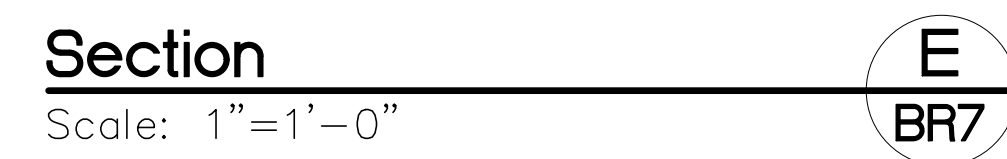
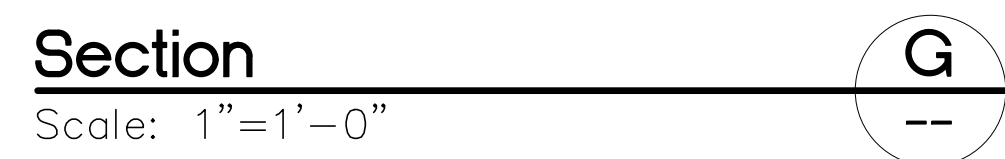
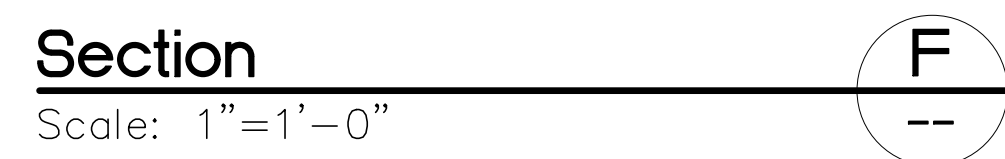


Section C
 Scale: $3/8" = 1'-0"$



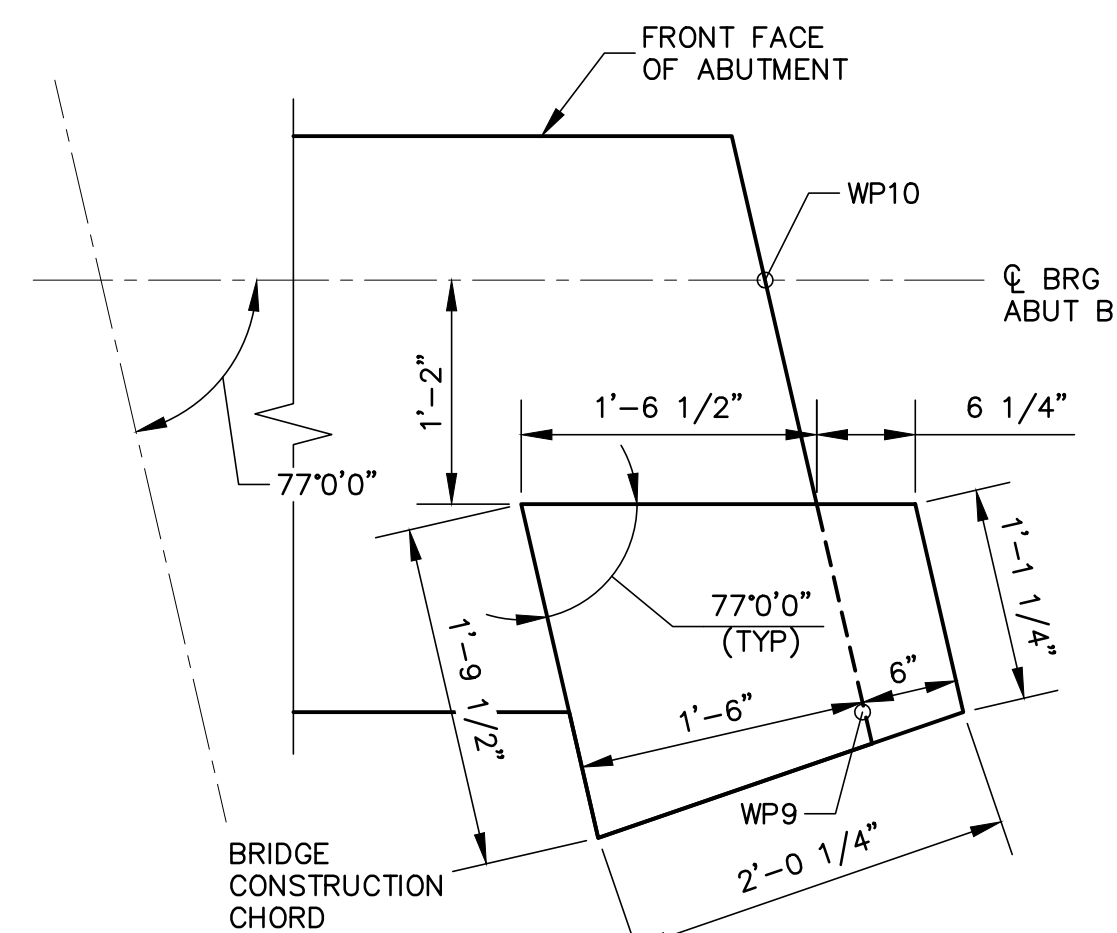
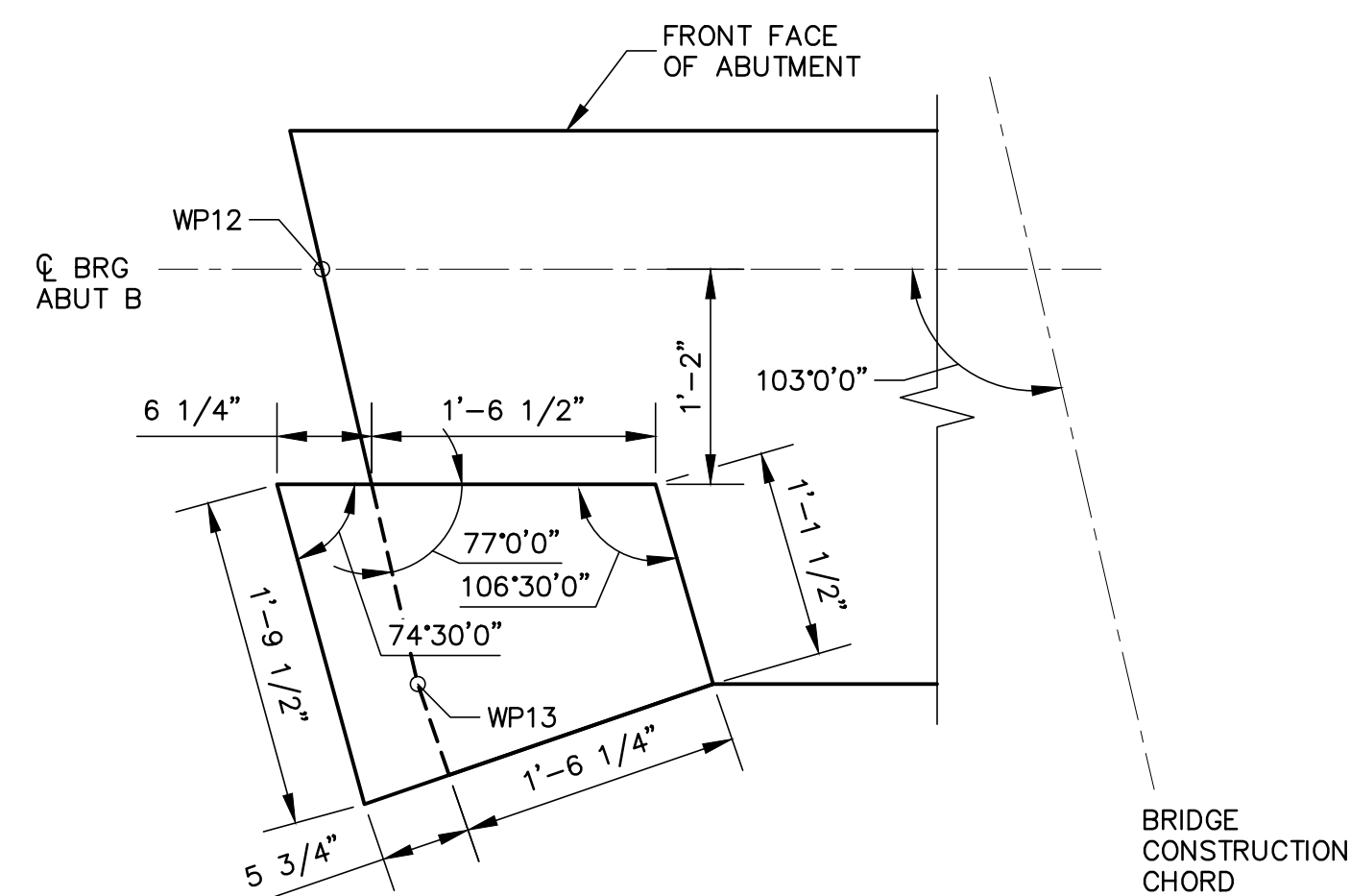
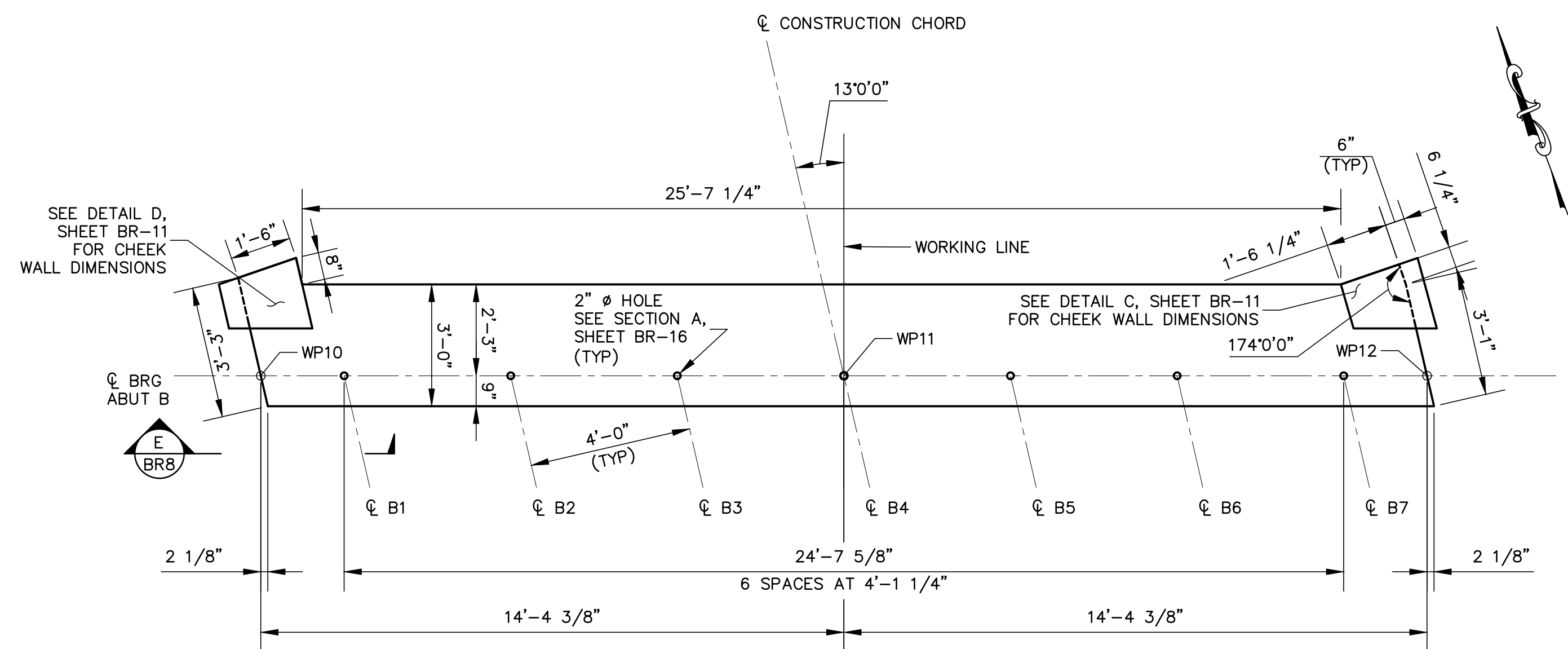
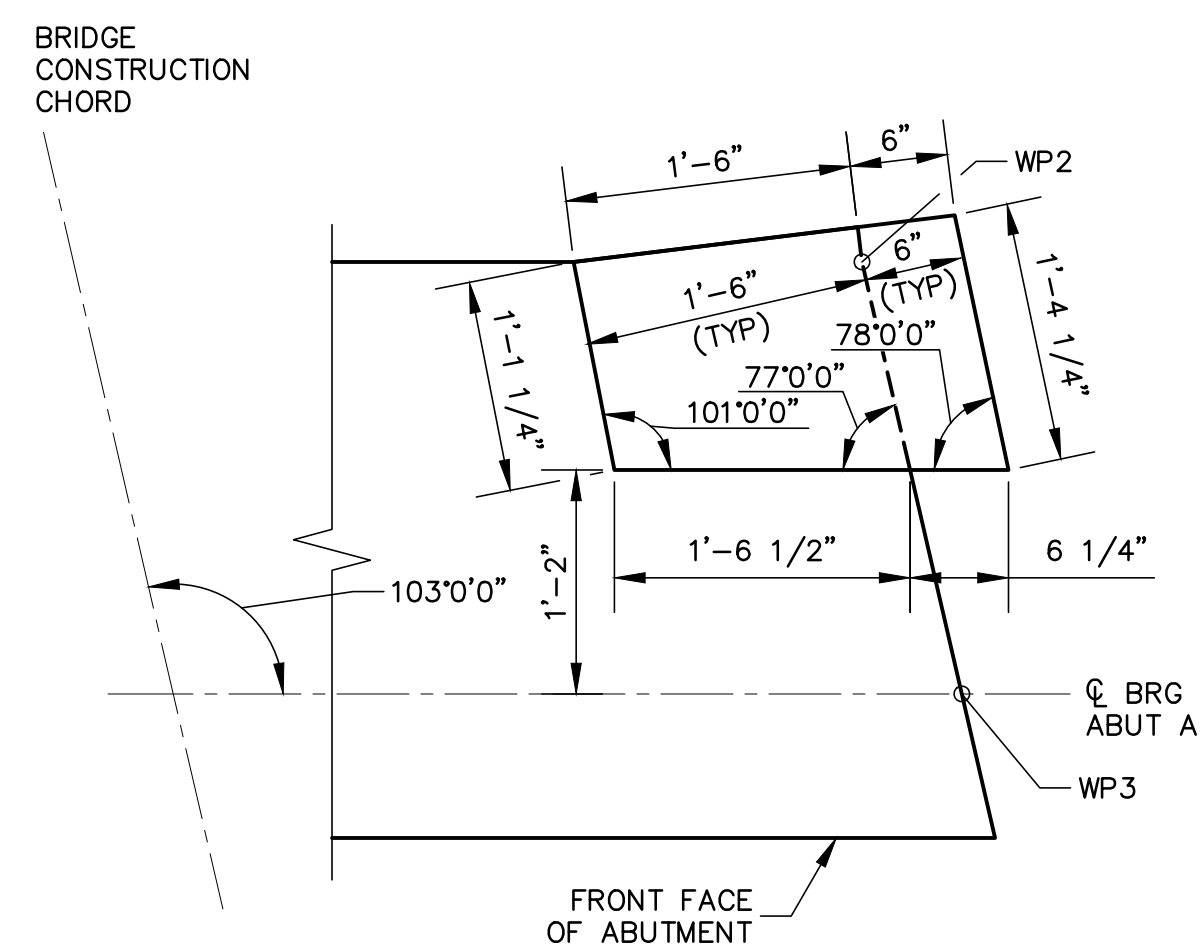
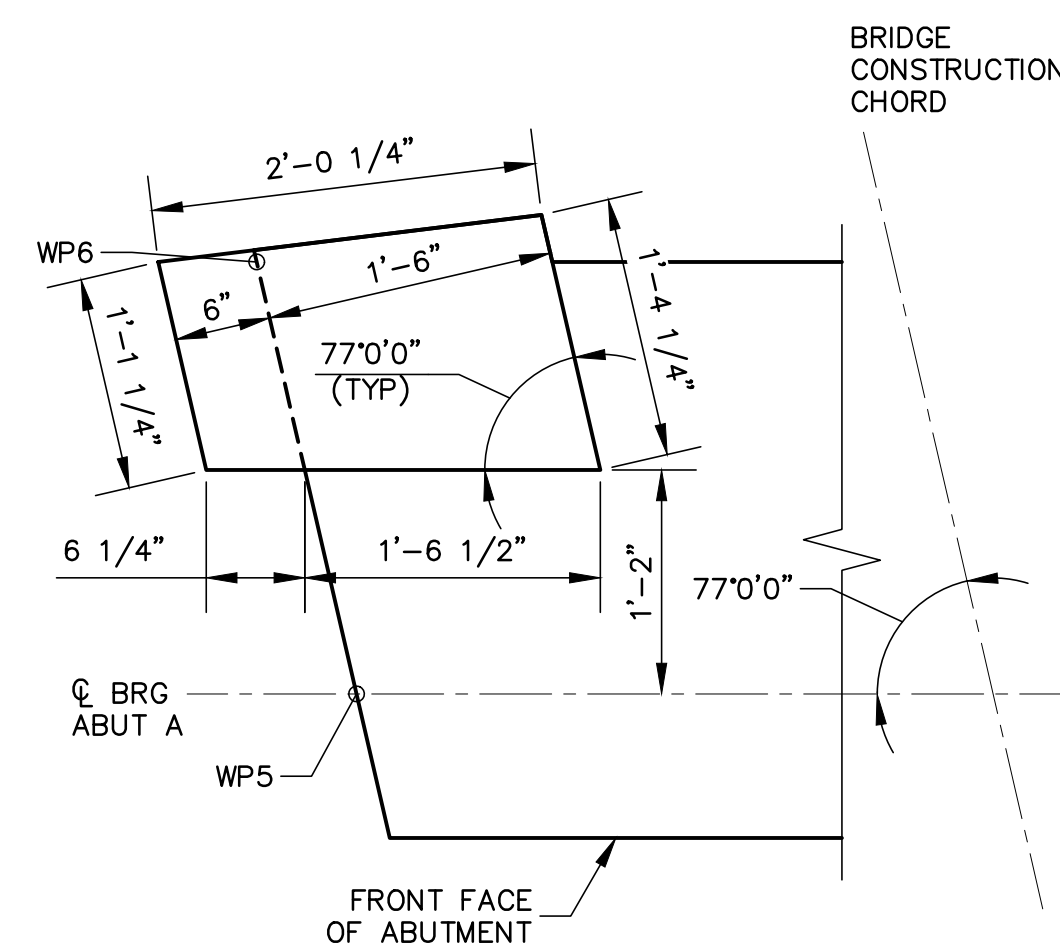
Section D
Scale: $3/8" = 1'-0"$

NOT FOR CONSTRUCTION

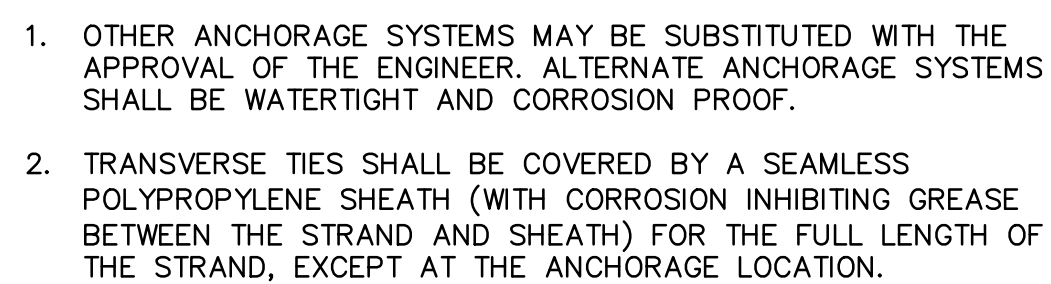
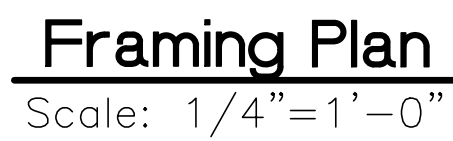


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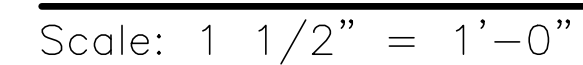
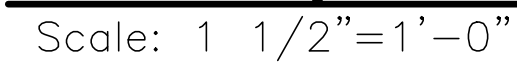
drawing no. BR-8		Town of Madbury, New Hampshire Nute Road Bellamy River Crossing Replacement Abutment A Reinforcement		date: July 2020 project no: 1162 checked by:	designed by: LBK drawn by: TMA approved by:			<div> <div> <div>CMA</div> <div>ENGINEERS</div> </div> <div>Civil/ENVIRONMENTAL/STRUCTURAL</div> </div> <div> Portsmouth, NH • Manchester, NH • Portland, ME 603/431-6196 • 603/627-0708 • 207/541-4223 c m a e n g i n e e r s . c o m </div>		B A no.	PS&E Set Issued for Review Issued for Review revision	07/2020 04/2020 date	LBK LBK by
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NOT FOR CONSTRUCTION



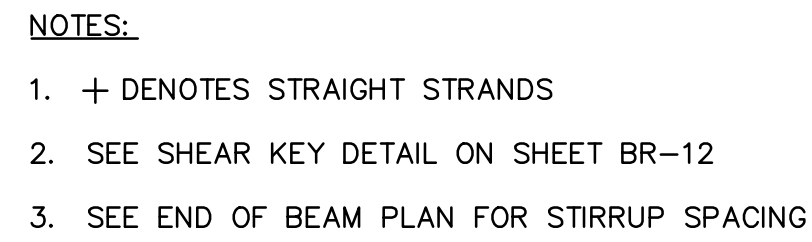
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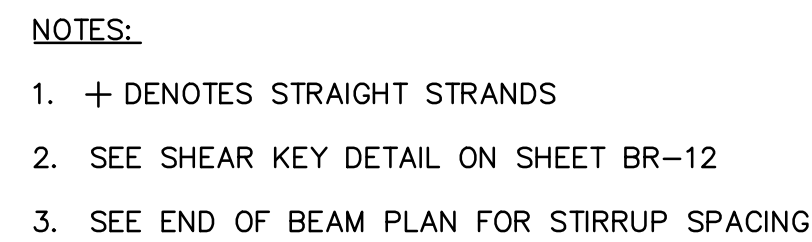
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NOT FOR CONSTRUCTION

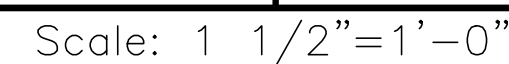
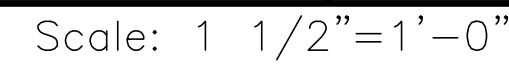
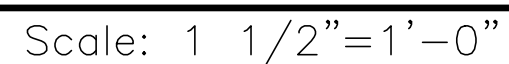
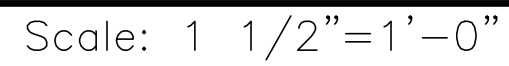
drawing no. BR-12		Town of Madbury, New Hampshire		date: July 2020		designed by: LBK															
sheet: 13 of 23		Nute Road Bellamy River Crossing Replacement Prestressed Beam Layout		project no: 1162		drawn by: TMA															
				checked by: ---		approved by: ---															
						<div>04'8" Scale: 1/4" = 1'-0"</div>															



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



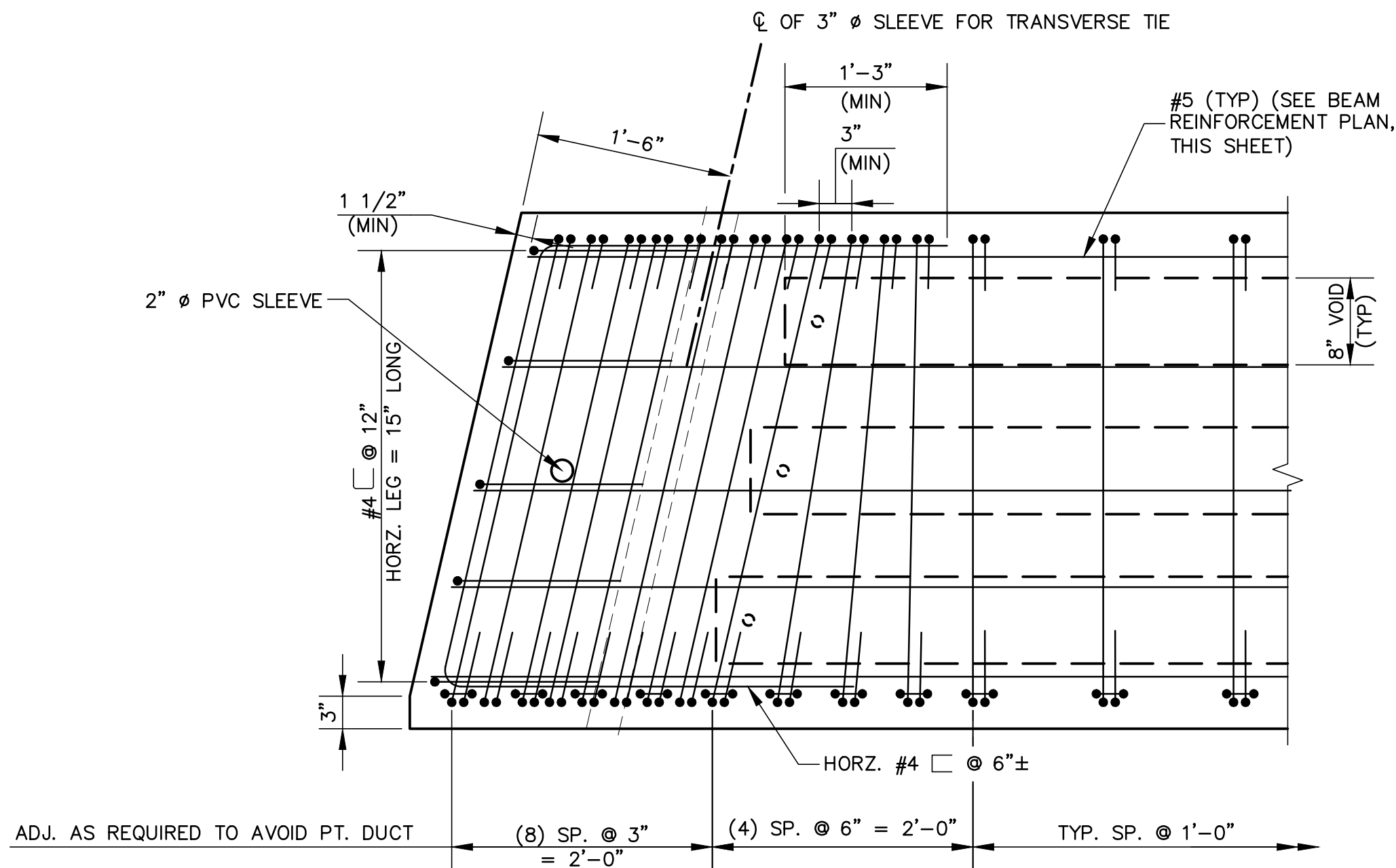
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NOTE: NEGATIVE VALUES INDICATE DOWNWARD DEFLECTION.

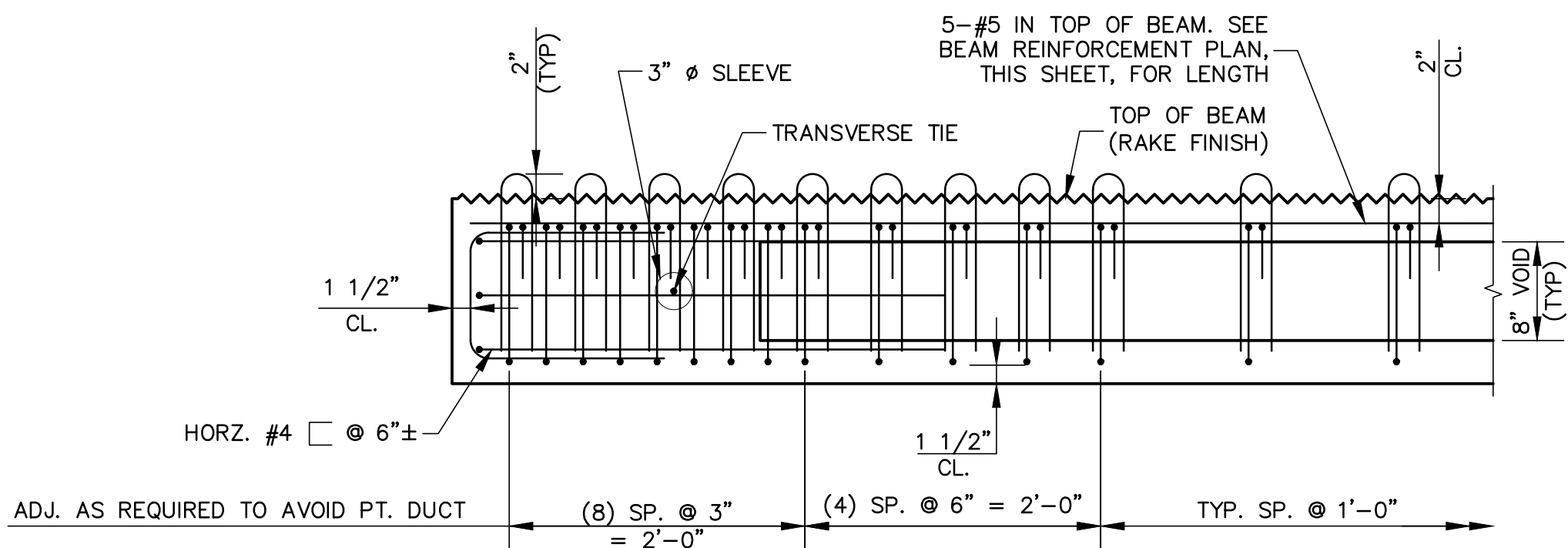
$$\text{TOP OF DECK POUR ELEVATION} = \text{F.G.} - \text{PAVEMENT THICKNESS} + \Delta \text{ SLAB} + \Delta \text{ SUPERIMPOSED DL}$$

sheet: 14 of 23



End of Beam Plan

Scale: 1"=1'-0"

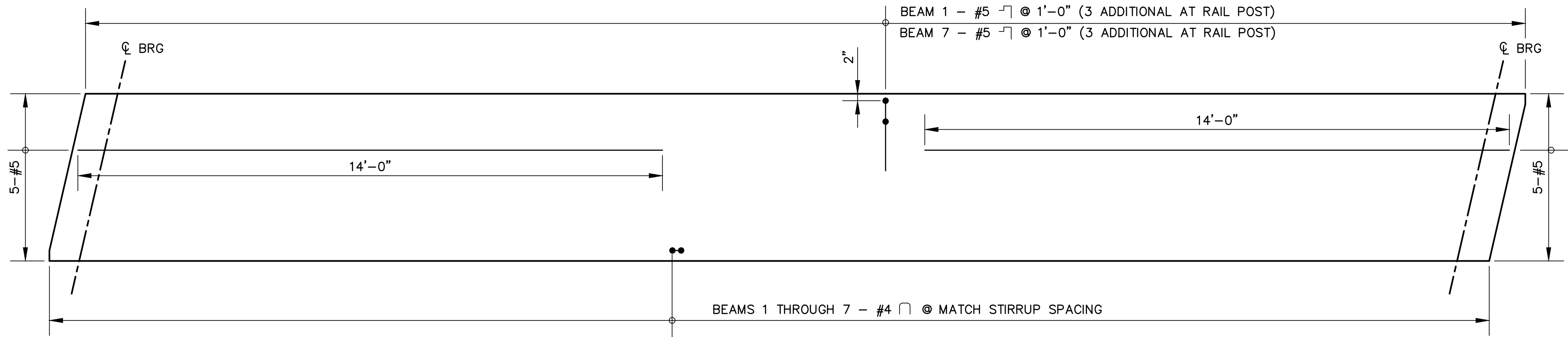


End of Beam Elevation

Scale: 1"=1'-0"

NOTES:

1. PRESTRESSING STRANDS ARE OMITTED FOR CLARITY.

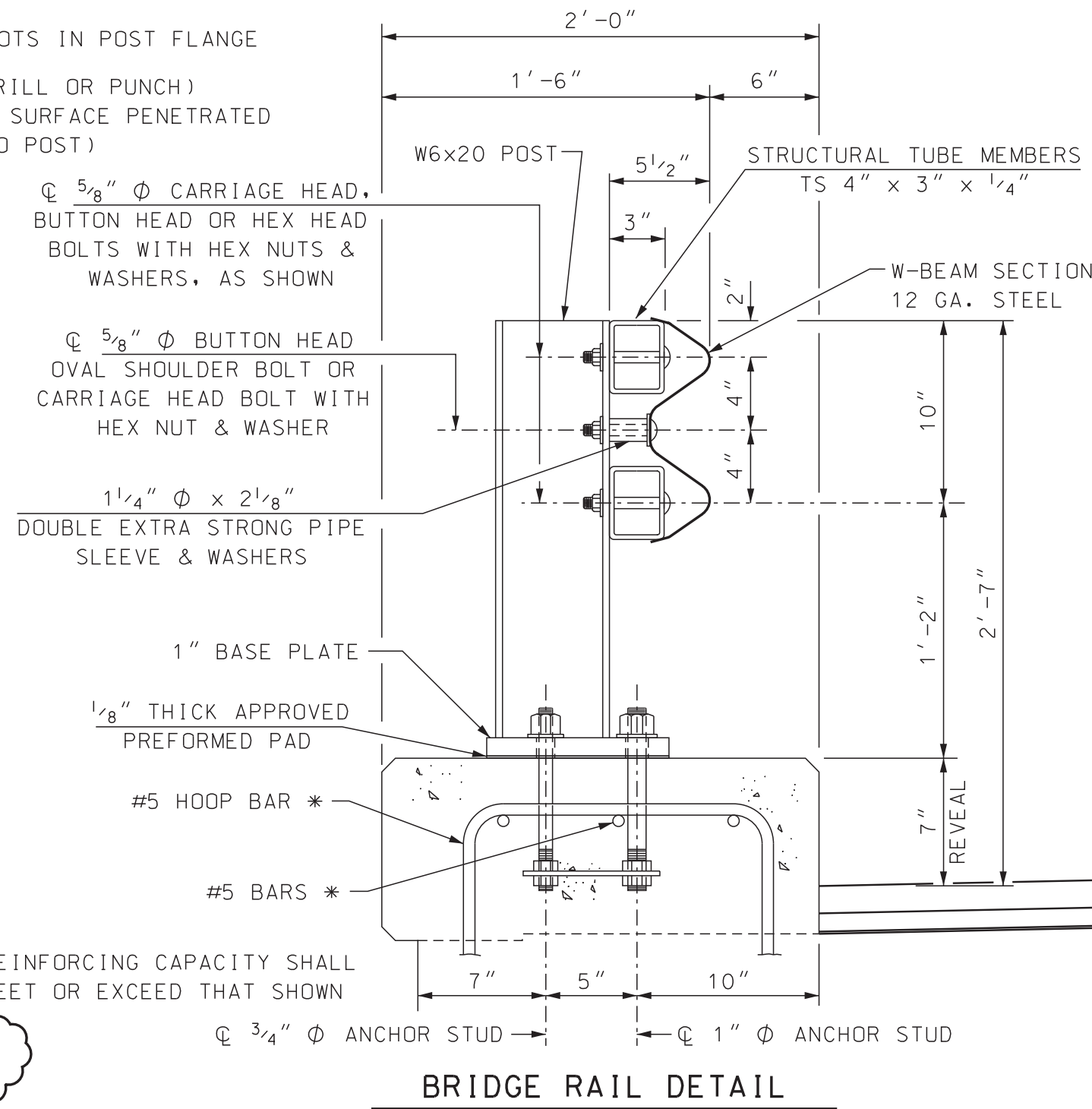
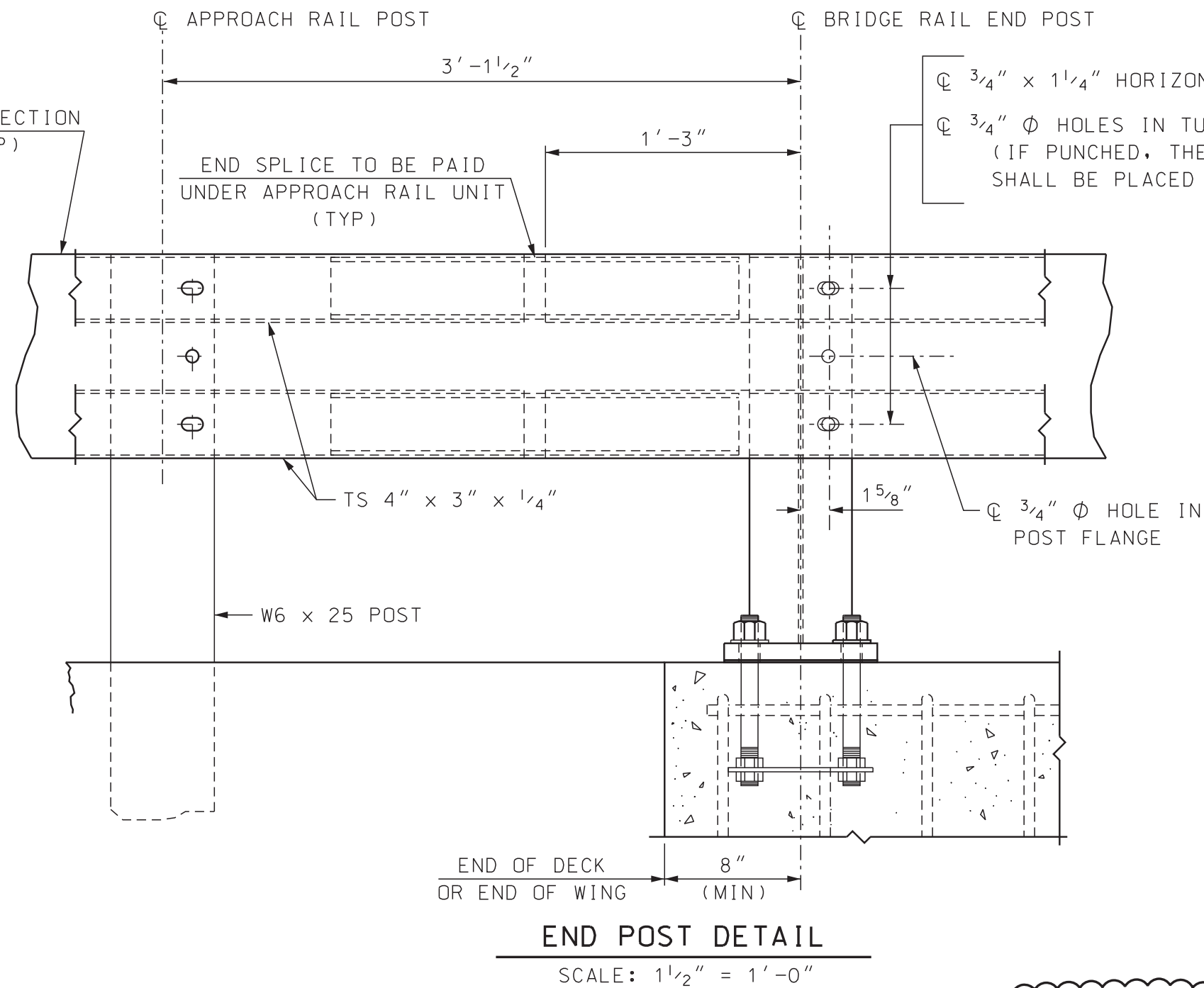
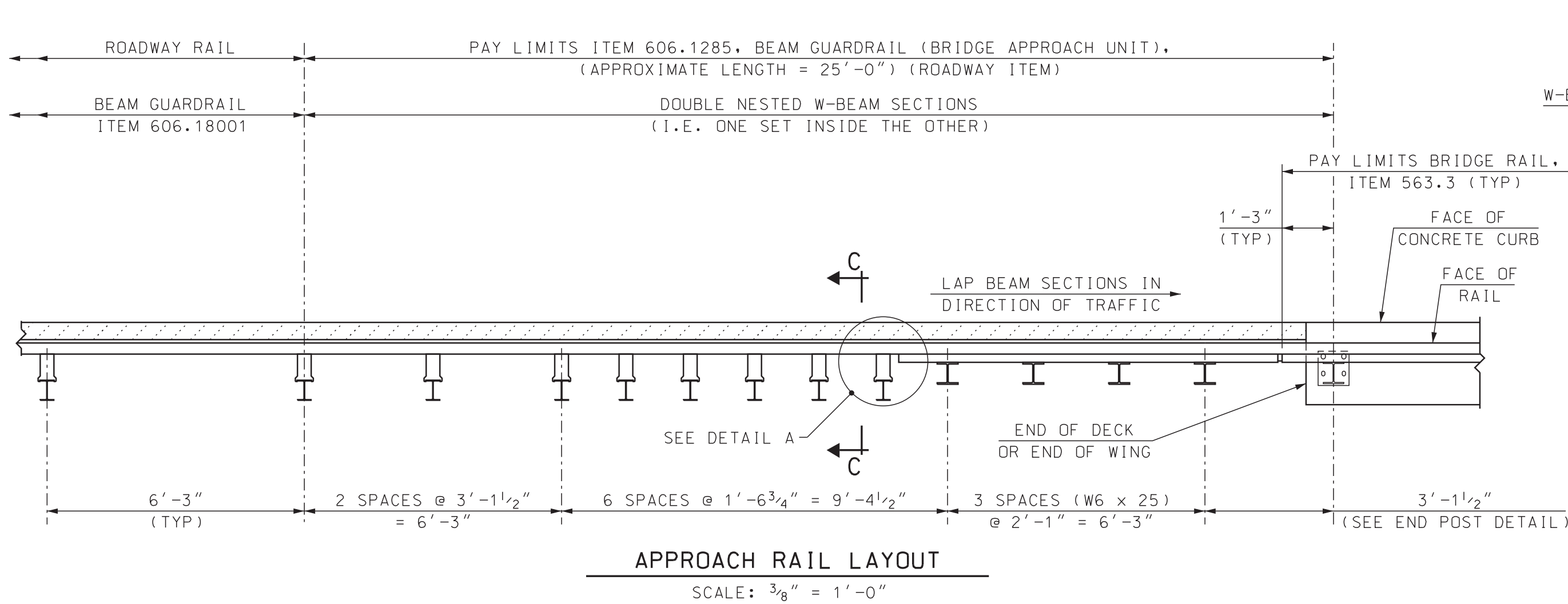


Beam Reinforcing Plan

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

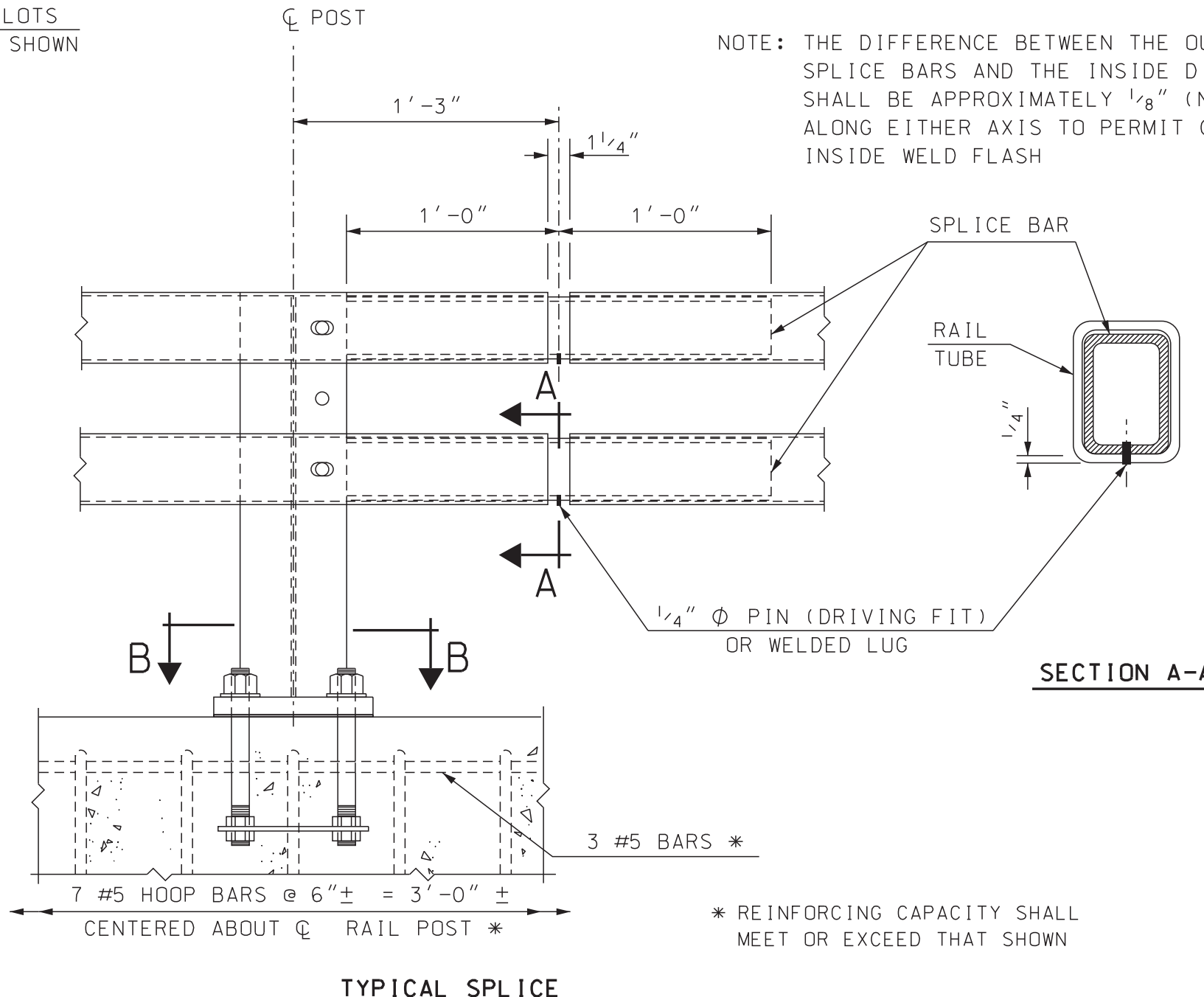
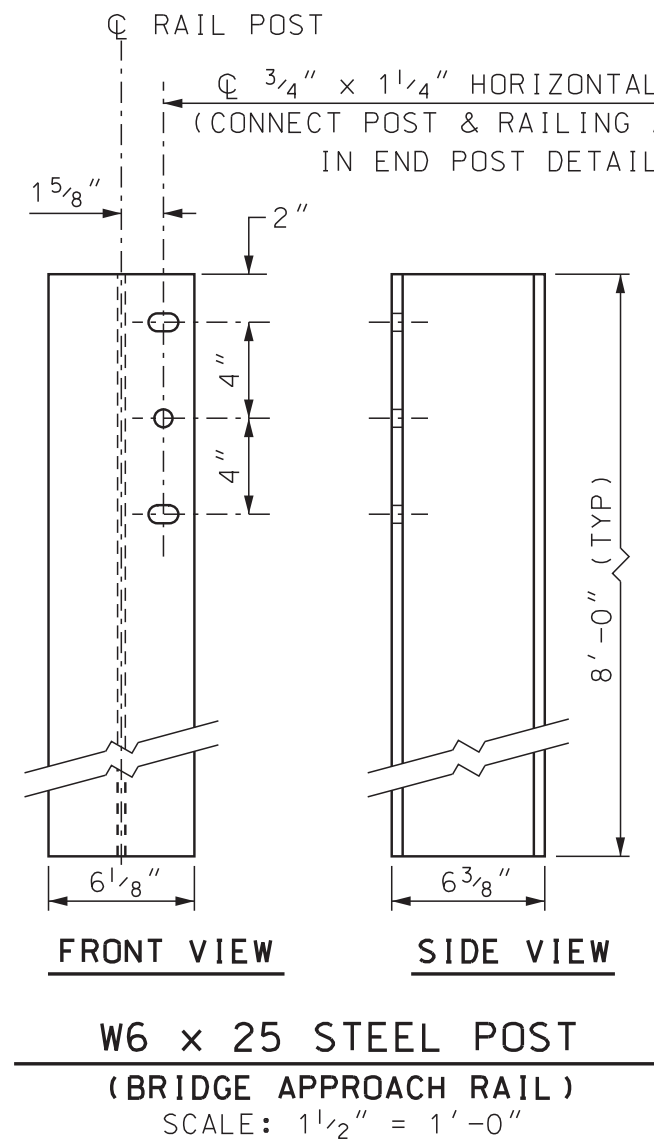
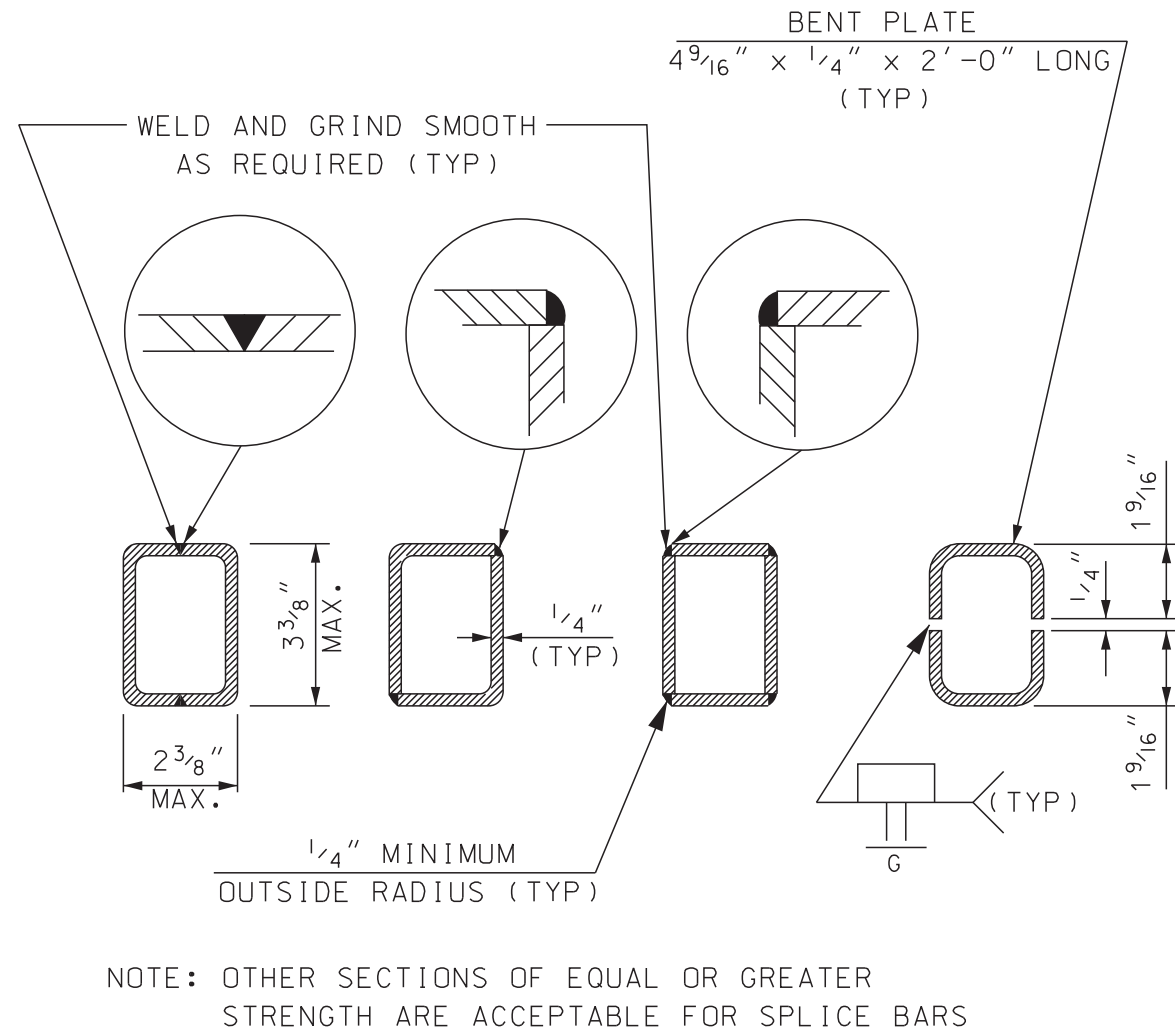
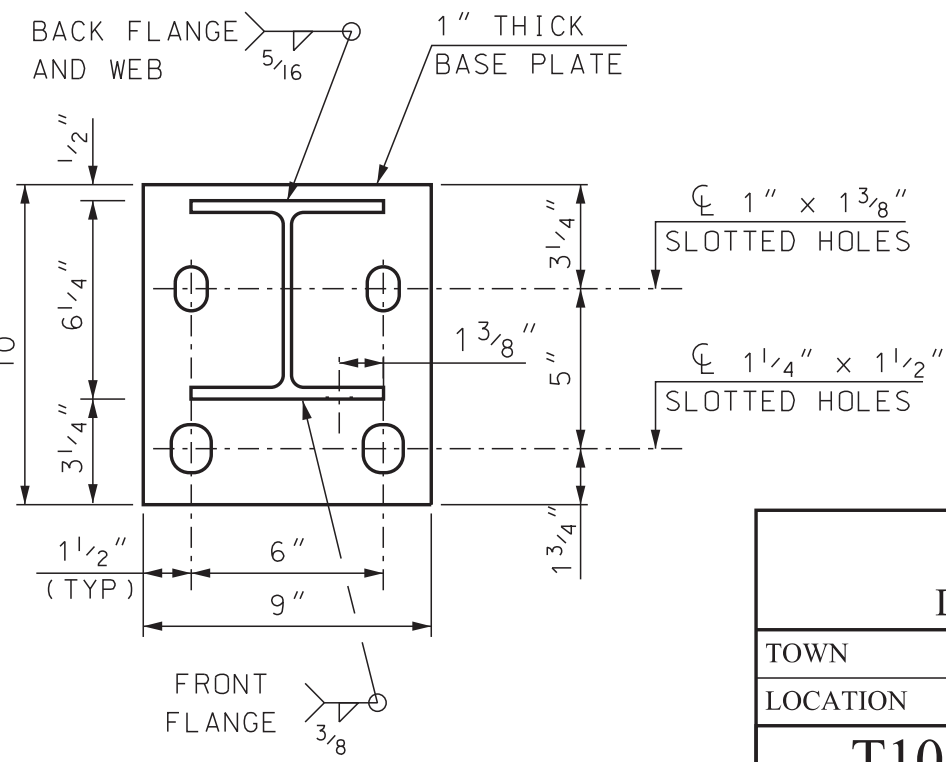
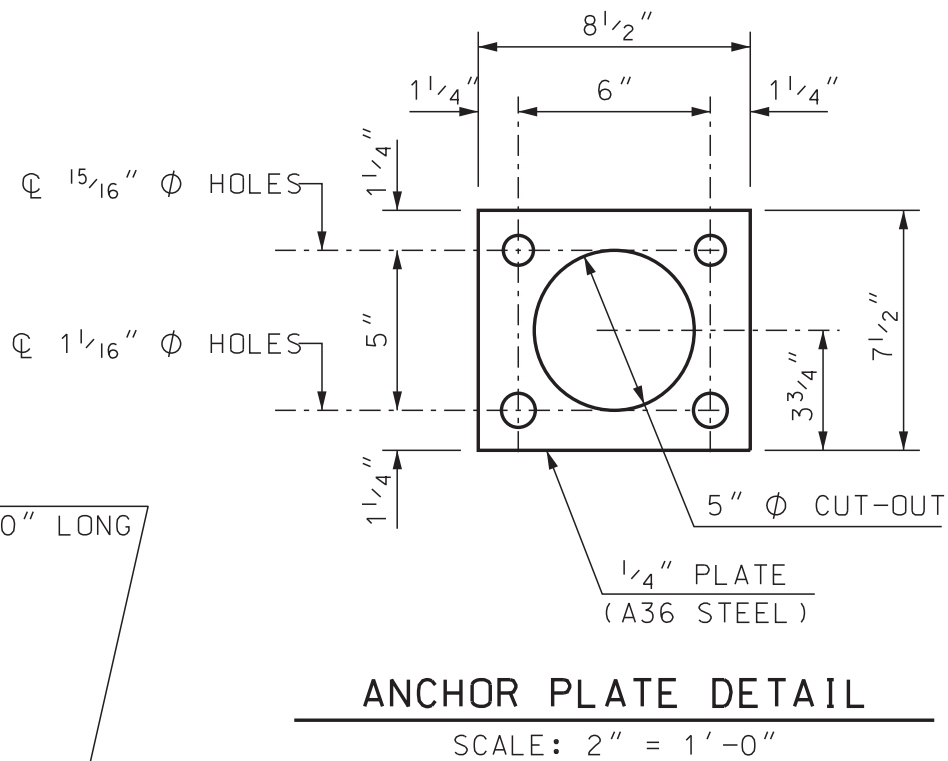
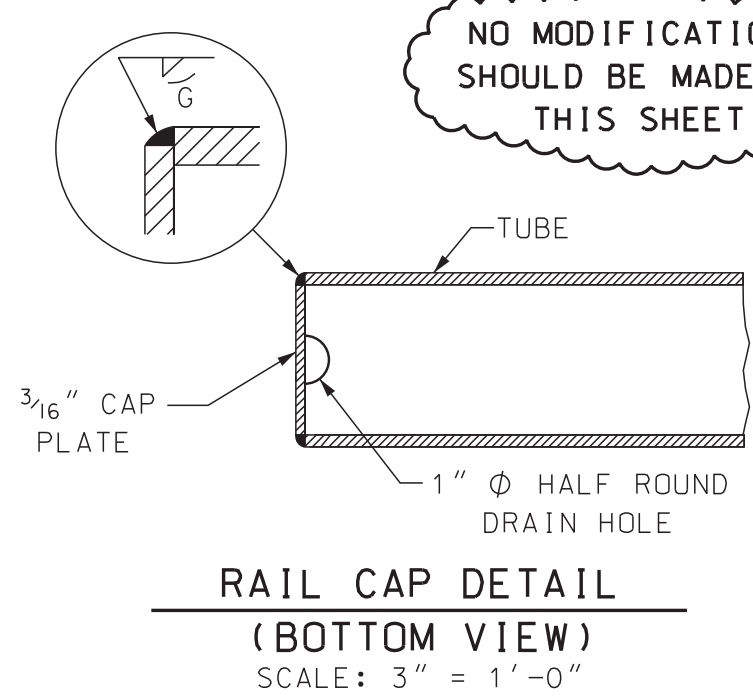
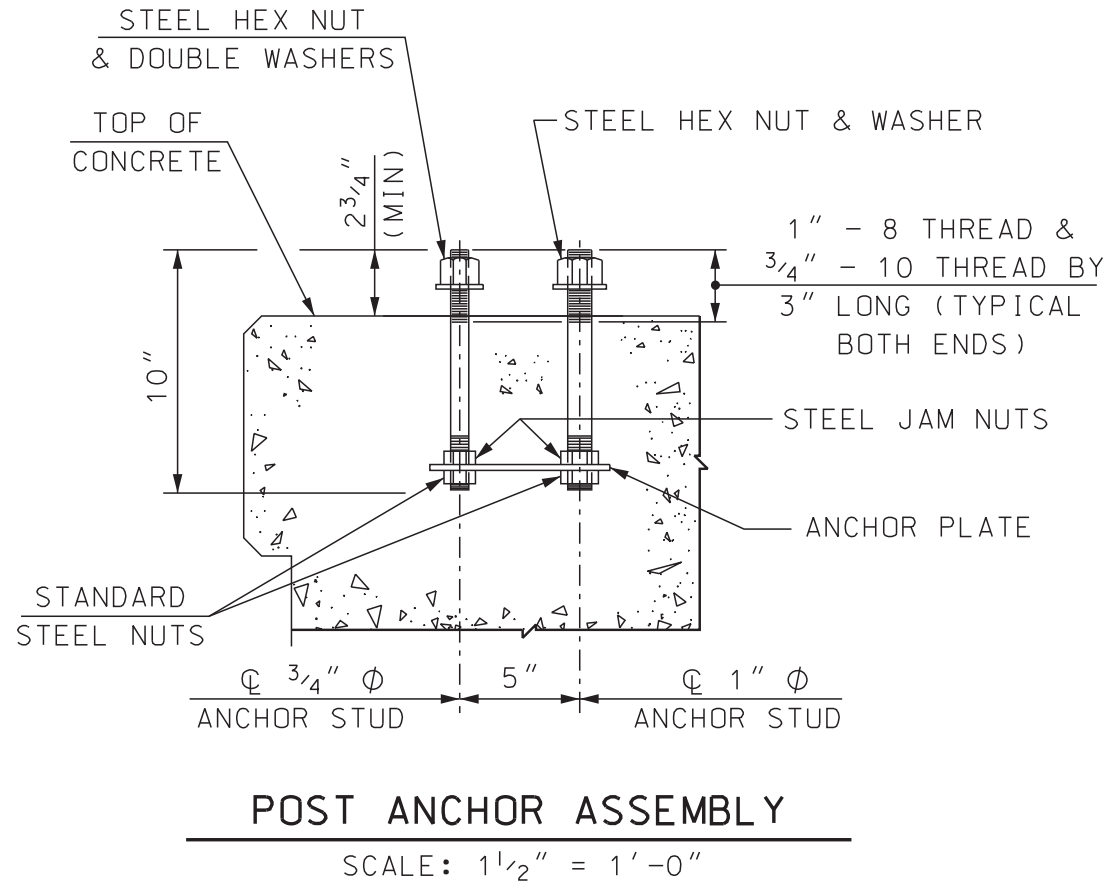
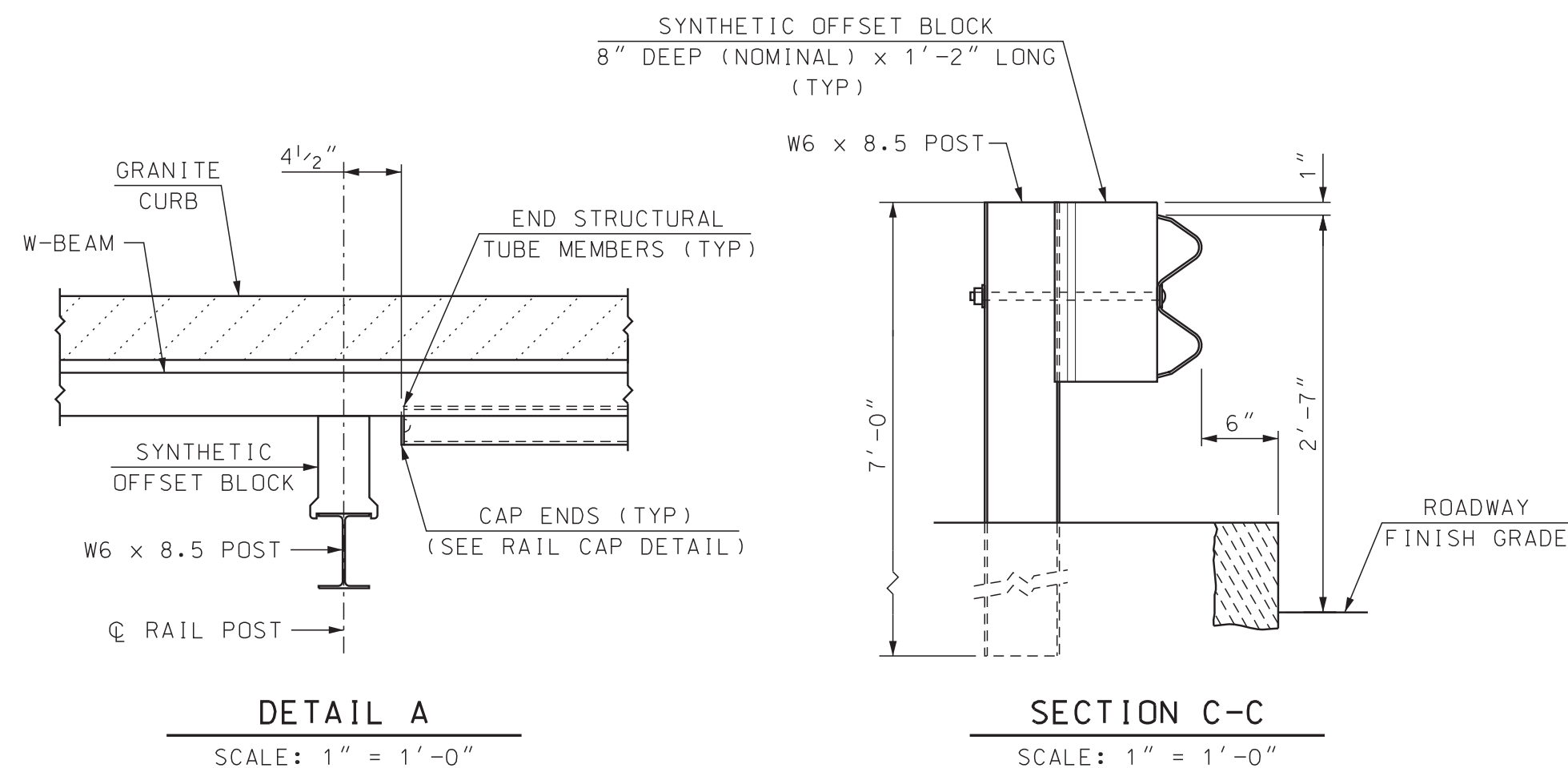
NOT FOR CONSTRUCTION

Town of Madbury, New Hampshire		designed by: LBK	date: July 2020	drawing no. BR-14	
Nute Road		drawn by: TMA	project no: 1162	sheet: 15 of 23	
Bellamy River Crossing Replacement		checked by: ---	approved by: ---	revision	
Prestress Details		no.		date	
2 of 2		by		date	



GENERAL NOTES

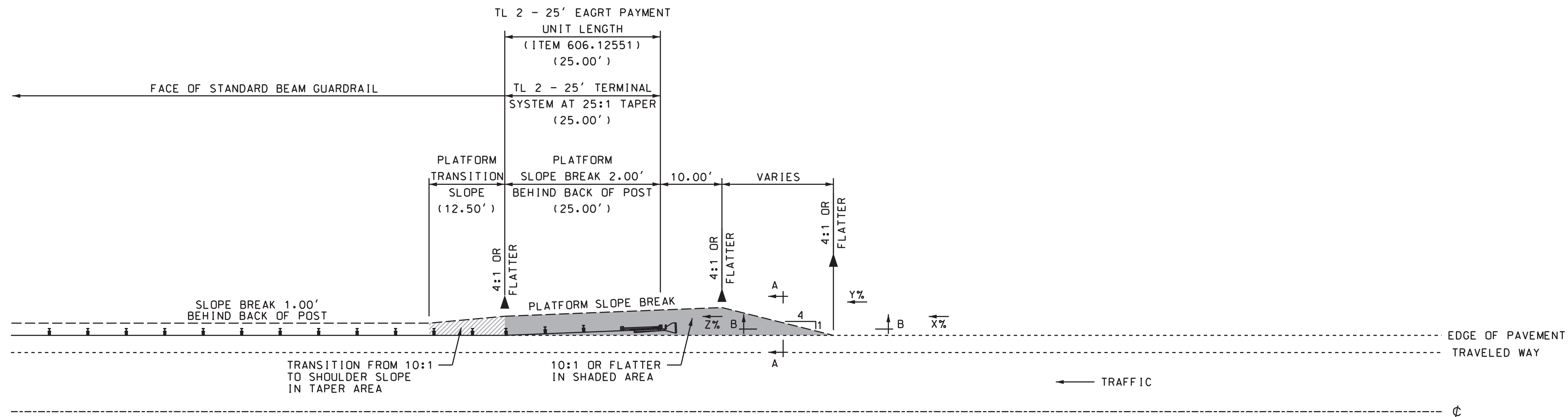
- BRIDGE RAIL T101 SHALL NOT BE USED ON NATIONAL HIGHWAY SYSTEMS.
- BRIDGE RAIL T101 WAS SUCCESSFULLY CRASHED TESTED FOR NCHRP 350 (@ HEIGHT OF 2'-3"), TL-3 PER FHWA MAY 30, 1997 MEMORANDUM. USE OF THIS SYSTEM SHALL BE FOR POSTED SPEEDS ≤45 mph.
- ITEM 563.3, BRIDGE RAIL T101, SHALL INCLUDE POSTS, BASE PLATES, ANCHOR PLATES, ANCHOR STUDS, PREFORMED PADS, RAIL ASSEMBLY BOLTS, NUTS, WASHERS, STRUCTURAL TUBING, SPLICE BARS, PIPE SLEEVES AND W-BEAM SECTIONS.
 - ASTM A572 GRADE 50 : POSTS AND BASE PLATES
 - ASTM A500 GRADE B : STRUCTURAL TUBING
 - ASTM A36 : PIPE SLEEVES, RAIL SPLICE BARS AND ANCHOR PLATES
 - ASTM A449 : ANCHOR STUDS WITH STANDARD NUTS AND HARDENED STEEL COMMERCIAL TYPE A PLAIN WIDE WASHERS
 - A307 : RAIL BOLTS, NUTS, AND WASHERS
 - AASHTO M180 TYPE II : W-BEAM SECTIONS
- ALL STEEL COMPONENTS SHALL BE GALVANIZED AFTER FABRICATION IN CONFORMANCE WITH AASHTO M232 (ASTM A153) AND AASHTO M111 (ASTM A123). GALVANIZED SURFACES SHALL HAVE A UNIFORM APPEARANCE AND GALVANIZED MATERIAL SHALL BE PROPERLY STORED.
- STRUCTURAL TUBING SHALL BE SUPPLIED AS ONE PIECE FOR BRIDGE RAIL 40 FEET OR LESS IN LENGTH. IN OTHER CASES, TUBING SHALL BE SPLICED WITH A SPLICE BAR (SEE SPLICE BAR DETAILS). NO TRANSVERSE BUTT WELDS ARE PERMITTED ON RAIL TUBING WITHIN A CONTINUOUS LENGTH.
- EACH PIECE OF RAIL TUBING SHALL BE ATTACHED TO A MINIMUM OF THREE POSTS.
- FOR BRIDGE RAIL POST SPACING, SEE BRIDGE RAIL LAYOUT. THE MAXIMUM BRIDGE RAIL POST SPACING SHALL BE 8'-4". POST SPACING OF 8'-4" OR 6'-3" IS RECOMMENDED WHENEVER POSSIBLE FOR USE WITH 25' SECTIONS OF STANDARD W-BEAM RAIL.
- PREFORMED BEARING PADS SHALL CONFORM TO AASHTO M251.
- NUTS FOR THREADED ANCHOR STUDS CONNECTING THE BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
- OTHER TYPES OF OFFSET BLOCKS MAY BE SUBSTITUTED FOR THOSE SHOWN. SEE NOTES IN STANDARD PLAN GR-2 (BEAM GUARDRAIL STANDARD SECTION - STEEL POSTS & HARDWARE DETAILS) OF THE HIGHWAY DESIGN STANDARD PLANS FOR ROAD CONSTRUCTION.



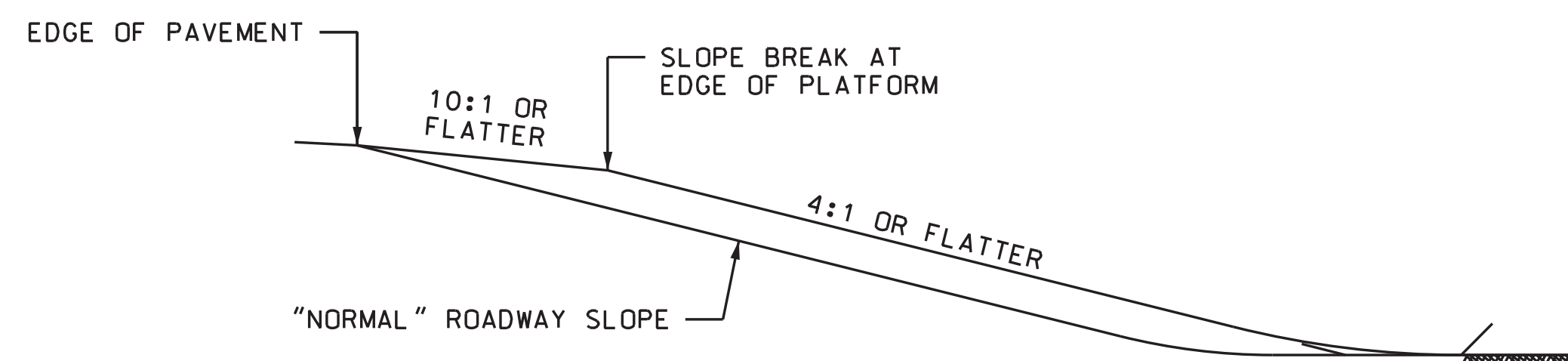
(GALVANIZED - 7" CURB REVEAL)

STATE OF NEW HAMPSHIRE										
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN										
TOWN			BRIDGE NO.			STATE PROJECT				
LOCATION										
T101 BRIDGE & APPROACH RAIL (STEEL POSTS)								BRIDGE SHEET		
REVISIONS AFTER PROPOSAL			BY		DATE		BY		DATE	
			DESIGNED	TEXAS/JSZ	3/90	CHECKED	NHDOT	BR-18		
			DRAWN	PJP	1/10	CHECKED	NHDOT			
			QUANTITIES			CHECKED			FILE NUMBER	
			ISSUE DATE	1/20/10	FEDERAL PROJECT NO.		SHEET NO.			
			REV. DATE	1/6/20				19		TOTAL SHEETS
								23		

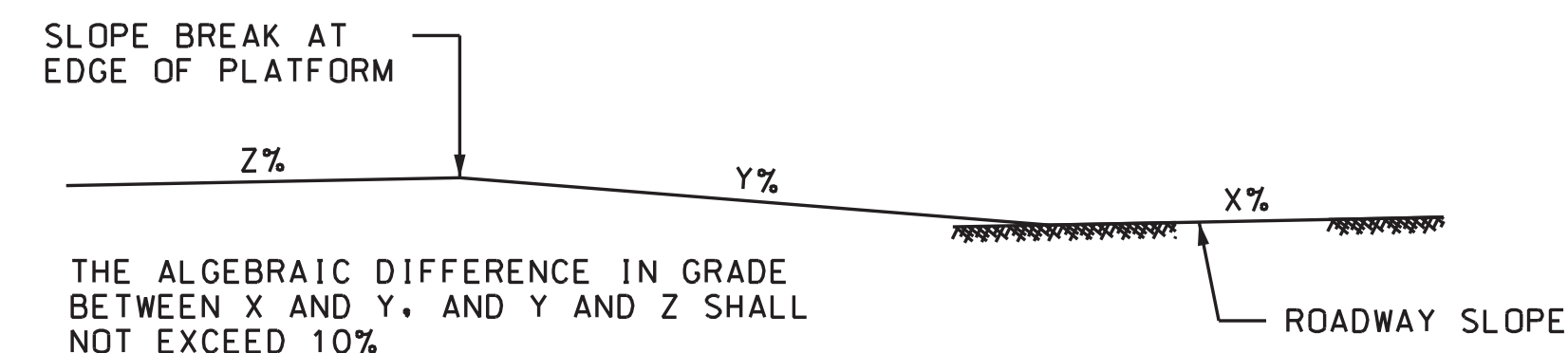
SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
English/T101	T101-7GALV_SP	AS NOTED



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

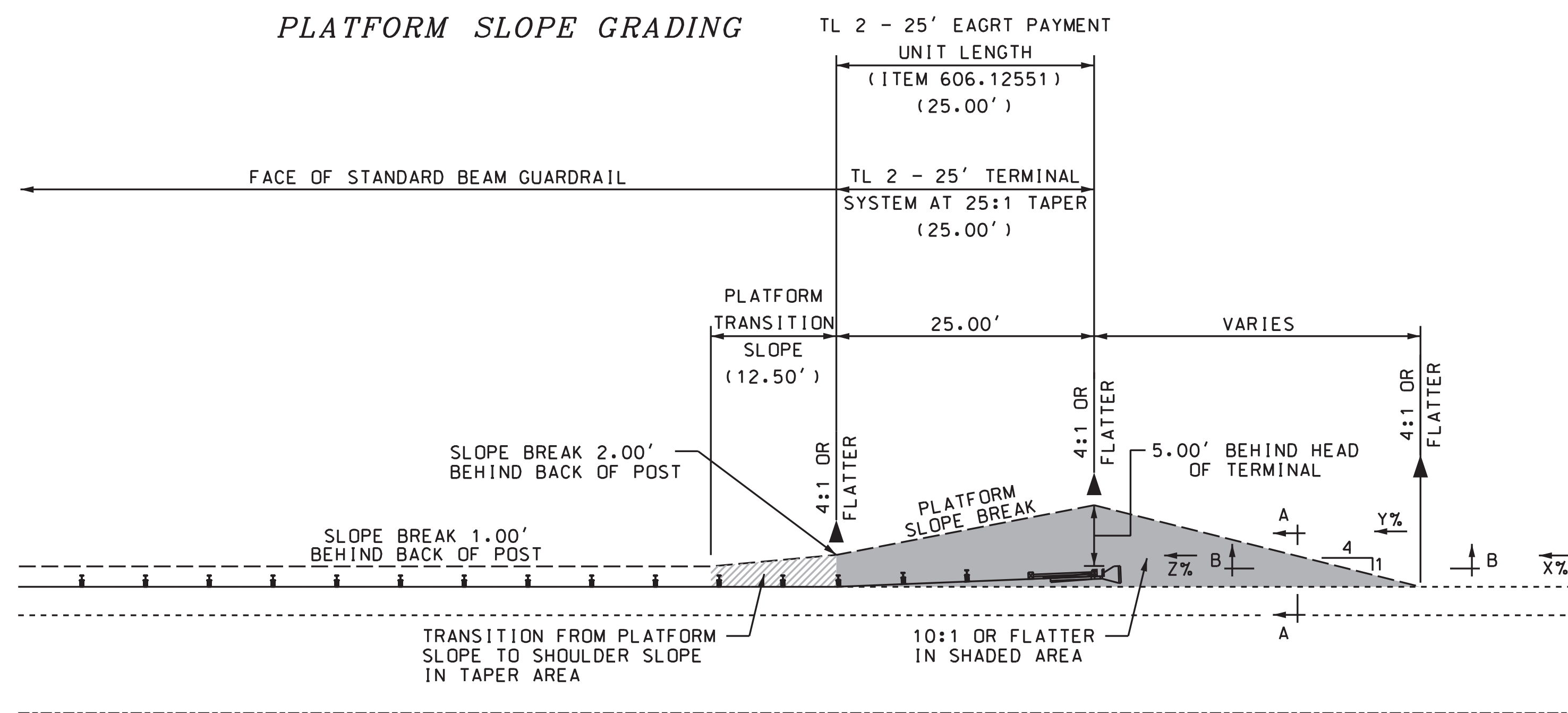


SECTION A-A
PLATFORM SLOPE GRADING



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 203.5571 - EAGRT PLATFORM PREFERRED, TL 2 - 25'

NOTES

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

NOT TO SCALE

STATE OF NEW HAMPSHIRE SPECIAL DETAILS				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
TL 2 - 25' EAGRT PLATFORM DETAILS				
REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
01/22/19	+12_25	-	20	25

- 1) ALL WORK SHALL BE IN CONFORMANCE WITH CURRENT NHDOT STANDARD SPECIFICATIONS, DETAILS, AND THE TOWN OF MADBURY REQUIREMENTS.
- 2) ENGINEER SHALL BE DEFINED AS THE RESIDENT ENGINEER / OWNER'S REPRESENTATIVE, WHO IS RESPONSIBLE FOR ENGINEERING OBSERVATION DURING CONSTRUCTION, ACTING DIRECTLY OR THROUGH THEIR DULY AUTHORIZED REPRESENTATIVES.
- 3) THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY LOCATIONS PUBLIC OR PRIVATE, SHOWN OR NOT SHOWN, PRIOR TO CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH PROPOSED CONSTRUCTION AND THE APPROPRIATE REMEDIAL ACTION SHALL BE TAKEN BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL NOTIFY DIG-SAFE (1-800-DIG-SAFE) AT LEAST 72 HOURS PRIOR TO THE BEGINNING OF WORK TO CONFIRM THE LOCATION OF UNDERGROUND UTILITIES.
- 4) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING THE HORIZONTAL AND VERTICAL CONTROL THROUGHOUT THE PROJECT.
- 5) THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING RESIDENTS OF ANY WORK RESTRICTING ACCESS TO ANY DRIVEWAY 24 HOURS IN ADVANCE.
- 6) ALL MAIL BOXES SHALL REMAIN AT THE SAME LOCATION AND BE RESET TO SAME HEIGHT IF TEMPORARY REMOVAL IS NECESSARY.
- 7) OVERHEAD UTILITY LINES ARE LOCATED THROUGHOUT THE PROJECT WITH CROSSINGS AT VARIOUS LOCATIONS AND RUNNING ALONG THE ROAD THROUGHOUT THE PROJECT. THE CONTRACTOR IS ADVISED THAT EXTREME CAUTION WILL BE REQUIRED IN THE OPERATION OF EQUIPMENT, ESPECIALLY CRANES.
- 8) REMOVE TOPSOIL FOR ITS TOTAL DEPTH WITHIN THE LIMITS OF THE SLOPE LINES, UNLESS OTHERWISE DIRECTED. STOCKPILE TOPSOIL AND USE IT ON THIS PROJECT AS NEEDED UNDER SECTION 646.51 - TURF ESTABLISHMENT WITH MULCH, TACKIFIERS AND LOAM. STOCKPILE LOCATION SHALL BE DETERMINED BY THE CONTRACTOR WITHIN THE RIGHT-OF-WAY OR OFF SITE. ALL COST FOR STOCKPILING OF TOPSOIL SHALL BE INCLUDED IN THE APPROPRIATE 646 ITEM OF THIS CONTRACT.
- 9) PERFORM ALL WORK WITHIN THE EXISTING RIGHT-OF-WAY OR ACQUIRED TEMPORARY RIGHT-OF-ENTRY LIMITS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING OR RE-ESTABLISHING ALL PROPERTY MONUMENTATION (IRON PIPE, REBAR BOUNDS, ETC.). THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
- 10) CONTRACTOR SHALL PLACE BARRICADES IN A MANNER THAT WILL PROVIDE CONTINUOUS AND UNRESTRICTED ACCESS FOR RESIDENTS WITHIN THE PROJECT LIMITS.
- 11) RIGHT-OF-WAY AGREEMENTS HAVE BEEN ESTABLISHED WITH ABUTTING PROPERTY OWNERS BASED ON THE TOE OF SLOPE SHOWN ON THESE PLANS. ALL WORK SHALL BE PERFORMED WITHIN THE AREA BOUND BY THE TOE OF SLOPE. THE AGREEMENTS ARE INCLUDED AS AN APPENDIX TO THE NHDES WETLANDS PERMIT APPLICATION.
- 12) CONTRACTOR SHALL PROTECT PRIVATE PROPERTY AND SHALL TAKE ALL NECESSARY MEASURES AND PRECAUTIONS TO AVOID DAMAGE TO EXISTING TREES, SHRUBS, LAWN, PLANTINGS, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRS/REPLACEMENT OF ALL DAMAGED ITEMS.
- 13) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL METHODS AND MATERIALS FOR CONSTRUCTION OF THE PROJECT, INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA REGULATIONS. THE OWNER AND ENGINEER WILL PERIODICALLY REVIEW CONSTRUCTION FOR COMPLIANCE WITH THE PLANS AND SPECIFICATIONS. SUCH REVIEW DOES NOT IMPLY APPROVAL OF THE METHODS OF CONSTRUCTION.
- 14) THE CONTRACTOR SHALL EXERCISE CAUTION AND COMPLY WITH ALL APPLICABLE TRAFFIC LAWS AND REGULATIONS IN EXECUTION OF THE WORK. THE CONTRACTOR SHALL COORDINATE ACTIVITIES WITH THE TOWN'S POLICE AND FIRE DEPARTMENTS TO ENSURE ACCESS DURING CONSTRUCTION. THE CONTRACTOR SHALL FURNISH, ERECT, AND MAINTAIN BARRICADES, WARNING SIGNS, DELINEATORS, STRIPING, FLAGGERS, AND PILOT CARS IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE SPECIFICATIONS. THE CONTRACTOR SHALL BEAR ALL EXPENSE OF MAINTAINING THE SECTION OF ROAD UNDERGOING IMPROVEMENT INCLUDING ALL TEMPORARY APPROACHES OR CROSSINGS AND INTERSECTIONS WITH TRAILS, ROADS, STREETS, BUSINESSES, PARKING LOTS, RESIDENCES, GARAGES, FARMS, AND OTHER FEATURES THAT MAY BE NECESSARY. THE CONTRACTOR SHALL USE ALL NECESSARY MEANS TO CONTROL DUST DURING THE CONSTRUCTION PERIOD INCLUDING THE USE OF CALCIUM CHLORIDE.
- 15) ALL WORK IS TO BE COMPLETED DURING PERIODS OF LOW FLOW. THE CONTRACTOR SHALL PUMP/DIVERT STREAM FLOW AROUND WORK AREA TO MINIMIZE SILTATION IN STREAM WATERS. THE CONTRACTOR SHALL BE PREPARED FOR, AND MAKE PROVISIONS FOR, HIGH FLOW EVENTS THAT MAY OCCUR EVEN DURING TYPICAL LOW FLOW PERIODS.
- 16) THE CONTRACTOR SHALL REVIEW AND COMPLY WITH ALL APPLICABLE NOTES IN THE "PERMIT REQUIREMENT NOTES" INCLUDED ON SHEET W-1 OF THE WETLAND PERMIT PLANS INCLUDED IN THE CONTRACT DOCUMENTS.

- 1) FIELD SURVEY PERFORMED BY DOUCET SURVEY INC. BY J.P.E. & P.J.S. DURING 09/12 USING A TRIMBLE 5603 DR 200 PLUS TOTAL STATION AND BY G.A.N. & E.J.S. DURING 08/18 USING A TRIMBLE S7 TOTAL STATION WITH A TRIMBLE TSC3 DATA COLLECTOR AND A SOKKIA B21 AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.
- 2) JURISDICTIONAL WETLANDS DELINEATED BY MARC JACOBS, CERTIFIED WETLAND SCIENTIST NUMBER 090, DURING AUGUST 2018 IN ACCORDANCE WITH 1987 CORPS OF ENGINEERS WETLANDS DELINEATIONS MANUAL, AND TECHNICAL REPORT Y-87-1.
- 3) HORIZONTAL DATUM BASED ON NHSPC (2800) NAD83 (2011) (US FEET) DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.
- 4) VERTICAL DATUM IS BASED ON APPROXIMATE NAVD88 (GEOID12A) ($\pm 0.2'$) DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.
- 5) THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES/TYPES IS SUBJECT TO NUMEROUS FIELD CONDITIONS, INCLUDING; THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS, MANHOLE CONFIGURATION, ETC.
- 6) DUE TO THE COMPLEXITY OF RESEARCHING ROAD RECORDS AS A RESULT OF INCOMPLETE, UNORGANIZED, INCONCLUSIVE, OBLITERATED, OR LOST DOCUMENTS, THERE IS AN INHERENT UNCERTAINTY INVOLVED WHEN ATTEMPTING TO DETERMINE THE LOCATION AND WIDTH OF A ROADWAY RIGHT OF WAY. THE EXTENT OF THE RIGHT OF WAY IS NOT INCLUDED ON THESE PLANS AS THEY WERE UNABLE TO BE IDENTIFIED. THE "MUTUAL RIGHT OF WAY AGREEMENT"(S) INCLUDED IN THE PROJECT CONTRACT DOCUMENTS ARE BASED ON THE TOE OF SLOPE SHOWN ON THE "MUTUAL RIGHT OF WAY AGREEMENT PLAN" WHICH IS ALSO INCLUDED IN THE PROJECT CONTRACT DOCUMENTS. NO WORK SHALL BE PERFORMED OUTSIDE OF THIS BOUNDARY WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.
- 7) FLOOD HAZARD ZONE: "A", PER FIRM MAP #33017C0305E, DATED 9/30/15.

- 1) THE PAVEMENT SHALL BE SUPERPAVE MIXTURE WITH PERFORMANCE GRADE 64-28 LIQUID ASPHALT. TOTAL REUSED BINDER LIMITED TO 1.0% MAXIMUM. THE VOLUMETRIC MIX DESIGN SHALL BE IN ACCORDANCE WITH NHDOT SPECIFICATIONS AND AASHTO STANDARD PRACTICE R35.
- 2) ALL PAVEMENT EDGES SHALL BE SAWCUT. THE CONTRACTOR SHALL TRIM, TACK, AND MATCH EXISTING PAVEMENT AT LOCATIONS WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT.
- 3) A TACK COAT SHALL BE APPLIED TO PAVEMENT BETWEEN COURSES AND TO ALL ABUTTING PAVEMENT SURFACES IN ACCORDANCE WITH NHDOT STANDARD SPECIFICATIONS AND SUPPLEMENTAL SPECIFICATION SECTION 410. THE TACK COAT SHALL BE SUBSIDIARY TO THE PAVEMENT COST.
- 4) PAVEMENT JOINT ADHESIVE (ITEM 403.6) SHALL BE APPLIED ON ALL LONGITUDINAL PAVEMENT JOINTS FOR ALL COURSES AND AT TRANSVERSE JOINTS FOR DRIVEWAYS AND PROJECT LIMITS FOR ALL COURSES.

*SEE ROADWAY NOTES

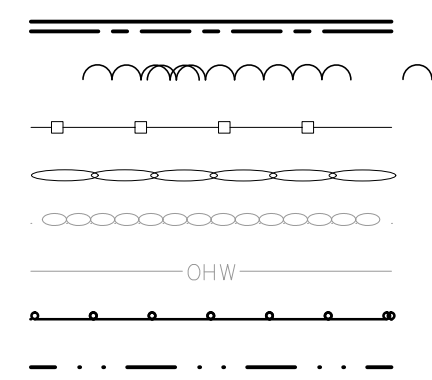
- 1) THE CONTRACTOR IS RESPONSIBLE FOR THE DEVELOPMENT AND APPROVAL OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP).
- 2) PRIOR TO CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NECESSARY. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING CONSTRUCTION. WHEN LAND IS EXPOSED DURING CONSTRUCTION, THE EXPOSURE SHOULD BE KEPT TO THE SHORTEST PRACTICAL PERIOD OF TIME. ANY DISTURBED AREAS THAT ARE TO BE LEFT UN-STABILIZED LONGER THAN TWO WEEKS SHALL BE TEMPORARILY SEEDED AND MULCHED AT THE RATE OF 2 TONS PER ACRE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL REMEDIAL WORK REQUIRED TO REPAIR AREAS WHICH ARE DAMAGED BY EROSION.
- 3) HAY BALE BARRIERS SHALL BE INSTALLED AND MAINTAINED AT DRAIN INLETS AND OUTLETS AND ALONG LIMITS OF WORK WHERE NECESSARY. HAY BALE BARRIERS SHALL NOT BE PLACED CLOSER THAN 25- FEET TO DRAIN INLETS AND OUTLETS. ADDITIONAL HAY BALES SHALL BE ADDED AS REQUIRED BY THE ENGINEER. HAY BALES WILL BE STAKED AND MAINTAINED PRIOR TO AND DURING CONSTRUCTION UNTIL DISTURBED AREAS HAVE A HEALTHY STAND OF GRASS.
- 4) ALL DISTURBED AREAS AND SIDE SLOPES THAT ARE AT ARE FINISH GRADED WITH NO FURTHER CONSTRUCTION TAKING PLACE SHALL BE TRACKED, SEEDED (IN ACCORDANCE WITH SECTION 644 OF THE STANDARD SPECIFICATIONS) AND MULCHED. ALL SEED, LIME AND FERTILIZER PROGRAMS SHALL CONFORM TO ALL APPLICABLE SECTIONS OF THE SPECIFICATIONS (SECTION 642 AND SECTION 643).
- 5) CONSTRUCTION TRAFFIC SHALL TRAVEL THE ROADBEDS OF EXISTING ROADS.
- 6) SILT FENCE SHALL BE INSTALLED AND MAINTAINED WHERE NECESSARY AND ADDITIONAL SILT FENCE ADDED AS REQUIRED BY THE ENGINEER PRIOR TO ANY ON-SITE GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL. GENERALLY, SILT FENCE SHALL BE INSTALLED TO PREVENT MIGRATION OF THE SEDIMENT FROM THE WORK AREA. IT SHOULD BE MAINTAINED DURING AND AFTER CONSTRUCTION TO REMOVE SEDIMENT FROM NATURAL DRAINAGE WAYS. THE SILT FENCE IS TO BE MAINTAINED AND CLEANED UNTIL ALL SLOPES HAVE A HEALTHY STAND OF GRASS.
- 7) AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED AND ACCUMULATED SEDIMENT DISPOSED OF IN A LOCATION DESIGNATED BY THE OWNER.
- 8) HAY BALES AND MULCH SHALL BE MOWINGS OF ACCEPTABLE HERBACEOUS GROWTH, FREE FROM NOXIOUS WEEDS OR WOODY STEMS AND SHALL BE DRY.
- 9) SILT FENCES SHALL BE A MINIMUM OF 36 INCHES HIGH WITH THE BOTTOM OF THE CLOTH KEYING INTO THE GROUND. POSTS SHALL BE OF WOOD OR STEEL.
- 10) THE EROSION CONTROL DEVICES DESCRIBED AND AS SPECIFIED IN THE SPECIFICATIONS REPRESENT THE MINIMUM REQUIRED MEASURES FOR EROSION CONTROL. THE CONTRACTOR SHALL ADD TO THESE DEVICES ANY OTHER MEASURES AS REQUIRED OR AS DIRECTED BY THE ENGINEER TO EFFECTIVELY PREVENT MIGRATION OF SEDIMENT FROM THE WORK AREA AND PROTECT WETLAND AREAS, WATERWAYS, EXISTING AND PROPOSED DRAINAGE FEATURES, SLOPES, LAWNS, AND PLANTS ADJACENT TO THE WORK AREA.

- 1) GUARDRAIL OFFSET BLOCKS SHALL BE SYNTHETIC.
- 2) ALL OFFSETS ARE TO FACE OF RAIL. EAGRT OFFSETS ARE TO THE FACE OF RAIL AT THE TERMINAL UNIT.

<p>[G1] STA 12+03.3 TO 11+78.3 LT 13.3' RADIUS = 261.67' CONST. T101 APPROACH RAIL STA 11+78.3 TO 11+53.3 LT 13.3' RADIUS = 261.67' CONST. 25.0 LF W BEAM GUARDRAIL STA 11+53.3 TO 11+28.3 LT 13.3' AT 11+53.3 LT 14.0' AT 11+28.3 CONST. 25' EAGRT W/ PLATFORM</p>	<p>[G3] STA 12+53.1 TO 12+78.1 RT 12.5' RADIUS = 287.50' CONST. T101 APPROACH RAIL STA 12+78.1 TO 13+40.6 RT 12.5' RADIUS = 287.50' CONST. 62.5 LF W BEAM GUARDRAIL STA 13+40.6 TO 13+65.6 RT 12.5' AT 13+40.6 RT 13.5' AT 13+65.6 CONST. 25' EAGRT W/ PLATFORM</p>
<p>[G2] STA 11+99.6 TO 11+74.6 RT 13.2' RADIUS = 288.25' CONST. T101 APPROACH RAIL STA 11+74.6 TO 11+43.4 RT 13.2' RADIUS = 288.25' CONST. 31.25 LF W BEAM GUARDRAIL STA 11+43.4 TO 11+18.4 RT 13.2' AT 11+43.4 RT 14.0' AT 11+18.4 CONST. 25' EAGRT W/ PLATFORM</p>	<p>[G4] STA 12+62.7 TO 12+87.7 LT 12.5' RADIUS = 262.50' CONST. T101 APPROACH RAIL STA 12+87.7 TO 13+94.0 LT 12.5' RADIUS = 262.50' CONST. 106.25 LF W BEAM GUARDRAIL STA 13+94.0 TO 14+19.0 LT 12.5' AT 13+94.0 LT 13.5' AT 14+19.0 CONST. 25' EAGRT W/ PLATFORM</p>

drawing no.
RW-1

EDGE OF RIVER
TREE LINE
SILT FENCE
WATER DIVERSION STRUCTURE
EXISTING STONE WALL
EXISTING OVERHEAD ELECTRIC
GUARDRAIL
WETLANDS



DAVID P. MARTIN & MICHELE J. MARTIN
50 NUTE ROAD
MADBURY, NH 03823
S.C.R.D. BOOK 4045 PAGE 0563

MURRAY 1995 TRUST, NANCY J &
CAMBRIDGE TRUST COMPANY, MURRAY, P T
49 SOUTH MAIN STREET, SUITE 203
CONCORD, NH 03301
S.C.R.D. BOOK 3485 PAGE 0302

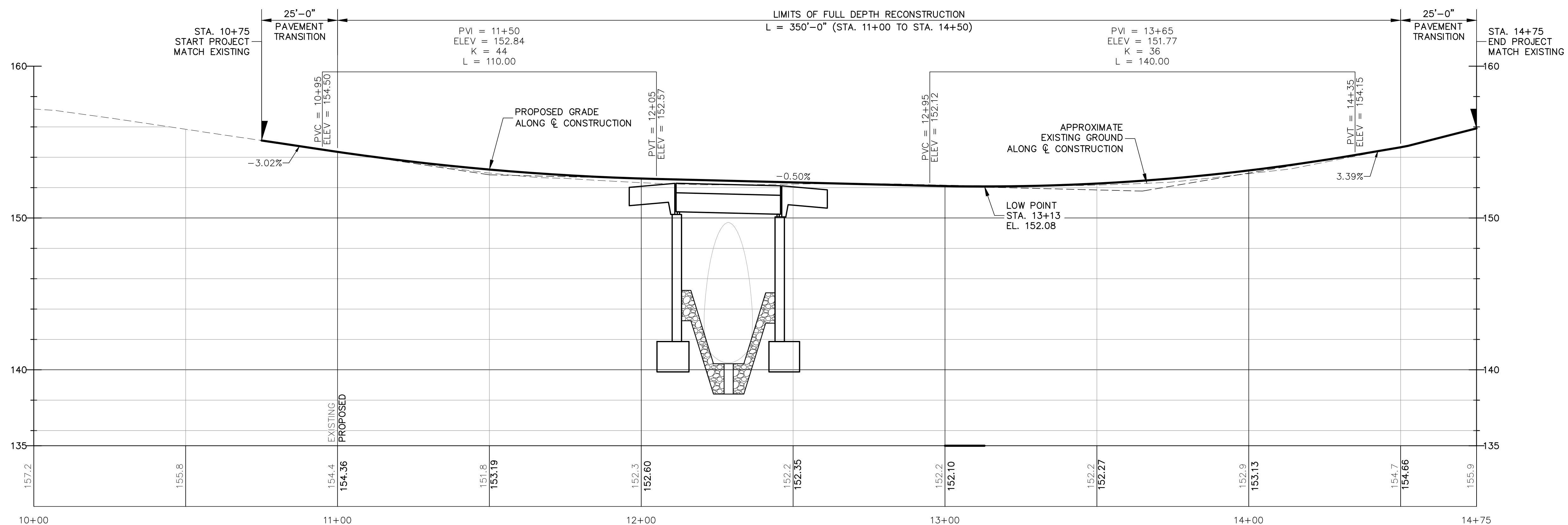
THOMAS RAMSBOTHAM &
CAROLYN J. RAMSBOTHAM
54 NUTE ROAD
MADBURY, NH 03823
S.C.R.D. BOOK 0885 PAGE 0334

PATRICK M. MURRAY, TRUSTEE
MURRAY 1995 TRUST
17 HILLCREST DRIVE
DOVER, NH 03820
S.C.R.D. BOOK 4380 PAGE 0967

PI STA = 12+74.40
N = 251775.08
E = 1168120.70
 $\Delta = 53^{\circ}10'32''$
T = 137.637'
R = 275.00'
L = 255.23'
E = 32.52'

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N = 251775.08
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Scale: 1"=20'



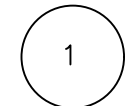
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 $1''=4'$ (V)

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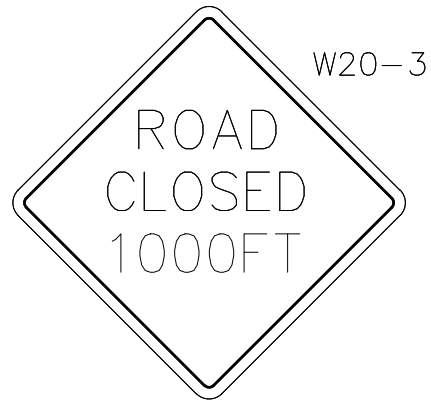
drawing no. RW-2		Town of Madbury, New Hampshire		date: July 2020		designed by: LBK																	
		Nute Road		project no: 1162		drawn by: TMA																	
		Bellamy River Crossing Replacement		checked by: ---		approved by: ---																	
sheet: 22 of 23		Roadway Plan & Profile		As Noted		scale: ---		c m a e n g i n e e r s . c o m		Portsmouth, NH • Manchester, NH • Portland, ME 603/431-6196 • 603/627-0708 • 207/541-4223		CIVIL/ENVIRONMENTAL/STRUCTURAL		CMA ENGINEERS				no.		revision		by	
		date																					



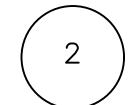
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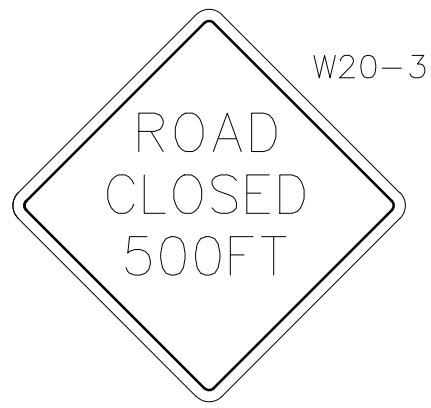
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W20-3



48" X 48"



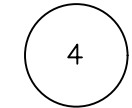
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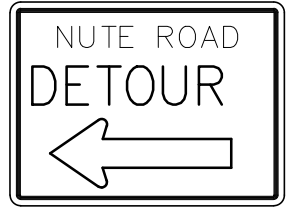
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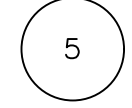
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30" X 24"



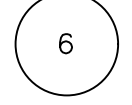
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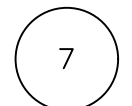
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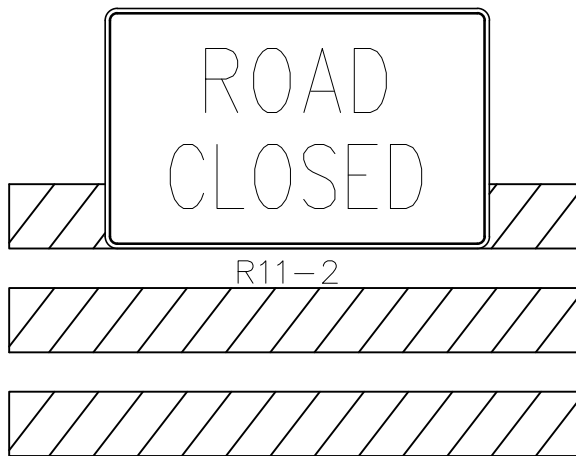
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M4-8a

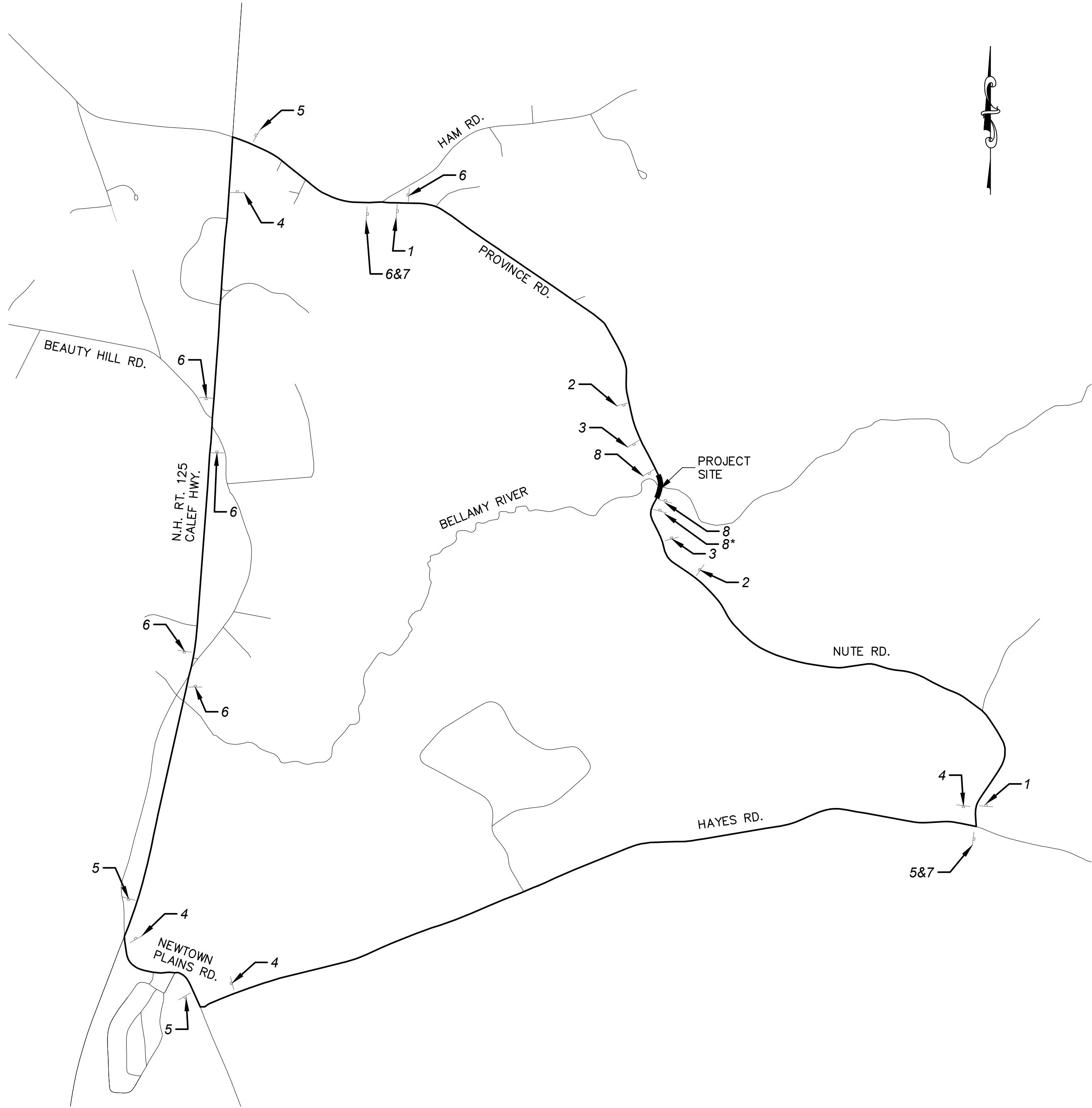
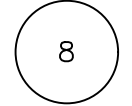


24' X 18"



R11-2

48" X 30"



Detour Plan

Scale: 1"=1000'

*CONTRACTOR SHALL PROVIDE GAP IN BARRICADE AND BARRIER TO MAINTAIN VEHICLE ACCESS TO DRIVEWAY

NOTES:

1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM WITH SECTIONS 618 AND 619 OF THE STANDARD SPECIFICATIONS, THESE TRAFFIC CONTROL PLANS, THE CURRENT EDITION OF THE MUTCD, INCLUDING ALL REVISIONS, AND THE STATE OF NEW HAMPSHIRE DOT TRAFFIC CONTROL HANDBOOK.
2. 30 LINEAR FT OF TEMPORARY CONCRETE BARRIER SHALL BE PLACED TO BLOCK THE ROADWAY DIRECTLY BEHIND THE TYPE III BARRICADES (#8).
3. CONTRACTOR IS RESPONSIBLE FOR SUPPLYING AND MAINTAINING ALL SIGNS REQUIRED FOR DETOUR.
4. SIGNS SHALL BE REMOVED OR COVERED DURING PERIODS IN WHICH THEY ARE NOT REQUIRED.
5. LAYOUT SHOWN IS NOT TO SCALE AND IS A SUGGESTED LAYOUT.
6. CONTRACTOR SHALL SUBMIT A SIGNAGE PLAN FOR APPROVAL PRIOR TO ANY WORK.
7. TOTAL ESTIMATED SIGN AREA: 202 SF
8. ALL COST FOR TRAFFIC CONTROL DEVICES INCLUDING PLACEMENT, RELOCATION, AND REMOVAL OF SIGNS SHALL BE INCLUDED IN ITEM 619.1 - MAINTENANCE OF TRAFFIC.
9. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE TOWN OF MADBURY PUBLIC WORKS, FIRE AND POLICE DEPARTMENTS, AND ENGINEER AT LEAST 14 DAYS PRIOR TO IMPLEMENTING AND ROAD CLOSURES OR DETOURS.
10. ACCESS TO EXISTING DRIVES SHALL BE MAINTAINED AT ALL TIMES. IN THE EVENT THAT MAJOR WORK MUST BE DONE AT DRIVES THAT PRECLUDES FULL ACCESS, THE CONTRACTOR IS TO COORDINATE THE WORK WITH THE OWNER TO MINIMIZE INCONVENIENCE.

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