

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION



SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Eighth Edition November 2017.

DESIGN LOADING

Live Load HL - 93 Modified For Strength I

TRAFFIC DATA

Current (2018) AADT	90
Future (2038) AADT	110
DHV - % of AADT	19
Design Hour Volume	21
Heavy Trucks (% of AADT)	9
Heavy Trucks (% of DHV)	9
Directional Distribution (% of DHV)	60
18 kip Equivalent P 2.0	7
18 kip Equivalent P 2.5	6
Design Speed (mph)	35

HYDROLOGIC DATA

Drainage Area	13.5 sq mi
Design Discharge (Q50)	1950.6 cfs
Check Discharge (Q100)	2280.7 cfs
Headwater Elevation (Q1.1)	481.01 ft
Headwater Elevation (Q10)	483.69 ft
Headwater Elevation (Q25)	485.07 ft
Headwater Elevation (Q50)	486.82 ft
Headwater Elevation (Q100)	487.28 ft
Discharge Velocity (Q1.1)	2.85 fps
Discharge Velocity (Q50)	7.43 fps
Discharge Velocity (Q100)	6.17 fps

MATERIALS

Concrete:	
Curbs	Class "LP"
Precast	Class "P"
All Other	Class "A"
Reinforcing Bars:	
Plain Steel	ASTM A 615/A 615M, Grade 60
Stainless Steel	ASTM A 955, Grade 75
Glass Fiber Reinforced Polymer (GFRP)	CSA S807-10, ACI 440.1R-15
Prestressing Strands	AASHTO M 203 (ASTM A 416), Grade 270, Low Relaxation

BASIC DESIGN STRESSES

Concrete	
Class "LP"	f'c = 5000 psi
Class "P"	f'c = 6000 psi
	f'ci = 4500 psi
Class "A"	f'c = 4000 psi
Plain Reinforcing Steel	f y = 60,000 psi
Stainless Reinforcing Steel	f y = 75,000 psi
Prestressing Strand	F p = 270,000 psi
Glass Fiber Reinforced Polymer	
#5 Bar	f fu = 100,000 psi
#6 Bar	f fu = 100,000 psi
#7 Bar	f fu = 95,000 psi
Minimum Elastic Modulus	E f = 6,150,000 psi
Minimum Nominal Design Tensile Strain	ε fu = 1.226%

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SUMNER
OXFORD COUNTY
HEALD BRIDGE
OVER
WEST BRANCH NEZINSCOT RIVER
REDDING ROAD
PROJECT NO. 21704.00
PROJECT LENGTH 0.057 mi.
BRIDGE NO. 0673

UTILITIES

Central Maine Power Company
Oxford Networks

MAINTENANCE OF TRAFFIC

Bridge Closure with Detour onto Tuell Hill Road,
ST 219, Greenwoods Road and Black Mountain Road

PROJECT LOCATION	Redding Road over the West Branch of the Nezinscot River, 0.50 miles west of the intersection of Redding Road and Black Mountain Road. Lat./Long. 44°23'56" N / 70°27'43" W
PROGRAM AREA	BRIDGE
OUTLINE OF WORK	Bridge replacement and approximately 360 feet of approach work including approximately 150 feet of mill and overlay work.

WIN 21704.00

21704.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED

COMMISSIONER
DATE
11/7/18
CHIEF ENGINEER
James Noel Sawyer

STATE OF MAINE
JAMES E. FRENCH
No. 10491
LICENSED PROFESSIONAL ENGINEER
SIGNATURE
DATE
11/7/18
P.E. NUMBER
10-21-18

PROJECT INFORMATION
PROGRAM
PROJECT MANAGER
DESIGNER
CONSULTANT
CONTRACTOR
PROJECT COMPLETION DATE
BRIDGE
M. PARLIN
S. BEAUMONT
FUSS AND O'NEILL
PROJECT RESIDENT
CONTRACTOR

SUMNER
HEALD BRIDGE
TITLE SHEET

SHEET NUMBER
1
OF 24

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GENERAL CONSTRUCTION NOTES

2. The clearing limits as shown on the plans are approximate. The exact limits will be established in the field by the Resident. Payment for clearing will be considered incidental to Contract items.

3. All utility facilities shall be adjusted by the respective utilities unless otherwise noted.

4. Do not excavate for Aggregate Subbase Course where existing material is suitable as determined by the Resident.

5. In areas where the Resident directs the Contractor not to excavate to the subgrade line shown on the plans, payment for removing existing pavement, grubbing, shaping, ditching, and compacting the existing subbase and layers of new subbase 6 inches or less thick will be made under appropriate equipment rental items.

6. All embankment material, except as otherwise shown, shall be Granular Borrow meeting the requirements of Subsection 703.19, Material for Underwater Backfill.

7. Place riprap on sideslopes as shown in the General Plan up to EL. 486.00.

8. Construct the riprap shelf at each abutment at EL. 482.00.

9. Place loam 2 inches deep on all new or reconstructed sideslopes or as directed by the Resident.

10. Erosion Control Mix may be substituted in those areas normally receiving loam and seed as directed by the Resident. Placement shall be in accordance with Standard Specifications Section 619, Mulch. Payment will be made under Item No. 619.14, Erosion Control Mix.

11. Place a 24-in. wide strip of Temporary Erosion Control Blanket on the sideslopes along the top of the riprap and behind the wingwalls.

12. Guardrail posts as shown in the Standard Details shall be modified from the indicated length of 6 feet to a length of 7 feet with an embedment of 4.5 feet. Payment will be considered incidental to the guardrail pay items.

13. A Low Volume Guardrail End shall be installed concurrently with the placement of each section of beam guardrail.

14. Extended-use Erosion Control Blanket, seeded gutters, riprap downspouts, and other gutters lined with Stone Ditch Protection shall be constructed after paving and shoulder work is completed, where it is apparent that runoff will cause continual erosion. Payment will be made under the appropriate Contract items.

15. *Protective Coating for Concrete Surfaces shall be applied to the following areas:*

*All exposed surfaces of concrete curbs,
Fascias down to the drip notch,
Concrete wearing surfaces,
Top of abutment wingwalls and to one foot below the top of
wingwalls on the back side.*

16. Project information referred to below may be accessed at the following MaineDOT web address: <http://www.maine.gov/mdot/contractors/>.

17. The hydrologic and hydraulic report of the bridge site may be accessed at the MaineDOT web address. The report is based on MaineDOT's interpretation of the information obtained for the subject site. No assurance is given that the information or the conclusions of the report will be representative of actual conditions at the time of construction.

18. The project geotechnical report titled: *Geotechnical Design Basis Letter* Heald Bridge (*0673) Redding Road over W. Branch Nezinscot River Summer, Maine WIN 21704.00 August 31, 2017 may be accessed at the MaineDOT web address.

19. Geotechnical information furnished or referred to in this plan set is for the use of the Bidders and the Contractor. No assurance is given that the information or interpretations will be representative of actual subsurface conditions at the construction site. MaineDOT will not be responsible for the Bidders' or Contractor's interpretations of, or conclusions drawn from, the geotechnical information. The boring logs contained in the plan set present factual and interpretive subsurface information collected at discrete locations. Data provided may not be representative of the subsurface conditions between the boring locations.

20. Quantities included for pay items measured and paid for by Lump Sum are estimated quantities and are provided by MaineDOT for informational purposes only. Lump Sum pay items will be paid for at the Contract Bid amount, with no addition or reduction in payment to the Contractor if the actual final quantities are different from the MaineDOT provided estimated quantities, except as follows:

a. If a Lump Sum pay item is eliminated, the requirements of Standard Specifications Section 109.2, Elimination of Items, will take precedence.

b. If other Contract Documents specifically allow a change in payment for a Lump Sum pay item, those requirements will be followed.

c. If a design change results in changes to estimated quantities for Lump Sum pay items, price adjustments will be made in accordance with Standard Specifications Section 109.7, Equitable Adjustments to Compensation.

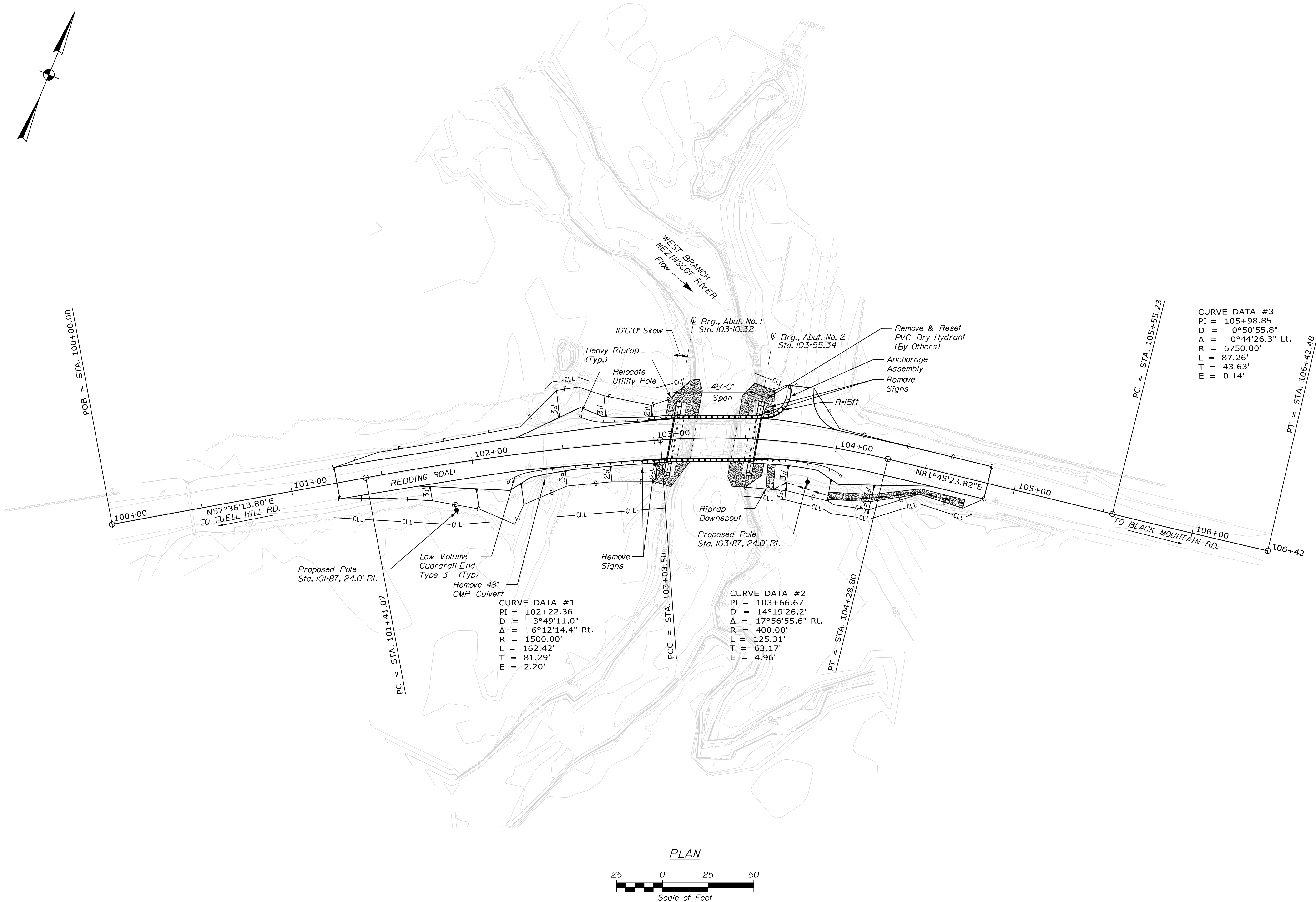
21. The existing bridge shall be removed by and become the property of the Contractor. The steel portions of the existing bridge may be coated with a lead-based paint system. The Contractor is responsible for the containment, proper management and disposal of all lead-contaminated hazardous waste generated by the process of demolishing the bridge. The Contractor is responsible for implementing appropriate OSHA mandated personal protection standards related to this process. Once the existing bridge is removed, the Contractor is solely responsible for the care, custody and control of the components of the existing bridge and any hazardous waste generated as a result of the storage, recycling or disposal of the bridge components, including lead-coated steel. The Contractor shall recycle or reuse the steel in accordance with the Maine Department of Environmental Protection's "Maine Hazardous Waste Management Regulations," Chapter 850. A copy of this regulation is available at MaineDOT's offices on Child Street in Augusta. Payment for all labor, materials, equipment and other costs required to remove and dispose of the existing bridge will be considered incidental to the bridge removal pay item.

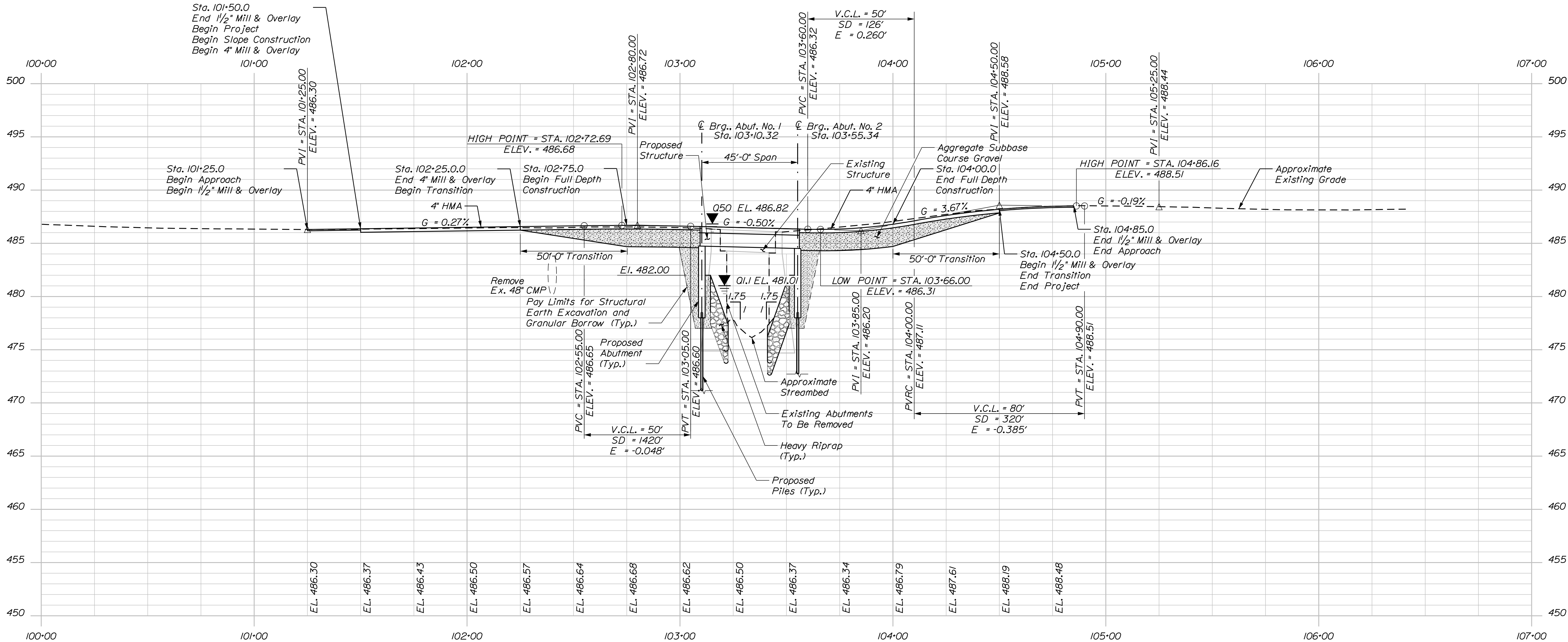
22. *Guardrail posts shall be outside of the Riprap Downspout.*

23. Two Reflective Flexible Guard Rail Markers (Item 606.353) shall be installed at each guardrail end unless otherwise noted or directed by the Resident.

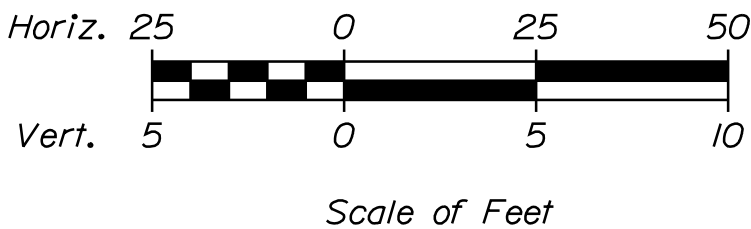
24. Removal of existing 48" CMP will be paid for under Item 203.20 Common Excavation.

<div> <div>OF 24</div> <div>SHEET NUMBER</div> </div>	<div>HEALD BRIDGE</div> <div>WEST BRANCH NEZINSCOT RIVER</div> <div>SUMNER OXFORD COUNTY</div>	<div> <div> <div>PROJ. MANAGER</div> <div>A. Girardi</div> </div> <div> <div>DESIGN-DETAILED</div> <div>M. Smith</div> </div> <div> <div>CHECKED-REVIEWED</div> <div>S. Beaumont</div> </div> </div> <div> <div>DATE</div> <div>10/18</div> </div>	<div> <div>BY</div> <div>M. Smith</div> </div>	<div> <div>DATE</div> <div>10/18</div> </div>	<div> <div>STATE OF MAINE</div> <div>DEPARTMENT OF TRANSPORTATION</div> </div>
	<div>ESTIMATED QUANTITIES</div>	<div> <div>SIGNATURE</div> <div>M. Smith</div> </div> <div> <div>P.E. NUMBER</div> <div></div> </div> <div> <div>DATE</div> <div></div> </div>			
					<div> <div>BRIDGE NO. 0673</div> <div>WIN</div> <div>21704.00</div> </div>
					BRIDGE PLANS

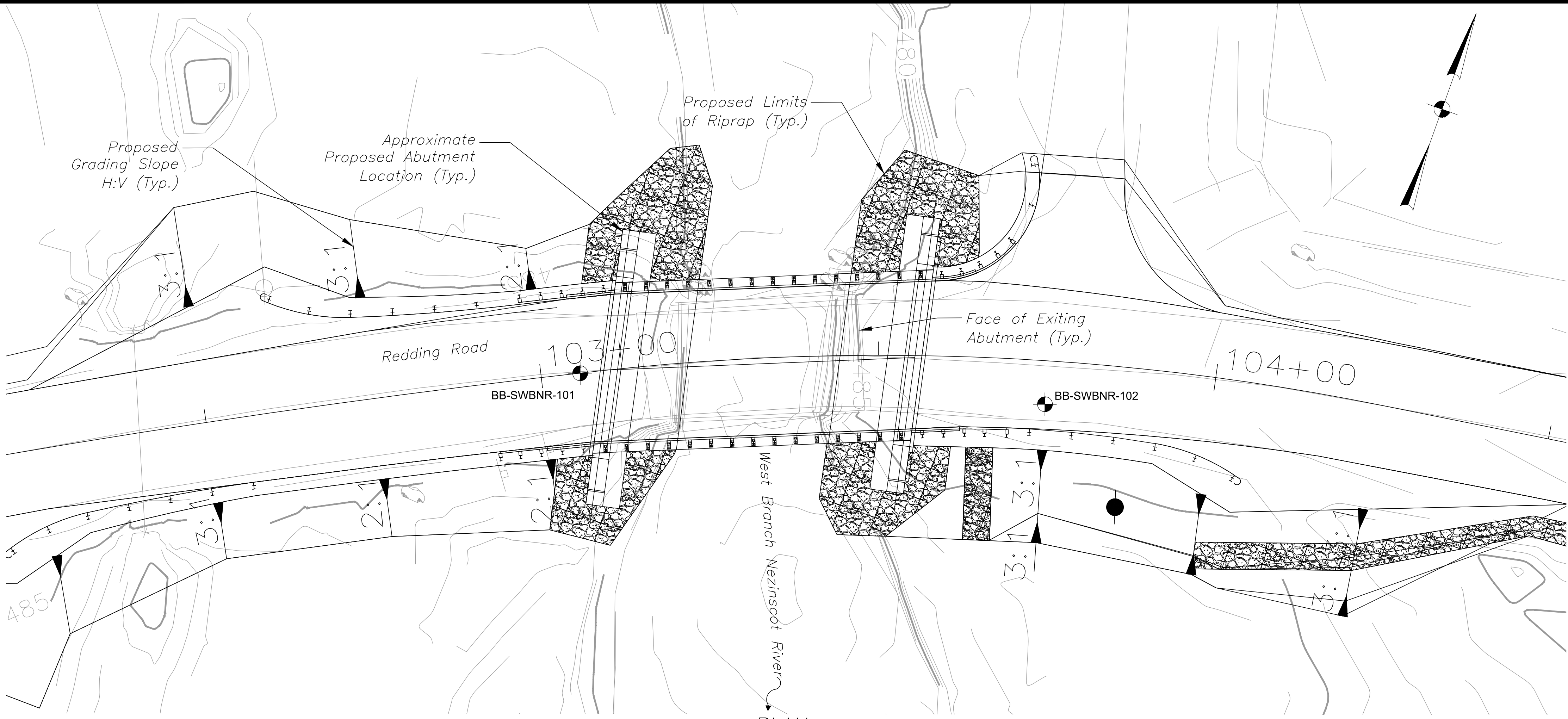




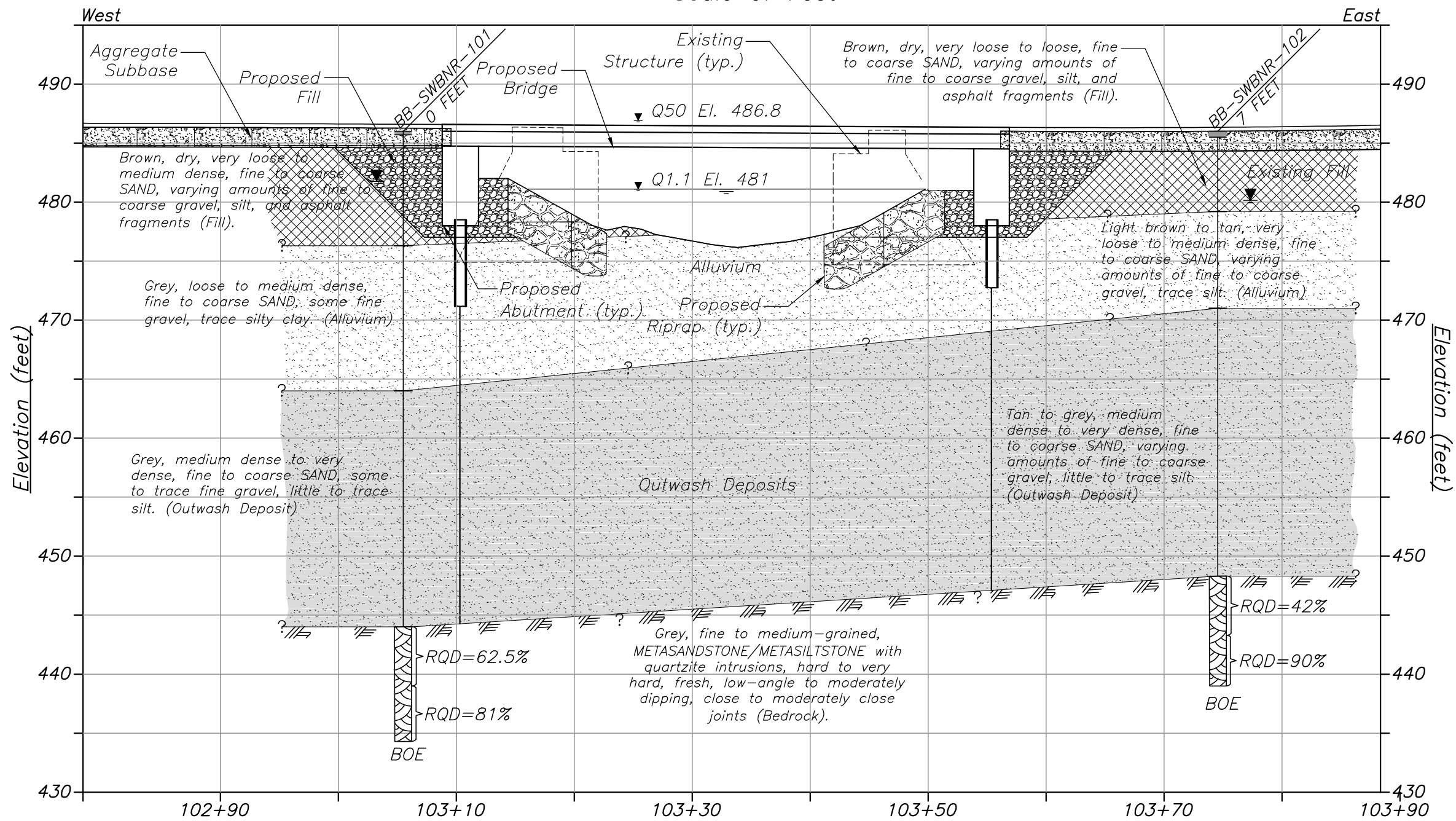
PROFILE



PROJ. MANAGER	M. Wright	BY	DATE	SIGNATURE
DESIGN-DETAILED	A. Gradi	M. Smith	10/18	
CHECKED-REVIEWED	S. Beaumont	L. Greer	10/18	
DESIGN-DETAILED	E. Madorey	M. Smith	10/18	
DESIGN-DETAILED				P.E. NUMBER
REVISIONS 1				DATE
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REVISIONS 4				
FIELD CHANGES				

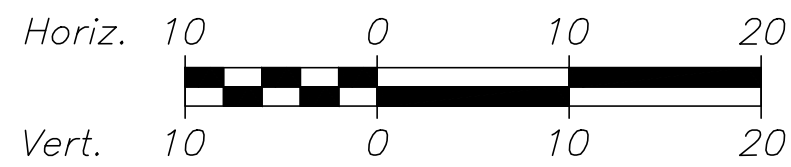


Scale of Feet



Interpretive Subsurface Profile
Station along Centerline of Proposed Bridge #0673 (feet)

PROFILE



Scale of Feet

Legend

BB-SWBNR-101 Boring location observed by Nobis

Note:

- For additional information relating to the nature and results of the test borings observed by Nobis, refer to the Nobis Geotechnical Design Basis Letter dated August 31, 2017.

Legend

Weathered Bedrock
Top of Bedrock
Boring
BOE = Bottom of Exploration
Boring No.
Offset
Pavement Thickness if applicable
Strata Interface
RQD = Rock Quality Designation for Rock Core Sample

Note:

- This generalized interpretive soil profile is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and have been developed by interpretations of widely spaced subsurface explorations and samples. Actual soil transitions may vary. For more specific information refer to the Nobis Boring Logs.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
21704.00
WIN
BRIDGE NO. 0673
21704.00
BRIDGE PLANS

PROJ. MANAGER	B. Waterman	BY	DATE
DESIGN-DETAILED	P. Clarke		
CHECKED-REVIEWED	B. Waterman		
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
SIGNATURE			
P.E. NUMBER			
DATE			

HEALD BRIDGE
WEST BRANCH NEZINSCOT RIVER
SUMNER
OXFORD COUNTY
BORING LOCATION PLAN & INTERPRETIVE SUBSURFACE PROFILE

SHEET NUMBER
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OF 24

[illegible]

Maine Department of Transportation				Project: Meigs Bridge (R673) Reeding Road over West Branch Nezins River				Boring No.:		BB-SWBNR-102	
Soil/Rock Exploration Log				Location: Summer, Maine				WIN:		21704.00	
US CUSTOMARY UNITS											
Driller: New England Boring Contractors				Elevation (ft.): 486				Auger 10/001: N/A			
Operator: M. Porter				Datum: NAVD-88				Sampler: 1-3/8" Split-Spoon			
Logged By: P. Clarke (Nobis)				Rig Type: B-53 Mobile ATV				Sampler Wt./Fall: 140#/30"			
Date Start/Finish: June 28, 2017/June 28, 2017				Drilling Method: Drive and Wash				Core Barrel: MDZ			
Boring Location: STA 103+15, 6" RT				Casing ID/OD: 4"/4.5"				Water Level: 8.59' bgs			
Hammer Efficiency Factor: .75				Hammer Type: Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & C-clamp <input type="checkbox"/>							
Definition: R = Rock Core Sample S ₁ = Split Stem Auger HSA = Hollow Stem Auger U = Thin Wall Tube Sample M = Unsuccessful Split Stem Sample Attempt V = Vane Shear Test RP = Pocket Penetration M = Unsuccessful Field Cone Shear Test Attempt				S ₂ = Rock/Rubble Field Note Ungrained Shear Strength (psi) T ₁ (psi) = Lab. Vane Ungrained Shear Strength (psi) q _u = Unconfined Compressive Strength (psi) Uncorrected = Raw Field SPT Revalue Hammer Efficiency Factor = Rig Specific Annual Calibration Value N ₆₀ = SPT Noncorrected N ₆₀ = SPT Noncorrected Corrected for Hammer Efficiency C = Consolidation Test				R = Pocket Torque Shear Strength (psi) RC = Water Content, percent LL = Liquid Limit PL = Plastic Limit P = Percentile Index C = Grain-Size Analysis C = Consolidation Test			
Sample Information											
Depth (ft.)	Sample No.	Pen./Rel. (in.)	Sample Depth (ft.)	Blows / 6 in. (100%) or 18 in. (300%)	N-unconnected	N ₆₀	Sampling Bore	Elevation (ft.)	Stratigraphic Log		Laboratory Testing Results/ASTM and Unified Class
5	10	24/9	0.50 - 2.50	6/3/3/2	6	8	RC	485.5	Asphalt (6").		
	20	24/10	2.50 - 4.50	3/2/1/2	3	4			10-A 13": Brown, dry, loose, sandy fine to coarse GRAVEL, trace silt, (F111). 10-B 16": Dark brown, dry, loose, fine to coarse SAND, some fine to coarse gravel, little silt, few asphalt particles and fragments, (F111). Light brown, moist, soft, clayey SILT, some fine sand, (F111).		
	30	24/12	4.50 - 6.50	WOR/1/1/1	2	3			Light brown, wet, very loose, fine to medium SAND, some silt, (F111).		
	40	24/6	6.50 - 8.50	1/1/1/1	2	3		479.2	40-A 13": Light brown, wet, very loose, fine to medium SAND, trace silt, (F111). 40-B 13": Light brown, wet, very loose, fine to coarse SAND, trace fine gravel, trace silt, (Stream Alluvium).		
10	50	24/7	10.00 - 12.00	11/7/5/6	12	15			Tan, wet, medium dense, sandy fine to coarse GRAVEL, trace silt, (Stream Alluvium).		
	60	24/11	15.00 - 17.00	13/22/28/37	50	63			Tan, wet, very dense, fine to medium SAND, little silt, trace fine to coarse gravel, (Outwash Deposit).		A-2-4 (10)
20	70	24/12	20.00 - 22.00	1/2/28/32	50	63			Tan with orange staining, wet, very dense, fine to coarse SAND, little silt, (Outwash Deposit). Begin washing ahead prior to advancing casing. Switch to 140# automatic hammer.		
	80	24/14	25.00 - 27.00	12/28/30/37	58	73			Tan with orange staining, wet, very dense, fine to coarse SAND, little silt, trace fine gravel, (Outwash Deposit).		
	90	5/5	30.00 - 30.42	100/5"	100	125			Grey, wet, fine to coarse SAND, some fine gravel, trace silt, (Outwash Deposit). Switch back to 300# hammer for casing advancement.		
	100	11/4	35.00 - 35.92	64/100/5"	100	125			Grey, wet, sandy fine to coarse GRAVEL, trace silt, (Outwash Deposit).		
35	R1	48/45	42.00 - 42.00	R00 = 42%				448.3	Probable transition into bedrock at approximately 37.7' bgs based on drilling action. Top of Bedrock Elevation at El. 448.3. R1: Grey, fine to medium-grained METASANDSTONE/METASILTSTONE with Quartzite intrusions, hard to very hard, fresh, low-angle to moderately-dipping, very close to moderately close joints. Sangerville Formation (Anasaguitook Member). R00 = 42% (Poor). R1: Core Times (min/sec): 38"-39" (11/20) 39"-40" (11/50) 40"-41" (11/30) 41"-42" (11/20)		UCI Q _p = 13,113 psi
	R2	60/62	42.00 - 41.00	R00 = 90%					R2: Grey, fine to medium-grained METASANDSTONE/METASILTSTONE with Quartzite intrusions, hard to very hard, fresh, low-angle to moderately-dipping, very close to moderately close joints. Sangerville Formation (Anasaguitook Member). R00 = 90% (Good). R2: Core Times (min/sec): 42"-43" (11/40) 43"-44" (11/20) 44"-45" (11/30) 45"-46" (11/20) 46"-47" (11/30)		
45								439.0	Bottom of Exploration at 47.0 feet below ground surface.		
Remarks: -Borehole backfilled with native soils. -Pavement restored with asphalt cold patch. -bgs = below ground surface. -Automatic Hammer IDW NBEC 1.											
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.											
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.											
										Page 1 of 1	
										Boring No.: BB-SWBNR-102	

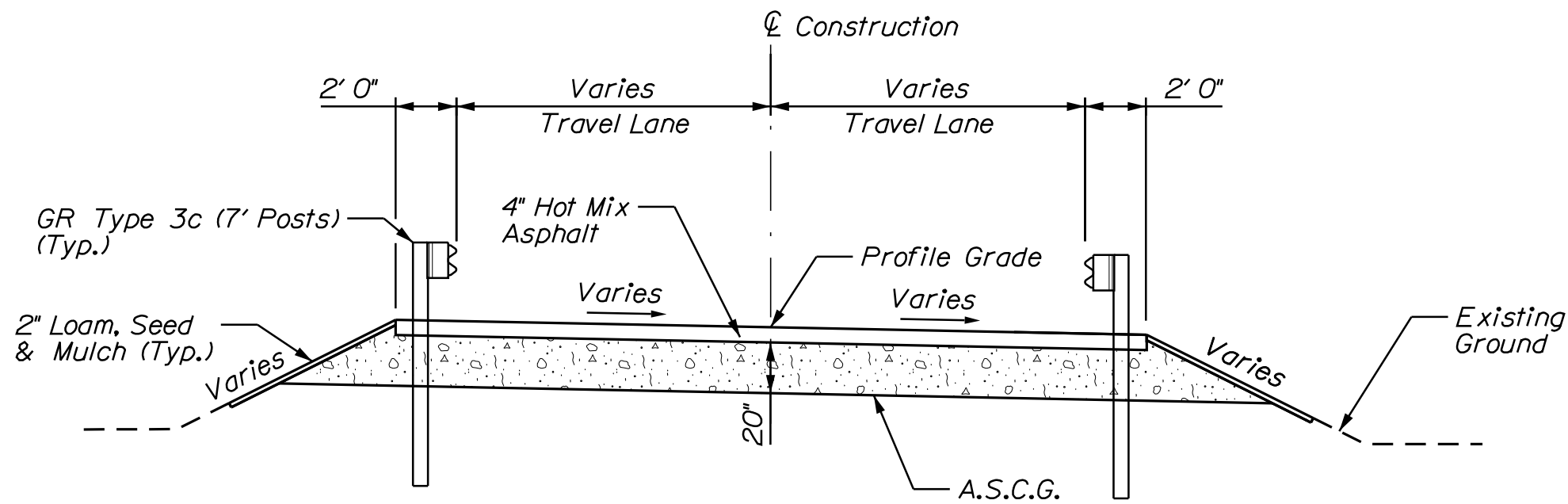
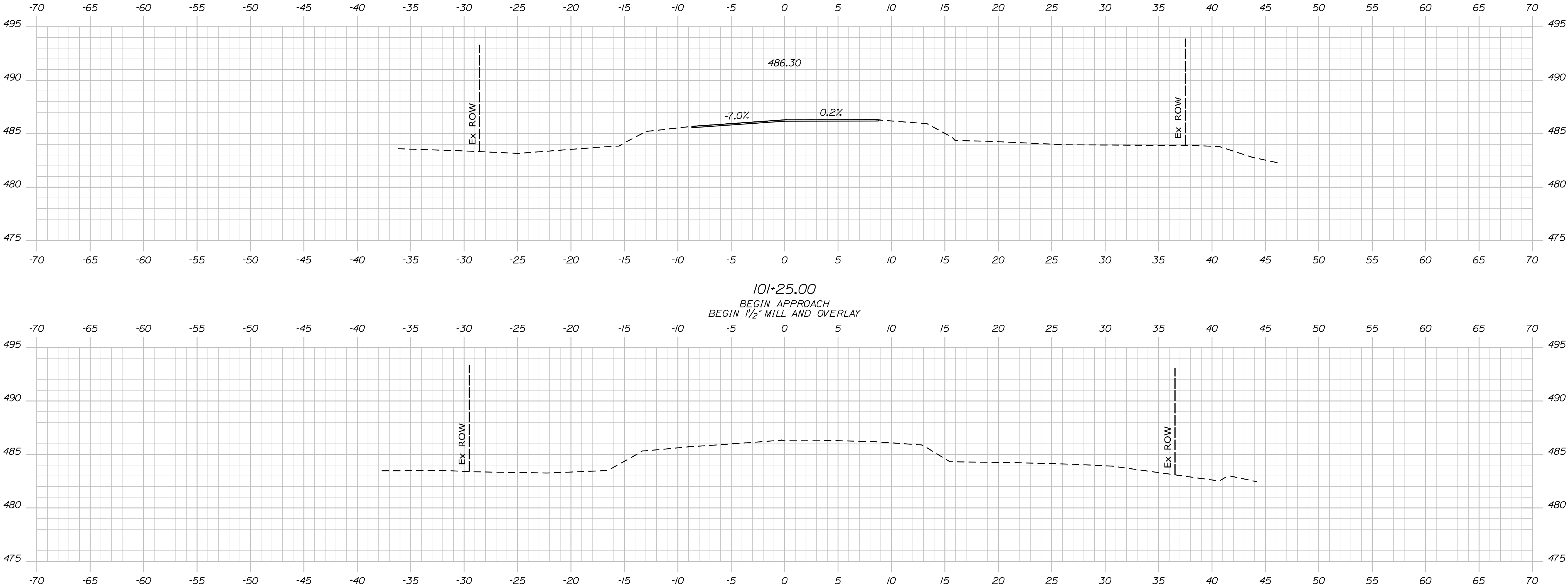
SHEET NUMBER <div>6</div> <div>OF 24</div>		HEALD BRIDGE		PROJ. MANAGER		M. Wright	BY	DATE	STATE OF MAINE			
		WEST BRANCH NEZINSCOT RIVER		DESIGN-DETAILED							A. Girault	M. Smith
SUMNER OXFORD COUNTY		BORING LOGS		CHECKED-REVISED		S. Beaumont	J. French	10/18	DEPARTMENT OF TRANSPORTATION			
				DESIGN2-DETAILED2		E. Moloney	M. Smith	10/18	SIGNATURE			
				DESIGN3-DETAILED3					P.E. NUMBER			
				REVISIONS 1								
				REVISIONS 2					BRIDGE NO. 0673			
				REVISIONS 3							WIN	
				REVISIONS 4							21704.00	
				FIELD CHANGES							DATE	
									BRIDGE PLANS			

Date:10/23/2018

Username:

Division: HIGHWAY

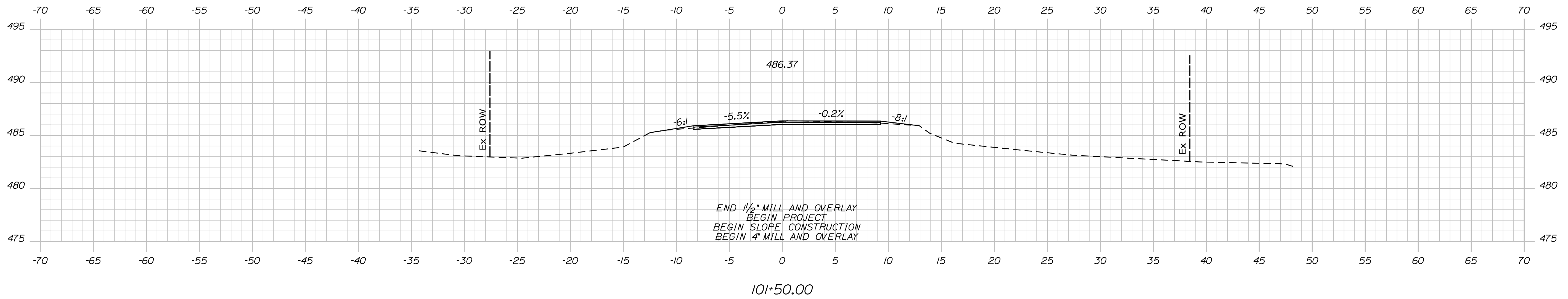
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APPROACH DESIGN SECTION

STATE OF MAINE										DEPARTMENT OF TRANSPORTATION									
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BRIDGE NO. 0673										BRIDGE PLANS									
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REVISIONS 3																			
REVISIONS 2																			
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DESIGN3-DETAILED3																			
DESIGN2-DETAILED2																			
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HEALD BRIDGE																			
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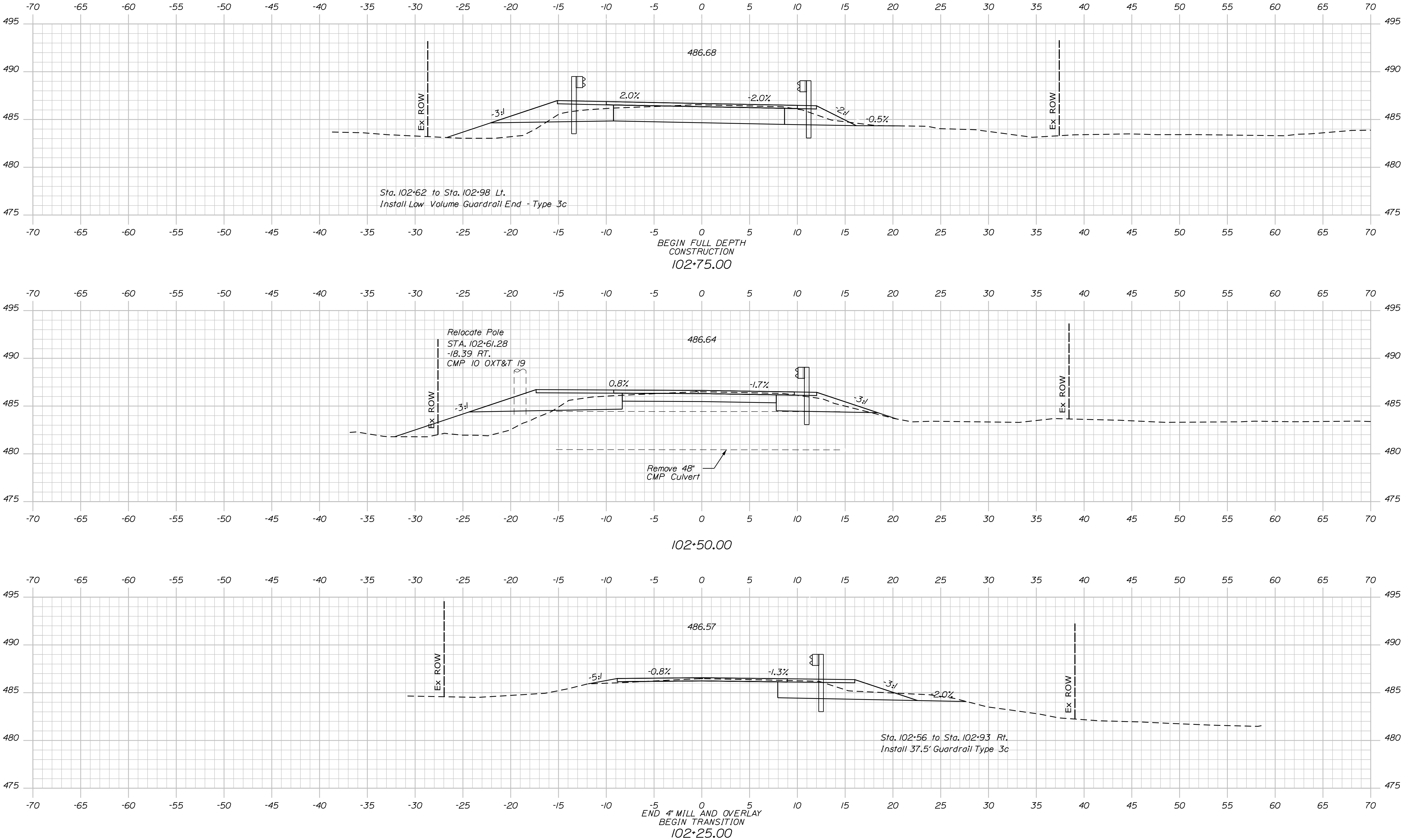


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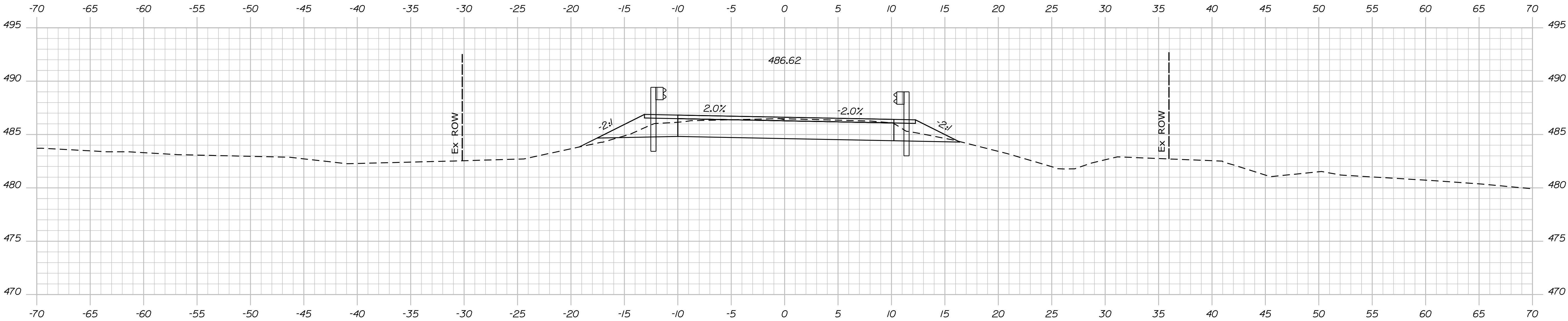
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STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		21704.00		WIN		21704.00		BRIDGE NO. 0673		BRIDGE PLANS	
HEALD BRIDGE		WEST BRANCH NEZINSCOT RIVER		OXFORD COUNTY		SUMNER		CROSS SECTIONS		SHEET NUMBER		9	
BY		DATE		SIGNATURE		P.E. NUMBER		DATE		FIELD CHANGES		OF 24	
M. Wright		10/18		M. Smith									
A. Gradi		10/18		L. Crear									
S. Beaumont		10/18		E. Madway									
DESIGN-DETAILED		DESIGN-DETAILED		DESIGN-DETAILED		DESIGN-DETAILED		DESIGN-DETAILED		DESIGN-DETAILED			
CHECKED-REVIEWED		CHECKED-REVIEWED		CHECKED-REVIEWED		CHECKED-REVIEWED		CHECKED-REVIEWED		CHECKED-REVIEWED			
REVISIONS 1		REVISIONS 2		REVISIONS 3		REVISIONS 4		REVISIONS 5		REVISIONS 6			
REVISIONS 7		REVISIONS 8		REVISIONS 9		REVISIONS 10		REVISIONS 11		REVISIONS 12			



SHEET NUMBER
10
OF 24

HEALD BRIDGE
WEST BRANCH NEZINSCOT RIVER
SUMNER OXFORD COUNTY
CROSS SECTIONS

PROJ. MANAGER		M. Wight	BY	DATE	SIGNATURE
DESIGN-DETAILED	A. Gradi				
CHECKED-REVIEWED	S. Beaumont	M. Smith	M. Smith	10/18	P.E. NUMBER
DESIGN-DETAILED	E. Madway				
REVISIONS 1					DATE
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

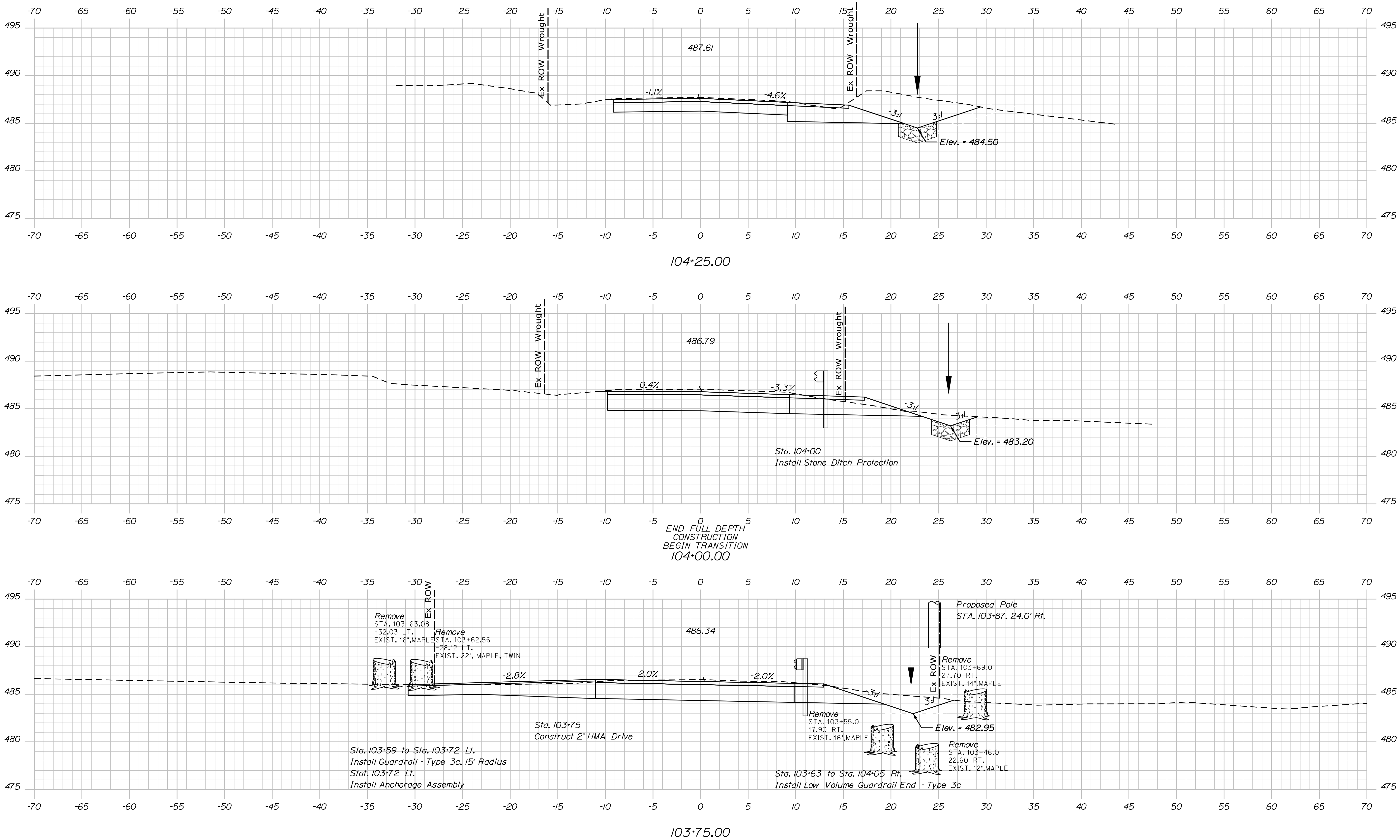
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
21704.00
BRIDGE NO. 0673
WIN
21704.00
BRIDGE PLANS

Date:10/23/2018

Username:

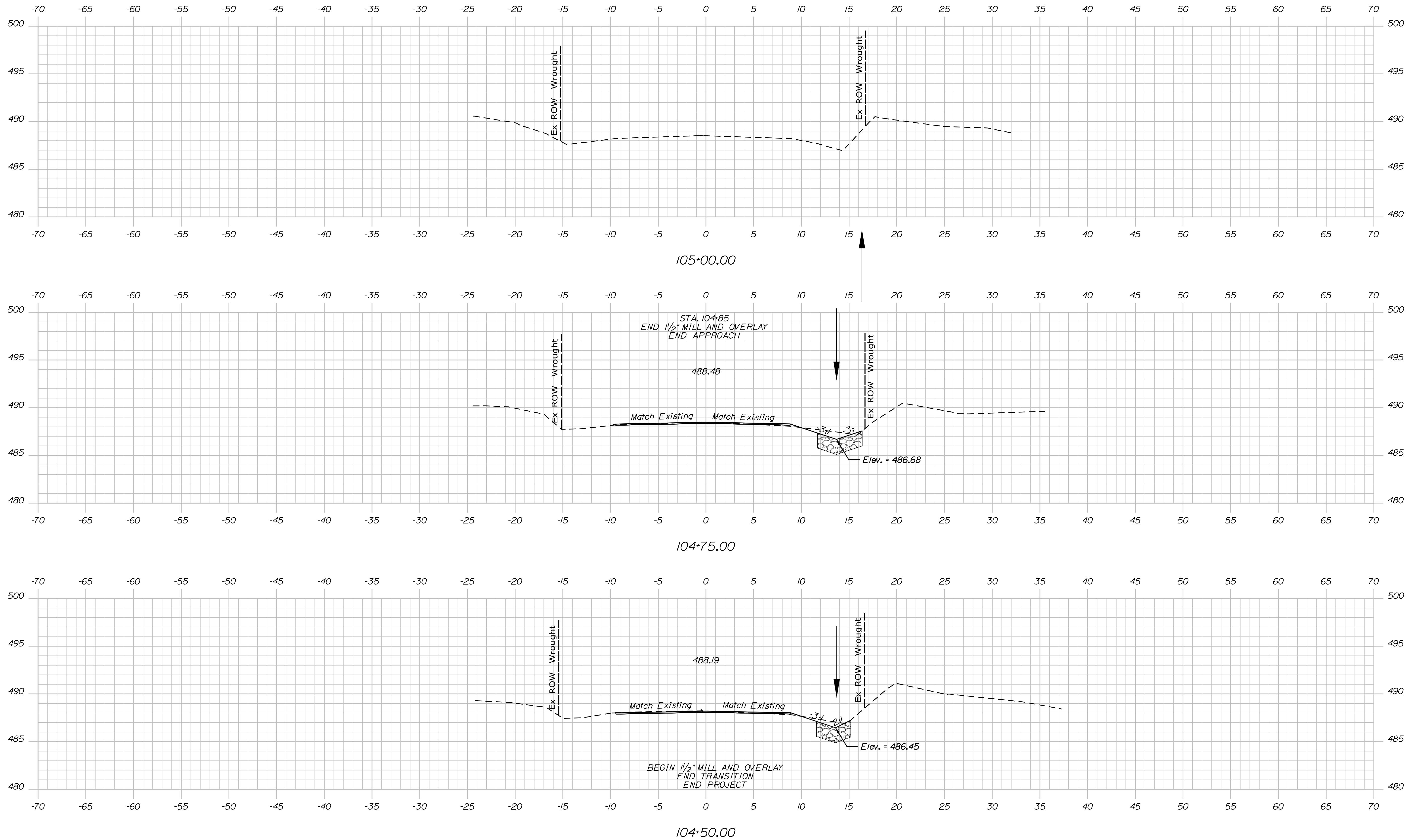
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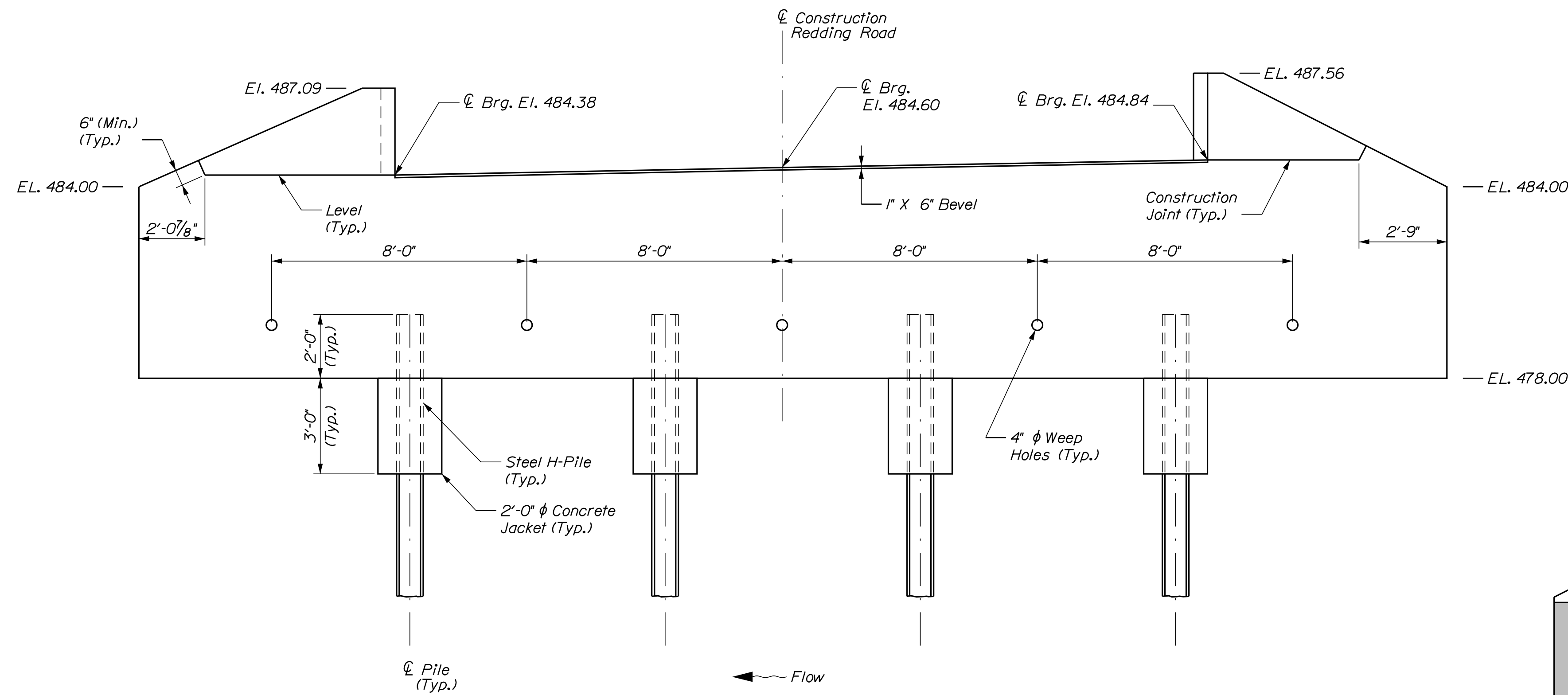
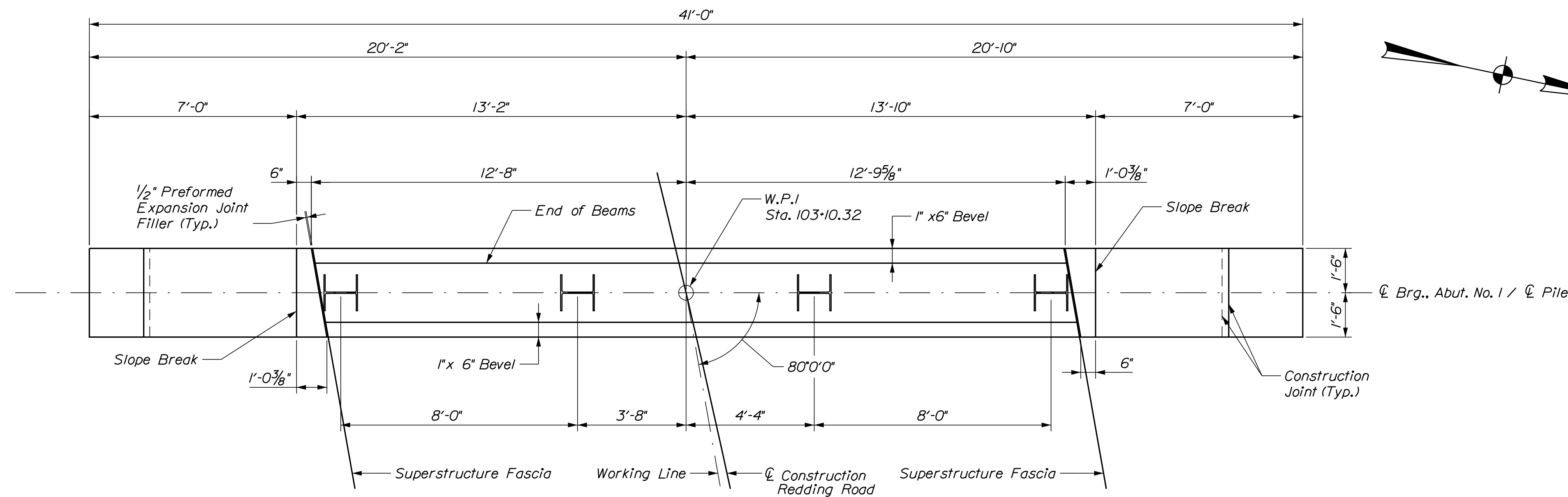


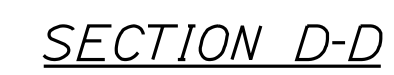
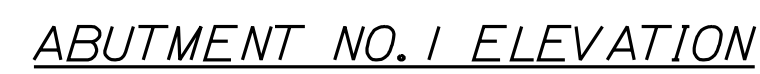
STATE OF MAINE										DEPARTMENT OF TRANSPORTATION										21704.00										WIN										21704.00										BRIDGE NO. 0673										BRIDGE PLANS																																																	
HEALD BRIDGE										WEST BRANCH NEZINSCOT RIVER										SUMNER										OXFORD COUNTY										CROSS SECTIONS										SHEET NUMBER										11										OF 24																																							
PROJ. MANAGER										BY										DATE										SIGNATURE										P.E. NUMBER										DATE																																																											
DESIGN-DETAILED										A. Graldi										M. Smith										10/18																																																																															
CHECKED-REVIEWED										S. Beaumont										L. Greer										10/18																																																																															
DESIGN-DETAILED										E. Moloney										M. Smith										10/18																																																																															
DESIGN-DETAILED										3																																																																																																			
REVISIONS										1																																																																																																			
REVISIONS										2																																																																																																			
REVISIONS										3																																																																																																			
REVISIONS										4																																																																																																			
FIELD CHANGES																																																																																																													

Filename: ... \Bentley\ustrn\012_Xsect.dgn

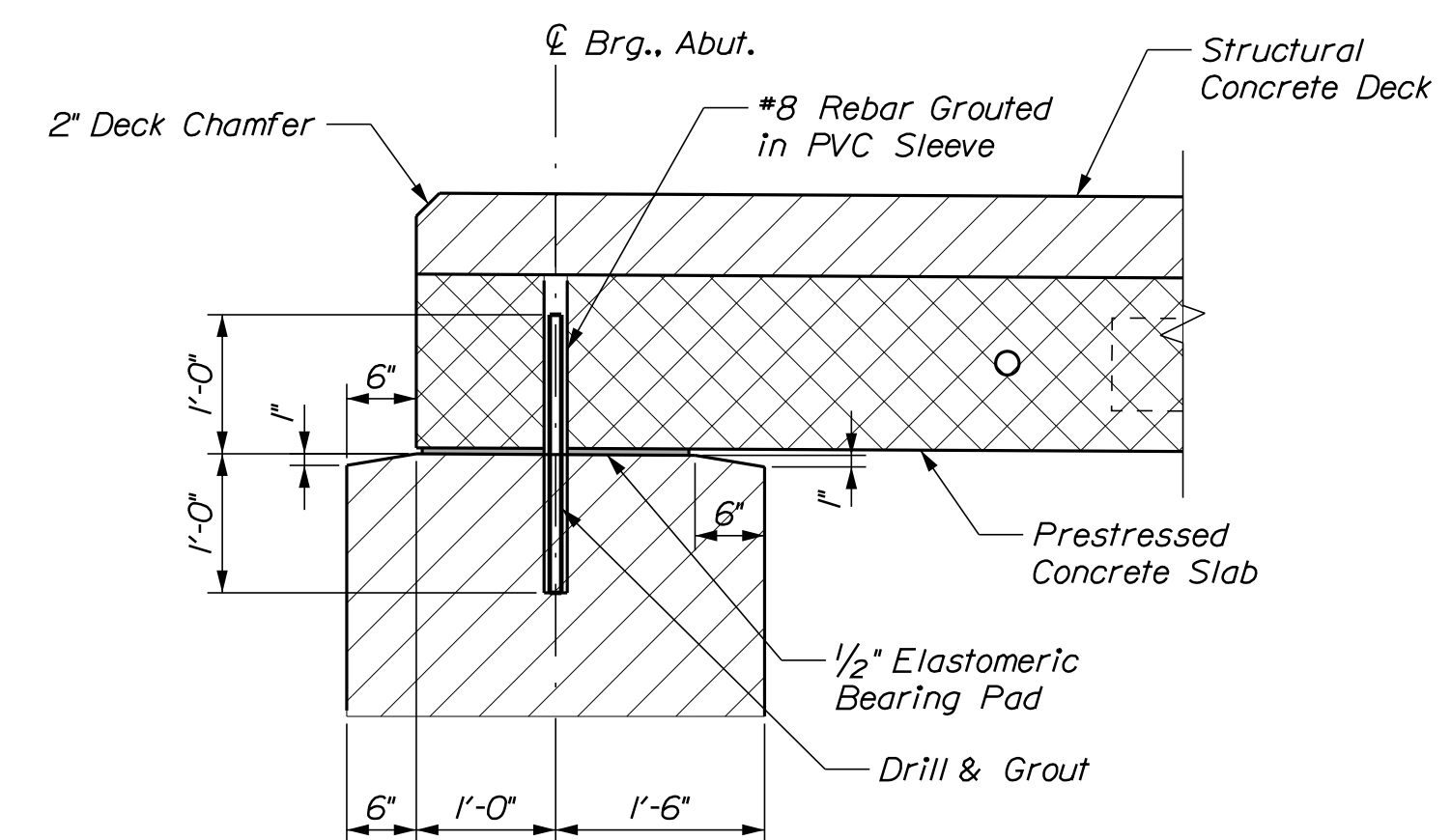
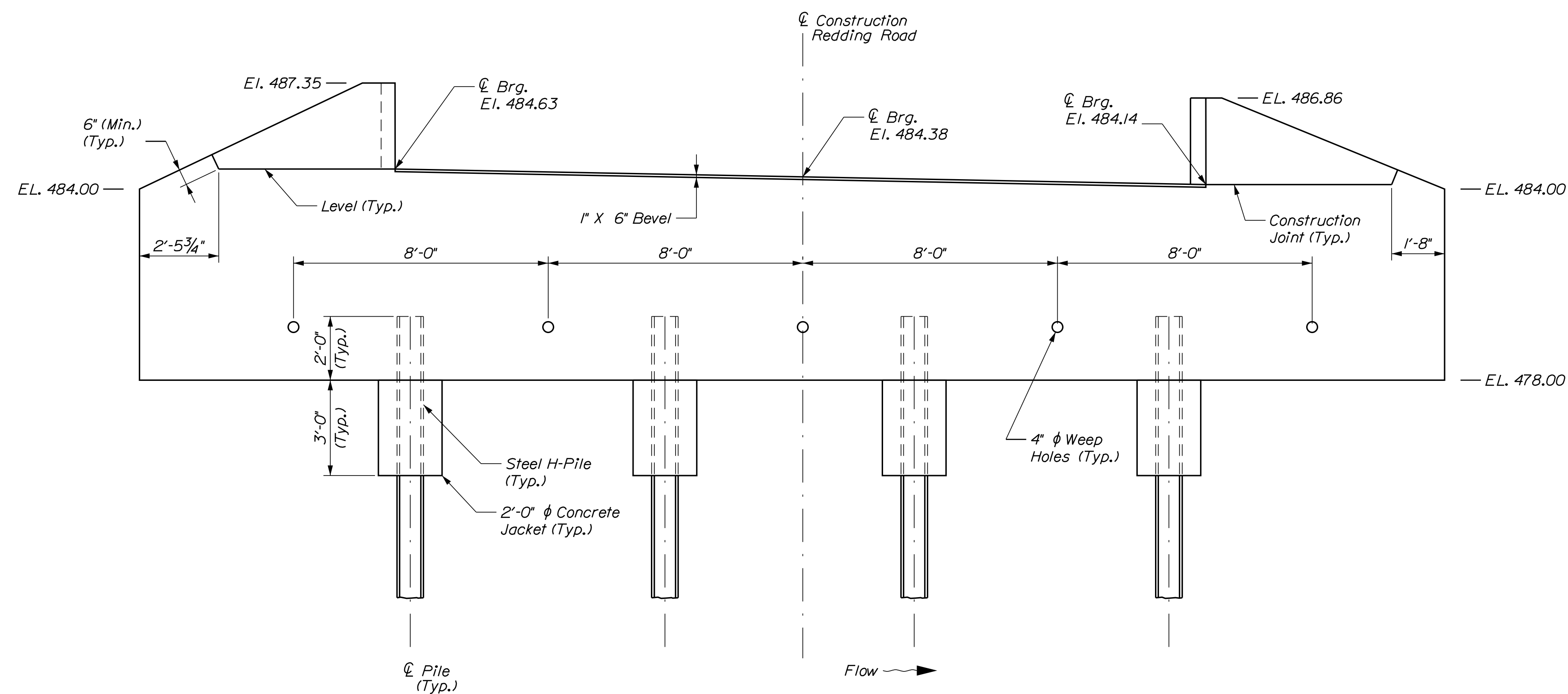
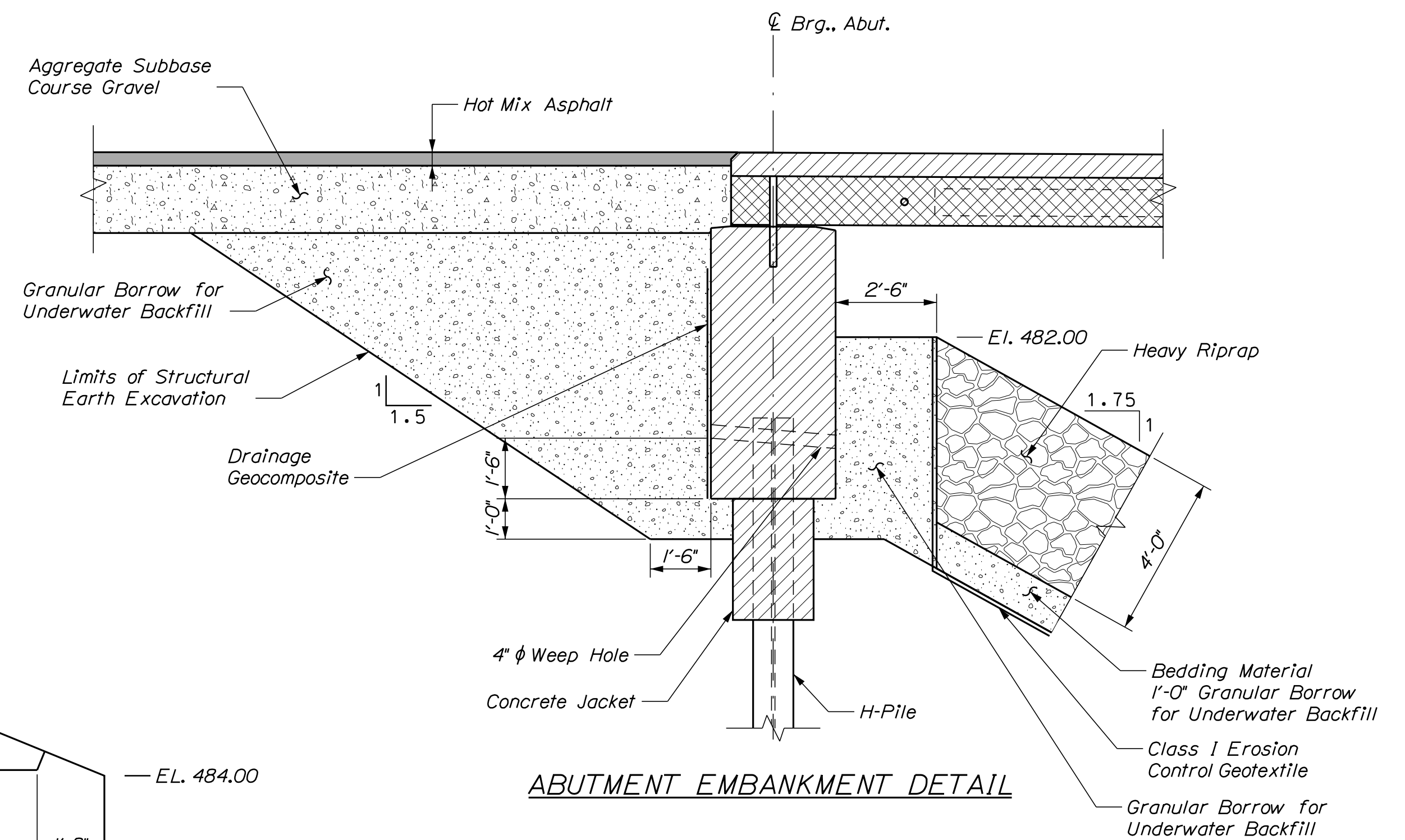
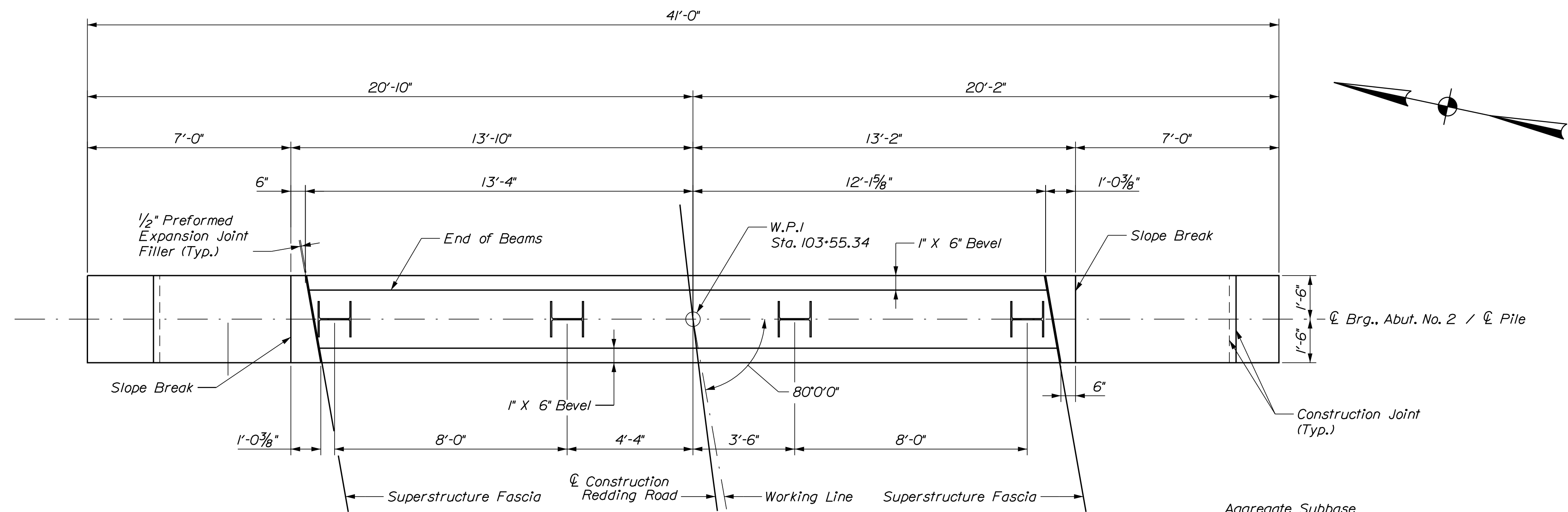


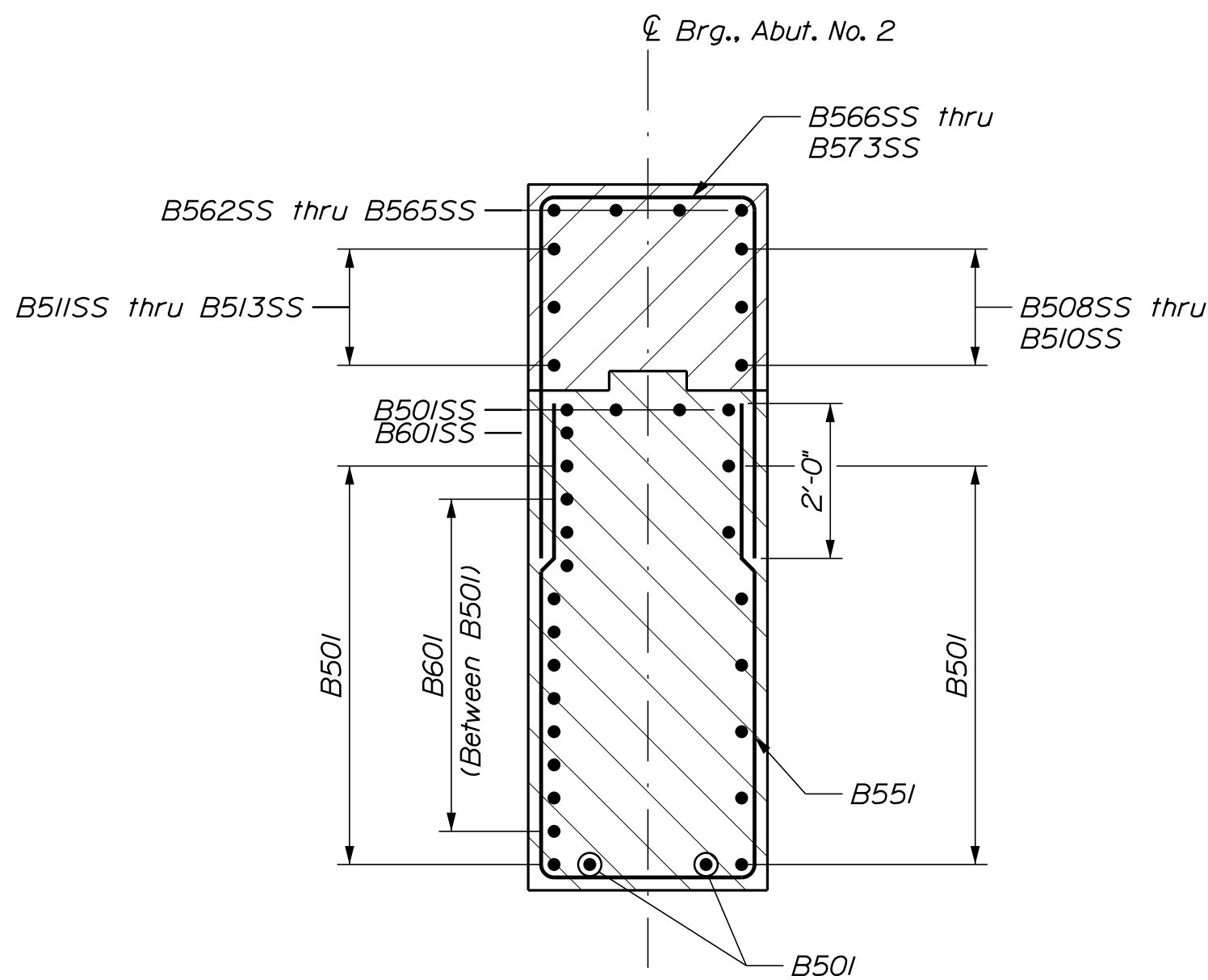
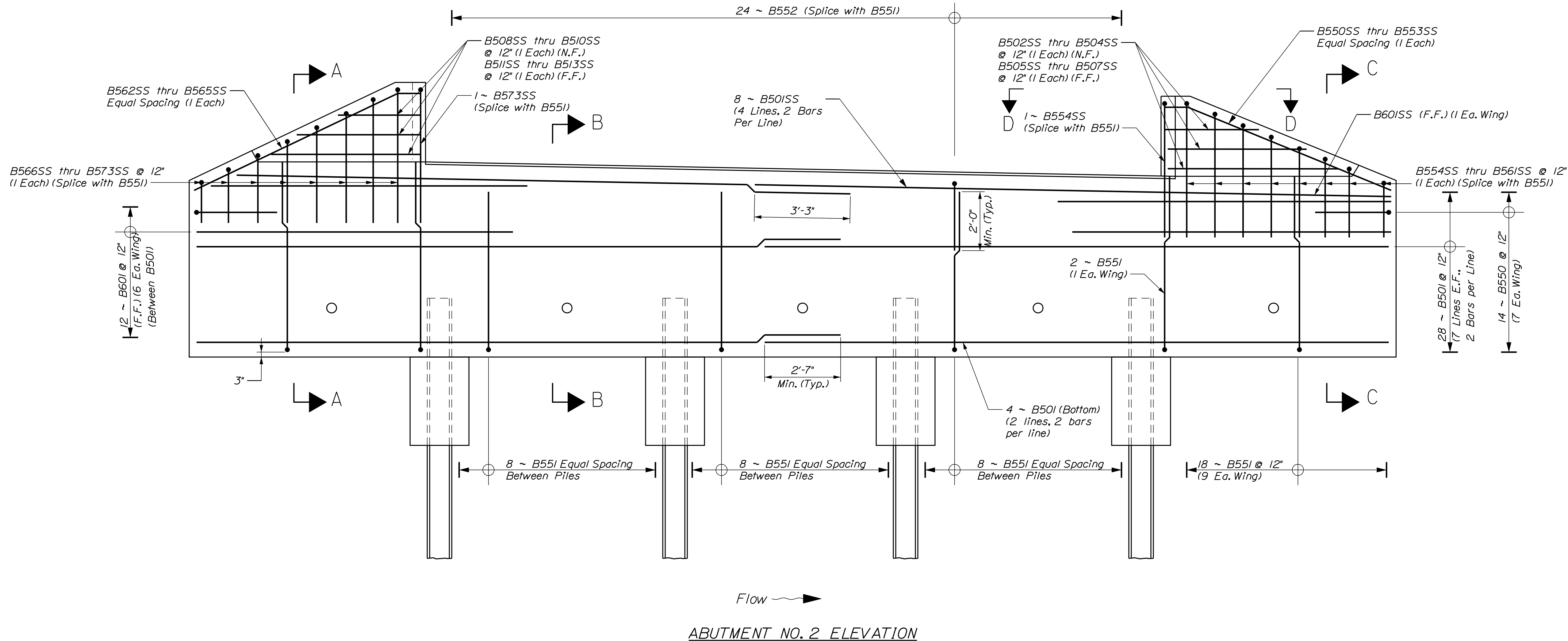
SHEET NUMBER	12					
	OF 24					
WEST BRANCH NEZINSCOT RIVER HEALD BRIDGE SUMNER OXFORD COUNTY						
		PROJ. MANAGER	M. Wright	BY	DATE	
		DESIGN-DETAILED	A. Graldi	M. Smith	10/18	
		CHECKED-REVIEWED	S. Beaumont	L. Greer	10/18	
		DESIGN2-DETAILED2	M. Smith	M. Maloney	10/18	SIGNATURE
		DESIGN3-DETAILED3				P.E. NUMBER
		REVIEWS 1				
		REVIEWS 2				
		REVIEWS 3				
		REVIEWS 4				DATE
		FIELD CHANGES				
CROSS SECTIONS						
BRIDGE NO. 0673 WIN 21704.00 BRIDGE PLANS						
DEPARTMENT OF TRANSPORTATION STATE OF MAINE						
21704.00						



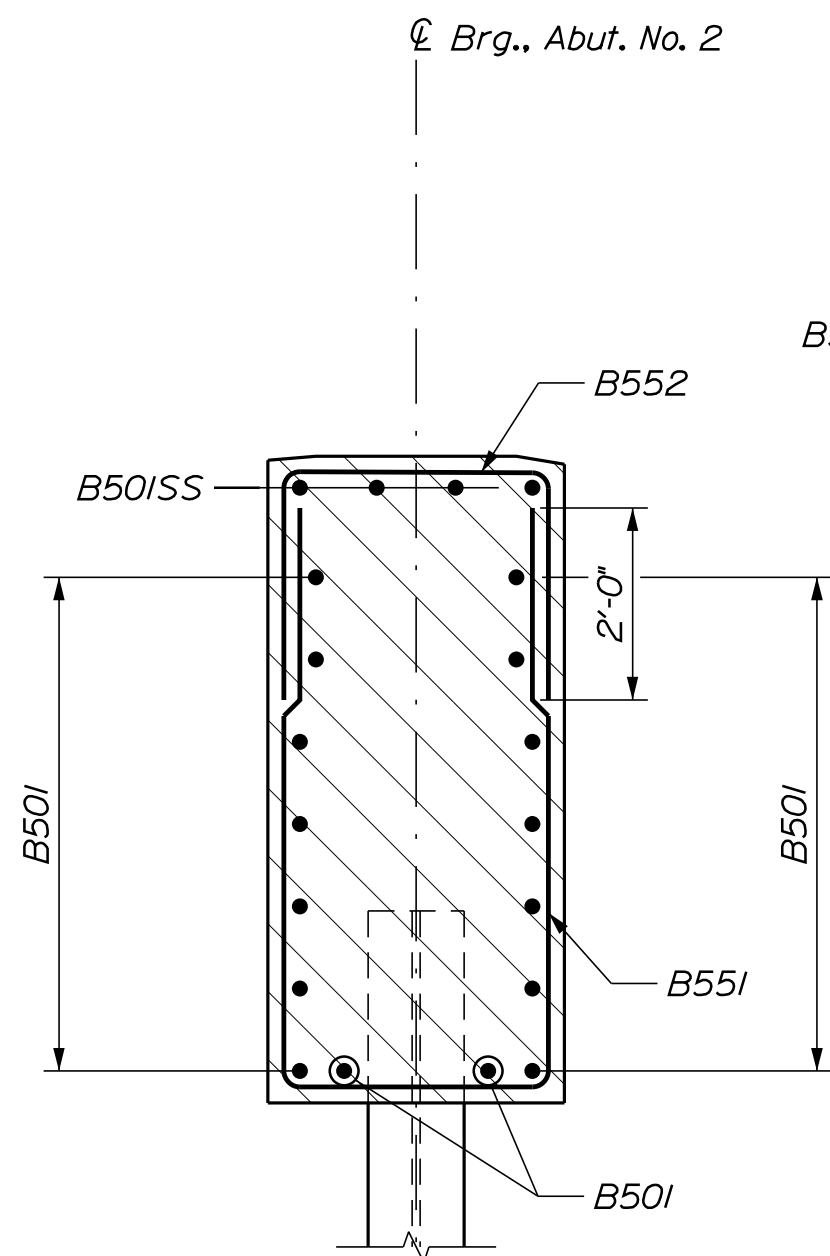


LEGEND
N.F. = Near Face
F.F. = Far Face
E.F. = Each Face

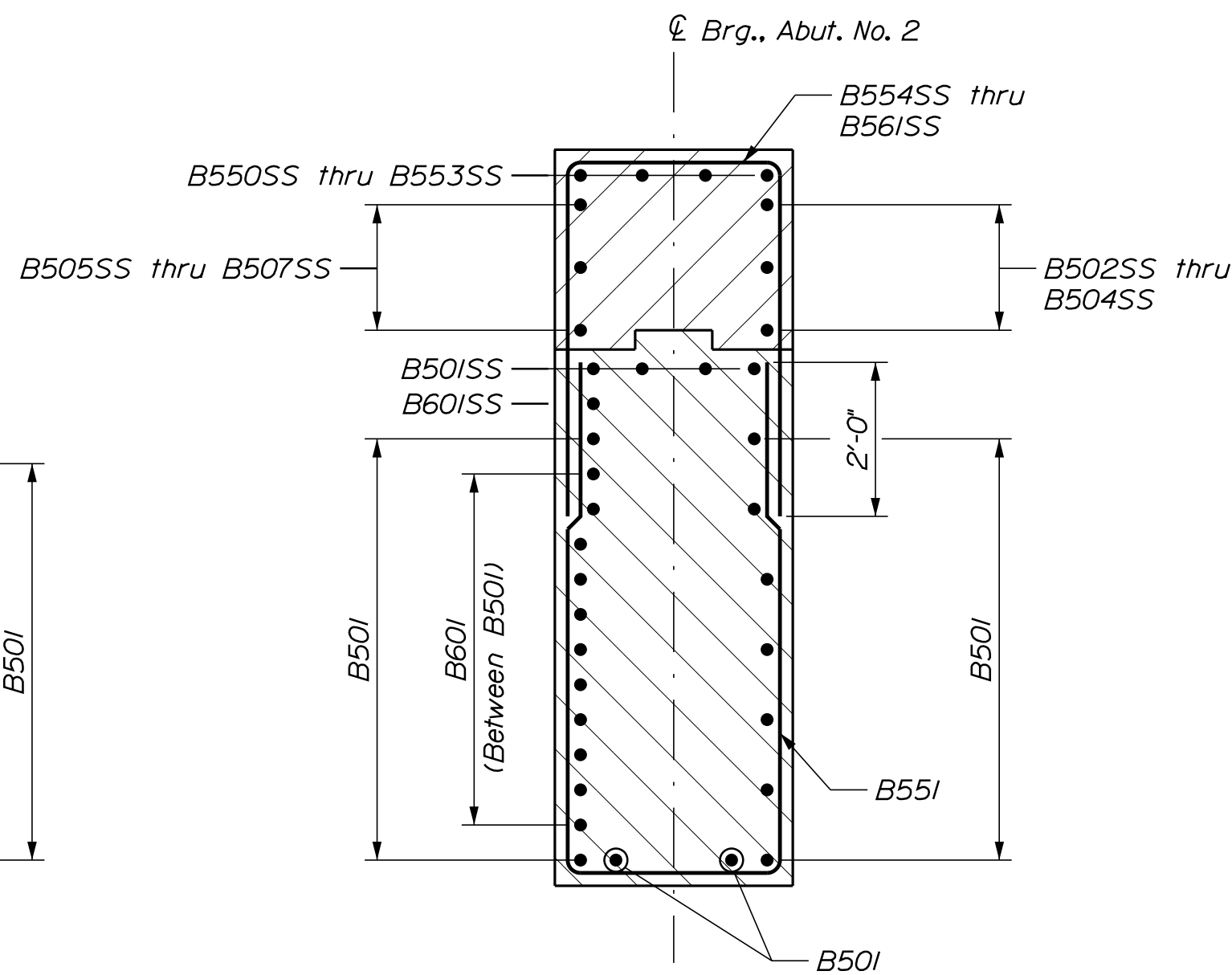




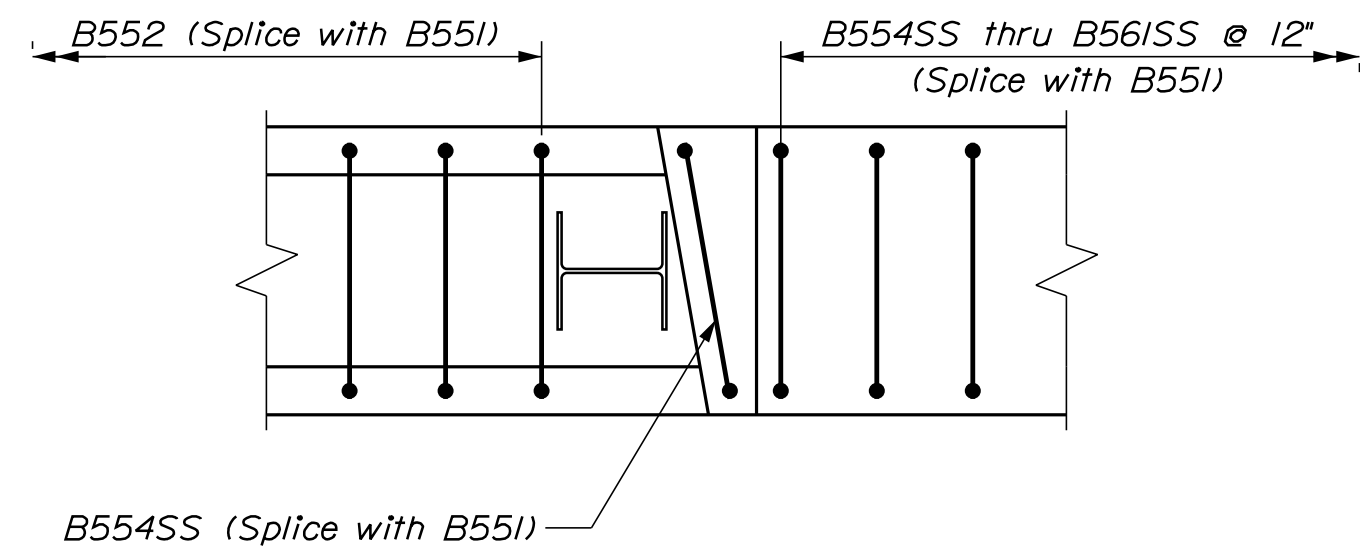
SECTION A-A
WINGWALL SECTION



SECTION B-B
ABUTMENT SECTION



SECTION C-C
WINGWALL SECTION

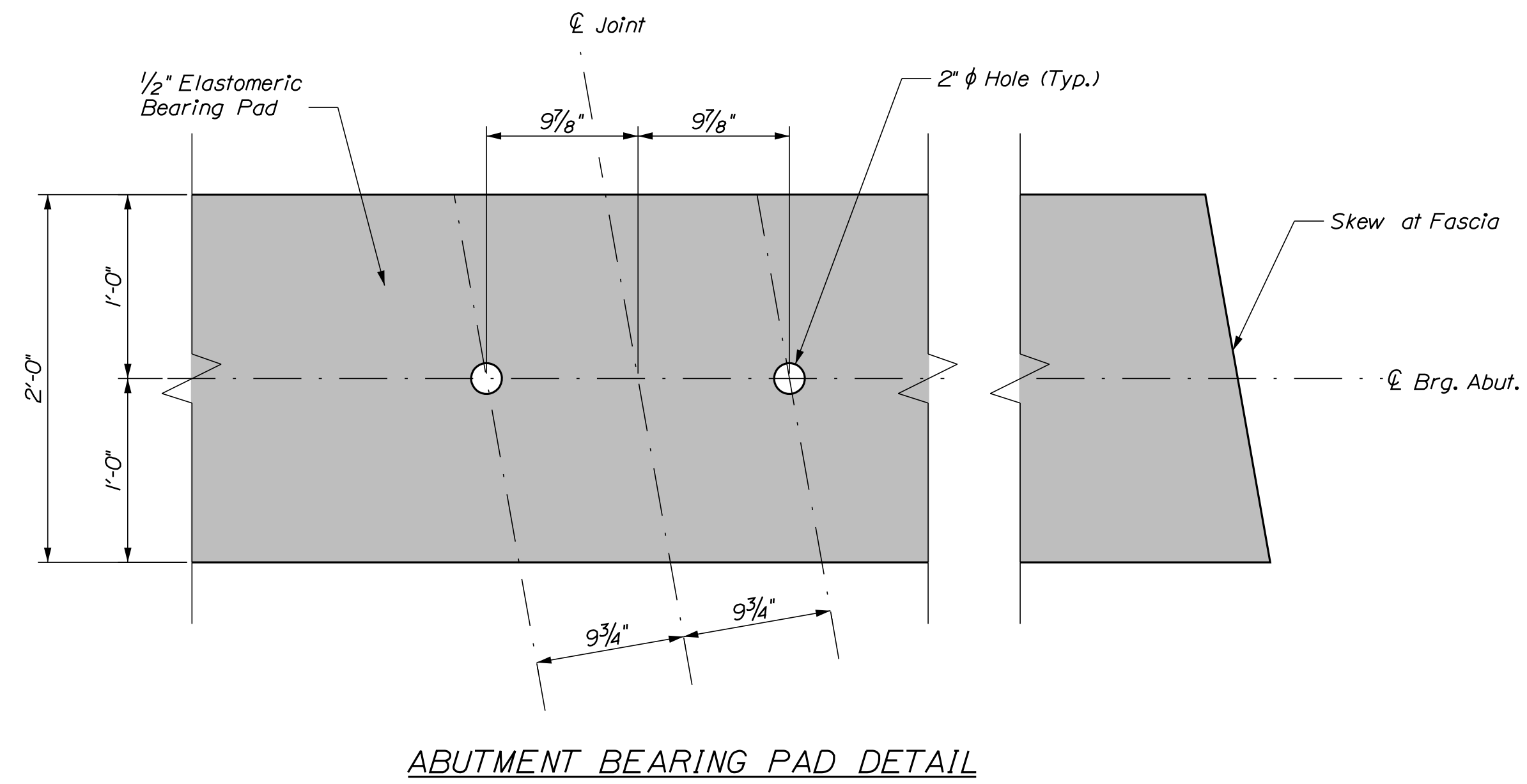


SECTION D-D

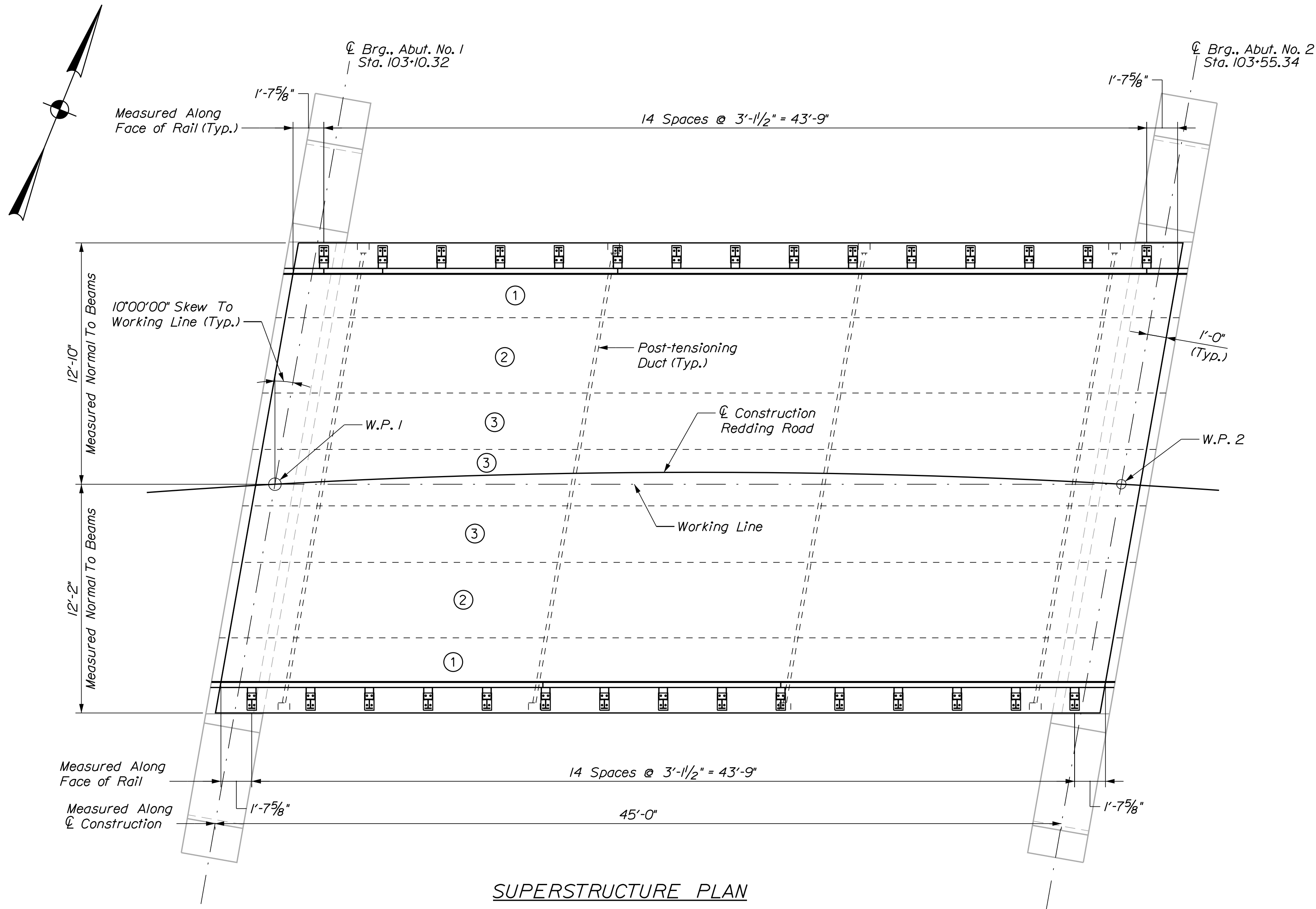
LEGEND

N.F. = Near Face
F.F. = Far Face
E.F. = Each Face

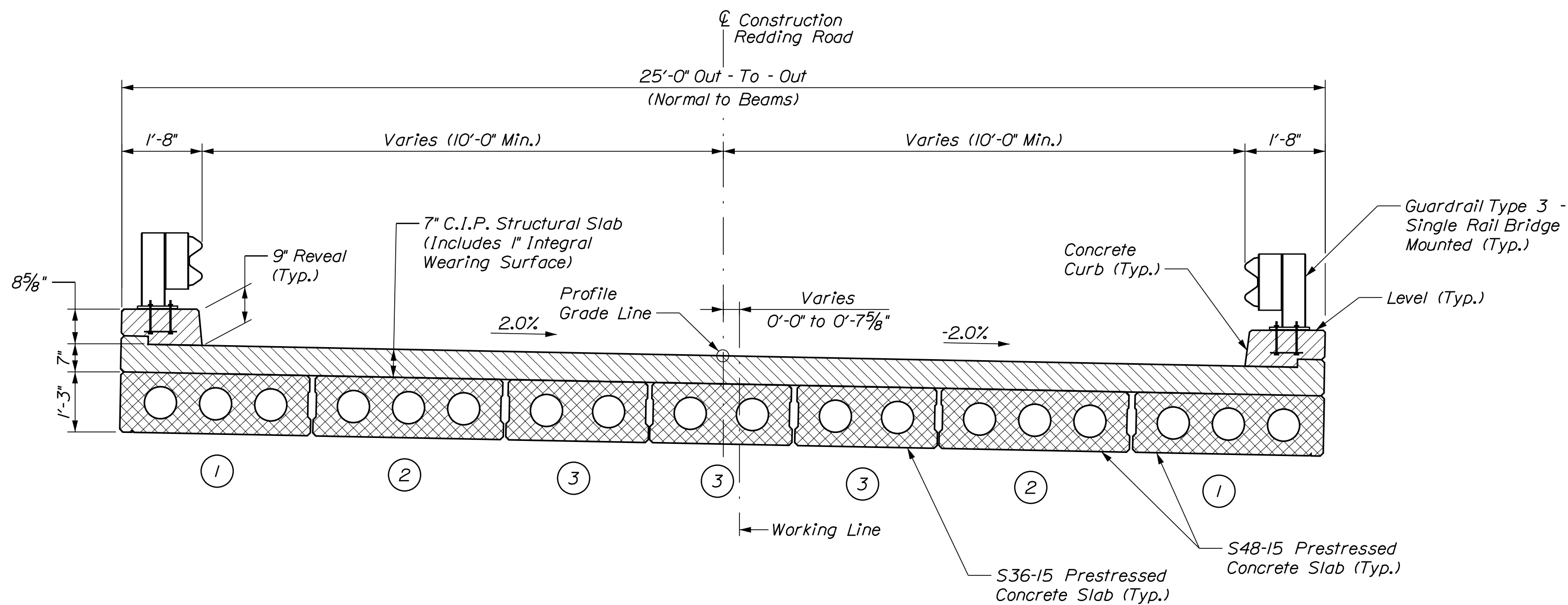
PROJ. MANAGER	DATE	BY	DATE	SIGNATURE
DESIGN-DETAILED	10/18	M. Smith	10/18	
CHECKED-REVIEWED	10/18	A. Gradi	10/18	
DESIGN-DETAILED	10/18	J. French	10/18	
DESIGN-DETAILED	10/18	M. Smith	10/18	
REVISIONS 1				
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				



<div>17</div> <div>OF 24</div>		SHEET NUMBER		HEALD BRIDGE				STATE OF MAINE							
				WEST BRANCH NEZINSCOT RIVER				DEPARTMENT OF TRANSPORTATION							
				SUMNER											
				OXFORD COUNTY				21704.00							
				BEARING DETAILS											
				DESIGN-DETAILED				PROJ. MANAGER		M. Wright		BY		DATE	
				CHECKED-REVIEWED				A. Gradi		M. Smith		10/18			
				DESIGN-DETAILED				S. Beaumont		J. French		10/18		SIGNATURE	
				DESIGN-DETAILED				E. Maloney		M. Smith		10/18			
								DESIGN-DETAILED						P.E. NUMBER	
				REVISIONS 1											
				REVISIONS 2											
				REVISIONS 3											
				REVISIONS 4						DATE					
				FIELD CHANGES											
										BRIDGE NO. 0673					
										WIN					
										21704.00					
										BRIDGE PLANS					



SUPERSTRUCTURE PLAN



TRANSVERSE SECTION

SUPERSTRUCTURE NOTES

1. Reinforcing steel shall have a minimum concrete cover of 2 inches unless otherwise noted.
2. Form a one inch V-groove on the fascias at the horizontal joint between the curb and slab.
3. The superstructure slab concrete shall be placed continuously and shall be kept plastic until the entire placement has been made.

TABLE OF WORKING POINT COORDINATES

W.P.	X	Y
1	961488.12	570642.16
2	961529.85	570659.01

NOTE:

All dimensions measured perpendicular to
 ℄ Construction Redding Road.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

21704.00

BRIDGE NO. 0673
WIN
21704.00
BRIDGE PLANS

HEALD BRIDGE
WEST BRANCH NEZINSCOT RIVER
SUMNER
OXFORD COUNTY

SUPERSTRUCTURE PLAN
AND TRANSVERSE SECTION

PROJ. MANAGER
DESIGN-DETAILED
CHECKED-REVIEWED
DESIGNS-DETAILED
REVISIONS 1
REVISIONS 2
REVISIONS 3
REVISIONS 4
FIELD CHANGES

BY
M. Wright
A. Gradi
M. Smith
J. French
M. Smith

DATE
10/18
10/18
10/18

SIGNATURE

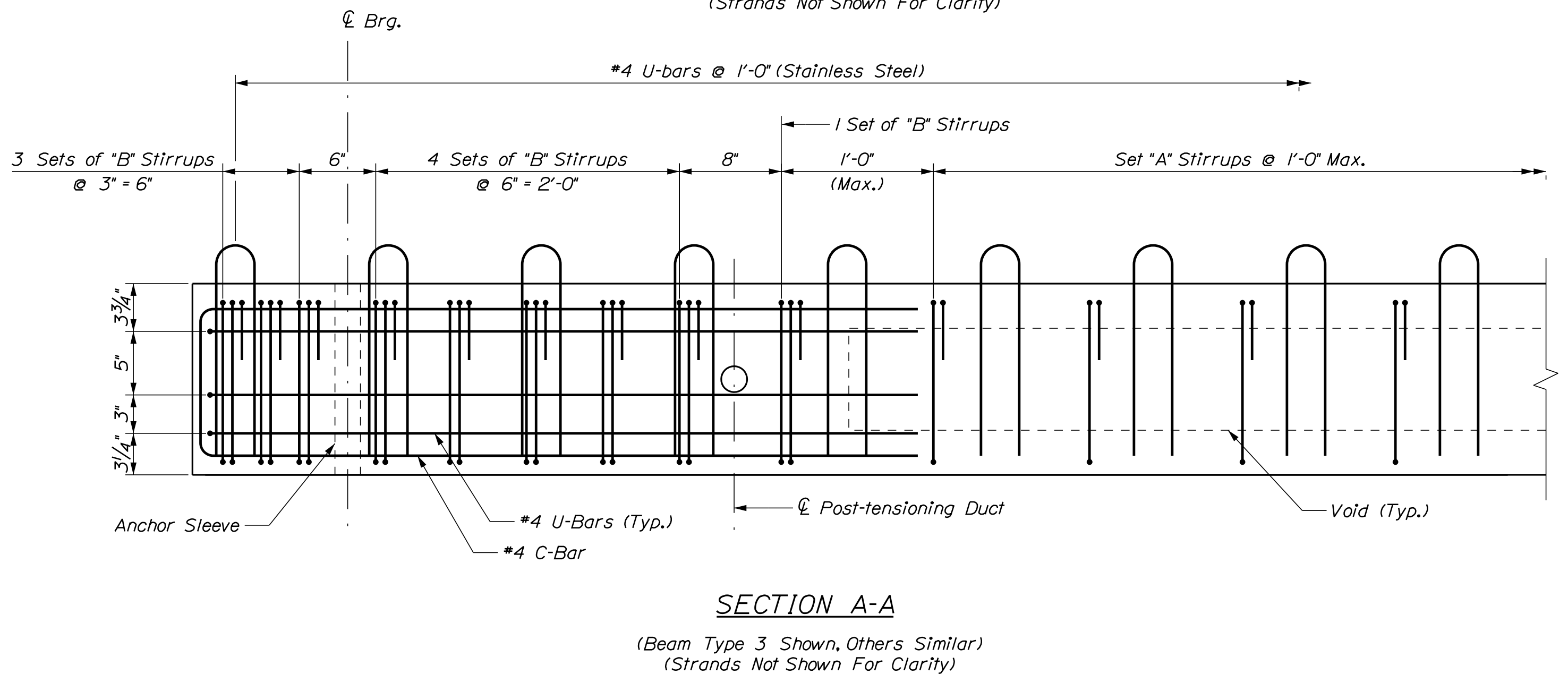
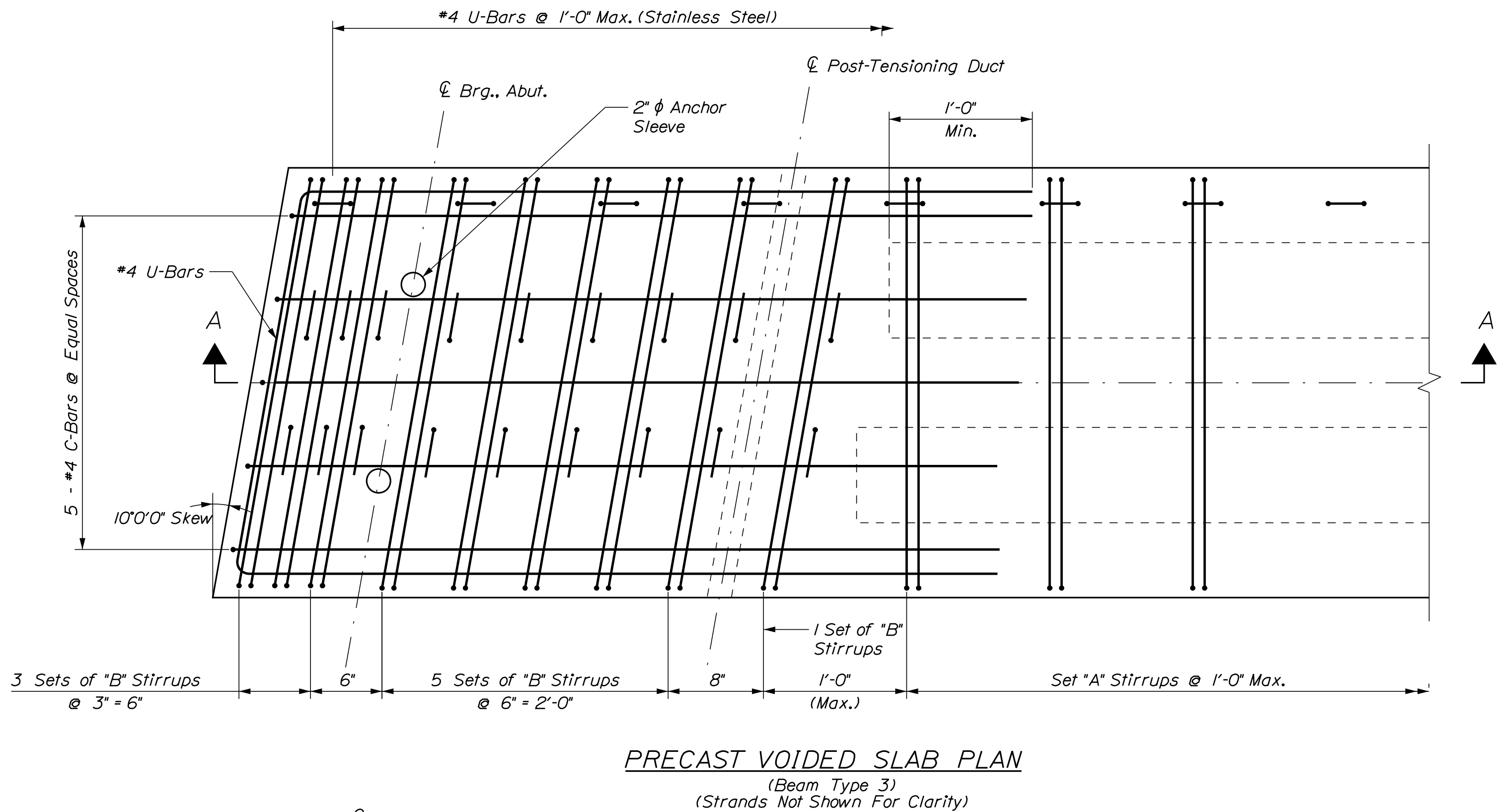
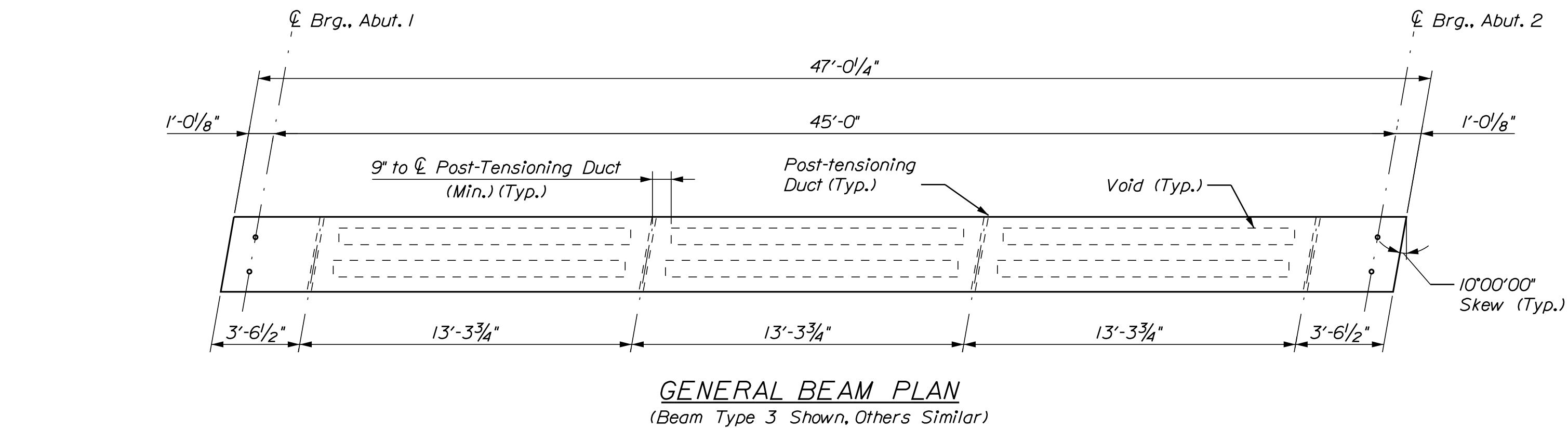
P.E. NUMBER

DATE

SHEET NUMBER

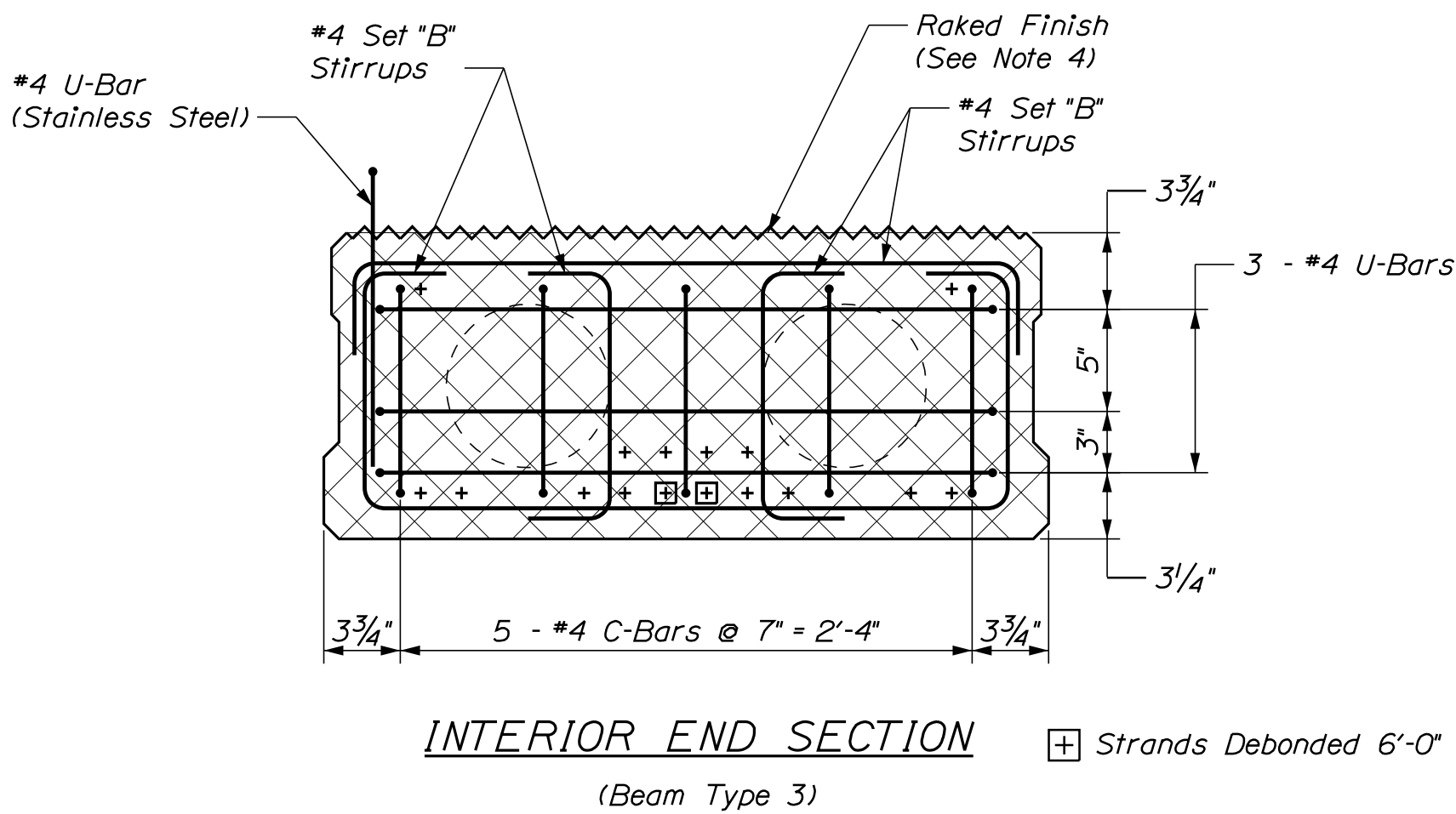
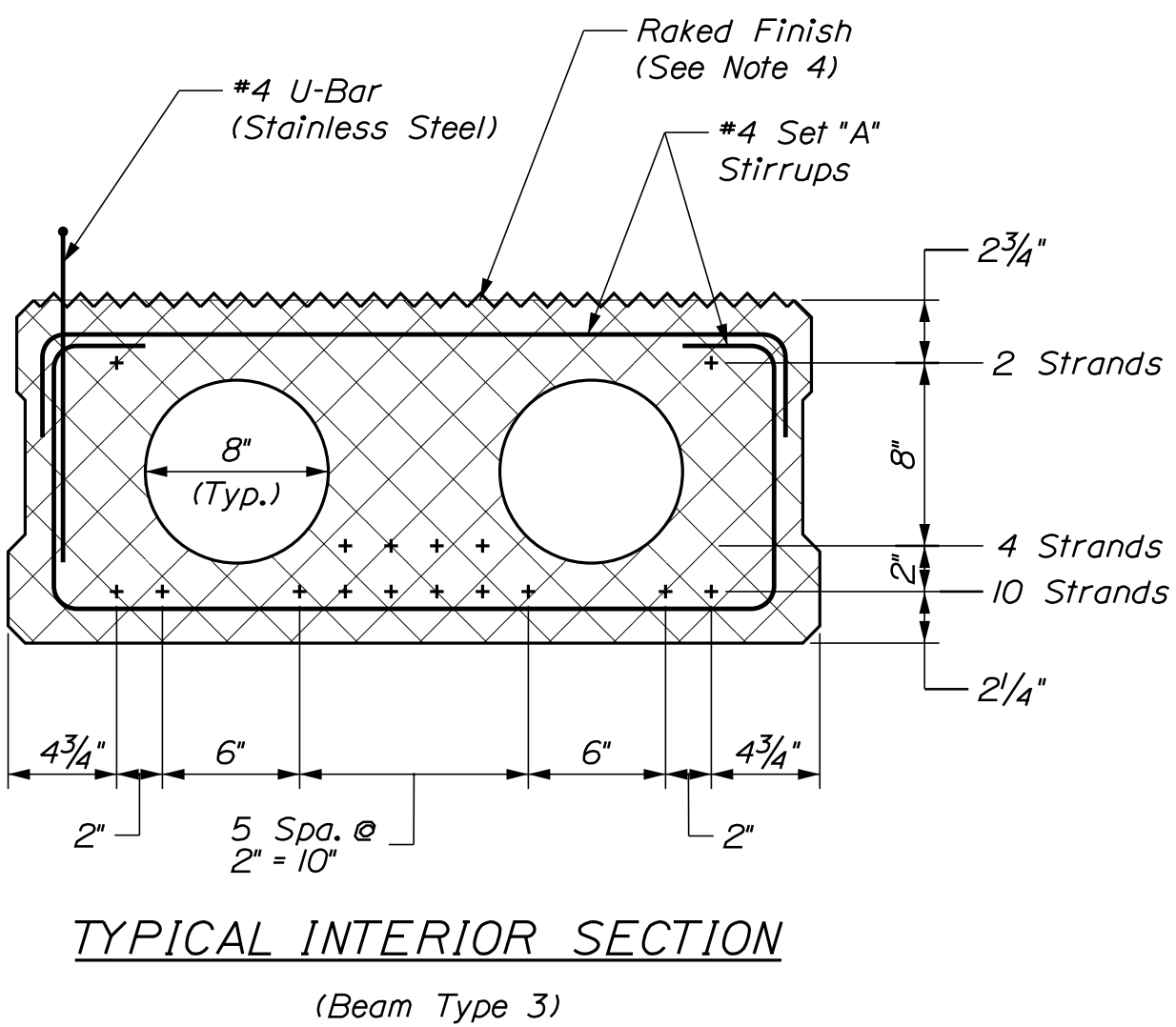
18

OF 24



PRECAST CONCRETE SUPERSTRUCTURE NOTES

1. Prestressing strands shall be 0.6-in. diameter. The tensioning force is 44 kips per prestressing strand, including top strands.
2. Reinforcing steel shall have a minimum concrete cover of 2 inches unless otherwise noted.
3. Install a 1-in. diameter nonmetallic void drain in the bottom of each void at both ends.
4. Unless otherwise noted, the top surface of the prestressed beams shall be raked to a surface roughness of $\pm 1/4$ inch, except at locations corresponding to the blocking points. At these locations, a flattened area of sufficient size shall be finished to facilitate taking elevations for setting top of slab elevations.
5. The drilling of holes in the prestressed beams and the use of powder actuated tools on the beams will not be permitted without the approval of the Fabrication Engineer.
6. Neoprene pads shall be either polychloroprene or natural polyisoprene of 50 \pm 5 Shore A durometer hardness, and shall conform to the requirements of Division 2, Section 18.2 of AASHTO Standard Specifications for Highway Bridges. Neoprene pads will not be paid for directly but will be considered incidental to related contract items.
7. Post tensioning strands shall be covered by a seamless polypropylene sheath, with corrosion inhibiting grease between the strands and sheath, for the full length of the strand except at the anchorage location.
8. The Contractor shall calibrate the jacking equipment as necessary to provide an anchorage of 38 to 41 kips after setting losses in each 0.6-in. diameter post tensioning strand.



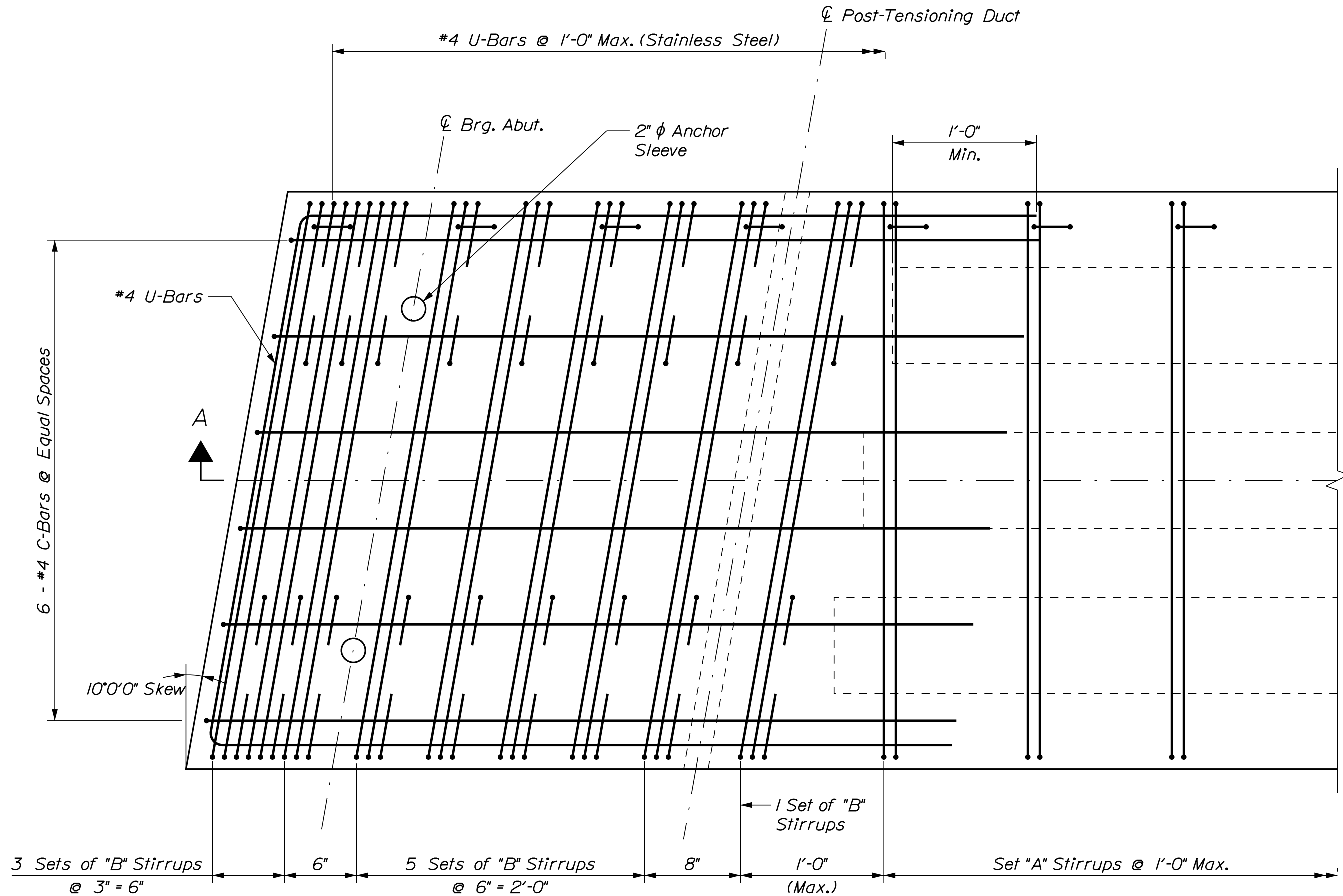
SHEET NUMBER				19				OF 24					
HEALD BRIDGE WEST BRANCH NEZINSCOT RIVER SUMNER OXFORD COUNTY				PROJ. MANAGER		M. Wright	BY	DATE		STATE OF MAINE DEPARTMENT OF TRANSPORTATION			
				DESIGN-DETAILED		A. Girault	M. Smith	10/18					
				CHECKED-REVIEWED		S. Beaumont	J. French	10/18					
				DESIGN2-DETAILED2		E. Maloney	M. Smith	10/18					
				DESIGN3-DETAILED3									
PRECAST VOIDED SLAB (1 OF 2)				REVISIONS 1				P.E. NUMBER		21704.00			
				REVISIONS 2									
				REVISIONS 3									
				REVISIONS 4									
				FIELD CHANGES									
								DATE		BRIDGE NO. 0673			
										WIN			
										21704.00			
										BRIDGE PLANS			

Date:10/23/2018

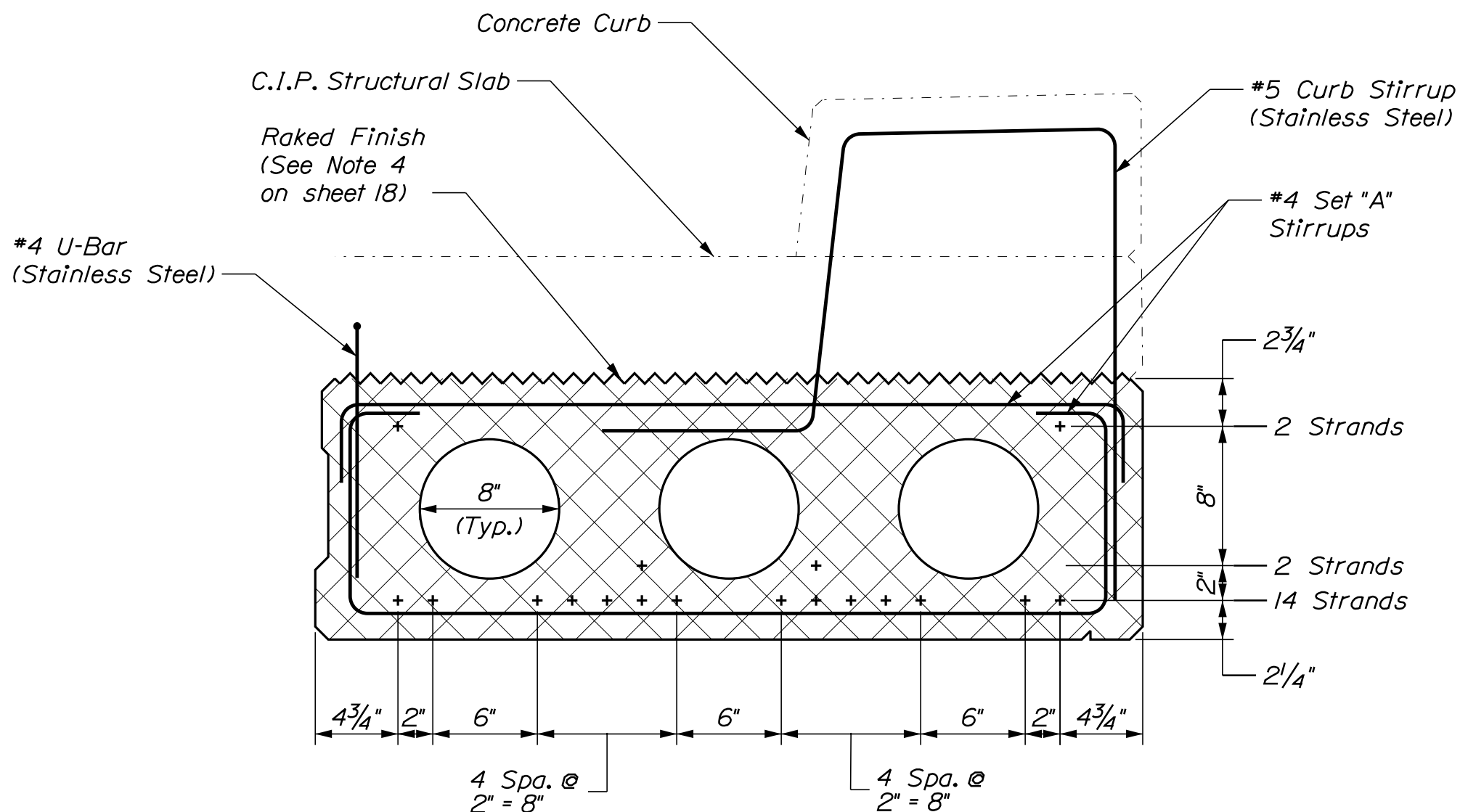
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Division: HIGHWAY

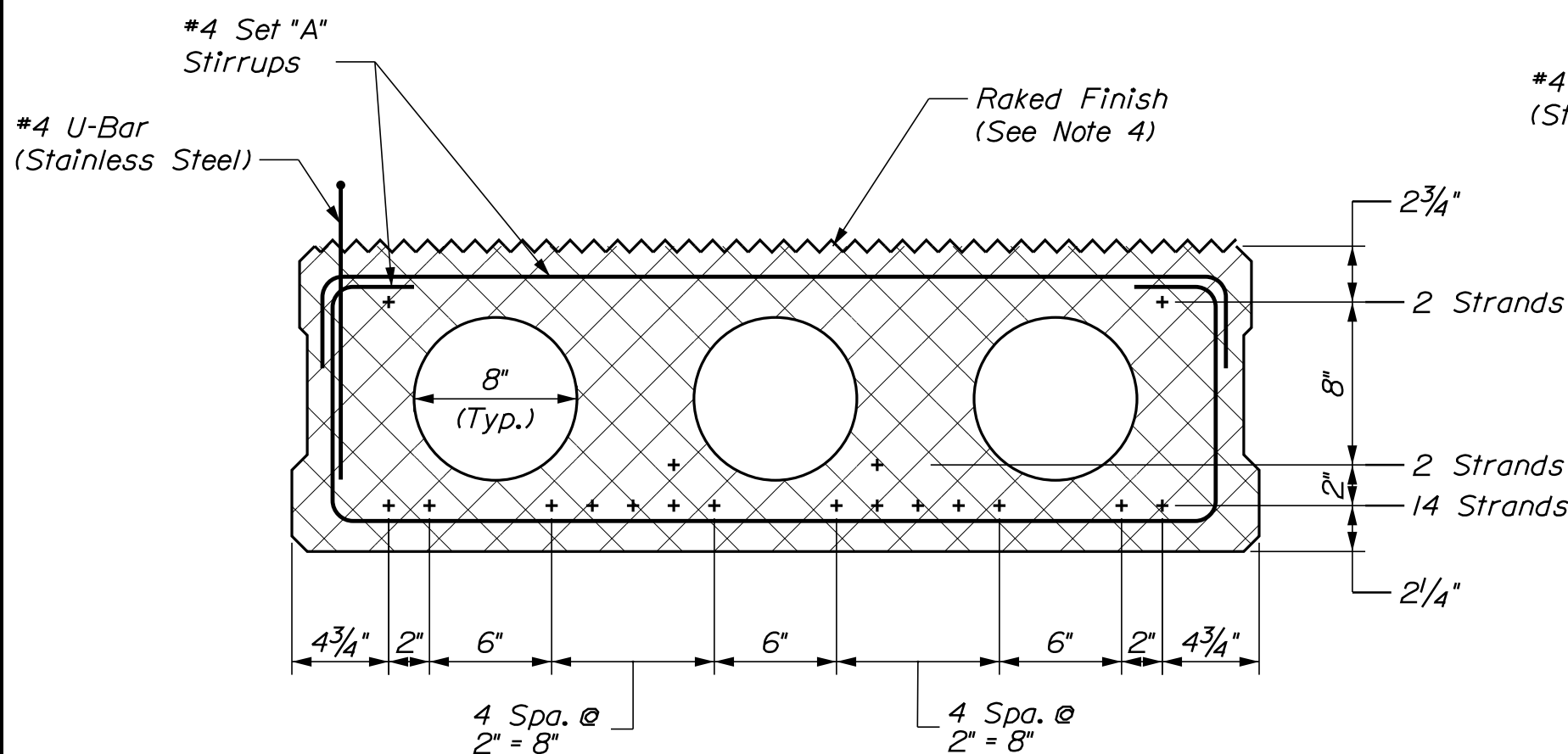
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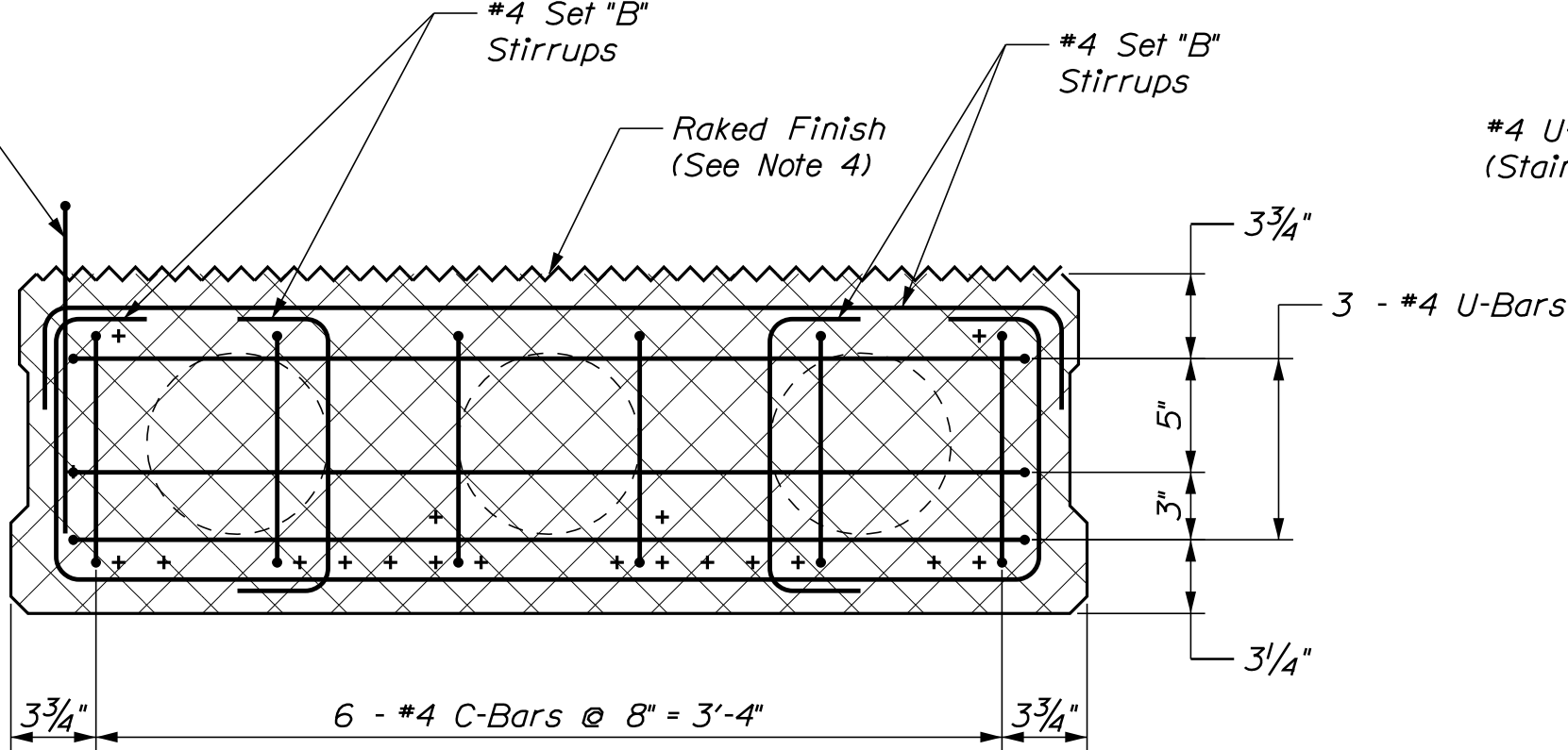
PRECAST VOIDED SLAB PLAN
 (Beam Type 2 Shown, Beam Type 1 Similar)
 (Strands Not Shown For Clarity)



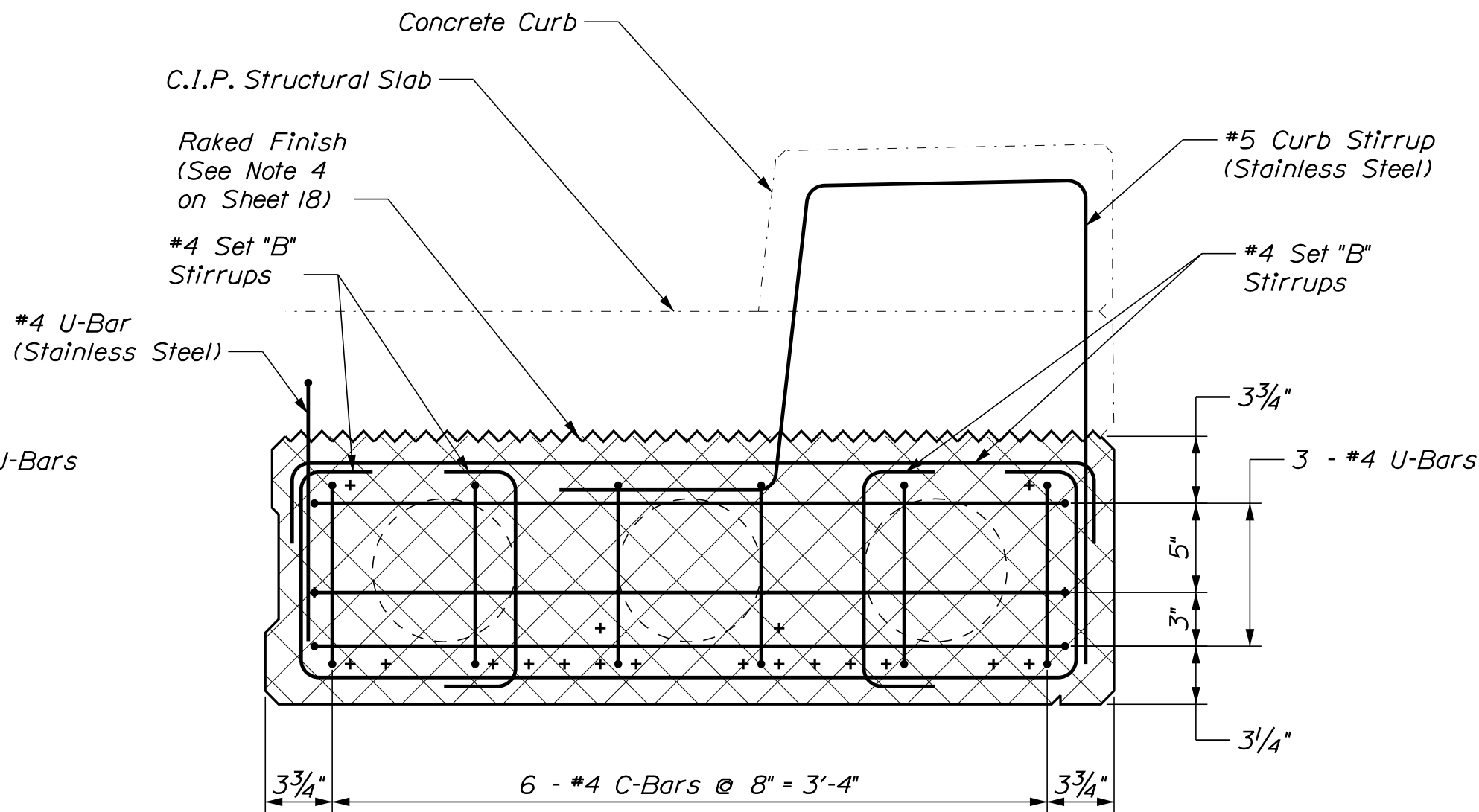
TYPICAL EXTERIOR SECTION
 (Beam Type 1)



TYPICAL INTERIOR SECTION
 (Beam Type 2)

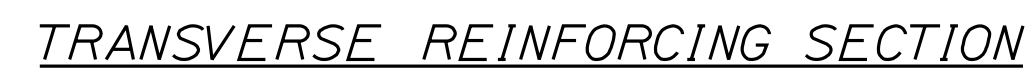


TYPICAL INTERIOR END SECTION
 (Beam Type 2)



TYPICAL EXTERIOR END SECTION
 (Beam Type 1)

HEALD BRIDGE				STATE OF MAINE			
WEST BRANCH NEZINSCOT RIVER				DEPARTMENT OF TRANSPORTATION			
SUMNER							
OXFORD COUNTY							
PRECAST VOIDED SLAB (2 OF 2)							
SHEET NUMBER				BRIDGE NO. 0673			
20				WIN			
OF 24				21704.00			
				BRIDGE PLANS			



<p style="text-align: center;"><i>DEAD LOAD DEFLECTION (INCHES)</i></p> <p style="text-align: center;"><i>(DECK, RAIL AND CURBS)</i></p>										
<p>℄ Brg. Abut. 1</p>	0.10L	0.20L	0.30L	0.40L	0.50L	0.60L	0.70L	0.80L	0.90L	<p>℄ Brg. Abut. 2</p>
0.00	0.15	0.33	0.46	0.55	0.58	0.55	0.46	0.33	0.15	0.00

STRAIGHT BARS								BENT BARS															
MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION	
Abutment No. 1 (Plain)								Abutment No. 1 (Plain)															
A50I	32	21'-8"	Horiz. E.F.					A550	14	7'-10"	S	0	2'-7"	2'-8"	2'-7"			0					Wingwall Side
A60I	12	10'-9"	Horiz. Wingwall, F.F.					A551	44	14'-0"	S	0	5'-8"	2'-8"	5'-8"			0					Abutment Bottom
								A552	24	8'-4"	S	0	2'-10"	2'-8"	2'-10"			0					Abutment Top
Abutment No. 1 (Stainless Steel)								Abutment No. 1 (Stainless Steel)															
A50ISS	8	22'-0"	Horiz. Below Beam Seat, E.F.					A550SS	1	8'-5"	V				0'-9"	7'-8"						North Wingwall, Top	
A502SS	1	4'-7"	Horiz. North Wingwall, N.F.					A551SS	1	8'-3"	V				0'-7"	7'-8"						North Wingwall, Top	
A503SS	1	3'-2"	Horiz. North Wingwall, N.F.					A552SS	1	8'-1"	V				0'-5"	7'-8"						North Wingwall, Top	
A504SS	1	1'-2"	Horiz. North Wingwall, N.F.					A553SS	1	7'-11"	V				0'-3"	7'-8"						North Wingwall, Top	
A505SS	1	5'-1"	Horiz. North Wingwall, F.F.					A554SS	2	13'-10"	S	0	5'-7"	2'-8"	5'-7"			0				North Wingwall, Top	
A506SS	1	3'-7"	Horiz. North Wingwall, F.F.					A555SS	1	13'-2"	S	0	5'-3"	2'-8"	5'-3"			0				North Wingwall, Top	
A507SS	1	1'-8"	Horiz. North Wingwall, F.F.					A556SS	1	12'-2"	S	0	4'-9"	2'-8"	4'-9"			0				North Wingwall, Top	
A508SS	1	5'-9"	Horiz. South Wingwall, N.F.					A557SS	1	11'-0"	S	0	4'-2"	2'-8"	4'-2"			0				North Wingwall, Top	
A509SS	1	4'-1"	Horiz. South Wingwall, N.F.					A558SS	1	10'-0"	S	0	3'-8"	2'-8"	3'-8"			0				North Wingwall, Top	
A510SS	1	1'-10"	Horiz. South Wingwall, N.F.					A559SS	1	9'-0"	S	0	3'-2"	2'-8"	3'-2"			0				North Wingwall, Top	
A511SS	1	5'-4"	Horiz. South Wingwall, F.F.					A560SS	1	8'-0"	S	0	2'-8"	2'-8"	2'-8"			0				North Wingwall, Top	
A512SS	1	3'-7"	Horiz. South Wingwall, F.F.					A561SS	1	6'-10"	S	0	2'-1"	2'-8"	2'-1"			0				North Wingwall, Top	
A513SS	1	1'-4"	Horiz. South Wingwall, F.F.					A562SS	1	7'-9"	V				0'-3"	7'-6"						South Wingwall, Top	
A60ISS	2	11'-4"	Horiz. Wingwall, F.F.					A563SS	1	7'-11"	V				0'-5"	7'-6"						South Wingwall, Top	
								A564SS	1	8'-1"	V				0'-7"	7'-6"						South Wingwall, Top	
Abutment No. 2 (Plain)								Abutment No. 2 (Plain)															
B50I	32	21'-8"	Horiz. E.F.					A565SS	1	8'-3"	V				0'-9"	7'-6"						South Wingwall, Top	
B60I	12	10'-9"	Horiz. Wingwall, F.F.					A566SS	1	7'-0"	S	0	2'-2"	2'-8"	2'-2"			0				South Wingwall, Top	
								A567SS	1	7'-8"	S	0	2'-6"	2'-8"	2'-6"			0				South Wingwall, Top	
								A568SS	1	8'-8"	S	0	3'-0"	2'-8"	3'-0"			0				South Wingwall, Top	
								A569SS	1	9'-6"	S	0	3'-5"	2'-8"	3'-5"			0				South Wingwall, Top	
Abutment No. 2 (Stainless Steel)								Abutment No. 2 (Stainless Steel)															
B50ISS	8	22'-0"	Horiz. Below Beam Seat, E.F.					A570SS	1	10'-4"	S	0	3'-10"	2'-8"	3'-10"			0				South Wingwall, Top	
B502SS	1	5'-9"	Horiz. South Wingwall, N.F.					A571SS	1	11'-2"	S	0	4'-3"	2'-8"	4'-3"			0				South Wingwall, Top	
B503SS	1	3'-10"	Horiz. South Wingwall, N.F.					A572SS	1	12'-0"	S	0	4'-8"	2'-8"	4'-8"			0				South Wingwall, Top	
B504SS	1	1'-5"	Horiz. South Wingwall, N.F.					A573SS	2	13'-0"	S	0	5'-2"	2'-8"	5'-2"			0				South Wingwall, Top	
B505SS	1	6'-2"	Horiz. South Wingwall, F.F.					Abutment No. 2 (Plain)															
B506SS	1	4'-4"	Horiz. South Wingwall, F.F.					B550	14	7'-10"	S	0	2'-7"	2'-8"	2'-7"			0				Wingwall Side	
B507SS	1	1'-11"	Horiz. South Wingwall, F.F.					B551	44	14'-0"	S	0	5'-8"	2'-8"	5'-8"			0				Abutment Bottom	
B508SS	1	5'-4"	Horiz. North Wingwall, N.F.					B552	24	7'-10"	S	0	2'-7"	2'-8"	2'-7"			0				Abutment Top	
B509SS	1	3'-9"	Horiz. North Wingwall, N.F.					Abutment No. 2 (Stainless Steel)															
B510SS	1	1'-8"	Horiz. North Wingwall, N.F.					B550SS	1	8'-2"	V				0'-9"	7'-5"						South Wingwall, Top	
B511SS	1	4'-11"	Horiz. North Wingwall, F.F.					B551SS	1	8'-0"	V				0'-7"	7'-5"						South Wingwall, Top	
B512SS	1	3'-4"	Horiz. North Wingwall, F.F.					B552SS	1	7'-10"	V				0'-5"	7'-5"						South Wingwall, Top	
B513SS	1	1'-2"	Horiz. North Wingwall, F.F.					B553SS	1	7'-8"	V				0'-3"	7'-5"						South Wingwall, Top	
B60ISS	2	11'-4"	Horiz. Wingwall, F.F.					B554SS	2	12'-6"	S	0	4'-11"	2'-8"	4'-11"			0				South Wingwall, Top	
Superstructure (Glass Fiber Reinforced Polymer)								B555SS	1	11'-8"	S	0	4'-6"	2'-8"	4'-6"			0				South Wingwall, Top	
S500G	64	24'-1"	Longitudinal					B556SS	1	10'-10"	S	0	4'-1"	2'-8"	4'-1"			0				South Wingwall, Top	
S501G	48	25'-0"	Transverse					B557SS	1	10'-0"	S	0	3'-8"	2'-8"	3'-8"			0				South Wingwall, Top	
								B558SS	1	9'-4"	S	0	3'-4"	2'-8"	3'-4"			0				South Wingwall, Top	
								B559SS	1	8'-6"	S	0	2'-11"	2'-8"	2'-11"			0				South Wingwall, Top	
								B560SS	1	7'-8"	S	0	2'-6"	2'-8"	2'-6"			0				South Wingwall, Top	
								B561SS	1	6'-10"	S	0	2'-1"	2'-8"	2'-1"			0				South Wingwall, Top	
								B562SS	1	7'-10"	V				0'-3"	7'-7"						North Wingwall, Top	
								B563SS	1	8'-0"	V				0'-5"	7'-7"						North Wingwall, Top	
								B564SS	1	8'-2"	V				0'-7"	7'-7"						North Wingwall, Top	
								B565SS	1	8'-4"	V				0'-9"	7'-7"						North Wingwall, Top	
								B566SS	1	7'-0"	S	0	2'-2"	2'-8"	2'-2"			0				North Wingwall, Top	
								B567SS	1	7'-10"	S	0	2'-7"	2'-8"	2'-7"			0				North Wingwall, Top	
								B568SS	1	8'-8"	S	0	3'-0"	2'-8"	3'-0"			0				North Wingwall, Top	
								B569SS	1	9'-8"	S	0	3'-6"	2'-8"	3'-6"			0				North Wingwall, Top	
								B570SS	1	10'-8"	S	0	4'-0"	2'-8"	4'-0"			0				North Wingwall, Top	
								B571SS	1	11'-6"	S	0	4'-5"	2'-8"	4'-5"			0				North Wingwall, Top	
								B572SS	1	12'-6"	S	0	4'-11"	2'-8"	4'-11"			0				North Wingwall, Top	
								B573SS	2	13'-4"	S	0	5'-4"	2'-8"	5'-4"			0				North Wingwall, Top	
														</									

- 1

ROAD CLOSED
500 FT.

W20-4
(36"x36")
- 2

ROAD CLOSED
1000 FT.

W20-4
(36"x36")
- 3

DETOUR AHEAD

W20-2
(36"x36")
- 4

ROAD CLOSED

TYPE III BARRICADE

TYPE III BARRICADE

R11-2
(48"x30")
- 5

DETOUR
Redding Rd

M4-8 (24"x12")
D3-1 (42"x12")
M6-3 (21"x15")
- 6

DETOUR
Redding Rd

M4-8 (24"x12")
D3-1 (42"x12")
M6-3 (21"x15")
- 7

DETOUR
Redding Rd

M4-8 (24"x12")
D3-1 (42"x12")
M6-3 (21"x15")
- 8

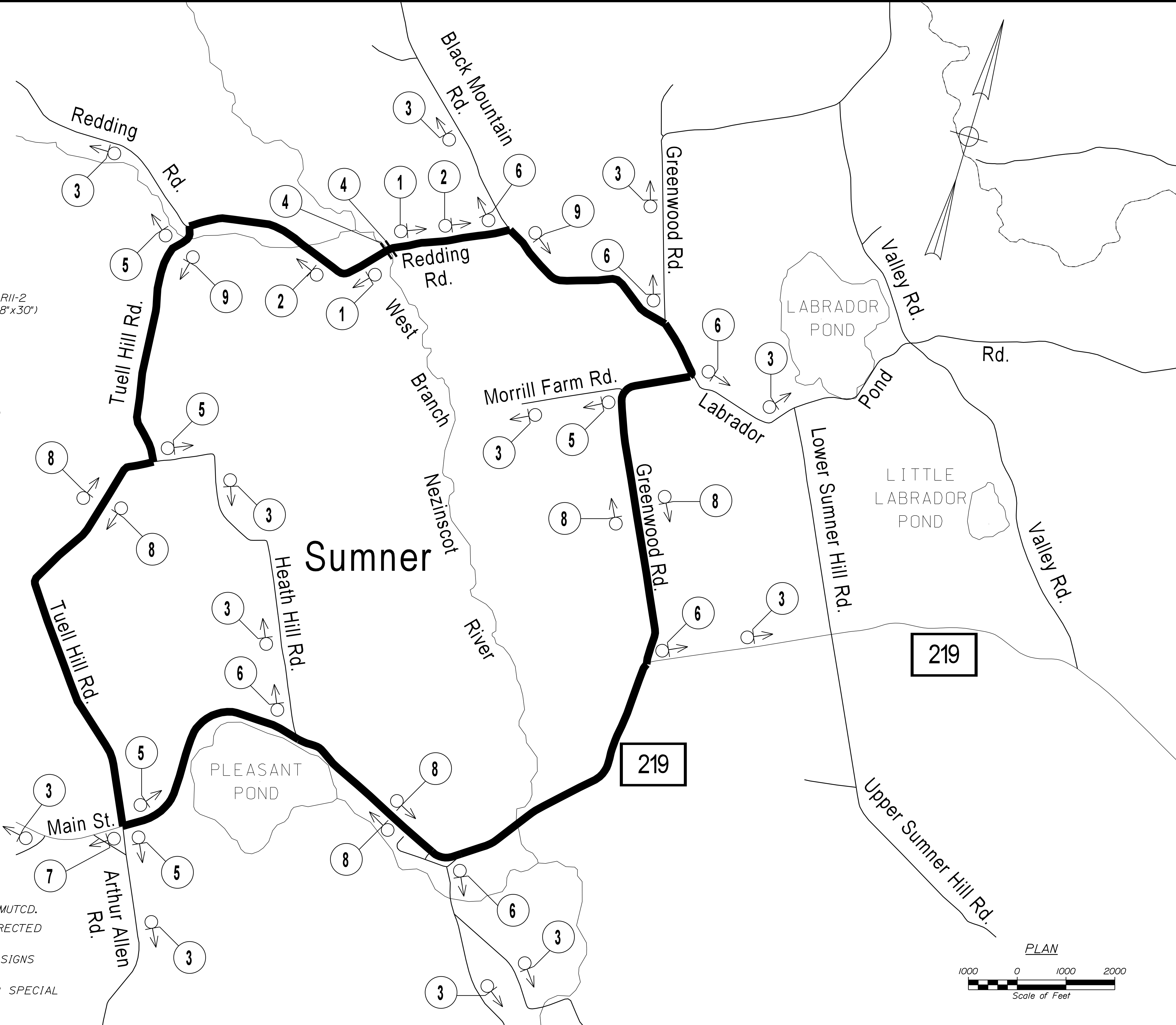
DETOUR
Redding Rd

M4-8 (24"x12")
D3-1 (42"x12")
- 9

END
DETOUR

M4-8 (24"x12")

DETOUR NOTES:
SPACING TO BE DETERMINED BY THE RESIDENT IN ACCORDANCE WITH MUTCD.
OTHER SIGNS MAY BE NEEDED AS DIRECTED BY THE RESIDENT.
CONFLICTING DIRECTIONAL AND ROUTE SIGNS SHALL BE COVERED.
PLACE ADVANCED WARNING SIGNS PER SPECIAL PROVISION 652.



SHEET NUMBER										STATE OF MAINE																	
HEALD BRIDGE WEST BRANCH NEZINSCOT RIVER SUMNER OXFORD COUNTY										PROJ. MANAGER		M. Wright		BY		DATE		DEPARTMENT OF TRANSPORTATION									
										DESIGN-DET AILED		A. Gradi		M. Smith		10/18											
										CHECKED-REVIEWED		S. Beaumont		L. Greer		10/18											
DETOUR PLAN										DESIGN2-DET AILED2		E. Moloney		M. Smith		10/18		SIGNATURE									
										DESIGN3-DET AILED3								P.E. NUMBER									
										REVISIONS 1																	
										REVISIONS 2																	
										REVISIONS 3																	
										REVISIONS 4																	
										FIELD CHANGES								DATE									
																		BRIDGE NO. 0673									
																		WIN									
																		21704.00									
																		BRIDGE PLANS									

THIS PLAN WAS PREPARED IN CONNECTION WITH THE DEPARTMENT'S ACQUISITION OF REAL PROPERTY FOR TRANSPORTATION PURPOSES. IT CANNOT BE USED TO ESTABLISH LEGAL BOUNDARIES BETWEEN ABUTTING PROPERTY OWNERS.

ALBERT W. ARMSTRONG
REBECCA ARMSTRONG
PARCEL NO. (1)
LAND = 74± S.F. (EASE. FOR HIGHWAY PURPOSES)
SLOPE EASE. = 558± S.F. (2)
TOTAL AREA = 135± AC. (PER TAX MAP)

KRISTINA LEE MADDOCKS
~~CATHERINE J. RICHARDS~~
PARCEL NO. (2)
LAND = 0.08± AC. (EASE. FOR HIGHWAY PURPOSES)
TOTAL AREA = 87± AC. (PER TAX MAP)

EBEN H. SHAW
SUSAN L. SHAW
TOTAL AREA = 198± AC. (PER TAX MAP)

EBEN H. SHAW
SUSAN L. SHAW
PARCEL NO. (3)
LAND = 0.08± AC. (EASE. FOR HIGHWAY PURPOSES)
DRAINAGE EASE. = (1)
TEMP. CONST. RIGHTS = 160± S.F. (2)
TOTAL AREA = 198± AC. (PER TAX MAP)

EXISTING RIGHT OF WAY REFERENCES

OXFORD COUNTY COMMISSIONERS RECORDS
VOLUME 5, PAGE 224
1861, 4 RODS WIDE

NOTE: PRESCRIPTIVE EASEMENT FOR
HIGHWAY PURPOSES WITHIN LIMITS OF
WROUGHT PORTION (L.O.W.P.)

REVISIONS				PLAN FILED IN PLAN BOOK		PAGE		COUNTY RECORD		EAST		DAVID BERNHARDT COMMISSIONER JOYCE NOEL TAYLOR CHIEF ENGINEER DATE	REDDING ROAD		
NO.	DATE	DESCRIPTION	BY	NO.	GRANTOR	INSTRUMENT	DATE	BOOK	PAGE		SUMNER		OXFORD COUNTY		
						COND.	8/20/18	5425		270	FEDERAL AID PROJECT NO. BR-2170(400)				
											MAY 2018		RIGHT-OF-WAY MAP	D.O.T. FILE NO. 9-400	
											SCALE 1" = 25'		SHEET 1 OF 1		

Username: Perry.Silverman

Date:10/11/2018

Division: ROW

Filename: ... \00\ROW\MSTA001_RWP\PLAN1.dgn

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION - AUGUSTA, ME 04333-0016
SUMNER
RIGHT OF WAY MAP

SHEET NUMBER

24

OF 24

ITEM		TECH	CHECKED	SYMBOLS	
BASE MAP				• IP or • IIP (IRON PIPE or PIN FOUND)	(WELL)
EXIST. R/W		PNS		□ S.T. (SEPTIC TANK)	○
PROP. LINES		PNS		▭ CONSTRUCTION LIMIT LINE	—
AREAS				▭ PROPERTY LINE	—
				▭ LIMITS OF WROUGHT PORTION (L.O.W.P.)	—
				▭ EXISTING RIGHT OF WAY	—
				▭ NEW RIGHT OF WAY	—
				▭ NEW ROW WITHIN EXIST. ROW	—
				▭ CONTROL OF ACCESS	—

BRIDGE NO. 0673
HEALD BRIDGE
OVER THE
WEST BRANCH NEZINSKOT RIVER
WIN 021704.00