

# STATE OF MAINE DEPARTMENT OF TRANSPORTATION



## SPECIFICATIONS

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

## DESIGN LOADING

Live Load ..... HL - 93 Modified for Strength I

## TRAFFIC DATA

Current (2018) AADT .....	3500
Future (2038) AADT .....	4200
DHV - % of AADT .....	10
Design Hour Volume .....	420
Heavy Trucks (% of AADT) .....	12
Heavy Trucks (% of DHV) .....	10
Directional Distribution (% of DHV) .....	60
18 kip Equivalent P 2.0 .....	299
18 kip Equivalent P 2.5 .....	285
Design Speed (mph) .....	45

## HYDROLOGIC DATA

Drainage Area .....	99.3 sq mi
Design Discharge (Q50) .....	7175 cfs
Check Discharge (Q100) .....	8260 cfs
Headwater Elevation (Q1.1) .....	311.2 ft
Headwater Elevation (Q10) .....	317.3 ft
Headwater Elevation (Q25) .....	318.7 ft
Headwater Elevation (Q50) .....	319.7 ft
Headwater Elevation (Q100) .....	320.6 ft
Discharge Velocity (Q1.1) .....	2.3 fps
Discharge Velocity (Q50) .....	5.8 fps
Discharge Velocity (Q100) .....	6.4 fps

## MATERIALS

Concrete:  
Curbs ..... Class "LP"  
All Other ..... Class "A"

Reinforcing:  
Plain Reinforcing Steel ..... ASTM A615, Grade 60  
Stainless Reinforcing Steel ..... ASTM A955, Grade 75  
Glass Fiber Reinforcing Polymer (GFRP) ..... ASTM D7957

Structural Steel:  
All Material (except as noted) ..... ASTM A709, Grade 50W (unpainted)  
High Strength Bolts ..... ASTM F3125, Grade A325, Type 3

## BASIC DESIGN STRESSES

Concrete:  
Class "A" .....  $f'c = 4000$  psi  
Class "LP" .....  $f'c = 5000$  psi

Reinforcing:  
Plain Reinforcing Steel .....  $f_y = 60,000$  psi  
Stainless Reinforcing Steel .....  $f_y = 75,000$  psi  
Glass Fiber Reinforced Polymer  
#6 Bar .....  $f_{fu} = 100,000$  psi  
Minimum Elastic Modulus .....  $E_f = 6,500,000$  psi  
Minimum Nominal Design Tensile Strain .....  $\epsilon_{fu} = 1.1\%$

Structural Steel:  
ASTM A709, Grade 50 .....  $F_y = 50,000$  psi  
ASTM F3125, Grade A325 .....  $F_u = 120,000$  psi

# BUCKFIELD OXFORD COUNTY HALL BRIDGE OVER NEZINSCOT RIVER ROUTE 117 FEDERAL AID PROJECT STP-2187(600) PROJECT LENGTH 0.123 mi. BRIDGE NO. 3287

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## UTILITIES

Central Maine Power  
Firstlight  
Charter Communications

## MAINTENANCE OF TRAFFIC

Maintain alternating one-way traffic on a Special Detour using traffic signals.

<b>PROJECT LOCATION</b>	Route 117 over the Nezinscot River Located 0.73 miles east of Route 140 Lat./Long. 44°17'7.3" N 70°21'9.4" W
<b>PROGRAM AREA</b>	Highway-Bridges
<b>OUTLINE OF WORK</b>	Bridge Replacement

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	DATE 12-3-21
APPROVED	COMMISSIONER: <i>[Signature]</i>
CHIEF ENGINEER: <i>[Signature]</i>	12-2-2021

STATE OF MAINE DEPARTMENT OF TRANSPORTATION PROFESSIONAL ENGINEER	SIGNATURE Joshua Paul Hasbrouck 14372	P.E. NUMBER 17 Nov 2021	DATE
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PROJECT INFORMATION	PROGRAM BRIDGE	PROJECT MANAGER M. PARLIN	DESIGNER J. HASBROUCK	CONSULTANT	PROJECT RESIDENT CONTRACTOR	PROJECT COMPLETION DATE
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STP-2187(600)	WIN 21876.00
BUCKFIELD HALL BRIDGE	TITLE SHEET

SHEET NUMBER <b>1</b> OF 35
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User name: Joshua.P.Hasbrouck Date:11/17/2021

Division: BRIDGE

File name: \\00\BRIDGE\MSTA\001\Title.dgn

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
202.19	REMOVING EXISTING BRIDGE (530 CY)	1	LS
202.202	REMOVING PAVEMENT SURFACE	130	SY
203.20	COMMON EXCAVATION	2060	CY
203.24	COMMON BORROW	10	CY
203.25	GRANULAR BORROW	540	CY
206.082	STRUCTURAL EARTH EXCAVATION - MAJOR STRUCTURES	400	CY
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	2180	CY
403.2081	12.5 MM POLYMER MODIFIED HMA	288	T
403.209	HOT MIX ASPHALT 9.5 MM (INCIDENTALS)	8	T
403.2131	12.5 MM POLYMER MODIFIED HMA BASE	703	T
409.15	BITUMINOUS TACK COAT - APPLIED	305	G
461.131	TEMPORARY PAVEMENT	250	T
501.231	DYNAMIC LOADING TEST	2	EA
501.54	STEEL H-BEAM PILES 117 LBS/FT, DELIVERED	294	LF
501.541	STEEL H-BEAM PILES 117 LBS/FT, IN PLACE	294	LF
501.903	PILE TIPS - ROCK INJECTOR POINT	12	EA
501.92	PILE DRIVING EQUIPMENT MOBILIZATION	1	LS
502.219	STRUCTURAL CONCRETE, ABUT & RET WALLS (148 CY)	1	LS
502.26	STR CONC RD & SW SLABS ON STEEL BRIDGE (150 CY)	1	LS
502.31	STRUCTURAL CONCRETE APPROACH SLABS (25 CY)	1	LS
502.49	STRUCTURAL CONCRETE CURBS AND SIDEWALKS (19 CY)	1	LS
502.77	FRP BRIDGE DRAIN - TYPE F	2	EA
503.12	REINFORCING STEEL, FABRICATED/DELIVERED	25,300	LB
503.13	REINFORCING STEEL, PLACING	25,300	LB
503.26	STAINLESS STEEL REINF - FAB & DEL	11,900	LB
503.27	STAINLESS STEEL REINF - PLACING	11,900	LB
504.702	STRUCTURAL STEEL FAB'D & DELIV'D, WELDED (278010 LB)	1	LS
504.71	STRUCTURAL STEEL ERECTION (278010 LB)	1	LS
505.08	SHEAR CONNECTORS (990 EA)	1	LS
507.0821	STEEL BRIDGE RAILING, 3 BAR (347 LF)	1	LS
507.0822	STEEL APPROACH RAILING, 3 BAR	4	EA
508.14	HIGH PERFORMANCE WATERPROOFING MEMBRANE (606 SY)	1	LS
510.10	SPECIAL DETOUR 16' RDWY WIDTH TRAVELWAY NOT SEPARATED	1	LS
511.07	COFFERDAM; UPSTREAM	1	LS
511.07	COFFERDAM; DOWNSTREAM	1	LS
515.21	PROTECTIVE COATING FOR CONCRETE SURFACES (164 SY)	1	LS
519.60	EXPANSION DEVICE - ASPHALTIC PLUG JOINT	64	LF
526.301	PORTABLE CONCRETE BARRIER TYPE 1 (100 LF)	1	LS
527.34	WORK ZONE CRASH CUSHIONS	4	UN
530.30	GFRP, REINFORCEMENT BARS, FAB & DEL	37,740	LF
530.31	GFRP, REINFORCEMENT BARS, PLACING	37,740	LF
603.17	18" CULV PIPE OPTION 1	46	LF
605.36	GRANULAR DRAINAGE TRENCH	6	CY
606.1301	31" W-BEAM GUARDRAIL, MID-WAY SPLICE - SINGLE FACED	300	LF
606.1305	31" W-BEAM GUARDRAIL, MID-WAY SPLICE - FLARED TERMINAL	4	EA
606.1721	BRIDGE TRANSITION - TYPE 1	4	EA
606.353	REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	8	EA
606.47	SINGLE WOOD POST	1	EA
610.08	PLAIN RIPRAP	13	CY
610.16	HEAVY RIPRAP	1608	CY
613.319	EROSION CONTROL BLANKET	132	SY
615.07	LOAM	100	CY
618.14	SEEDING METHOD NUMBER 2	17	UN
619.12	MULCH	17	UN
619.14	EROSION CONTROL MIX	200	CY
620.58	EROSION CONTROL GEOTEXTILE	1606	SY
620.66	DRAINAGE GEOCOMPOSITE	50	SY
627.733	4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	1000	LF
627.77	REMOVING PAVEMENT MARKINGS	550	SF
627.78	TEMPORARY 4" PAINTED PAVEMENT MARK LINE WHITE OR YELLOW	1300	LF
629.05	HAND LABOR, STRAIGHT TIME	10	HR
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	10	HR
631.14	GRADER (INCLUDING OPERATOR)	25	HR
631.15	ROLLER, EARTH AND BASE COURSE (INCLUDING OPERATOR)	25	HR
631.172	TRUCK - LARGE (INCLUDING OPERATOR)	10	HR
637.071	DUST CONTROL	1	LS
639.18	FIELD OFFICE TYPE A	1	EA
643.72	TEMPORARY TRAFFIC SIGNAL	1	LS
652.312	TYPE III BARRICADE	4	EA
652.33	DRUM	25	EA
652.34	CONE	50	EA
652.35	CONSTRUCTION SIGNS	400	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES	1	LS
652.38	FLAGGER	360	HR
656.75	TEMPORARY SOIL EROSION & WATER POLLUTION CONTROL	1	LS
659.10	MOBILIZATION	1	LS

**GENERAL CONSTRUCTION NOTES**

- For easements, construction limits and right of way lines, refer to the Right of Way Map.
- 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.
- All utility facilities shall be adjusted by the respective utilities unless otherwise noted.
- Existing signs within the Project limits shall be removed and reset as directed by the Resident. Payment for removal and reinstallation of existing signs will be considered incidental to the Contract. No separate payment will be made.
- Do not excavate for Aggregate Subbase Course where existing material is suitable as determined by the Resident.
- 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.
- All embankment material, except as otherwise shown, placed below EL. 320.0 shall be Granular Borrow meeting the requirements of Subsection 703.19, Material for Underwater Backfill.
- Place loam 2 inches deep on all new or reconstructed sideslopes or as directed by the Resident.
- 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 Pay Item 619.14, Erosion Control Mix.
- Place a 24-in. wide strip of Erosion Control Blanket on the sideslopes along the top of the riprap.
- Guardrail posts as shown in the Standard Details shall be modified from the indicated length of 7 feet to a length of 8 feet with an embedment of 5.25 feet. Payment will be considered incidental to the guardrail pay items.
- An MASH compliant guardrail end treatment shall be installed concurrently with the placement of each section of beam guardrail.
- Where it is apparent that runoff will cause continual erosion, extended-use Erosion Control Blanket, seeded gutters, riprap downspouts, and other gutters lined with Plain Riprap shall be constructed after paving and shoulder work is completed. Payment will be made under the appropriate Contract items.
- Protective Coating for Concrete Surfaces shall be applied to the following areas:  
All exposed surfaces of concrete curbs,  
Fascias down to the drip notch,  
Top of wingwalls, and  
To one foot below the ground on vertical walls.
- Project information referred to below may be accessed at the following MaineDOT web address: <http://www.maine.gov/mdot/contractors/>
- The existing bridge plans may be accessed at the MaineDOT web address. The plans are reproductions of the original drawings as prepared for the construction of the bridge. It is very unlikely that the plans will show any construction field changes or any alterations which may have been made to the bridge during its life span.
- The hydrologic report of the bridge site may be accessed at the MaineDOT web address. The hydrologic 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.
- The project geotechnical report titled: Geotechnical Design Report for WIN 021876.00 Route 117 over Nezinscot River, November 5, 2021 may be accessed at the MaineDOT web address.
- 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:

- If a Lump Sum pay item is eliminated, the requirements of Standard Specifications Section 109.2, Elimination of Items, will take precedence.
- If other Contract Documents specifically allow a change in payment for a Lump Sum pay item, those requirements will be followed.
- 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 and Time.

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. Temporary pavement ramps shall be constructed to meet the following criteria:

For roadways with speed limits equaling or exceeding 50 mph, temporary ramps shall be constructed at a length of eight feet per inch of transition depth.

For roadways with speed limits less than 50 mph, temporary ramps shall be constructed at a length of four feet per inch of transition depth.

Materials, placement, maintenance, and removal shall be incidental to contract items.

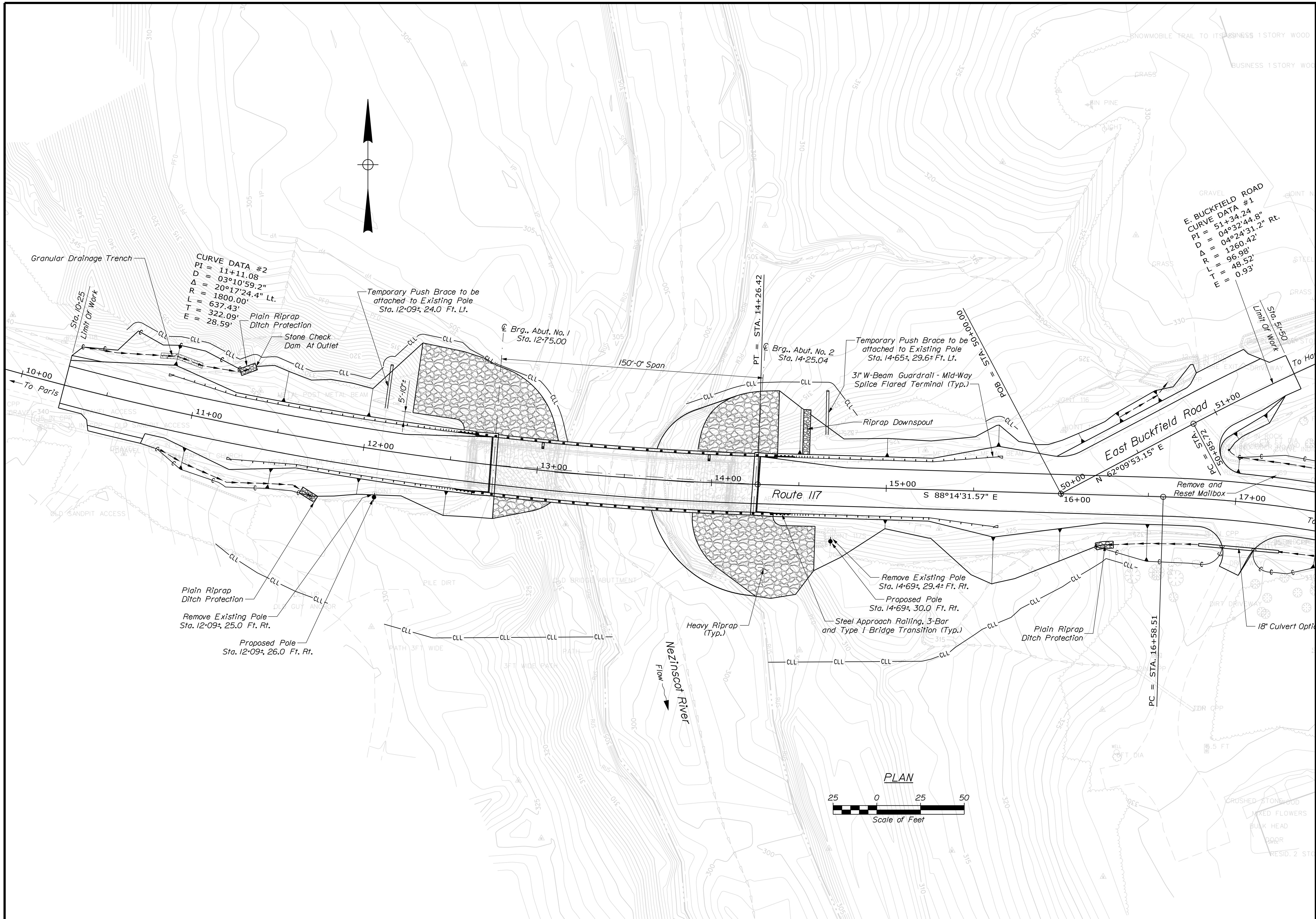
23. Stones which cannot be rolled or compacted into the surface of the gravel drives shall be removed by hand raking. Payment for hand raking will be considered incidental to Pay Item 304.10, Aggregate Subbase Course - Gravel.

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
STP-2187(600)		WIN 21876.00	
BRIDGE NO. 3287		BRIDGE PLANS	
PROJ. MANAGER	M. PARLIN	BY	J. HASBROUCK
DESIGN-DETAILED	J. HASBROUCK	DATE	SHAWPARADIS NOV. 2021
CHECKED-REVIEWED	R. MAYER		J. HASBROUCK NOV. 2021
DESIGNS-DETAILED		SIGNATURE	
REVISIONS 1		P.E. NUMBER	
REVISIONS 2		DATE	
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
HALL BRIDGE			
NEZINSCOT RIVER			
OXFORD COUNTY			
BUCKFIELD			
ESTIMATED QUANTITIES AND GENERAL CONSTRUCTION NOTES			
SHEET NUMBER			
2			
OF 35			

Username: Joshua.P.Hasbrouck Date:11/9/2021

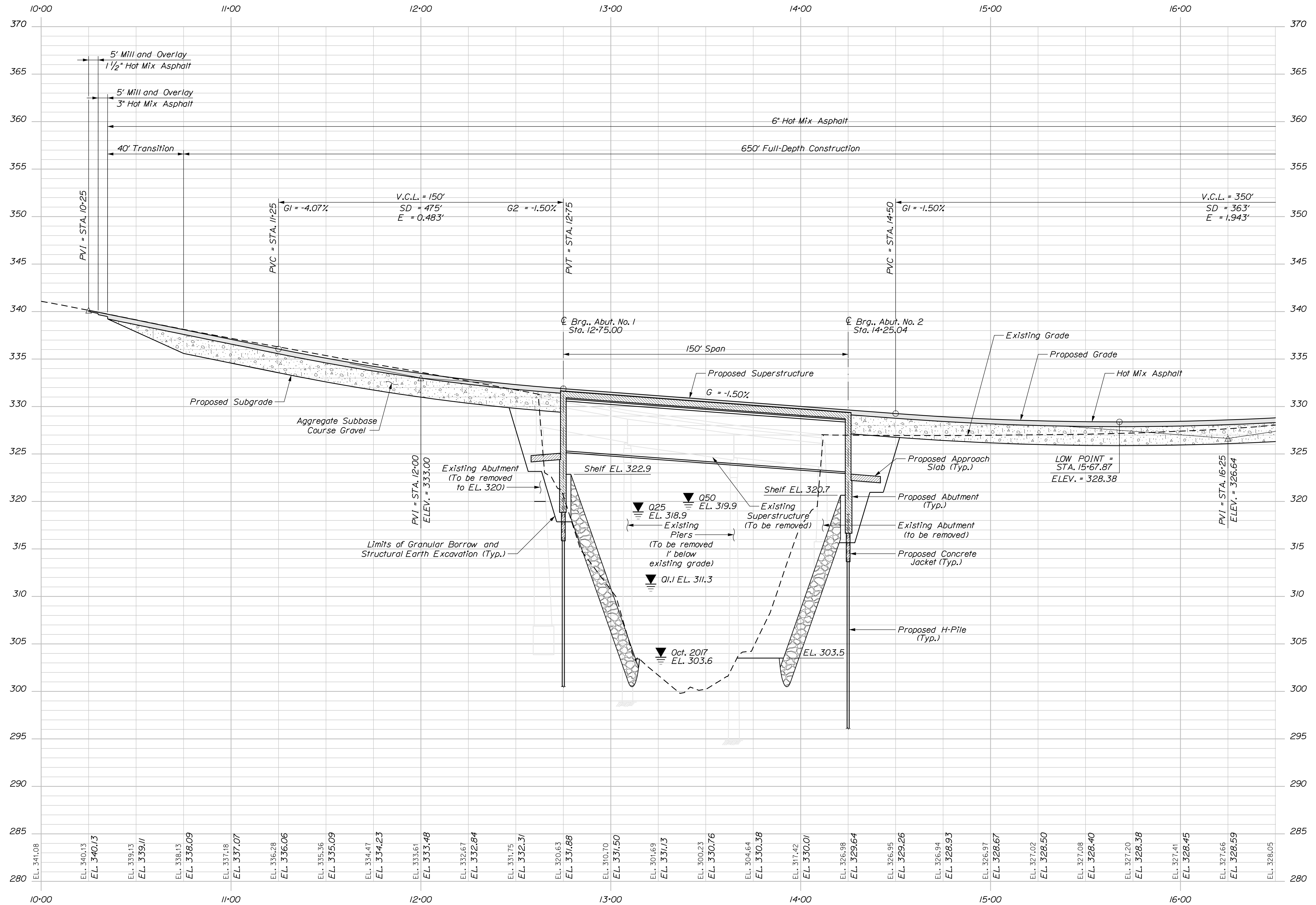
Division: BRIDGE

Filename: ... \BRIDGE\MSTA\003\_GenPlan1.dgn



STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
STP-2187(600)		BRIDGE NO. 3287	
WIN		21876.00	
BRIDGE PLANS			
PROJ. MANAGER	M. PARLIN	BY	J. HASBROUCK
CHECKED/REVIEWED	R. MYERS	DATE	NOV. 2021
DESIGN/DETAILS		SIGNATURE	
DESIGNS/DETAILS		P.E. NUMBER	
REVISIONS 1		DATE	
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
HALL BRIDGE		OXFORD COUNTY	
NEZINSCOT RIVER		GENERAL PLAN	
BUCKFIELD		SHEET NUMBER	
		3	
		OF 35	





PROFILE  
Route 117

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
STP-2187(600)		WIN	
BRIDGE NO. 3287		21876.00	
BRIDGE PLANS			
PROJ. MANAGER	M. PARLIN	BY	D. SHAW
DESIGN-DETAILED	J. HASBROUCK	DATE	NOV. 2021
CHECKED-REVIEWED	R. MYERS	DATE	NOV. 2021
DESIGN-DETAILED		SIGNATURE	
REVISIONS 1		P.E. NUMBER	
REVISIONS 2		DATE	
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
HALL BRIDGE		OXFORD COUNTY	
NEZINSCOT RIVER		PROFILE	
BUCKFIELD			
SHEET NUMBER		5	
		OF 35	





Maine Department of Transportation Soil/Bank Exploration Log US CUSTOMARY UNITS		Project: Hall Bridge #2327 carries Route 117 over Nezinscot River, Locations Buckfield, Maine		Boring No.: BB-BNR-101		
Driller: Melindot		Elevation (ft.): 327.4		Auger ID/OD: 5" Solid Stem		
Operator: Travis Jones		Status: NAV88		Sampler: Standard Split Spoon		
Logged By: B. Sliven		Rig Type: CME 45C		Home #/Fall: 140W/30"		
Date Start/Finish: 8/9/2017-8/9/2017		Drilling Method: Cased Wash Boring		Core Barrel: NO-2"		
Boring Location: 12455.7, 7.1 ft ft.		Coating ID/OD: NW		Water Level: 14.0 ft bgs		
Home Efficiency Factor: 0.854		Home Type: Automatic		Rope & Cathode: Hydraulic		
S = Rock Core Sample U = Lab. Vane Shear Strength (psi) W = Unsuccessful Split Spoon Sample Attempt V = Thin Wall Tube Sample X = Field Vane Shear Test Y = Field Vane Shear Test Z = Unsuccessful Field Vane Shear Test Attempt		A = Rock Core Sample B = Lab. Vane Shear Strength (psi) C = Unsuccessful Split Spoon Sample Attempt D = Thin Wall Tube Sample E = Field Vane Shear Test F = Field Vane Shear Test G = Unsuccessful Field Vane Shear Test Attempt		H = Rock Core Sample I = Lab. Vane Shear Strength (psi) J = Unsuccessful Split Spoon Sample Attempt K = Thin Wall Tube Sample L = Field Vane Shear Test M = Field Vane Shear Test N = Unsuccessful Field Vane Shear Test Attempt		
Depth (ft.)	Sample No.	Pen./Rec. (in)	Sample Depth (ft.)	Blade 1/8" (in.) Strength (lb/ft <sup>2</sup> )	Visual Description and Remarks	
0					8" RWL	
5	10	24/17	5.00 - 7.00	2/21/11	3 4	Light brown, dry, very loose, medium to fine SAND, some silt, trace gravel, (F111).
10	20	24/6	10.30 - 12.30	8/11/8/5	19 27	Light brown, dry, medium dense, Gravelly SAND, trace silt, (F111). Set in NW casing and drove to 15.0 ft bgs.
15	30	24/3	15.00 - 17.00	4/4/5/12	9 13 16	Light brown, wet, medium dense, GRAVEL, little coarse sand, (F111).
20	40/AB	24/10	19.00 - 21.00	9/5/2/3	7 10 30	40/A 19.0-20.9 ft bgs Light brown, wet, loose, SAND, some silt, trace gravel, (F111). 40/B 20.9-21.0 ft bgs Dark brown, wet, loose, fine SAND, little silt, trace gravel, (F111).
25	50	24/15	25.00 - 27.00	6/4/2/1	6 9 8	Light and dark brown, mottled, wet, loose, SAND, little gravel, little silt, (F111).
30	60/AB	13.2/11	30.00 - 31.10	8/7/5011.2"	---	Dark grey, wet, hard, silt, some sand, trace gravel, trace clay, (Marine Deposit)
35	R1	60/53	31.20 - 36.20	ROD = 85%	NO-2	Top of Bedrock at Elev. 300.5 ft. R1 Bedrock Grey, coarse-grained, METASANDSTONE, hard, fresh, thin moderate dipping light grey metasilstone beds, occasional zones of grey and light grey, fine to medium grained, cross and convolute-laminated metasediments, joints along relic bedding are low to moderately dipping, close to moderately close, tight to open. [SANGERVILLE FORMATION (Anasaguitlook Member)] Rock Mass Quality = Good R1 Core Times (min:sec) 31.2-32.2 ft (1246) 32.2-33.2 ft (1256) 33.2-34.2 ft (1266) 34.2-35.2 ft (1276) 35.2-36.2 ft (1286) 93% Recovery
40	R2	48/48	36.20 - 40.20	ROD = 93%	NO-2	R2 Bedrock similar to R1. R2 Core Times (min:sec) 36.2-37.2 ft (1244) 37.2-38.2 ft (1254) 38.2-39.2 ft (1264) 39.2-40.2 ft (1274) 100% Recovery Core Blocked
45					Bottom of Exploration at 40.2 feet below ground surface.	
Laboratory Testing Results: ASD10 and Field Class						
10" Concrete Bridge Deck, 10.0 ft from Bridge Deck to Existing Grade.						

Maine Department of Transportation Soil/Bank Exploration Log US CUSTOMARY UNITS		Project: Hall Bridge #2327 carries Route 117 over Nezinscot River, Locations Buckfield, Maine		Boring No.: BB-BNR-201		
Driller: Melindot		Elevation (ft.): 327.4		Auger ID/OD: N/A		
Operator: Dageff/Aties		Status: NAV88		Sampler: Standard Split Spoon		
Logged By: B. Willner		Rig Type: CME 45C		Home #/Fall: 140W/30"		
Date Start/Finish: 5/9-15/2019		Drilling Method: Cased Wash Boring		Core Barrel: None Observed		
Boring Location: 12473.4, 6.8 ft ft.		Coating ID/OD: HW & NW		Water Level: None Observed		
Home Efficiency Factor: 0.928		Home Type: Automatic		Rope & Cathode: Hydraulic		
S = Rock Core Sample U = Lab. Vane Shear Strength (psi) W = Unsuccessful Split Spoon Sample Attempt V = Thin Wall Tube Sample X = Field Vane Shear Test Y = Field Vane Shear Test Z = Unsuccessful Field Vane Shear Test Attempt		A = Rock Core Sample B = Lab. Vane Shear Strength (psi) C = Unsuccessful Split Spoon Sample Attempt D = Thin Wall Tube Sample E = Field Vane Shear Test F = Field Vane Shear Test G = Unsuccessful Field Vane Shear Test Attempt		H = Rock Core Sample I = Lab. Vane Shear Strength (psi) J = Unsuccessful Split Spoon Sample Attempt K = Thin Wall Tube Sample L = Field Vane Shear Test M = Field Vane Shear Test N = Unsuccessful Field Vane Shear Test Attempt		
Depth (ft.)	Sample No.	Pen./Rec. (in)	Sample Depth (ft.)	Blade 1/8" (in.) Strength (lb/ft <sup>2</sup> )	Visual Description and Remarks	
0					Ground and Rock (F111). SC = South NW casing.	
5	10	24/4	5.00 - 7.00	7/11/14/19	25 39	Brown, wet, dense, Gravelly fine to coarse SAND, with cobbles, (F111).
10	20	24/16	10.50 - 12.50	4/10/14/12	24 37 24	Cobbles from 10.0-10.5 ft bgs. Changed to NW casing at 10.0 ft bgs. Light brown, wet, dense, fine to coarse SAND, little gravel, little silt, (F111).
15	30	24/18	15.00 - 17.00	2/3/3/4	6 9 6	Light brown, wet, loose, fine to medium SAND, some silt, (F111).
20	40	24/16	20.00 - 22.00	60/20/22/17	47 65 35	Gray-brown, wet, very dense, fine to coarse SANDY GRAVEL, some silt, (Marine Deposit).
25	R1	60/60	26.50 - 31.50	ROD = 53%	NO-2	Weathered ROCK. Top of Bedrock at Elev. 295.2 ft. R1 Bedrock Grey, coarse-grained, METASANDSTONE, hard, fresh, thin moderate dipping light grey metasilstone beds, occasional zones of grey and light grey, fine to medium grained, cross and convolute-laminated metasediments, joints along relic bedding are low to moderately dipping, close to moderately close, tight to open. [SANGERVILLE FORMATION (Anasaguitlook Member)] Rock Mass Quality = Fair R1 Core Times (min:sec) 26.4-27.4 ft (1208) 27.4-28.4 ft (1218) 28.4-29.4 ft (1228) 29.4-30.4 ft (1238) 30.4-31.4 ft (1248) 31% Recovery
30	R2	60/55	31.40 - 36.40	ROD = 62%	NO-2	R2 Bedrock similar to R1. R2 Core Times (min:sec) 31.4-32.4 ft (1218) 32.4-33.4 ft (1228) 33.4-34.4 ft (1238) 34.4-35.4 ft (1248) 35.4-36.4 ft (1258) 52% Recovery
35					Bottom of Exploration at 36.4 feet below ground surface.	
Laboratory Testing Results: ASD10 and Field Class						
10" Concrete Bridge Deck, 10.0 ft from Bridge Deck to Existing Grade.						

Maine Department of Transportation Soil/Bank Exploration Log US CUSTOMARY UNITS		Project: Hall Bridge #2327 carries Route 117 over Nezinscot River, Locations Buckfield, Maine		Boring No.: BB-BNR-202		
Driller: Melindot		Elevation (ft.): 327.4		Auger ID/OD: N/A		
Operator: Dageff/Aties		Status: NAV88		Sampler: Standard Split Spoon		
Logged By: B. Willner		Rig Type: CME 45C		Home #/Fall: 140W/30"		
Date Start/Finish: 5/15/2019-10/00-15/30		Drilling Method: Cased Wash Boring		Core Barrel: NO-2"		
Boring Location: 13499.8, 7.1 ft ft.		Coating ID/OD: HW & NW		Water Level: None Observed		
Home Efficiency Factor: 0.928		Home Type: Automatic		Rope & Cathode: Hydraulic		
S = Rock Core Sample U = Lab. Vane Shear Strength (psi) W = Unsuccessful Split Spoon Sample Attempt V = Thin Wall Tube Sample X = Field Vane Shear Test Y = Field Vane Shear Test Z = Unsuccessful Field Vane Shear Test Attempt		A = Rock Core Sample B = Lab. Vane Shear Strength (psi) C = Unsuccessful Split Spoon Sample Attempt D = Thin Wall Tube Sample E = Field Vane Shear Test F = Field Vane Shear Test G = Unsuccessful Field Vane Shear Test Attempt		H = Rock Core Sample I = Lab. Vane Shear Strength (psi) J = Unsuccessful Split Spoon Sample Attempt K = Thin Wall Tube Sample L = Field Vane Shear Test M = Field Vane Shear Test N = Unsuccessful Field Vane Shear Test Attempt		
Depth (ft.)	Sample No.	Pen./Rec. (in)	Sample Depth (ft.)	Blade 1/8" (in.) Strength (lb/ft <sup>2</sup> )	Visual Description and Remarks	
0					Ground and Rock (F111). SC = South NW casing.	
5	10	24/14	5.00 - 7.00	3/4/3/5	7 11 15	Brown, wet, medium dense, fine to coarse SAND, some silt, trace gravel, (Marine Deposit).
10	20	24/17	9.00 - 11.00	3/3/6/9	9 14 13	Brown, wet, medium dense, fine to coarse SAND, little silt, trace gravel, (Marine Deposit).
15	30	24/18	14.00 - 16.00	ROD = 75%	NO-2	Similar to above, except very dense. Roller Cone ahead to 14.8 ft bgs. Top of Bedrock at Elev. 302.6 ft. R1 Bedrock Grey, coarse-grained, METASANDSTONE, hard, fresh, thin moderate dipping light grey metasilstone beds, occasional zones of grey and light grey, fine to medium grained, cross and convolute-laminated metasediments, joints along relic bedding are low to moderately dipping, close to moderately close, tight to open. [SANGERVILLE FORMATION (Anasaguitlook Member)] Rock Mass Quality = Fair R1 Core Times (min:sec) 14.8-15.8 ft (1246) 15.8-16.8 ft (1256) 16.8-17.8 ft (1266) 17.8-18.8 ft (1276) 18.8-19.8 ft (1286) 87% Recovery
20	R2	60/54	19.80 - 24.80	ROD = 19%	NO-2	R2 Bedrock similar to R1. R2 Core Times (min:sec) 19.8-20.8 ft (1258) 20.8-21.8 ft (1268) 21.8-22.8 ft (1278) 22.8-23.8 ft (1288) 23.8-24.8 ft (1298) 10% Recovery
25					Bottom of Exploration at 24.8 feet below ground surface.	
30						
35						
40						
45						
50						
Laboratory Testing Results: ASD10 and Field Class						
10" Concrete Bridge Deck, 11.2 ft from Bridge Deck to Existing Grade.						

Maine Department of Transportation Soil/Bank Exploration Log US CUSTOMARY UNITS		Project: Hall Bridge #2327 carries Route 117 over Nezinscot River, Locations Buckfield, Maine		Boring No.: BB-BNR-102		
Driller: Melindot		Elevation (ft.): 326.8		Auger ID/OD: 5" Solid Stem		
Operator: Travis Jones		Status: NAV88		Sampler: Standard Split Spoon		
Logged By: B. Sliven		Rig Type: CME 45C		Home #/Fall: 140W/30"		
Date Start/Finish: 8/9/2017-8/9/2017		Drilling Method: Cased Wash Boring		Core Barrel: NO-2"		
Boring Location: 14419, 5.5 ft ft.		Coating ID/OD: NW		Water Level: Coved at 8.6 ft bgs.		
Home Efficiency Factor: 0.854		Home Type: Automatic		Rope & Cathode: Hydraulic		
S = Rock Core Sample U = Lab. Vane Shear Strength (psi) W = Unsuccessful Split Spoon Sample Attempt V = Thin Wall Tube Sample X = Field Vane Shear Test Y = Field Vane Shear Test Z = Unsuccessful Field Vane Shear Test Attempt		A = Rock Core Sample B = Lab. Vane Shear Strength (psi) C = Unsuccessful Split Spoon Sample Attempt D = Thin Wall Tube Sample E = Field Vane Shear Test F = Field Vane Shear Test G = Unsuccessful Field Vane Shear Test Attempt		H = Rock Core Sample I = Lab. Vane Shear Strength (psi) J = Unsuccessful Split Spoon Sample Attempt K = Thin Wall Tube Sample L = Field Vane Shear Test M = Field Vane Shear Test N = Unsuccessful Field Vane Shear Test Attempt		
Depth (ft.)	Sample No.	Pen./Rec. (in)	Sample Depth (ft.)	Blade 1/8" (in.) Strength (lb/ft <sup>2</sup> )	Visual Description and Remarks	
0					8" RWL	
5	10	24/15	5.00 - 7.00	4/8/6/4	14 20	Light brown, medium dense, medium to fine SAND, some silt, little gravel, (F111).
10	20	24/1	10.20 - 12.20	3/4/6/6	10 14	Brown, dry, medium dense, SAND, some silt, little gravel, (F111).
15	30	24/16	15.00 - 17.00	2/2/2/2	4 6 6	Light brown, moist, loose, SAND, some silt, trace gravel, trace organic roots, (Marine Deposit). Bore casing 20.0 ft bgs, and washed ahead.
20	40	24/12	20.00 - 22.00	11/15/11/11	36 37 12	Light brown, wet, medium dense, coarse to medium SAND, little gravel, trace silt, (Marine Deposit).
25	50	24/22	25.00 - 27.00	3/1/1/1	2 3 1	Grey, wet, soft, silt, little clay, little fine sand, (Marine Deposit).
30	60	24/24	30.00 - 30.80	40/50/11.2"	---	Casing blow fracture at 29.5 ft bgs. Grey-brown, wet, very dense, silt, fine SAND, some gravel, (Marine Deposit).
35	R1	60/56	35.80 - 40.80	ROD = 78%	NO-2	Top of Bedrock at Elev. 296.1 ft. R1 Bedrock Grey, coarse-grained, METASANDSTONE, hard, fresh, thin moderate dipping light grey metasilstone beds, occasional zones of grey and light grey, fine to medium grained, cross and convolute-laminated metasediments, joints along relic bedding are low to moderately dipping, close to moderately close, tight to open. [SANGERVILLE FORMATION (Anasaguitlook Member)] Rock Mass Quality = Good R1 Core Times (min:sec) 35.8-36.8 ft (1232) 36.8-37.8 ft (1242) 37.8-38.8 ft (1252) 38.8-39.8 ft (1262) 39.8-40.8 ft (1272) 93% Recovery
40	R2	60/56	35.80 - 40.80	ROD = 67%	NO-2	R2 Bedrock similar to R1. R2 Core Times (min:sec) 35.8-36.8 ft (1232) 36.8-37.8 ft (1242) 37.8-38.8 ft (1252) 38.8-39.8 ft (1262) 39.8-40.8 ft (1272) 93% Recovery
45					Bottom of Exploration at 40.8 feet below ground surface.	
Laboratory Testing Results: ASD10 and Field Class						
10" Concrete Bridge Deck, 11.2 ft from Bridge Deck to Existing Grade.						

**STATE OF MAINE**  
**DEPARTMENT OF TRANSPORTATION**

**HALL BRIDGE**  
**NEZINSCOT RIVER**  
**BUCKFIELD**

**OXFORD COUNTY**

**BORING LOGS**

**021876.00**  
**WIN**  
**21876.00**

**BRIDGE NO. 3287**  
**BRIDGE PLANS**

PROJ. MANAGER	BY	DATE
CHECKED/REVIEWED		
DESIGN/DETAILS	M.S.T.PIERRE	OCT 2021
DESIGN/DETAILS	T. WHITE	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

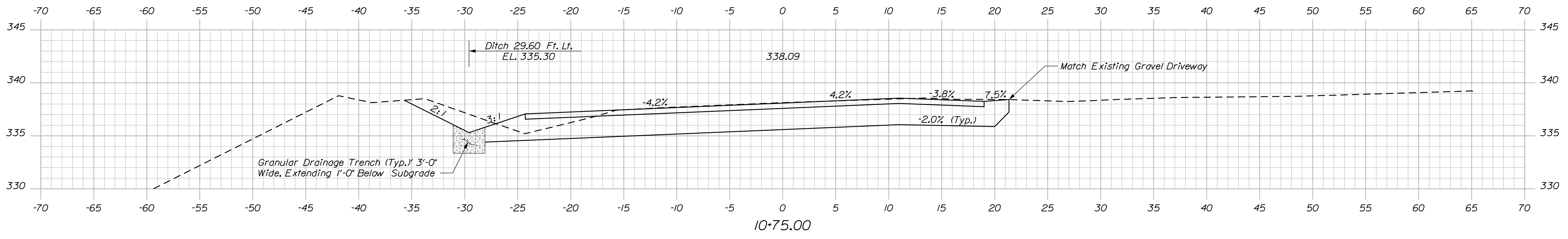
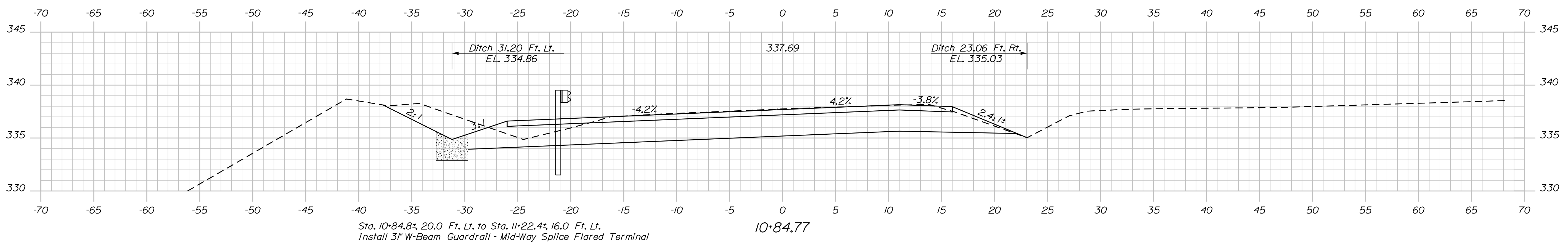
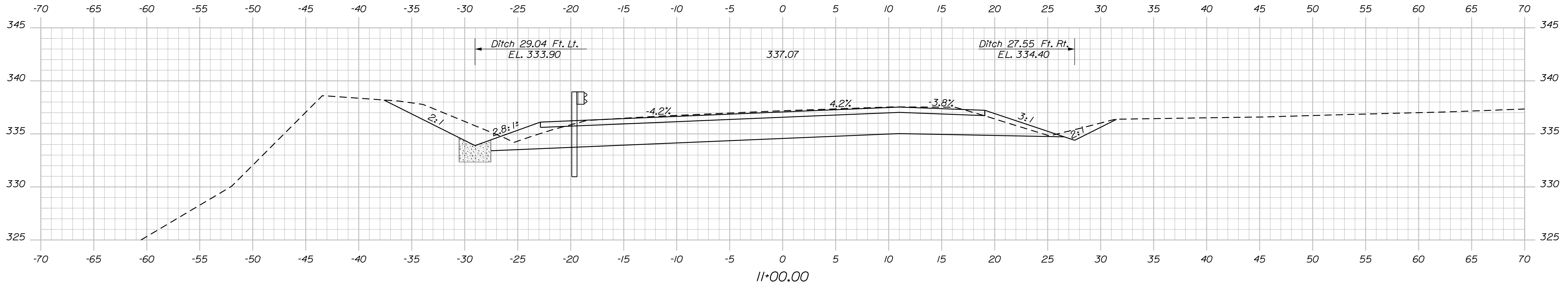
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OF 35



Username: Joshua.P.Hasbrouck Date:11/9/2021

Division: BRIDGE

Filename: ... \MSTA1010\_XSECT\_10+59.dgn



STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
STP-2187(600)  
BRIDGE NO. 3287  
WIN  
21876.00  
BRIDGE PLANS

DESIGN-DETAILED	NOV. 2021	SIGNATURE
CHECKED-REVIEWED	NOV. 2021	P.E. NUMBER
DESIGN-DETAILED		DATE
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

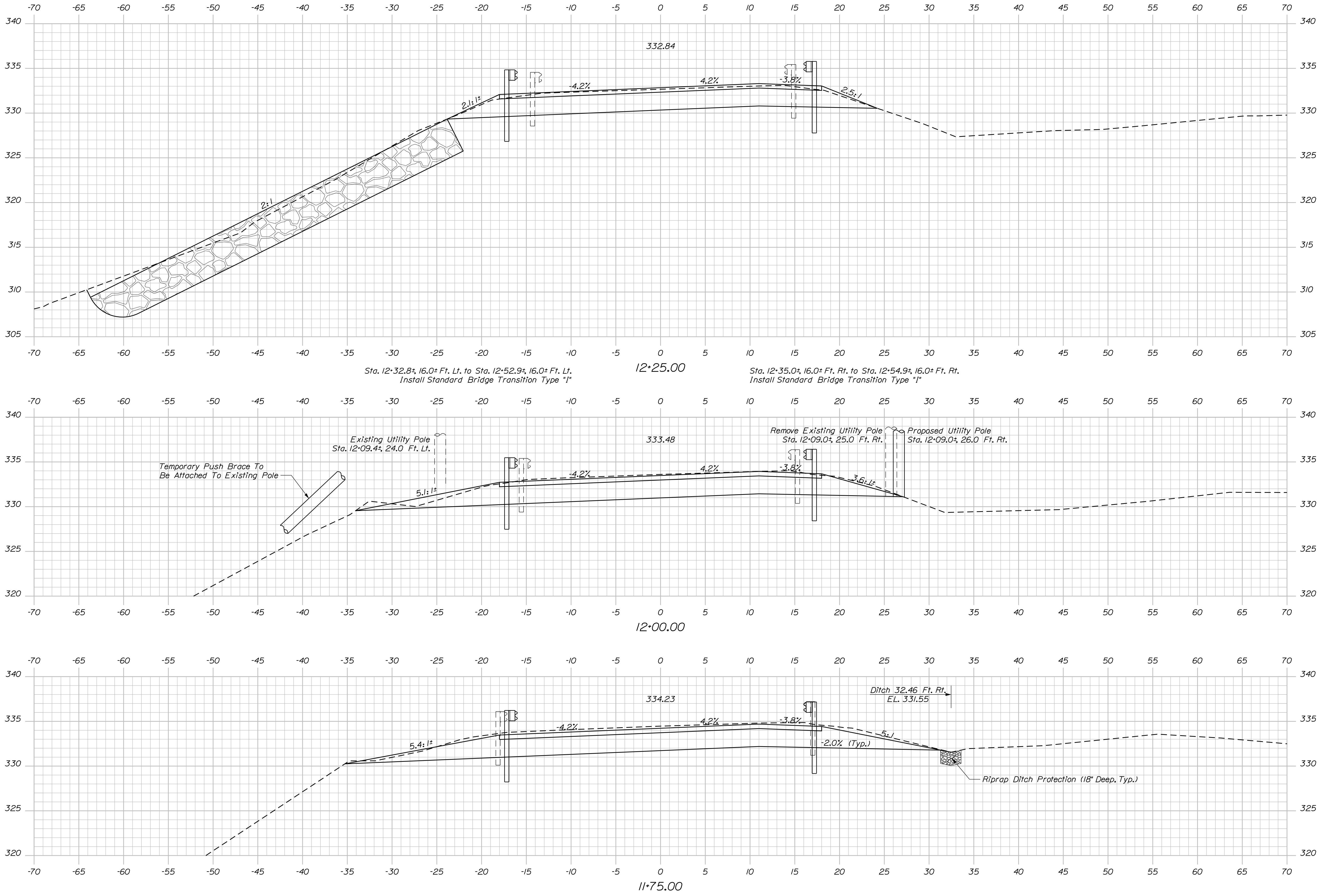
PROJ. MANAGER  
M. PARLIN  
BY  
J. HASBROUCK  
DATE  
NOV. 2021

HALL BRIDGE  
NEZINSCOT RIVER  
OXFORD COUNTY  
BUCKFIELD  
ROUTE 117 CROSS SECTIONS

SHEET NUMBER  
**10**  
OF 35



Filename: ... \MSTAO12\_XSECT\_11+75.dgn  
 Division: BRIDGE  
 Username: Joshua.P.Hasbrouck Date: 11/9/2021



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2187(600)	
SIGNATURE		P.E. NUMBER	
DATE		DATE	
BY		DATE	
M. PARLIN		NOV. 2021	
J. HASBROUCK		NOV. 2021	
DESIGNED		CHECKED	
DESIGNED		DESIGNED	
REVISIONS 1		REVISIONS 2	
REVISIONS 3		REVISIONS 4	
FIELD CHANGES		FIELD CHANGES	
HALL BRIDGE NEZINSCOT RIVER OXFORD COUNTY BUCKFIELD <b>ROUTE 117 CROSS SECTIONS</b>			
SHEET NUMBER			
12			
OF 35			

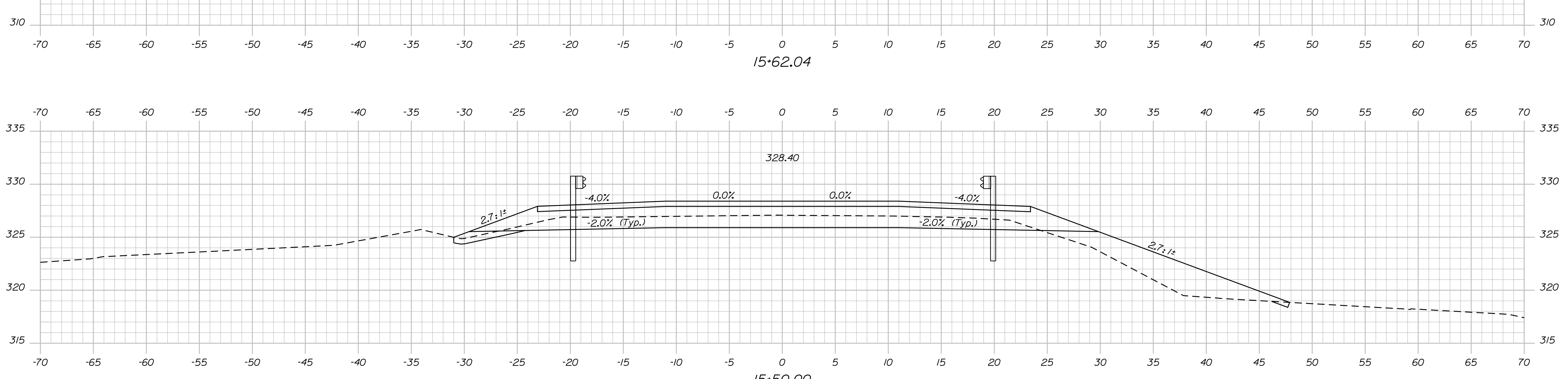
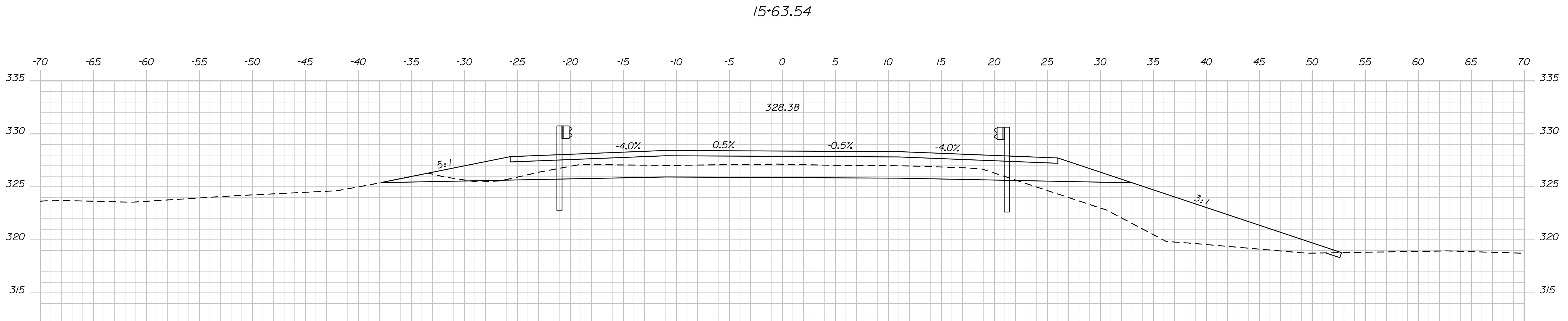
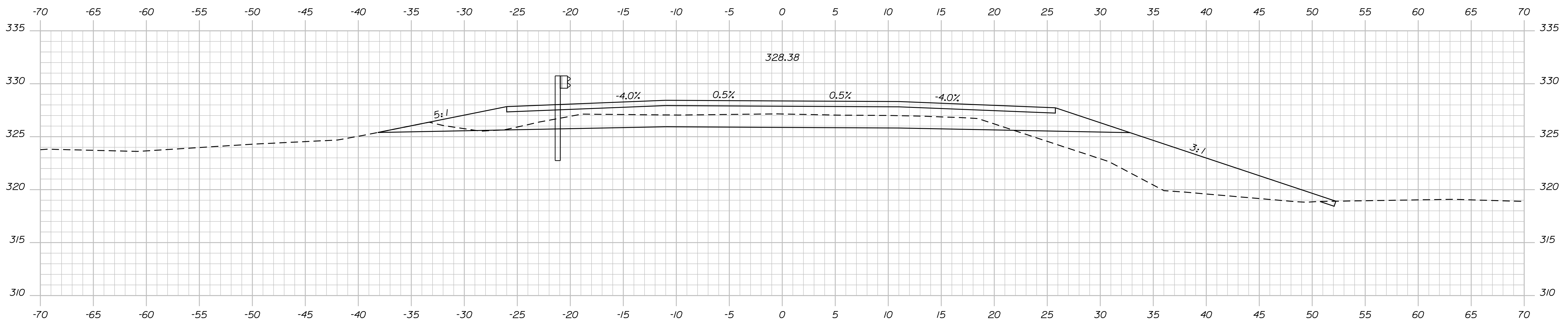




Username: Joshua.P.Hasbrouck Date:11/9/2021

Division: BRIDGE

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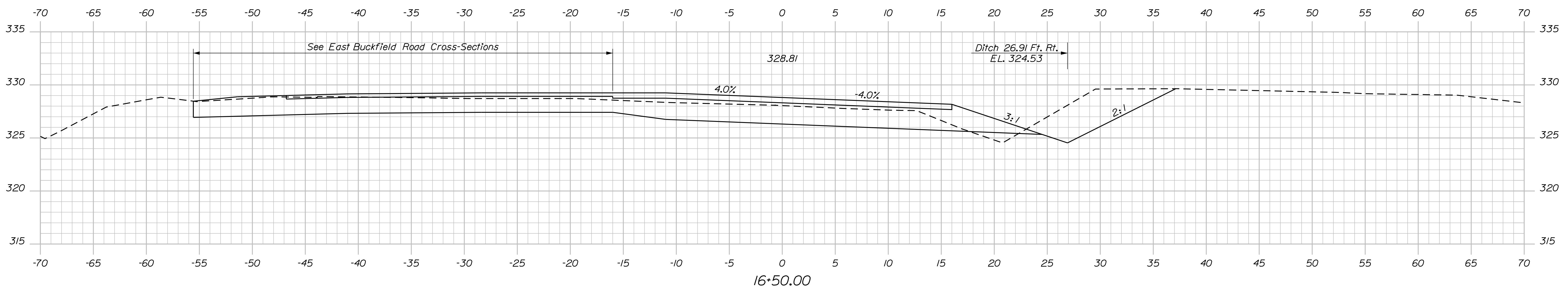
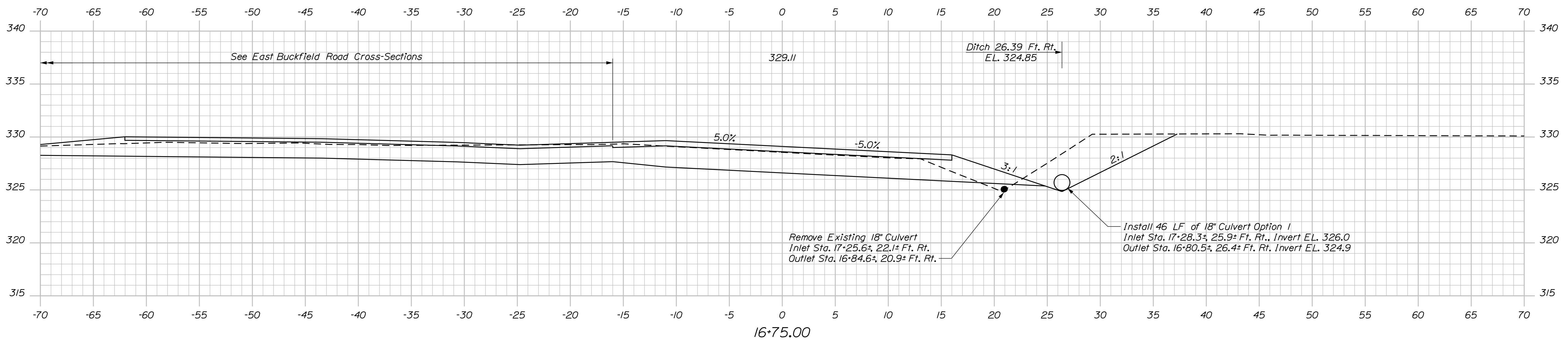
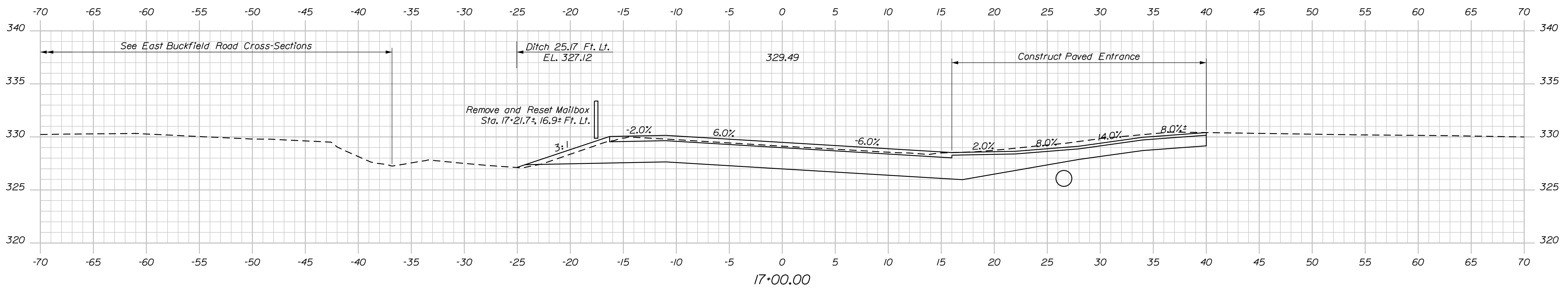
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PROJ. MANAGER		M. PARLIN		BY		J. HASBROUCK		DATE		SIGNATURE		P.E. NUMBER	
DESIGN-DETAILED		J. HASBROUCK		SHAWMATER		NOV. 2021							
CHECKED-REVIEWED													
DESIGN-DETAILED													
REVISIONS 1													
REVISIONS 2													
REVISIONS 3													
REVISIONS 4													
FIELD CHANGES													
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Username: Joshua.P.Hasbrouck Date:11/9/2021

Division: BRIDGE

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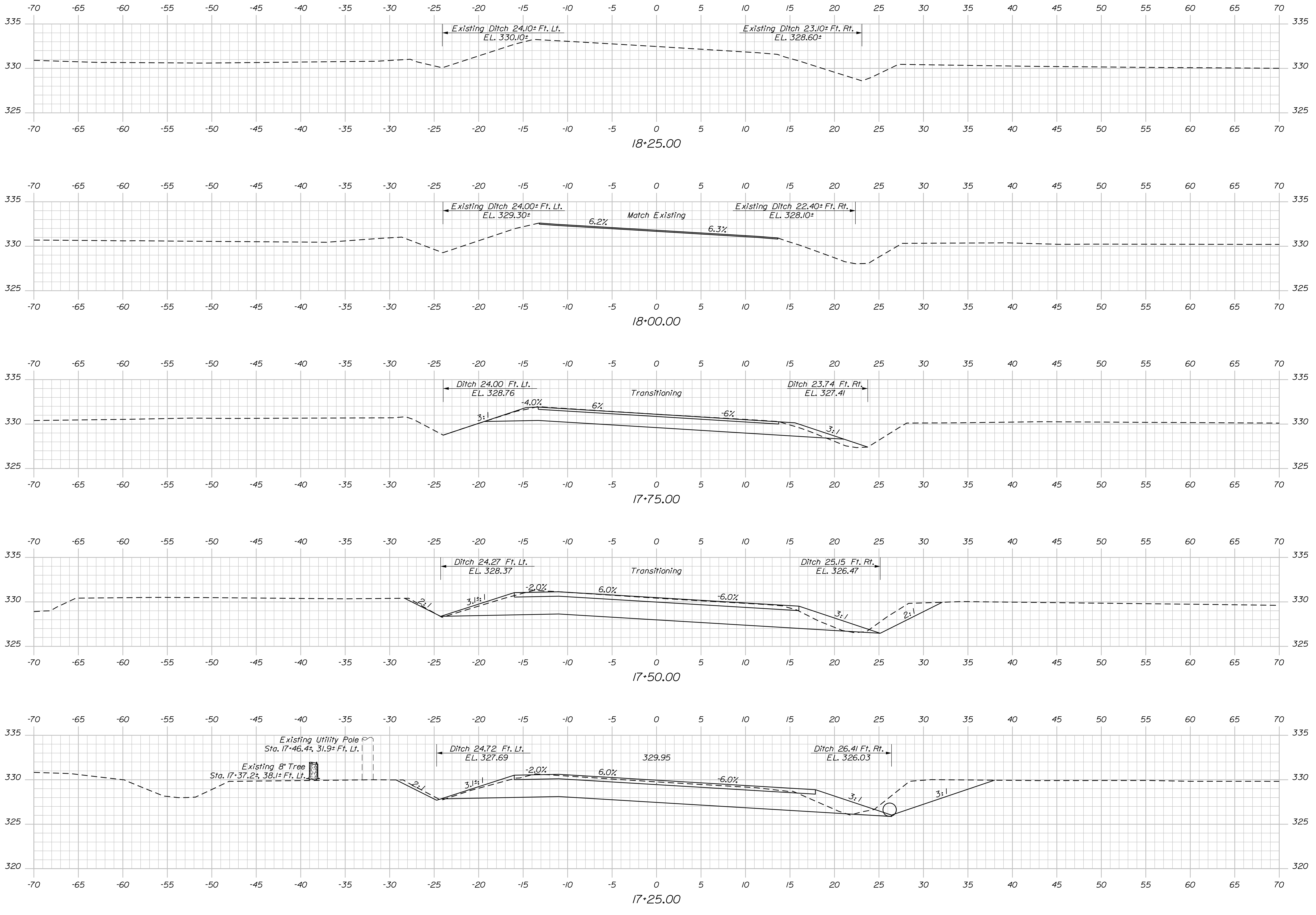


STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		STP-2187(600)		BRIDGE NO. 3287		WIN		21876.00		BRIDGE PLANS	
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Username: Joshua.P.Hasbrouck Date:11/9/2021

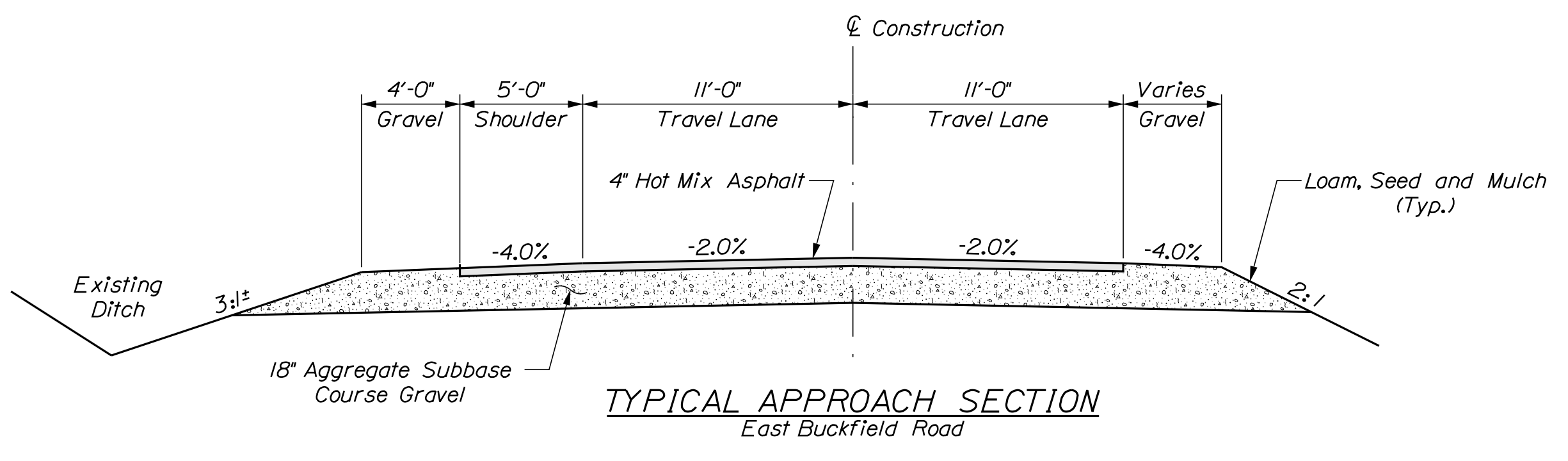
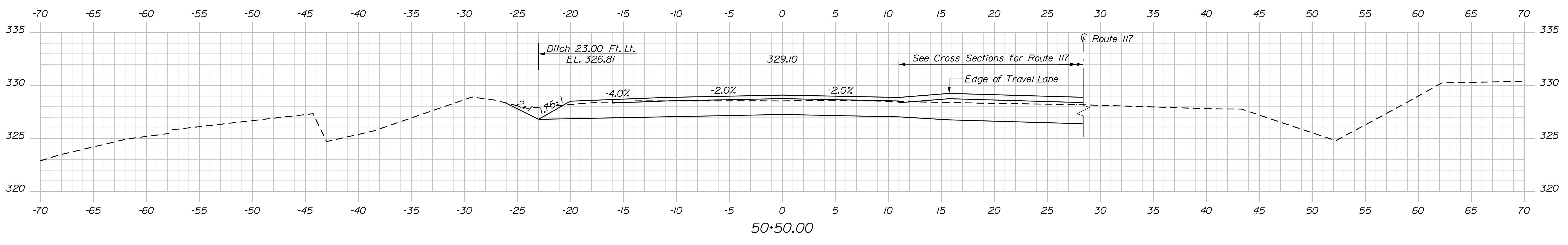
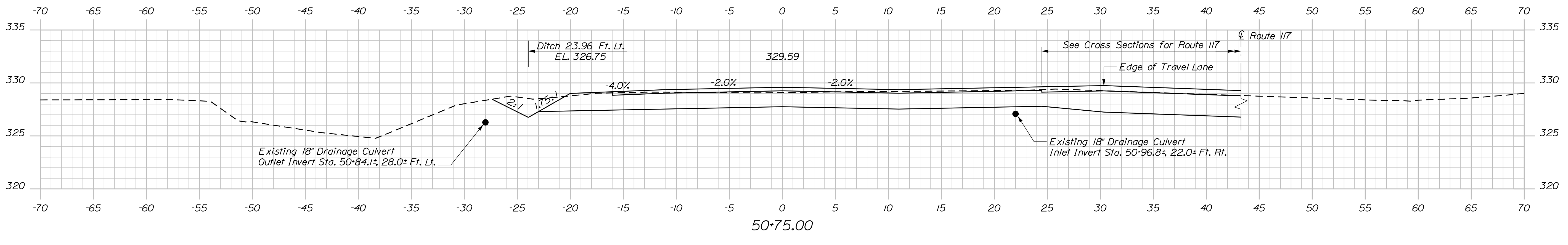
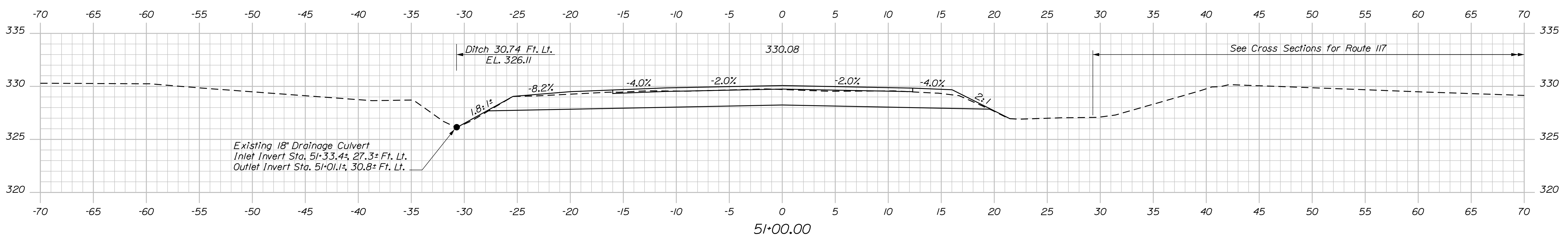
Division: BRIDGE

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STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2187(600)	
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ROUTE 117 CROSS SECTIONS		21876.00	
SHEET NUMBER		BRIDGE PLANS	
18		DATE	
OF 35		SIGNATURE	
PROJ. MANAGER		P.E. NUMBER	
M. PARLIN		DATE	
J. HASBROUCK		NOV. 2021	
DESIGN DETAILED		NOV. 2021	
CHECKED/REVIEWED		SIGNATURE	
DESIGN DETAILED		DATE	
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REVISIONS 1		P.E. NUMBER	
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REVISIONS 3		NOV. 2021	
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FIELD CHANGES		NOV. 2021	

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 Username: Joshua.P.Hasbrouck Date: 11/9/2021

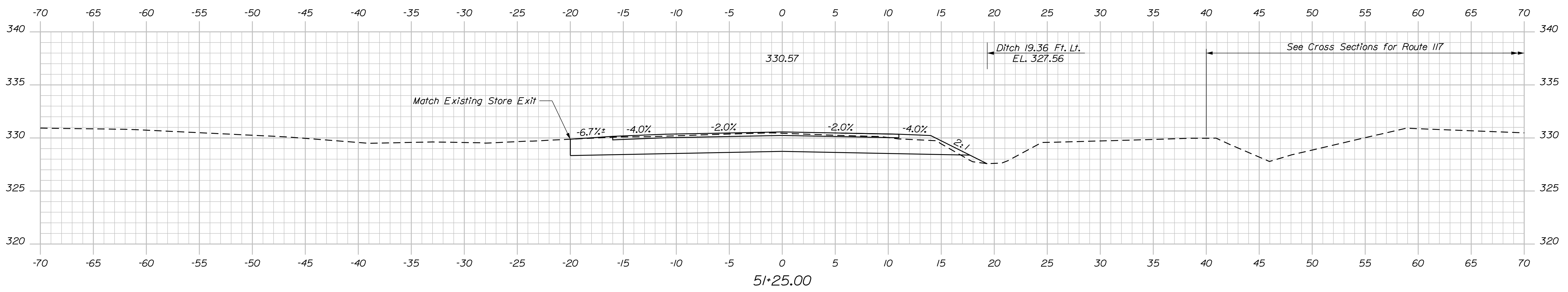
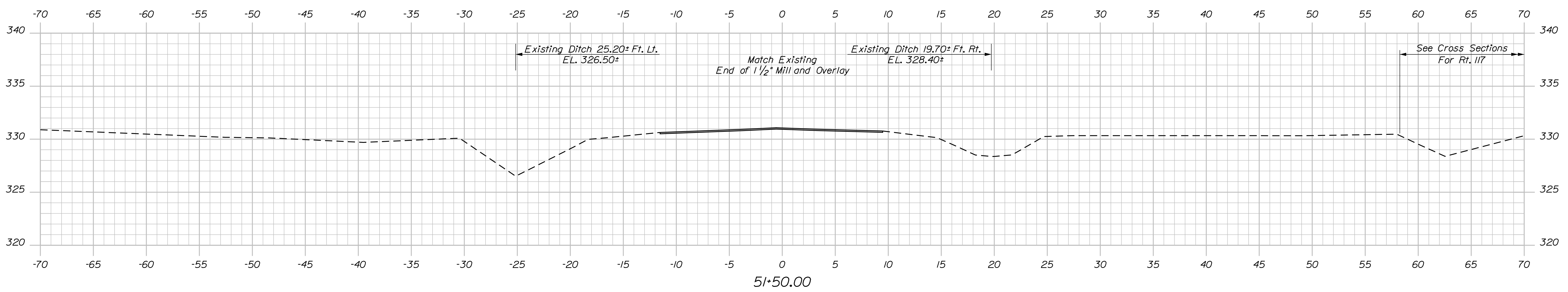
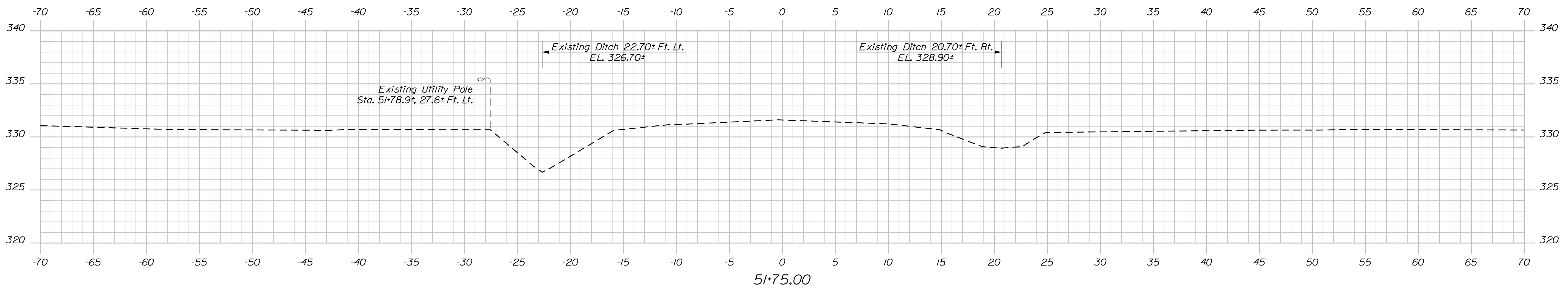


STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2187(600)		BRIDGE NO. 3287	WIN 21876.00	BRIDGE PLANS
HALL BRIDGE NEZINSCOT RIVER BUCKFIELD		OXFORD COUNTY		EAST BUCKFIELD RD. CROSS SECTIONS		
PROJ. MANAGER	M. PARLIN	BY	J. HASBROUCK	DATE		
DESIGN-DETAILED	J. HASBROUCK	SHAWMATER	NOV. 2021	SIGNATURE		
CHECKED-REVIEWED	J. HASBROUCK	NOV. 2021	SIGNATURE	P.E. NUMBER		
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REVISIONS 1						
REVISIONS 2						
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REVISIONS 4						
FIELD CHANGES						
SHEET NUMBER				19		
				OF 35		

Username: Joshua.P.Hasbrouck Date:11/9/2021

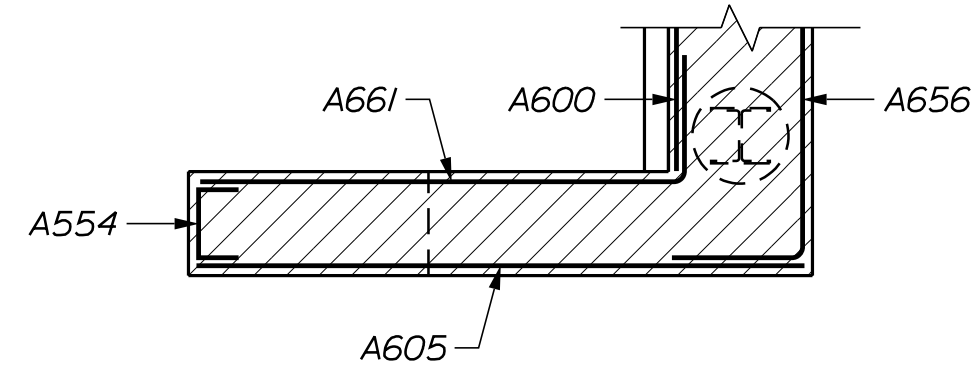
Division: BRIDGE

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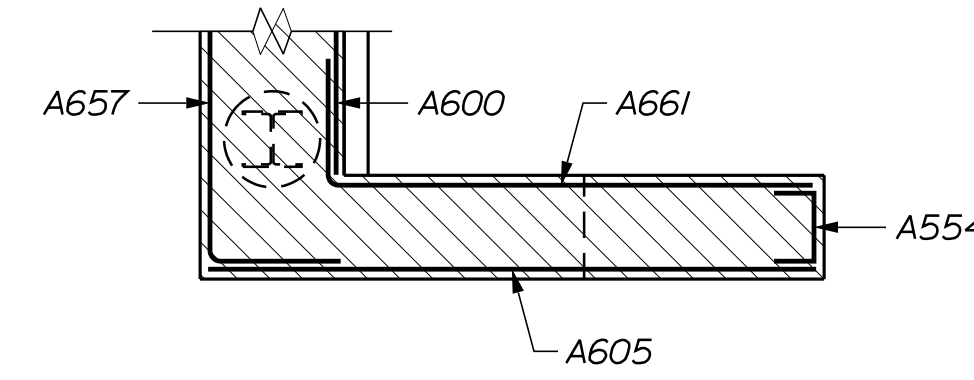


STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
STP-2187(600)		BRIDGE NO. 3287	
WIN		21876.00	
BRIDGE PLANS			
PROJ. MANAGER	M. PARLIN	BY	J. HASBROUCK
CHECKED/REVIEWED	J. HASBROUCK	DATE	NOV. 2021
DESIGN/DETAILED	J. HASBROUCK	DATE	NOV. 2021
DESIGNS/DETAILED		SIGNATURE	
REVISIONS 1		P.E. NUMBER	
REVISIONS 2		DATE	
REVISIONS 3			
REVISIONS 4			
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SHEET NUMBER			
20			
OF 35			

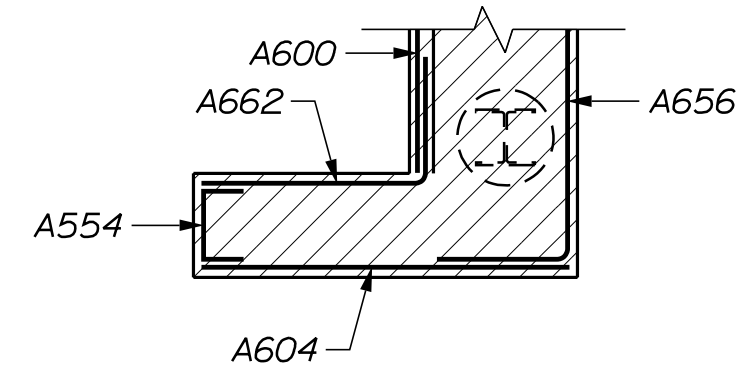




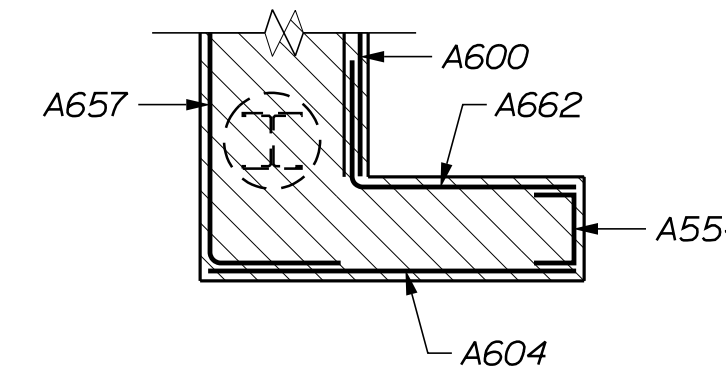
**SOUTH WINGWALL SECTION PLAN**  
Section through mid portion of wing  
Vertical bars not shown for clarity



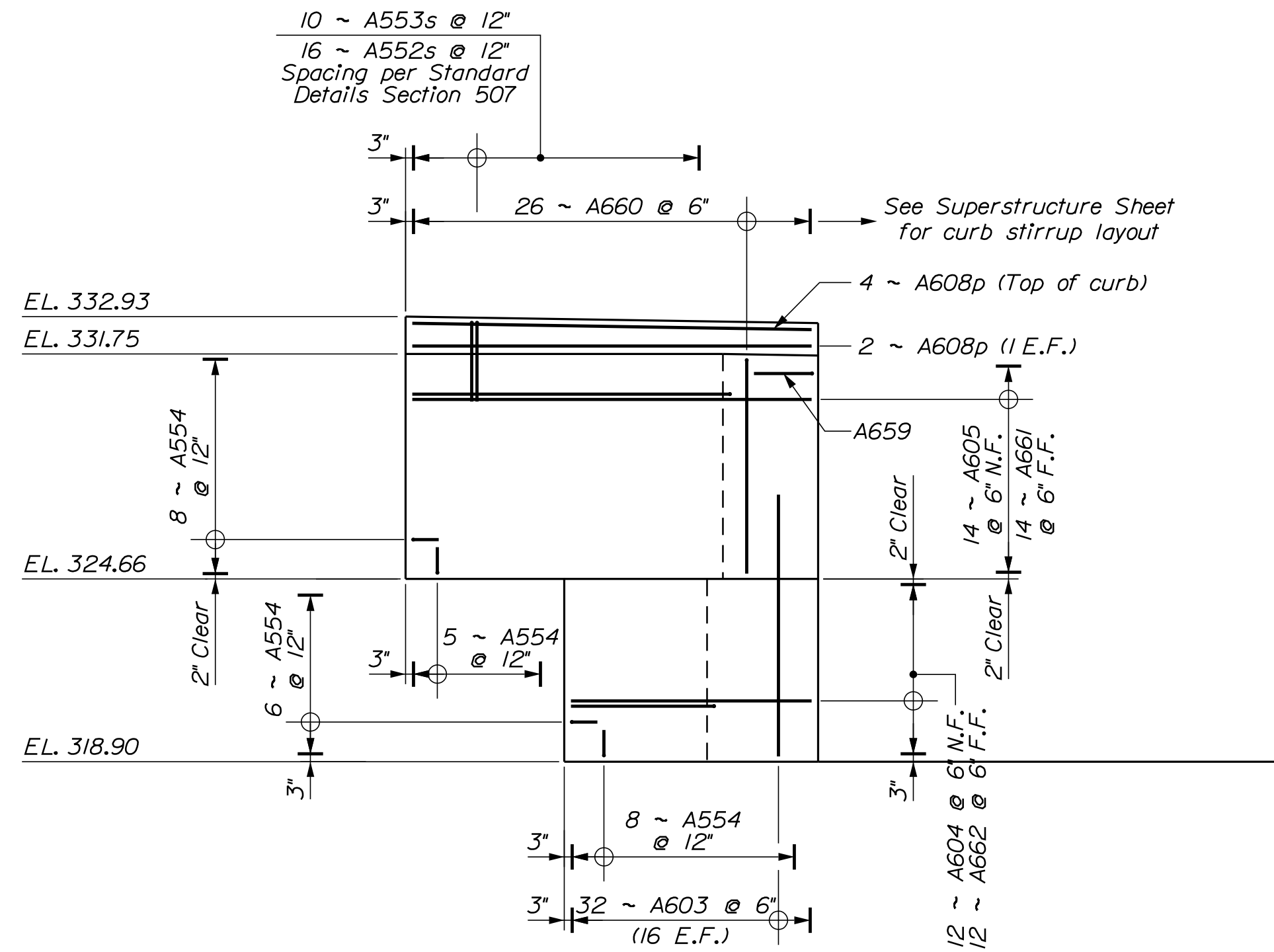
**NORTH WINGWALL SECTION PLAN**  
Section through mid portion of wing  
Vertical bars not shown for clarity



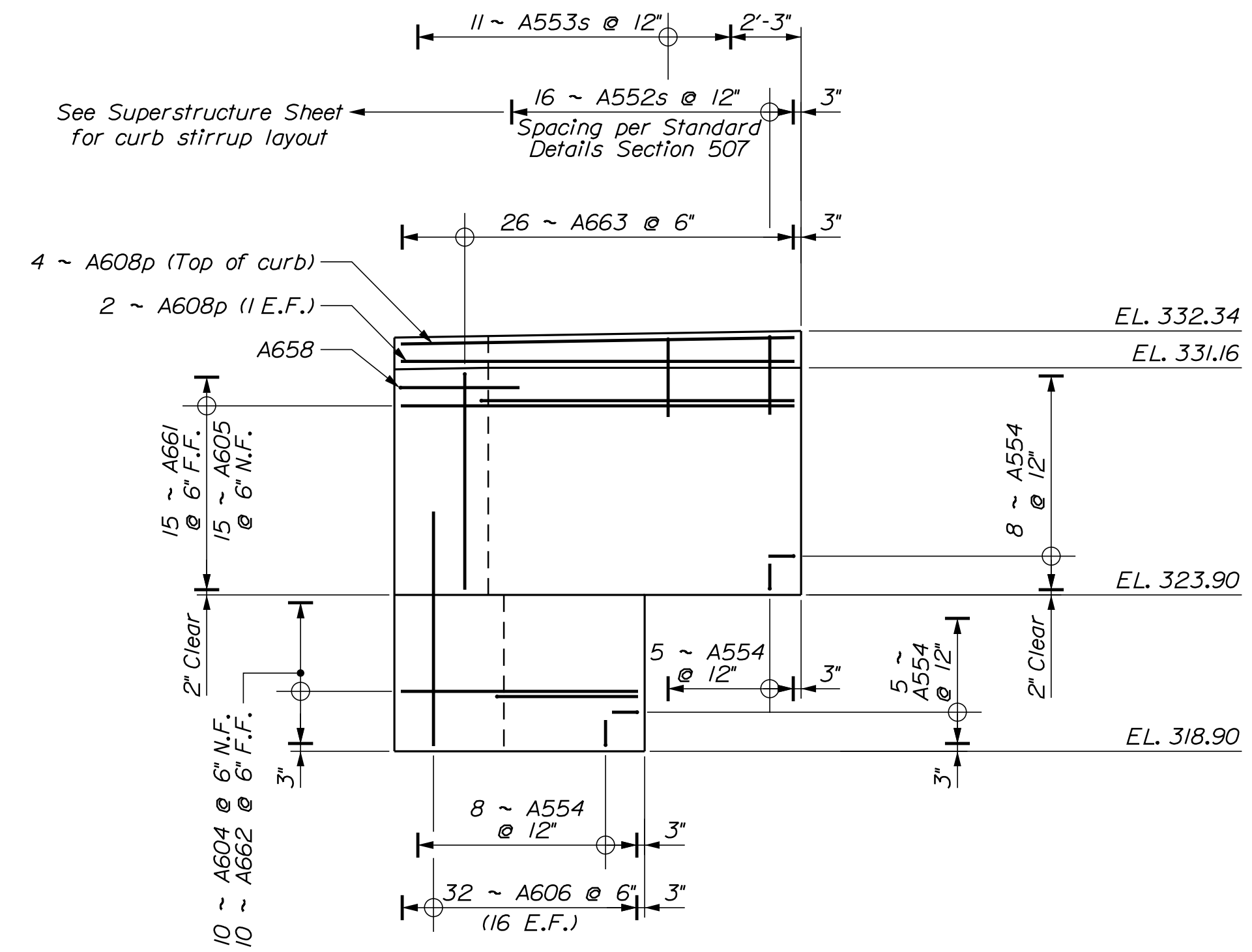
**SOUTH WINGWALL SECTION PLAN**  
Section through lower portion of wing  
Vertical bars not shown for clarity



**NORTH WINGWALL SECTION PLAN**  
Section through lower portion of wing  
Vertical bars not shown for clarity



**SOUTH WINGWALL REINFORCEMENT ELEVATION**



**NORTH WINGWALL REINFORCEMENT**

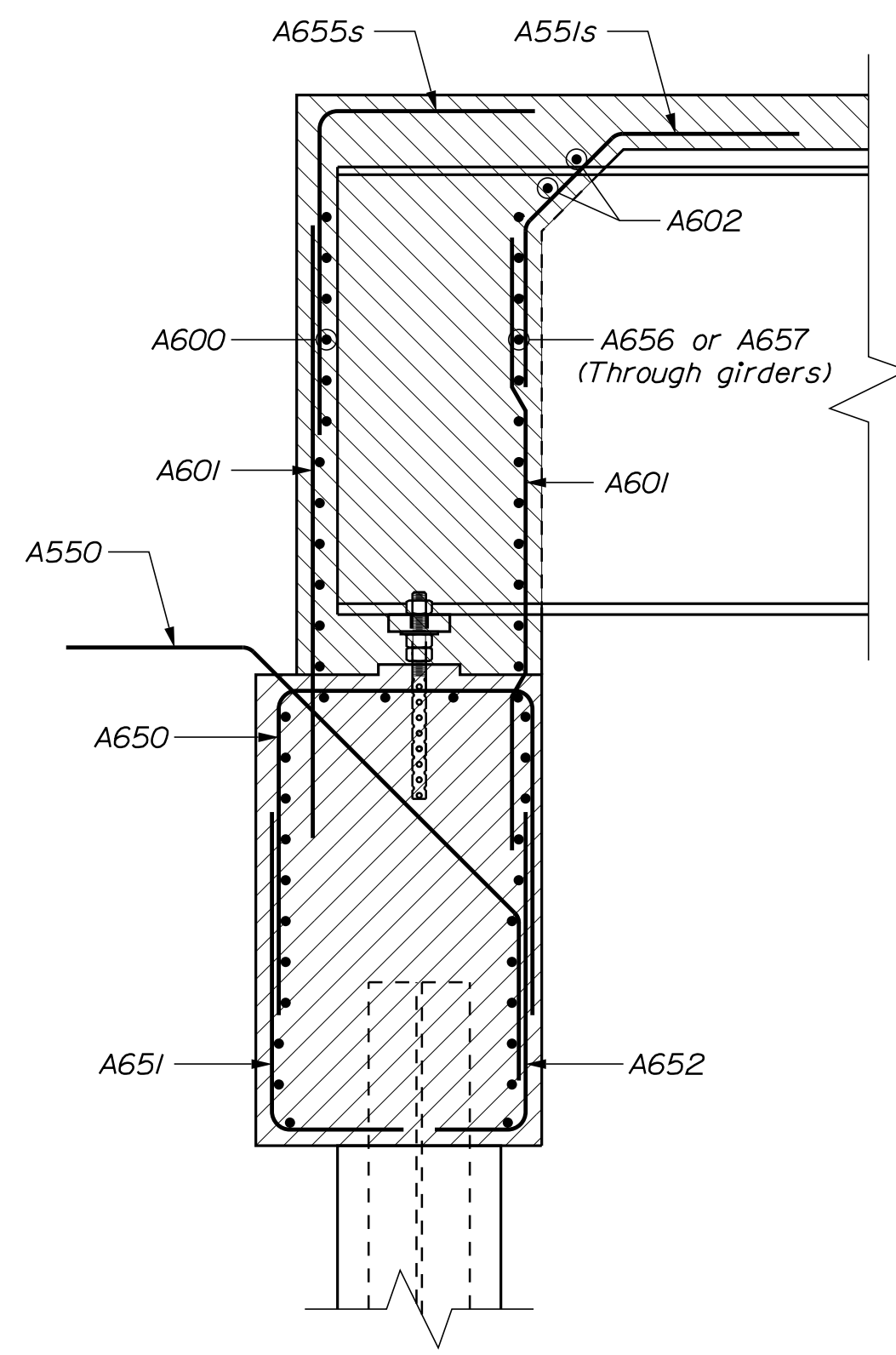
DESIGN-DETAILED	BY	DATE
CHECKED-REVIEWED	J. HASBROUCK	NOV. 2021
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REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

PROJ. MANAGER	M. PARLIN	DATE
DESIGN-DETAILED	J. HASBROUCK	NOV. 2021
CHECKED-REVIEWED	J. HASBROUCK	NOV. 2021
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FIELD CHANGES		

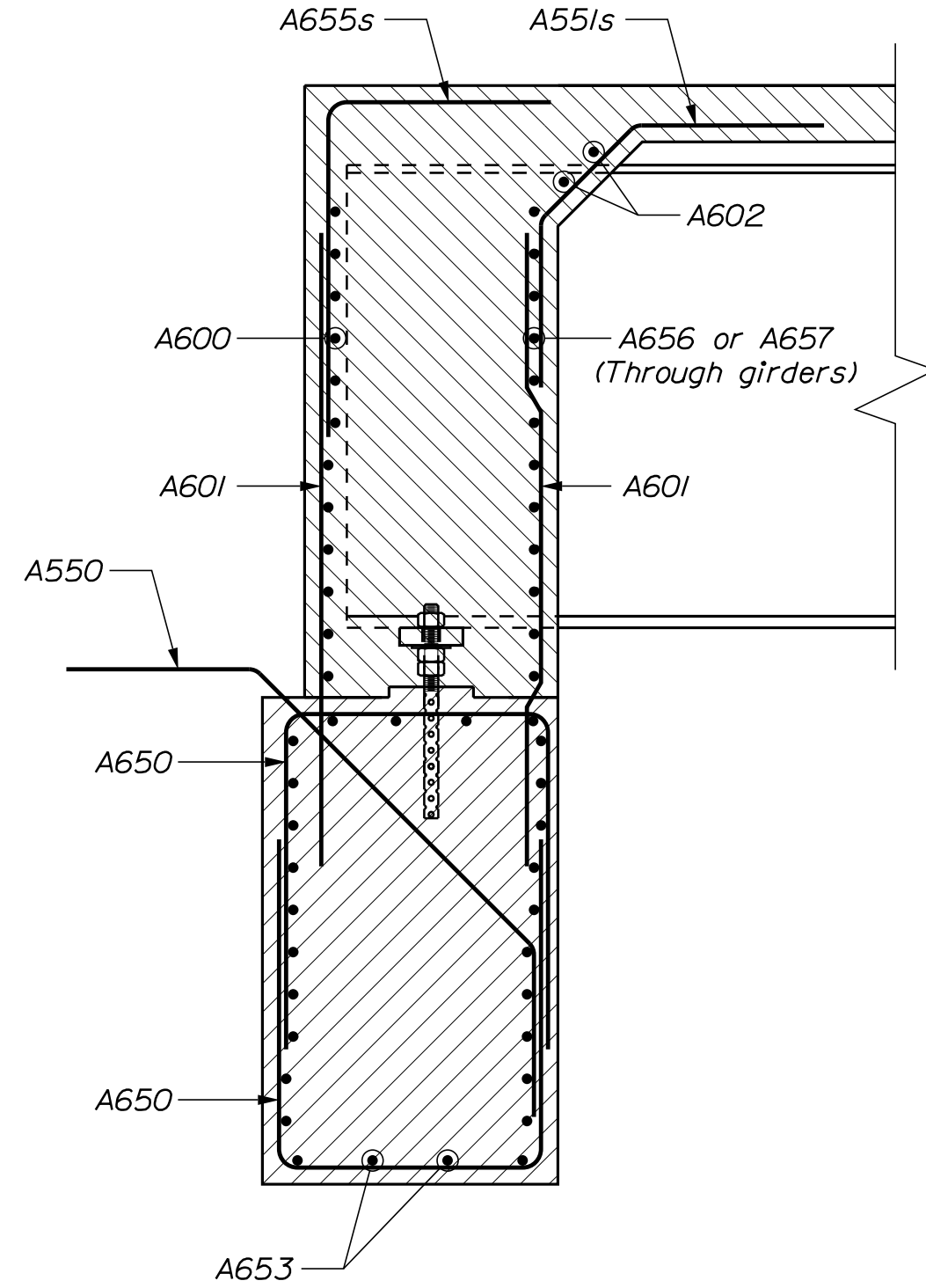
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NEZINSNOT RIVER  
BUCKFIELD OXFORD COUNTY  
ABUTMENT NO. 1  
WINGWALL REINFORCEMENT

SHEET NUMBER

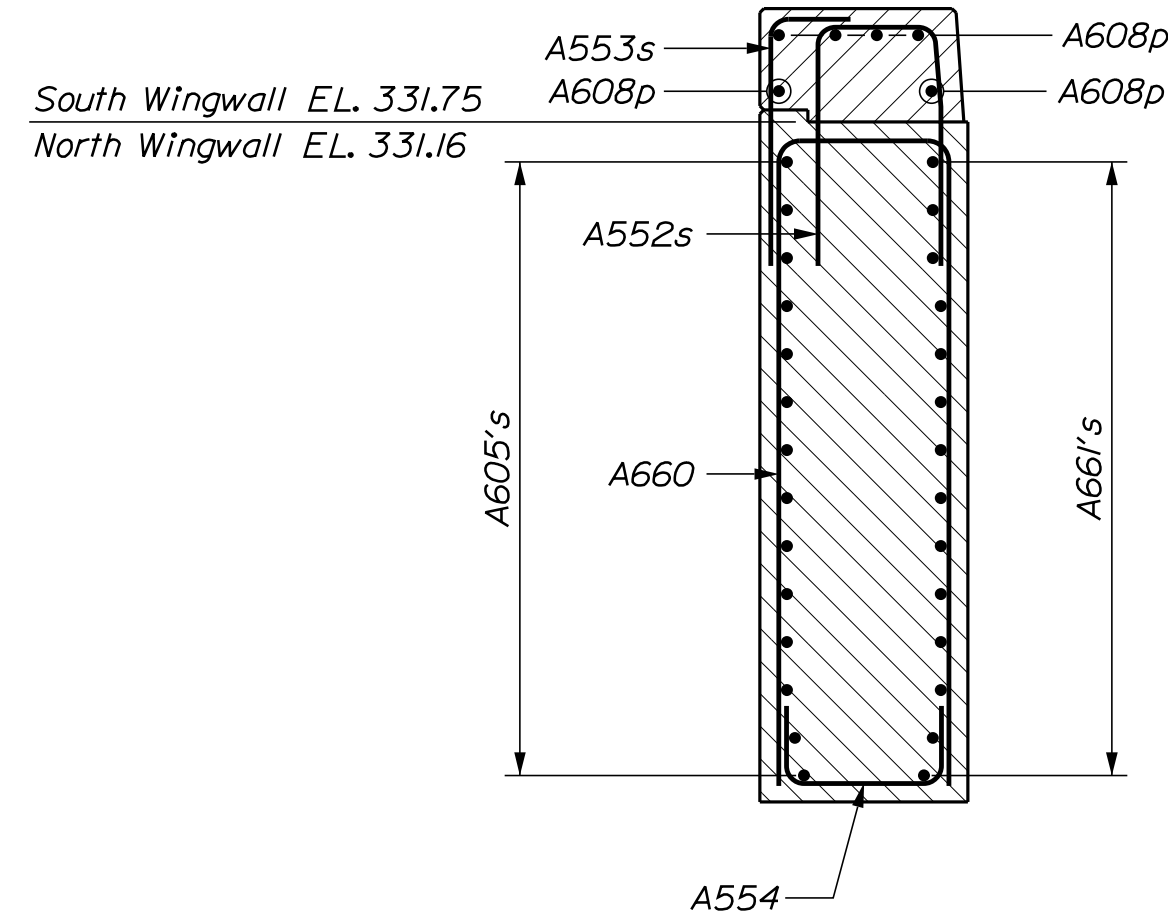
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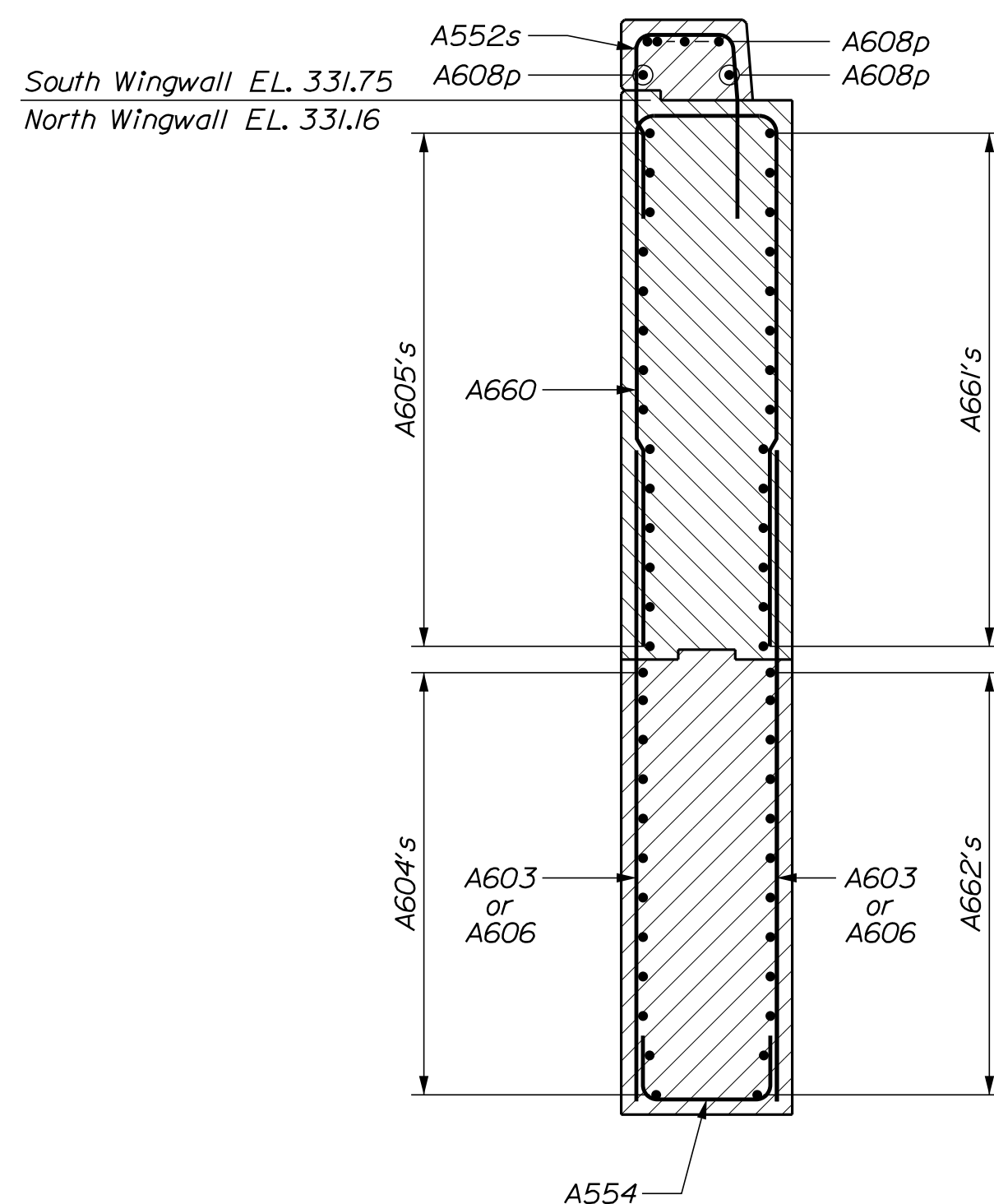
**SECTION AT PILE**  
Deck reinforcing not shown for clarity



**SECTION BETWEEN PILES**  
Deck reinforcing not shown for clarity



**WINGWALL SECTION**



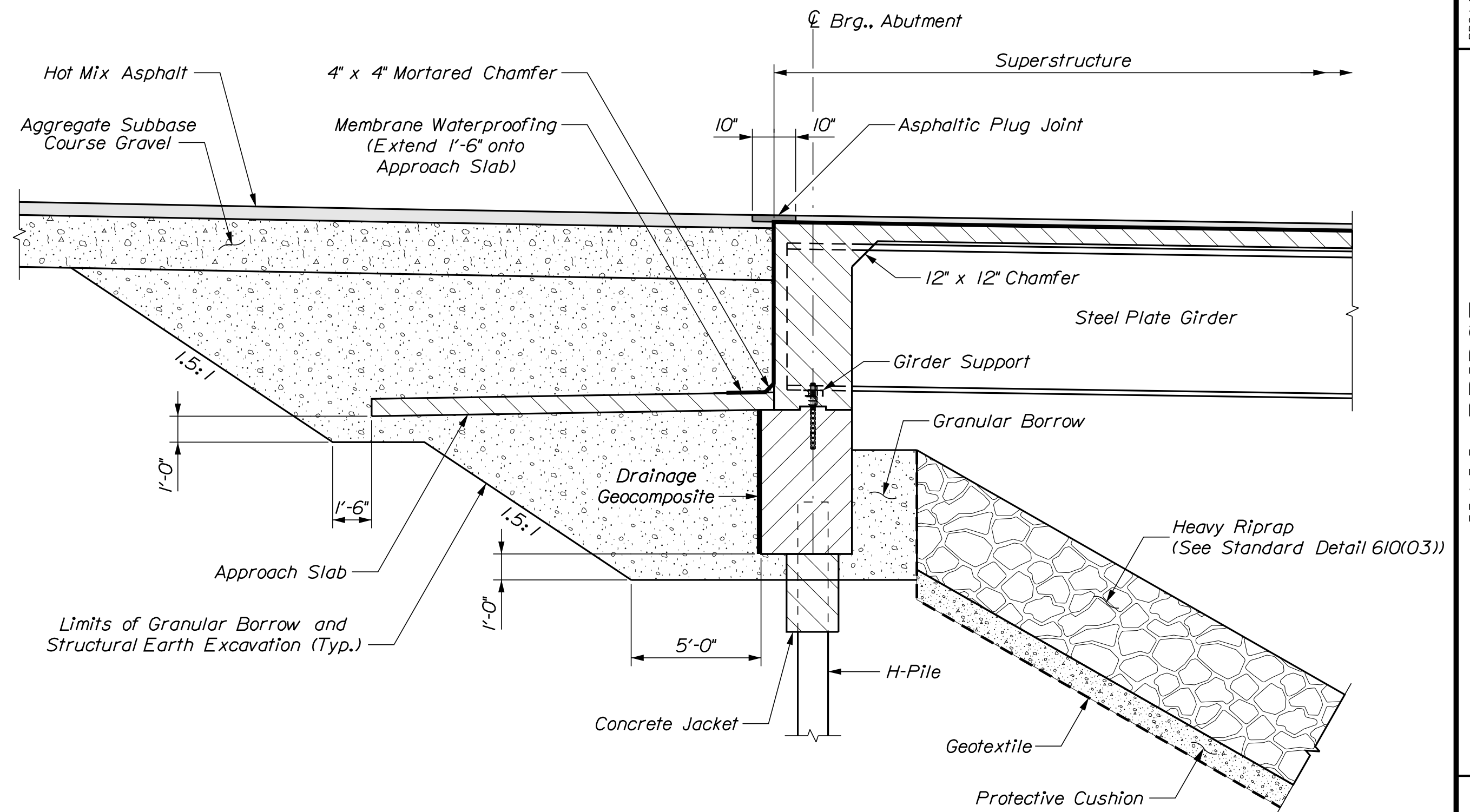
**WINGWALL SECTION**

**PILE NOTES**

- The maximum factored pile load is 315 kips at the Strength I Limit State.
  - Piles shall be driven to the required resistance on or within bedrock in accordance with Standard Specification Section 501.
  - Estimate of piles required:  
Abutment No. 1: 6 - HP 14 x 117 @ 26 feet  
Abutment No. 2: 6 - HP 14 x 117 @ 23 feet
- The order lengths of the piles shall include an additional 5 feet of length for each test pile to accommodate dynamic pile testing equipment.
- H-pile material shall be ASTM A572, Grade 50.
  - Piles shall be equipped with a pile tip in accordance with Special Provision 501 Foundation Pile - Rock Injector Pile Tip.
  - Piles shall not be out of position shown by more than 2 inches in any direction.
  - The Contractor shall perform and submit a wave equation analysis for review and acceptance by the Resident. The maximum allowable driving stress is 0.90 times F<sub>y</sub>. The submittal analyses shall include the proposed stopping criteria based on the wave equation analysis and the proposed driving system.
  - The Contractor shall perform 1 dynamic load test(s) on each abutment with 24-hour (minimum) restrrike tests to confirm the nominal resistance of the piles. The required nominal resistance for the pile is the factored axial pile load divided by a resistance factor of 0.65 per LRFD Specifications. One dynamic test shall be performed on the first production pile driven at each abutment.

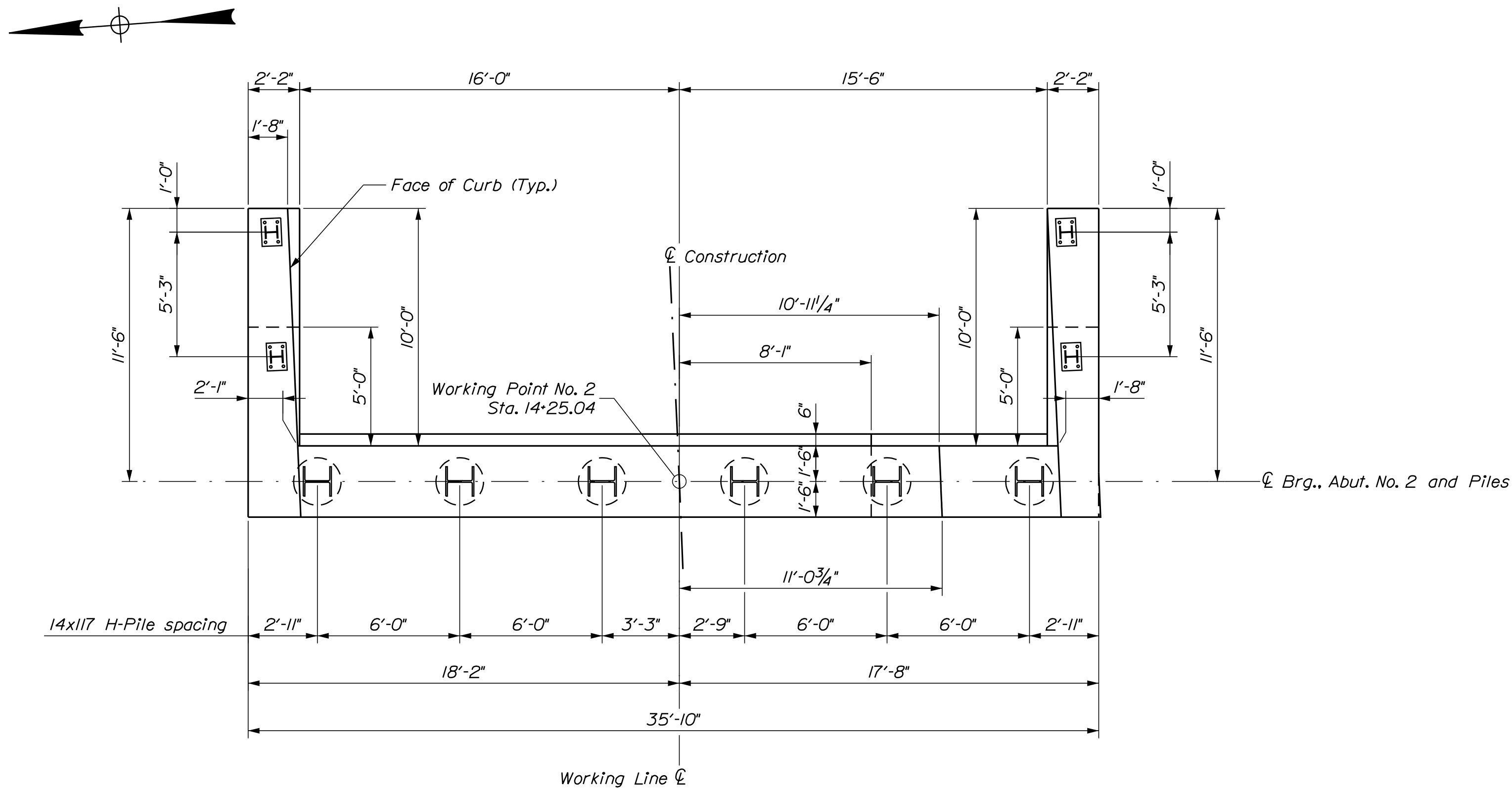
**ABUTMENT NOTES**

- Reinforcing steel shall have a minimum concrete cover of 2 inches in the walls and 3 inches in the footings unless otherwise noted.
- Cover joints where waterstops are not required in accordance with Standard Details Section 502(O).
- The concrete jackets around the tops of the H-piles will not be paid for directly but will be considered incidental to Pay Item 502.219 Structural Concrete Abutments and Retaining Walls. Fill Concrete may be used for the concrete jackets.
- The mortared chamfer will not be paid for separately, but will be considered incidental to related contract items.
- The Asphaltic Plug Joint shall not use a bridging plate or backer rod.
- Install Drainage Geocomposite on the back face of the abutment below the approach slab, and on the back face of the wings up to the subgrade.

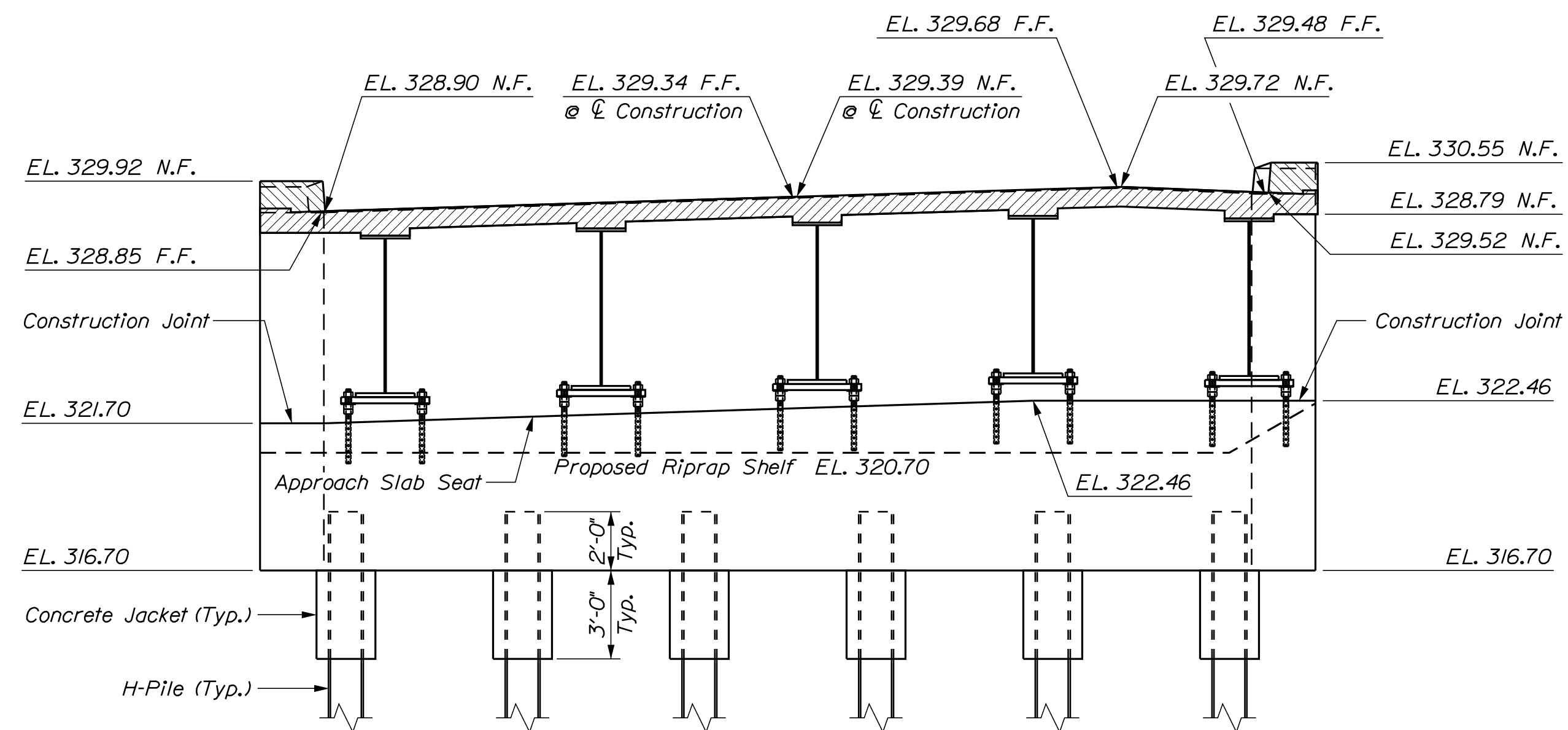
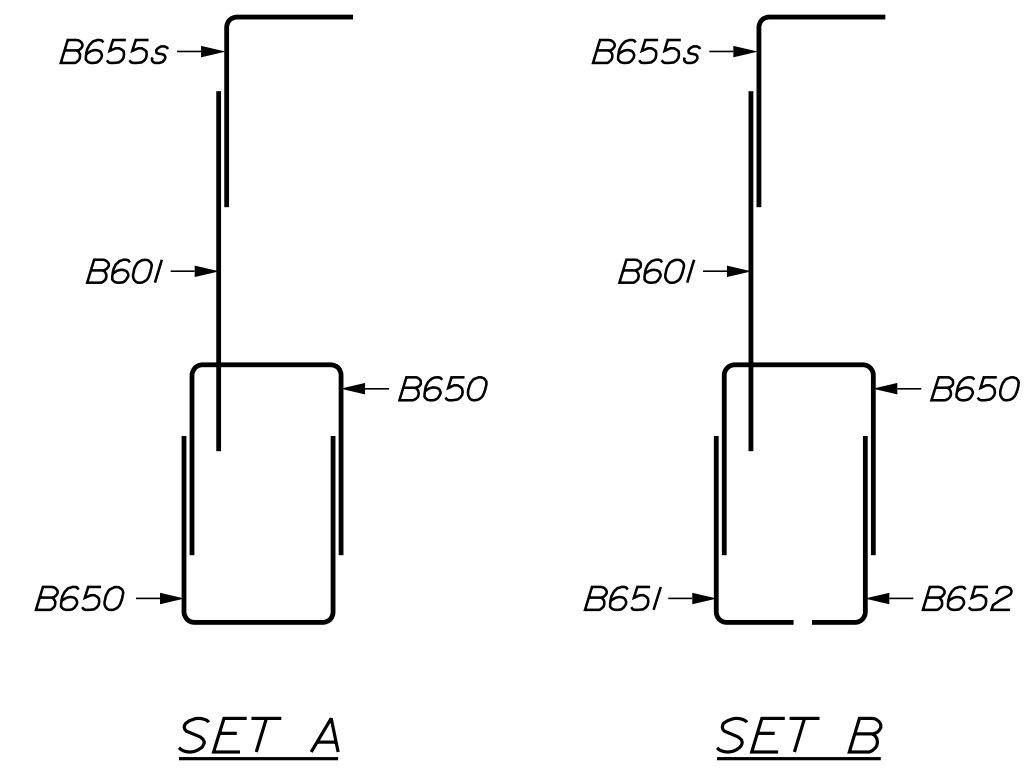


**ABUTMENT BACKWALL DETAIL**  
Abutment No. 1 shown, Abutment No. 2 similar

PROJ. MANAGER	BY	DATE
M. PARLIN	J. HASBROUCK	NOV. 2021
CHECKED/REVIEWED	D. SHAW	NOV. 2021
DESIGN/TAILED	J. HASBROUCK	NOV. 2021
DESIGN/TAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

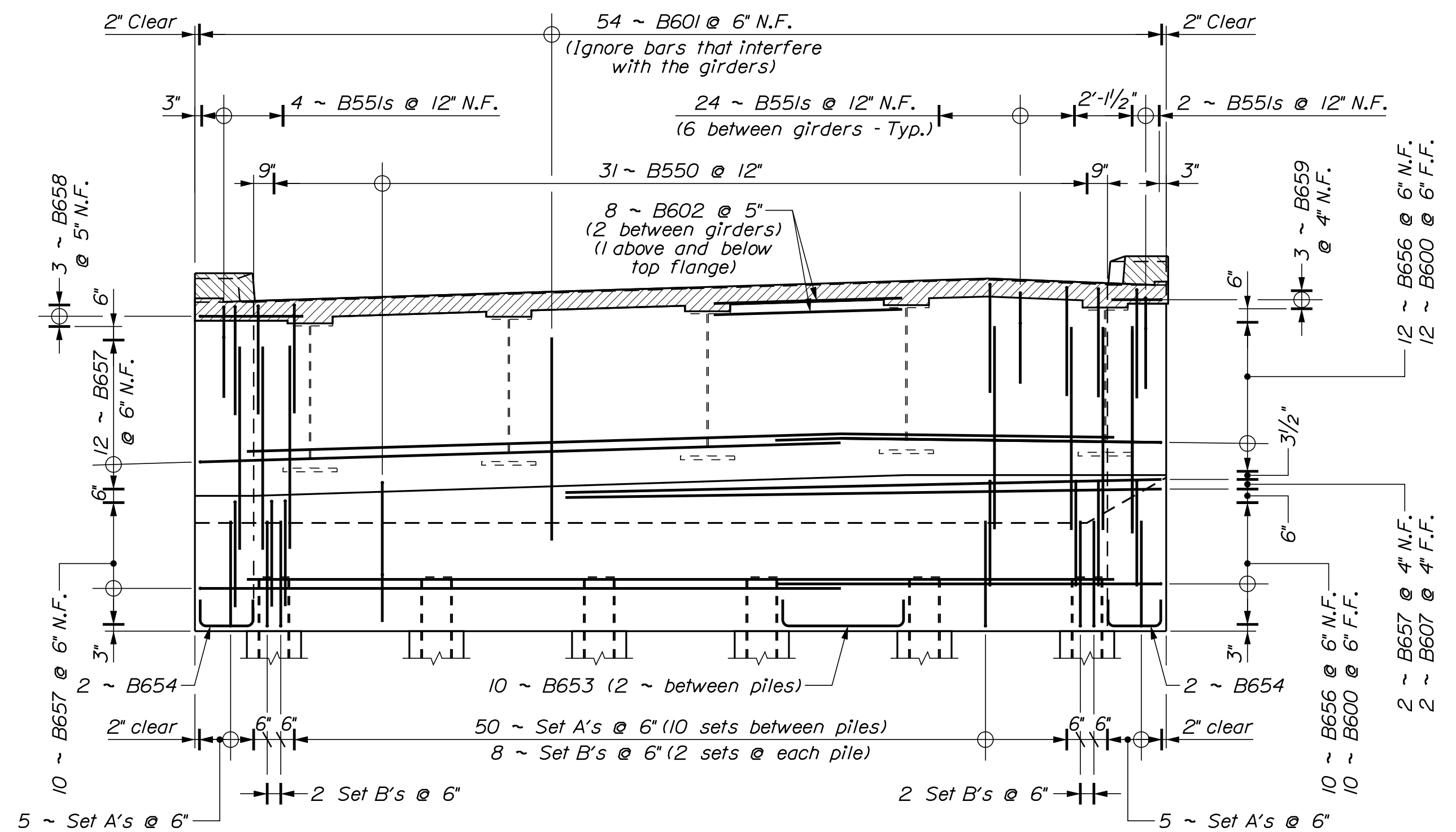


ABUTMENT NO. 2 PLAN



ABUTMENT NO. 2 ELEVATION

N.F. = Near Face (Face of Breastwall)  
F.F. = Far Face (Face of Backwall)

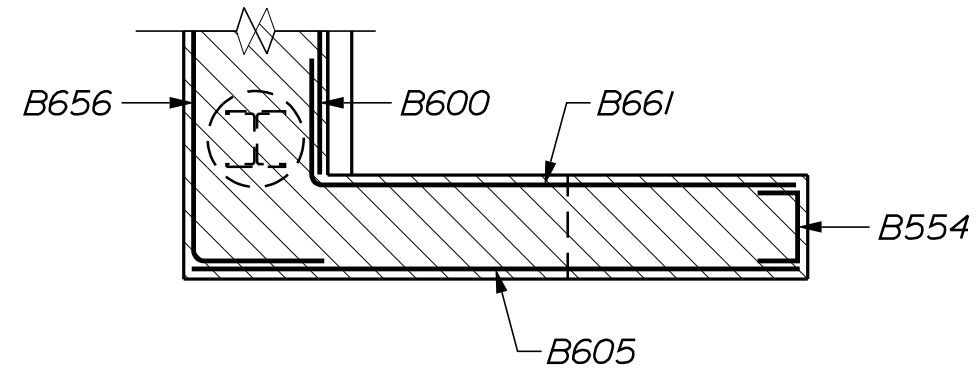


ABUTMENT NO. 2 REINFORCEMENT ELEVATION

Girder Supports not shown for clarity

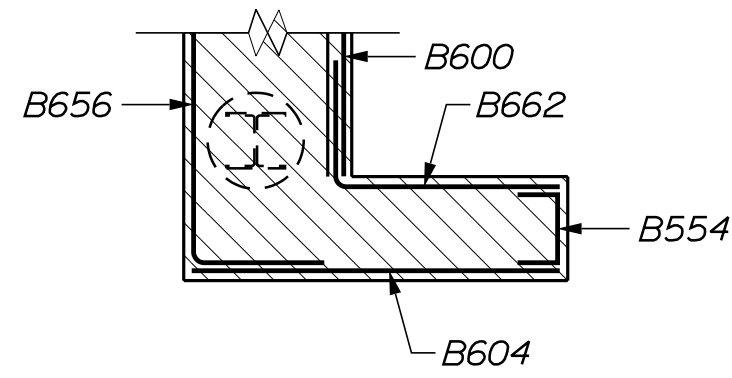
Set A: 2 ~ B650, 1 ~ B601 F.F., 1 ~ B655s F.F. (Top)  
Set B: 1 ~ B650 (Top), 1 ~ B651 (Bottom F.F.), 1 ~ B652 (Bottom N.F.),  
1 ~ B601 F.F., 1 ~ B655s F.F. (Top)

PROJ. MANAGER	BY	DATE
M. PARLIN	J. HASBROUCK	NOV. 2021
CHECKED-REVIEWED	D. SHAW	NOV. 2021
DESIGNED-DETAILED	J. HASBROUCK	NOV. 2021
DESIGNED-DETAILED	J. HASBROUCK	NOV. 2021
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		



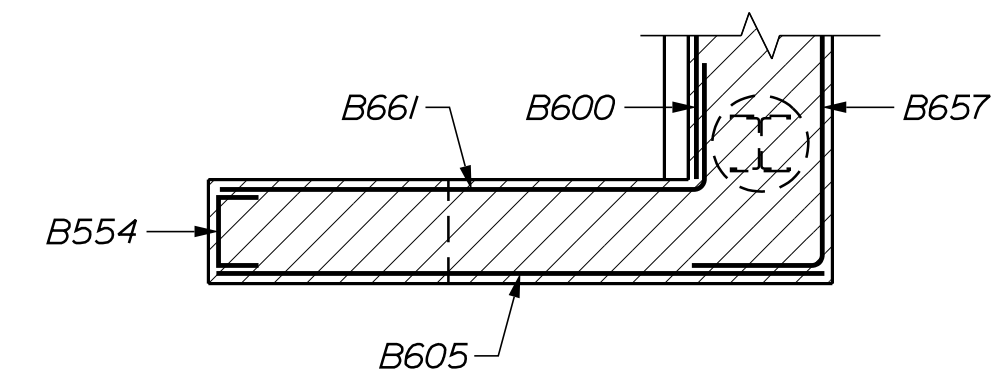
**SOUTH WINGWALL SECTION PLAN**

Section through mid portion of wing  
Vertical bars not shown for clarity



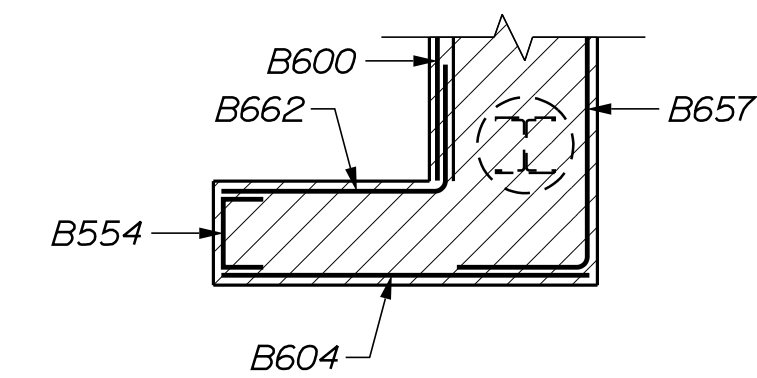
**SOUTH WINGWALL SECTION PLAN**

Section through lower portion of wing  
Vertical bars not shown for clarity



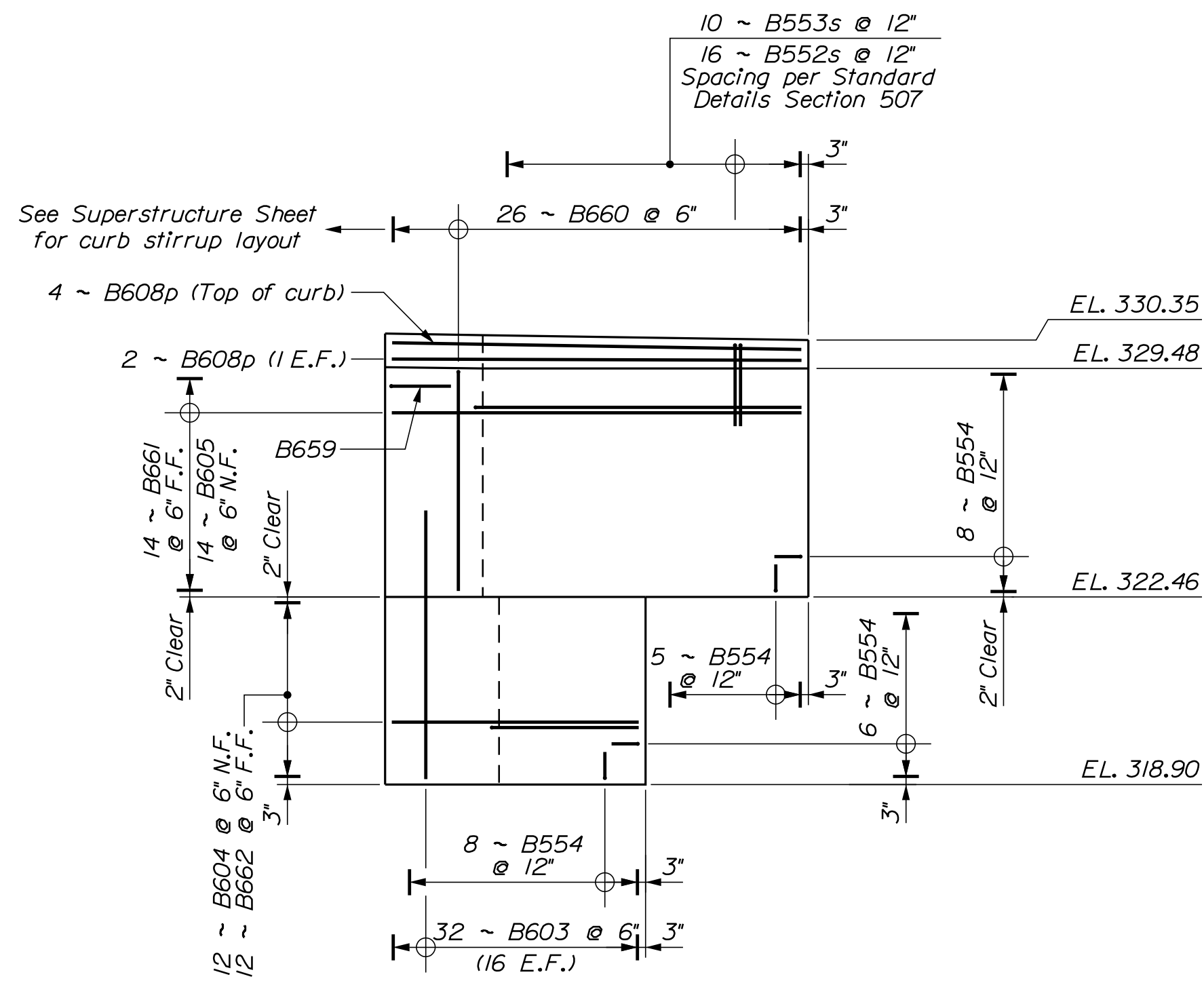
**NORTH WINGWALL SECTION PLAN**

Section through mid portion of wing  
Vertical bars not shown for clarity

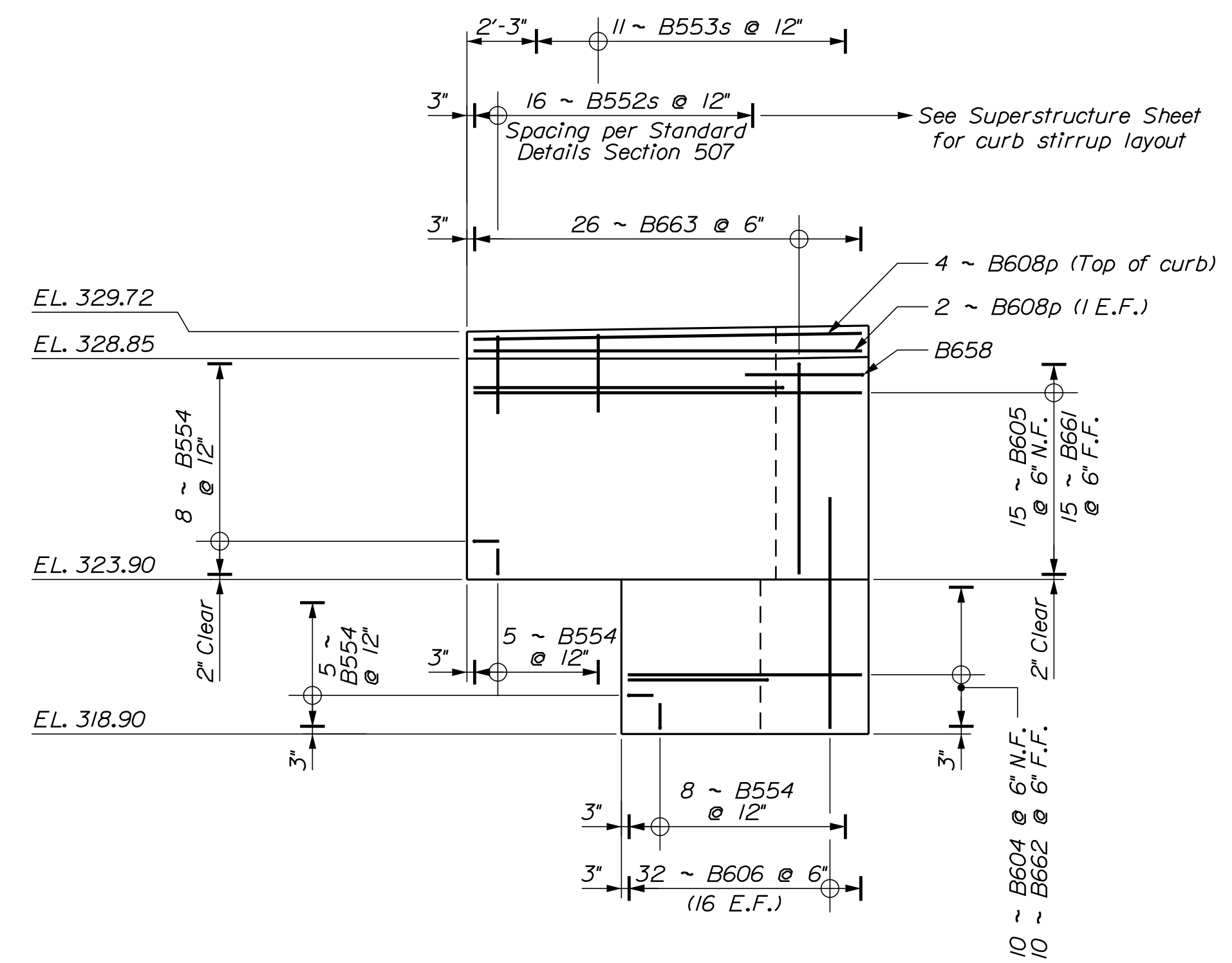


**NORTH WINGWALL SECTION PLAN**

Section through lower portion of wing  
Vertical bars not shown for clarity



**SOUTH WINGWALL REINFORCEMENT ELEVATION**



**NORTH WINGWALL REINFORCEMENT**

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
STP-2187(600)  
WIN  
21876.00  
BRIDGE NO. 3287  
BRIDGE PLANS

PROJ. MANAGER M. PARLIN  
DESIGN-DETAILED J. HASBROUCK  
CHECKED-REVIEWED J. HASBROUCK  
DESIGN-DETAILED J. HASBROUCK  
REVISIONS 1  
REVISIONS 2  
REVISIONS 3  
REVISIONS 4  
FIELD CHANGES

DATE NOV. 2021  
NOV. 2021

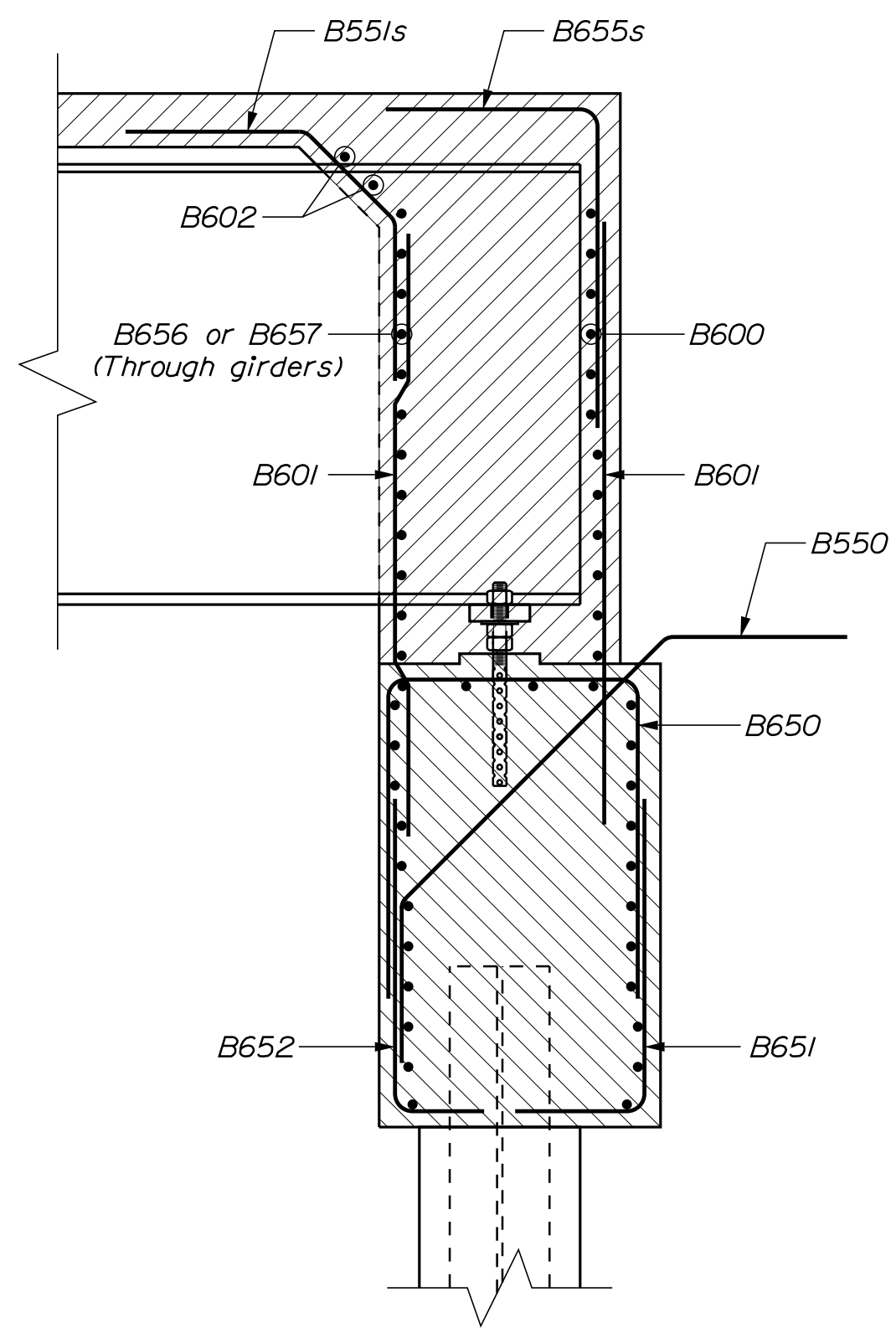
SIGNATURE  
P.E. NUMBER  
DATE

HALL BRIDGE  
NEZINSCOT RIVER  
BUCKFIELD OXFORD COUNTY

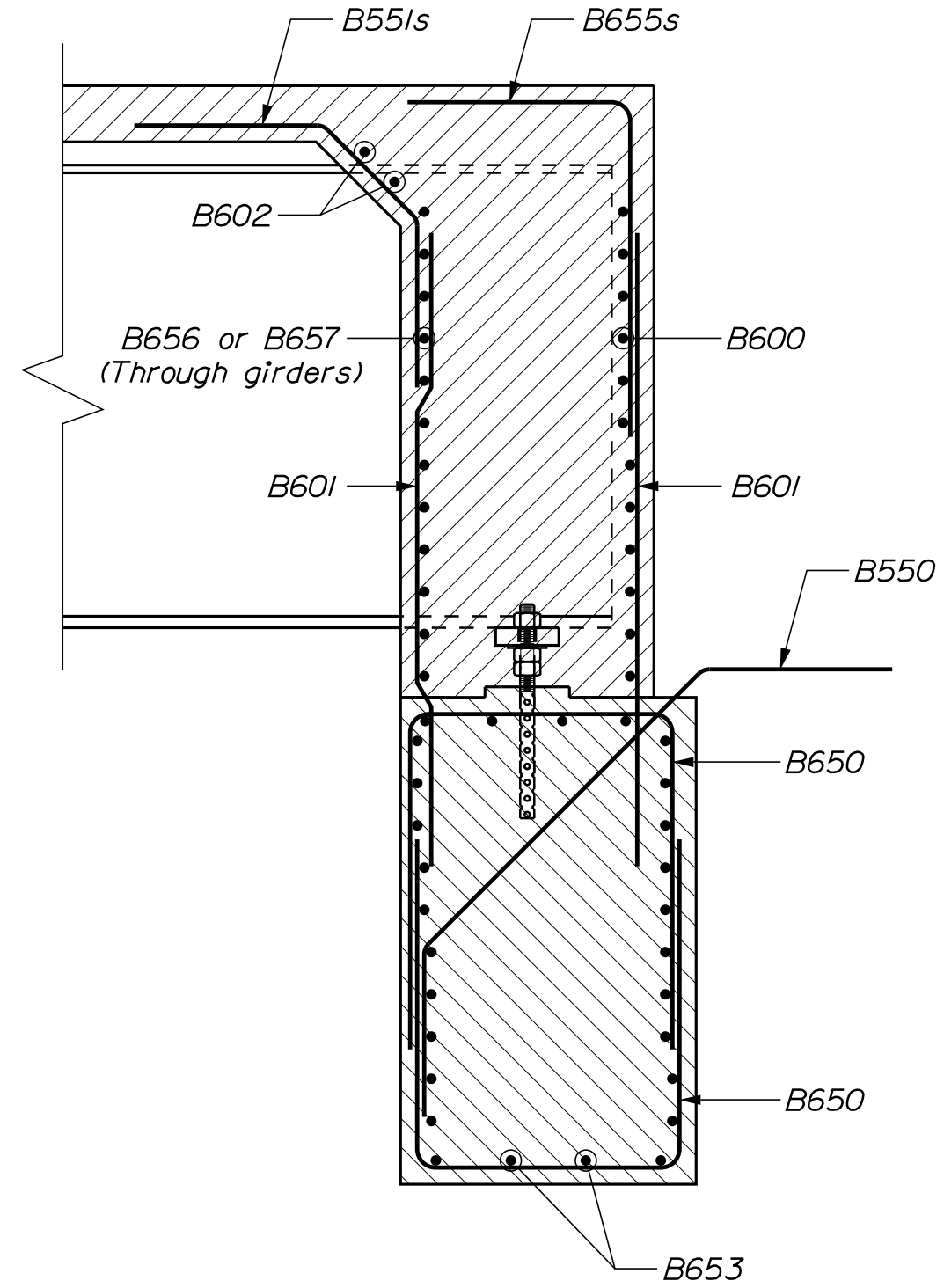
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WINGWALL REINFORCEMENT**

SHEET NUMBER

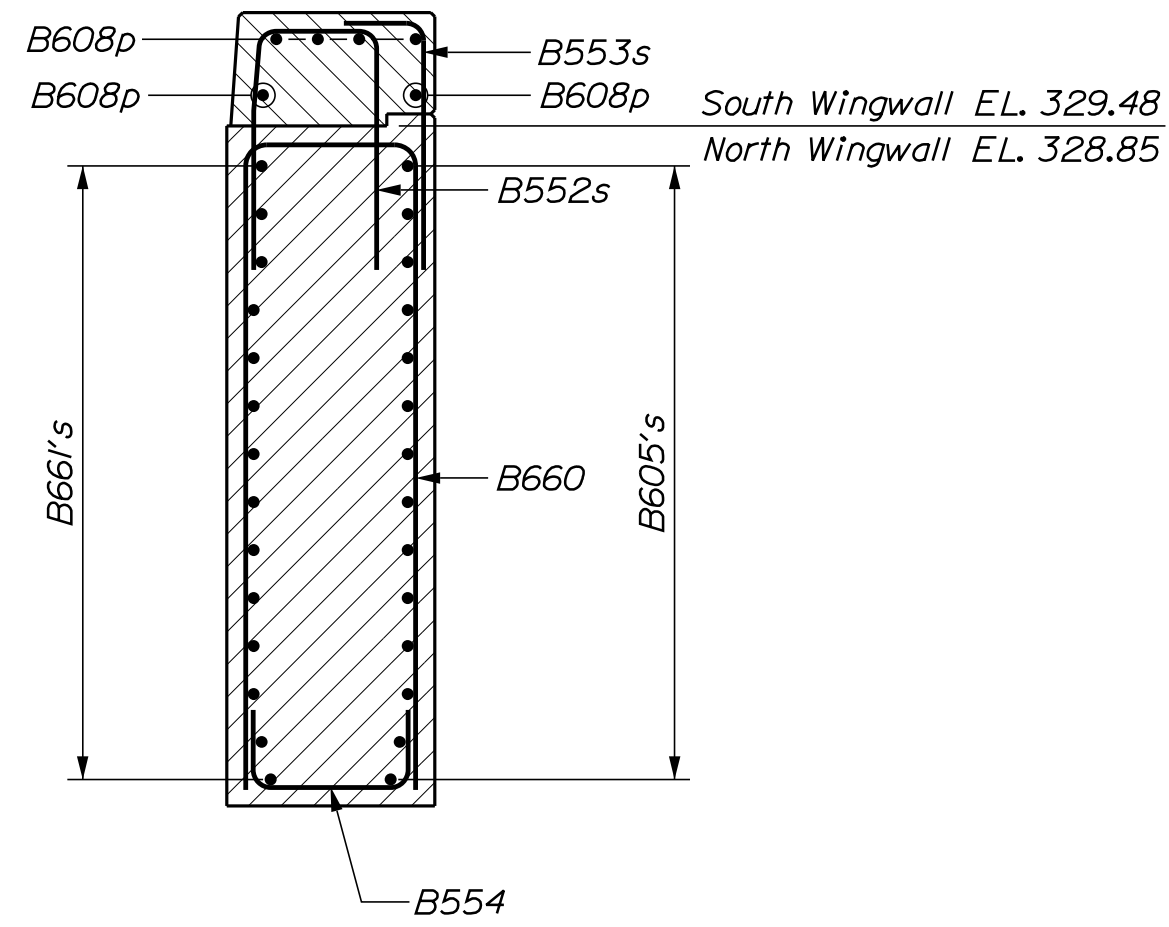
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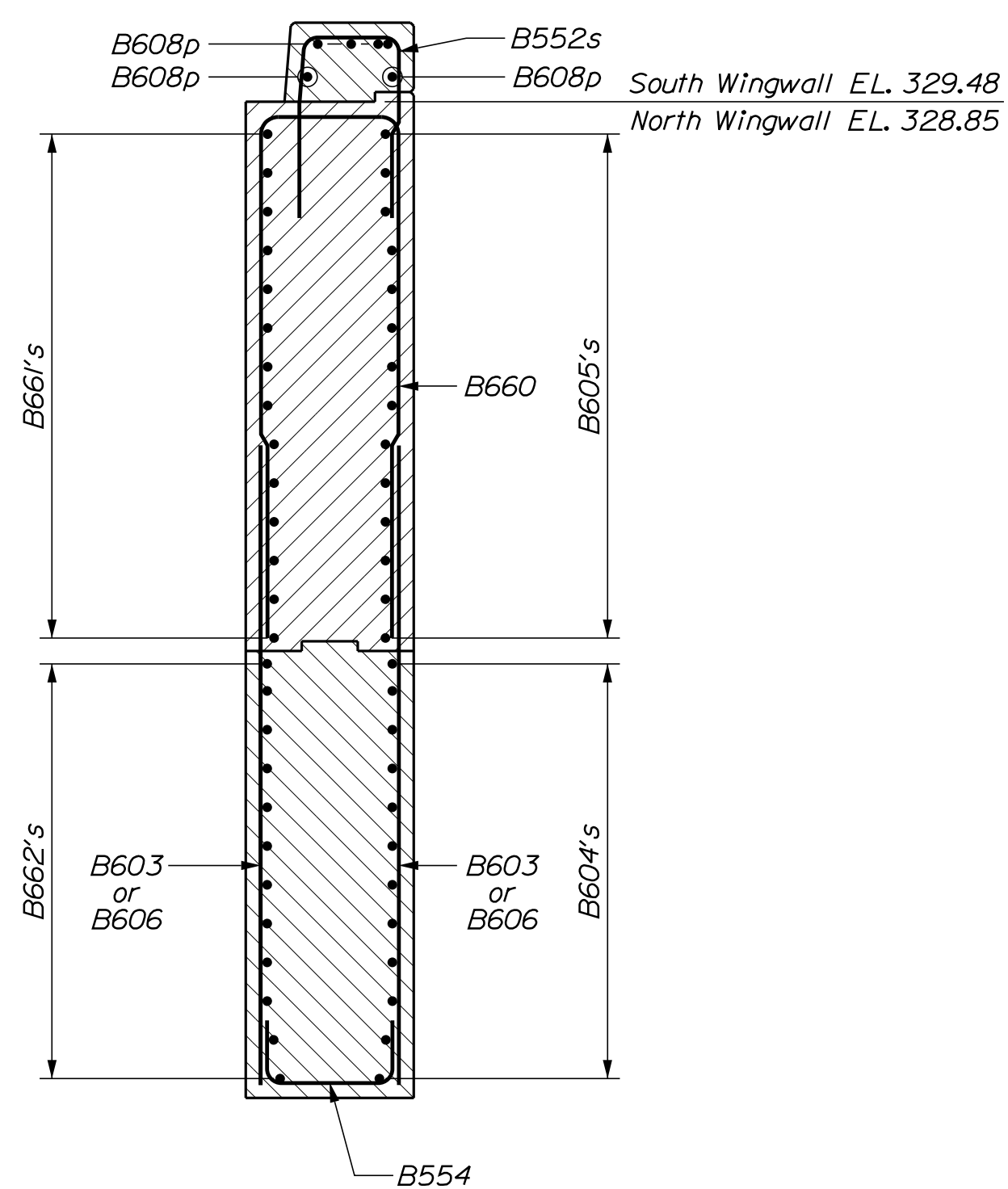
**SECTION AT PILE**  
Deck reinforcing not shown for clarity



**SECTION BETWEEN PILES**  
Deck reinforcing not shown for clarity



**WINGWALL SECTION**

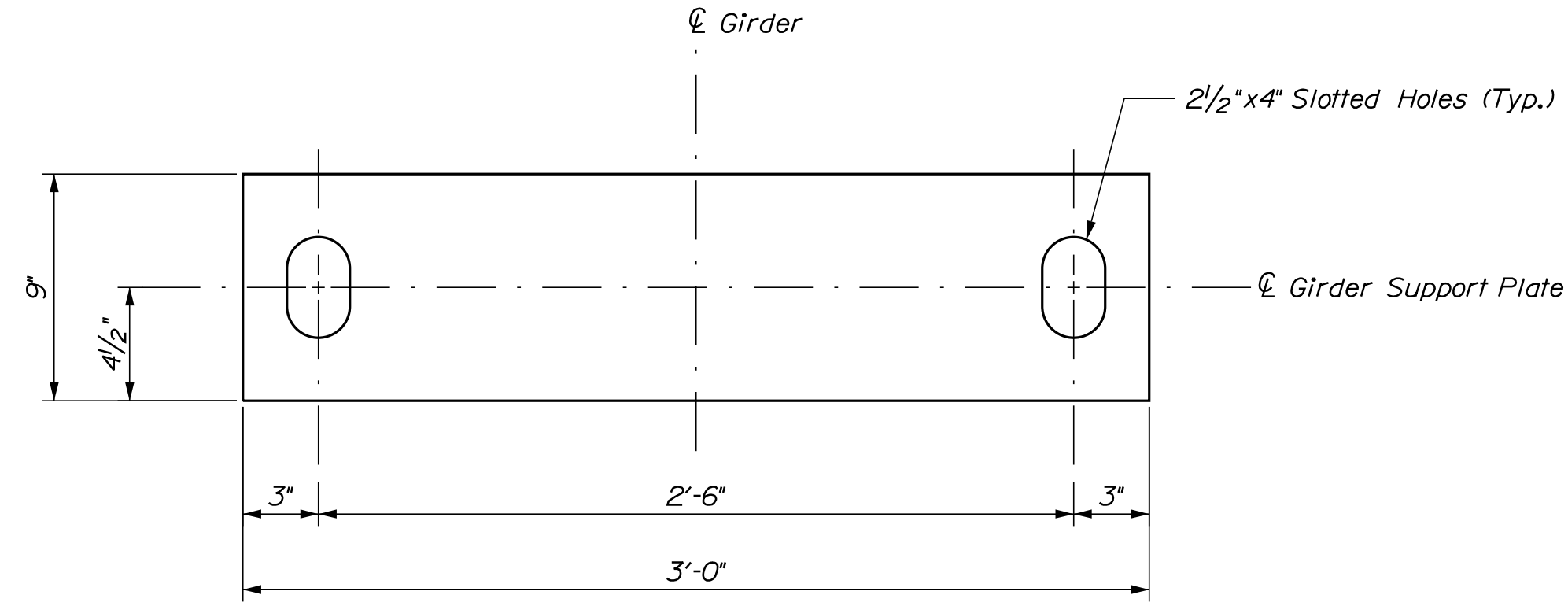


**WINGWALL SECTION**

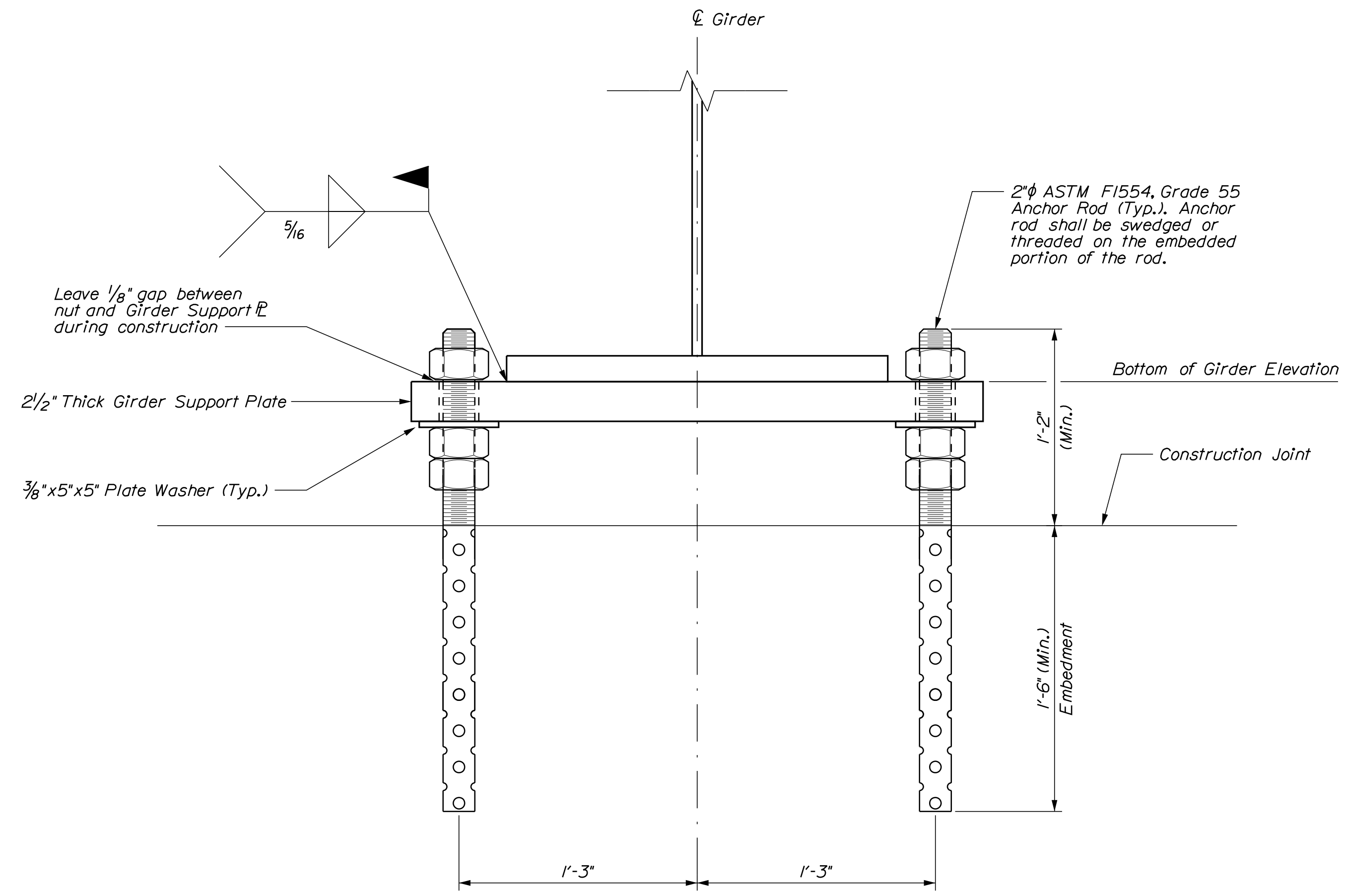
STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		STP-2187(600)		BRIDGE NO. 3287		WIN		21876.00		BRIDGE PLANS	
HALL BRIDGE		NEZINSCOT RIVER		OXFORD COUNTY		BUCKFIELD		ABUTMENT NO. 2		SECTIONS		SHEET NUMBER	
PROJ. MANAGER		M. PARLIN		BY		DATE		SIGNATURE		P.E. NUMBER		DATE	
DESIGN-DETAILED		J. HASBROUCK		D. SHAW		NOV. 2021		SIGNATURE		P.E. NUMBER		DATE	
CHECKED-REVIEWED		M. PARLIN		J. HASBROUCK		NOV. 2021		SIGNATURE		P.E. NUMBER		DATE	
DESIGN-DETAILED		DESIGNS-DETAILED		DESIGNS-DETAILED		DESIGNS-DETAILED		DESIGNS-DETAILED		DESIGNS-DETAILED		DESIGNS-DETAILED	
REVISIONS 1		REVISIONS 2		REVISIONS 3		REVISIONS 4		REVISIONS 1		REVISIONS 2		REVISIONS 3	
FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES	
26		OF 35											

GIRDER SUPPORT NOTES

1. Payment for fabrication and installation of the girder support assemblies at the abutments will be considered incidental to related Contract items.



GIRDER SUPPORT PLATE



GIRDER SUPPORT DETAIL

**ABUTMENT NO. 1  
BOTTOM OF GIRDER  
ELEVATIONS**

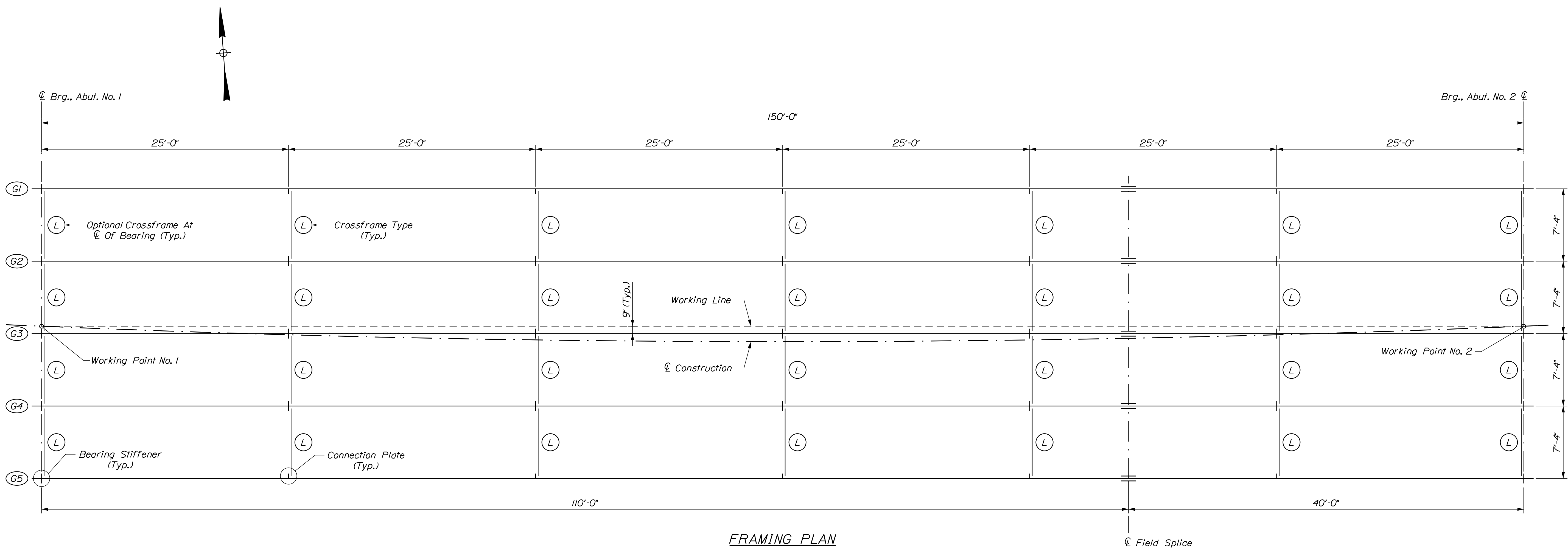
Girder	Elevation
G1	324.85
G2	325.06
G3	325.28
G4	325.49
G5	325.40

**ABUTMENT NO. 2  
BOTTOM OF GIRDER  
ELEVATIONS**

Girder	Elevation
G1	322.58
G2	322.83
G3	323.03
G4	323.26
G5	323.17

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		STP-2187(600)		BRIDGE NO. 3287		BRIDGE PLANS	
BUCKFIELD		NEZINSCOT RIVER		OXFORD COUNTY		HALL BRIDGE		GIRDER SUPPERT DETAILS	
SHEET NUMBER		27		OF 35		WIN		21876.00	
PROJ. MANAGER		M. PARLIN		BY		DATE		SIGNATURE	
DESIGN DETAILED		J. HASBROUCK		D. SHAW		NOV. 2021		P.E. NUMBER	
CHECKED/REVIEWED		M. PARLIN		J. HASBROUCK		NOV. 2021		DATE	
DESIGN DETAILED		REVISIONS 1		REVISIONS 2		REVISIONS 3		REVISIONS 4	
FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES	

Filename: ... \00\BRIDGE\MSTA\028\_Framing.dgn Division: BRIDGE Username: Joshua.P.Hasbrouck Date:11/17/2021



FRAMING PLAN

STRUCTURAL STEEL NOTES

- Camber ordinates, as shown, are computed to compensate for all dead load deflections and for the curvature of the finished grade profile.
- No transverse butt weld splices will be allowed in the flange plates or web plates within 10 feet or 10 percent of the span length (whichever is greater) from the points of maximum negative moment or maximum positive moment. Butt weld splices in flanges shall be not less than one foot from transverse butt welds in the web plates and no transverse web or flange butt welds shall be located within one foot of other transverse welds (e.g. connection plates to web welds) on either flange or web. No transverse butt weld splices will be allowed in areas of stress reversal.
- Sections of flange plates or web plates between transverse shop splices or between a transverse shop splice and a field splice shall be not less than 20 feet in length unless otherwise shown on the Plans.
- Bearing stiffeners shall be plumb after erection and dead loading of the structure.
- Intermediate crossframe or diaphragm connection plates may be either plumb or normal to the top flange.
- All connection plate and stiffener welds shall be 5/16" fillet welds.
- Prior to structural steel erection, the Contractor shall submit an erection plan and sequence to the Resident for approval.
- Ends of girder webs shall be vertical under full dead load.
- Drip Bars shall be used adjacent to Abutment 2, as shown in the Standard Details.
- Coat girder ends and cross frames to a distance of 10 feet from each Abutment centerline of bearing in accordance with Standard Specifications Section 506, Shop Applied Protective Coating - Steel (Zinc Rich Coating System), except NEPCOAT Qualified Products List C may be used. Payment for the coating will be incidental to Pay Item 504.702.
- After placement of the superstructure concrete, thoroughly clean the abutments of all stains with a method approved by the Resident. Payment will be considered incidental to related Contract items.
- Bolted field splice connections shall be made using 7/8" diameter ASTM F3125, Grade A325 Type 3 high strength bolts. Bolt hole size shall be 15/16" diameter. Field splice bolt threads shall be excluded from the shear plane.
- Bolted diaphragms or cross frame connections shall be made using 7/8" diameter, ASTM F3125, Grade A325, Type 3 high strength bolts. Hole size shall be 15/16" diameter. The minimum edge distance shall be 1 1/2" unless otherwise shown. Oversized or short-slotted holes are not permitted. Bolt threads shall be excluded from the shear plane of cross frame or diaphragm connections.
- Structural steel was designed with a vertical construction load of 50 lb/sf and lateral wind velocity during construction of 80 mph.
- Cross frames at the CL of bearing would be encased in the abutment concrete and are optional. The Contractor may use them for stability during construction or omit them.

BOTTOM OF SLAB ELEVATIONS

Girder	CL Abut. No. 1	10 Ft.	20 Ft.	30 Ft.	40 Ft.	50 Ft.	60 Ft.	70 Ft.	80 Ft.	90 Ft.	100 Ft.	110 Ft.	120 Ft.	130 Ft.	140 Ft.	CL Abut. No. 2
G1	330.52	330.45	330.38	330.30	330.22	330.11	330.00	329.86	329.71	329.55	329.36	329.17	328.95	328.73	328.50	328.27
G2	330.74	330.68	330.61	330.54	330.45	330.35	330.24	330.10	329.95	329.79	329.60	329.40	329.19	328.96	328.73	328.49
G3	330.96	330.90	330.83	330.76	330.67	330.57	330.46	330.32	330.17	330.01	329.82	329.62	329.41	329.18	328.95	328.71
G4	331.18	331.12	331.05	330.98	330.89	330.79	330.68	330.54	330.39	330.23	330.04	329.84	329.63	329.40	329.17	328.93
G5	331.09	331.05	331.00	330.94	330.87	330.78	330.67	330.54	330.39	330.22	329.03	329.82	329.59	329.35	329.10	328.84

TABLE OF DEFLECTIONS ~ GIRDERS 1 AND 5 (Inches)

	CL Abut. No. 1	10 Ft.	20 Ft.	30 Ft.	40 Ft.	50 Ft.	60 Ft.	70 Ft.	80 Ft.	90 Ft.	100 Ft.	110 Ft.	120 Ft.	130 Ft.	140 Ft.	CL Abut. No. 2
Steel Dead Load	0.00	0.41	0.79	1.14	1.43	1.67	1.83	1.91	1.91	1.83	1.67	1.43	1.14	0.79	0.41	0.00
Fluid Dead Load	0.00	0.87	1.69	2.44	3.07	3.56	3.90	4.08	4.08	3.90	3.56	3.07	2.44	1.69	0.87	0.00
Superimposed Dead Load	0.00	0.27	0.52	0.75	0.94	1.10	1.20	1.26	1.26	1.20	1.10	0.94	0.75	0.52	0.27	0.00

TABLE OF DEFLECTIONS ~ GIRDERS 2, 3, AND 4 (Inches)

	CL Abut. No. 1	10 Ft.	20 Ft.	30 Ft.	40 Ft.	50 Ft.	60 Ft.	70 Ft.	80 Ft.	90 Ft.	100 Ft.	110 Ft.	120 Ft.	130 Ft.	140 Ft.	CL Abut. No. 2
Steel Dead Load	0.00	0.42	0.81	1.17	1.47	1.71	1.87	1.96	1.96	1.87	1.71	1.47	1.17	0.81	0.42	0.00
Fluid Dead Load	0.00	0.92	1.79	2.58	3.25	3.77	4.13	4.32	4.32	4.13	3.77	3.25	2.58	1.79	0.92	0.00
Superimposed Dead Load	0.00	0.27	0.52	0.75	0.94	1.10	1.20	1.26	1.26	1.20	1.10	0.94	0.75	0.52	0.27	0.00

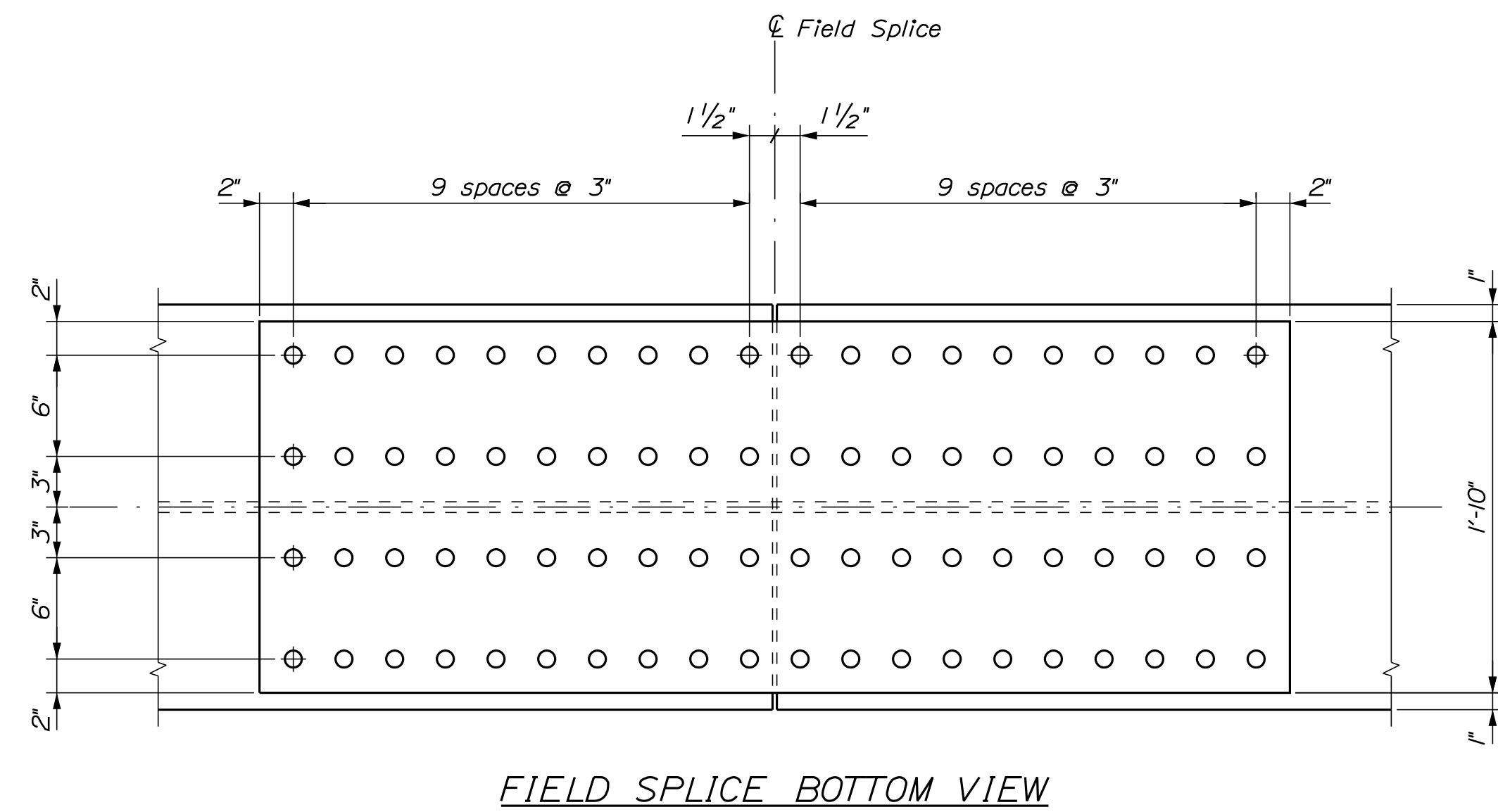
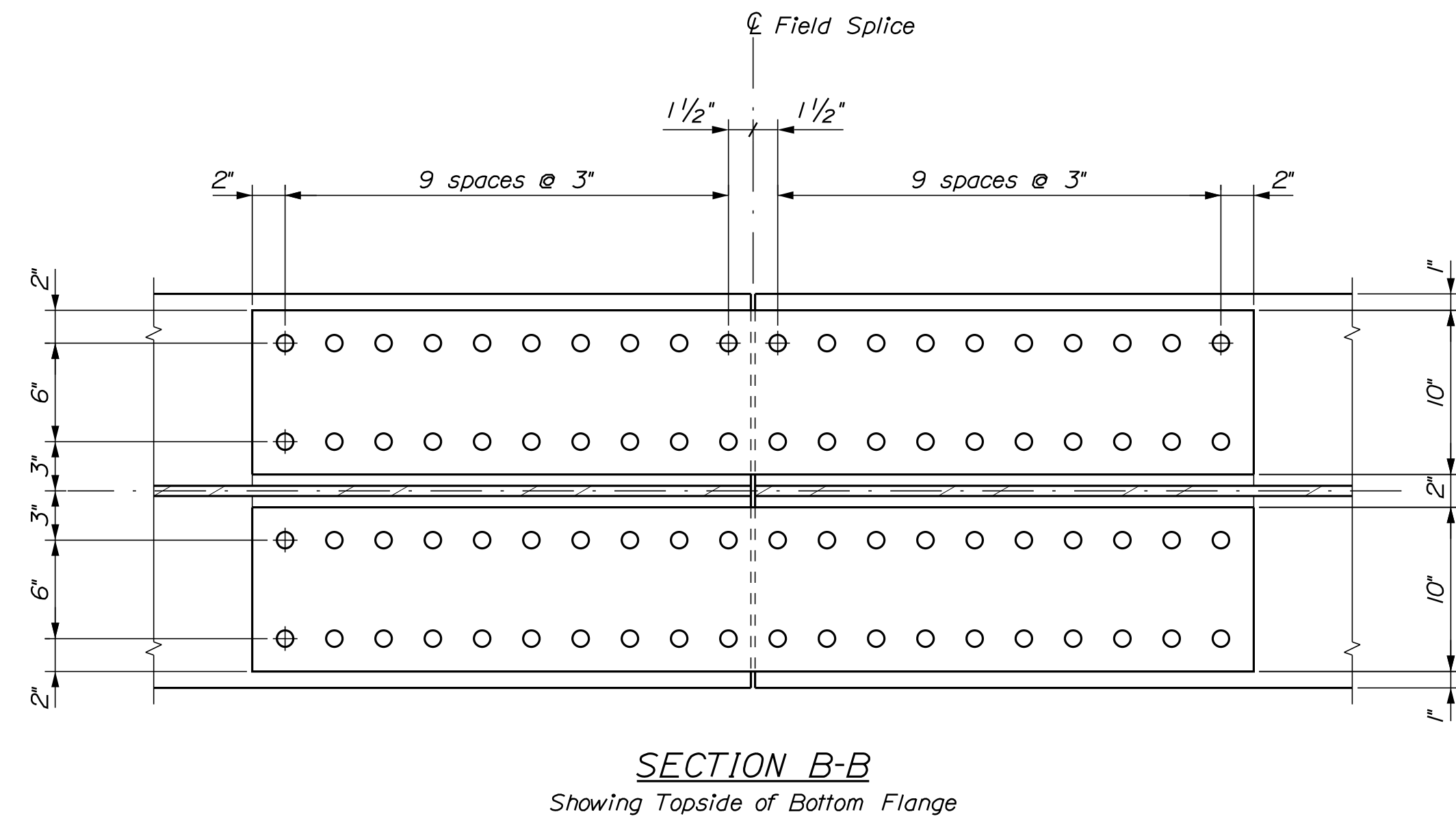
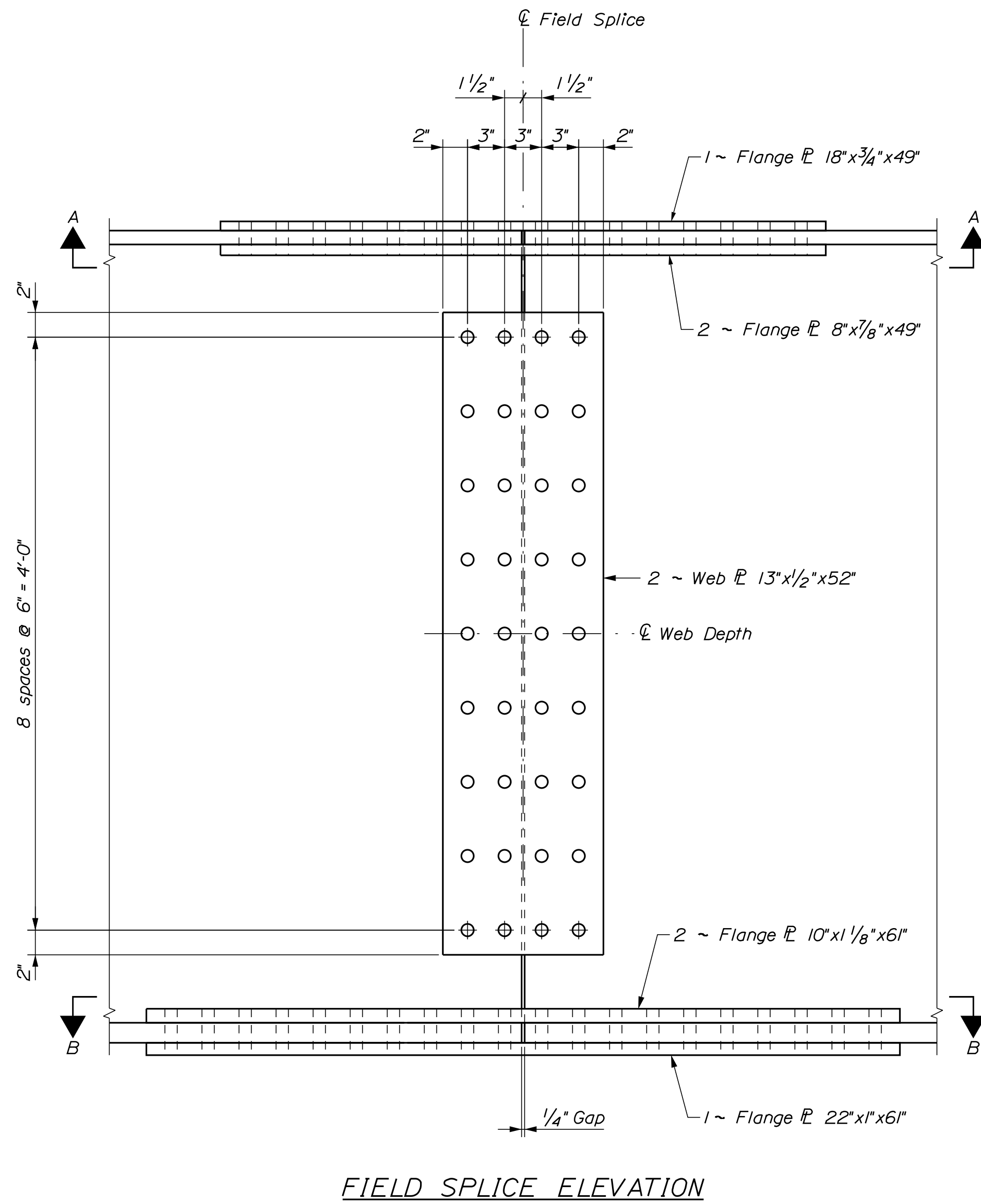
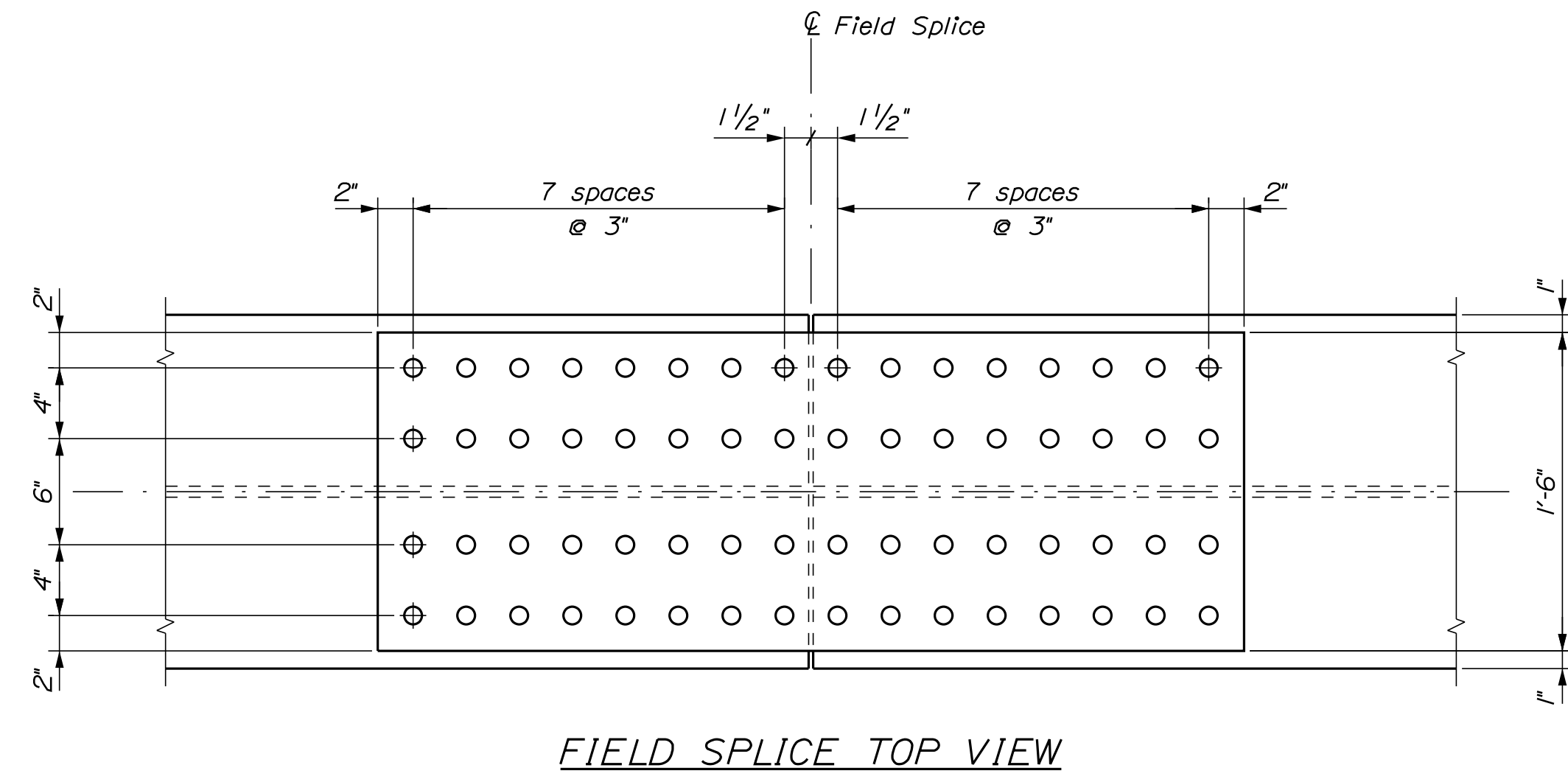
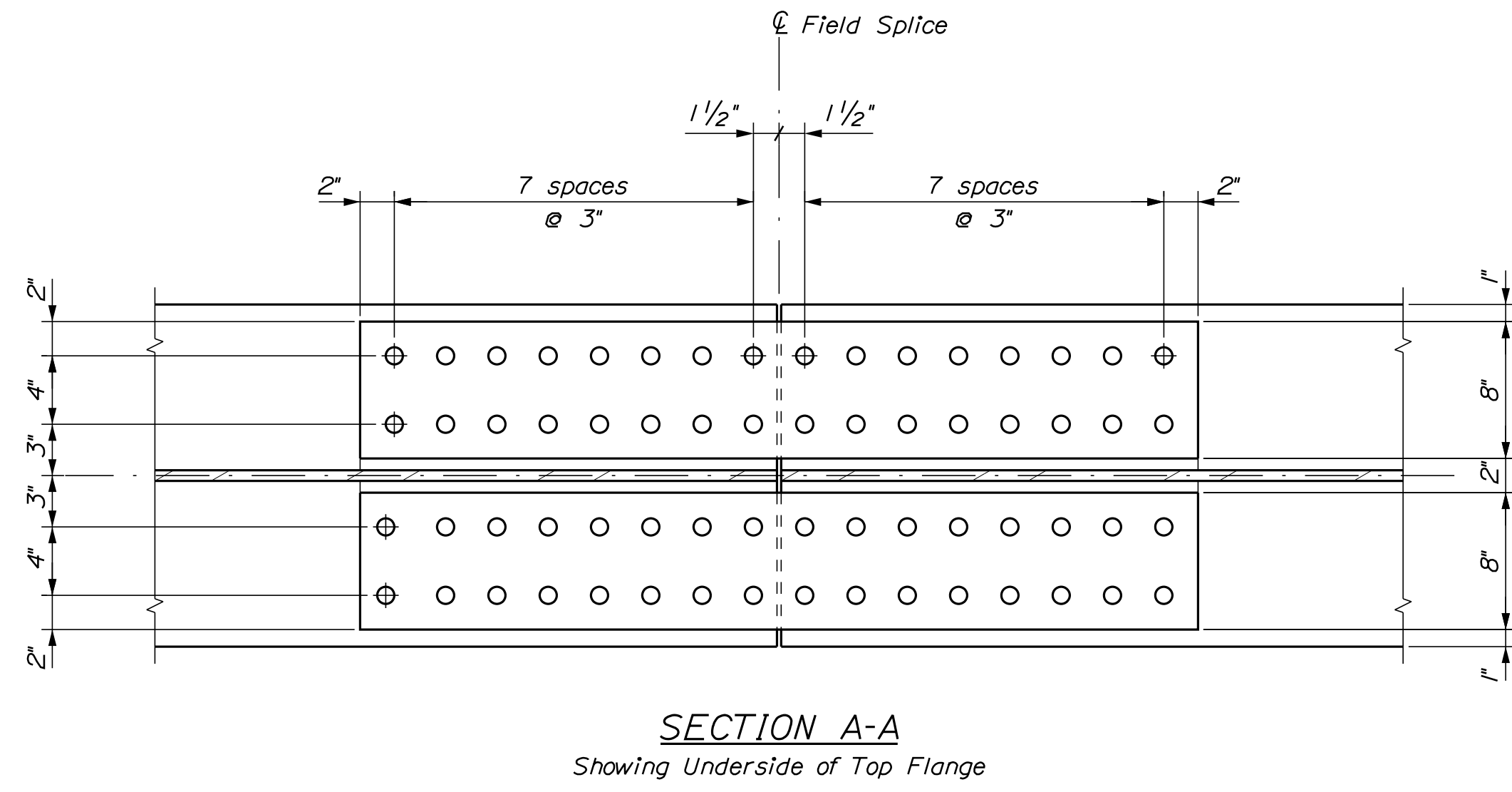
STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
STP-2187(600)  
BRIDGE NO. 3287  
WIN 21876.00  
BRIDGE PLANS

HALL BRIDGE  
NEZINSCOT RIVER  
OXFORD COUNTY  
BUCKFIELD  
FRAMING PLAN

PROJ. MANAGER	BY	DATE
M. PARLIN	J. HASBROUCK	NOV. 2021
DESIGN-DETAILED	J. HASBROUCK	NOV. 2021
CHECKED-REVIEWED	D. SHAW	NOV. 2021
DESIGN-DETAILED	J. HASBROUCK	NOV. 2021
DESIGN-DETAILED	J. HASBROUCK	NOV. 2021
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

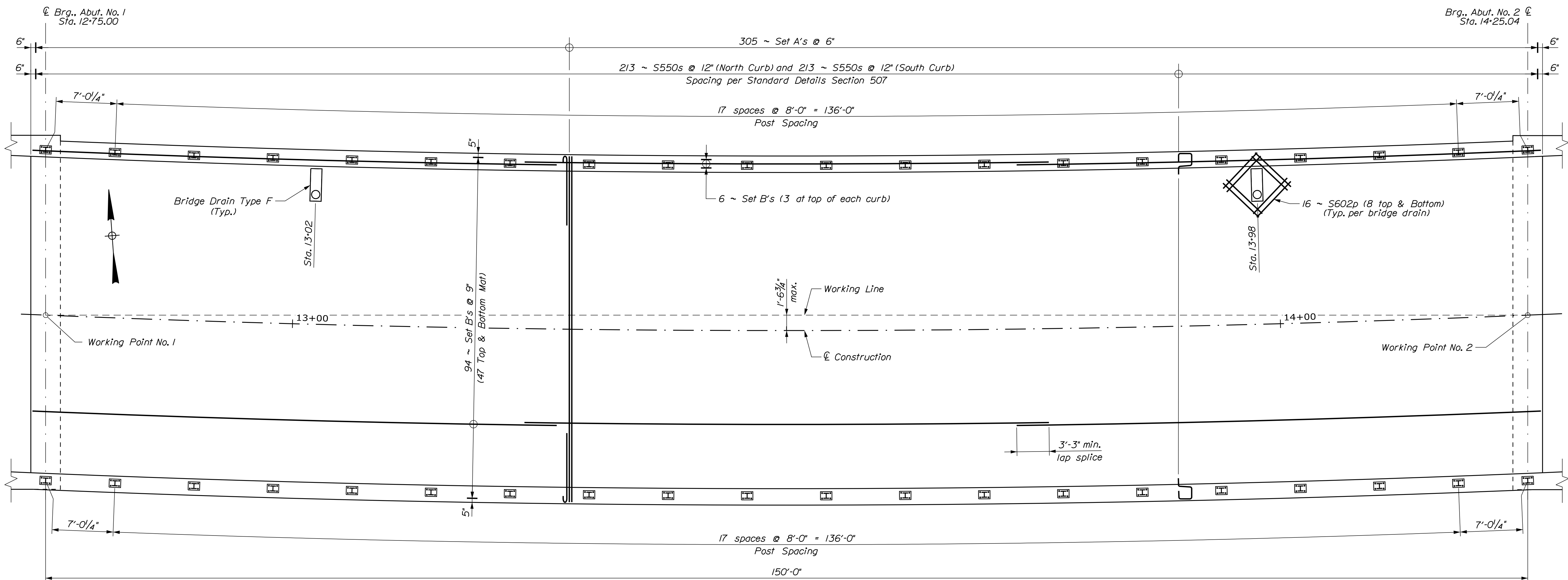
SHEET NUMBER  
28  
OF 35





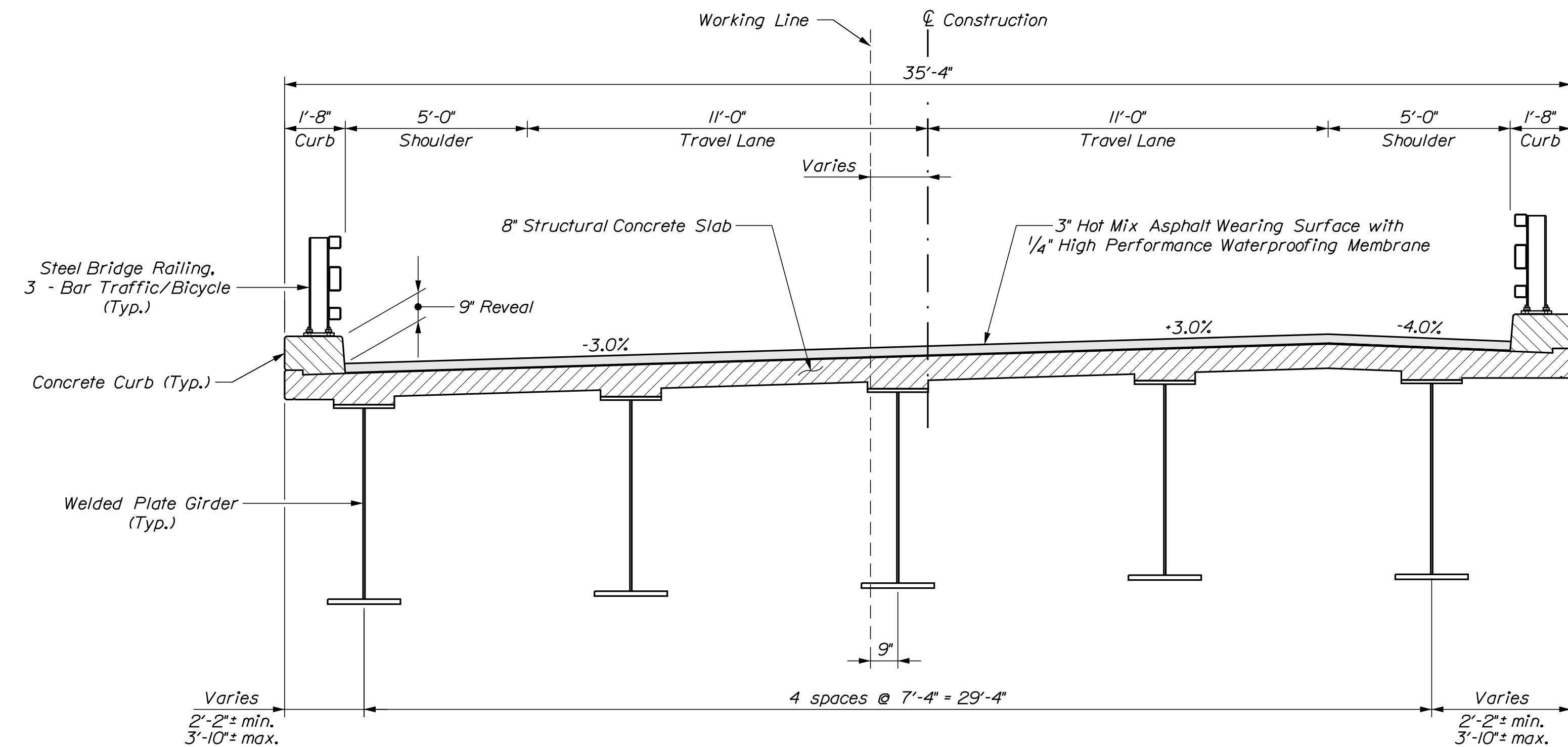
PROJ. MANAGER	BY	DATE
J. HASBROUCK	J. HASBROUCK	NOV. 2021
CHECKED/REVIEWED	D. SHAW	NOV. 2021
DESIGNED/DETAILED	J. HASBROUCK	NOV. 2021
DESIGNED/DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

HALL BRIDGE  
NEZINSCOT RIVER  
OXFORD COUNTY  
BUCKFIELD  
GIRDER SPLICE DETAIL



**SUPERSTRUCTURE PLAN**

Set A = 2 ~ S602p (35'), 2 ~ S650s (1 at each fascia)  
Set B = 3 ~ S601p (53'-1')

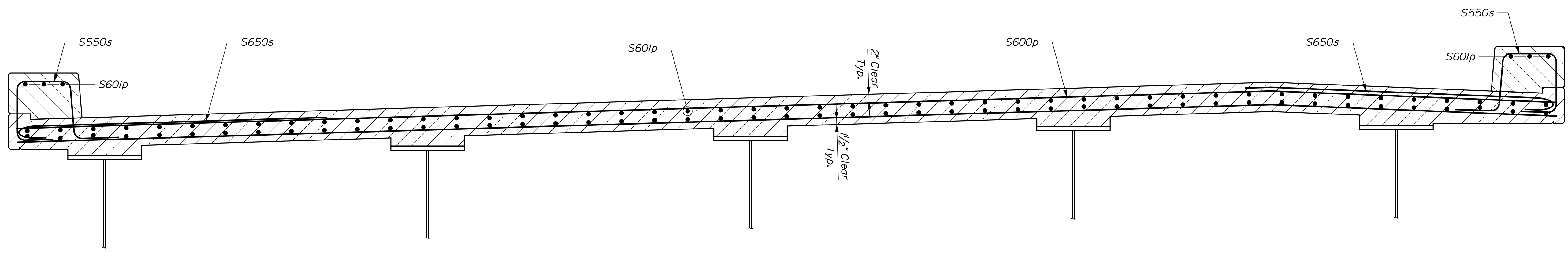


**TYPICAL PROPOSED BRIDGE SECTION**

**SUPERSTRUCTURE NOTES**

1. The theoretical blocking used for design of the structure is  $3\frac{5}{8}$  inches at the centerline of bearing of the abutments. Refer to Standard Detail 502(03) for blocking details.
2. Reinforcing steel shall have a minimum concrete cover of 2 inches unless otherwise noted.
3. Adjust reinforcing steel to fit around the bridge drains in a manner approved by the Resident. Do not cut transverse reinforcing bars.
4. Form a one inch V-groove on the fascias at the horizontal joint between the curb and slab.
5. The superstructure slab concrete shall be placed continuously and shall be kept plastic until the entire placement has been made.
6. The use of Precast Concrete Deck Panels will not be allowed on this project.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2187(600)		BRIDGE NO. 3287		BRIDGE PLANS	
PROJECT: HALL BRIDGE NEZINSCOT RIVER BUCKFIELD		COUNTY: OXFORD		SHEET NUMBER: 31		OF 35	
PROJ. MANAGER	BY	DATE	DESIGN DETAILED	DATE	SIGNATURE	P.E. NUMBER	DATE
J. HASBROUCK	J. HASBROUCK	NOV. 2021	D. SHAW	NOV. 2021			
CHECKED/REVIEWED	DESIGN DETAILED	REVISIONS 1	REVISIONS 2	REVISIONS 3	REVISIONS 4	FIELD CHANGES	
M. PARLIN	J. HASBROUCK						
WIN	21876.00						



SUPERSTRUCTURE SECTION

SHEET NUMBER

32

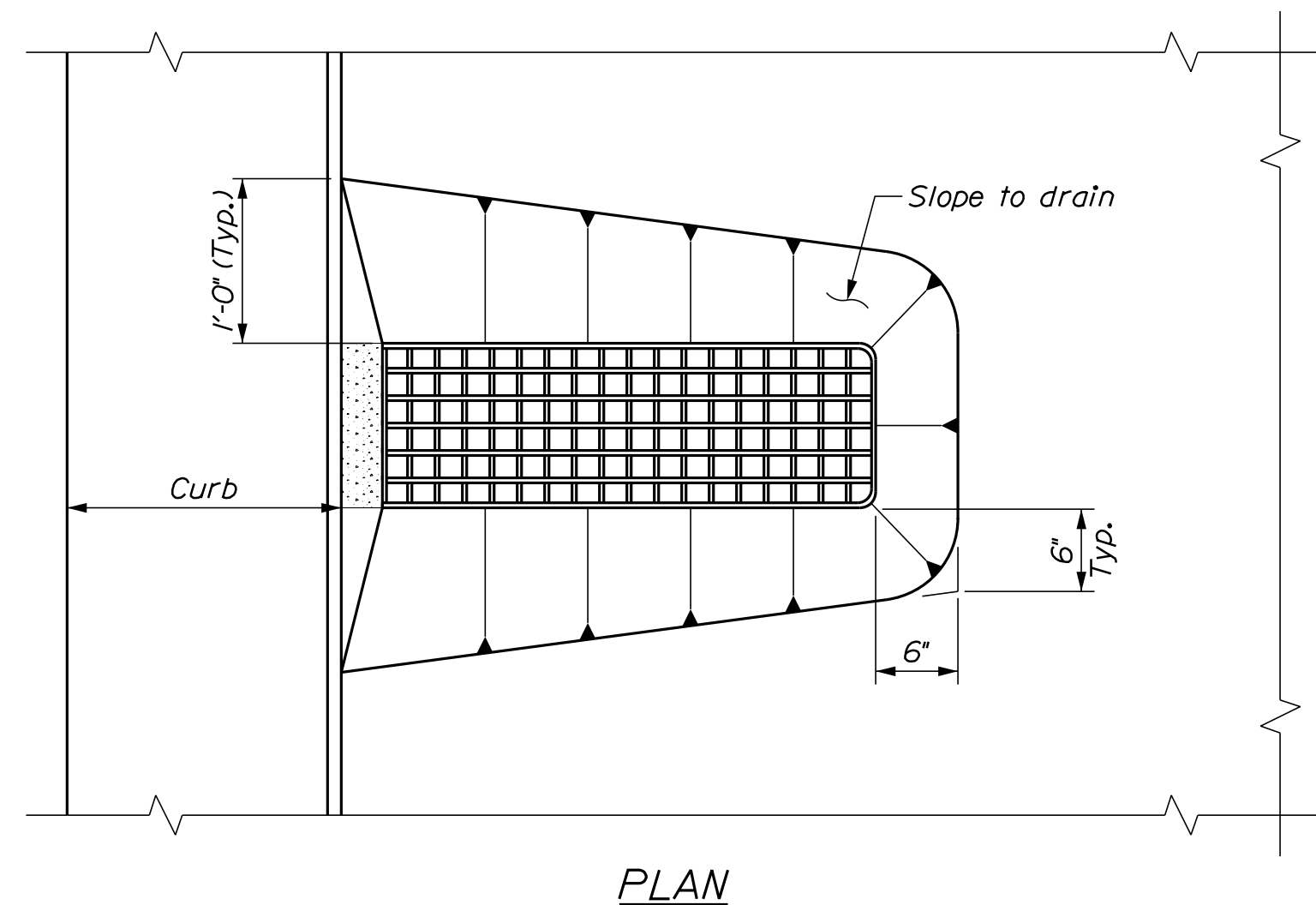
OF 35

HALL BRIDGE  
 NEZINSCOT RIVER  
 BUCKFIELD OXFORD COUNTY  
**SUPERSTRUCTURE DETAILS**

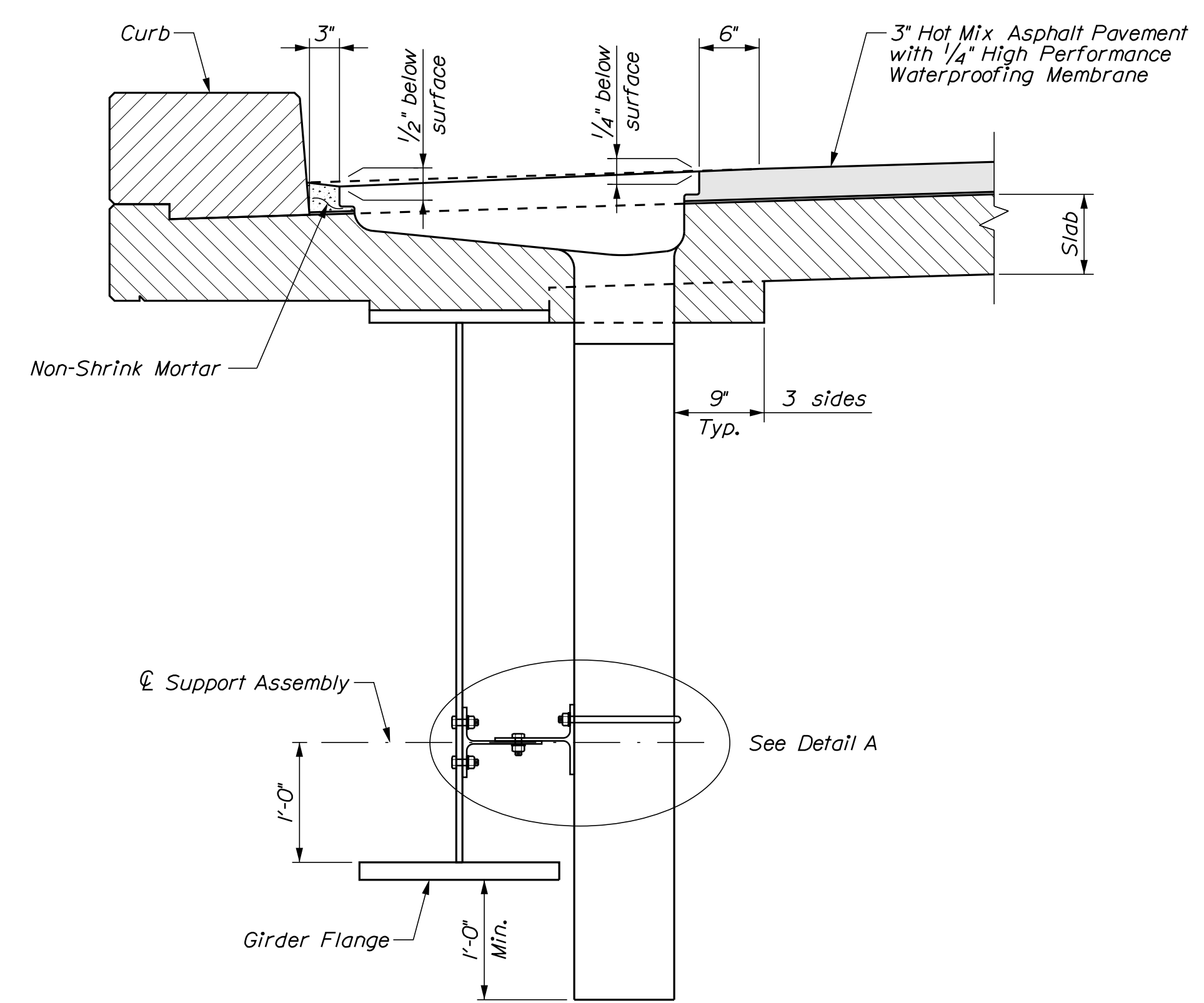
PROJ. MANAGER	M. PARLIN	BY	DATE
DESIGN-DETAILED	J. HASBROUCK	D. SHAW	NOV. 2021
CHECKED-REVIEWED	MARGON	J. HASBROUCK	NOV. 2021
DESIGNS-DETAILED2			
DESIGNS-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

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 SIGNATURE  
 P.E. NUMBER  
 DATE

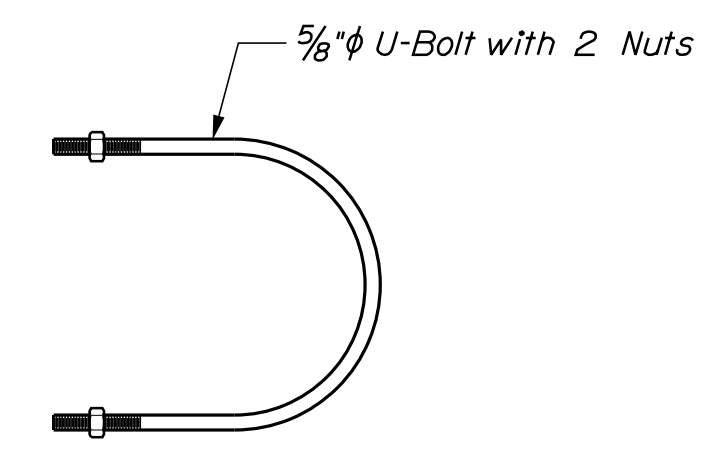
STATE OF MAINE  
 DEPARTMENT OF TRANSPORTATION  
**STP-2187(600)**  
 BRIDGE NO. 3287  
**WIN 21876.00**  
 BRIDGE PLANS



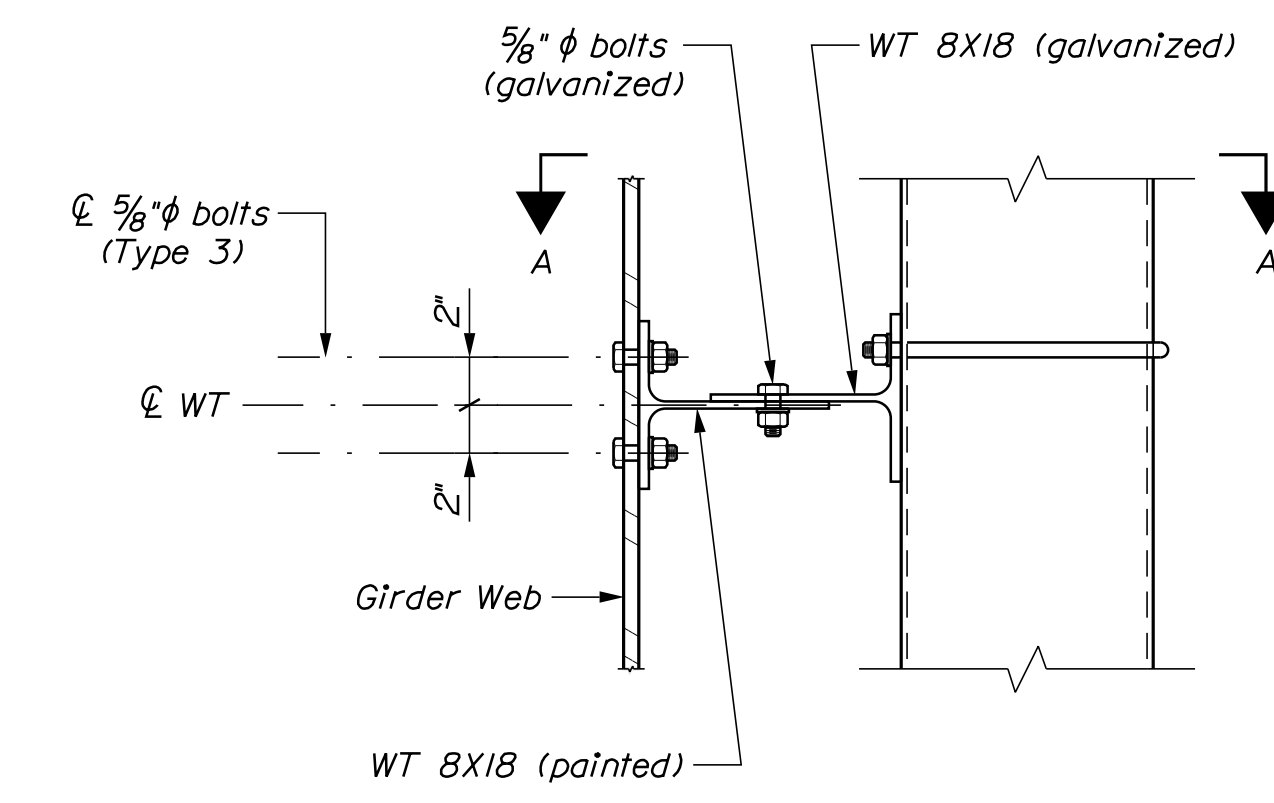
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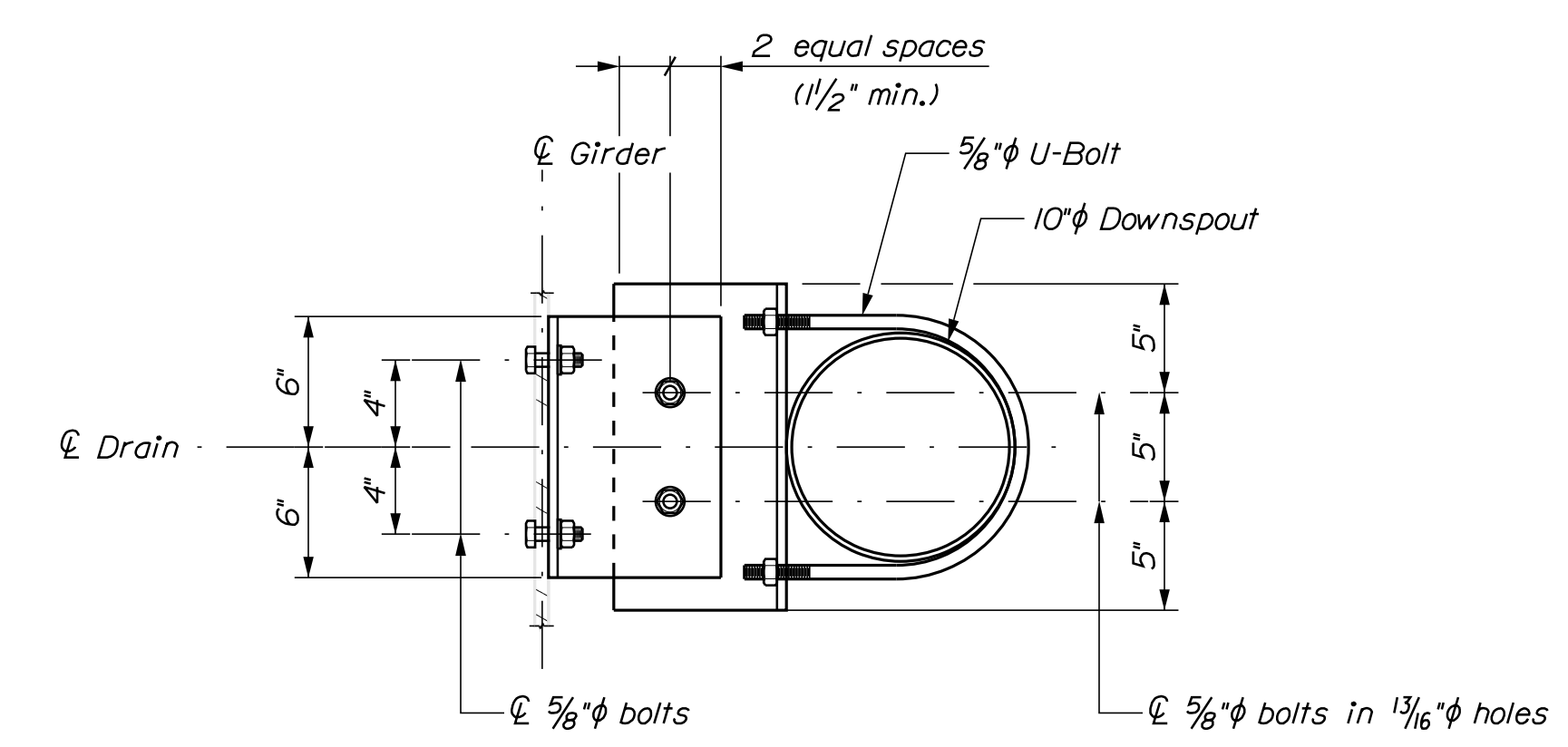
FRP BRIDGE DRAIN TYPE F ELEVATION



U-BOLT DETAIL



DETAIL A



SECTION A-A

FRP BRIDGE DRAIN NOTES

1. FRP Bridge Drains shall be designed and detailed based on the dimensions for the bridge drain details shown, and in accordance with Special Provisions Section 502, Fiber Reinforced Polymer Bridge Drains.
2. Except as noted, the drain support assembly and all associated hardware shall be galvanized in accordance with Standard Specifications Section 506.
3. Coat painted steel in accordance with Standard Specifications Section 506, Shop Applied Protective Coating - Steel (Zinc Rich Coating System), except NEPCOAT Qualified Products List C may be used.
4. Support assembly components and all hardware shall meet the grade requirements identified in Standard Detail 502(24).

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
STP-2187(600)		BRIDGE NO. 3287	
WIN		21876.00	
BRIDGE PLANS			
PROJ. MANAGER	M. PARLIN	BY	D. SHAW
DESIGN DETAILED	J. HASBROUCK	DATE	NOV. 2021
CHECKED/REVIEWED	J. HASBROUCK	DATE	NOV. 2021
DESIGN DETAILED			
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
HALL BRIDGE		OXFORD COUNTY	
NEZINSCOT RIVER			
BUCKFIELD			
FRP BRIDGE DRAINS			
SHEET NUMBER			
33			
OF 35			



Town, County, State \_\_\_\_\_  
 Approx. Property Lines \_\_\_\_\_  
 Existing Right of Way \_\_\_\_\_  
 Limits of Wrought Portion \_\_\_\_\_  
 Control Of Access \_\_\_\_\_  
 New Right of Way \_\_\_\_\_  
 New Easement \_\_\_\_\_  
 New Temporary Rights \_\_\_\_\_  
 New R/W Within Existing R/W \_\_\_\_\_

New R/W Along Existing R/W \_\_\_\_\_  
 Building \_\_\_\_\_  
 Trees Conifer \_\_\_\_\_  
 Tree Line \_\_\_\_\_  
 Water Edge \_\_\_\_\_  
 Ledge \_\_\_\_\_  
 Fence \_\_\_\_\_  
 Sign \_\_\_\_\_

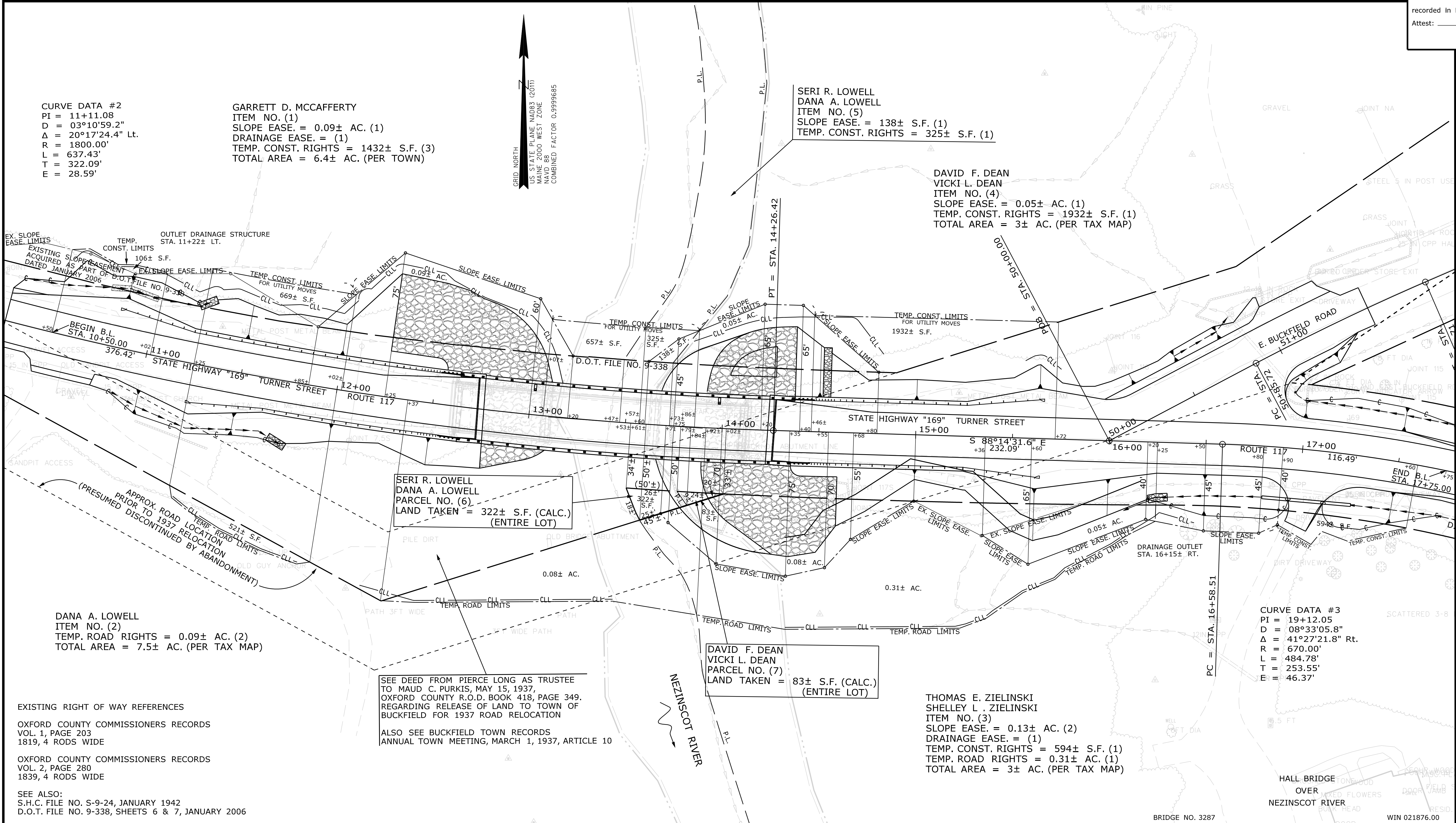
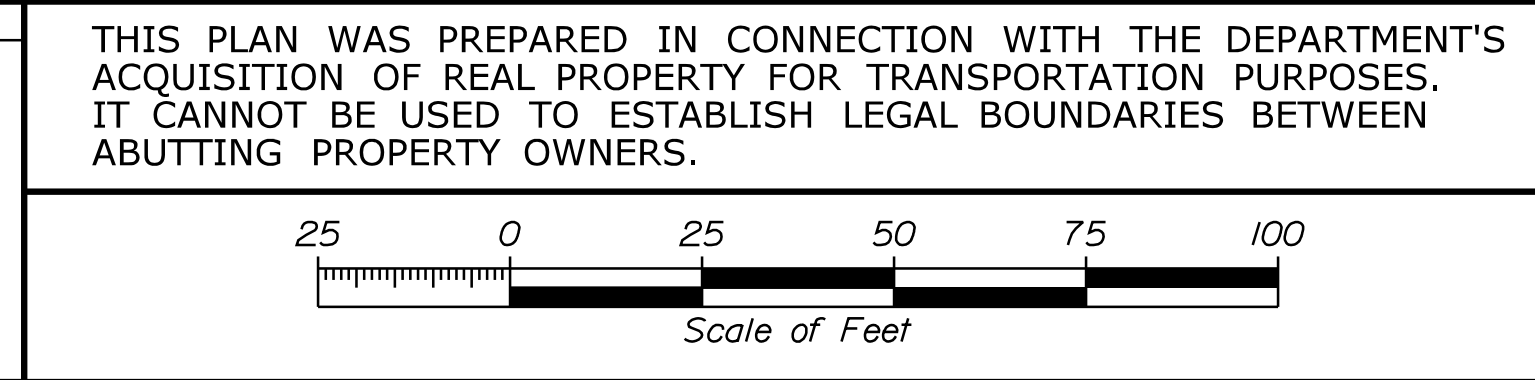
Clearing Limit Line \_\_\_\_\_  
 Bush Line \_\_\_\_\_  
 Rock/Boulder \_\_\_\_\_  
 Flag Pole \_\_\_\_\_  
 Barb Wire \_\_\_\_\_  
 Stockade \_\_\_\_\_  
 Well \_\_\_\_\_  
 Mailbox \_\_\_\_\_

Sanitary Sewer \_\_\_\_\_  
 Telephone Line \_\_\_\_\_  
 Electric Line \_\_\_\_\_  
 Water Line \_\_\_\_\_  
 Underdrain Line \_\_\_\_\_  
 Gas Line \_\_\_\_\_  
 Guardrail \_\_\_\_\_  
 Culvert \_\_\_\_\_

Traveled Way \_\_\_\_\_  
 Ditch \_\_\_\_\_  
 Catch Basin \_\_\_\_\_  
 Manhole \_\_\_\_\_  
 Sewer Manhole \_\_\_\_\_  
 Utility Pole \_\_\_\_\_  
 Fire Hydrant \_\_\_\_\_  
 Curbing \_\_\_\_\_

PLAN LEGEND  
 Existing \_\_\_\_\_ Proposed \_\_\_\_\_  
 Cut Line \_\_\_\_\_ Fill Line \_\_\_\_\_  
 Stonewall \_\_\_\_\_ Retaining Wall \_\_\_\_\_  
 Baseline \_\_\_\_\_  
 Monument \_\_\_\_\_  
 Iron Rod Found \_\_\_\_\_  
 Replacement Pin Set \_\_\_\_\_  
 Traverse Point \_\_\_\_\_  
 Pipe Found \_\_\_\_\_

STATE OF MAINE  
 REGISTRY OF DEEDS  
 COUNTY \_\_\_\_\_  
 RECEIVED \_\_\_\_\_  
 at \_\_\_\_\_ h \_\_\_\_\_ m \_\_\_\_\_ M and  
 recorded in Plan Bk \_\_\_\_\_, Pg. \_\_\_\_\_  
 Attest: \_\_\_\_\_ REGISTER



CURVE DATA #2  
 PI = 11+11.08  
 D = 03°10'59.2" Lt.  
 Δ = 20°17'24.4" Lt.  
 R = 1800.00'  
 L = 637.43'  
 T = 322.09'  
 E = 28.59'

GARRETT D. MCCAFFERTY  
 ITEM NO. (1)  
 SLOPE EASE. = 0.09± AC. (1)  
 DRAINAGE EASE. = (1)  
 TEMP. CONST. RIGHTS = 1432± S.F. (3)  
 TOTAL AREA = 6.4± AC. (PER TOWN)

SERI R. LOWELL  
 DANA A. LOWELL  
 ITEM NO. (5)  
 SLOPE EASE. = 138± S.F. (1)  
 TEMP. CONST. RIGHTS = 325± S.F. (1)

DAVID F. DEAN  
 VICKI L. DEAN  
 ITEM NO. (4)  
 SLOPE EASE. = 0.05± AC. (1)  
 TEMP. CONST. RIGHTS = 1932± S.F. (1)  
 TOTAL AREA = 3± AC. (PER TAX MAP)

SERI R. LOWELL  
 DANA A. LOWELL  
 PARCEL NO. (6)  
 LAND TAKEN = 322± S.F. (CALC.)  
 (ENTIRE LOT)

DAVID F. DEAN  
 VICKI L. DEAN  
 PARCEL NO. (7)  
 LAND TAKEN = 83± S.F. (CALC.)  
 (ENTIRE LOT)

THOMAS E. ZIELINSKI  
 SHELLEY L. ZIELINSKI  
 ITEM NO. (3)  
 SLOPE EASE. = 0.13± AC. (2)  
 DRAINAGE EASE. = (1)  
 TEMP. CONST. RIGHTS = 594± S.F. (1)  
 TEMP. ROAD RIGHTS = 0.31± AC. (1)  
 TOTAL AREA = 3± AC. (PER TAX MAP)

DANA A. LOWELL  
 ITEM NO. (2)  
 TEMP. ROAD RIGHTS = 0.09± AC. (2)  
 TOTAL AREA = 7.5± AC. (PER TAX MAP)

SEE DEED FROM PIERCE LONG AS TRUSTEE  
 TO MAUD C. PURKIS, MAY 15, 1937,  
 OXFORD COUNTY R.O.D. BOOK 418, PAGE 349.  
 REGARDING RELEASE OF LAND TO TOWN OF  
 BUCKFIELD FOR 1937 ROAD RELOCATION  
 ALSO SEE BUCKFIELD TOWN RECORDS  
 ANNUAL TOWN MEETING, MARCH 1, 1937, ARTICLE 10

EXISTING RIGHT OF WAY REFERENCES  
 OXFORD COUNTY COMMISSIONERS RECORDS  
 VOL. 1, PAGE 203  
 1819, 4 RODS WIDE  
 OXFORD COUNTY COMMISSIONERS RECORDS  
 VOL. 2, PAGE 280  
 1839, 4 RODS WIDE  
 SEE ALSO:  
 S.H.C. FILE NO. S-9-24, JANUARY 1942  
 D.O.T. FILE NO. 9-338, SHEETS 6 & 7, JANUARY 2006

ITEM	TECH	CHECKED
EXISTING CONDITION PLAN	PNS	
FINAL RIGHT OF WAY	PNS	
AREAS		

STATE OF MAINE  
 DEPARTMENT OF TRANSPORTATION  
 16 STATE HOUSE STATION - AUGUSTA, ME 04333-0016 - 207-624-3460  
 BUCKFIELD  
 RIGHT OF WAY MAP

NO.	DATE	REVISIONS DESCRIPTION	BY	PLAN FILED IN PLAN BOOK				PAGE COUNTY RECORD				BRUCE A. VAN NOTE COMMISSIONER JOYCE NOEL TAYLOR CHIEF ENGINEER DATE	
				NO.	GRANTOR	INSTRUMENT	DATE	BOOK	PAGE	COND.	09-27-21		5639

STATE HIGHWAY "169"  
 ROUTE 117 TURNER STREET  
 BUCKFIELD OXFORD COUNTY  
 FEDERAL AID PROJECT NO. STP-2187(600)

JUNE 2021  
 SCALE 1" = 25'  
 RIGHT-OF-WAY MAP  
 SHEET 1 OF 1  
 D.O.T. FILE NO. 9-415

SHEET NUMBER  
**35**  
 OF 35

Username: Joshua.P.Hosbrouck Date:11/9/2021

Division: BRIDGE

Filename: ...00\ROW\MSTA001\_RWP\PLAN1.dgn