

**HOYLE
TANNER**

106 Lafayette Street, Unit 2D • Yarmouth, ME 04096
(207) 844-8102 • www.hoyletanner.com

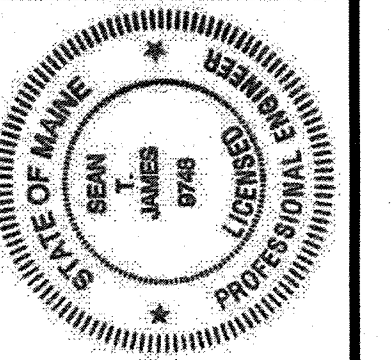


Concrete	
Class "A"	f 'c = 4000 psi
Class "LP"	f 'c = 5000 psi
Class "P"	f 'c = 8000 psi
	f 'ci = 6500 psi
Low-Carbon Chromium	f y = 100,000 psi
Prestressing Strand	F μ = 270,000 psi

Maintain one lane of alternating traffic using temporary signals and staged construction.

Title Sheet	1
Estimated Quantities	2
General Construction Notes	3
General Plans	4-6
Profiles	7-9
Boring Location Plan	10
Interpretive Subsurface Profile	11-12
Boring Logs	13-16
Staged Construction	17
Typical Sections	18
Cross Sections	19-43
Abutment Typical Section	44
Abutment No. 1 Plan and Elevation	45
Abutment No. 2 Plan and Elevation	46
Abutment No. 1 Reinforcing	47
Abutment No. 1 Sections	48
Wingwall and Approach Slab Details	49
Framing Plan	50
Beam Details	51-52
Superstructure Plan	53
Superstructure Reinforcing	54
Diaphragm Reinforcing	55
Combination Railing	56-58
Bicycle Railing	59
Miscellaneous Details	60
Reinforcing Steel Schedule	61
Right of Way Plans	62-64

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	
APPROVED	DATE
COMMISSIONER: <i>[Signature]</i>	5-21-24
CHIEF ENGINEER: <i>[Signature]</i>	3-21-2024




SIGNATURE

9748
P.E. NUMBER

3/13/2024
DATE

PROJECT INFORMATION	
PROGRAM	Bridge
PROJECT MANAGER	Andrew Lathie
DESIGNER	Sean James
CONSULTANT	Hoyle, Tanner & Assoc., Inc.
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

YARMOUTH-FREEPORT COUSINS RIVER BRIDGE

TITLE SHEET

SHEET NUMBER

1

OF 64

<u>PROJECT LOCATION</u>	Route 1 / Cousins River Bridge (#2183) over Cousins River. Located on the Yarmouth/Freeport Town Line. Lat./Long. 43°48'45.68N 70°09'12.60" W
<u>OUTLINE OF WORK</u>	Bridge Replacement

GENERAL CONSTRUCTION NOTES

1. For easements, construction limits, and right of way lines, refer to the Right of Way Map.

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. 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.

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

6. 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.

7. All embankment material, except as otherwise shown, placed below EL 5.0 shall be Granular Borrow meeting the requirements of Standard Specifications Subsection 703.19, Granular Borrow, for Material for Underwater Backfill.

8. Place riprap on sideslopes up to EL 5.0 or as shown.

9. Construct the riprap shelf at:
EL 7.0 at Abutment No. 1
EL 6.0 at Abutment No. 2

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

11. 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.

12. Place a 24 inch wide strip of Erosion Control Blanket on the sideslopes along the top of the riprap and behind the wingwalls.

13. A MASH compliant guardrail end treatment shall be installed concurrently with the placement of each section of beam guardrail.

14. Where it is apparent that runoff will cause continual erosion, 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. 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 and sidewalks,
Fascias down to the drip notch,
Concrete barrier railing,
Top of abutment backwalls and wingwalls, and
To one foot below the ground on vertical walls against earth.

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

17. 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.

18. Reports on hydrology and/or hydraulics applicable to the bridge site may be accessed at the MaineDOT web address. The reports are 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.

19. The project geotechnical report titled: Geotechnical Design Report Cousins River Bridge, Yarmouth-Freeport, Maine, WIN 021725.00, dated November 2023, may be accessed at the MaineDOT web address.

20. 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.

21. 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 and Time.

22. There is sufficient normal stress above the ULFGA in the post-constructed condition to prevent buoyant uplift at tidal water levels up to 2 feet above Q100 Storm Surge Water Level. During construction, ULFGA may be subject to buoyant forces resulting from tidal and artesian water levels. The Contractor is responsible for controlling buoyancy of the ULFGA during construction. See Special Provision 203.

23. Static groundwater levels measured during the subsurface investigation are provided on the boring logs. Artesian groundwater pressures that result in hydraulic head elevations above the existing roadway elevation were observed in all borings in the eastern portion of the project extents. See the Geotechnical Design Report for more information.

24. Payment for the cutting, fitting, and all related work for connecting new culverts sections to existing culvert sections and proposed catch basins shall be considered incidental to 603.195, 24" Reinforced Concrete Pipe.

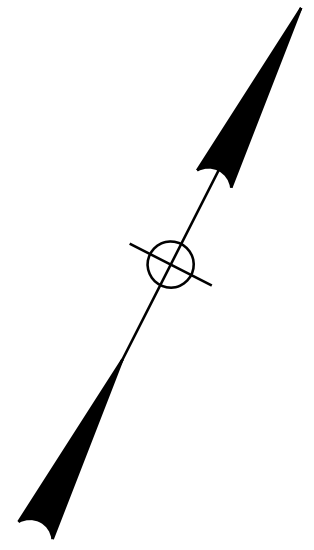
25. Pay Item 507.0848 includes an extra 40 LF of railing that will not be installed on the bridge, but shall be delivered to the Department. See Special Provision Section 507 Bridge Railing. The quantity shall include 5 posts, splice hardware for each end of the extra rail, and all associated mounting hardware such as bolts, anchor bolts, nuts, washers, etc.

COUSINS RIVER BRIDGE COUSINS RIVER YARMOUTH-FREEPORT	STATE OF MAINE DEPARTMENT OF TRANSPORTATION									
	STP-2172(500)									
GENERAL CONSTRUCTION NOTES	BRIDGE NO. 2183									
	WIN 21725.00									
BRIDGE PLANS										

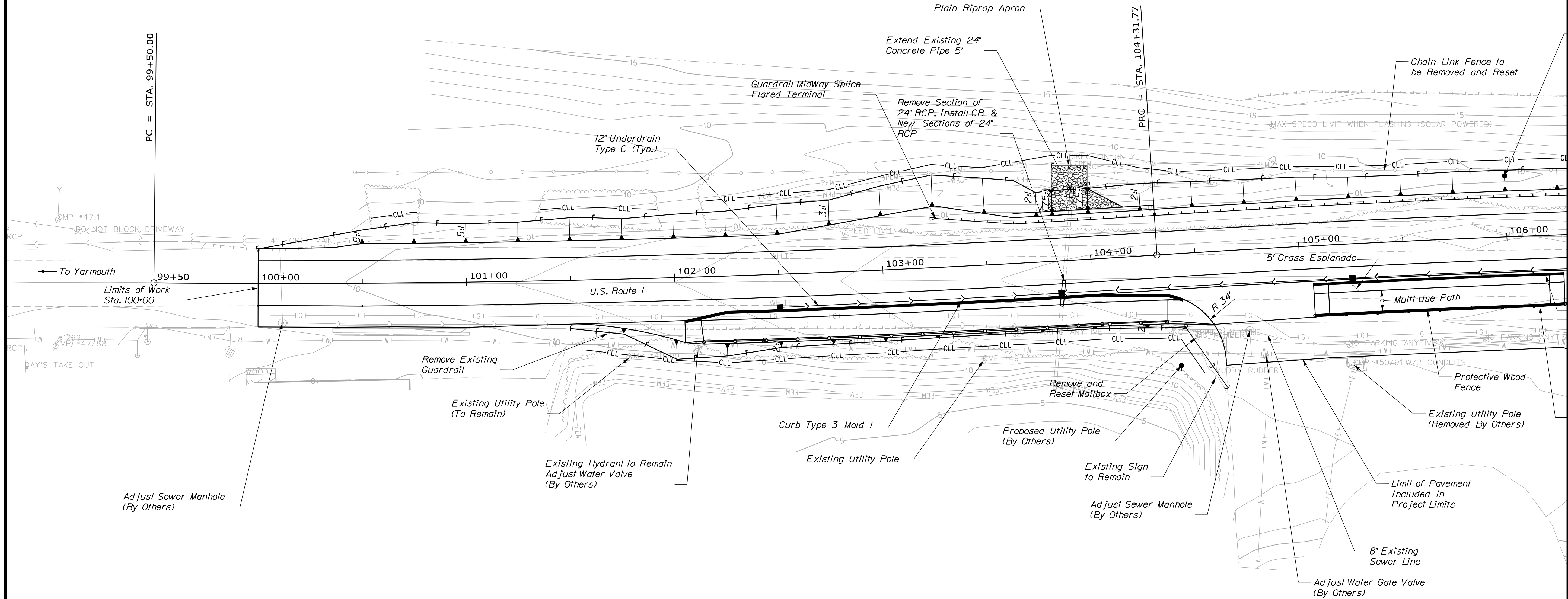
PROJ. MANAGER	A. LaHe	BY	DATE
DESIGN-DETAILED	OKK	OKK	NOV. 2023
CHECKED-REVIEWED	OKK	STJ	DEC. 2023
DESIGN-DETAILED	OKK	MM	NOV. 2023
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE	
P.E. NUMBER	
DATE	

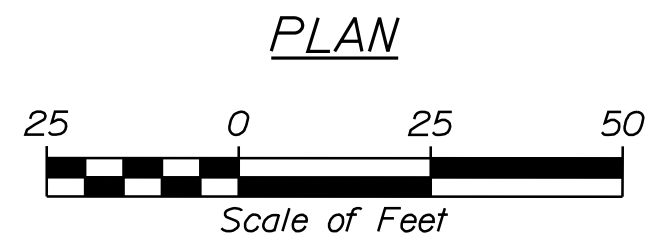
SHEET NUMBER
3
OF 64



CURVE DATA #1
 PI = 101+90.99
 D = 0°52'53.3"
 Δ = 4°14'48.0" Lt.
 R = 6500.00'
 L = 481.77'
 T = 240.99'
 E = 4.47'



CURVE DATA #2
PI = 108+25.10
D = 0°52'53.3"
Δ = 6°55'32.6" Rt.
R = 6500.00'
L = 785.70'
T = 393.33'
E = 11.89'

[illegible]

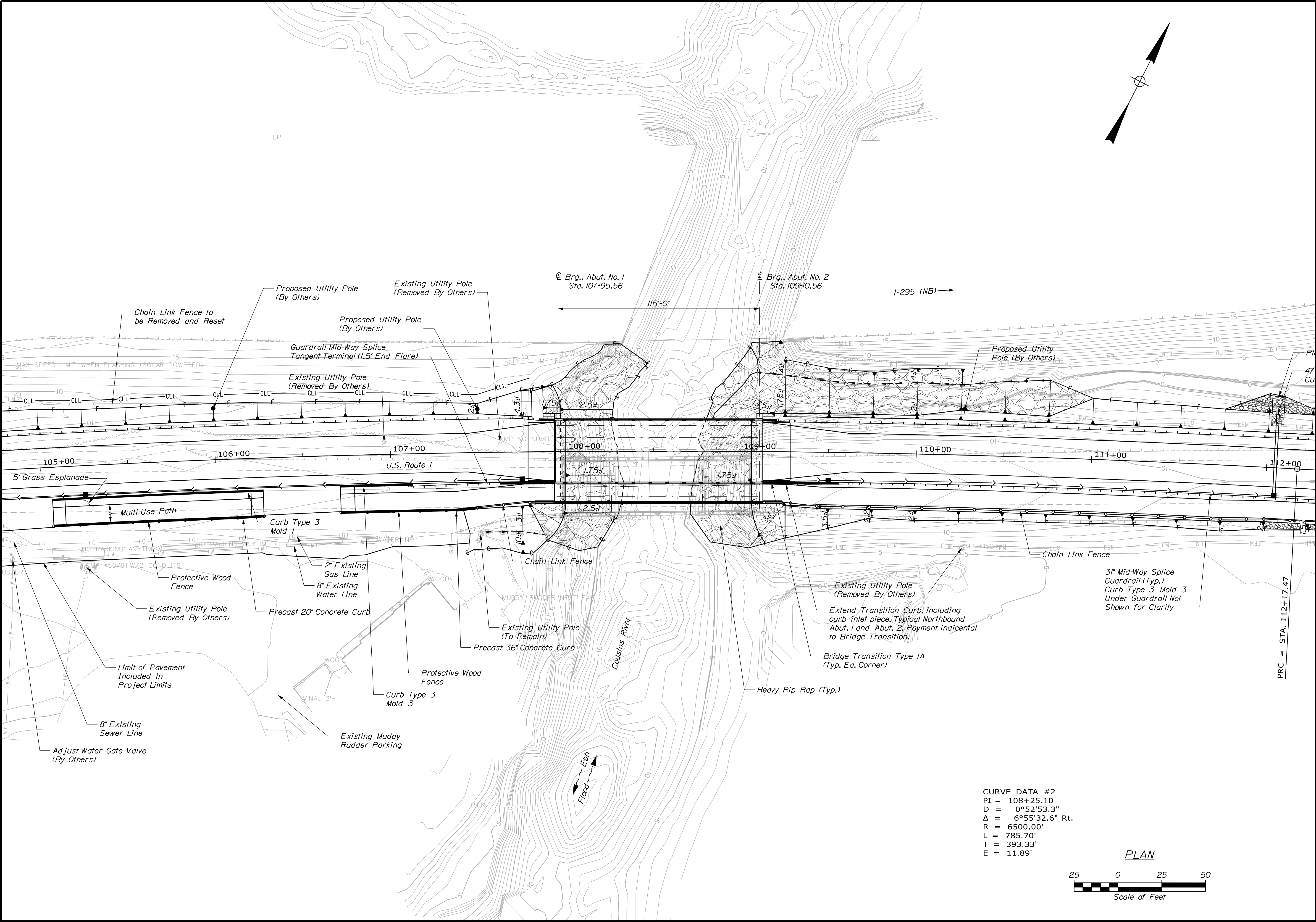
COUSINS RIVER BRIDGE
COUSINS RIVER
YARMOUTH-FREEPORT CUMBERLAND COUNTY
GENERAL PLAN
(1 OF 3)

Date: 3/13/2024

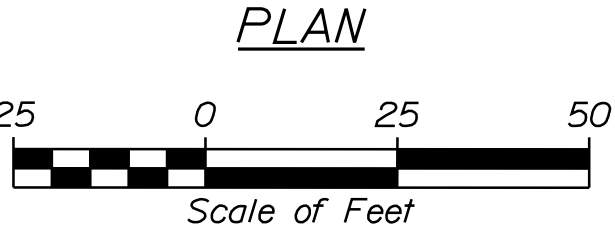
Username:

Division: BRIDGE

Filename: ... \00\BRIDGE\MSTA\005_BDPlan2.dgn



CURVE DATA #2
PI = 108+25.10
D = 0°52'53.3"
Δ = 6°55'32.6" Rt.
R = 6500.00'
L = 785.70'
T = 393.33'
E = 11.89'



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	
STP-2172(500)	
BRIDGE NO. 2183	WIN 21725.00
BRIDGE PLANS	

PROJ. MANAGER	BY	DATE
DESIGN-DETAILED	OK	NOV 2023
CHECKED-REVIEWED	OK	DEC 2023
DESIGN-DETAILED	OK	NOV 2023
DESIGN-DETAILED	OK	NOV 2023
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

Cousins River Bridge	CUMBERLAND COUNTY
Cousins River	
Yarmouth-Freepoint	
GENERAL PLAN	
(2 OF 3)	

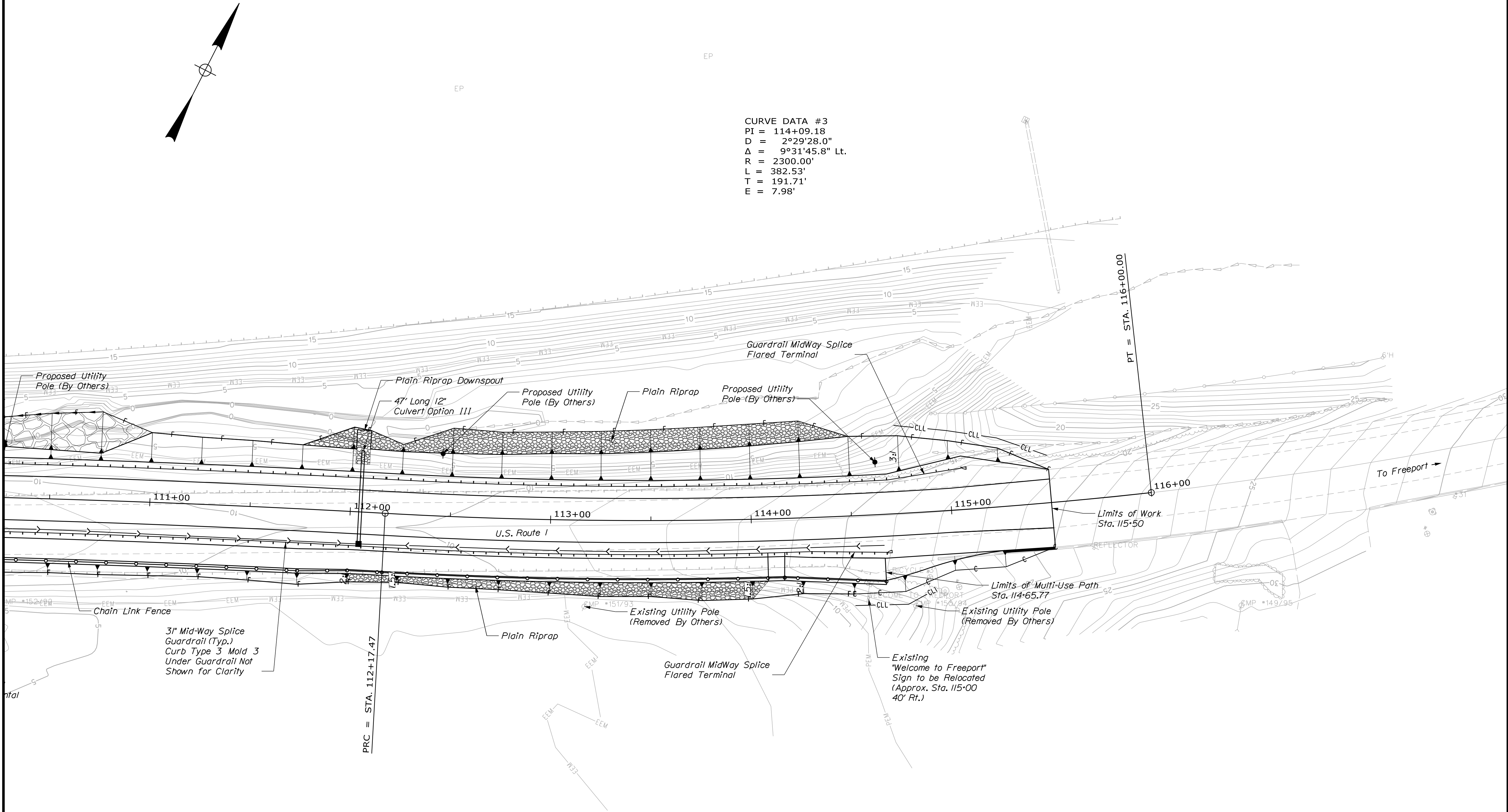
SHEET NUMBER
5
OF 64

Date: 3/13/2024

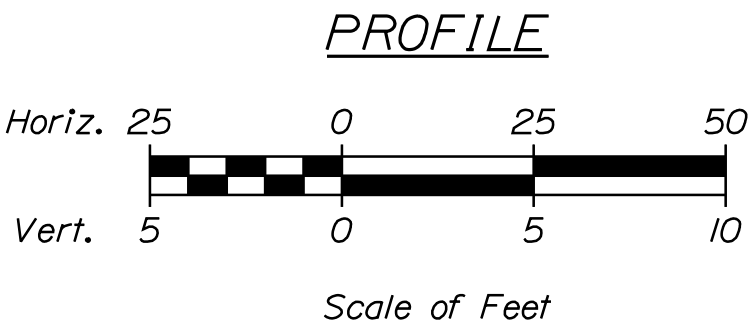
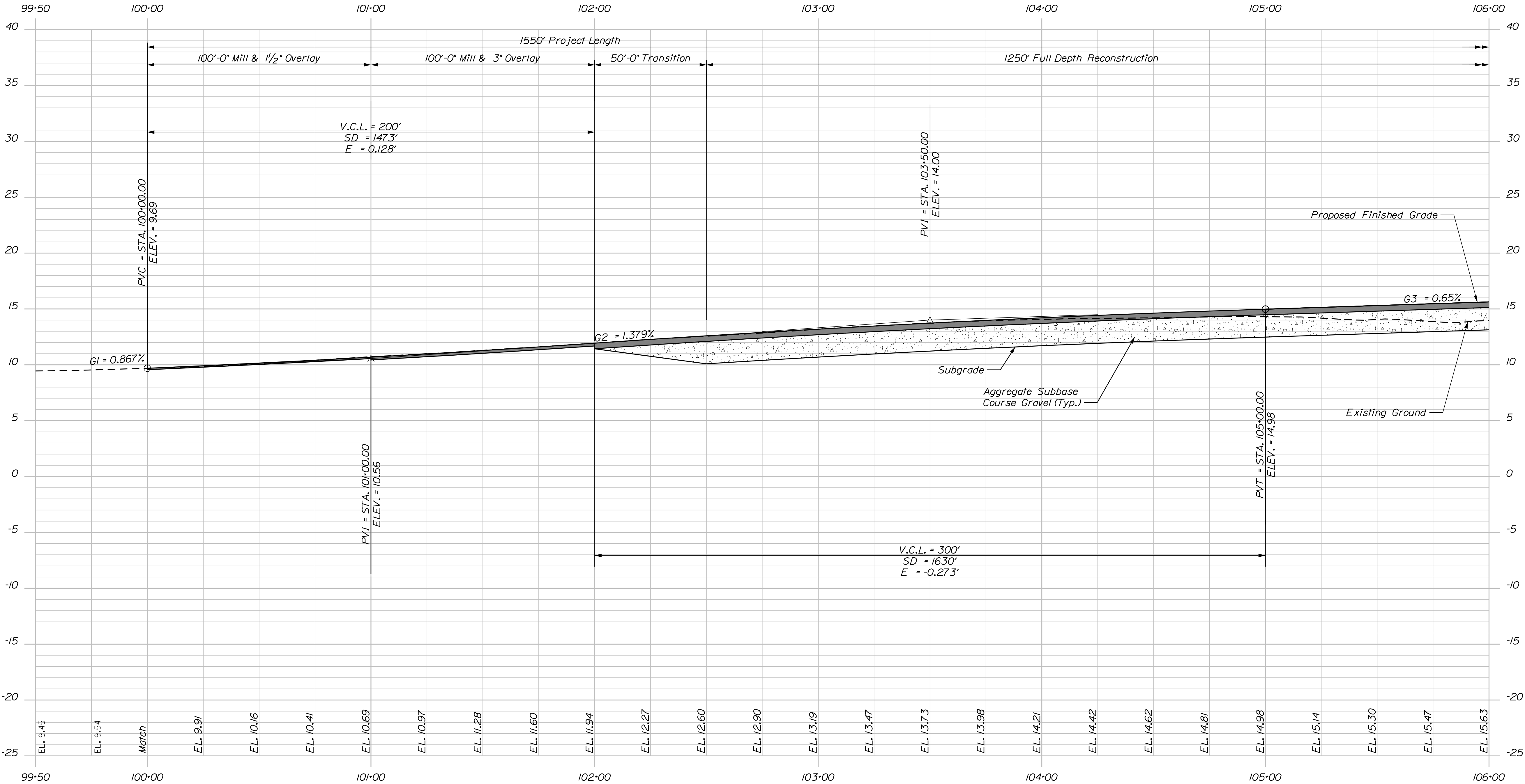
Username:

Division: BRIDGE

Filename: ... \00\BRIDGE\MSTA\006_BDPlan3.dgn

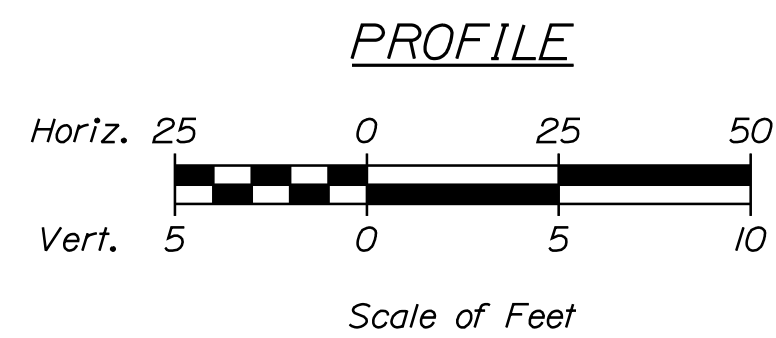


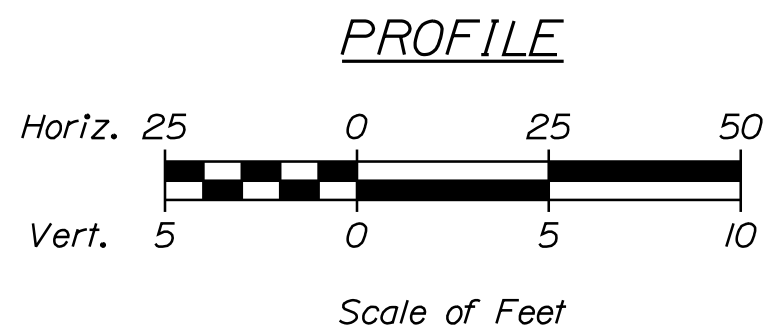
STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		STP-2172(500)		BRIDGE NO. 2183		WIN		21725.00		BRIDGE PLANS	
COUSINS RIVER BRIDGE		COUSINS RIVER		CUMBERLAND COUNTY		YARMOUTH-FREEPORT		GENERAL PLAN		(3 OF 3)		SHEET NUMBER	
DESIGN-DETAILED		CHECKED-REVIEWED		DESIGN-DETAILED		DESIGN-DETAILED		REVISIONS 1		REVISIONS 2		REVISIONS 3	
DATE		BY		DATE		BY		DATE		BY		DATE	
NOV 2023		OKK		NOV 2023		OKK		NOV 2023		OKK		NOV 2023	
SIGNATURE		SIGNATURE		SIGNATURE		SIGNATURE		SIGNATURE		SIGNATURE		SIGNATURE	
P.E. NUMBER		P.E. NUMBER		P.E. NUMBER		P.E. NUMBER		P.E. NUMBER		P.E. NUMBER		P.E. NUMBER	
DATE		DATE		DATE		DATE		DATE		DATE		DATE	
FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES	



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SIGNATURE	
	STP-2172(500)	
	BRIDGE NO. 2183	WIN 21725.00
BRIDGE PLANS		

COUSINS RIVER BRIDGE COUSINS RIVER YARMOUTH-FREERPORT CUMBERLAND COUNTY	DATE
PROFILE (1 OF 3)	NOV 2023
	DEC 2023
	NOV 2023
SHEET NUMBER	DATE
7	
OF 64	



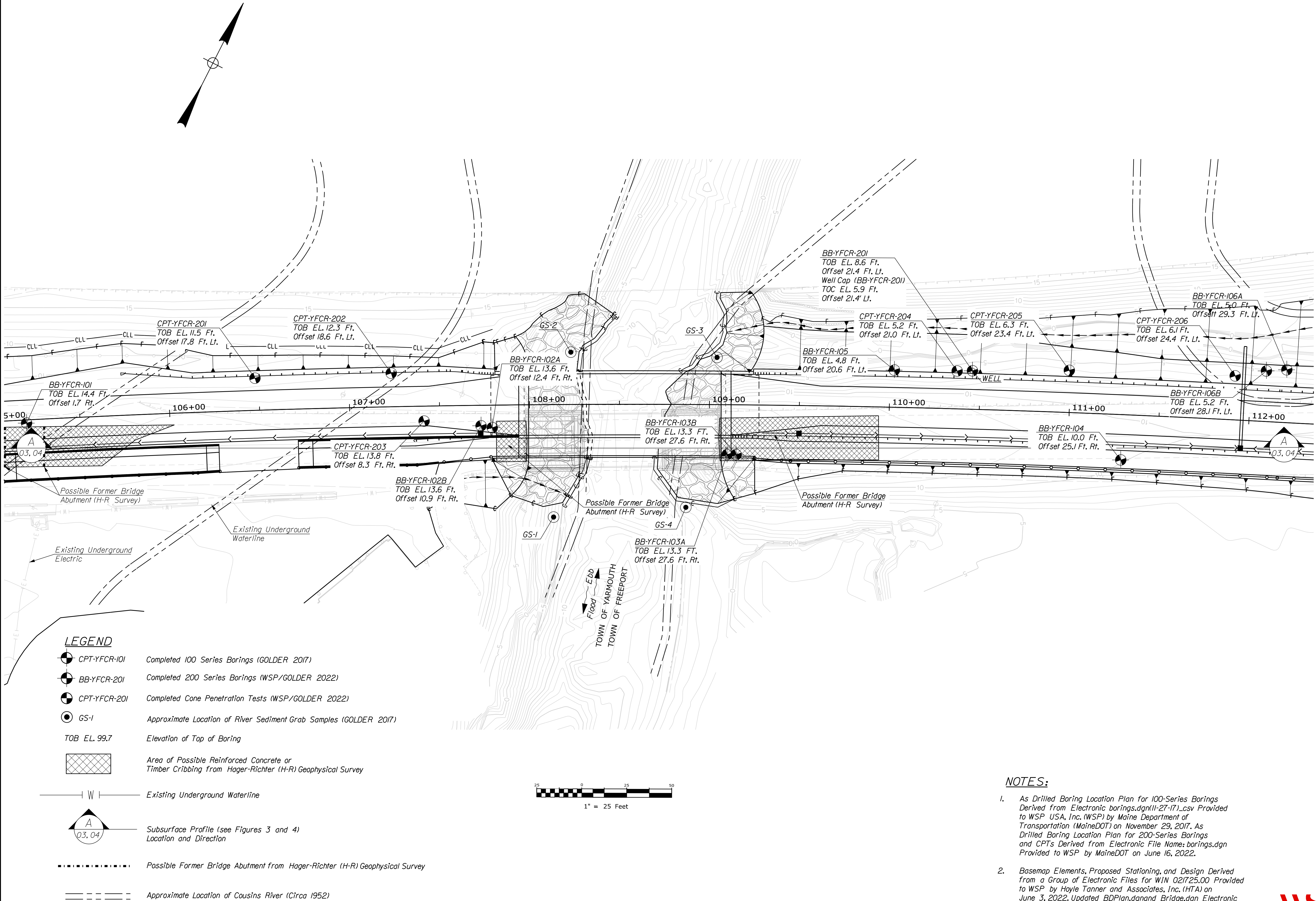


Date:11/28/2023

Username:

Division: BRIDGE

Filename: ... \BRIDGE\WSTA\BorLocPlan.dgn



SHEET NUMBER		US HIGHWAY ONE				PROJ. MANAGER		M. LADDON	BY	DATE	STATE OF MAINE	
10		COUSINS RIVER BRIDGE REPLACEMENT #2183				DESIGN-DETAILED		MA	MA	08/05/22	DEPARTMENT OF TRANSPORTATION	
		YARMOUTH AND FREEPORT CUMBERLAND COUNTY				CHECKED-REVIEWED		DEB	CCB	11/20/23	SIGNATURE	
						DESIGN2-DETAILED2		-	-	-		
						DESIGN3-DETAILED3		-	-	-	21725.00	
						REVISIONS 1		-	-	-	P.E. NUMBER	
						REVISIONS 2		-	-	-		
						REVISIONS 3		-	-	-		
						REVISIONS 4		-	-	-	BRIDGE NO. 2183	
						FIELD CHANGES		-	-	-	WIN	
								-	-	-	21725.00	
								-	-	-	BRIDGE PLANS	

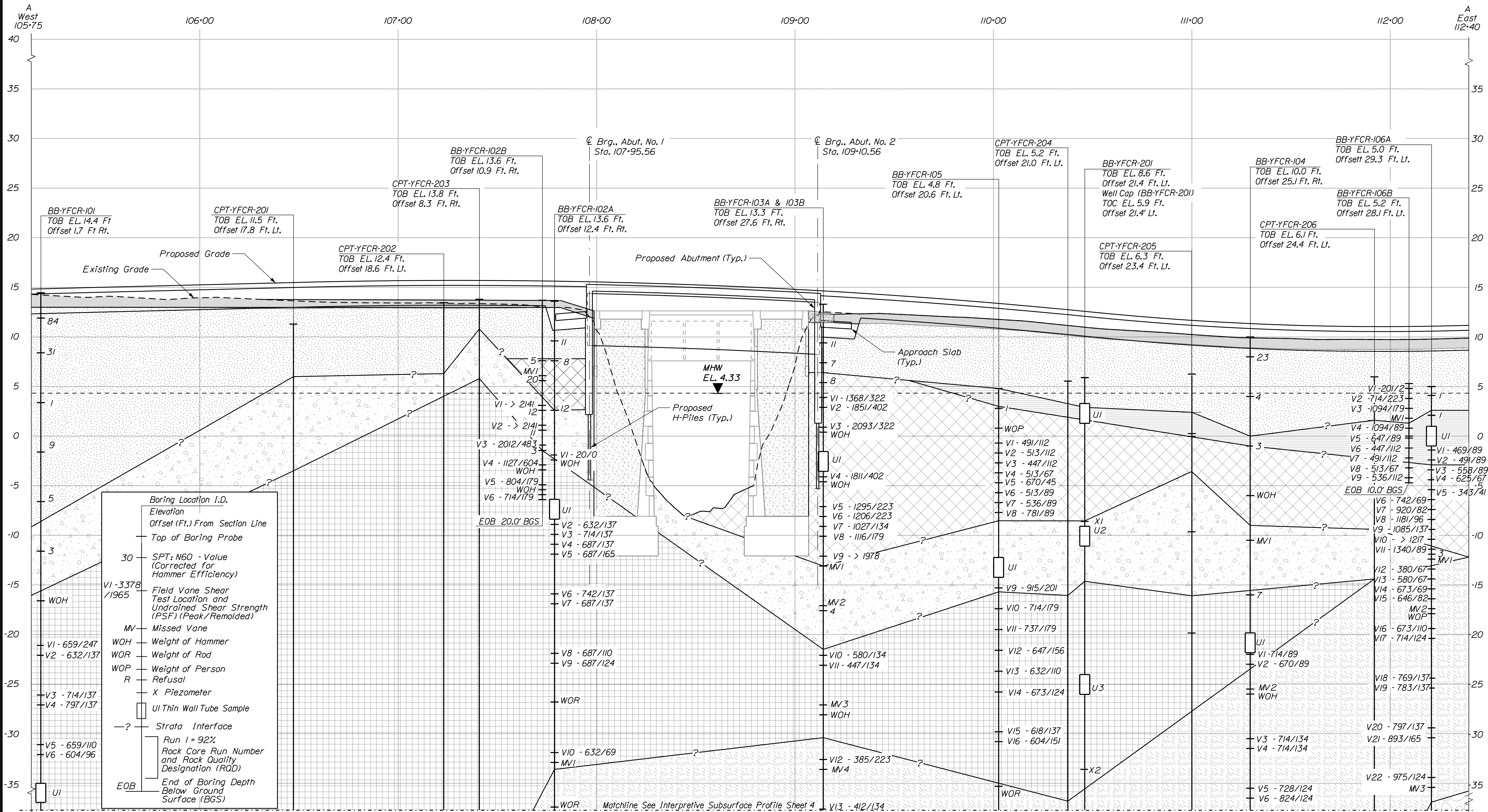


Date:11/28/2023

Username:

Division: BRIDGE

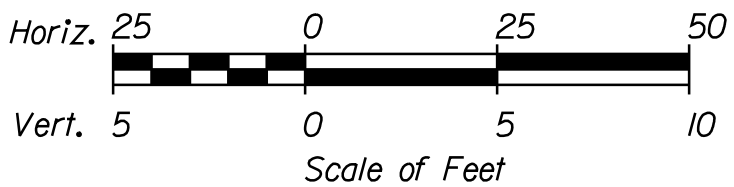
Filename: ... \MST\A003_Geoprofile1.dgn



Boring Location I.D.	
Elevation	Offset (Ft.) From Section Line
Top of Boring Probe	
30	SPT-N60 - Value (Corrected for Hammer Efficiency)
VI - 3378 /1965	Field Vane Shear Test Location and Undrained Shear Strength (PSF) (Peak/Remolded)
MV	Missed Vane
WOH	Weight of Hammer
WOR	Weight of Rod
WOP	Weight of Person
R	Refusal
X	Piezometer
UI	Thin Wall Tube Sample
---	Strata Interface
Run I = 92%	Rock Core Run Number and Rock Quality Designation (RQD)
EOB	End of Boring Depth Below Ground Surface (BGS)

LEGEND

	Asphalt		Olive-Grey to Tan-Brown, Medium Stiff to Very Stiff, Silty Clay and Clayey Silt (Presumpscot Clay 1)		Grey, Medium to Dense Fine to Coarse Sand with Occasional Bands of Gravel (Sand and Gravel)
	Grey to Brown Medium Dense, Fine to Coarse Sand with little to Trace Silt and Grey to Brown Silts, Clays and Clayey Sand/Gravel (Fill)		Olive Grey, Very Soft Sandy Silt and Clayey Silt (Sandy Silt/Clayey Silt)		White to Dark Grey, Fine to Coarse Grained Quartz-Biotite-Plagioclase Granofels (Bedrock)
	Proposed Riprap		Grey Soft to Stiff, Silty Clay, Clayey Silt, Sandy Clay, Fine to Coarse Sand and Silty Clay (Presumpscot Clay 2)		Existing Ground Surface
	Granular Fill		Olive-Grey to Grey, Medium Stiff Silty Clay with Trace Amounts of Sand, Gravel and Shells (Presumpscot Clay 3)		Mean High Water
	Brown to Grey, Organic Silts and Clays or Slightly Fibrous Peat (Organic Clay)		Existing Bridge Structure		Proposed Bridge Substructure and Superstructure

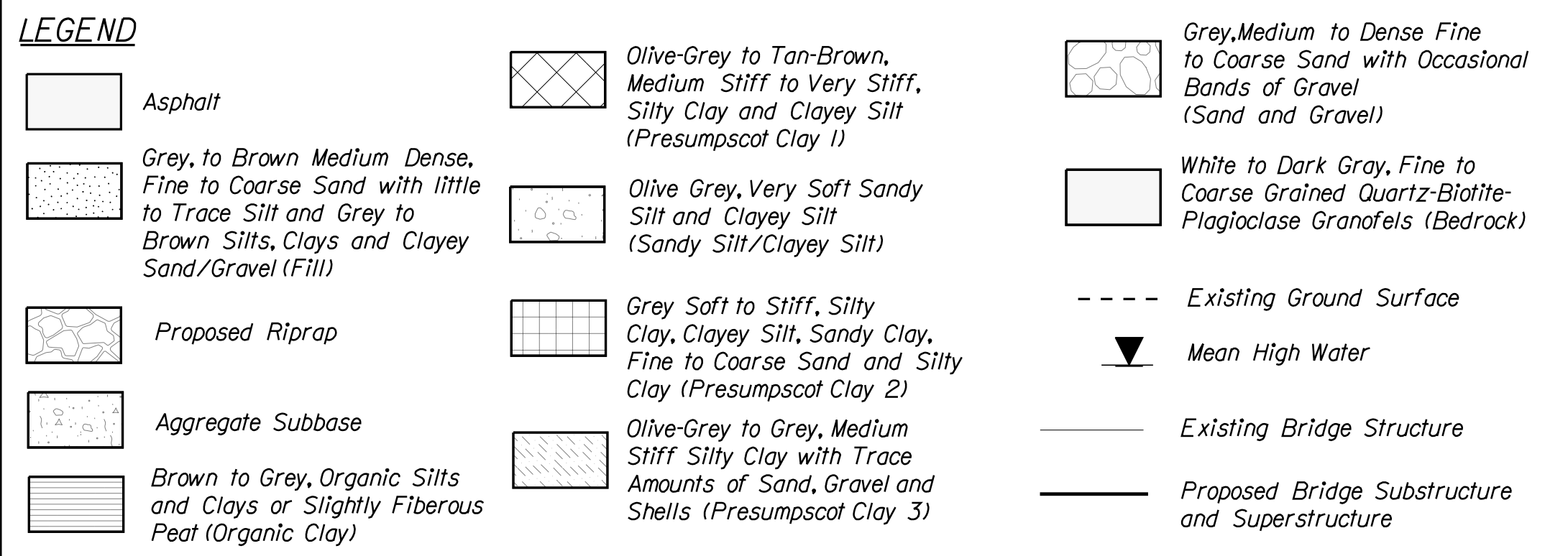


NOTES:

- As Drilled Boring Location Plan for 100-Series Borings Derived from Electronic borings.dgn(11-27-17).csv Provided to WSP USA, Inc. (WSP) by Maine Department of Transportation (MaineDOT) on November 29, 2017. As Drilled Boring Location Plan for 200-Series Borings and CPTs Derived from Electronic File Name: borings.dgn Provided to WSP by MaineDOT on June 16, 2022.
- Basemap Elements, Proposed Stationing, and Design Derived from a Group of Electronic Files for WIN 021725.00 Provided to WSP by HTA on September 13, 2021. Static Groundwater Levels Measured During the Subsurface Investigation are Provided in the Boring Logs. Artesian Groundwater Pressures That Result in Hydraulic Head Elevations Above the Existing Roadway Elevation Were Observed in Borings BB-YFCR-104, BB-YFCR-105, BB-YFCR-106, and BB-YFCR-201. See the Geotechnical Design Report (Note 5) for More Information.
- For Detailed Lithological Descriptions, See Boring Logs and the Cone Penetration Test Results Provided in the Geotechnical Design Report (Note 5).
- For Complete Laboratory Data, See the Geotechnical Design Report (Note 7).
- Geotechnical Design Report: WSP USA, Inc., December 2023, Geotechnical Design Report, Cousins River Bridge, Yarmouth-Freeport, Maine, MaineDOT WIN 021725.00. Report May Be Accessed/Requested from MaineDOT.

- Groundwater Surface Shown is the Mean High Water (MHW) Elevation from the Project Hydrology and Hydraulic Reports Located in the Draft Preliminary Design Report Provided to WSP by HTA on September 13, 2021. Static Groundwater Levels Measured During the Subsurface Investigation are Provided in the Boring Logs. Artesian Groundwater Pressures That Result in Hydraulic Head Elevations Above the Existing Roadway Elevation Were Observed in Borings BB-YFCR-104, BB-YFCR-105, BB-YFCR-106, and BB-YFCR-201. See the Geotechnical Design Report (Note 5) for More Information.
- This Generalized Subsurface Profile is Intended to Convey Trends in Subsurface Conditions. The Boundaries Between Strata are Approximate and Idealized and Have Been Developed Based on Interpretations of Widely Spaced Explorations. Actual Soil and Rock Transitions May Vary and Are Likely More Erratic. For More Specific Information, Refer to Boring Logs and the Geotechnical Design Report (Note 5).

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		21725.00		WIN 21725.00	
US HIGHWAY ONE		COUSINS RIVER BRIDGE REPLACEMENT #2183		YARMOUTH AND FREEPORT CUMBERLAND COUNTY	
INTERPRETIVE SUBSURFACE PROFILE A-A'		SHEET NUMBER		11	
BRIDGE NO. 2183		BRIDGE PLANS		OF 64	



Scale of Feet

Horiz. 25 0 25 50

Vert. 5 0 5 10

1. As Drilled Boring Location Plan for 100-Series Borings Derived from Electronic borings.dgn(11-27-17).csv Provided to WSP USA, Inc. (WSP) by Maine Department of Transportation (MaineDOT) on November 29, 2017. As Drilled Boring Location Plan for 200-Series Borings and CPTs Derived from Electronic File Name: borings.dgn Provided to WSP by MaineDOT on June 16, 2022.

2. Basemap Elements, Proposed Stationing, and Design Derived from a Group of Electronic Files for WIN 021725.00 Provided to WSP by Hoyle Tanner and Associates, Inc. (HTA) on June 3, 2022. Updated BDPlan.dgn and Bridge.dgn Electronic Files Provided to WSP by HTA on November 6, 2023.
3. For Detailed Lithological Descriptions, See Boring Logs and the Cone Penetration Test Results Provided in the Geotechnical Design Report (Note 5).
4. For Complete Laboratory Data, See the Geotechnical Design Report (Note 7).
5. Geotechnical Design Report: WSP USA, Inc., December 2023, Geotechnical Design Report, Cousins River Bridge, Yarmouth-Freeport, Maine, MaineDOT WIN 021725.00. Report May Be Accessed/Requested from MaineDOT.
6. Groundwater Surface Shown is the Mean High Water (MHW) East Elevation from the Project Hydrology and Hydraulic Reports I12-40 Located in the Draft Preliminary Design Report Provided to WSP by HTA on September 13, 2021. Static Groundwater Levels Measured During the Subsurface Investigation are Provided in the Boring Logs. Artesian Groundwater Pressures That Result in Hydraulic Head Elevations Above the Existing Roadway Elevation Were Observed in Borings BB-YFCR-I04, BB-YFCR-I05, BB-YFCR-I06, and BB-YFCR-201. See the Geotechnical Design Report (Note 5) for More Information.
7. This Generalized Subsurface Profile is Intended to Convey Trends in Subsurface Conditions. The Boundaries Between Strata are Approximate and Idealized and Have Been Developed Based on Interpretations of Widely Spaced Explorations, Actual Soil and Rock Transitions May Vary and Are Likely More Erratic. For More Specific Information, Refer to Boring Logs and the Geotechnical Design Report (Note 5).

WS | D

[illegible]

Maine Department of Transportation				Project Cousins River Bridge #2183		Boring No. BB-YFCR-102A					
Soil/Rock Exploration Log				Location Yarmouth/Freeport, Maine		WIN 21725.00					
US CUSTOMARY UNITS											
Driller: S. W. Cole Explorations		Elevation (ft.): 13.625		Auger 10'/OD: 4' 6"							
Operator: Jeff Lee		Datum: NAVD88		Sampler: Standard Split Spoon							
Logged by: LLM		Rig type: CME-850		Hammer Wt./Fall: 140 lbs/ 30"							
Date Start/Finish: 10/13/17; 10/18/17		Drilling Method: Cased Wash		Core Barrel: 1-7/8" - ND							
Boring Location: North 257009.866, East: 106564.656		Casing 10'/OD: 4' 4.5"		Water Level: 4'		See Remarks					
Hammer Efficiency Factor: 0.8131		Hammer Type: Automatic 88		Hydraulic 10		Rope & Cathode 10					
Drilling Notes:		K = Rock Core Sample		S _u = Peak/Retained Field Shear Unsurpassed Shear Strength (psf)		L = Liquidity Index					
S = Split Spoon Sample		SSA = Split Stem Auger		S _u = Lab Shear Unsurpassed Shear Strength (psf)		WC = Water Content, percent					
MU = Unsuccessful Split Spoon Sample Attempt		HSA = Helix Stem Auger		C _p = Unconfined Compressive Strength (ksf)		LL = Liquid Limit					
I = Thin Wall Tube Sample		BS = Roller Core		N ₆₀ = Standard Penetration Test (blows/ft)		P = Plastic Limit					
MU = Unsuccessful Thin Wall Tube Sample Attempt		WDH = Weight of 140lb. Hammer		HMER Efficiency Factor = 0.8131		R = Plasticity Index					
I = Field Shear Test (in situ)		HMER = Weight of Hammer		N ₆₀ = Standard Penetration Test (blows/ft)		C = Grain Size Analysis					
MU = Unsuccessful Field Shear Test Attempt		S _u = Pocket Torque Shear Strength (psf)		HMER Efficiency Factor=0.8131		C = Consolidation Index					
Sample Information											
Depth (ft.)	Sample No.	Pen./AAC. (in.)	Sample Depth (in.)	Blows (6 in. SPT)	Notes	Coring	Fluctuation (ft.)	Grain Size Log	Visual Description and Remarks	Laboratory Testing Results/ASTM and Unified Class.	
0						SSA			0.9' of asphalt pavement		
5	10	24/18	3.00 - 5.00	2/4/4/4	8	11			Top 0.2' is brown, damp, fine to coarse SAND, little silt. (FILL)		
	20	24/15.6	5.00 - 7.00	2/2/4/3	6	8			Bottom 1.2' is brown/gray, damp, soft, Silty CLAY, little sand, trace organics (wood). More gray and denser towards bottom. (FILL)		
10	30	24/24	10.00 - 12.00	2/4/5/7	9	12	21		Gray, damp, medium stiff, Silty CLAY, little fine sand, trace organics (wood). (FILL)		
	40	24/24	15.00 - 17.00	WDH(24")	-	-	64		30A: Top 0.85' is damp, grey-brown with mottling. Silty CLAY, little sand. (FILL)	WC = 24.42 LL = 39 PI = 19 LI = 0.2	
	50	24/24	22.00 - 24.00	WDH(24")	-	-	25		30B: Bottom 1.15' is olive/gray/brown with mottling, damp, stiff, Silty CLAY. (PRESPUSCOT FORMATION)		
15	60	24/24	25.00 - 27.00	WDH(24")	-	-	33		Oliver/gray, wet, very soft, Silty CLAY, some silt fragments. (PRESPUSCOT FORMATION)		
	70	24/24	30.00 - 32.00	WDH(24")	-	-	29		Too soft for pocket penetrometer; T ₉₀ = 0.4, 0.8 ksf		
20	80	24/24	35.00 - 37.00	WDH(24")	-	-	37		Too soft for pocket penetrometer; T ₉₀ = 0.4, 0.8 ksf		
	90	24/24	40.00 - 42.00	WDH(24")	-	-	39		Gray, wet, medium stiff, Silty CLAY, (PRESPUSCOT FORMATION)		
25	100	24/18	45.00 - 47.00	WDH(24")	-	-	39		Gray, wet, medium stiff, Silty CLAY, trace gravel, trace sand. (PRESPUSCOT FORMATION)		
	110	24/18	50.00 - 52.00	WDH(24")	-	-	46		65x130 mm vane raw torque readings: V2: 23/5 ft-lbs V3: 25/5 ft-lbs		
30	120	24/18	55.00 - 57.00	WDH(24")	-	-	47		Gray, wet, medium stiff, Silty CLAY, trace gravel at top of sample, Silty fine sand dens in bottom 6". (PRESPUSCOT FORMATION)		
	130	24/18	60.00 - 62.00	WDH(24")	-	-	46		65x130 mm vane raw torque readings: V10: 23/2.5 ft-lbs V11: 23/2.5 ft-lbs		
35	140	24/18	65.00 - 67.00	WDH(24")	-	-	51		Failed 65x130 mm vane, would not push to 47" @ g.s.		
40	150	24/18	70.00 - 72.00	WDH(24")	-	-	57		Gray, wet, very soft, Silty CLAY, trace shell fragments. (PRESPUSCOT FORMATION)		
45	160	24/18	75.00 - 77.00	WDH(24")	-	-	51		Gray, wet, very soft, Silty CLAY, trace shell fragments. (PRESPUSCOT FORMATION)		
50	170	24/18	80.00 - 82.00	WDH(24")	-	-	51		Gray, wet, very soft, Silty CLAY, trace shell fragments. (PRESPUSCOT FORMATION)		
55	180	24/18	85.00 - 87.00	WDH(24")	-	-	51		Gray, wet, very soft, Silty CLAY, trace shell fragments. (PRESPUSCOT FORMATION)		
60	190	24/18	90.00 - 92.00	WDH(24")	-	-	51		Gray, wet, very soft, Silty CLAY, trace shell fragments. (PRESPUSCOT FORMATION)		
Remarks:											
1. Water levels: No water in hole at 8:23 (10/17/17), 2:8' @ 3:45 PM (10/17/17), 15:7' @ g.s. 8:02 AM (10/18/17), water at 4:8' @ g.s. in casing at 2:10 PM (10/18/17), 6:5" after casing removed at 2:36 PM (10/18/17). 2. " - " Blow counts not representative of undisturbed material, sample disturbed by field vials. 3. Hammer Efficiency Factor provided by S.W. Cole and taken from "Drill Rig SP" Hammer Energy Calibration Report - Drill Rig model: CME-850 SN 295782, Drill Rig No. KR-37 dated 3/24/17 by Terracore. 4. Boring filled with 21.25 bags of gravel on 10/18/17, an additional 3.75 bags added on 10/19/17, additional 1 bag added 10/20/17, patched with cold patch.											
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.										Page 1 of 2	
* 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.											
Boring No.: BB-YFCR-102A											

[illegible]

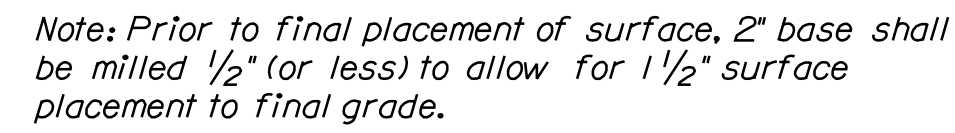
Maine Department of Transportation				Project Cousins River Bridge #2183				Boring No. BB-YFCR-104			
Soil/Rock Exploration Log				Location Yarmouth/Freeport, Maine				WIN: 21725.00			
VS CUSTOMARY UNITS											
Driller: S. V. Cole Explorations		Elevation (ft.): 10.039		Auger ID/DB: 4"/6"		Sampler: Standard Split Spoon					
Operator: Jeff Lee		Datum: NAVD88									
Logged By: LLM		Rig Type: OMC-850		Hammer Wt./Fall: 140 lbs/30"							
Date Start/Finish: 9:05 (10/10/17)/11:14 (10/11/17)		Drilling Method: Cased Wash		Core Barrel: 1-7/8" - ND							
Boring Location: North 357135 855 East 104264.287		Casing ID/DB: 4"/4.5"		Water Level: See remarks							
Hammer Efficiency Factor: 0.833		Hammer Type: Automatic		Hydraulic		Rope & Cathode					
Definitions: B = Split Spoon Sample MS = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample Attempt V = Field Vane Shear Test PP = Pocket Penetrometer N = Unsuccessful Field Vane Shear Test Attempt				R = Rock Core Sample SSA = Split Stem Auger HSA = Hollow Stem Auger BS = Barrel Core KDR = Weight of 140 lb. Hammer WDR = Weight of Rods or Casing T ₅₀ = Pocket Torque Shear Strength (psf)				S _u = Peak/Undrained Field Vane Undrained Shear Strength (psf) S _{u(10)} = 10 sec Undrained Shear Strength (psf) S _{u(15)} = 15 sec Undrained Shear Strength (psf) S _{u(30)} = 30 sec Undrained Shear Strength (psf) S _{u(60)} = 60 sec Undrained Shear Strength (psf) S _{u(120)} = 120 sec Undrained Shear Strength (psf) S _{u(240)} = 240 sec Undrained Shear Strength (psf) S _{u(480)} = 480 sec Undrained Shear Strength (psf) S _{u(960)} = 960 sec Undrained Shear Strength (psf) S _{u(1920)} = 1920 sec Undrained Shear Strength (psf) S _{u(3840)} = 3840 sec Undrained Shear Strength (psf) S _{u(7680)} = 7680 sec Undrained Shear Strength (psf) S _{u(15360)} = 15360 sec Undrained Shear Strength (psf) S _{u(30720)} = 30720 sec Undrained Shear Strength (psf) S _{u(61440)} = 61440 sec Undrained Shear Strength (psf) S _{u(122880)} = 122880 sec Undrained Shear Strength (psf) S _{u(245760)} = 245760 sec Undrained Shear Strength (psf) S _{u(491520)} = 491520 sec Undrained Shear Strength (psf) S _{u(983040)} = 983040 sec Undrained Shear Strength (psf) S _{u(1966080)} = 1966080 sec Undrained Shear Strength (psf) S _{u(3932160)} = 3932160 sec Undrained Shear Strength (psf) S _{u(7864320)} = 7864320 sec Undrained Shear Strength (psf) S _{u(15728640)} = 15728640 sec Undrained Shear Strength (psf) S _{u(31457280)} = 31457280 sec Undrained Shear Strength (psf) S _{u(62914560)} = 62914560 sec Undrained Shear Strength (psf) S _{u(125829120)} = 125829120 sec Undrained Shear Strength (psf) S _{u(251658240)} = 251658240 sec Undrained Shear Strength (psf) S _{u(503316480)} = 503316480 sec Undrained Shear Strength (psf) S _{u(1006632960)} = 1006632960 sec Undrained Shear Strength (psf) S _{u(2013265920)} = 2013265920 sec Undrained Shear Strength (psf) S _{u(4026531840)} = 4026531840 sec Undrained Shear Strength (psf) S _{u(8053063680)} = 8053063680 sec Undrained Shear Strength (psf) S _{u(16106127360)} = 16106127360 sec Undrained Shear Strength (psf) S _{u(32212254720)} = 32212254720 sec Undrained Shear Strength (psf) S _{u(64424509440)} = 64424509440 sec Undrained Shear Strength (psf) S _{u(128849018880)} = 128849018880 sec Undrained Shear Strength (psf) S _{u(257698037760)} = 257698037760 sec Undrained Shear Strength (psf) S _{u(515396075520)} = 515396075520 sec Undrained Shear Strength (psf) S _{u(1030792151040)} = 1030792151040 sec Undrained Shear Strength (psf) S _{u(2061584302080)} = 2061584302080 sec Undrained Shear Strength (psf) S _{u(4123168604160)} = 4123168604160 sec Undrained Shear Strength (psf) S _{u(8246337208320)} = 8246337208320 sec Undrained Shear Strength (psf) S _{u(16492674416640)} = 16492674416640 sec Undrained Shear Strength (psf) S _{u(32985348833280)} = 32985348833280 sec Undrained Shear Strength (psf) S _{u(65970697666560)} = 65970697666560 sec Undrained Shear Strength (psf) S _{u(131941395333120)} = 131941395333120 sec Undrained Shear Strength (psf) S _{u(263882790666240)} = 263882790666240 sec Undrained Shear Strength (psf) S _{u(527765581332480)} = 527765581332480 sec Undrained Shear Strength (psf) S _{u(1055531162664960)} = 1055531162664960 sec Undrained Shear Strength (psf) S _{u(2111062325329920)} = 2111062325329920 sec Undrained Shear Strength (psf) S _{u(4222124650659840)} = 4222124650659840 sec Undrained Shear Strength (psf) S _{u(8444249301319680)} = 8444249301319680 sec Undrained Shear Strength (psf) S _{u(16888498602639360)} = 16888498602639360 sec Undrained Shear Strength (psf) S _{u(33776997205278720)} = 33776997205278720 sec Undrained Shear Strength (psf) S _{u(67553994410557440)} = 67553994410557440 sec Undrained Shear Strength (psf) S _{u(135107988821114880)} = 135107988821114880 sec Undrained Shear Strength (psf) S _{u(270215977642229760)} = 270215977642229760 sec Undrained Shear Strength (psf) S _{u(540431955284459520)} = 540431955284459520 sec Undrained Shear Strength (psf) S _{u(1080863910568919040)} = 1080863910568919040 sec Undrained Shear Strength (psf) S _{u(2161727821137838080)} = 2161727821137838080 sec Undrained Shear Strength (psf) S _{u(4323455642275676160)} = 4323455642275676160 sec Undrained Shear Strength (psf) S _{u(8646911284551352320)} = 8646911284551352320 sec Undrained Shear Strength (psf) S _{u(17293822569102704640)} = 17293822569102704640 sec Undrained Shear Strength (psf) S _{u(34587645138205409280)} = 34587645138205409280 sec Undrained Shear Strength (psf) S _{u(69175290276410818560)} = 69175290276410818560 sec Undrained Shear Strength (psf) S _{u(138350580552821637120)} = 138350580552821637120 sec Undrained Shear Strength (psf) S _{u(276701161105643274240)} = 276701161105643274240 sec Undrained Shear Strength (psf) S _{u(553402322211286548480)} = 553402322211286548480 sec Undrained Shear Strength (psf) S _{u(1106804644422573096960)} = 1106804644422573096960 sec Undrained Shear Strength (psf) S _{u(2213609288845146193920)} = 2213609288845146193920 sec Undrained Shear Strength (psf) S _{u(4427218577690292387840)} = 4427218577690292387840 sec Undrained Shear Strength (psf) S _{u(8854437155380584775680)} = 8854437155380584775680 sec Undrained Shear Strength (psf) S _{u(17708874310761169551360)} = 17708874310761169551360 sec Undrained Shear Strength (psf) S _{u(35417748621522339102720)} = 35417748621522339102720 sec Undrained Shear Strength (psf) S _{u(70835497243044678205440)} = 70835497243044678205440 sec Undrained Shear Strength (psf) S _{u(141670994486089356410880)} = 141670994486089356410880 sec Undrained Shear Strength (psf) S _{u(283341988972178712821760)} = 283341988972178712821760 sec Undrained Shear Strength (psf) S _{u(566683977944357425643520)} = 566683977944357425643520 sec Undrained Shear Strength (psf) S _{u(1133367955888714851287040)} = 1133367955888714851287040 sec Undrained Shear Strength (psf) S _{u(2266735911777429702574080)} = 2266735911777429702574080 sec Undrained Shear Strength (psf) S _{u(4533471823554859405148160)} = 4533471823554859405148160 sec Undrained Shear Strength (psf) S _{u(9066943647109718810296320)} = 9066943647109718810296320 sec Undrained Shear Strength (psf) S _{u(18133887294219437620592640)} = 18133887294219437620592640 sec Undrained Shear Strength (psf) S _{u(36267774588438875241185280)} = 36267774588438875241185280 sec Undrained Shear Strength (psf) S _{u(72535549176877750482370560)} = 72535549176877750482370560 sec Undrained Shear Strength (psf) S _{u(145071092353755500964741120)} = 145071092353755500964741120 sec Undrained Shear Strength (psf) S _{u(290142184707511001929482240)} = 290142184707511001929482240 sec Undrained Shear Strength (psf) S _{u(580284369415022003858964480)} = 580284369415022003858964480 sec Undrained Shear Strength (psf) S _{u(1160568738830044007717928960)} = 1160568738830044007717928960 sec Undrained Shear Strength (psf) S _{u(2321137477660088015435857920)} = 2321137477660088015435857920 sec Undrained Shear Strength (psf) S _{u(4642274955320176030871715840)} = 4642274955320176030871715840 sec Undrained Shear Strength (psf) S _{u(9284549910640352061743431680)} = 9284549910640352061743431680 sec Undrained Shear Strength (psf) S _{u(18569099821280704123486863360)} = 18569099821280704123486863360 sec Undrained Shear Strength (psf) S _{u(37138199642561408246973726720)} = 37138199642561408246973726720 sec Undrained Shear Strength (psf) S _{u(74276399285122816493947453440)} = 74276399285122816493947453440 sec Undrained Shear Strength (psf) S _{u(148552798570245632987894906880)} = 148552798570245632987894906880 sec Undrained Shear Strength (psf) S _{u(297105597140491265975789813760)} = 297105597140491265975789813760 sec Undrained Shear Strength (psf) S _{u(594211194280982531951579627520)} = 594211194280982531951579627520 sec Undrained Shear Strength (psf) S _{u(1188422388561965063903159255040)} = 1188422388561965063903159255040 sec Undrained Shear Strength (psf) S _{u(23768447771239301278063185101000)} = 23768447771239301278063185101000 sec Undrained Shear Strength (psf) S _{u(47536895542478602556126370202000)} = 47536895542478602556126370202000 sec Undrained Shear Strength (psf) S _{u(95073791084957205112252740404000)} = 95073791084957205112252740404000 sec Undrained Shear Strength (psf) S _{u(190147582169914410224505480808000)} = 190147582169914410224505480808000 sec Undrained Shear Strength (psf) S _{u(380295164339828820449010961616000)} = 380295164339828820449010961616000 sec Undrained Shear Strength (psf) S _{u(760590328679657640898021923232000)} = 760590328679657640898021923232000 sec Undrained Shear Strength (psf) S _{u(1521180657359315281796043846464000)} = 1521180657359315281796043846464000 sec Undrained Shear Strength (psf) S _{u(3042361314718630563592087692928000)} = 3042361314718630563592087692928000 sec Undrained Shear Strength (psf) S _{u(6084722629437261127184175385856000)} = 6084722629437261127184175385856000 sec Undrained Shear Strength (psf) S _{u(12169445258874522254368350771712000)} = 12169445258874522254368350771712000 sec Undrained Shear Strength (psf) S _{u(24338890517749044508736701543424000)} = 24338890517749044508736701543424000 sec Undrained Shear Strength (psf) S _{u(48677781035498089017473403086848000)} = 48677781035498089017473403086848000 sec Undrained Shear Strength (psf) S _{u(97355562070996178034946806173696000)} = 97355562070996178034946806173696000 sec Undrained Shear Strength (psf) S _{u(194711124141992356069893612347392000)} = 194711124141992356069893612347392000 sec Undrained Shear Strength (psf) S _{u(389422248283984712139787224694784000)} = 389422248283984712139787224694784000 sec Undrained Shear Strength (psf) S _{u(778844496567969424279574449389568000)} = 778844496567969424279574449389568000 sec Undrained Shear Strength (psf) S _{u(1557688993135938848559148898779136000)} = 1557688993135938848559148898779136000 sec Undrained Shear Strength (psf) S _{u(3115377986271877697118297797558272000)} = 3115377986271877697118297797558272000 sec Undrained Shear Strength (psf) S _{u(6230755972543755394236595595116544000)} = 6230755972543755394236595595116544000 sec Undrained Shear Strength (psf) S _{u(12461511945087510788473191190233088000)} = 12461511945087510788473191190233088000 sec Undrained Shear Strength (psf) S _{u(24923023890175021576946382380466176000)} = 24923023890175021576946382380466176000 sec Undrained Shear Strength (psf) S _{u(49846047780350043153892764760932352000)} = 49846047780350043153892764760932352000 sec Undrained Shear Strength (psf) S _{u(99692095560700086307785529521864704000)} = 99692095560700086307785529521864704000 sec Undrained Shear Strength (psf) S _{u(199384191121400172615571059043729408000)} = 199384191121400172615571059043729408000 sec Undrained Shear Strength (psf) S _{u(398768382242800345231142118087458816000)} = 398768382242800345231142118087458816000 sec Undrained Shear Strength (psf) S _{u(797536764485600690462284236174917632000)} = 797536764485600690462284236174917632000 sec Undrained Shear Strength (psf) S _{u(1595073528971201380924568472349835264000)} = 1595073528971201380924568472349835264000 sec Undrained Shear Strength (psf) S _{u(3190147057942402761849136944699670528000)} = 3190147057942402761849136944699670528000 sec Undrained Shear Strength (psf) S _{u(6380294115884805523698273889399341056000)} = 6380294115884805523698273889399341056000 sec Undrained Shear Strength (psf) S _{u(12760588237777611047396547778798682112000)} = 12760588237777611047396547778798682112000 sec Undrained Shear Strength (psf) S _{u(25521176475555222094793095557597364224000)} = 25521176475555222094793095557597364224000 sec Undrained Shear Strength (psf) S _{u(510423529511104441895861911151947284448000)} = 510423529511104441895861911151947284448000 sec Undrained Shear Strength (psf) S _{u(102084705902220888379172382230394488896000)} = 102084705902220888379172382230394488896000 sec Undrained Shear Strength (psf) S _{u(204169411804441776758344764460788977792000)} = 204169411804441776758344764460788977792000 sec Undrained Shear Strength (psf) S _{u(408338823608883553516689528921577955584000)} = 408338823608883553516689528921577955584000 sec Undrained Shear Strength (psf) S _{u(816677647217767107033379057843155911168000)} = 816677647217767107033379057843155911168000 sec Undrained Shear Strength (psf) S _{u(1633355294435534214066758115686311822336000)} = 1633355294435534214066758115686311822336000 sec Undrained Shear Strength (psf) S _{u(3266710588871068428133516231372623644672000)} = 3266710588871068428133516231372623644672000 sec Undrained Shear Strength (psf) S _{u(6533421177742136856267032462745247289344000)} = 6533421177742136856267032462745247289344000 sec Undrained Shear Strength (psf) S _{u(13066842355484273712534064925490494578688000)} = 13066842355484273712534064925490494578688000 sec Undrained Shear Strength (psf) S _{u(26133684710968547425068129850980989157376000)} = 26133684710968547425068129850980989157376000 sec Undrained Shear Strength (psf) S _{u(52267369421937094850136259701961978314752000)} = 52267369421937094850136259701961978314752000 sec Undrained Shear Strength (psf) S _{u(104534738843874189700272519403923956629504000)} = 104534738843874189700272519403923956629504000 sec Undrained Shear Strength (psf) S _{u(209069477687748379400545038807847913259008000)} = 209069477687748379400545038807847913259008000 sec Undrained Shear Strength (psf) S _{u(418138955375496758801090077615695826518016000)} = 418138955375496758801090077615695826518016000 sec Undrained Shear Strength (psf) S _{u(836277910750993517602180155231391653036032000)} = 836277910750993517602180155231391653036032000 sec Undrained Shear Strength (psf) S _{u(1672555821501987035204360310462783306072064000)} = 1672555821501987035204360310462783306072064000 sec Undrained Shear Strength (psf) S _{u(3345111643003974070408720620925566612144128000)} = 3345111643003974070408720620925566612144128000 sec Undrained Shear Strength (psf) S _{u(6690223286007948140817441241851133224288256000)} = 6690223286007948140817441241851133224288256000 sec Undrained Shear Strength (psf) S _{u(13380446572015896281634882483702266448576512000)} = 13380446572015896281634882483702266448576512000 sec Undrained Shear Strength (psf) S _{u(26760893144031792563269764967404532897153024000)} = 26760893144031792563269764967404532897153024000 sec Undrained Shear Strength (psf) S _{u(53521786288063585126539529934809065794306048000)} = 53521786288063585126539529934809065794306048000 sec Undrained Shear Strength (psf) S _{u(107043572576127170253079059869618131588612096000)} = 107043572576127170253079059869618131588612096000 sec Undrained Shear Strength (psf) S _{u(214087145152254340506158119739236263177224192000)} = 214087145152254340506158119739236263177224192000 sec Undrained Shear Strength (psf) S _{u(428174290304508681012316239478472526354448384000)} = 428174290304508681012316239478472526354448384000 sec Undrained Shear Strength (psf) S _{u(856348580609017362024632478956945052708896768000)} = 856348580609017362024632478956945052708896768000 sec Undrained Shear Strength (psf) S _{u(1712697161218034724049264957913890105417793536000)} = 1712697161218034724049264957913890105417793536000 sec Undrained Shear Strength (psf) S _{u(3425394322436069448098529915827780210835587072000)} = 3425394322436069448098529915827780210835			

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project Cousins River Bridge #2183 Location Yarmouth/Freeport, Maine		Boring No.: BB-YFCR-106B WIN: 21725.00																																																																																																																										
Driller: New England Boring Contractors		Elevation (ft.): 5.251		Auger ID/OD: 4"/4"																																																																																																																										
Operator: Brad Enos		Datum: NAVD88		Sampler: Standard Split Spoon																																																																																																																										
Logged By: LLM		Rig Type: M-1		Hammer Wt./Fall: 140 lbs / 30"																																																																																																																										
Date Start/Finish: 11/20/13 00 (10/26/17)		Drilling Method: SSA		Core Barrel: N/A																																																																																																																										
Boring Location: North 357232 627 East 1043014 102		Casing ID/OD: N/A		Water Level*: N/A																																																																																																																										
Hammer Efficiency Factor: 0.6		Hammer Type: Automatic ☐ Hydraulic ☐ Rope & Cathead ☒																																																																																																																												
Definitions: P = Split Spoon Sample MS = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample Attempt V = Field Vane Shear Test PP = Pocket Penetrometer MW = Unsuccessful Field Vane Shear Test Attempt R = Rock Core Sample SA = Solid Stem Auger SSA = Hollow Stem Auger RC = Baller Core SDH = Weight of 140 lb. Hammer KORC = Weight of Rods or Casing S_u = Pocket Torque Shear Strength (psf) B = Unhammer Efficiency Factor/100/M-uncorrected S_u = Peak/Revised Field Vane Undrained Shear Strength (psf) S_{u(Lab)} = Lab Vane Undrained Shear Strength (psf) S_p = Unconfined Compressive Strength (psi) Uncorrected = Raw Field SPT Blow Hammer Efficiency Factor = Rig Specific Annual Calibration Value N₆₀ = SPT Uncorrected Corrected for Hammer Efficiency N₆₀ = Unsuccessful Field Vane Shear Test Attempt L = Liquidity Index WC = Water Content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test																																																																																																																														
Sample Information <table><thead><tr><th>Sample No.</th><th>Pen./REC. (in.)</th><th>Sample Depth (ft.)</th><th>Blows (C.F. in.)</th><th>Strength (lb/ft²)</th><th>Uncorrected</th><th>Corrected</th><th>Elevation (ft.)</th><th>Graphic Log</th><th>Visual Description and Remarks</th><th>Laboratory Testing Results/AASHTO and Unified Class</th></tr></thead><tbody><tr><td>10</td><td>24/1</td><td>0.00 - 2.00</td><td>WDP(24")</td><td>S_u = 201/22 psf</td><td>-</td><td></td><td></td><td></td><td>Brown, wet, soft, organic SILT, little fine to coarse sand, (ORGANIC CLAY, SILT, PEAT)</td><td></td></tr><tr><td>V1</td><td></td><td></td><td></td><td>S_u = 714/223 psf</td><td></td><td></td><td></td><td></td><td>Auger Sample: Grey, wet, Silty CLAY, little fine to coarse sand, (ORGANIC CLAY, SILT, PEAT)</td><td></td></tr><tr><td>V2</td><td>24/10.8</td><td>2.00 - 4.00</td><td>WDP(11/2")</td><td>S_u = 1094/175 psf</td><td>-</td><td></td><td></td><td></td><td>35x110 mm vane raw torque readings: V1: 4 5/0 05 ft-lbs V2: 16/5 ft-lbs 25A Top 0.3" is brown, wet, fine to coarse SAND, (ORGANIC CLAY, SILT, PEAT)</td><td></td></tr><tr><td>V3</td><td></td><td></td><td></td><td>S_u = 647/89 psf</td><td></td><td></td><td></td><td></td><td>35x110 mm vane raw torque readings: V3: 24 20 4 ft-lbs 25B Bottom 0.6" is grey, wet, stiff, Silty CLAY, organic silt, in spoon tip, (ORGANIC CLAY, SILT, PEAT)</td><td></td></tr><tr><td>V4</td><td></td><td></td><td></td><td>S_u = 442/112 psf</td><td>-</td><td></td><td></td><td></td><td>35x110 mm vane raw torque readings: V4: 11 5/1 5 ft-lbs 25C Top 0.6" is grey, wet, stiff, Silty CLAY, organic silt, in spoon tip, (ORGANIC CLAY, SILT, PEAT)</td><td></td></tr><tr><td>V5</td><td>24/0</td><td>6.00 - 8.00</td><td>WDP(24")</td><td>S_u = 491/112 psf</td><td>-</td><td></td><td></td><td></td><td>Wash sample: Brown, wet, PEAT coming up in wash from 4" to 8" bgs, (ORGANIC CLAY, SILT, PEAT)</td><td></td></tr><tr><td>V6</td><td></td><td></td><td></td><td>S_u = 536/112 psf</td><td>-</td><td></td><td></td><td></td><td>35x110 mm vane raw torque readings: V6: 10/2 5 ft-lbs V7: 11/2 5 ft-lbs</td><td></td></tr><tr><td>V7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Grey-brown, wet, medium stiff, Silty CLAY, trace sand, trace organics, organic odor, (PRESUMPTIVE FORMATION)</td><td></td></tr><tr><td>V8</td><td>24/24</td><td>8.00 - 10.00</td><td>KOR(12"/11/12")</td><td></td><td>-</td><td></td><td></td><td></td><td>35x110 mm vane raw torque readings: V8: 11 5/1 5 ft-lbs V9: 12/1 5 ft-lbs</td><td></td></tr><tr><td>V9</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Bottom of Exploration at 10.0 feet below ground surface</td><td></td></tr></tbody></table>						Sample No.	Pen./REC. (in.)	Sample Depth (ft.)	Blows (C.F. in.)	Strength (lb/ft ²)	Uncorrected	Corrected	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/AASHTO and Unified Class	10	24/1	0.00 - 2.00	WDP(24")	S _u = 201/22 psf	-				Brown, wet, soft, organic SILT, little fine to coarse sand, (ORGANIC CLAY, SILT, PEAT)		V1				S _u = 714/223 psf					Auger Sample: Grey, wet, Silty CLAY, little fine to coarse sand, (ORGANIC CLAY, SILT, PEAT)		V2	24/10.8	2.00 - 4.00	WDP(11/2")	S _u = 1094/175 psf	-				35x110 mm vane raw torque readings: V1: 4 5/0 05 ft-lbs V2: 16/5 ft-lbs 25A Top 0.3" is brown, wet, fine to coarse SAND, (ORGANIC CLAY, SILT, PEAT)		V3				S _u = 647/89 psf					35x110 mm vane raw torque readings: V3: 24 20 4 ft-lbs 25B Bottom 0.6" is grey, wet, stiff, Silty CLAY, organic silt, in spoon tip, (ORGANIC CLAY, SILT, PEAT)		V4				S _u = 442/112 psf	-				35x110 mm vane raw torque readings: V4: 11 5/1 5 ft-lbs 25C Top 0.6" is grey, wet, stiff, Silty CLAY, organic silt, in spoon tip, (ORGANIC CLAY, SILT, PEAT)		V5	24/0	6.00 - 8.00	WDP(24")	S _u = 491/112 psf	-				Wash sample: Brown, wet, PEAT coming up in wash from 4" to 8" bgs, (ORGANIC CLAY, SILT, PEAT)		V6				S _u = 536/112 psf	-				35x110 mm vane raw torque readings: V6: 10/2 5 ft-lbs V7: 11/2 5 ft-lbs		V7									Grey-brown, wet, medium stiff, Silty CLAY, trace sand, trace organics, organic odor, (PRESUMPTIVE FORMATION)		V8	24/24	8.00 - 10.00	KOR(12"/11/12")		-				35x110 mm vane raw torque readings: V8: 11 5/1 5 ft-lbs V9: 12/1 5 ft-lbs		V9									Bottom of Exploration at 10.0 feet below ground surface	
Sample No.	Pen./REC. (in.)	Sample Depth (ft.)	Blows (C.F. in.)	Strength (lb/ft ²)	Uncorrected	Corrected	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/AASHTO and Unified Class																																																																																																																				
10	24/1	0.00 - 2.00	WDP(24")	S _u = 201/22 psf	-				Brown, wet, soft, organic SILT, little fine to coarse sand, (ORGANIC CLAY, SILT, PEAT)																																																																																																																					
V1				S _u = 714/223 psf					Auger Sample: Grey, wet, Silty CLAY, little fine to coarse sand, (ORGANIC CLAY, SILT, PEAT)																																																																																																																					
V2	24/10.8	2.00 - 4.00	WDP(11/2")	S _u = 1094/175 psf	-				35x110 mm vane raw torque readings: V1: 4 5/0 05 ft-lbs V2: 16/5 ft-lbs 25A Top 0.3" is brown, wet, fine to coarse SAND, (ORGANIC CLAY, SILT, PEAT)																																																																																																																					
V3				S _u = 647/89 psf					35x110 mm vane raw torque readings: V3: 24 20 4 ft-lbs 25B Bottom 0.6" is grey, wet, stiff, Silty CLAY, organic silt, in spoon tip, (ORGANIC CLAY, SILT, PEAT)																																																																																																																					
V4				S _u = 442/112 psf	-				35x110 mm vane raw torque readings: V4: 11 5/1 5 ft-lbs 25C Top 0.6" is grey, wet, stiff, Silty CLAY, organic silt, in spoon tip, (ORGANIC CLAY, SILT, PEAT)																																																																																																																					
V5	24/0	6.00 - 8.00	WDP(24")	S _u = 491/112 psf	-				Wash sample: Brown, wet, PEAT coming up in wash from 4" to 8" bgs, (ORGANIC CLAY, SILT, PEAT)																																																																																																																					
V6				S _u = 536/112 psf	-				35x110 mm vane raw torque readings: V6: 10/2 5 ft-lbs V7: 11/2 5 ft-lbs																																																																																																																					
V7									Grey-brown, wet, medium stiff, Silty CLAY, trace sand, trace organics, organic odor, (PRESUMPTIVE FORMATION)																																																																																																																					
V8	24/24	8.00 - 10.00	KOR(12"/11/12")		-				35x110 mm vane raw torque readings: V8: 11 5/1 5 ft-lbs V9: 12/1 5 ft-lbs																																																																																																																					
V9									Bottom of Exploration at 10.0 feet below ground surface																																																																																																																					
Remarks: 1. "- -" Blow counts not representative of undisturbed material, sample disturbed by field vane. 2. Boring backfilled with drill cuttings. 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-YFCR-106B																																																																																																																														

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project Cousins River Bridge #2183 Location Yarmouth/Freeport, Maine		Boring No.: BB-YFCR-201 WIN: 021725.00																																																																																																																																																																						
Driller: Summit Geosengineering Services		Elevation (ft.): 5.90		Auger ID/OD: N/A																																																																																																																																																																						
Operator: Craig Coolidge		Datum: NAVD88		Sampler: N/A																																																																																																																																																																						
Logged By: Karen Roth		Rig Type: AMS PowerProbe 9500-VTR		Hammer Wt./Fall: N/A																																																																																																																																																																						
Date Start/Finish: 6/8/22 (08/19), 6/9/22 (11/24)		Drilling Method: Direct Push		Core Barrel: N/A																																																																																																																																																																						
Boring Location: N 357158 767, E 1042868 372		Casing ID/OD: 4 in/4.5 in		Water Level*: See Remarks																																																																																																																																																																						
Hammer Efficiency Factor: N/A		Hammer Type: Automatic ☐ Hydraulic ☐ Rope & Cathead ☐																																																																																																																																																																								
Definitions: P = Split Spoon Sample MS = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample Attempt V = Field Vane Shear Test PP = Pocket Penetrometer MW = Unsuccessful Field Vane Shear Test Attempt R = Rock Core Sample SA = Solid Stem Auger SSA = Hollow Stem Auger RC = Baller Core SDH = Weight of 140 lb. Hammer KORC = Weight of Rods or Casing S_u = Pocket Torque Shear Strength (psf) B = Unhammer Efficiency Factor/100/M-uncorrected S_u = Peak/Revised Field Vane Undrained Shear Strength (psf) S_{u(Lab)} = Lab Vane Undrained Shear Strength (psf) S_p = Unconfined Compressive Strength (psi) Uncorrected = Raw Field SPT Blow Hammer Efficiency Factor = Rig Specific Annual Calibration Value N₆₀ = SPT Uncorrected Corrected for Hammer Efficiency N₆₀ = Unsuccessful Field Vane Shear Test Attempt L = Liquidity Index WC = Water Content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test																																																																																																																																																																										
Sample Information <table><thead><tr><th>Sample No.</th><th>Pen./REC. (in.)</th><th>Sample Depth (ft.)</th><th>Blows (C.F. in.)</th><th>Strength (lb/ft²)</th><th>Uncorrected</th><th>Corrected</th><th>Elevation (ft.)</th><th>Graphic Log</th><th>Visual Description and Remarks</th><th>Laboratory Testing Results/AASHTO and Unified Class</th></tr></thead><tbody><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Wood slivers present in wash water from 1 to 3 feet bgs. Casing was sinking into ground while washing.</td><td></td></tr><tr><td>1U</td><td>24/16.8</td><td>3.00 - 5.00</td><td>Piston Sampler</td><td></td><td></td><td></td><td></td><td></td><td>Brown, wet, fine to medium SAND, trace gravel, trace silt, trace organics at bottom of tube, poorly-graded, non-plastic (FILL)</td><td>STX #675074 WC = 102 Fines = 8.7% A-3, SP-SM</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Wood, silt, and organics in wash water at 10 ft bgs (ORGANIC SILTS AND CLAYS)</td><td></td></tr><tr><td>2U</td><td>24/21</td><td>15.00 - 17.00</td><td>Piston Sampler</td><td></td><td></td><td></td><td></td><td></td><td>Vibrating wire piezometer installed at 14.5 ft bgs after completion of drilling. S/N: 2216845 Grey silt and clay in wash water at 15 ft bgs. Grey, wet, silty fine SAND, poorly-graded, non-plastic (SANDY SILT / CLAYEY SILT)</td><td>STX #675078 WC = 22% Fines = 28.3% A-4, SM</td></tr><tr><td>3U</td><td>24/24</td><td>30.00 - 32.00</td><td>Piston Sampler</td><td></td><td></td><td></td><td></td><td></td><td>Grey clay in wash water at 30 ft bgs. Grey, wet, CLAY (PRESUMPTIVE CLAY)</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Grey clay in wash water from 32 ft to 50 ft bgs.</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Vibrating wire piezometer installed at 39.5 ft bgs after completion of drilling. S/N: 2216844</td><td></td></tr><tr><td>4U</td><td>24/24</td><td>50.00 - 52.00</td><td>Piston Sampler</td><td></td><td></td><td></td><td></td><td></td><td>Grey clay in wash water at 50 ft bgs. Grey, wet, CLAY (PRESUMPTIVE CLAY)</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Grey clay in wash water from 52 ft to 67.7 ft bgs.</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Drill rig starts chattering and sand and gravel present in wash water at 67.7 ft bgs (SAND AND GRAVEL)</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Vibrating wire piezometer installed at 70 ft bgs after completion of drilling. S/N: 2216843</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Probable Top of Bedrock at Elev. -65.4 ft.</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Drill rig starts grinding and driller notes hard material at 71.3 ft bgs. Advanced with roller bit to 72.2 ft bgs and stayed in hard material with grinding.</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Bottom of Exploration at 72.2 feet below ground surface</td><td></td></tr></tbody></table>						Sample No.	Pen./REC. (in.)	Sample Depth (ft.)	Blows (C.F. in.)	Strength (lb/ft ²)	Uncorrected	Corrected	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/AASHTO and Unified Class										Wood slivers present in wash water from 1 to 3 feet bgs. Casing was sinking into ground while washing.		1U	24/16.8	3.00 - 5.00	Piston Sampler						Brown, wet, fine to medium SAND, trace gravel, trace silt, trace organics at bottom of tube, poorly-graded, non-plastic (FILL)	STX #675074 WC = 102 Fines = 8.7% A-3, SP-SM										Wood, silt, and organics in wash water at 10 ft bgs (ORGANIC SILTS AND CLAYS)		2U	24/21	15.00 - 17.00	Piston Sampler						Vibrating wire piezometer installed at 14.5 ft bgs after completion of drilling. S/N: 2216845 Grey silt and clay in wash water at 15 ft bgs. Grey, wet, silty fine SAND, poorly-graded, non-plastic (SANDY SILT / CLAYEY SILT)	STX #675078 WC = 22% Fines = 28.3% A-4, SM	3U	24/24	30.00 - 32.00	Piston Sampler						Grey clay in wash water at 30 ft bgs. Grey, wet, CLAY (PRESUMPTIVE CLAY)											Grey clay in wash water from 32 ft to 50 ft bgs.											Vibrating wire piezometer installed at 39.5 ft bgs after completion of drilling. S/N: 2216844		4U	24/24	50.00 - 52.00	Piston Sampler						Grey clay in wash water at 50 ft bgs. Grey, wet, CLAY (PRESUMPTIVE CLAY)											Grey clay in wash water from 52 ft to 67.7 ft bgs.											Drill rig starts chattering and sand and gravel present in wash water at 67.7 ft bgs (SAND AND GRAVEL)											Vibrating wire piezometer installed at 70 ft bgs after completion of drilling. S/N: 2216843											Probable Top of Bedrock at Elev. -65.4 ft.											Drill rig starts grinding and driller notes hard material at 71.3 ft bgs. Advanced with roller bit to 72.2 ft bgs and stayed in hard material with grinding.											Bottom of Exploration at 72.2 feet below ground surface	
Sample No.	Pen./REC. (in.)	Sample Depth (ft.)	Blows (C.F. in.)	Strength (lb/ft ²)	Uncorrected	Corrected	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/AASHTO and Unified Class																																																																																																																																																																
									Wood slivers present in wash water from 1 to 3 feet bgs. Casing was sinking into ground while washing.																																																																																																																																																																	
1U	24/16.8	3.00 - 5.00	Piston Sampler						Brown, wet, fine to medium SAND, trace gravel, trace silt, trace organics at bottom of tube, poorly-graded, non-plastic (FILL)	STX #675074 WC = 102 Fines = 8.7% A-3, SP-SM																																																																																																																																																																
									Wood, silt, and organics in wash water at 10 ft bgs (ORGANIC SILTS AND CLAYS)																																																																																																																																																																	
2U	24/21	15.00 - 17.00	Piston Sampler						Vibrating wire piezometer installed at 14.5 ft bgs after completion of drilling. S/N: 2216845 Grey silt and clay in wash water at 15 ft bgs. Grey, wet, silty fine SAND, poorly-graded, non-plastic (SANDY SILT / CLAYEY SILT)	STX #675078 WC = 22% Fines = 28.3% A-4, SM																																																																																																																																																																
3U	24/24	30.00 - 32.00	Piston Sampler						Grey clay in wash water at 30 ft bgs. Grey, wet, CLAY (PRESUMPTIVE CLAY)																																																																																																																																																																	
									Grey clay in wash water from 32 ft to 50 ft bgs.																																																																																																																																																																	
									Vibrating wire piezometer installed at 39.5 ft bgs after completion of drilling. S/N: 2216844																																																																																																																																																																	
4U	24/24	50.00 - 52.00	Piston Sampler						Grey clay in wash water at 50 ft bgs. Grey, wet, CLAY (PRESUMPTIVE CLAY)																																																																																																																																																																	
									Grey clay in wash water from 52 ft to 67.7 ft bgs.																																																																																																																																																																	
									Drill rig starts chattering and sand and gravel present in wash water at 67.7 ft bgs (SAND AND GRAVEL)																																																																																																																																																																	
									Vibrating wire piezometer installed at 70 ft bgs after completion of drilling. S/N: 2216843																																																																																																																																																																	
									Probable Top of Bedrock at Elev. -65.4 ft.																																																																																																																																																																	
									Drill rig starts grinding and driller notes hard material at 71.3 ft bgs. Advanced with roller bit to 72.2 ft bgs and stayed in hard material with grinding.																																																																																																																																																																	
									Bottom of Exploration at 72.2 feet below ground surface																																																																																																																																																																	
Remarks: 1. As-drilled boring location and ground surface elevation were provided by MaineDOT. 2. Boring backfilled with cement-bentonite grout to ground surface. Geokon 4500 vibrating wire piezometers installed at depths of 70 ft bgs, 39.5 ft bgs, and 14.5 ft bgs. 3. Arterial pressure was noted in the sand and gravel layer beneath the clay. Water level was measured at 4.8 ft, 5.8 ft, and 6.2 ft above ground surface at 13.08, 15.14, and 15.28, respectively, on 6/8/22, and at 6.7 ft above ground surface at 07:27 on 6/9/22. 4. Hole collapsed to 70.5 ft bgs overnight 6/8/22 to 6/9/22, with bottom of casing at 30 ft bgs. 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-YFCR-201																																																																																																																																																																										



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		1859510		WIN 18595.10		BRIDGE No. 5623		BRIDGE PLANS	
US HIGHWAY ONE		COUSINS RIVER BRIDGE REPLACEMENT #2183		YARMOUTH AND FREEPORT CUMBERLAND COUNTY		BORING LOGS SHEET 4		SHEET NUMBER	
DATE		09/05/22		SIGNATURE		P.E. NUMBER		DATE	
BY		MA CCB							
PROJ. MANAGER		M. LANDON		DESIGN-DETAILED		DESIGN-DETAILED		REVISIONS 1	
				CHECKED-REVIEWED		DESIGN-DETAILED		REVISIONS 2	
								REVISIONS 3	
								REVISIONS 4	
								FIELD CHANGES	



The diagram illustrates a circular excavation pit with two construction stages. Stage I includes a separation geotextile, geogrid, and assumed excavation support. Stage II includes a separation geotextile, geogrid, and assumed excavation support. The diagram also shows the aggregate, subbase, and gravel layers.

Labels and dimensions:

- Stage I
- Stage II
- Assumed approach support of excavation (to be removed)
- Separation Geotextile (Stage I)
- Separation Geotextile (Stage II)
- Aggregate Subbase Course Gravel
- Ultra-Lightweight Foamed Glass Aggregate
- Geogrid (Stage I)
- Geogrid (Stage II)
- Assumed approach support of excavation (to be abandoned in place)
- 1'-0"
- 1'-0"

Approach Slab

Aggregate Subbase Course Gravel

Separation Geotextile over top or structural support

Top of support of excavation to be abandoned in place

Ultra-Lightweight Foamed Glass Aggregate and Geogrid on each side of support of excavation (not shown for clarity)

Limit of support of excavation abandoned in place

Abutment

2" MIN

Section At Temporary Earth Support - Abutment

Section At Temporary
Earth Support - Abutment

Date: 3/13/2024

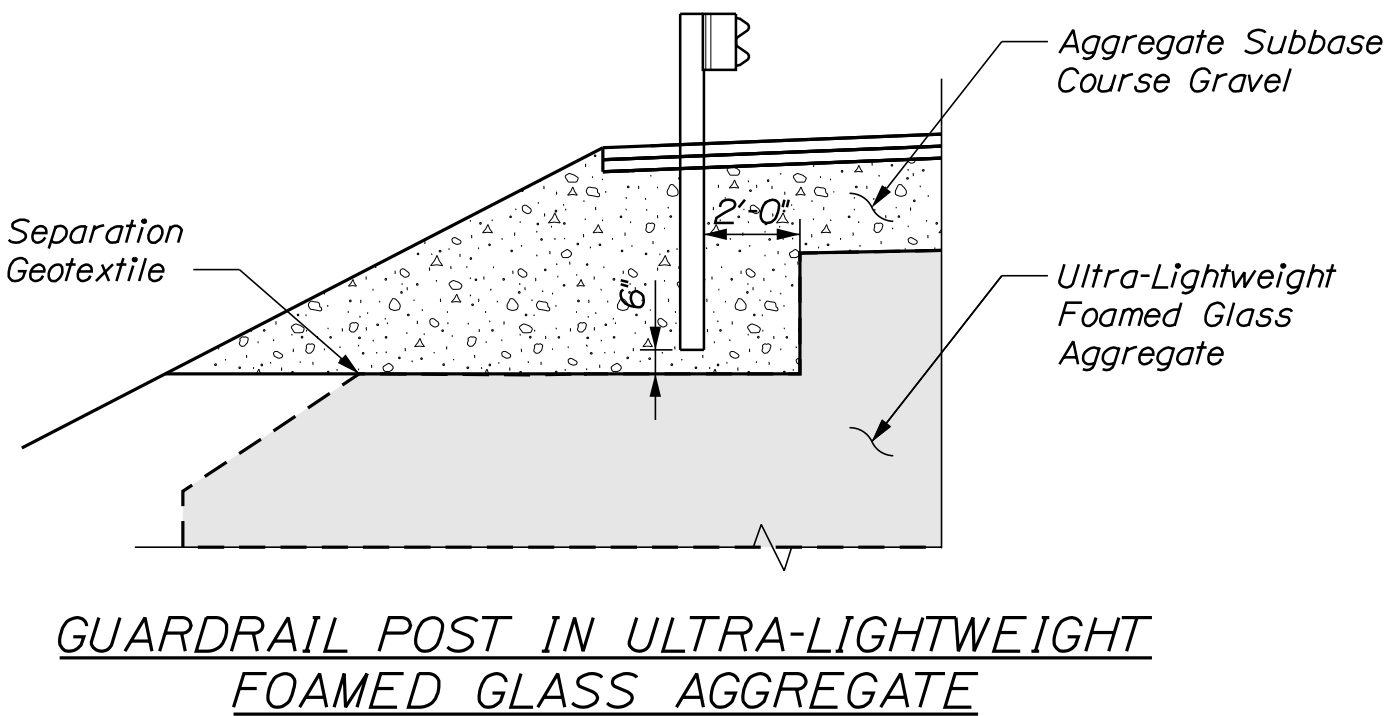
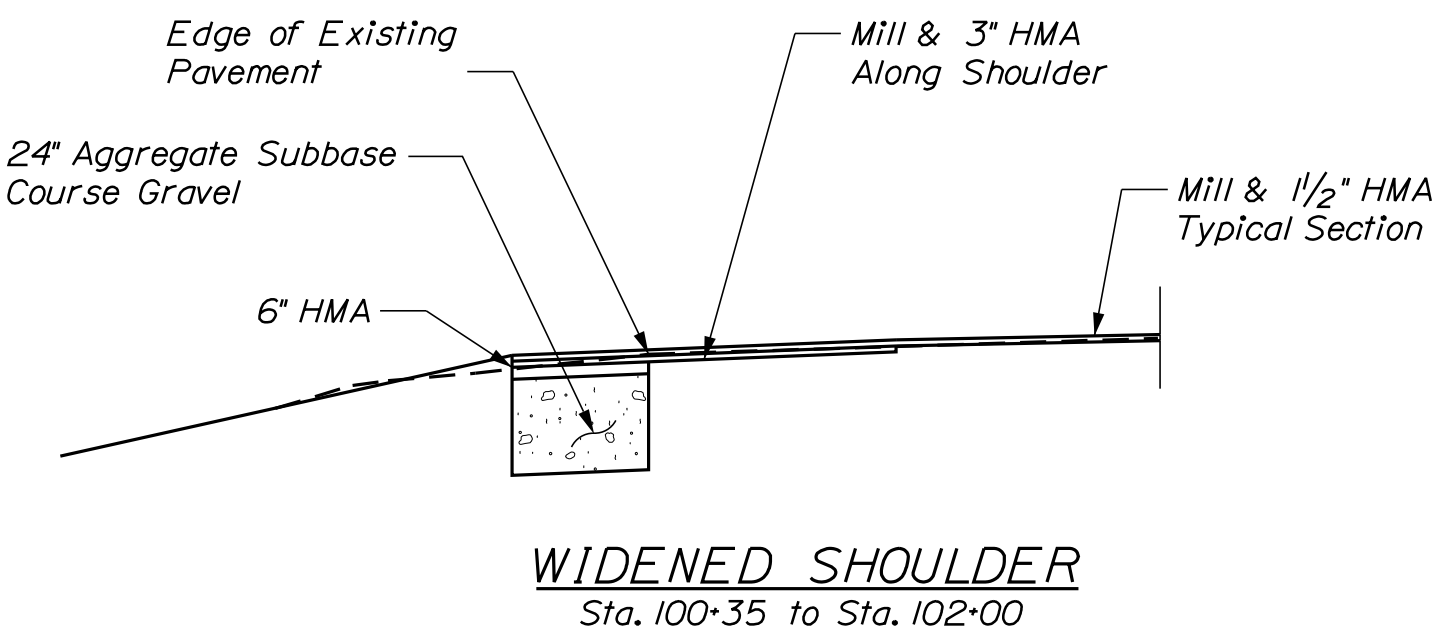
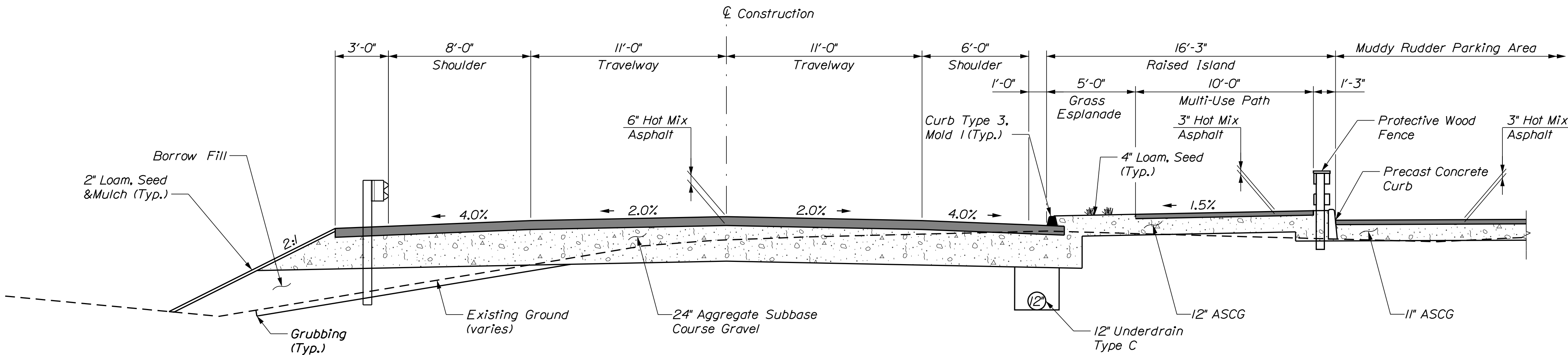
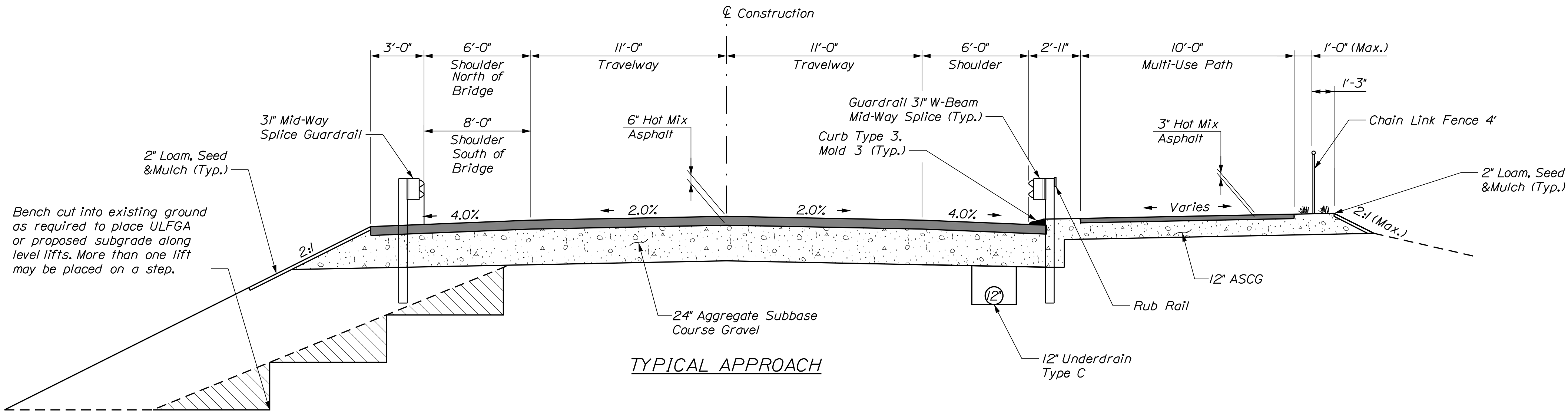
Username:

Division: BRIDGE

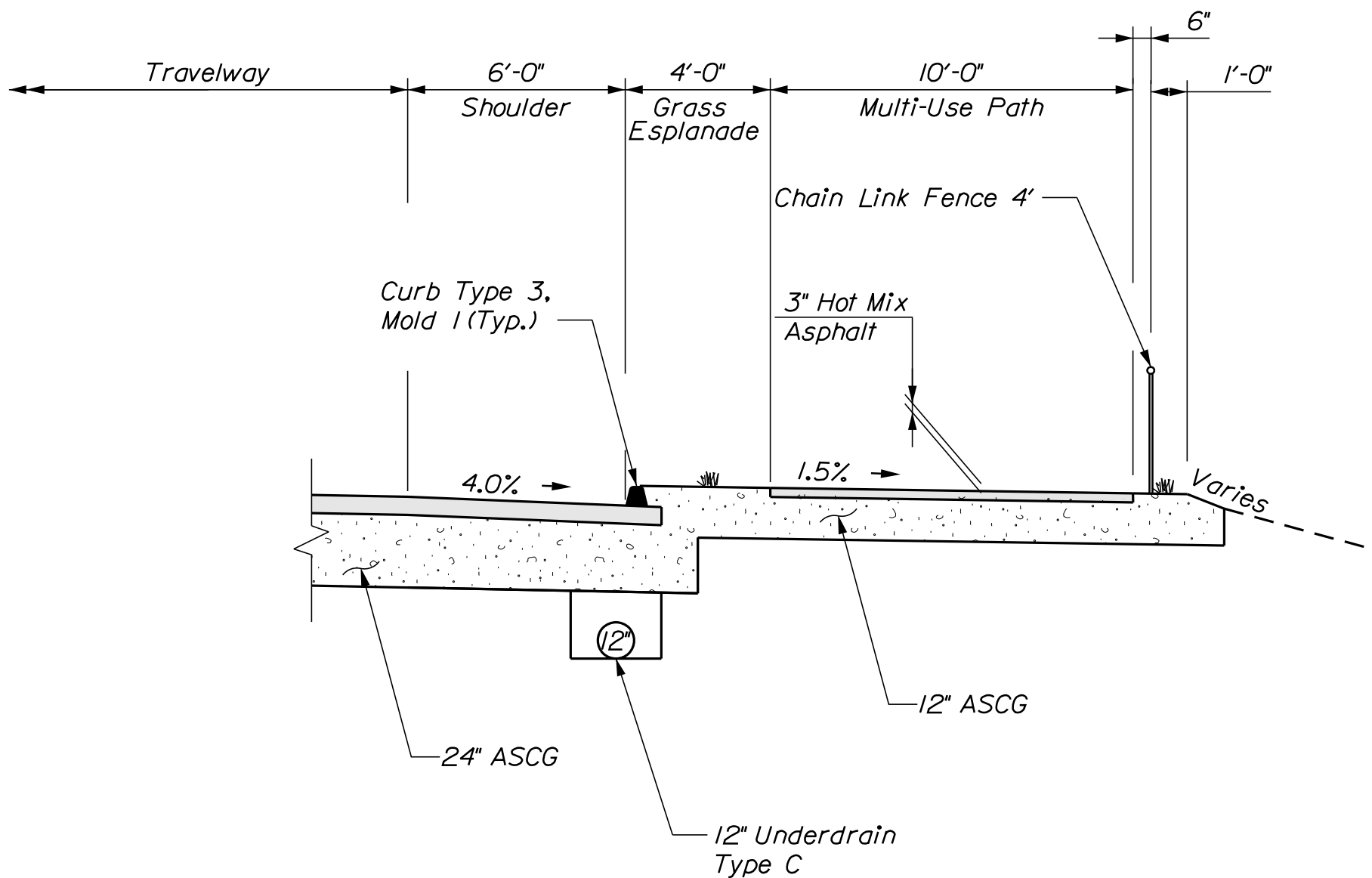
Filename: ... \BRIDGE\NSTA\018_Btypical2.dgn

NOTES

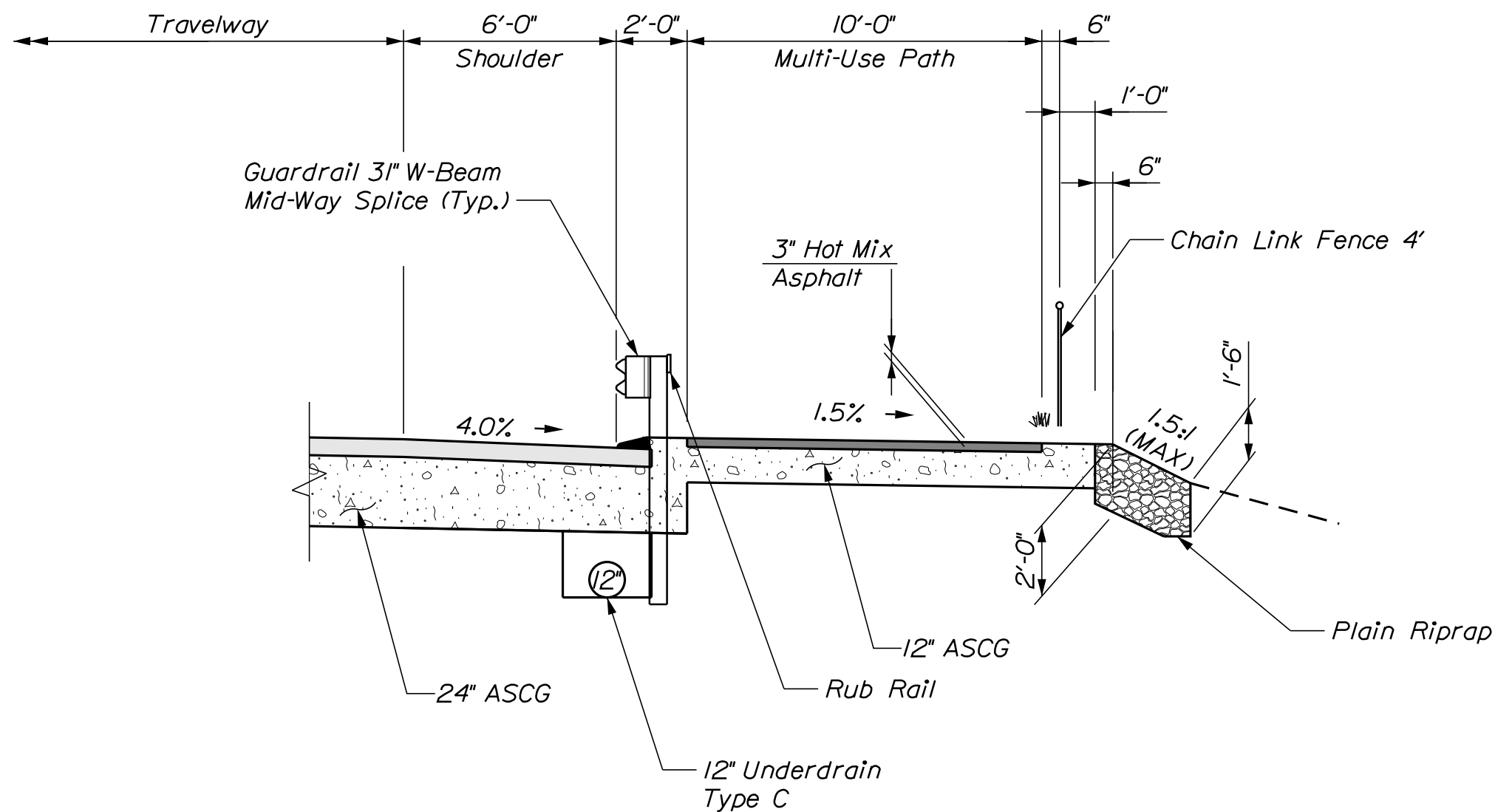
1. The station ranges referenced are approximate.
2. Rub rail components and hardware shall be incidental to the Guardrail 3" W-Beam, Mid-Way Splice. See detail on Miscellaneous Detail sheet.



APPROACH SECTION THROUGH PARKING



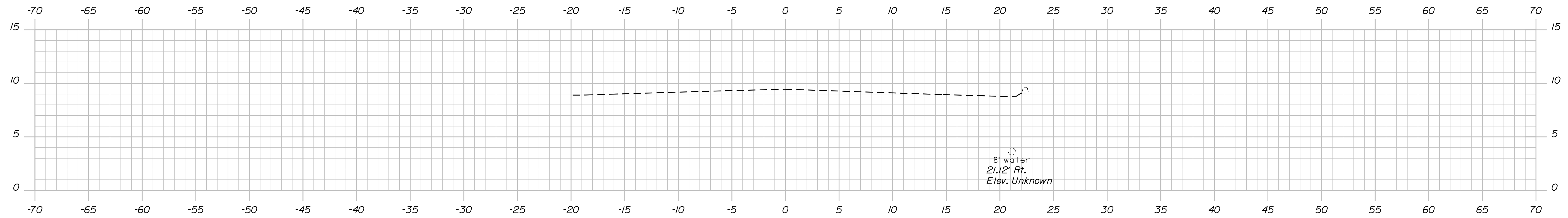
SIDEWALK SECTION
Sta. 102+12 to Sta. 104+35.30



SIDEWALK SECTION
Sta. 112+00 to Sta. 114+00

COUSINS RIVER BRIDGE				STATE OF MAINE			
COUSINS RIVER				DEPARTMENT OF TRANSPORTATION			
YARMOUTH-FREEPORT				STP-2172(500)			
CUMBERLAND COUNTY				BRIDGE NO. 2183			
TYPICAL SECTIONS				WIN			
FIELD CHANGES				21725.00			
REVISIONS 4				DATE			
REVISIONS 3				P.E. NUMBER			
REVISIONS 2							
REVISIONS 1							
DESIGN3-DETAILED3							
DESIGN2-DETAILED2							
CHECKED-REVIEWED				SIGNATURE			
DESIGN-DETAILED							
BY							
DATE							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							
OCT. 2023							
NOV. 2023							

Filename: ... \MSTA\019_XSECT_99+50_001.dgn



99+50.00

SHEET NUMBER

19

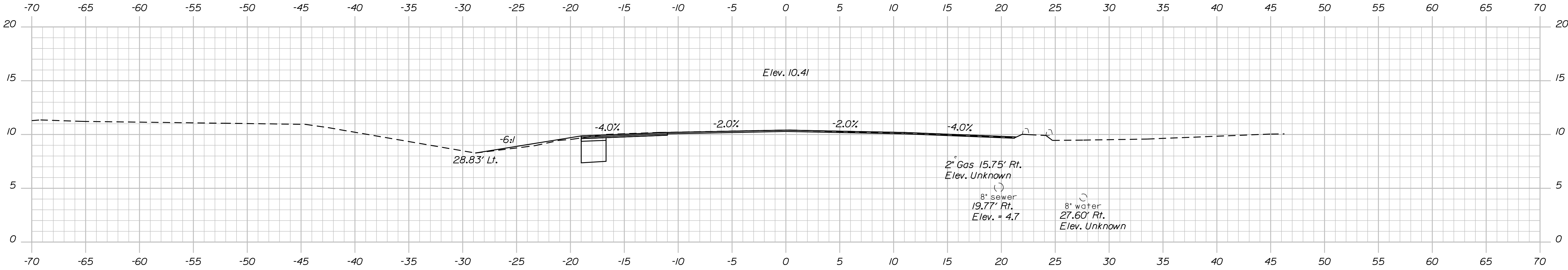
OF 64

Date: 3/13/2024

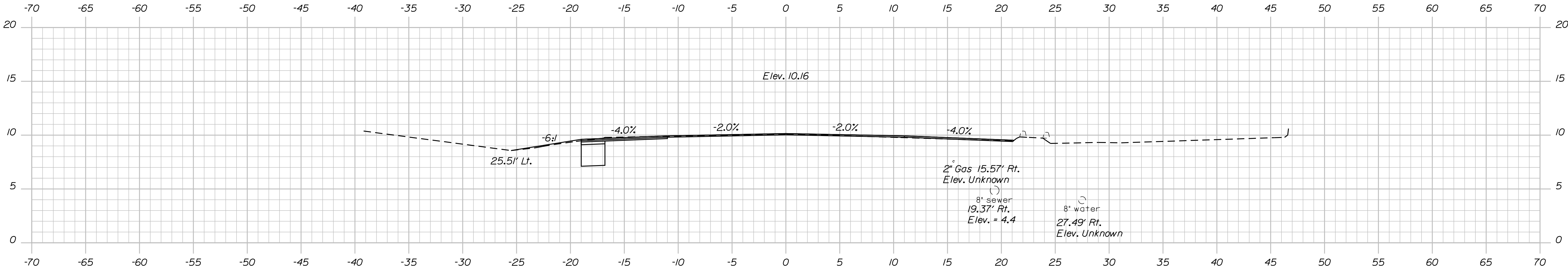
Username:

Division: BRIDGE

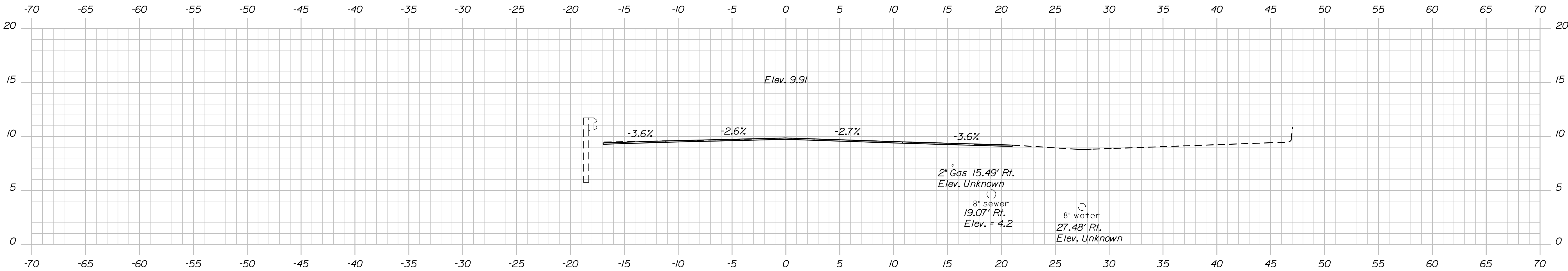
Filename: ... \MSTAD20_XSECT_100+25_002.dgn



100+75.00



100+50.00



100+25.00

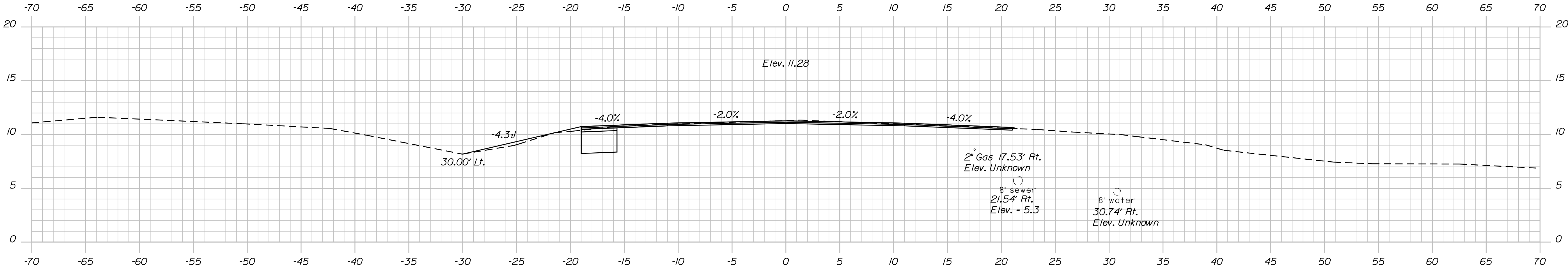
DATE	BY	PROJ. MANAGER	DESIGN-DETAILED	CHECKED-REVIEWED	OK	STU	MM	SIGNATURE	P.E. NUMBER	DATE
NOV 2023	OK	A. Lofth	OK	OK	OK	OK	OK			
DEC 2023	OK		OK	OK	OK	OK	OK			
NOV 2023	OK		OK	OK	OK	OK	OK			
			REVISIONS 1	REVISIONS 2	REVISIONS 3	REVISIONS 4	FIELD CHANGES			

Date:3/13/2024

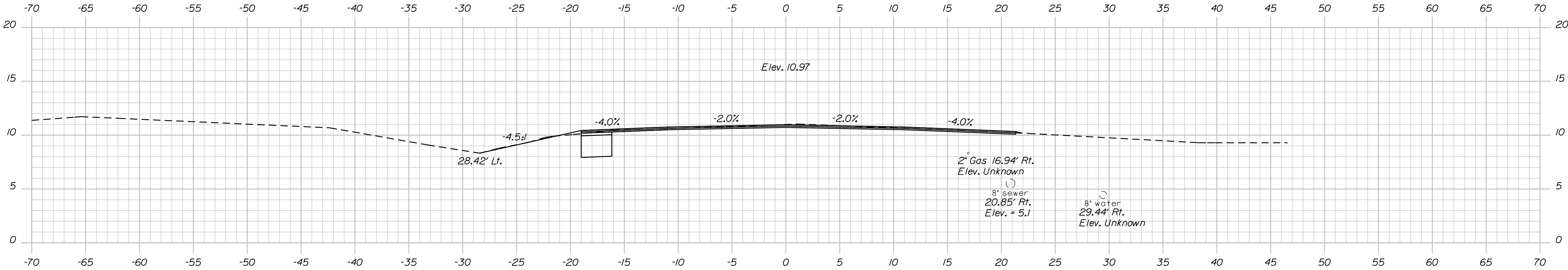
Username:

Division: BRIDGE

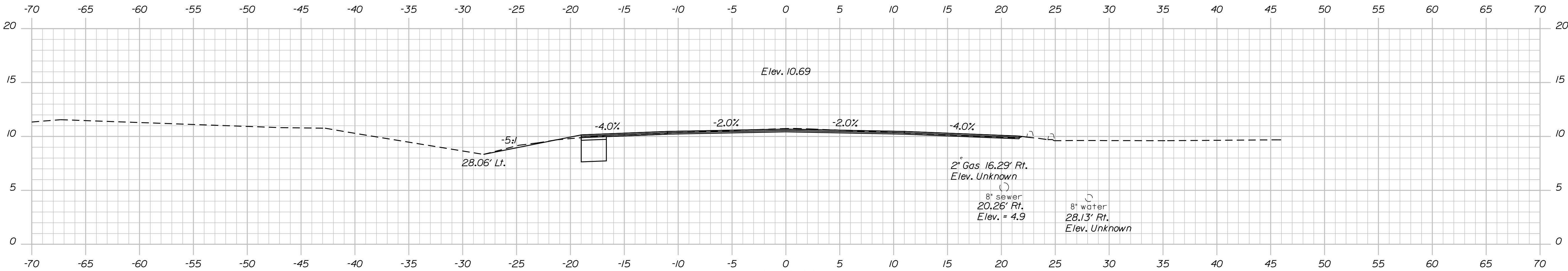
Filename: ... \MSTAD21_XSECT_101+00_003.dgn



101+50.00



101+25.00



101+00.00

START MILL & 3" HMA OVERLAY

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2172(500)

BRIDGE NO. 2183
WIN
21725.00
BRIDGE PLANS

COUSINS RIVER BRIDGE
COUSINS RIVER
YARMOUTH-FREEPORT CUMBERLAND COUNTY

CROSS SECTIONS

SHEET NUMBER

21

OF 64

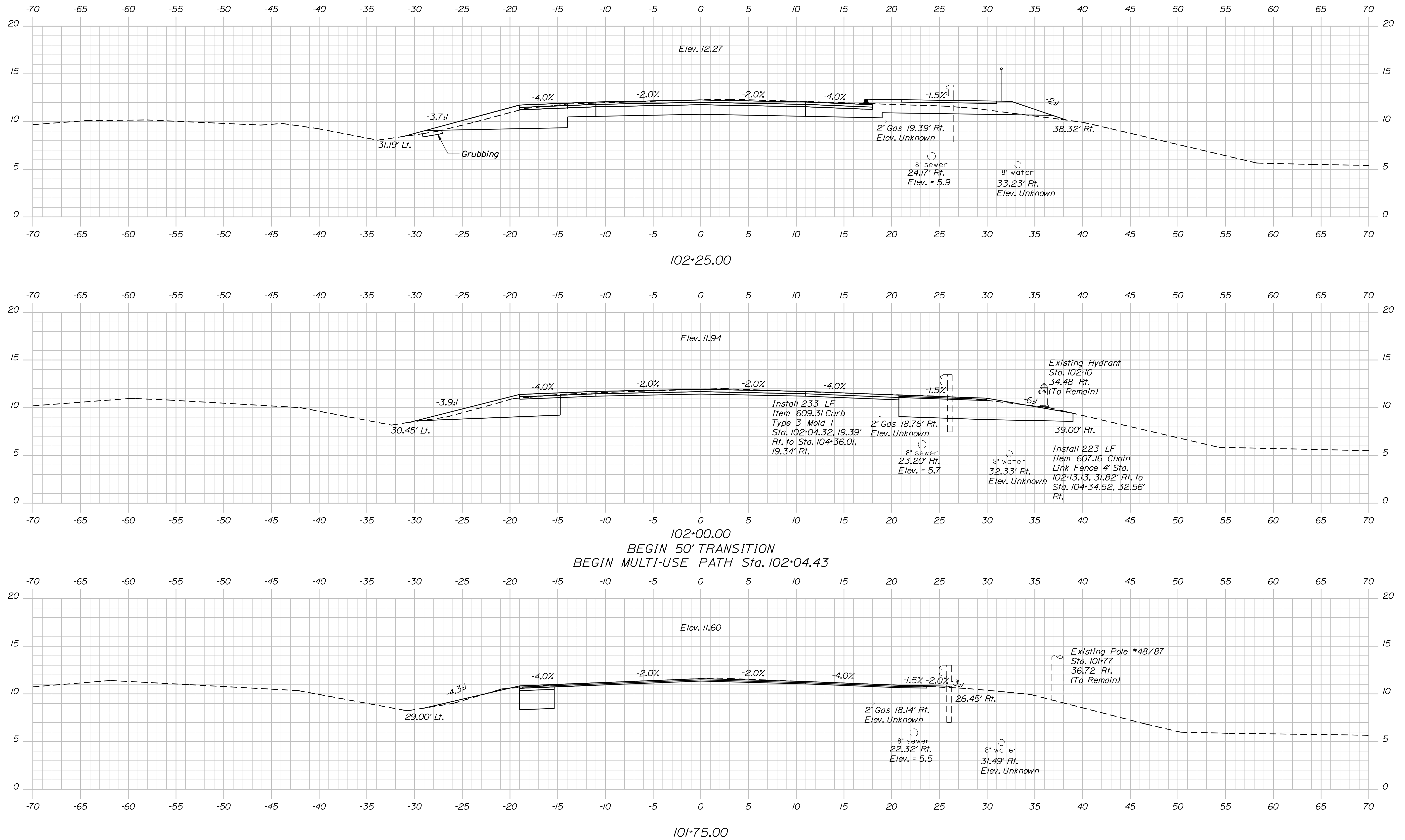
DATE	BY	PROJ. MANAGER	A. Lethe	DATE	BY	PROJ. MANAGER	A. Lethe
NOV. 2023	OKK	DESIGN-DETAILED	RPM	NOV. 2023	OKK	DESIGN-DETAILED	RPM
DEC. 2023	STJ	CHECKED-REVIEWED	OKK	DEC. 2023	STJ	CHECKED-REVIEWED	OKK
NOV. 2023	MM	DESIGN-DETAILED	OKK	NOV. 2023	MM	DESIGN-DETAILED	OKK
		REVISIONS 1				REVISIONS 1	
		REVISIONS 2				REVISIONS 2	
		REVISIONS 3				REVISIONS 3	
		REVISIONS 4				REVISIONS 4	
		FIELD CHANGES				FIELD CHANGES	

SIGNATURE

P.E. NUMBER

DATE

Filename: ... \MSTA\022_XSECT_101+75_004.dgn



Sta. 101+75.00 to Sta. 102+25.00

STATE OF MAINE	
DEPARTMENT OF TRANSPORTATION	
STP-2172(500)	
BRIDGE NO. 2183	WIN 21725.00
BRIDGE PLANS	

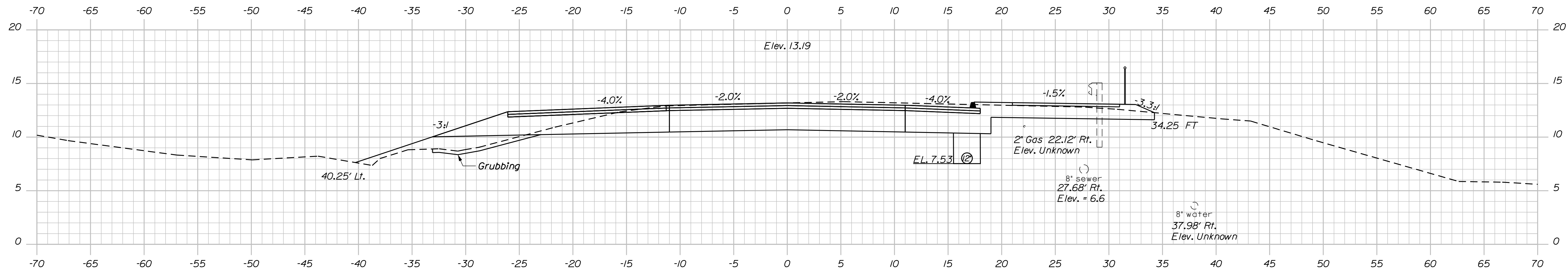
PROJ. MANAGER	A. Lotte	BY	DATE
DESIGN-DETAILED	RPM	OGK	NOV. 2023
CHECKED-REVIEWED	OGK	STJ	DEC. 2023
DESIGNED-DETAILED	OGK	MJM	NOV. 2023
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
SIGNATURE			
P.E. NUMBER			
DATE			

COUSINS RIVER BRIDGE	COUSINS RIVER	YARMOUTH-FREEPORT	CUMBERLAND COUNTY
CROSS SECTIONS			

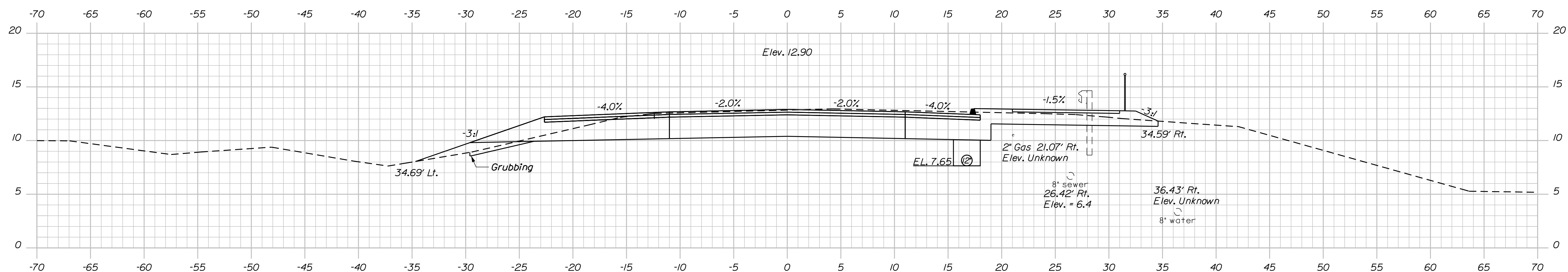
SHEET NUMBER

22

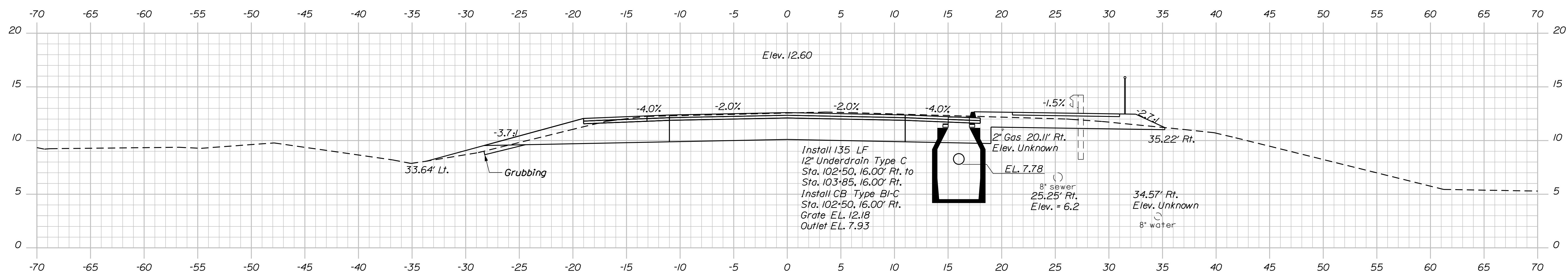
OF 64



103+00.00



102+75.00



102+50.00
END PAVEMENT TRANSITION
BEGIN FULL DEPTH RECONSTRUCTION

PROJ. MANAGER	A. Lathé	BY	DATE
DESIGN-DETAILED	RPM	OJK	NOV. 2023
DESIGNED-REVIEWED	OJK	SJJ	DEC. 2023
DESIGNED-DETAILED2	OJK	MJM	NOV. 2023
DESIGNS3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
SIGNATURE			
P.E. NUMBER			
DATE			

COUSINS RIVER BRIDGE
COUSINS RIVER

CUMBERLAND COUNTY

CROSS SECTIONS

SHEET NUMBER

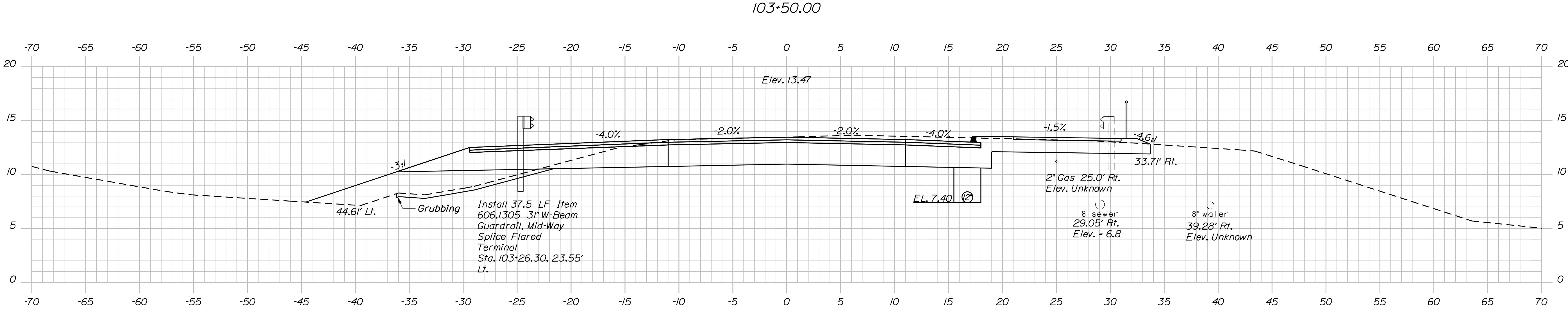
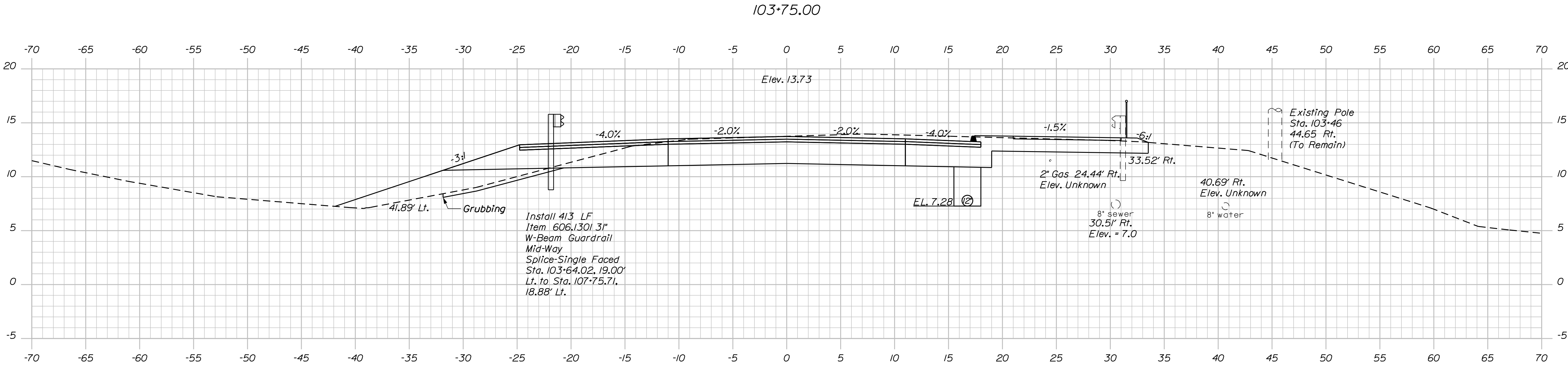
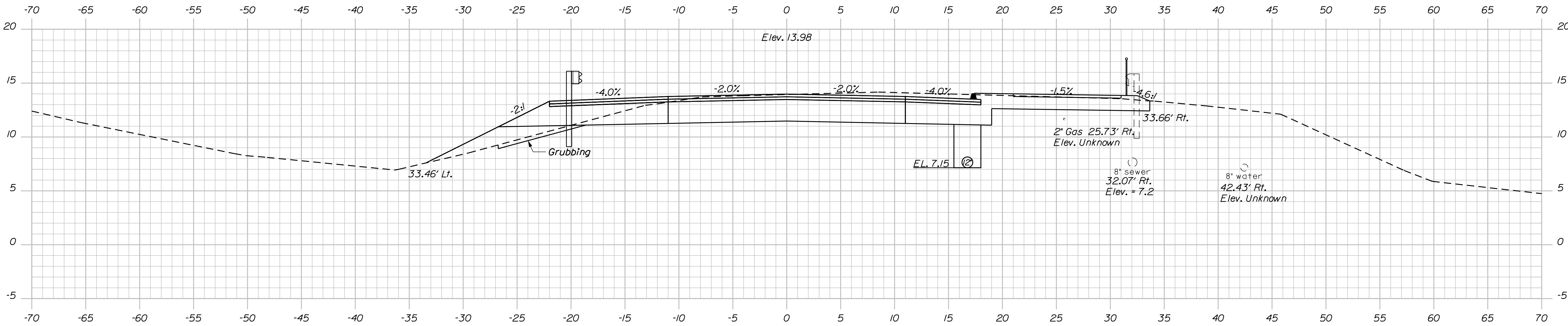
23

OF 64

Date: 3/13/2024

Username:

Filename: ... \MSTAD024_XSECT_103+25_006.dgn Division: BRIDGE



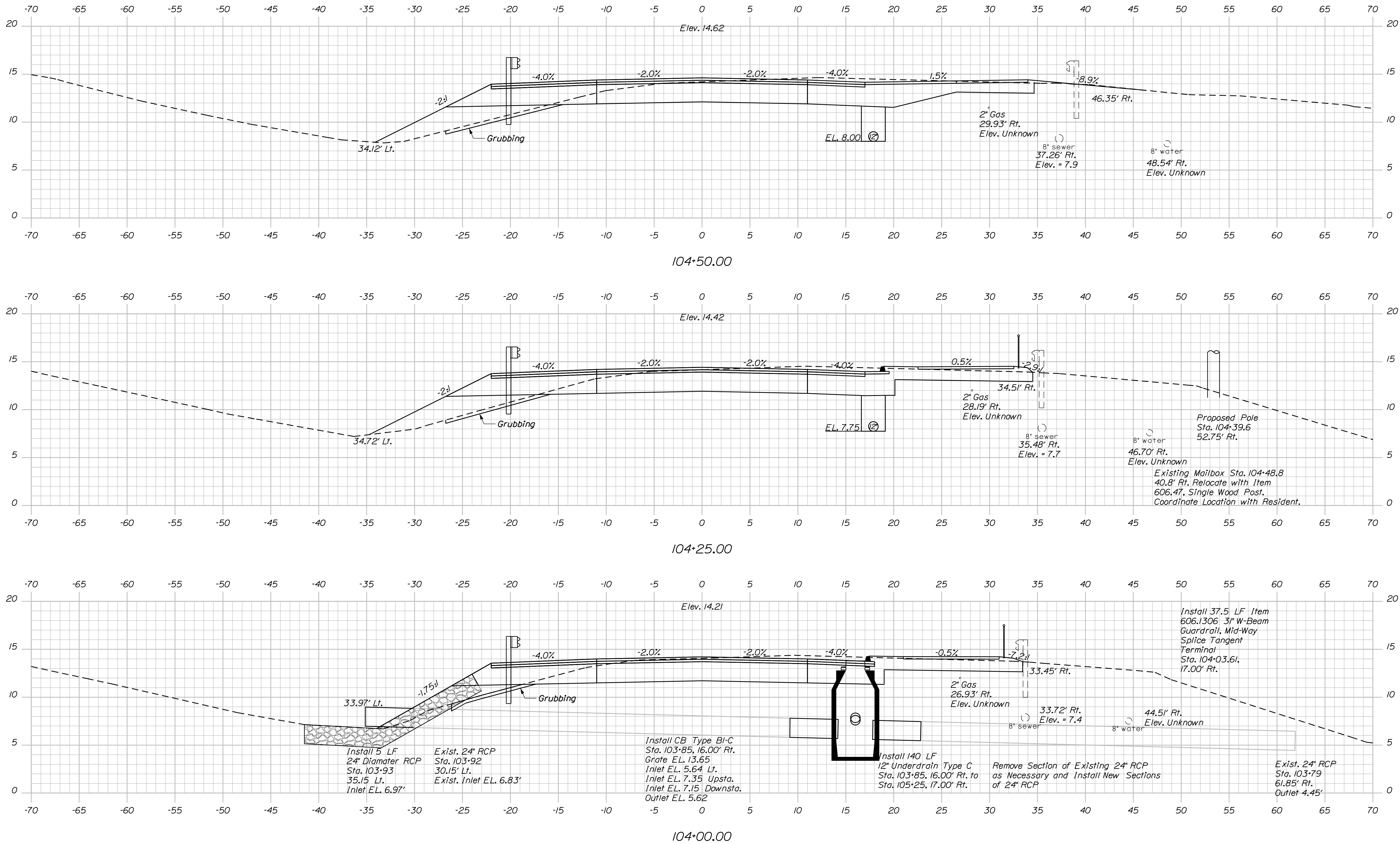
PROJ. MANAGER	DATE	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
DESIGN-DETAILED	NOV 2023	OKK	NOV 2023			
CHECKED-REVIEWED	DEC 2023	STJ	DEC 2023			
DESIGN-DETAILED	NOV 2023	MM	NOV 2023			
DESIGN-DETAILED						
REVISIONS 1						
REVISIONS 2						
REVISIONS 3						
REVISIONS 4						
FIELD CHANGES						

Date: 3/13/2024

Username:

Division: BRIDGE

Filename: ... \MSTAD25_XSECT_104+00_007.dgn



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2172(500)

BRIDGE NO. 2183
WIN
21725.00
BRIDGE PLANS

COUSINS RIVER BRIDGE
COUSINS RIVER
YARMOUTH-FREEPORT

CUMBERLAND COUNTY

CROSS SECTIONS

SHEET NUMBER
25
OF 64

DATE
NOV. 2023
DEC. 2023
NOV. 2023

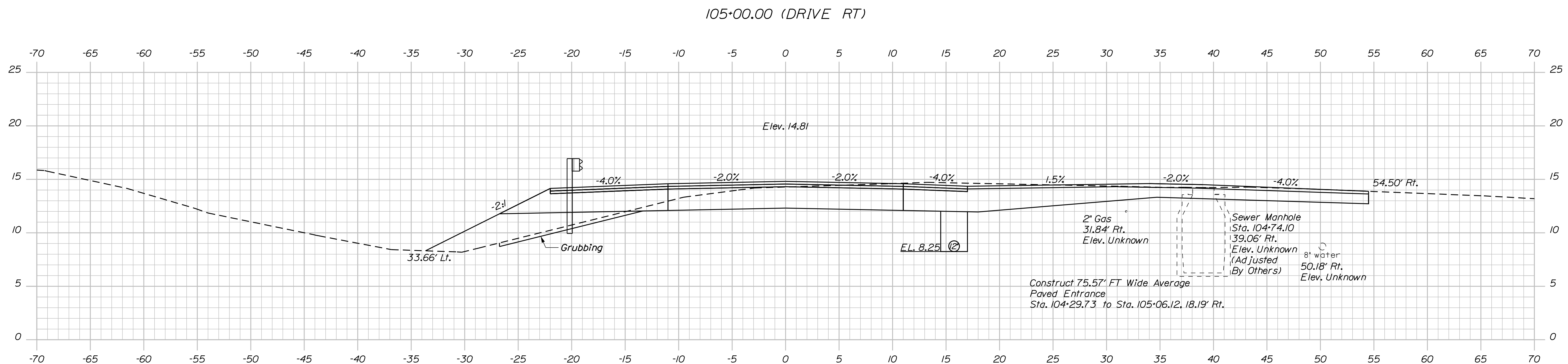
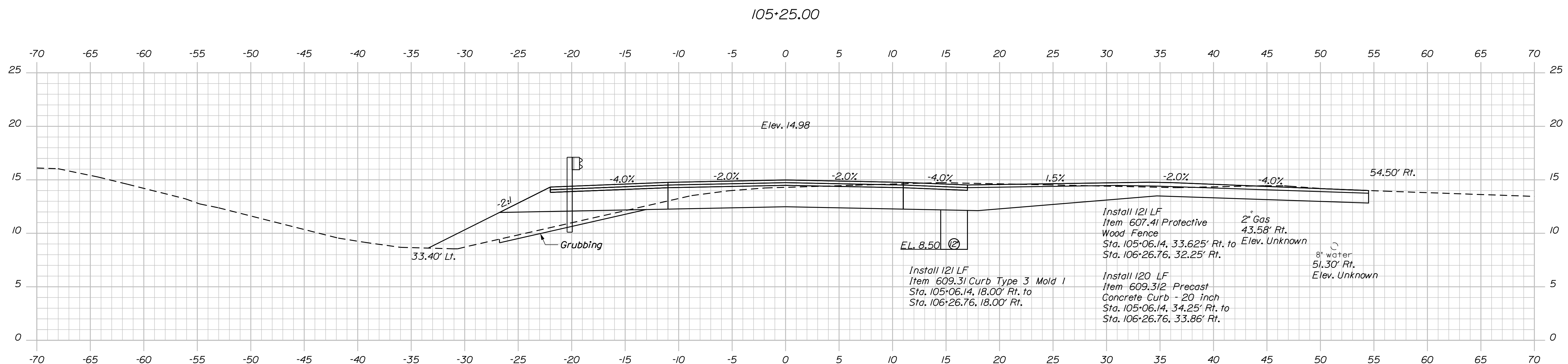
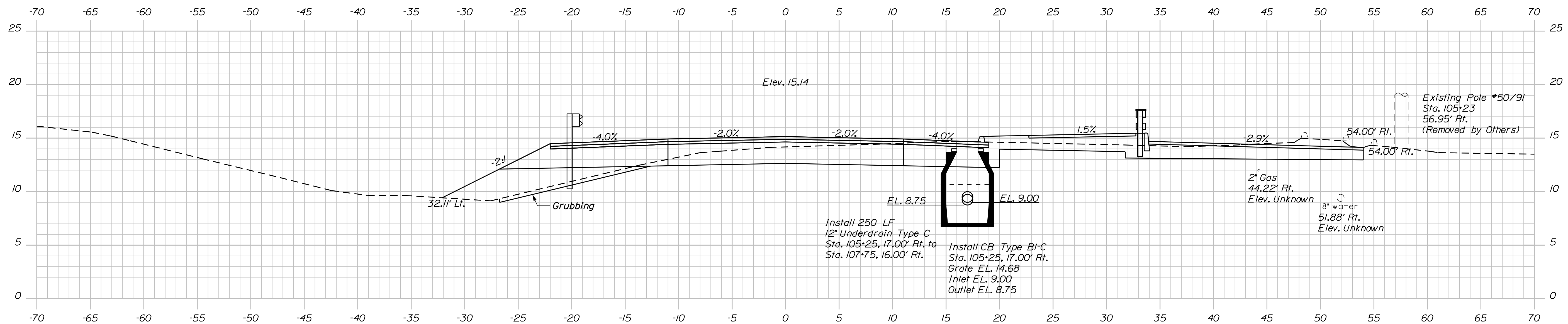
BY
OKK
STJ
MM

PROJ. MANAGER
A. LaFollette

DESIGN-DETAILED
CHECKED-REVIEWED
DESIGN-DETAILED
REVISIONS 1
REVISIONS 2
REVISIONS 3
REVISIONS 4

SIGNATURE
P.E. NUMBER
DATE

FIELD CHANGES



STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

STP-2172(500)

WIN
1725 0

21725.00

BRIDGE NO. 2183

BRIDGE PLANS

COUSINS RIVER BRIDGE

COUSINS RIVER

YARMOUTH-FREEPORT CUMBERLAND COUNTY

YARMOUTH-FREEPORT

CROSS SECTIONS

SHEET NUMBER

26

OF 64

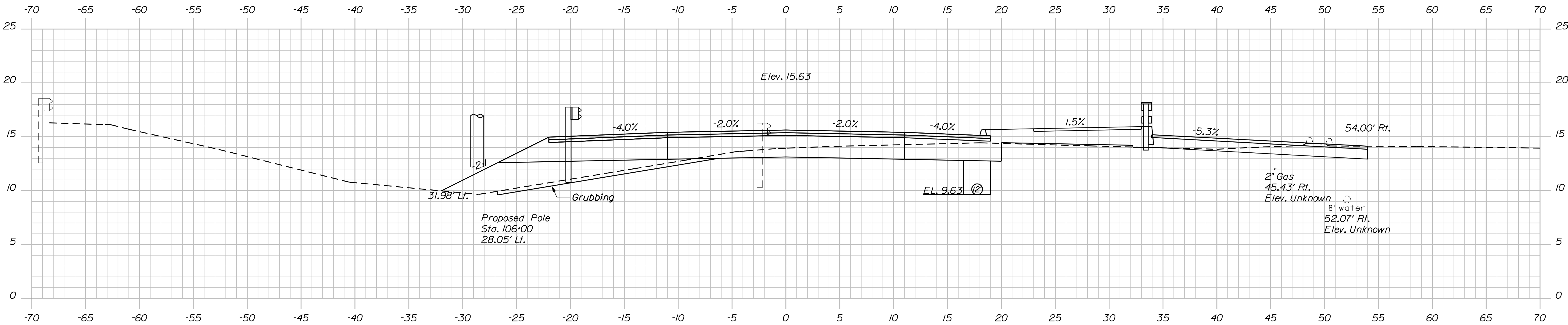
Sta. 104+75.00 to Sta. 105+25.00

Date:3/13/2024

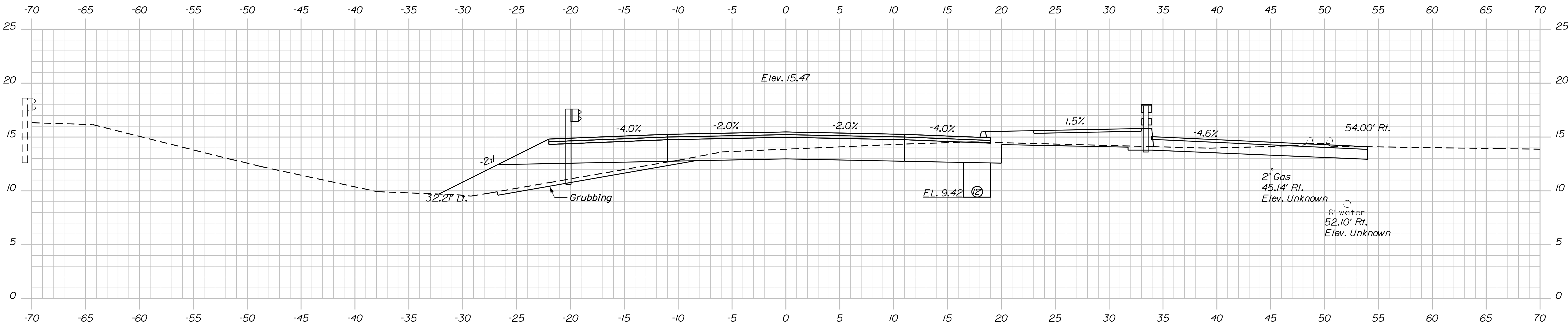
Username:

Division: BRIDGE

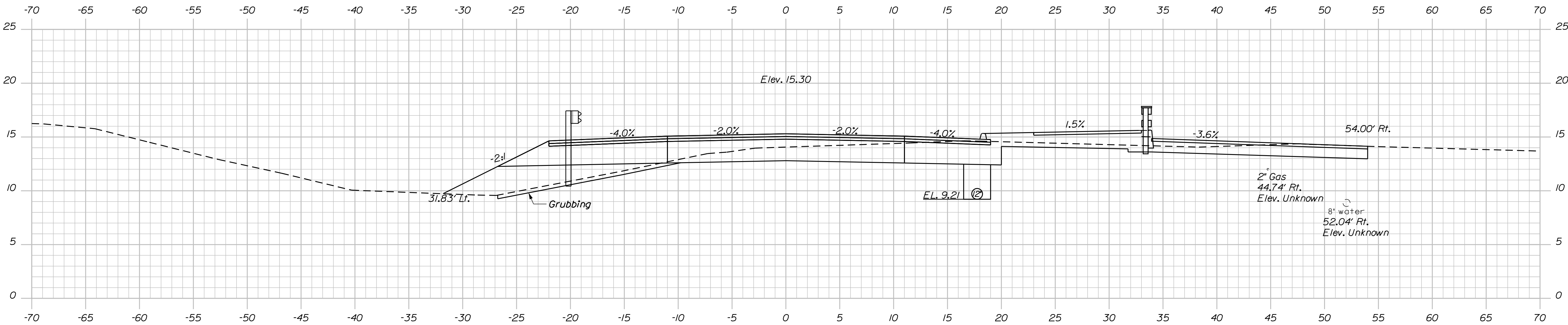
Filename: ... \MSTAN027_XSECT_105+50_009.dgn



106+00.00



105+75.00



105+50.00

STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

STP-2172(500)

BRIDGE NO. 2183

WIN

21725.00

BRIDGE PLANS

DATE	BY	PROJ. MANAGER	DESIGN-DETAILED	CHECKED-REVIEWED	OK	STU	MM	NOV. 2023	DEC. 2023	NOV. 2023	SIGNATURE	P.E. NUMBER	DATE

COUSINS RIVER BRIDGE

COUSINS RIVER

CUMBERLAND COUNTY

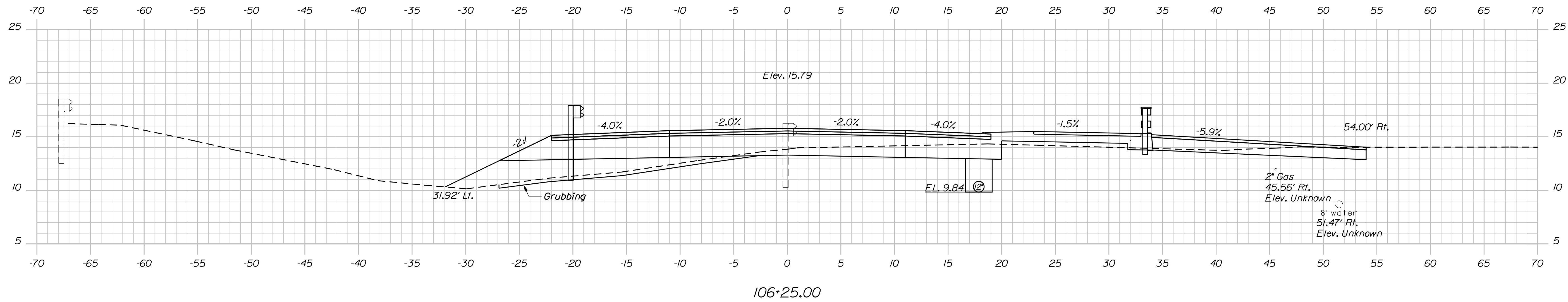
YARMOUTH-FREEPORT

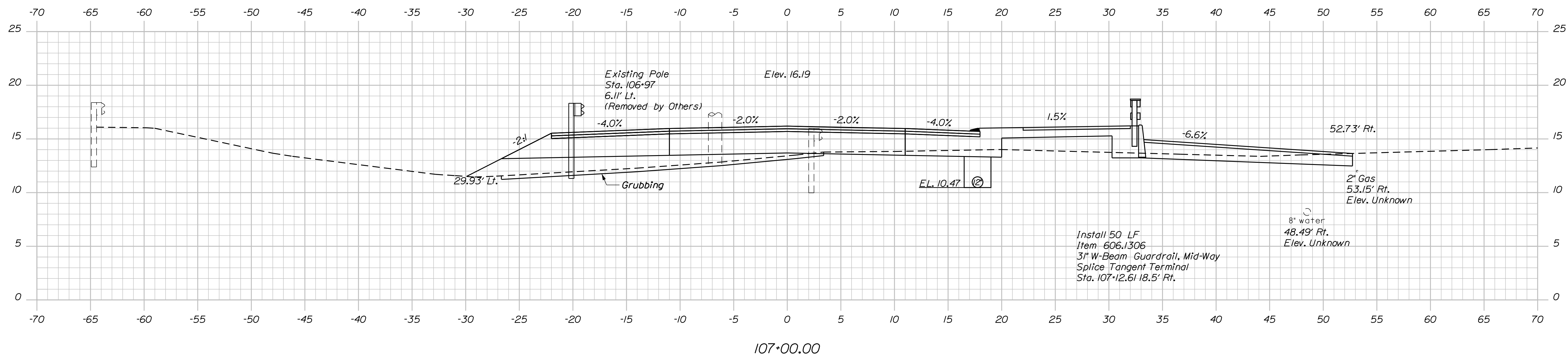
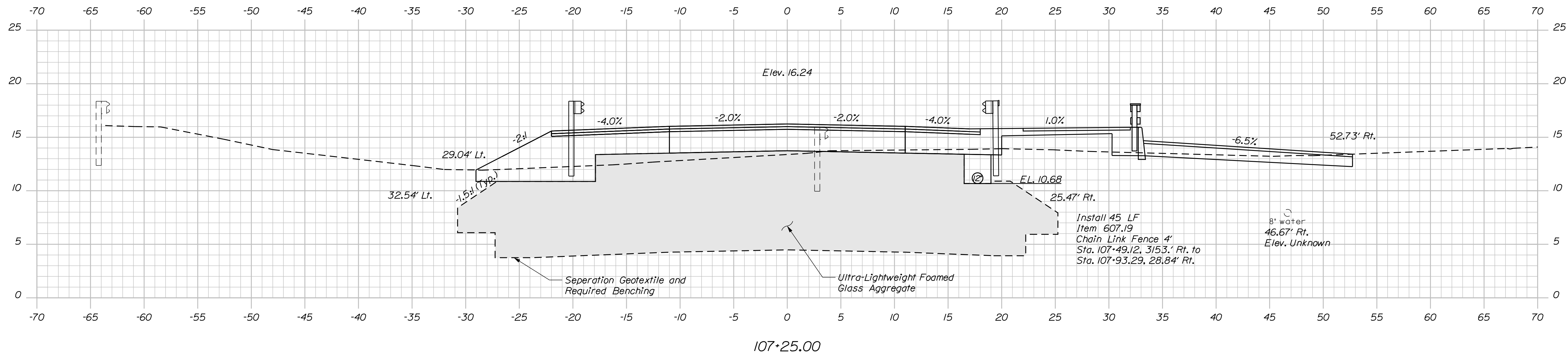
CROSS SECTIONS

SHEET NUMBER

27

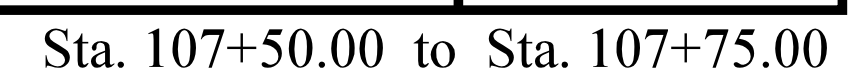
OF 64





29 OF 64	SHEET NUMBER	COUSINS RIVER BRIDGE		PROJ. MANAGER		A. Lothe	BY	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION STP-2172(500)
		COUSINS RIVER		DESIGN-DETAILED	RPM	OCK	OCK	NOV. 2023	
		YARMOUTH-FREEPORT		CHECKED-REVIEWED	OCK	STJ	DEC. 2023	SIGNATURE	
		CUMBERLAND COUNTY		DESIGN2-DETAILED2	OCK	MM	NOV. 2023	P.E. NUMBER	
		CROSS SECTIONS		DESIGN3-DETAILED3				DATE	
			REVISIONS 1						BRIDGE NO. 2183 WIN 21725.00 BRIDGE PLANS
			REVISIONS 2						
			REVISIONS 3						
			REVISIONS 4						
			FIELD CHANGES						

Filename: ... \MSTA\030_XSECT_107+50_012.dgn

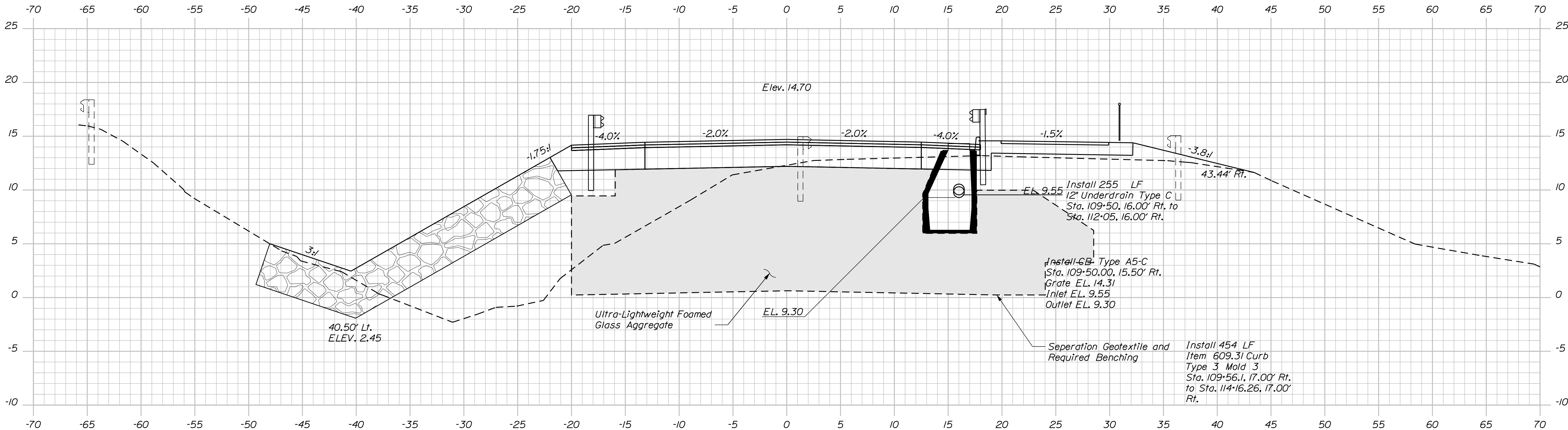


Date: 3/13/2024

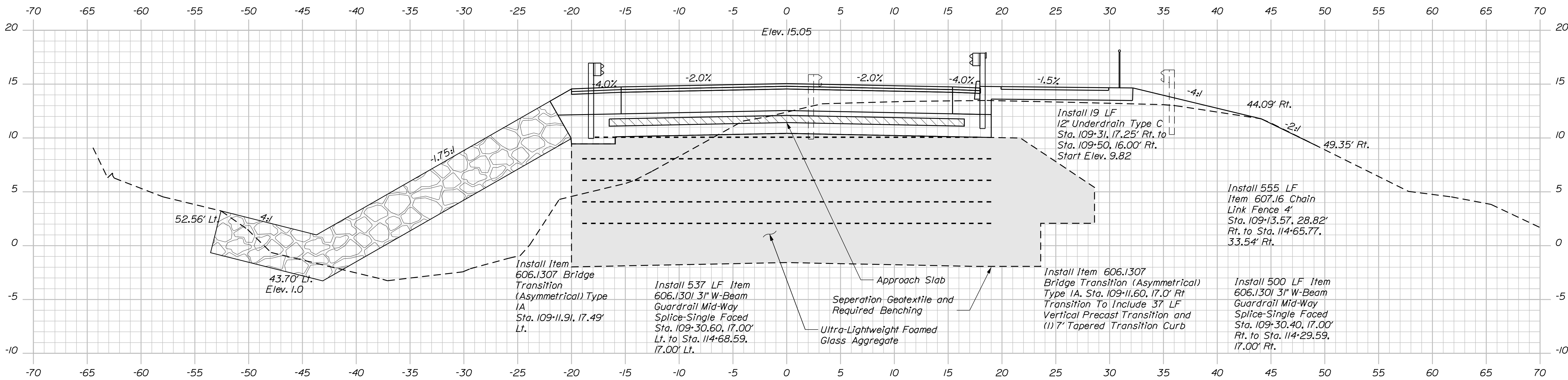
Username:

Division: BRIDGE

Filename: ... \MSTA031_XSECT_109+25_013.dgn



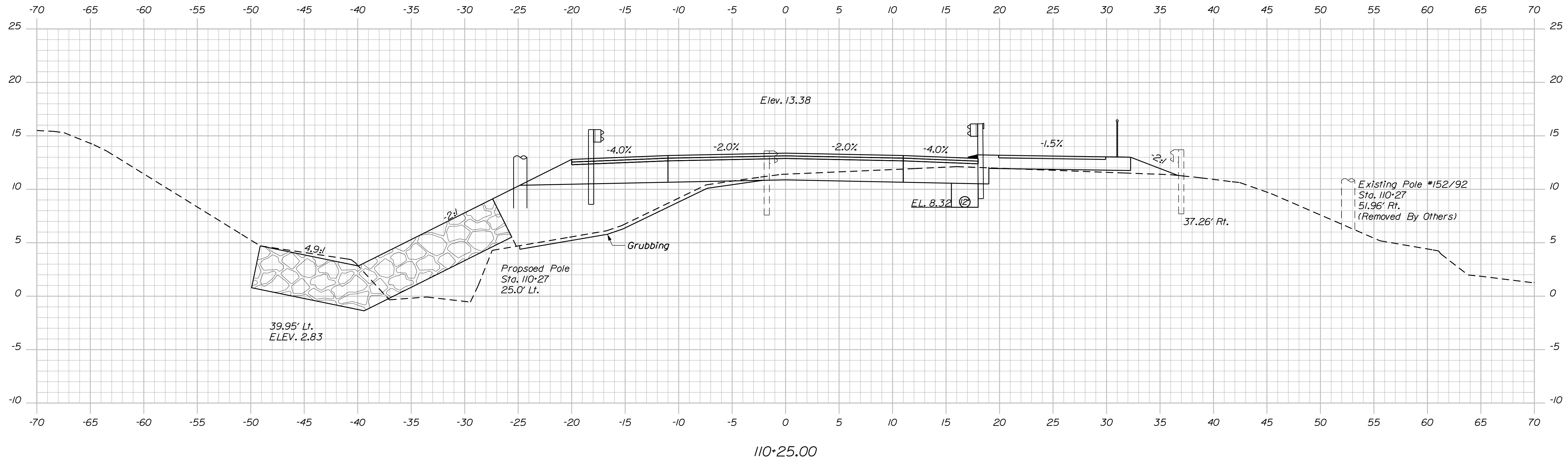
109+50.00
(End MUP Transition)



109+25.00

DATE	BY	PROJ. MANAGER	DESIGN-DETAILED	CHECKED	REVIEWED	OK	STU	MM	NOV 2023	DEC 2023	SIGNATURE	P.E. NUMBER	DATE

Filename: ... \MSTA\033_XSECT_110+25_015.dgn Division: BRIDGE



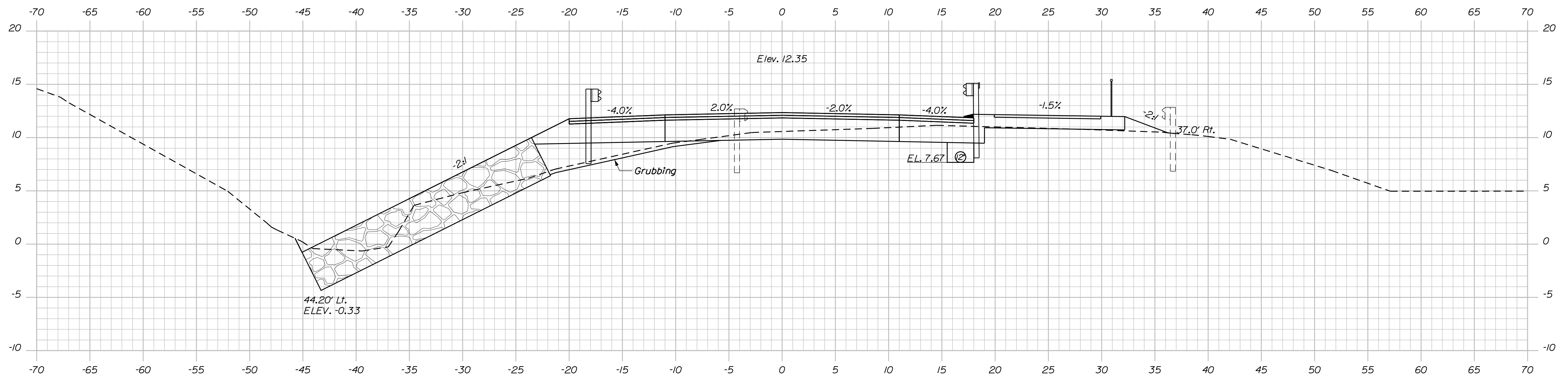
SHEET NUMBER

33

OF 64

Sta. 110+25.00 to Sta. 110+50.00

Filename: ... \MSTA\034_XSECT_110+75_016.dgn

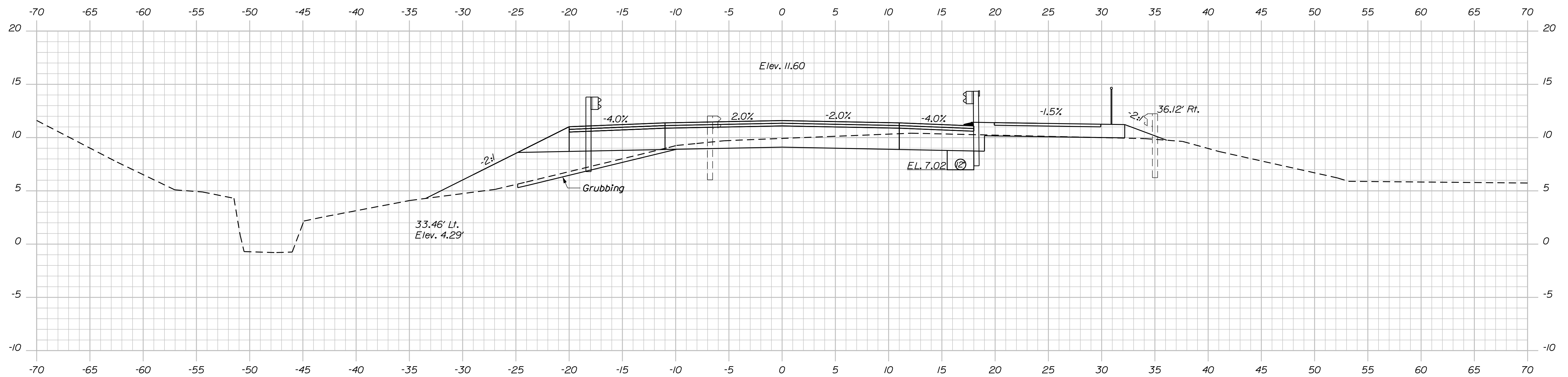


SHEET NUMBER

34

OF 64

Filename: ... \MSTA\035_XSECT_111+25_017.dgn



III+50.00

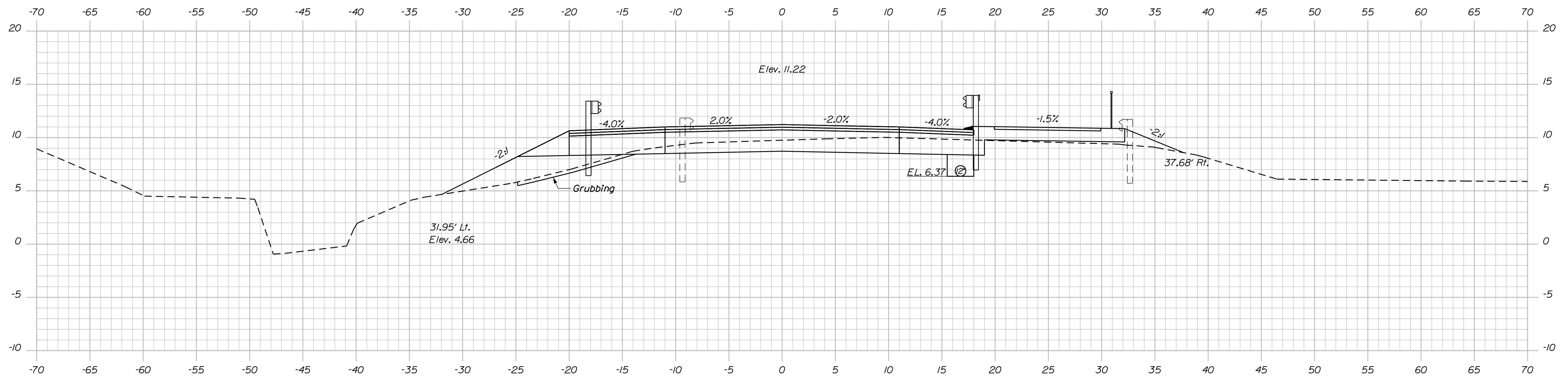
SHEET NUMBER

35

OF 64

Sta. 111+25.00 to Sta. 111+50.00

Filename: ... \MSTA\036_XSECT_111+75_018.dgn



III+75.00

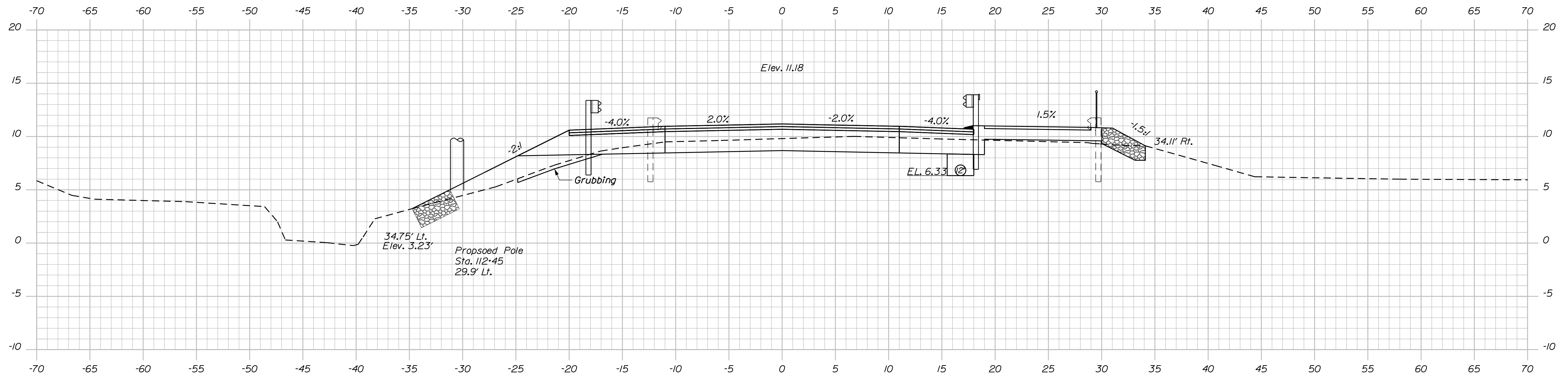
SHEET NUMBER

36

OF 64

Sta. 111+75.00 to Sta. 112+00.00

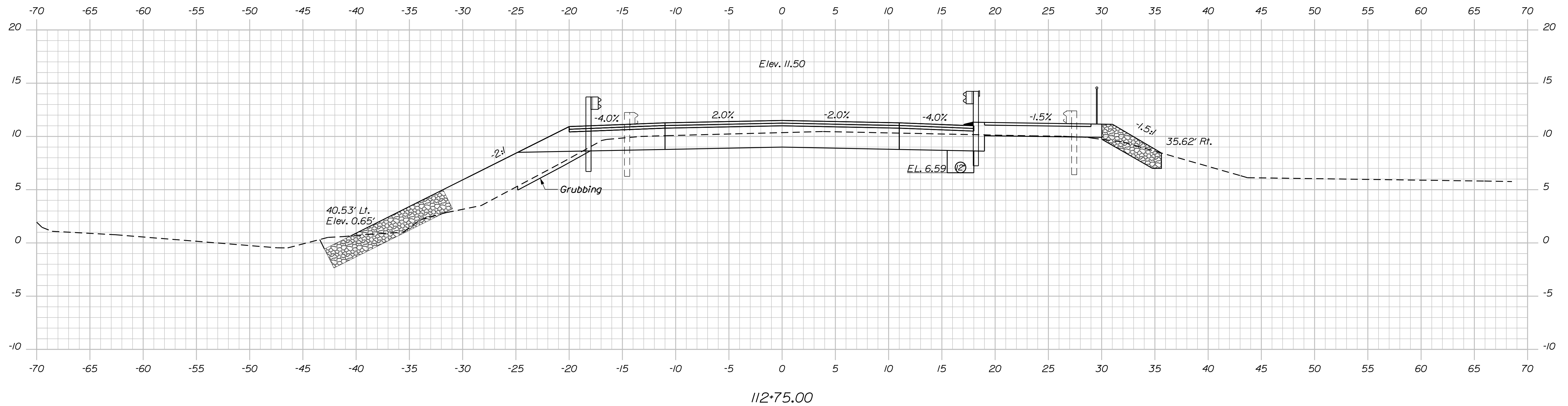
Filename: ... \MSTA\037_XSECT_112+25_019.dgn



SHEET NUMBER

37

OF 64



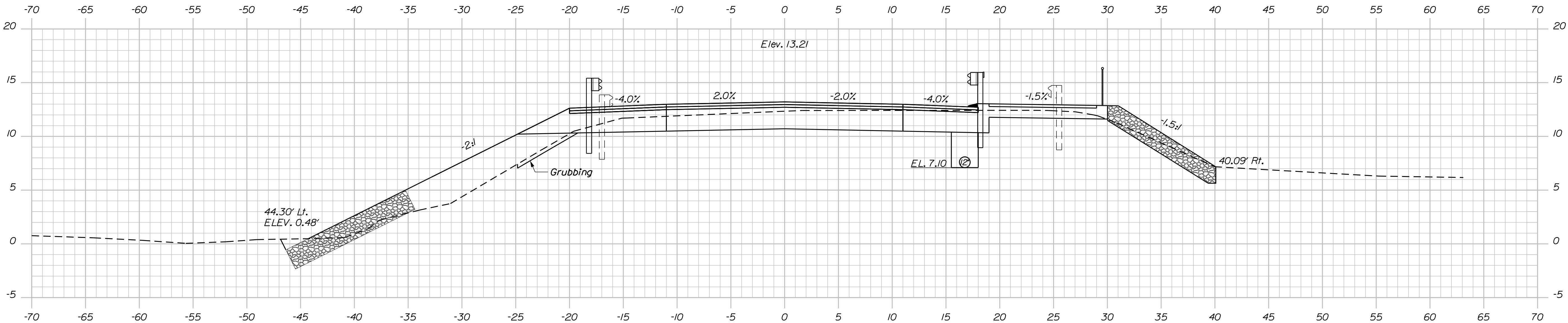
SHEET NUMBER 38 OF 64	COUSINS RIVER BRIDGE				PROJ. MANAGER	A. Lohme	DATE	NOV. 2023
	COUSINS RIVER				DESIGN DETAIL CD	PM	OK	NOV. 2023
	YARMOUTH-FREEPORT				DESIGN REVIEWED	OK	OK	DEC. 2023
	CUMBERLAND COUNTY				DESIGN DETAIL CD2	OK	OK	NOV. 2023
	CROSS SECTIONS				DESIGN DETAIL CD3	OK	OK	NOV. 2023
					REVISIONS 1			
					REVISIONS 2			
					REVISIONS 3			
					REVISIONS 4			
					FIELD CHANGES			
STATE OF MAINE DEPARTMENT OF TRANSPORTATION								SIGNATURE
STP-2172(500)								P. E. NUMBER
BRIDGE NO. 2183								WIN
21725.00								BRIDGE PLANS

Date: 3/13/2024

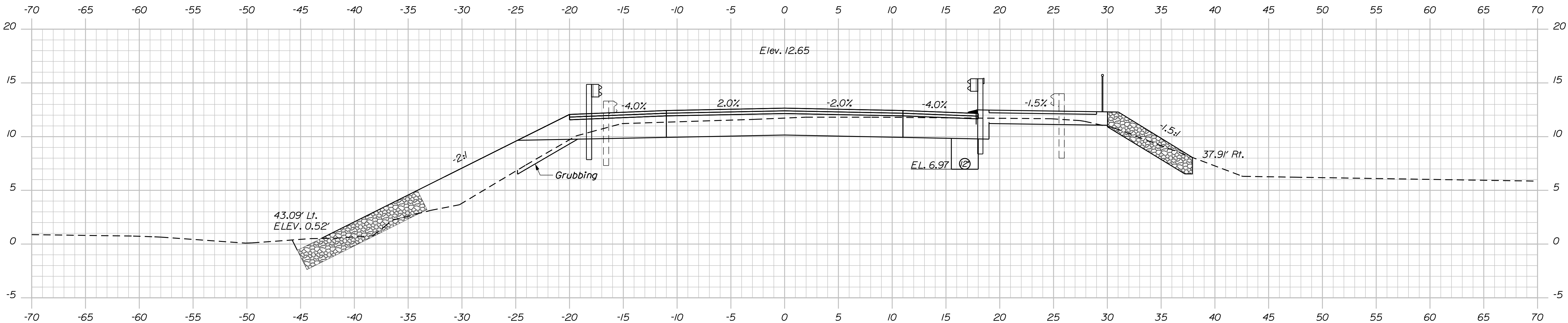
Username:

Division: BRIDGE

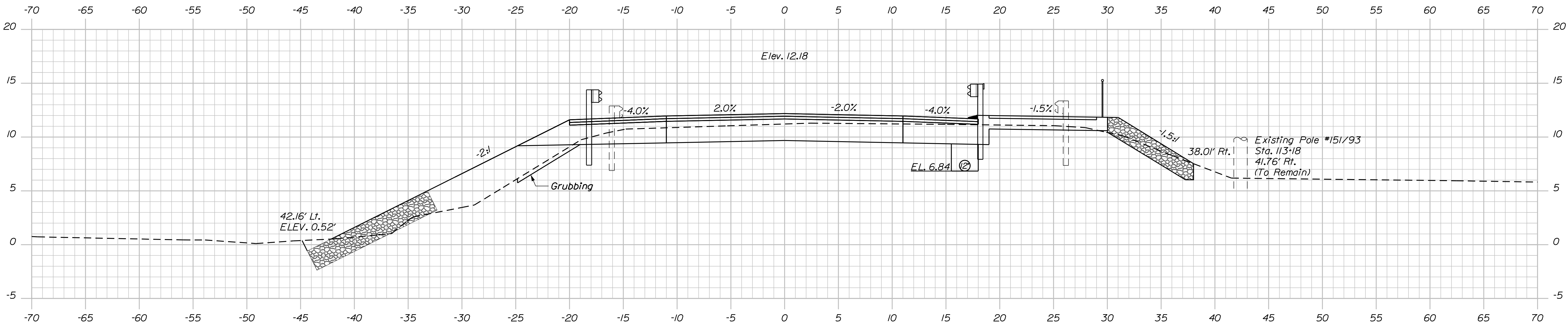
Filename: ... \MSTAO39_XSECT_113+25_021.dgn



113+75.00



113+50.00



113+25.00

STATE OF MAINE	
DEPARTMENT OF TRANSPORTATION	
STP-2172(500)	
BRIDGE NO. 2183	WIN
21725.00	
BRIDGE PLANS	

PROJ. MANAGER	DATE	BY	DATE
DESIGN-DETAILED	NOV. 2023	OKK	NOV. 2023
CHECKED-REVIEWED	DEC. 2023	STJ	DEC. 2023
DESIGN-DETAILED	NOV. 2023	MM	NOV. 2023
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

COUSINS RIVER BRIDGE	CUMBERLAND COUNTY
COUSINS RIVER	
YARMOUTH-FREEPORT	
CROSS SECTIONS	

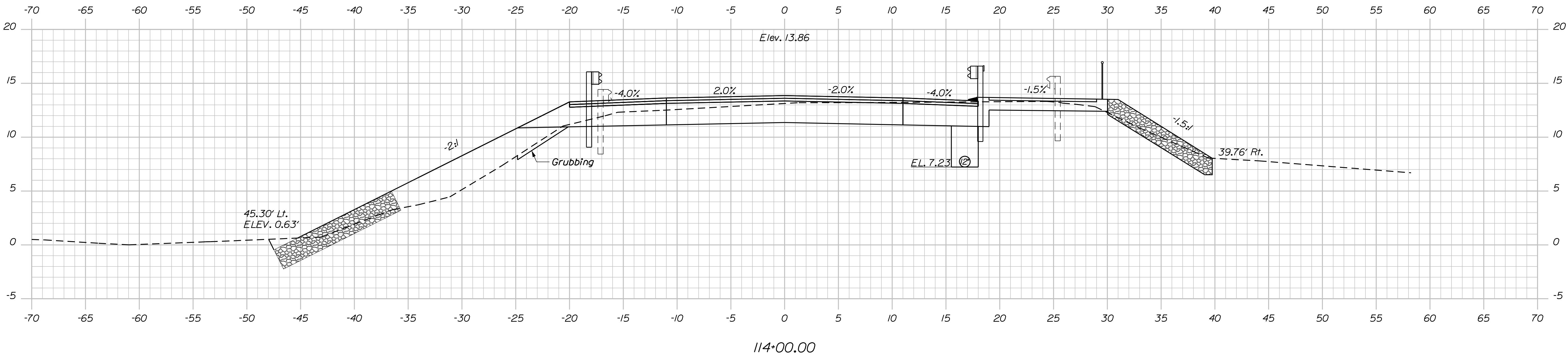
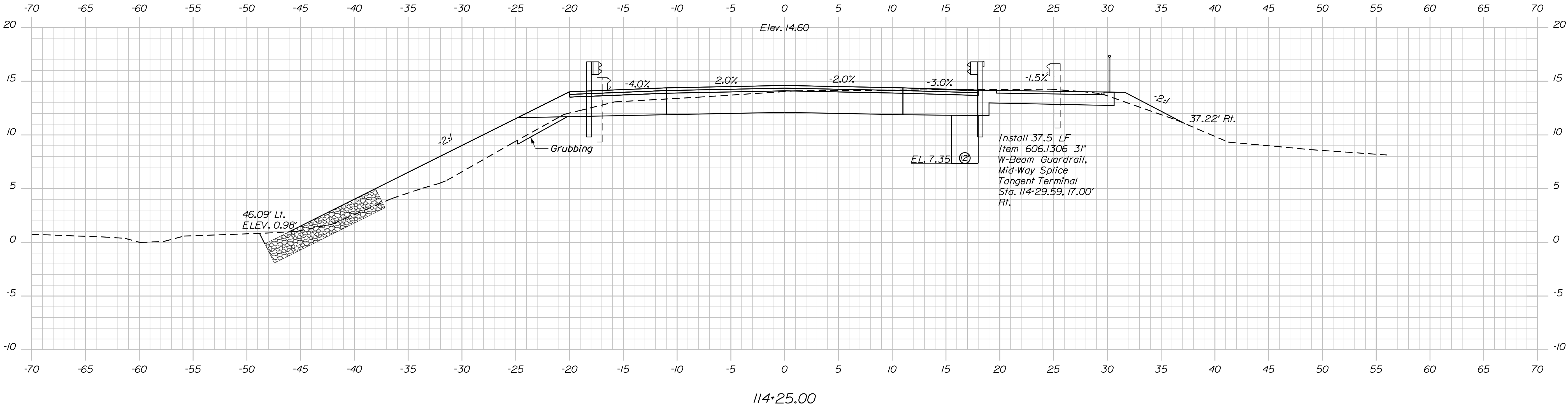
SHEET NUMBER
39
OF 64

Date: 3/13/2024

Username:

Division: BRIDGE

Filename: ... \MSTAN040_XSECT_114+00_022.dgn



PROJ. MANAGER	BY	DATE
DESIGN-DETAILED	OK	NOV. 2023
CHECKED-REVIEWED	STJ	DEC. 2023
DESIGN-DETAILED	MM	NOV. 2023
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

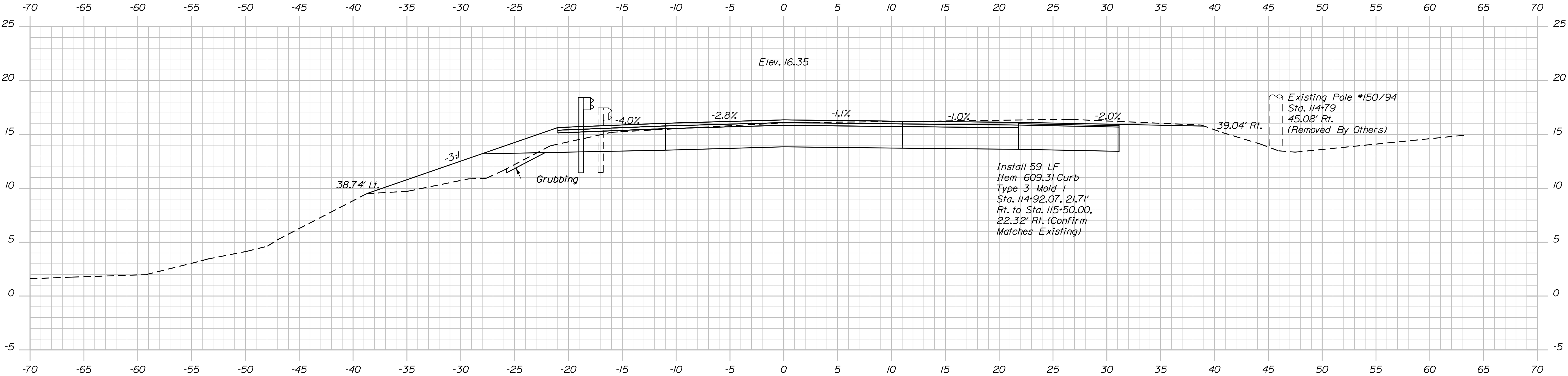
SIGNATURE	P.E. NUMBER	DATE

Date: 3/13/2024

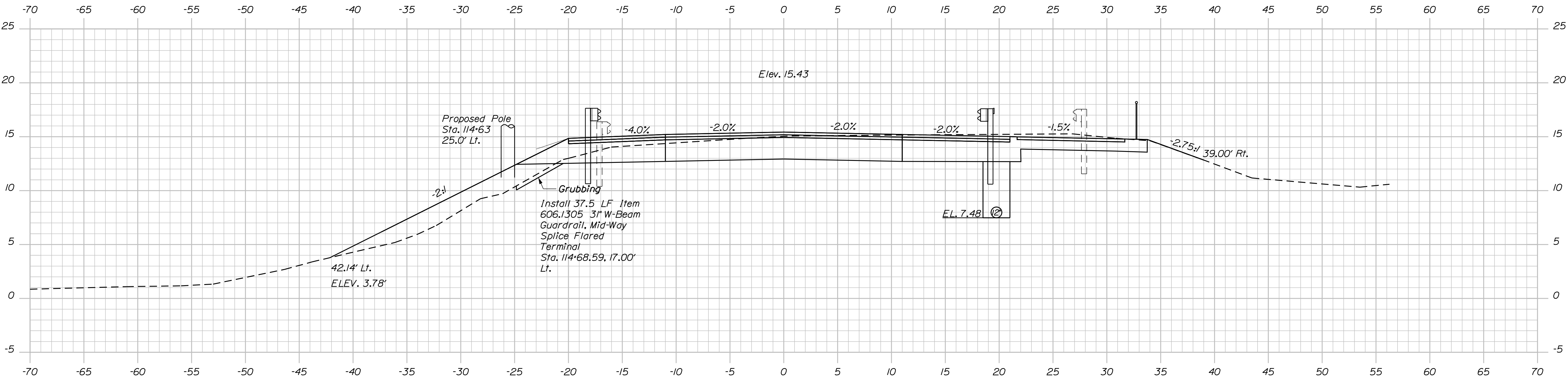
Username:

Division: BRIDGE

Filename: ... \MSTAN041_XSECT_114+50_023.dgn



114+75.00
END MULTIUSE PATH



114+50.00

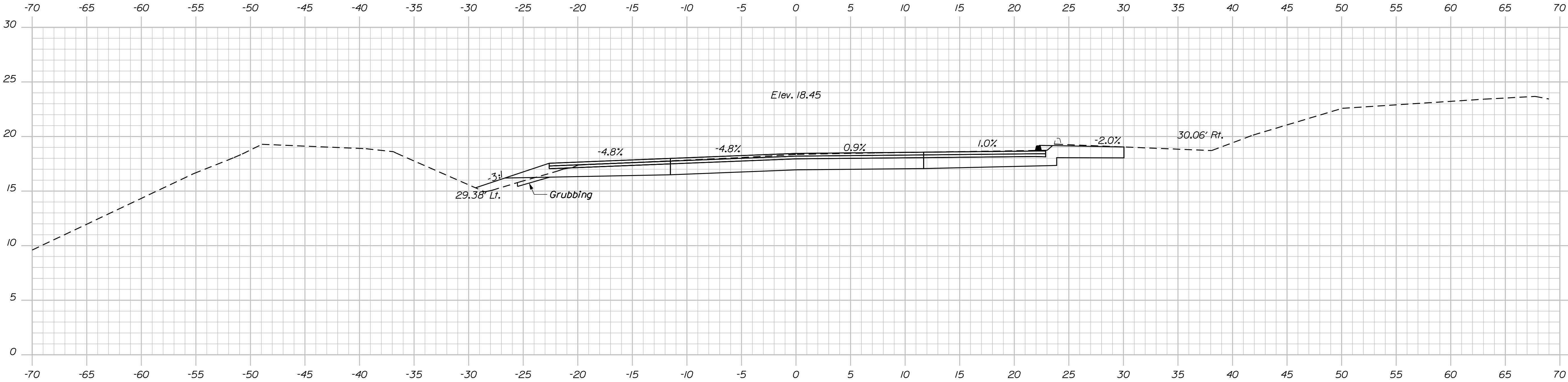
DATE	BY	PROJ. MANAGER	DESIGN-DETAILED	CHECKED-REVIEWED	OK'd	DATE	SIGNATURE	P.E. NUMBER	DATE
NOV 2023	OK'd	OK'd	OK'd	OK'd	OK'd	NOV 2023			
DEC 2023	STJ								
NOV 2023	MM								
REVISIONS 1									
REVISIONS 2									
REVISIONS 3									
REVISIONS 4									
FIELD CHANGES									

Date: 3/13/2024

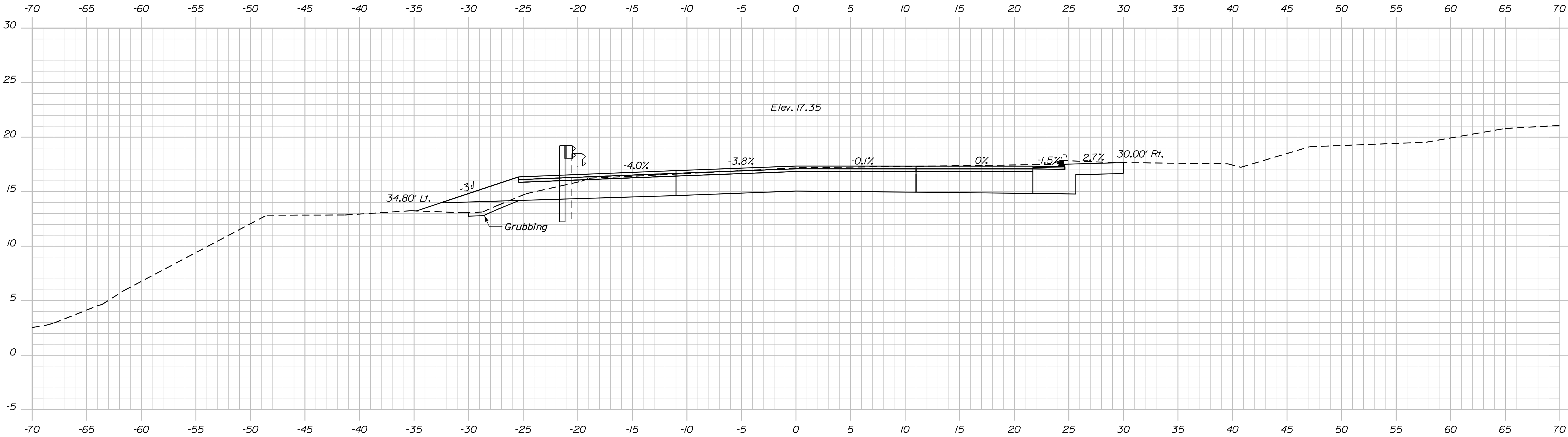
Username:

Division: BRIDGE

Filename: ... \MSTAO42_XSECT_115+00_024.dgn



115+25.00



115+00.00
 BEGIN 50' TRANSITION

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		
	STP-2172(500)	
	WIN 21725.00	BRIDGE NO. 2193

PROJ. MANAGER	BY	DATE
DESIGN-DETAILED	OKK	NOV. 2023
CHECKED-REVIEWED	STJ	DEC. 2023
DESIGN-DETAILED	MM	NOV. 2023
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

COUSINS RIVER BRIDGE	
COUSINS RIVER	
CUMBERLAND COUNTY	
YARMOUTH-FREEPORT	

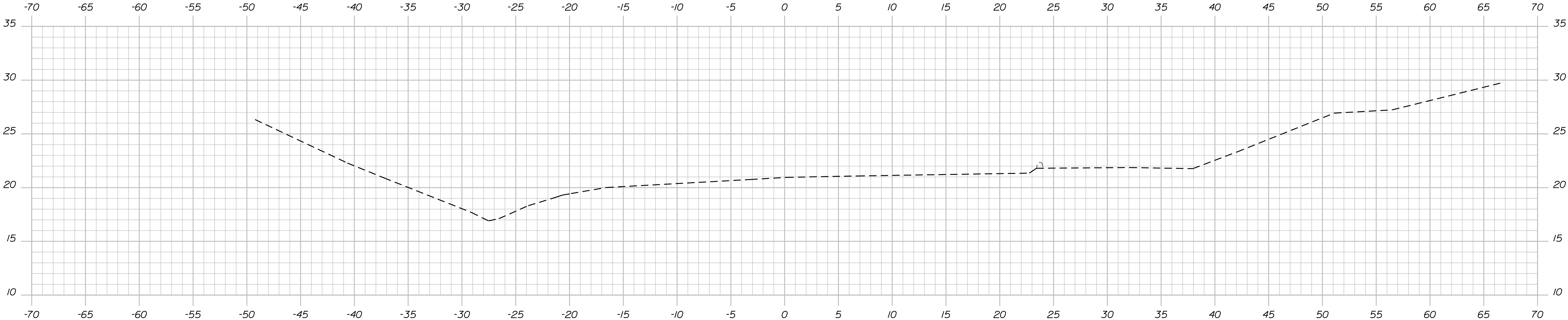
CROSS SECTIONS	
SHEET NUMBER	
42	
OF 64	

Date:3/13/2024

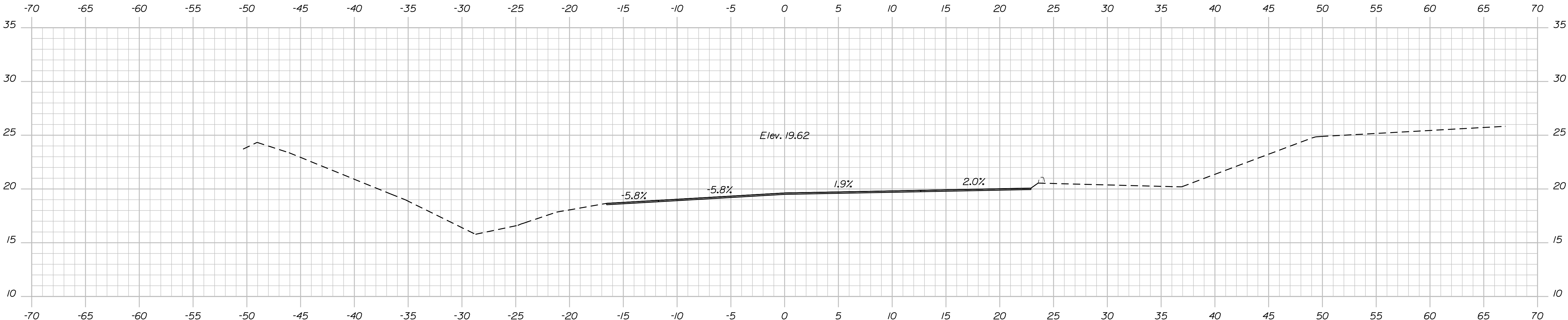
Username:

Division: BRIDGE

Filename: ... \MSTAO43_XSECT_115+50_025.dgn



115+75.00



115+50.00
MATCH EXISTING

STATE OF MAINE	
DEPARTMENT OF TRANSPORTATION	
STP-2172(500)	
BRIDGE NO. 2183	WIN 21725.00
BRIDGE PLANS	

PROJ. MANAGER	A. Lotte	BY	DATE
DESIGN-DETAILED	RPM	OKK	NOV. 2023
CHECKED-REVIEWED	OKK	STJ	DEC. 2023
DESIGN-DETAILED	OKK	MM	NOV. 2023
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE	P.E. NUMBER	DATE

COUSINS RIVER BRIDGE	
COUSINS RIVER	
YARMOUTH-FREEPORT CUMBERLAND COUNTY	
CROSS SECTIONS	

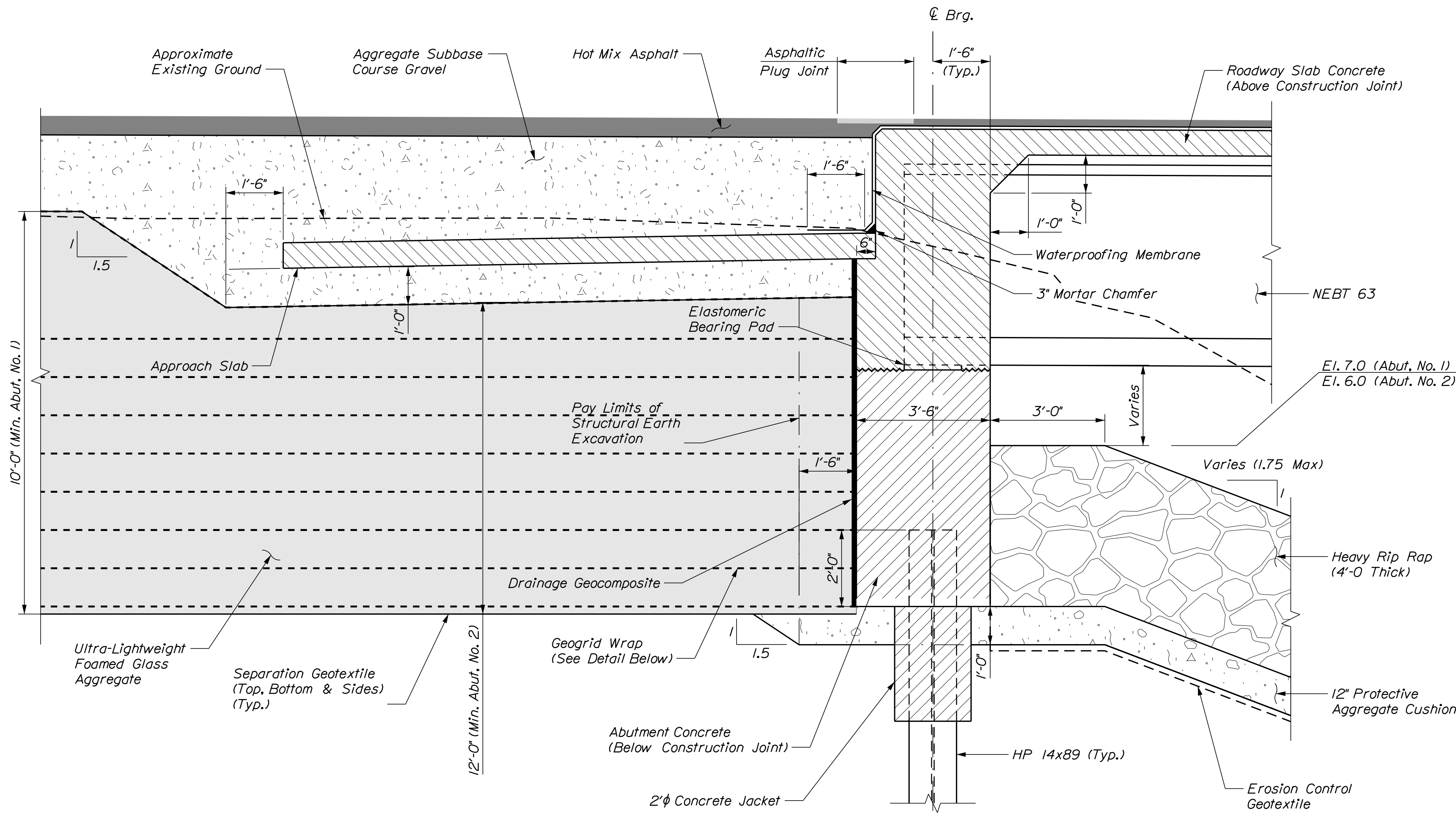
SHEET NUMBER
43
OF 64

Date: 3/13/2024

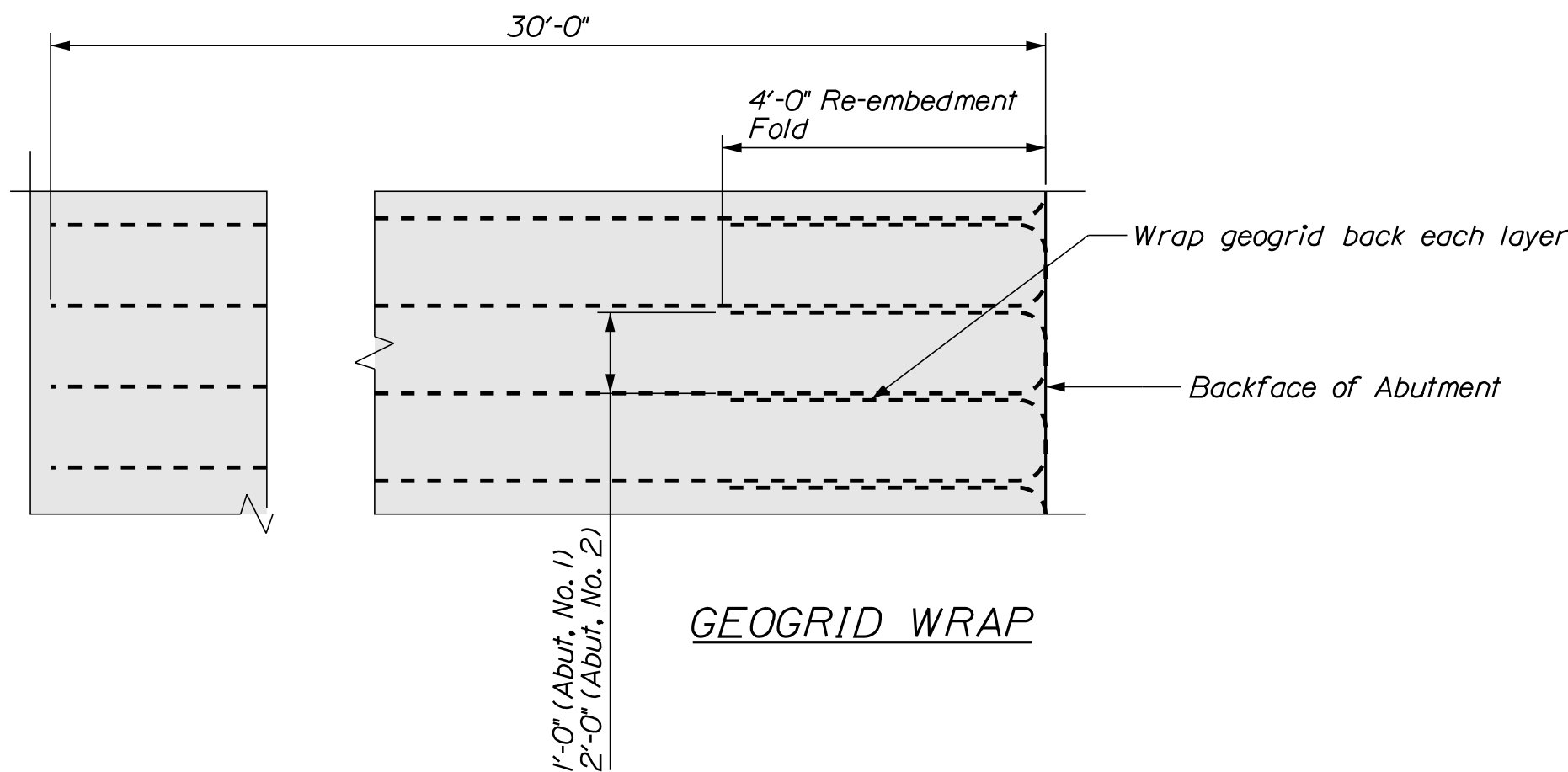
Username:

Division: BRIDGE

Filename: ... \MSTAN044_Abutment_Typ.dgn



ABUTMENT TYPICAL SECTION



GEOGRID WRAP

ELASTOMERIC BEARING NOTES

- The shear modulus of the elastomer shall be 110 psi.
- Elastomeric Bearing Pads shall be 1'-6" x 2'-8" in plan and 1" tall for each abutment.
- Elastomeric Bearing Pads shall conform to the requirements of the latest edition of AASHTO LRFD Bridge Construction Specifications, Section 18.2.
- Elastomeric Bearing Pads will not be paid for directly, but will be considered incidental to related Contract Items. No separate payment will be made.

ABUTMENT NOTES

- Abutments and wingwalls shall be backfilled with Ultra-Lightweight Foamed Glass Aggregate (ULFGA). ULFGA shall be covered on all sides by geotextile separation fabric per section 722.04.
- Geogrid reinforcement layers shall have a vertical spacing of 1-foot at Abutment 1 and 2-feet at Abutment 2. There will be 8 total layers at Abutment 1 and 5 total layers at abutment 2. The geogrid reinforcing layers shall be anchored with a 4-foot re-embedment lap between layers at the abutment walls.
- Reinforcing steel shall have a minimum concrete cover of 2 inches in the walls and 3 inches in the bottom of the abutment unless otherwise noted.
- Cover joints where waterstops are not required in accordance with Standard Details Section 502.
- Payment for 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.
- Install Drainage Geocomposite behind the abutments and wingwalls up to the approach slab seat elevation in accordance with Special Provision Section 620, Drainage Geocomposite.
- Payment for 3 inch mortar chamfer and waterproofing membrane shall be incidental to related items.
- Excavation outside limits of Structural Earth Excavation will be paid for under 203.20 Common Excavation or other related items.
- The Asphaltic Plug Joint shall not use a bridging plate or backer rod.

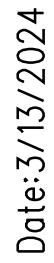
PILE NOTES

- The maximum factored pile load is 457 kips (including 64 kips allowed for downdrag) at the Strength 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: 7 ~ HP 14x89 @ 92 feet
Abutment No. 2: 7 ~ HP 14x89 @ 80 feet

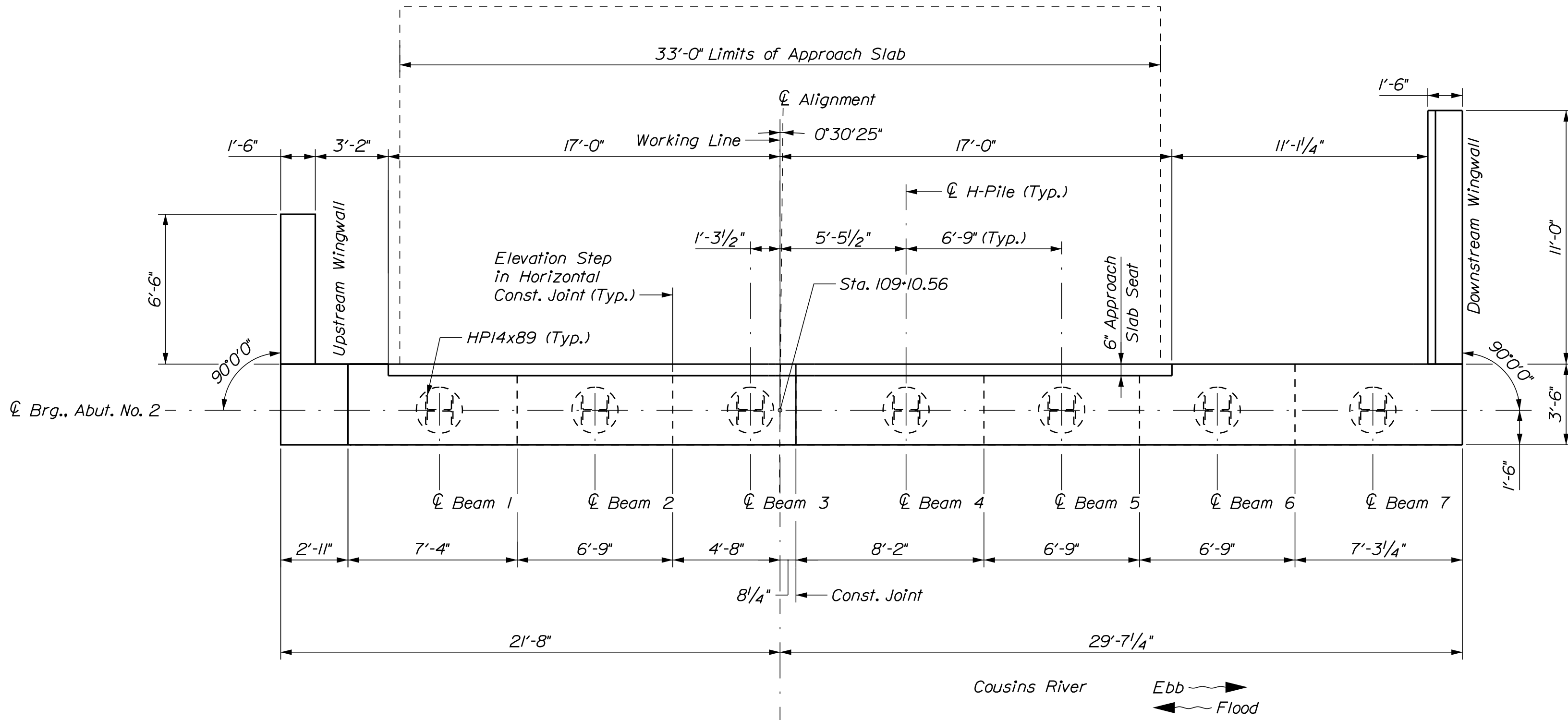
The order lengths of the piles shall include an additional 5 feet of length for each test pile to accommodate dynamic pile testing equipment.
- H-pile material shall be ASTM A572, Grade 50.
- H-pile splices shall be in accordance with Standard Detail 501(03).
- All piles shall be equipped with a pile tip in accordance with Standard Specifications Subsections 501.048, Prefabricated Pile Tips and 711.10 H-Beam Piles, Splices and Tips
- Piles shall not be out of position shown by more than 2 inches in any direction.
- The Contractor shall perform and submit two (2) wave equation analyses, one (1) for the Abutment No. 1 piles and one (1) for the Abutment No. 2 piles, for review and acceptance by the Resident. The maximum allowable driving stress is 0.90 times Fy. The submittal analyses shall include the proposed stopping criteria based on the wave equation analyses and the proposed driving system.
- The Contractor shall perform a total of four (4) dynamic load tests with 24-hour (minimum) restrike tests at the abutments, to confirm the nominal resistance of the piles. Each dynamic pile test at each abutment will be performed on the first production pile driven during each of the 2 stages of construction. The required nominal resistance for the pile is the factored axial pile load divided by a resistance factor of 0.65 per LRFD Specifications.
- Based on the results of the end of initial drive (EOD) and beginning of redrive (BOR) dynamic pile tests, and subsequent CAPWAP analyses, any driving criteria for pile end bearing in soil shall be carried out for six (6) consecutive inches. The Resident shall have final approval of the driving criteria.

COUSINS RIVER BRIDGE COUSINS RIVER YARMOUTH-FREEPORT				CUMBERLAND COUNTY				STATE OF MAINE DEPARTMENT OF TRANSPORTATION			
ABUTMENT TYPICAL SECTION				PROJ. MANAGER		A. Leithe		BY		DATE	
				DESIGN-DETAILED		RPM		OGK		NOV. 2023	
				CHECKED-REVISED		OGK		STU		DEC. 2023	
				DESIGN2-DETAILED2		OGK		MAM		NOV. 2023	
				DESIGN3-DETAILED3							
				DESIGNS 1						P.E. NUMBER	
				REVISIONS 2							
				REVISIONS 3							
				REVISIONS 4							
				FIELD CHANGES						DATE	

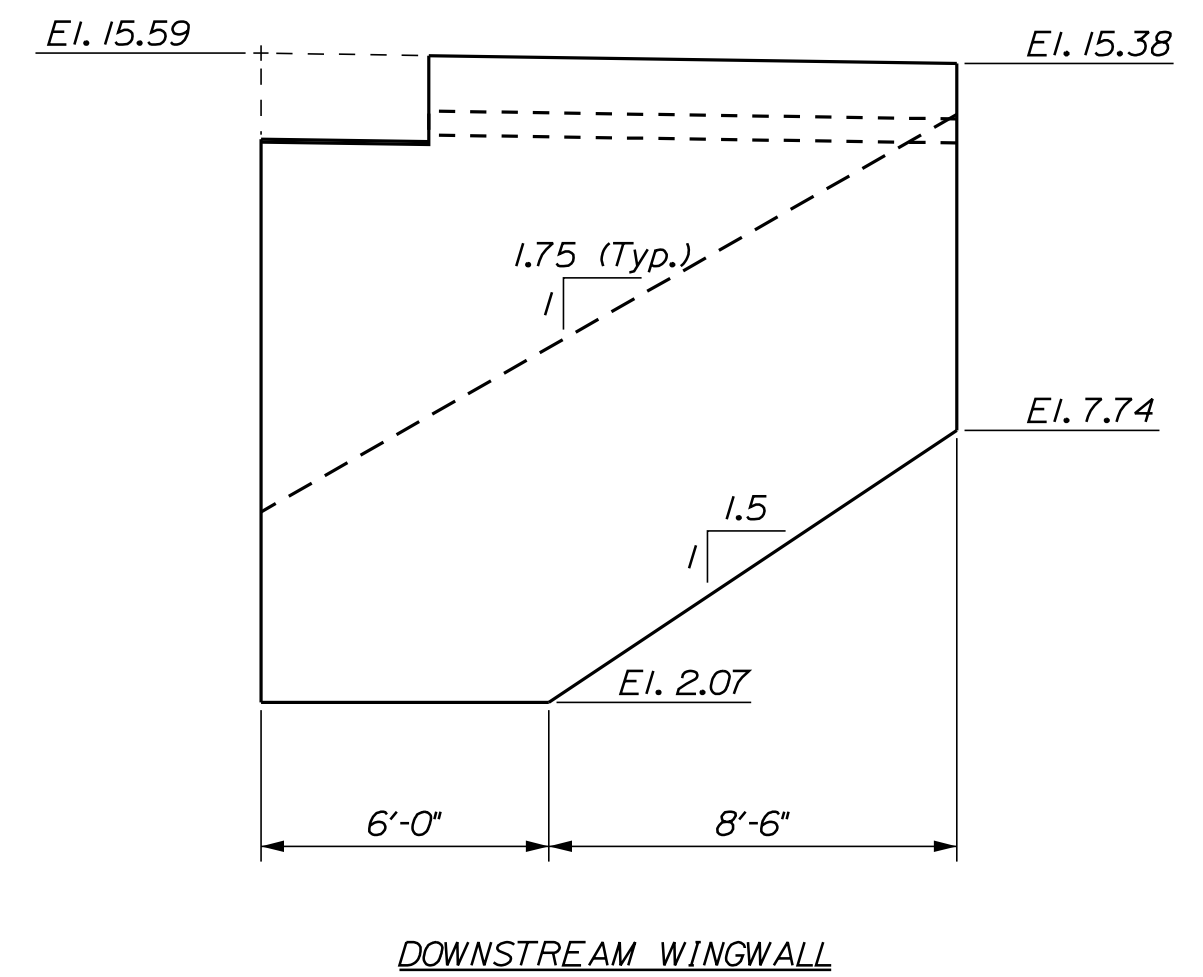


Username:

Filename: ... \BRIDGE\MSTA\046_Abument_2.dgn Division: BRIDGE

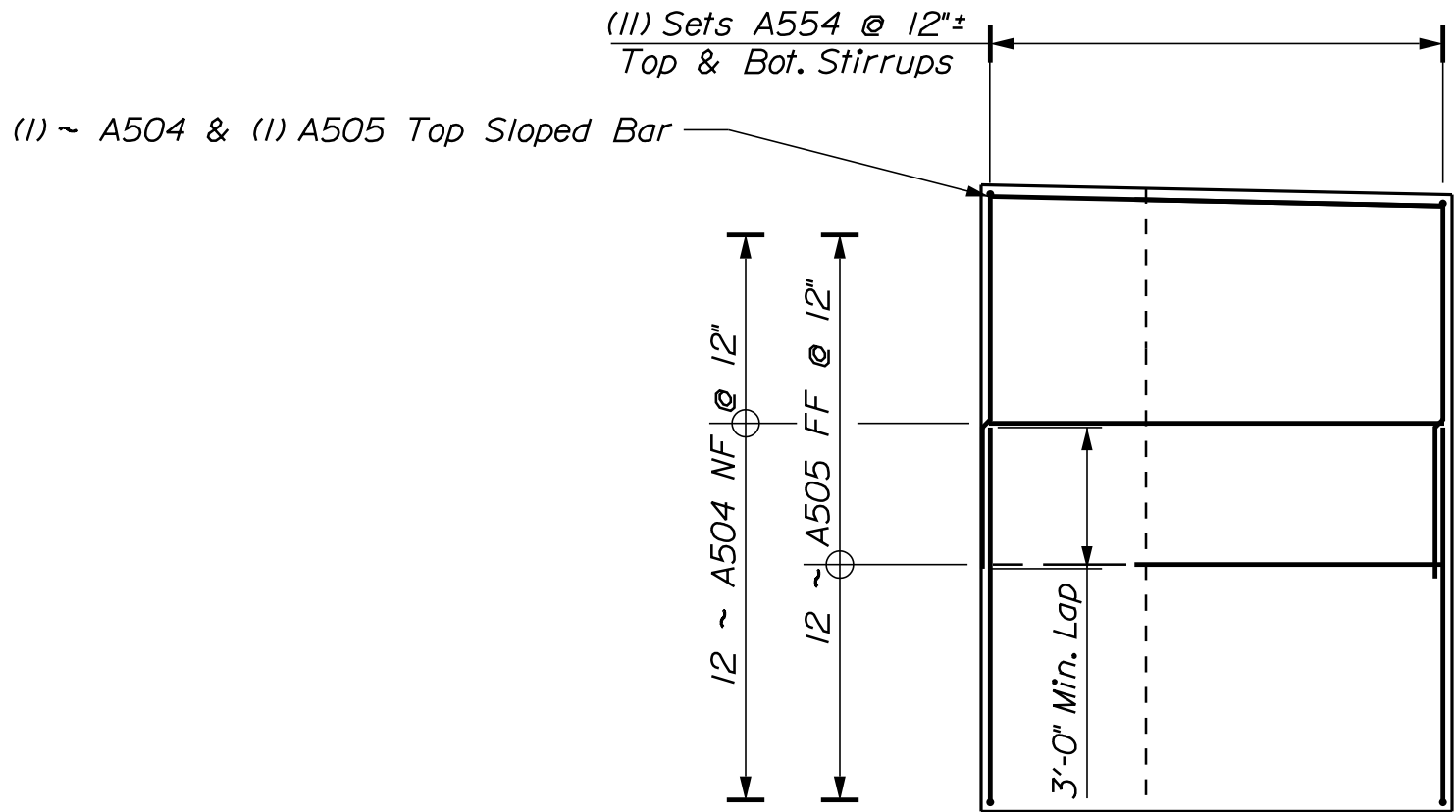
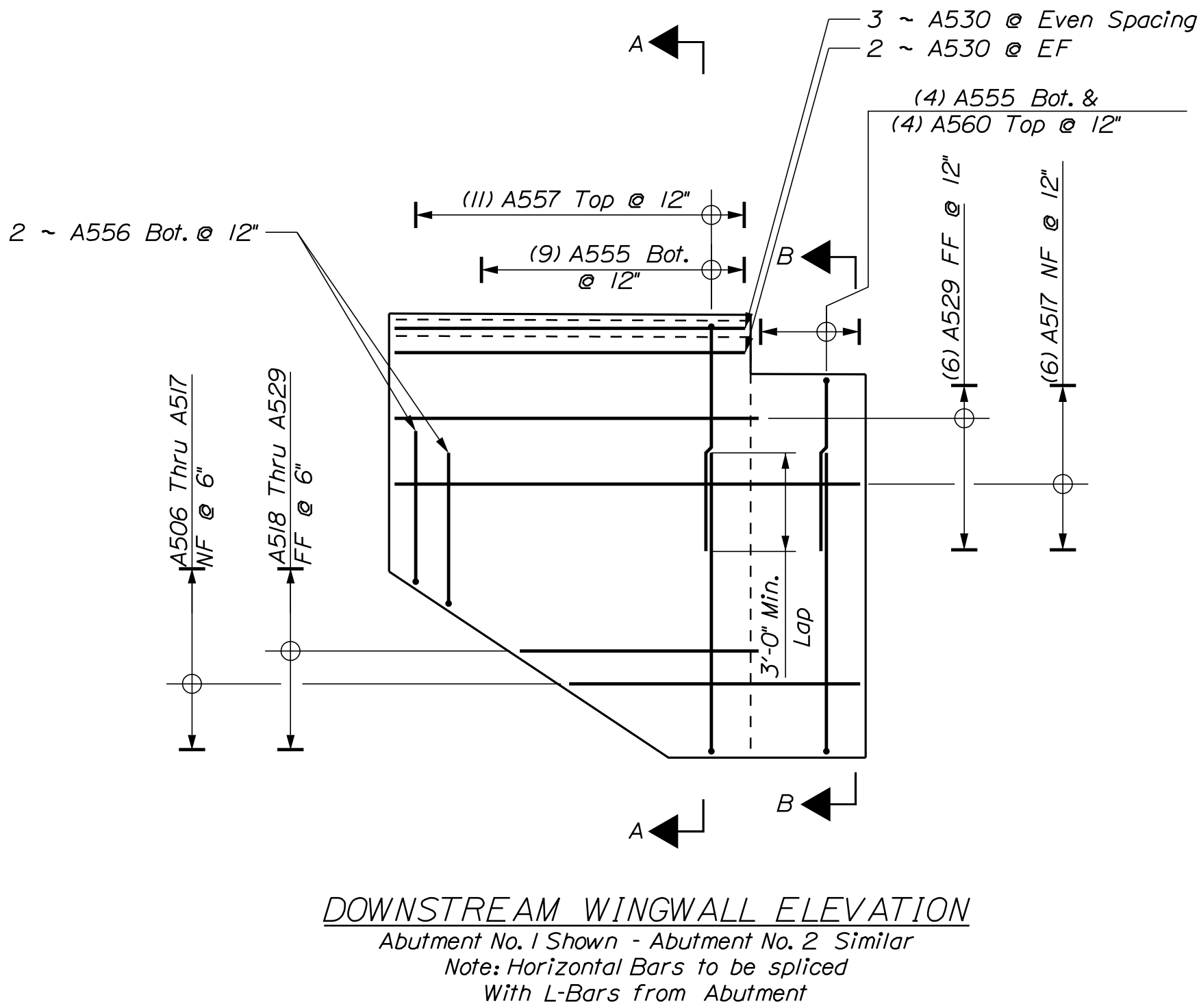
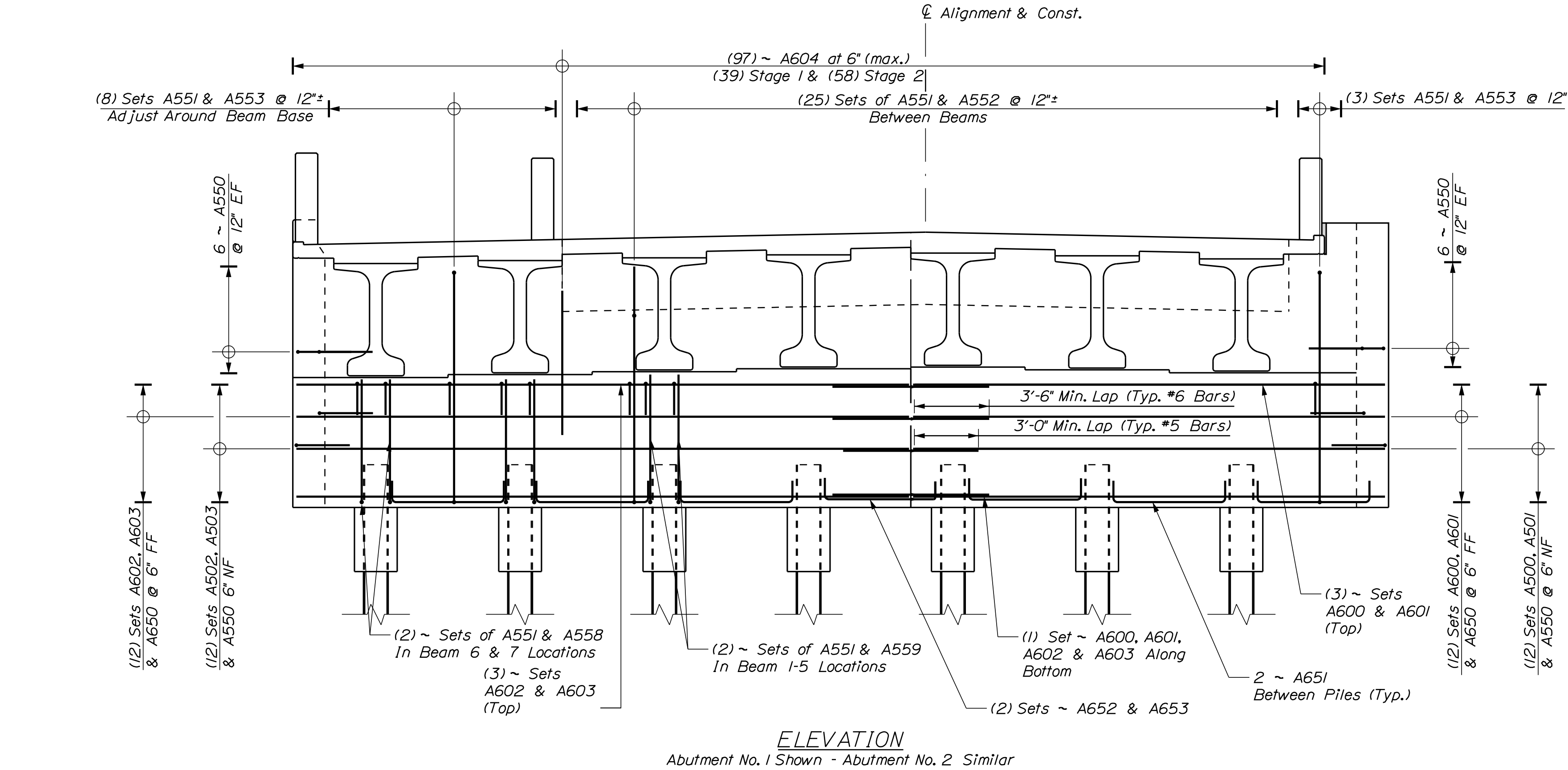


ABUTMENT NO. 2 PLAN



ABUTMENT NO. 2 ELEVATION

46 OF 64	SHEET NUMBER	COUSINS RIVER BRIDGE				PROJ. MANAGER		A. Lothe	BY	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION STP-2172(500) BRIDGE NO. 2183 WIN 21725.00 BRIDGE PLANS
		COUSINS RIVER				DESIGN-DETAILED		RPM	OKK	NOV. 2023	
		YARMOUTH-FREEPORT				CHECKED-REVIEWED		OKK	STJ	DEC. 2023	
		CUMBERLAND COUNTY				DESIGN-DETAILED2		OKK	MM	NOV. 2023	
		ABUTMENT NO. 2				DESIGN-DETAILED3		P.E. NUMBER			
		PLAN AND ELEVATION				REVISIONS 1		DATE			
						REVISIONS 2					
				REVISIONS 3							
				REVISIONS 4							
				FIELD CHANGES							



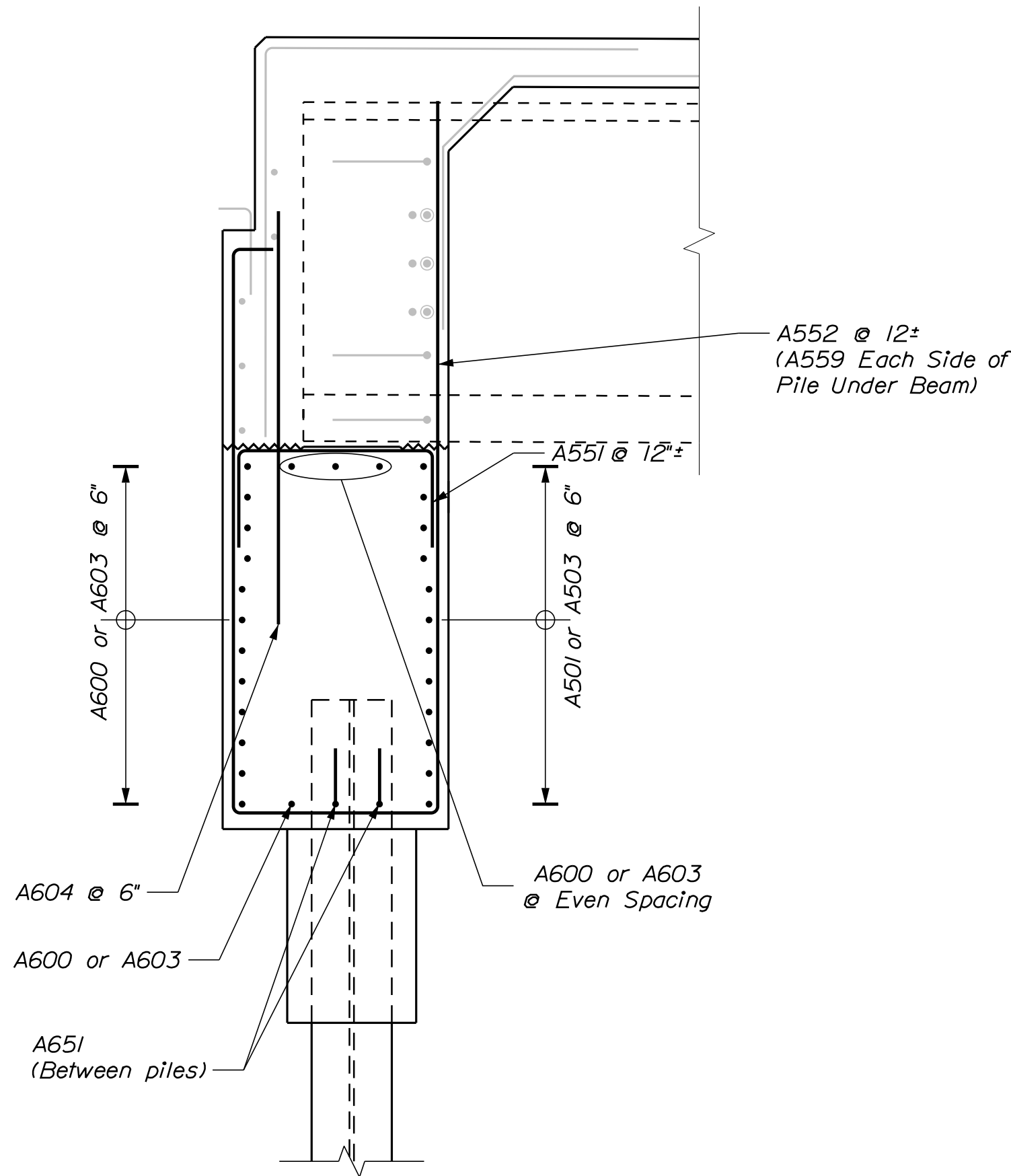
LEGEND

N.F. = NEAR FACE
F.F. = FAR FACE
E.S. = EACH SIDE

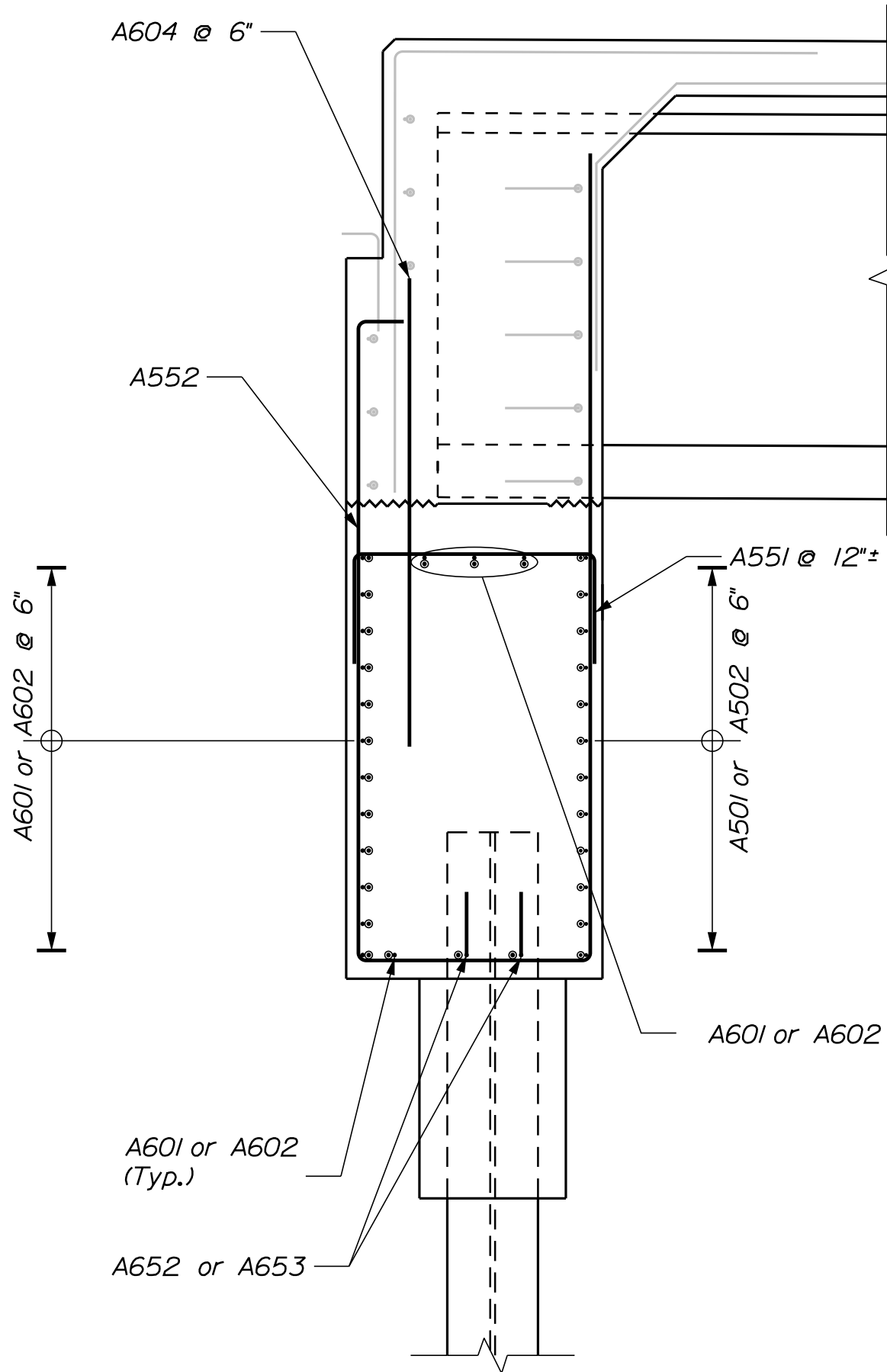
NOTES

1. For diaphragm reinforcing, see Diaphragm Reinforcing Sheet

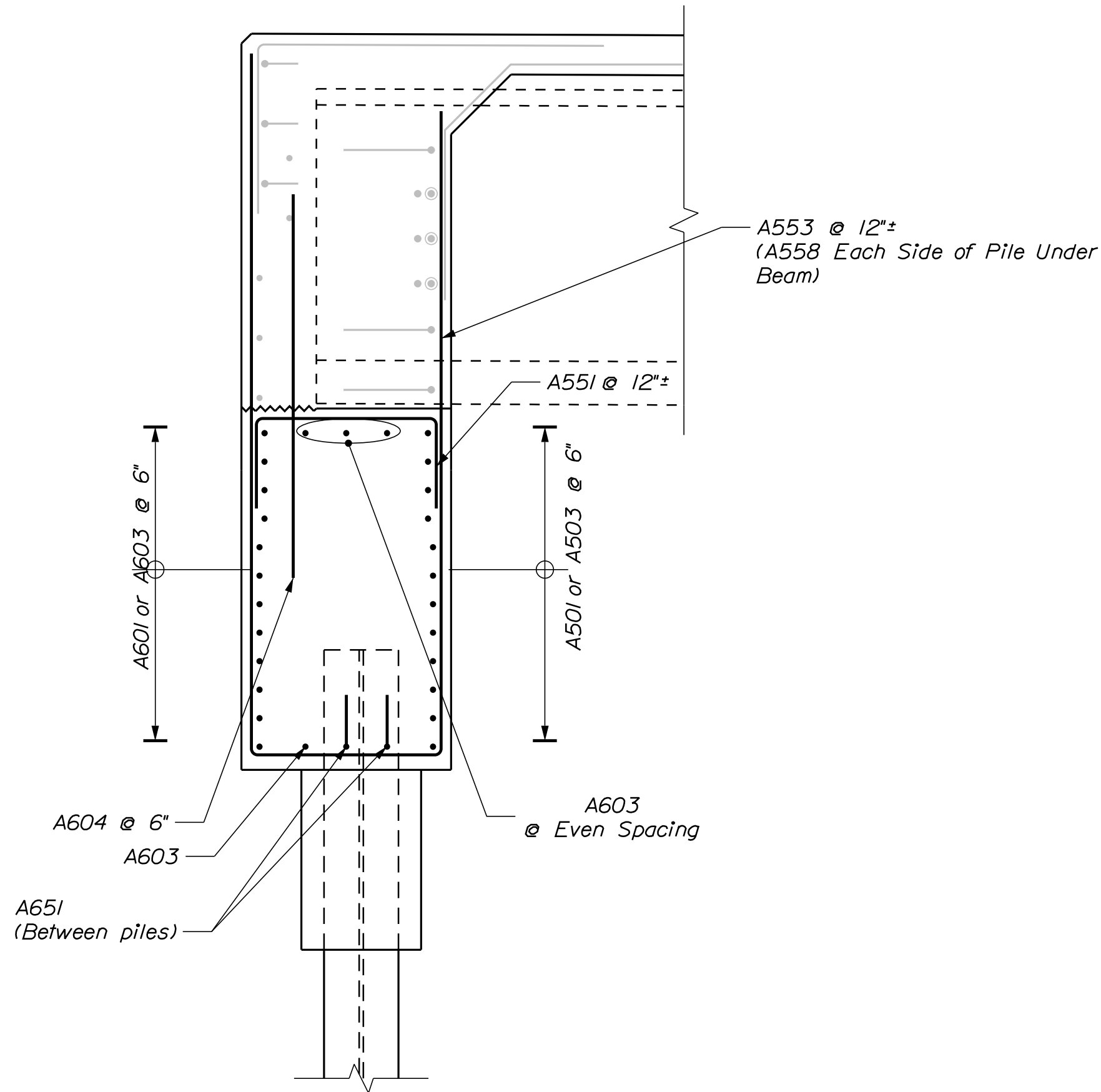
STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
STP-2172(500)		SIGNATURE	
WIN		P.E. NUMBER	
21725.00		DATE	
BRIDGE NO. 2183		BRIDGE PLANS	
COUSINS RIVER BRIDGE		CUMBERLAND COUNTY	
COUSINS RIVER		ABUTMENT NO. 1	
YARMOUTH-FREEPORT		REINFORCING	
SHEET NUMBER		47	
OF 64			



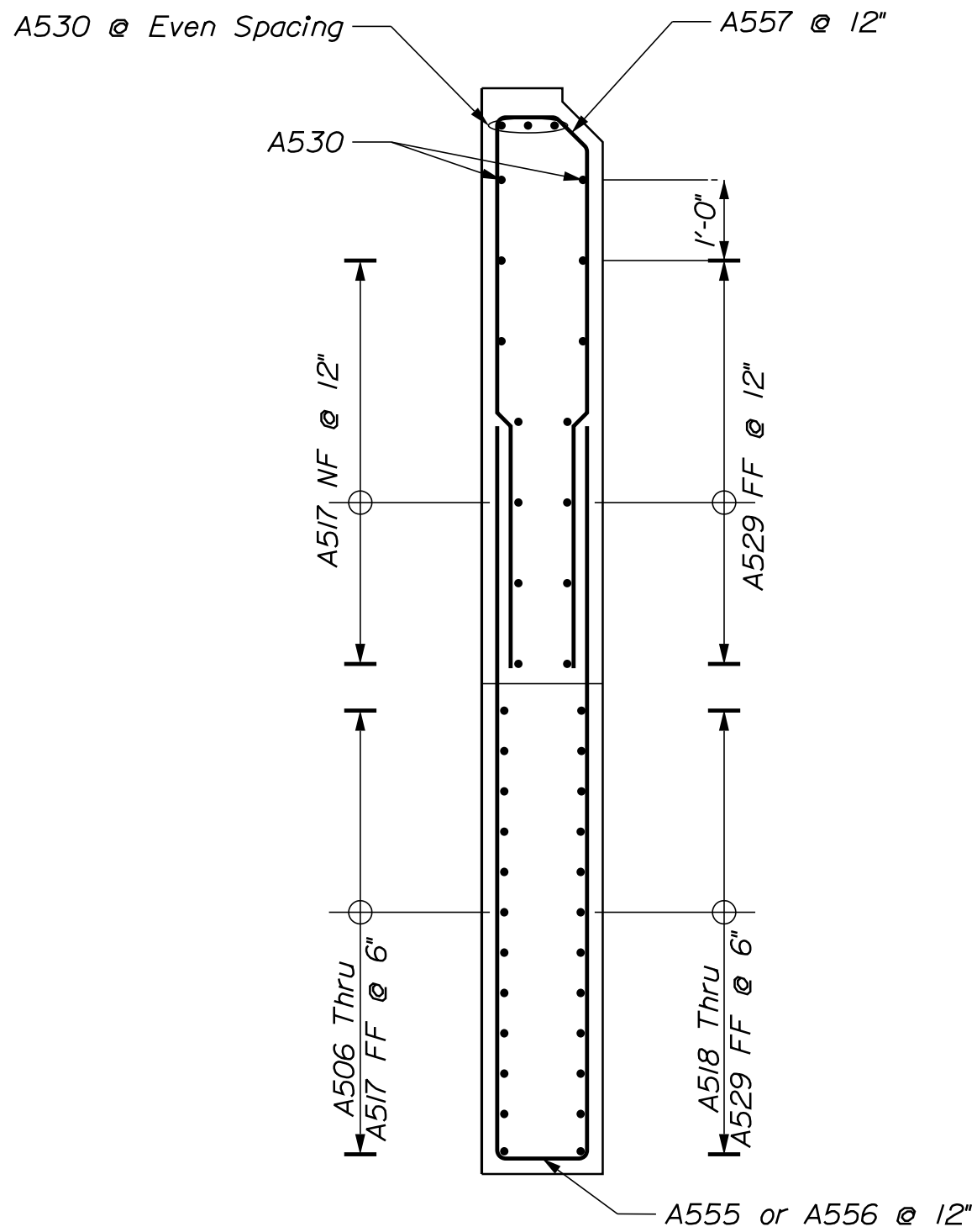
ABUTMENT SECTION BETWEEN PILES (AT APPROACH SLAB)



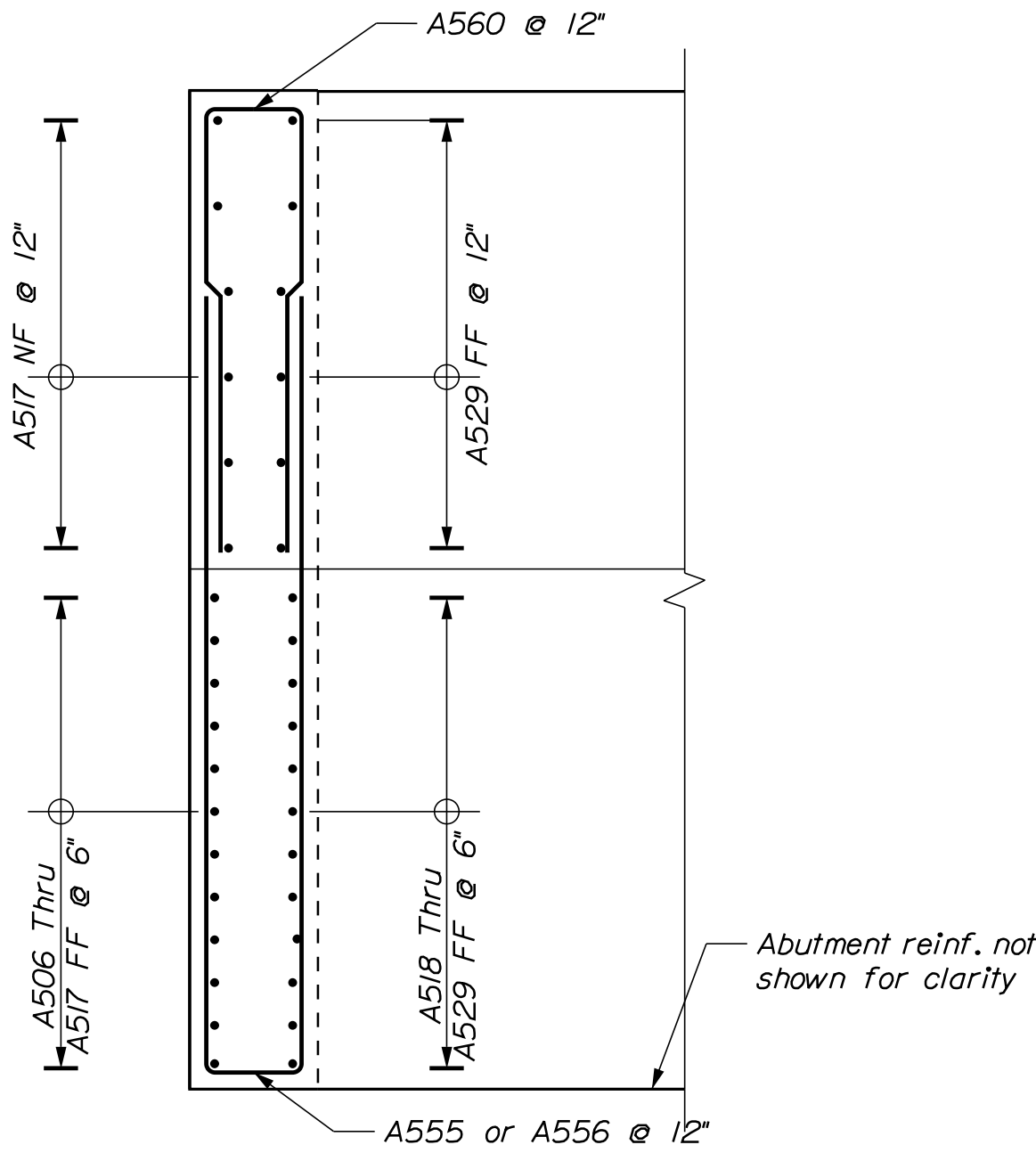
ABUTMENT SECTION AT VERTICAL CONSTRUCTION JOINT



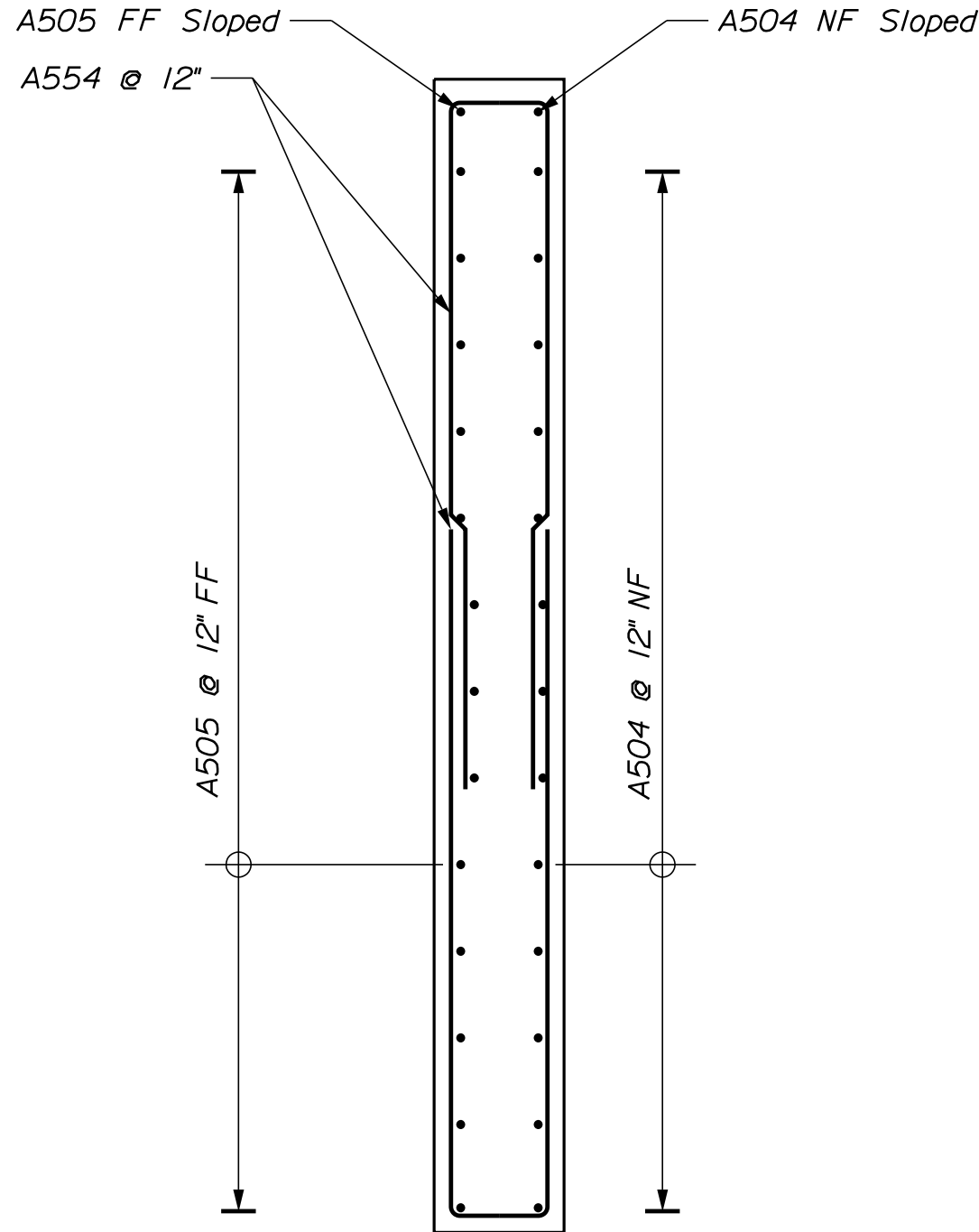
ABUTMENT SECTION BETWEEN PILES (AT MULTI-USE PATH)



WINGWALL SECTION A-A (DOWNSTREAM)



WINGWALL SECTION B-B (DOWNSTREAM)

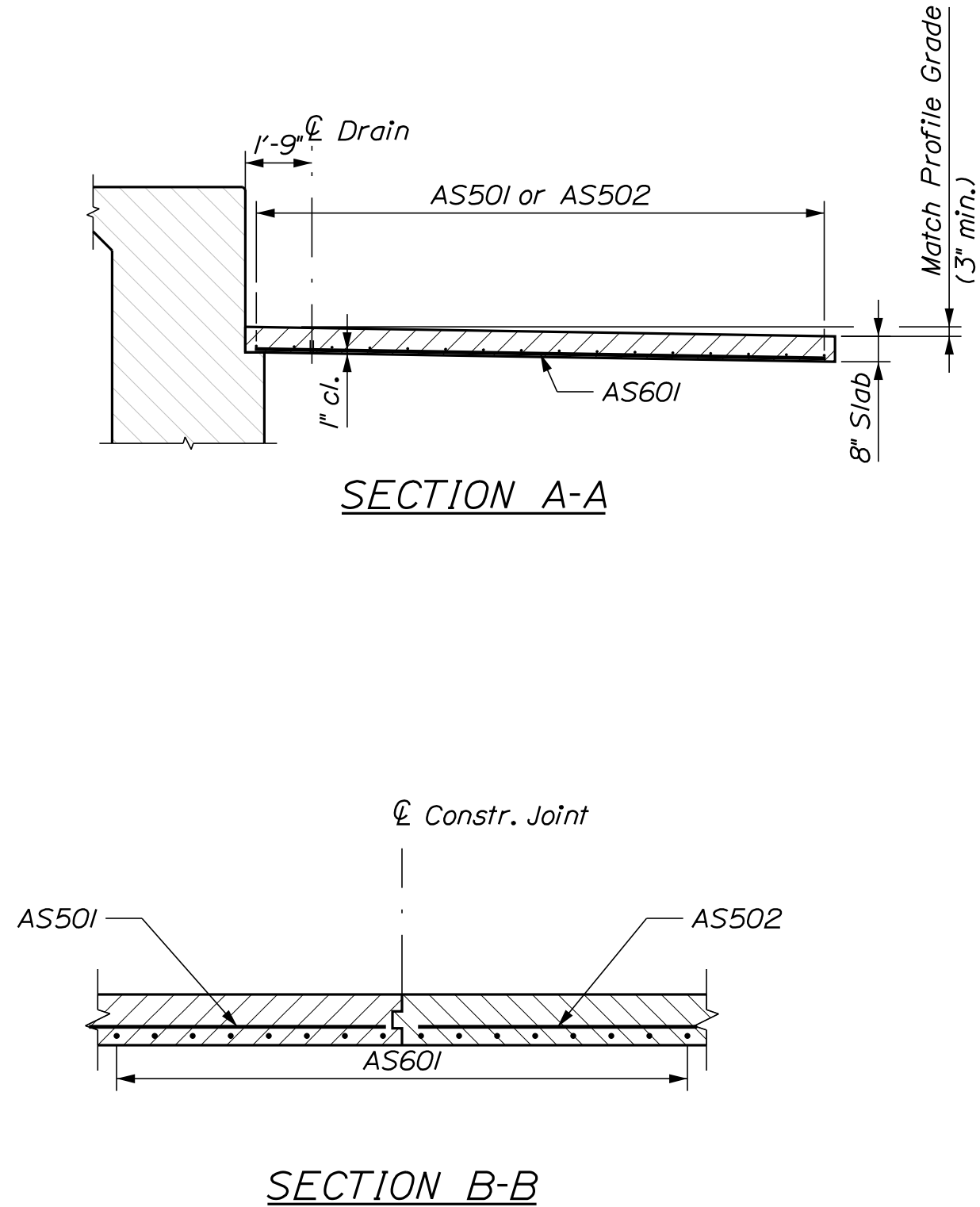
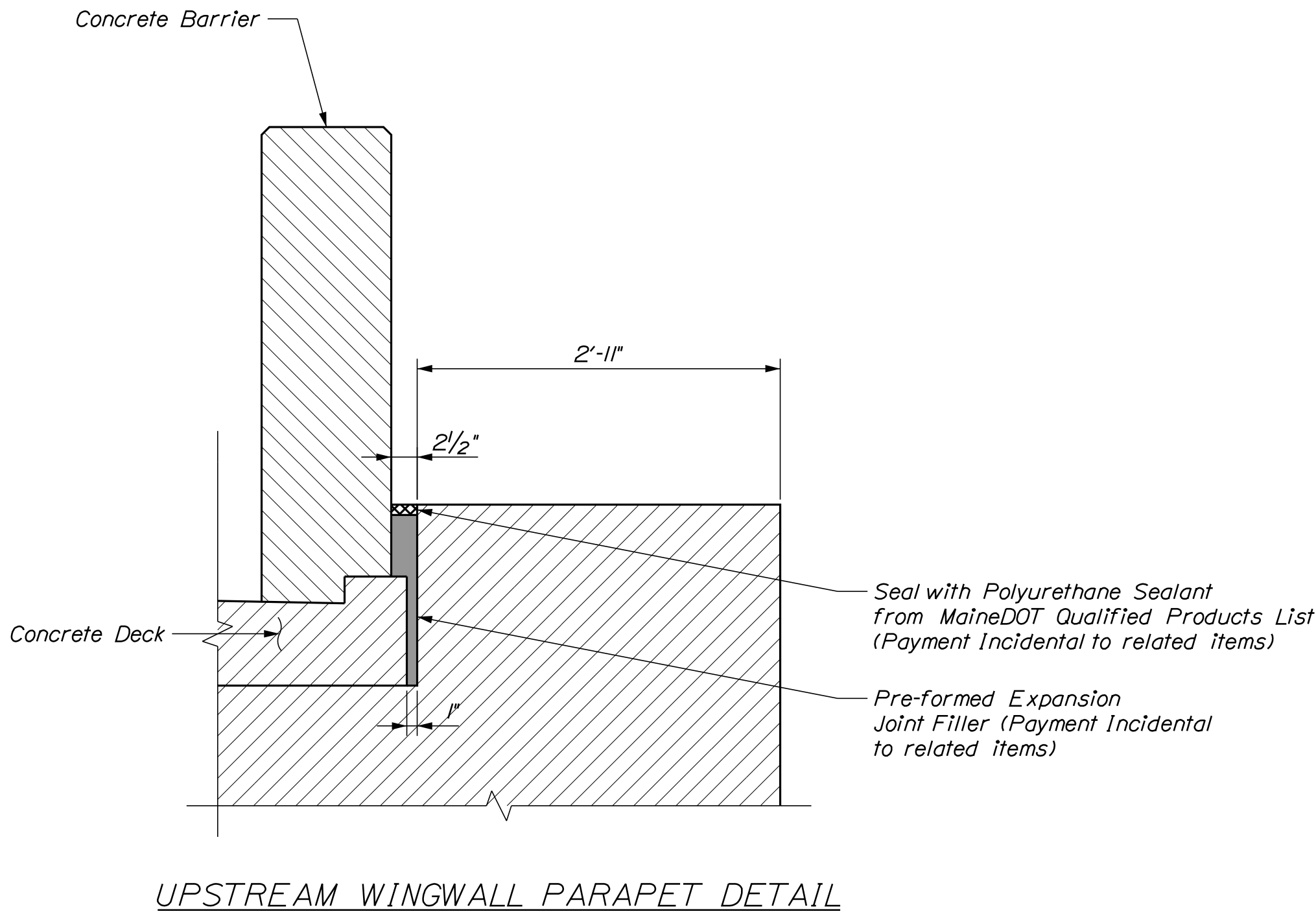
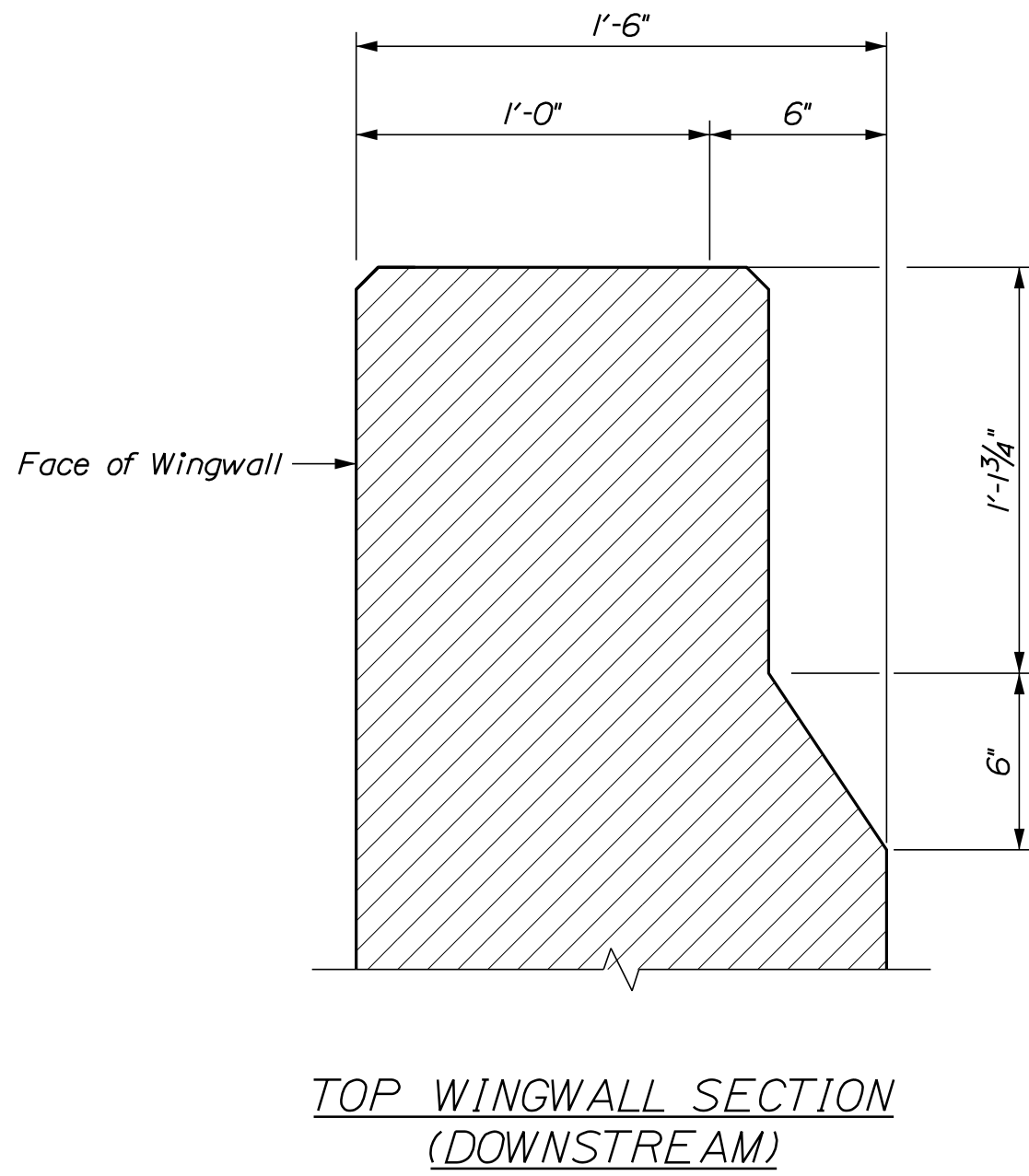
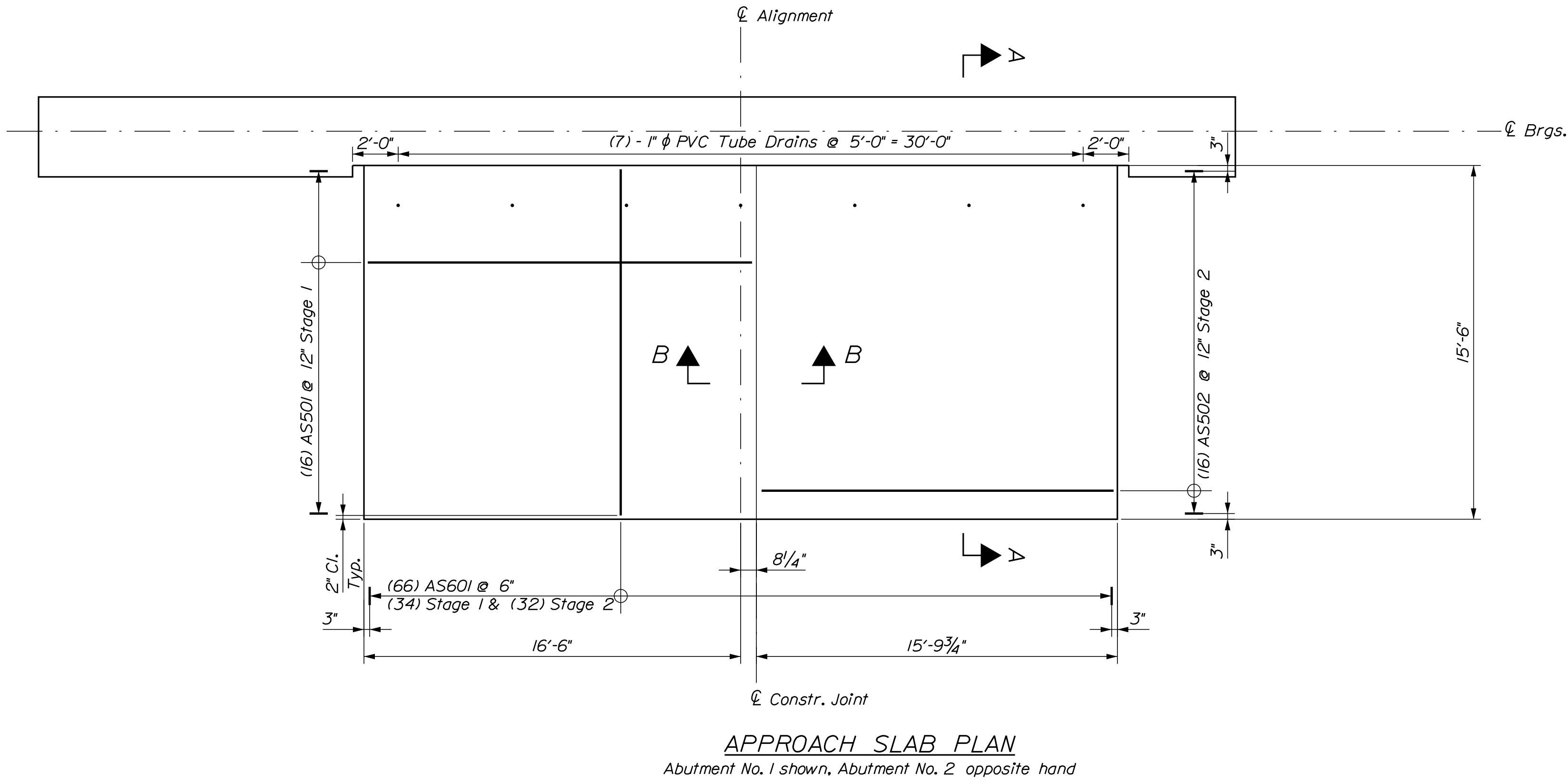


WINGWALL SECTION (UPSTREAM)

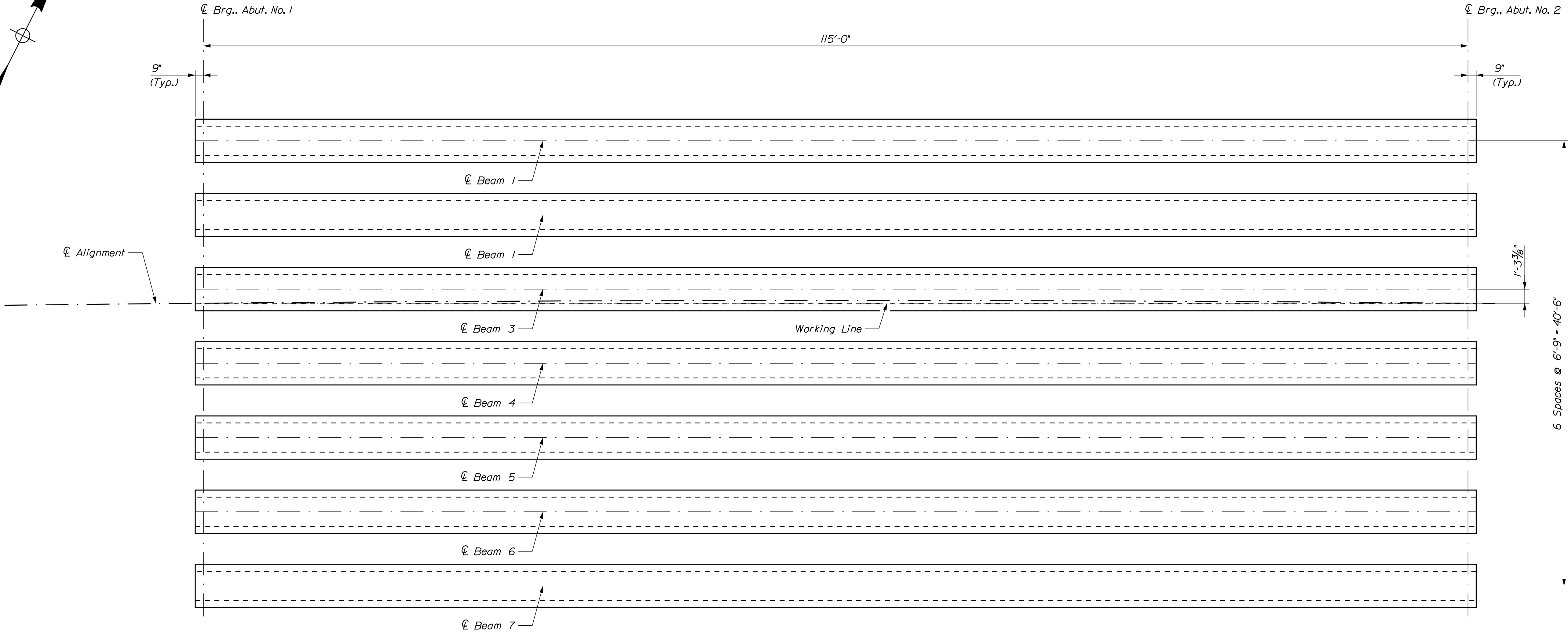
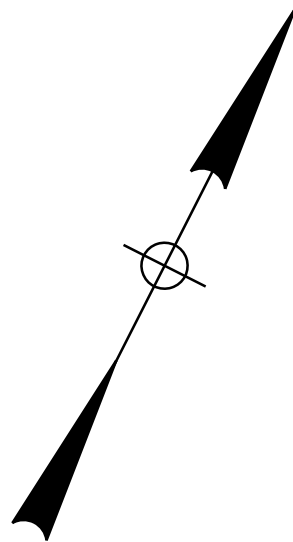
LEGEND

N.F. = NEAR FACE
F.F. = FAR FACE
E.S. = EACH SIDE

COUSINS RIVER BRIDGE		STATE OF MAINE	
COUSINS RIVER		DEPARTMENT OF TRANSPORTATION	
YARMOUTH-FREEPORT		STP-2172(500)	
CUMBERLAND COUNTY		WIN	
ABUTMENT NO. 1		21725.00	
SECTIONS		BRIDGE NO. 2183	
SHEET NUMBER		BRIDGE PLANS	
48		21725.00	
OF 64		21725.00	

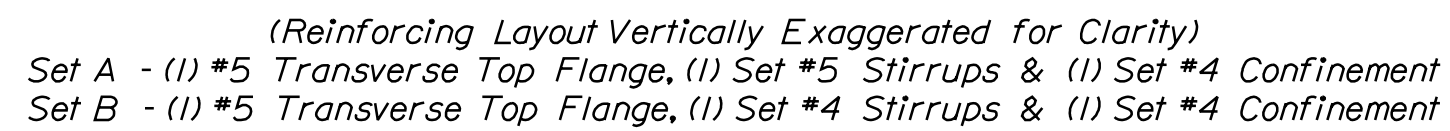


COUSINS RIVER BRIDGE					CUMBERLAND COUNTY		STATE OF MAINE DEPARTMENT OF TRANSPORTATION
COUSINS RIVER							
YARMOUTH-FREEPORT							
WINGWALL AND APPROACH					P.E. NUMBER		STP-2172(500)
SLAB DETAILS					DATE		
SHEET NUMBER					BRIDGE NO. 2183		WIN 21725.00 BRIDGE PLANS
49							
OF 64							



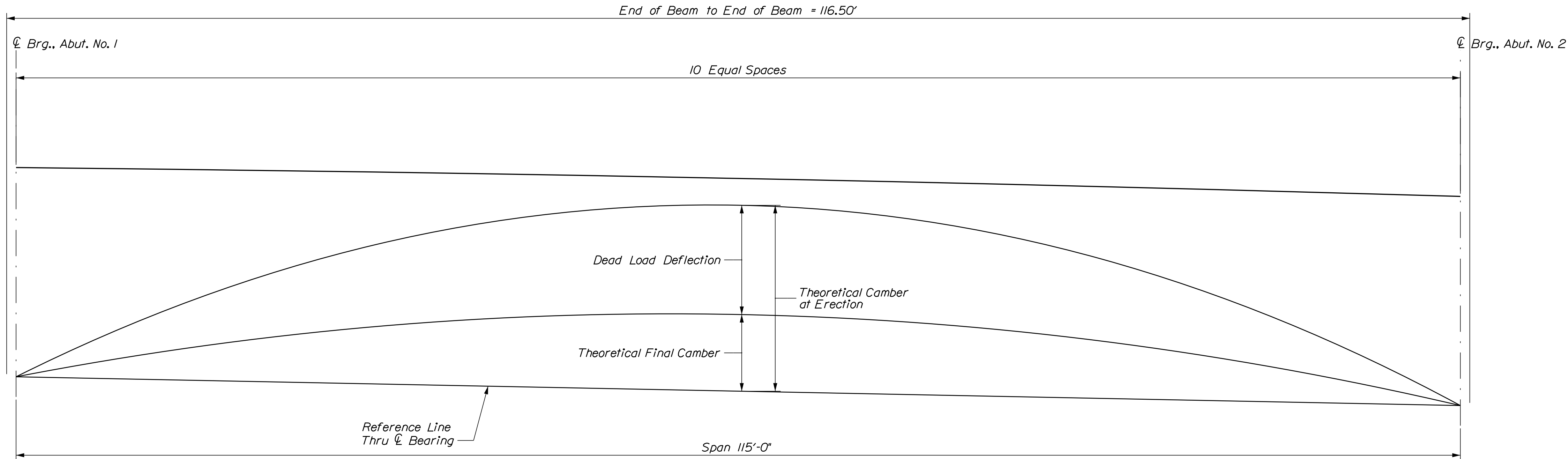
FRAMING PLAN

COUSINS RIVER BRIDGE COUSINS RIVER YARMOUTH-FREEPORT CUMBERLAND COUNTY	STATE OF MAINE DEPARTMENT OF TRANSPORTATION			
	STP-2172(500)			
	BRIDGE NO. 2183WIN21725.00BRIDGE PLANS			
FRAMING PLAN	PROJ. MANAGER	A. Lothe	BY	DATE
	DESIGN-DETAILED	RPM	OKK	NOV. 2023
	CHECKED-REVIEWED	OKK	STJ	DEC. 2023
	DESIGN-DETAILED	OKK	MM	NOV. 2023
	DESIGN-DETAILED			
SHEET NUMBER 50 OF 64	REVISIONS 1			SIGNATURE
	REVISIONS 2			P.E. NUMBER
	REVISIONS 3			DATE
	REVISIONS 4			
	FIELD CHANGES			



1. *Prestressing strands shall be 0.6-in. diameter. The tensioning force is 44 kips per prestressing strand, including the top strands.*
2. *Reinforcing steel shall have a minimum concrete cover of 2 inches unless otherwise noted.*
3. *The top surface of the upper flange of the prestressed beams shall be roughened, 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 bottom of slab elevations.*
4. *The drilling of holes in the prestressed beams and the use of powder actuated tools on the beams will not be permitted.*
5. *The estimated camber at release is 2.46 inches and the estimated camber at erection is 4.34 inches. Beam seat elevations are set for a minimum of 1 inch haunch at mid-span. Refer to Special Provision 535, Precast, Prestressed Concrete Superstructure - Camber.*
6. *All mild reinforcing shall be Low-Carbon Chromium, Grade 100ksi.*
7. *The lateral stability of the beams shall be the responsibility of the Contractor during erection and construction. A lateral support system shall be designed by the Contractor in accordance with the AASHTO LRFD Bridge Design and Bridge Construction Specifications.*

51 OF 64	SHEET NUMBER	COUSINS RIVER BRIDGE COUSINS RIVER YARMOUTH-FREPORT				CUMBERLAND COUNTY				PROJ. MANAGER		A. Lethie	BY	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION STP-2172(500) BRIDGE NO. 2183 WIN 21725.00 BRIDGE PLANS
										DESIGN-DETAILED		RPM	OGK	NOV. 2023	
										CHECKED-REVIEWED		OGK	STJ	DEC. 2023	
										DESIGNS DETAIL D2		OGK	MM	NOV. 2023	
										DESIGNS DETAIL D3					
										REVISIONS 1					
										REVISIONS 2					
										REVISIONS 3					
										REVISIONS 4					
										FIELD CHANGES					
BEAM DETAILS (1 OF 2)												DATE			



NEBT 63 CAMBER DIAGRAM

GIRDER	BOTTOM OF SLAB ELEVATIONS										
	A1	0.1xL	0.2xL	0.3xL	0.4xL	0.5xL	0.6xL	0.7xL	0.8xL	0.9xL	A2
G1	14.91	14.90	14.88	14.84	14.78	14.70	14.60	14.48	14.33	14.17	14.00
G2	15.05	15.04	15.01	14.97	14.91	14.83	14.73	14.61	14.46	14.30	14.13
G3	15.18	15.17	15.15	15.11	15.05	14.97	14.86	14.74	14.60	14.44	14.27
G4	15.10	15.09	15.06	15.02	14.96	14.88	14.78	14.66	14.51	14.35	14.18
G5	14.96	14.95	14.93	14.89	14.83	14.75	14.65	14.52	14.38	14.22	14.05
G6	14.83	14.82	14.79	14.75	14.69	14.61	14.51	14.39	14.24	14.08	13.91
G7	14.69	14.68	14.66	14.62	14.56	14.48	14.38	14.26	14.11	13.95	13.78

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2172(500)

BRIDGE NO. 2183
WIN 21725.00
BRIDGE PLANS

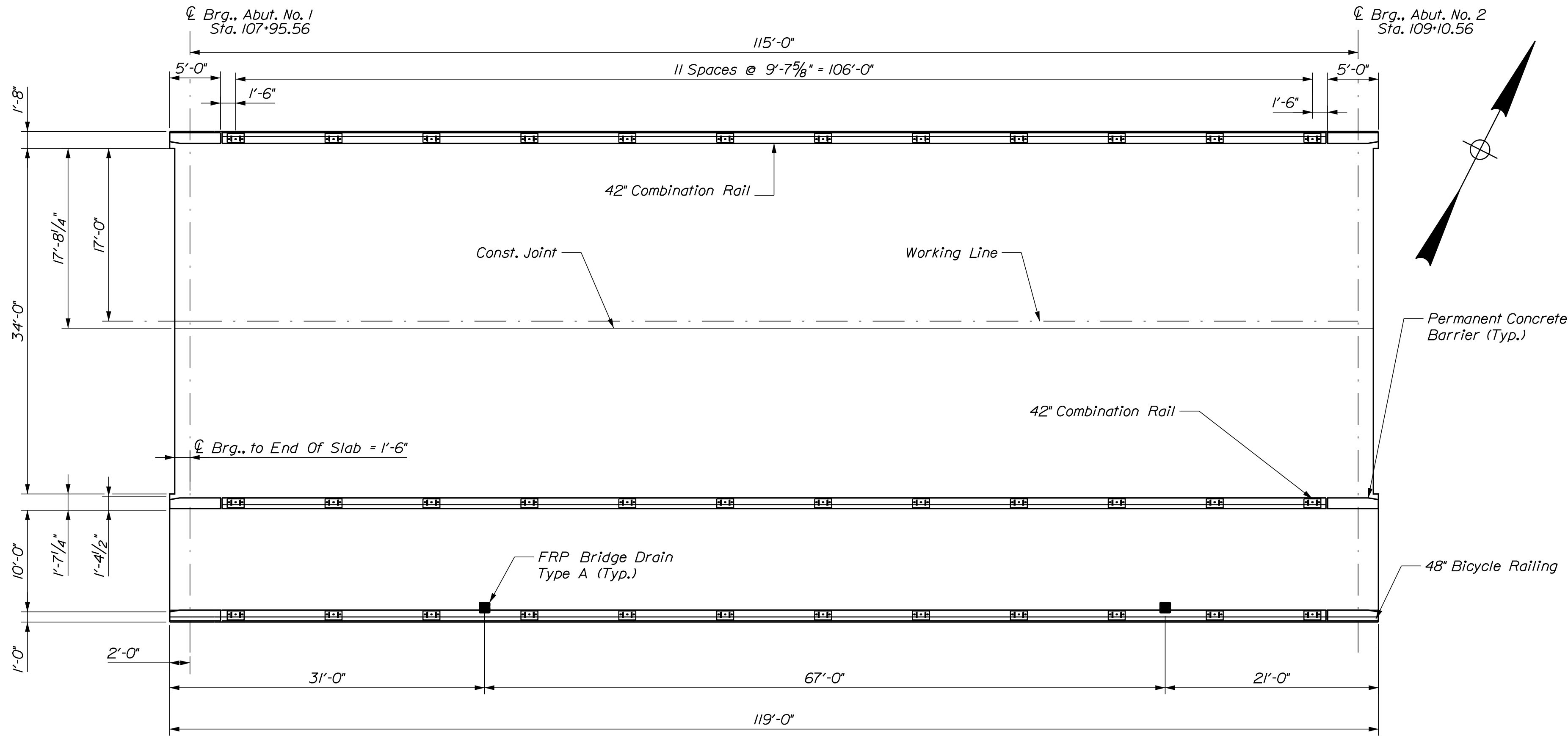
COUSINS RIVER BRIDGE
COUSINS RIVER
YARMOUTH-FREEPORT CUMBERLAND COUNTY

BEAM DETAILS (2 OF 2)

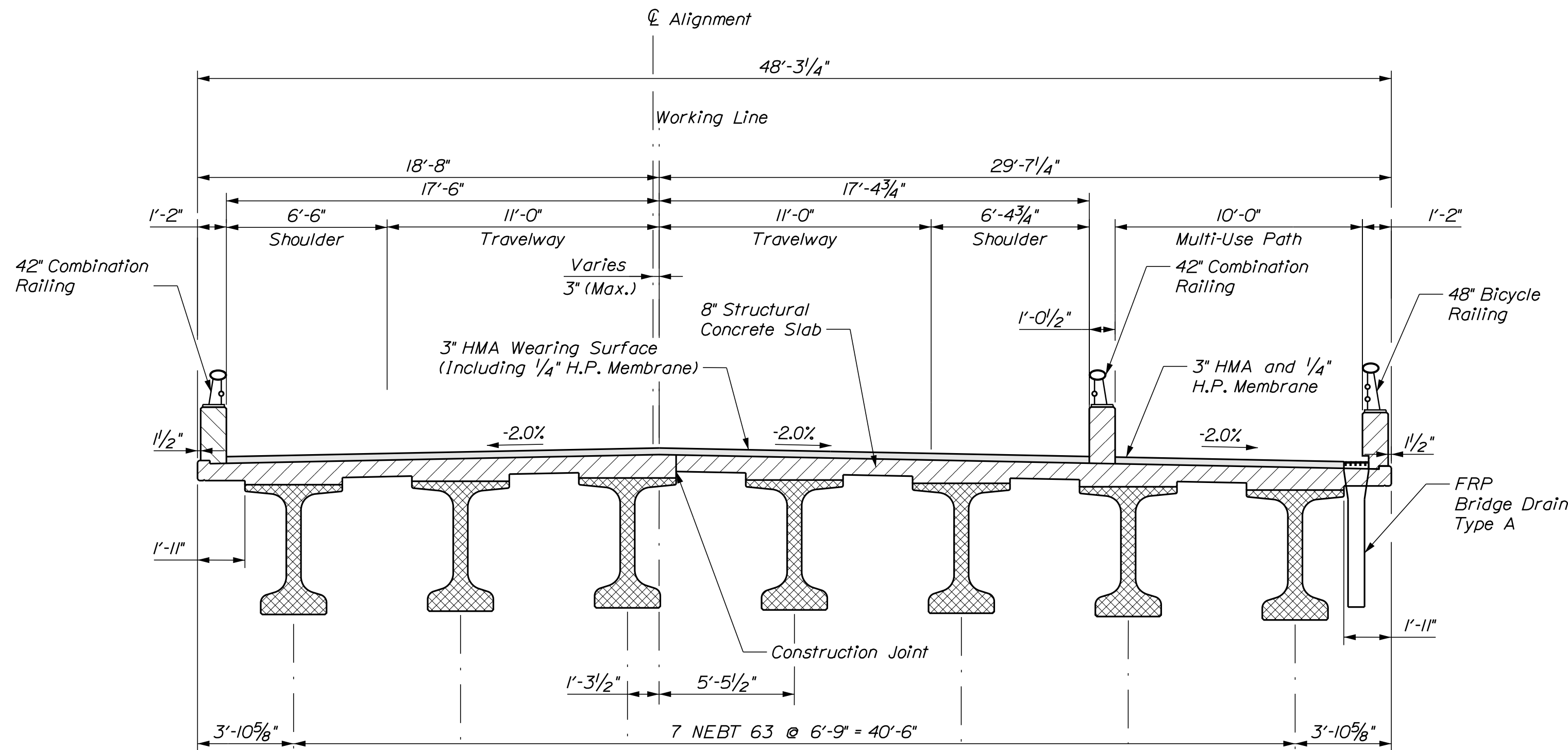
SHEET NUMBER
52
OF 64

PROJ. MANAGER	A. Lothe	BY	DATE
DESIGN-DETAILED	RPM	OKK	NOV. 2023
CHECKED-REVIEWED	OKK	STJ	DEC. 2023
DESIGN-DETAILED	OKK	MM	NOV. 2023
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE	P.E. NUMBER	DATE



SUPERSTRUCTURE PLAN

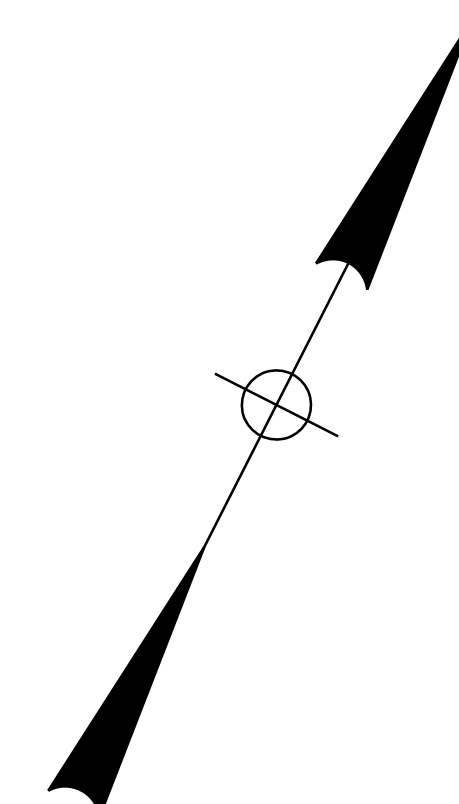


TYPICAL BRIDGE SECTION

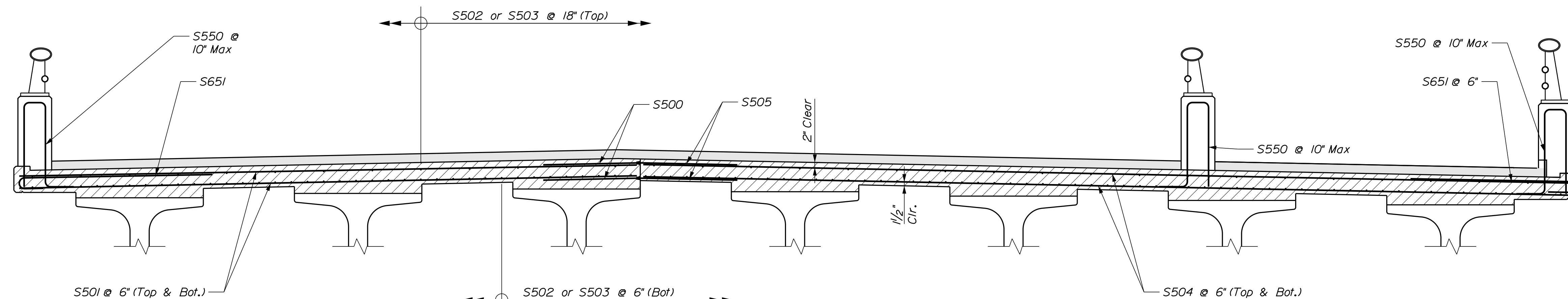
SUPERSTRUCTURE NOTES

1. The bearing elevation and deck thickness shall be adjusted in accordance with Special Provision Section 535, Precast, Prestressed Concrete Superstructure, Camber.
2. Reinforcing steel shall have a minimum concrete cover of 2 inches unless otherwise noted.
3. Form a one inch V-groove on the fascias at the horizontal joint between the curb and slab.
4. The superstructure slab concrete shall be placed continuously and shall be kept plastic until the entire placement has been made.
5. Precast Concrete Deck Panels are not allowed on this project.

STATE OF MAINE		DATE	
DEPARTMENT OF TRANSPORTATION		BY	
STP-2172(500)		A. Lathe	
BRIDGE NO. 2183		DESIGN-DETAILED	
WIN		CHECKED-REVIEWED	
21725.00		OKK	
BRIDGE PLANS		STU	
		MM	
		DESIGN-DETAILED	
		OKK	
		STU	
		MM	
		SIGNATURE	
		P.E. NUMBER	
		DATE	
COUSINS RIVER BRIDGE		CUMBERLAND COUNTY	
COUSINS RIVER		YARMOUTH-FREEPORT	
SUPERSTRUCTURE PLAN		SHEET NUMBER	
		53	
		OF 64	



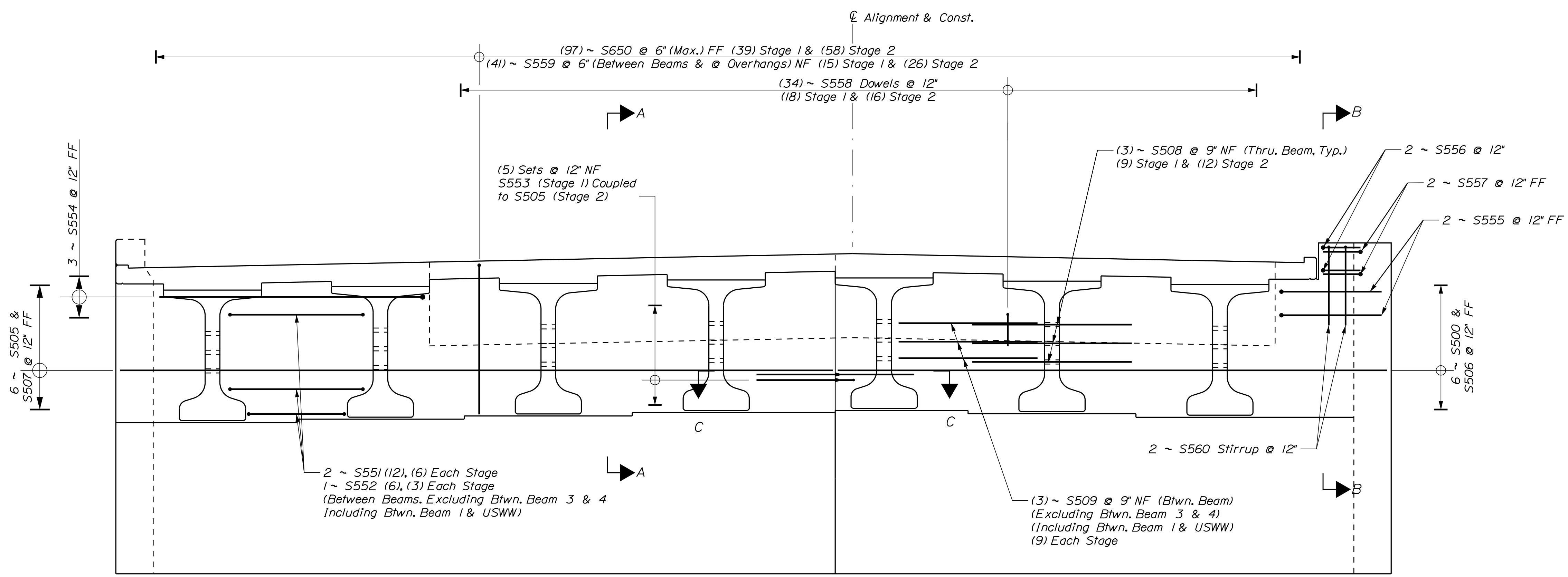
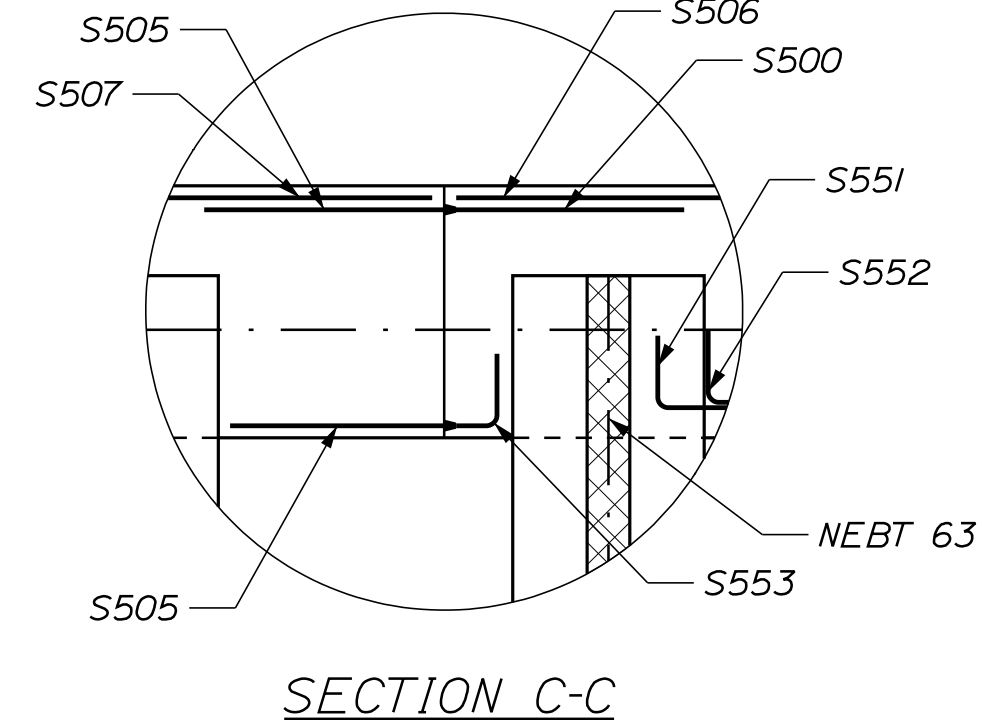
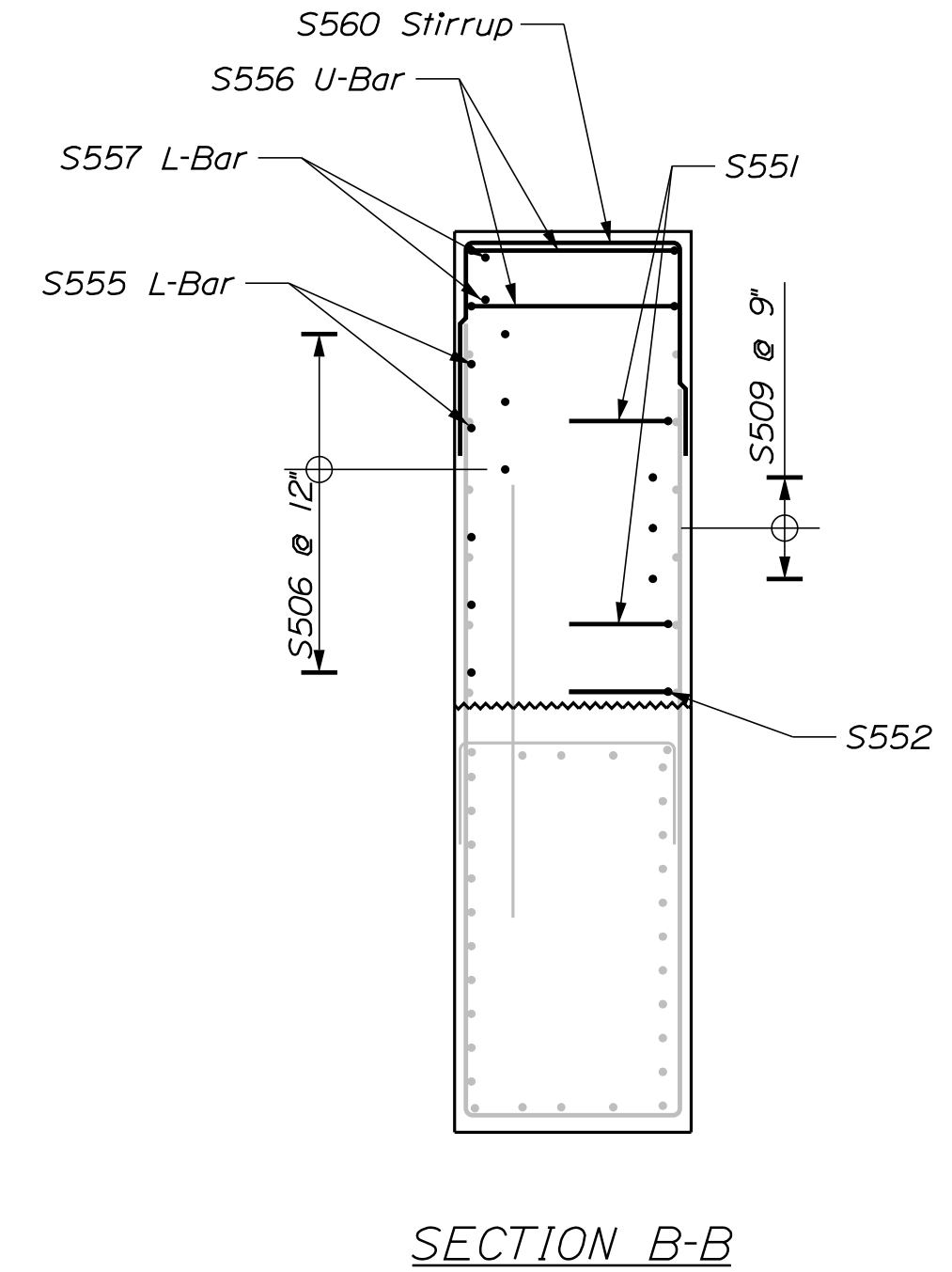
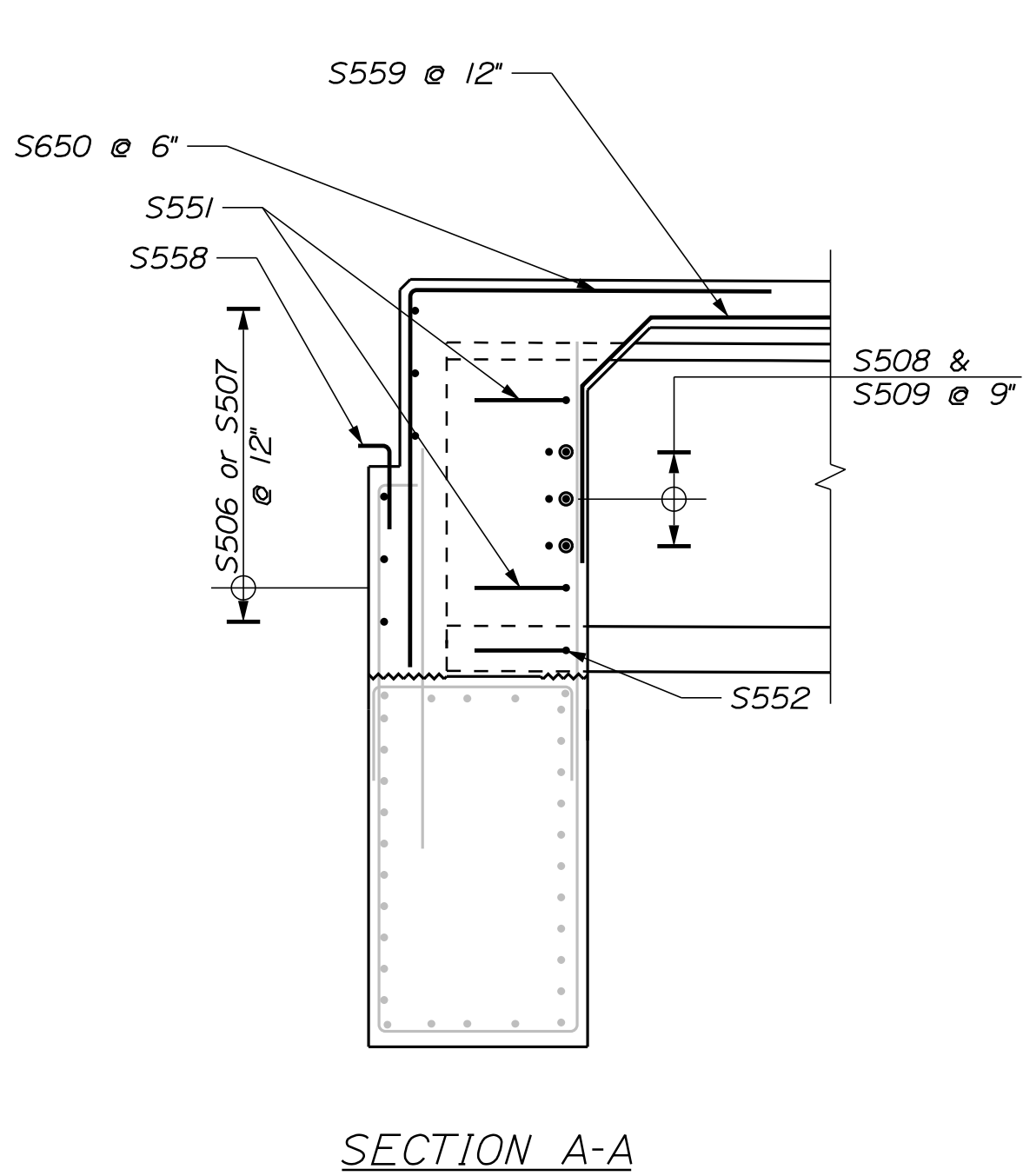
SUPERSTRUCTURE REINFORCING PLAN



TYPICAL REINFORCING SECTION

N.F. = NEAR FACE
F.F. = FAR FACE
E.S. = EACH SIDE

SHEET NUMBER		COUSINS RIVER BRIDGE COUSINS RIVER YARMOUTH-FREEPORT		CUMBERLAND COUNTY		PROJ. MANAGER		BY	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION	
						A. Lothe					
54		SUPERSTRUCTURE REINFORCING		DESIGN-DETAILED		RPM	OK	NOV. 2023	SIGNATURE	STP-2172(500)	
				CHECKED-REVIEWED		OK	STJ	DEC. 2023			
				DESIGN2-DETAILED2		OK	MJM	NOV. 2023			
				DESIGN3-DETAILED3		P.E. NUMBER					
				REVISIONS 1		DATE					
				REVISIONS 2		DATE					
OF 64				REVISIONS 3		DATE			BRIDGE NO. 2183	WIN 21725.00	BRIDGE PLANS
				REVISIONS 4		DATE					
				FIELD CHANGES		DATE					



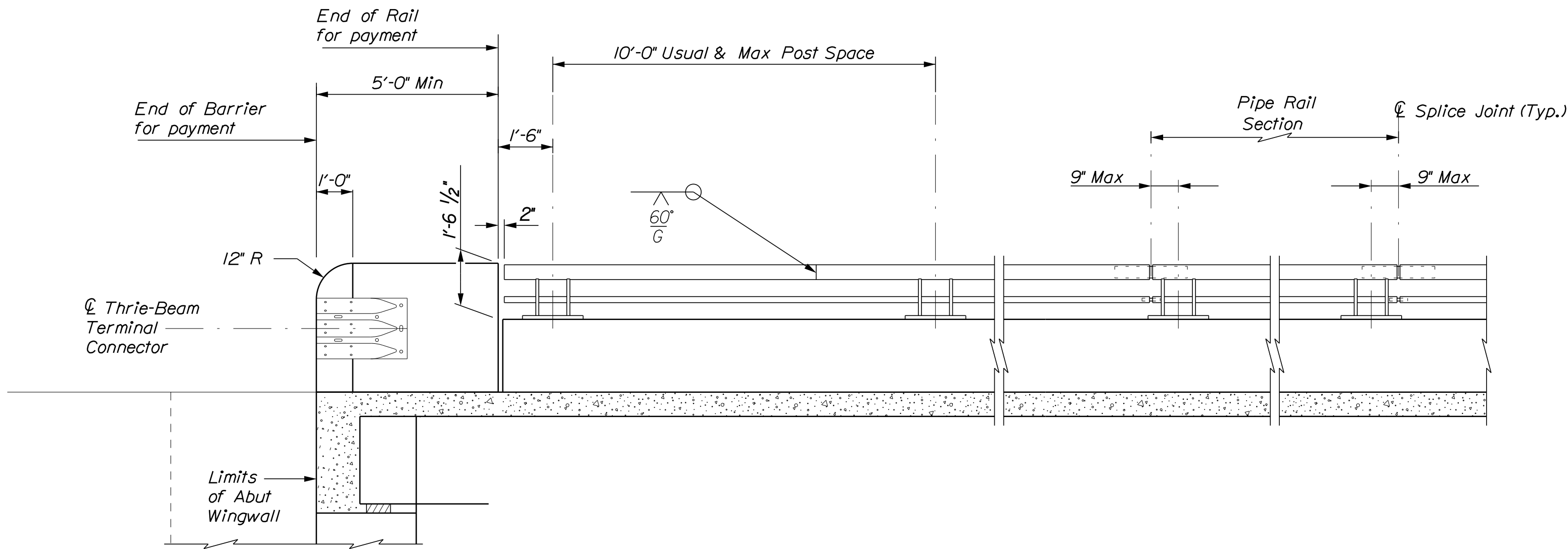
DIAPHRAGM REINFORCING
(Abutment No. 1 Shown, Abutment No. 2 Similar)
See Abutment No. 1 Reinforcing Sheet for Abutment Reinforcing

LEGEND
N.F. = NEAR FACE
F.F. = FAR FACE
E.S. = EACH SIDE

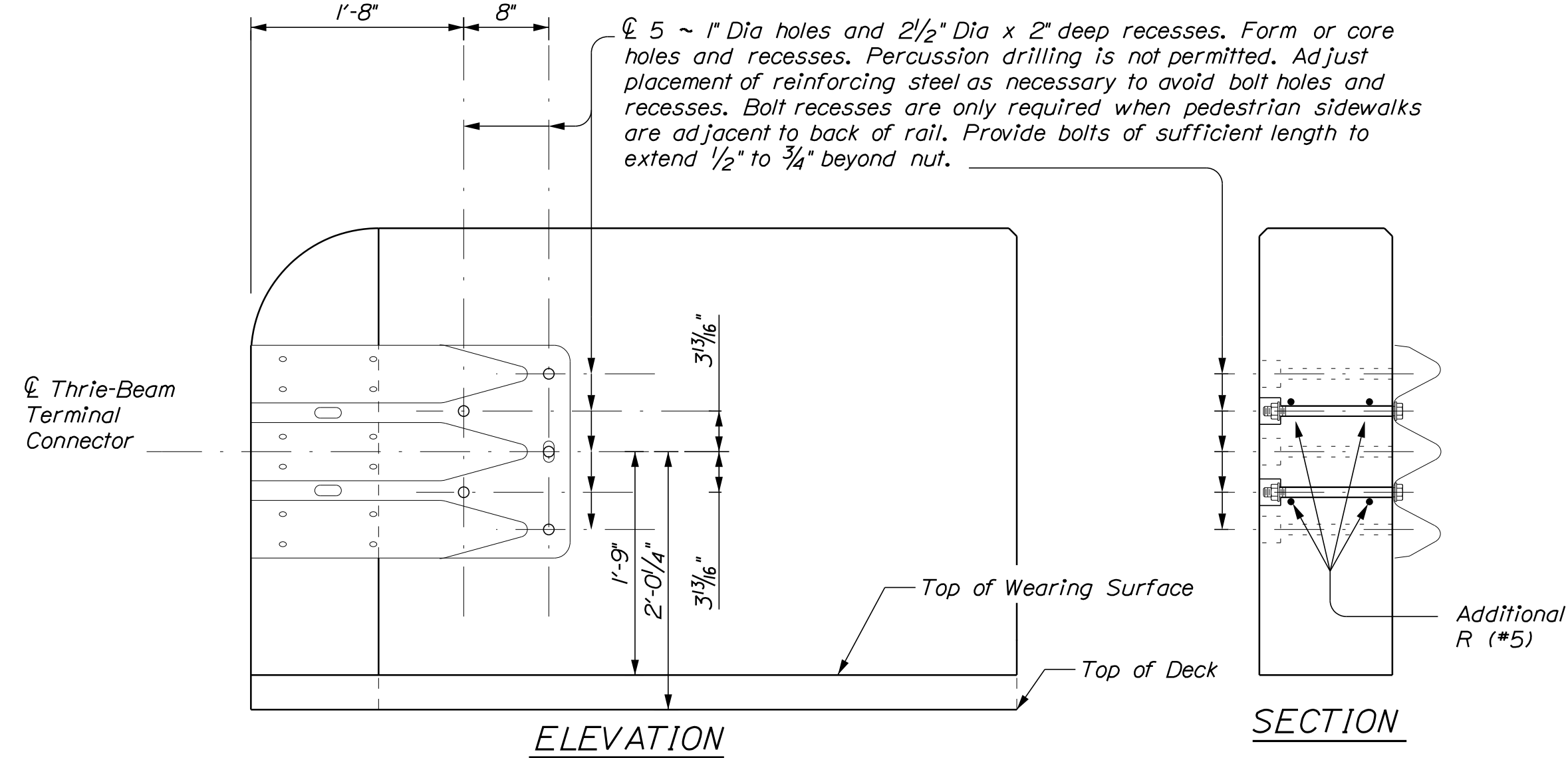
COUSINS RIVER BRIDGE COUSINS RIVER YARMOUTH-FREEPORT	STATE OF MAINE DEPARTMENT OF TRANSPORTATION	
	STP-2172(500)	
	BRIDGE NO. 2183	WIN 21725.00
CUMBERLAND COUNTY		
DIAPHRAGM REINFORCING		
SHEET NUMBER 55 OF 64		

PROJ. MANAGER	BY	DATE
DESIGN-DETAILED	OKK	NOV. 2023
CHECKED-REVIEWED	STJ	DEC. 2023
DESIGN-DETAILED	MM	NOV. 2023
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

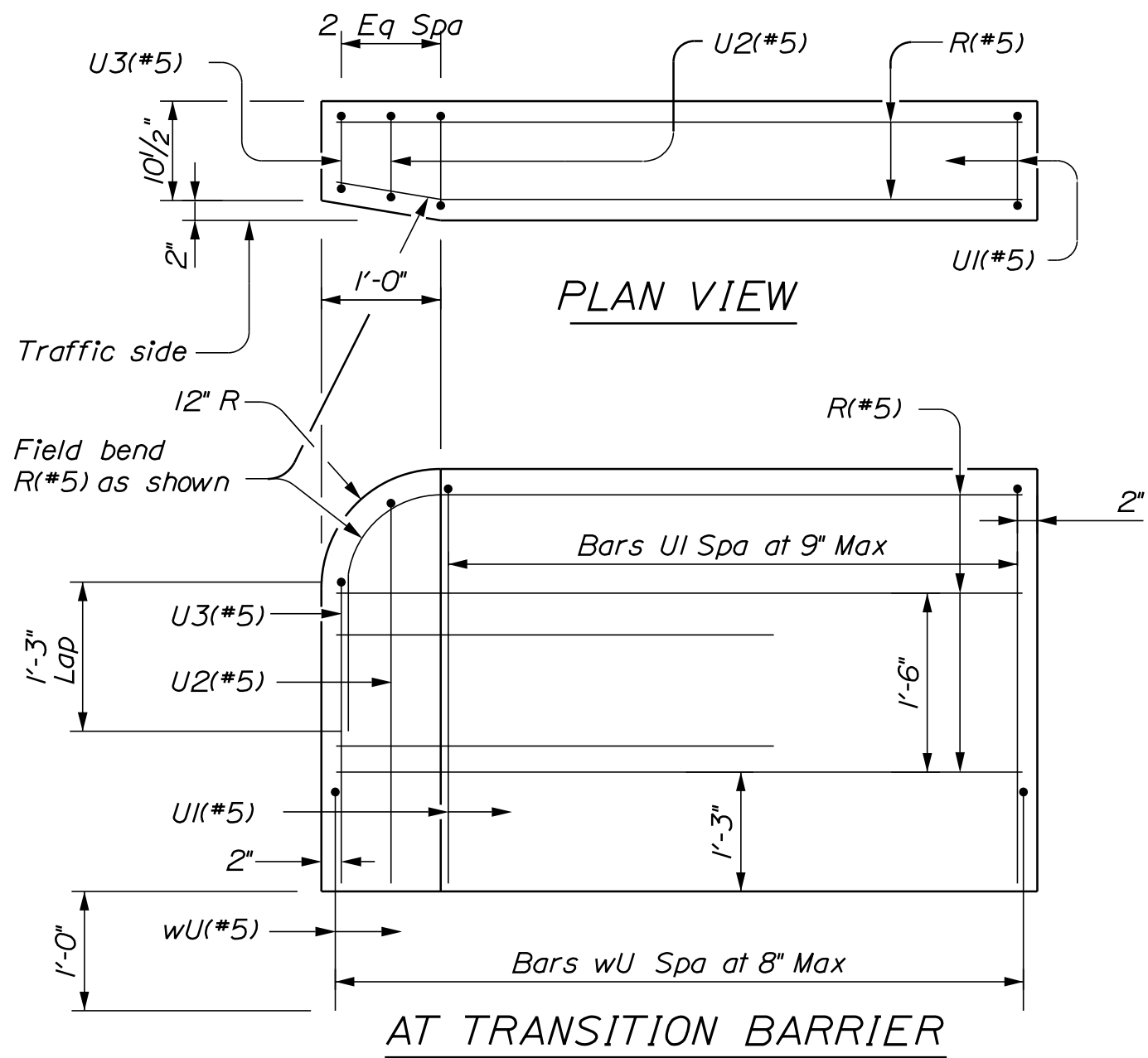
SIGNATURE	P.E. NUMBER	DATE



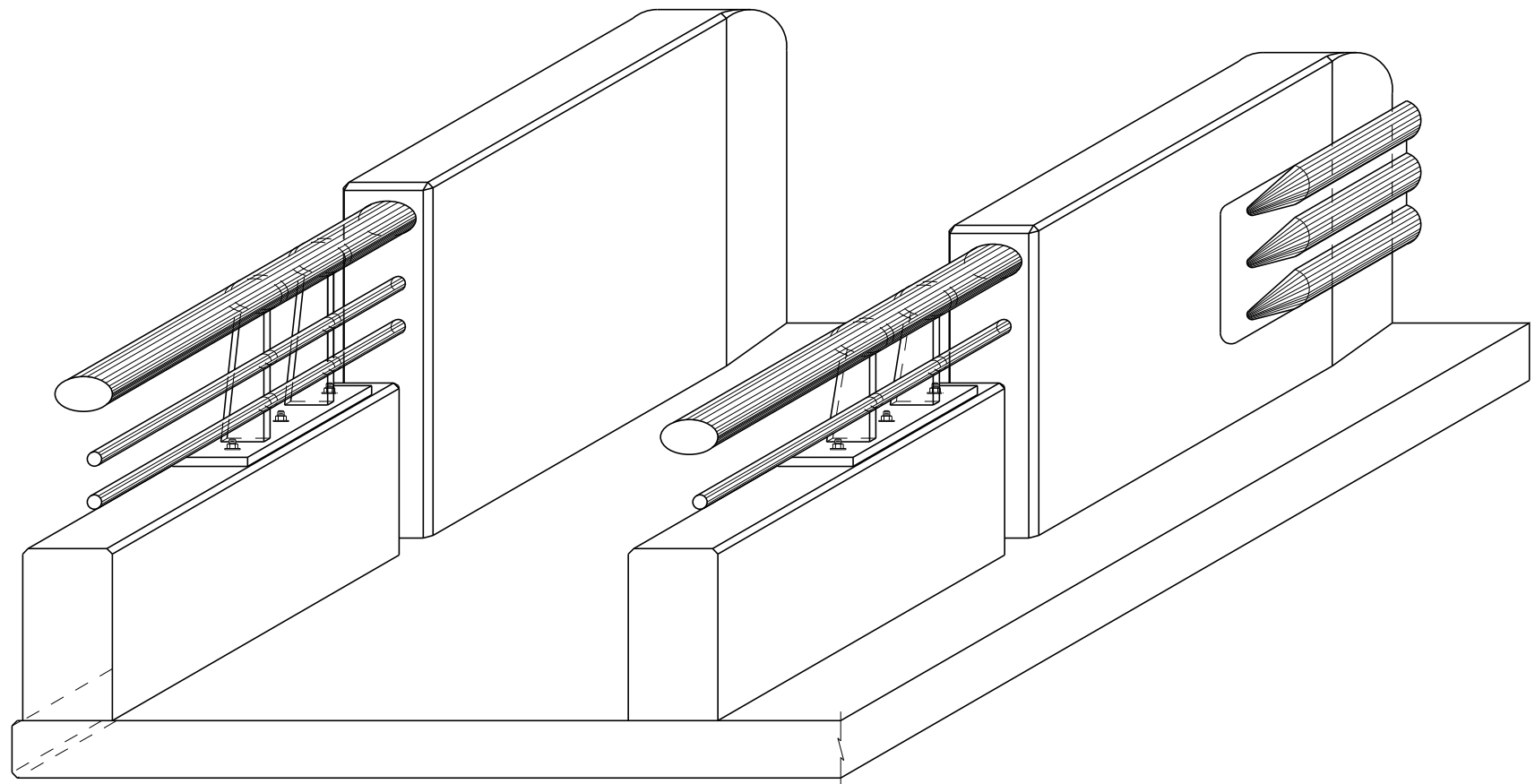
ROADWAY ELEVATION OF RAIL



TERMINAL CONNECTION DETAILS



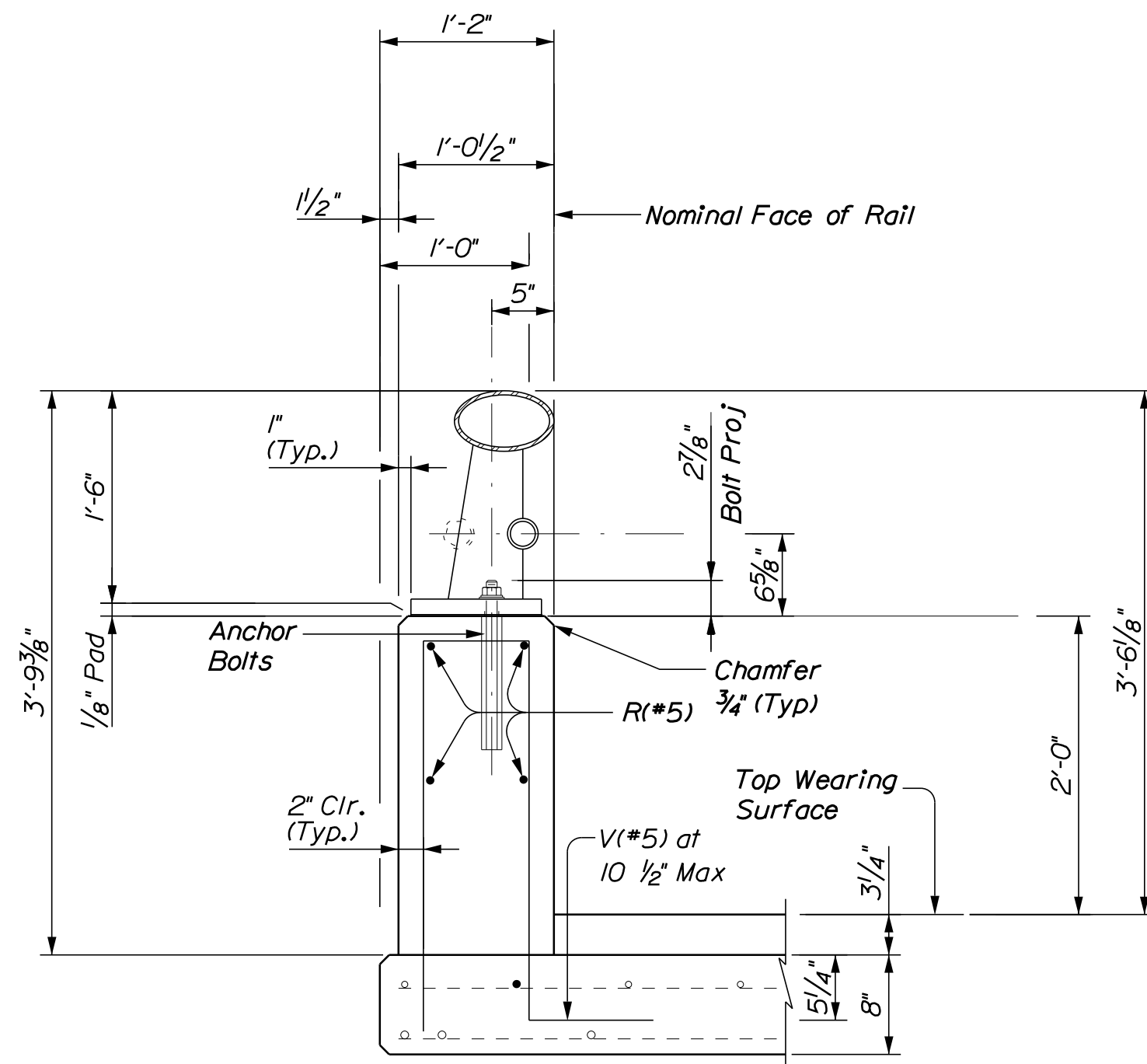
ELEVATION SHOWING TYPICAL REINFORCING PLACEMENT



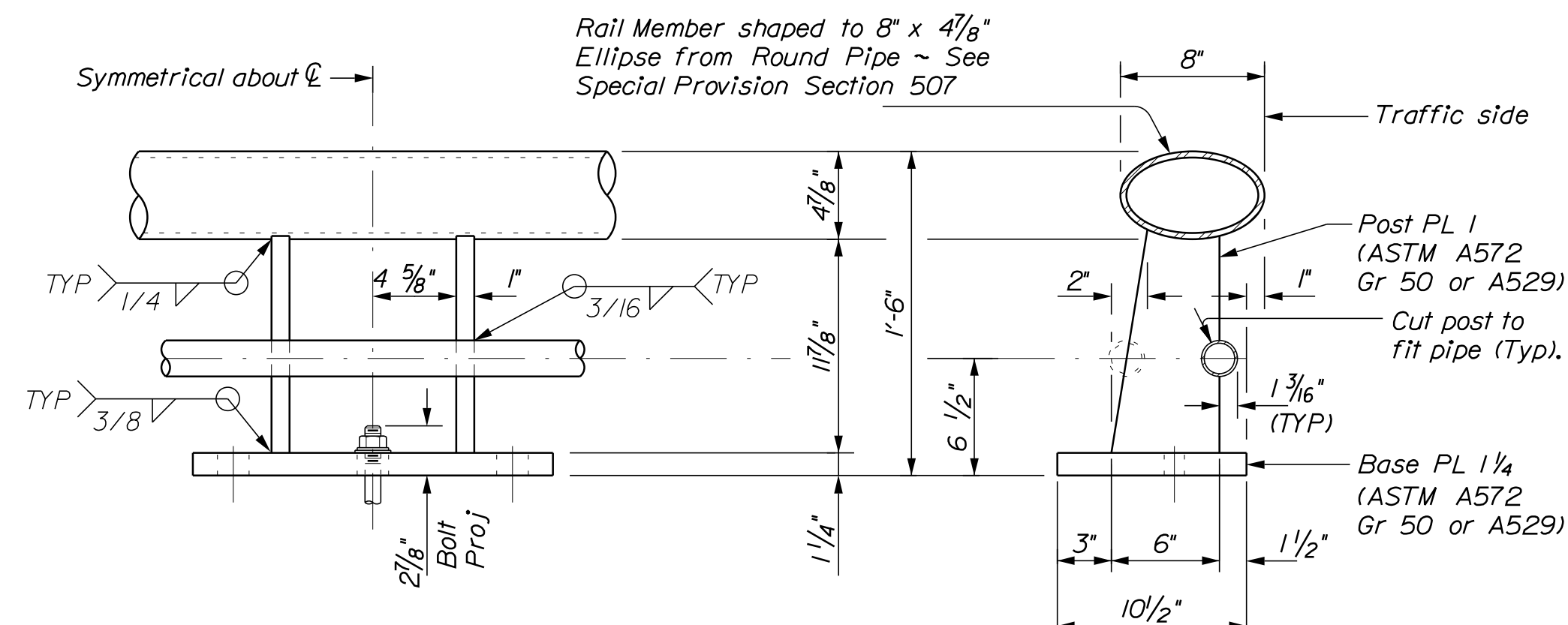
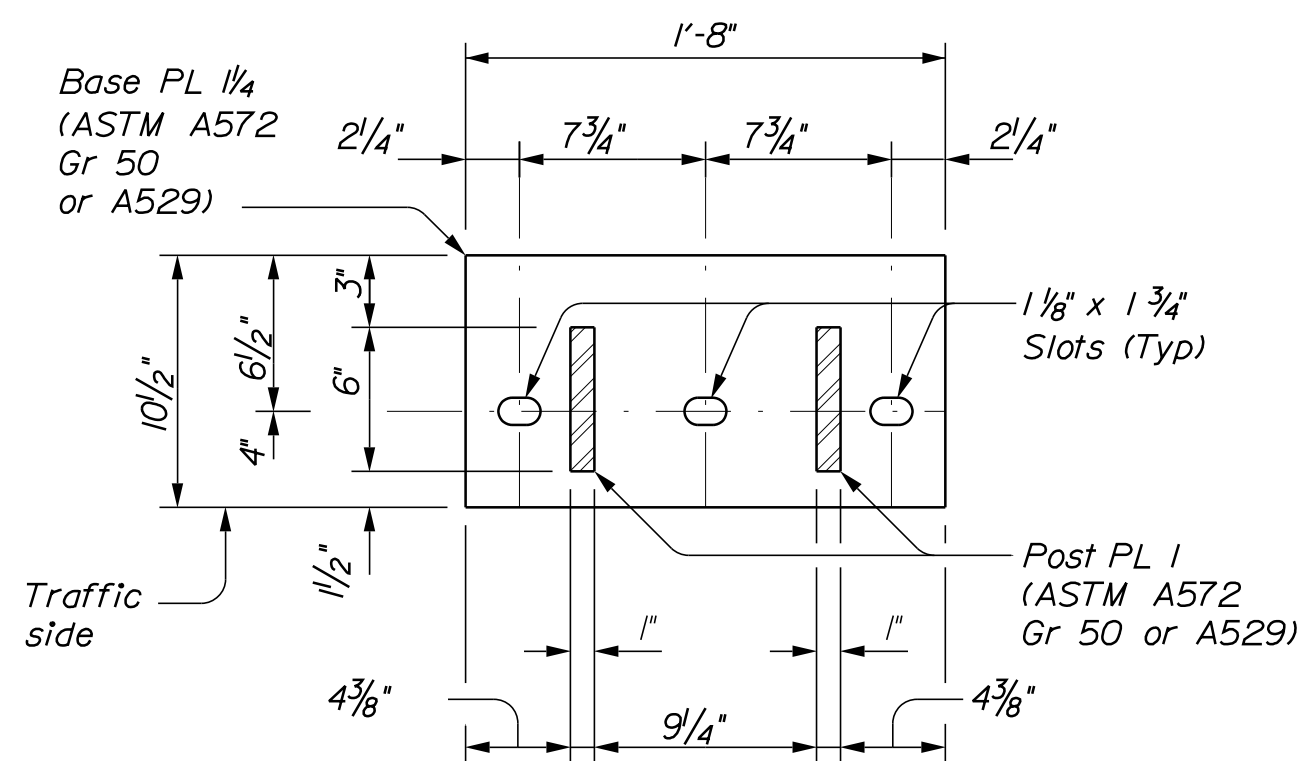
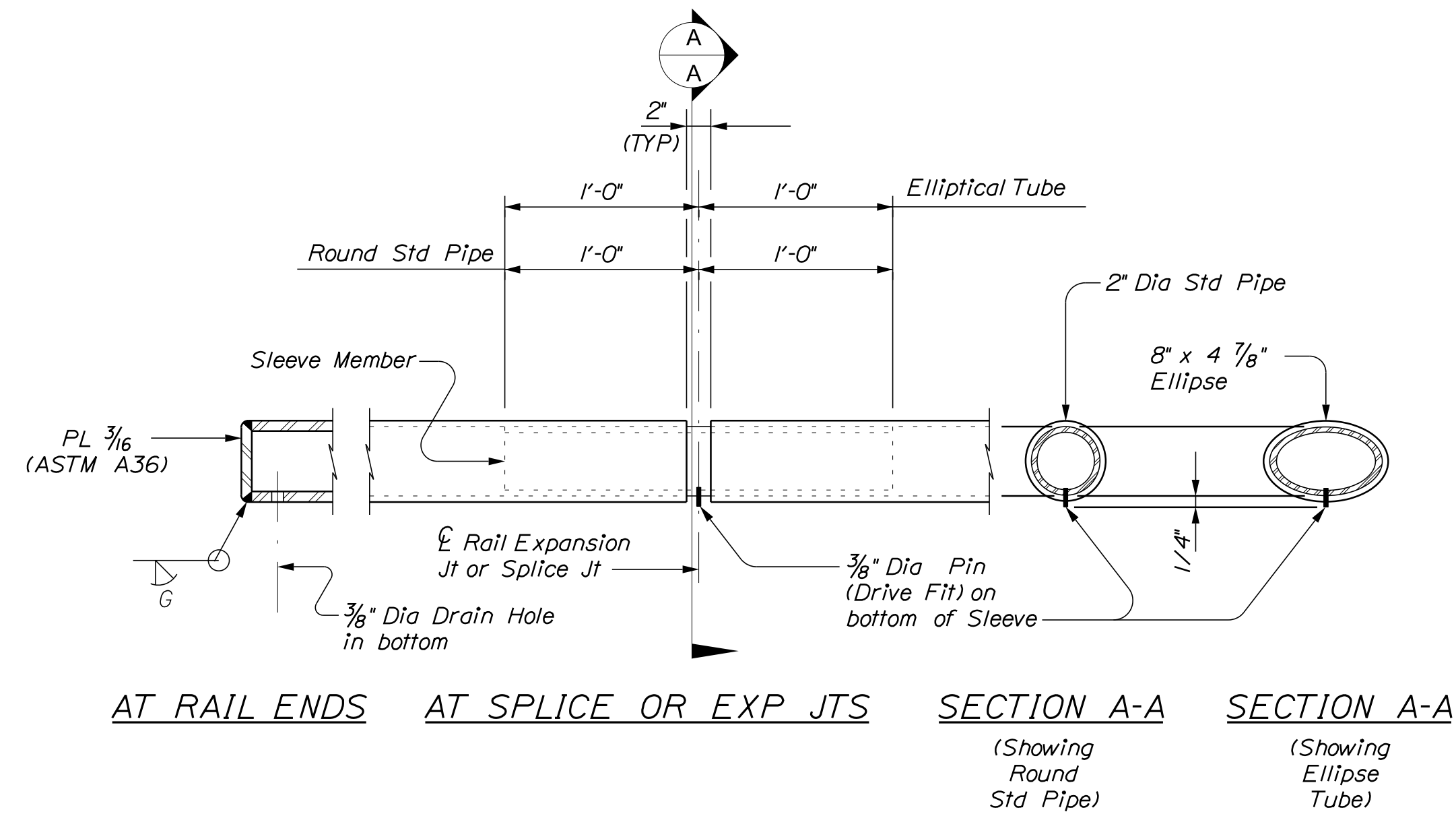
ISOMETRIC VIEW AT END OF BRIDGE

1. Bridge Transition, terminal connectors and associated hardware shall be paid for under Item 606.1307 Bridge Transition (Asymmetrical) Type 1A.
2. Pipe rail sections must have at least two posts but not more than four.
3. One shop splice per pipe rail section is permitted with minimum 85 percent penetration. The weld may be square groove or single V groove. Grind smooth.
4. Place 4 additional Bars R(*5) 3'-8" in length inside Bars U(*5) and centered 2'-0" from end of rail when Terminal Connections are required. Field bend as needed.

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		STP-2172(500)		BRIDGE NO. 2183		WIN		21725.00		BRIDGE PLANS	
COUSINS RIVER BRIDGE		COUSINS RIVER		CUMBERLAND COUNTY		YARMOUTH-FREEPORT		COMBINATION RAILING		(1 OF 3)		SHEET NUMBER	
DATE		BY		SIGNATURE		P.E. NUMBER		DATE					
NOV 2023		OKK											
DEC 2023		STJ											
NOV 2023		MM											
DESIGN-DETAILED		RPM		CHECKED-REVIEWED		OKK		DESIGN-DETAILED					
REVISIONS 1													
REVISIONS 2													
REVISIONS 3													
REVISIONS 4													
FIELD CHANGES													



SECTIONS THRU RAIL

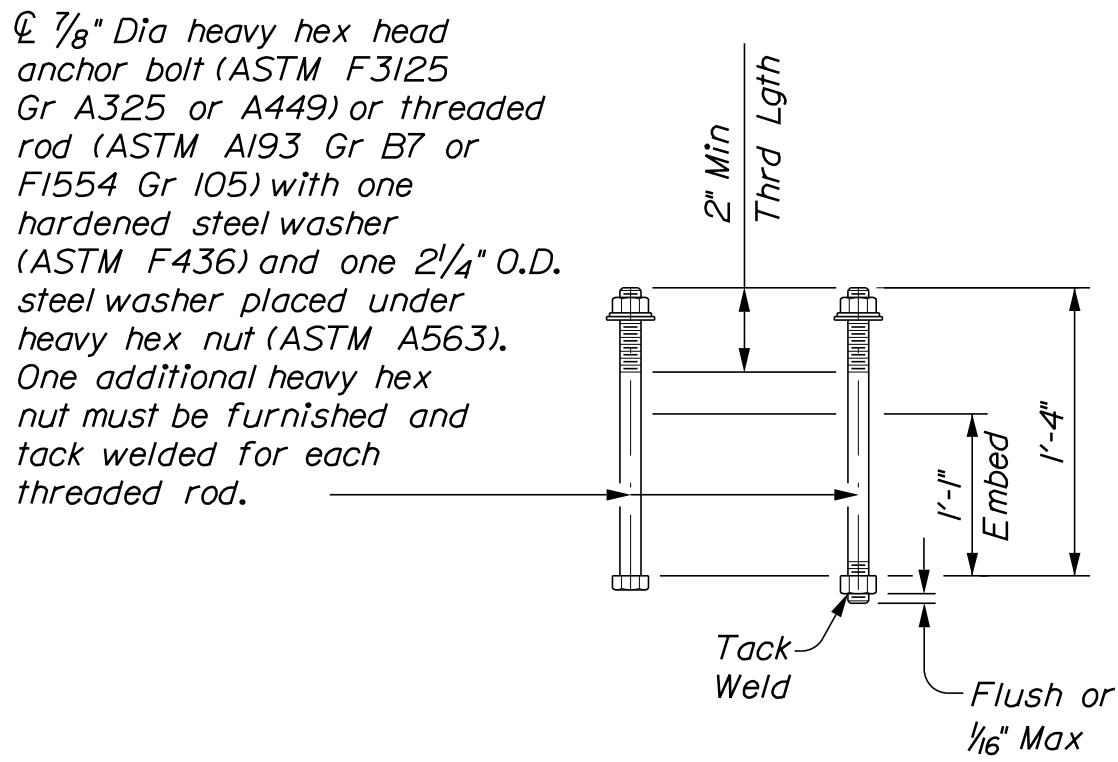
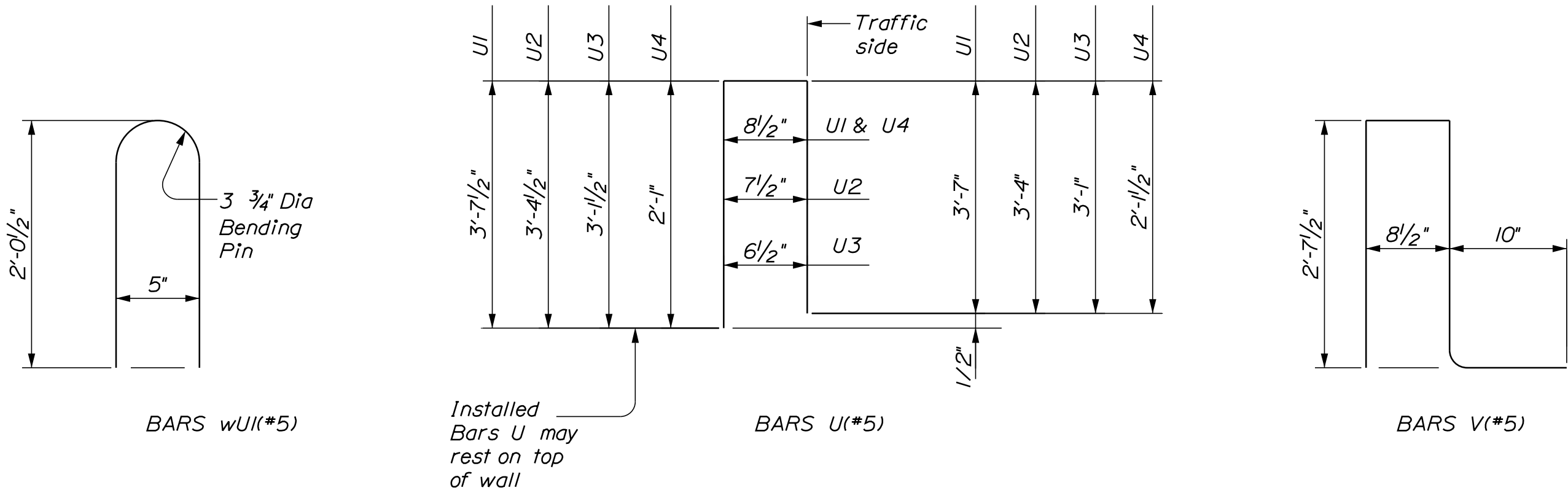


ELLIPTICAL TUBE WITH RAIL POST & ANCHORAGE DETAILS

Notes:

1. 2" Dia Std Pipe shall be (2.375" O.D., 0.154" wall thickness) ASTM A53 Gr B, A1085 or A500 Gr B.
2. Sleeve Member for 2" Dia. Ste. Pipe shall be 1 1/2" Dia Std Pipe (1.90" O.D., 0.145" wall thickness) (ASTM A53 Gr B or A500 Gr B).
3. Top longitudinal slab bar may be adjusted laterally 3" plus or minus to tie reinforcing.

57		OF 64		SHEET NUMBER		COUSINS RIVER BRIDGE COUSINS RIVER YARMOUTH-FREEPORT				PROJ. MANAGER		A. Lathe	BY	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION	
						DESIGN-DETAILED		RM	OK	NOV. 2023						
COMBINATION RAILING (2 OF 3)		CUMBERLAND COUNTY		CHECKED-REVIEWED		OK	STJ	DEC. 2023	SIGNATURE		P.E. NUMBER		DATE		STP-2172(500)	
				DESIGN2-DETAILED2		OK	MJM	NOV. 2023								
				DESIGN3-DETAILED3												
				REVISIONS 1												
				REVISIONS 2												
				REVISIONS 3												
				REVISIONS 4												
				FIELD CHANGES												
														BRIDGE NO. 2183		
														WIN		
														21725.00		
														BRIDGE PLANS		



CAST-IN-PLACE
ANCHOR BOLT OPTIONS

CONSTRUCTION NOTES

1. At the Contractor's option anchor bolts may be cast with the parapet. See "Material Notes."
2. Rail parapet must be plumb unless otherwise approved.
3. Steel posts must be square to the top of parapet. Place on 1/8" preformed pad.
4. Cap all ends of tubular steel sections at parapet.
5. Pipe rail sections must have at least two posts but not more than four.
6. Round or chamfer all exposed edges of steel components 1/16" by grinding prior to galvanizing.
7. Chamfer all exposed concrete corners.

MATERIAL NOTES

1. Galvanize all metal components of steel rail system. Apply additional coatings when shown elsewhere on the plans. Sleeve members and anchor bolts must receive galvanization prior to installation.
2. Anchor bolts must be 7/8" Dia ASTM A193 Gr B7 fully threaded rods with heavy hex nuts, one hardened steel washer (ASTM F436), and one (2 1/4" O.D.) steel washer each. Nuts must conform to ASTM A563 requirements. Minimum adhesive anchor embedment depth is 8". Anchor adhesive chosen must be able to achieve a nominal bond strength in tension of a single anchor, Na, of 17 kips (edge distance must be accounted for). Submit signed and sealed calculations or the manufacturers published literature showing the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use. Anchor installation, including hole size, drilling, and clean out, must be in accordance with manufacturers recommendation. Adhesive shall be from MaineDOT Qualified Products List.
3. Optional cast-in-place anchor bolts must be 7/8" Dia ASTM F3125 Gr A325 or A449 bolts (or A193 Gr B7 or F1554 Gr 105 threaded rods with one tack welded heavy hex nut each) with one heavy hex nut and one hardened steel washer ASTM F436 plus one (2 1/4" O.D.) steel washer at each bolt. Nuts must conform to ASTM A563 requirements.
4. Provide Class "LP" concrete.
5. Provide Stainless Steel Grade 75 reinforcing steel or Chromium Grade 100 steel.
6. Provide bar laps, where required, as follows:

Low Carbon Chromium ~ #5 = 3'-0"

GENERAL NOTES

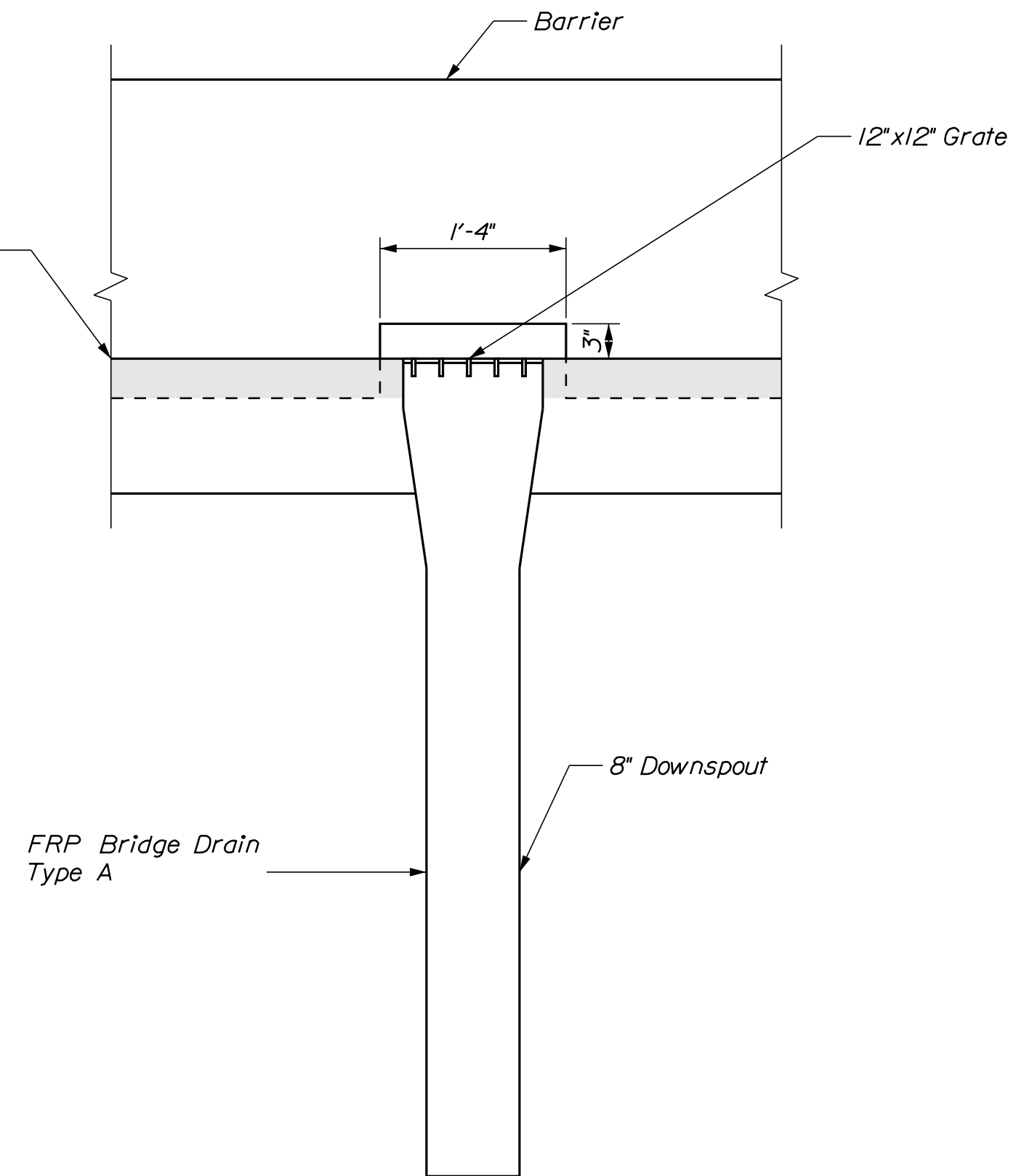
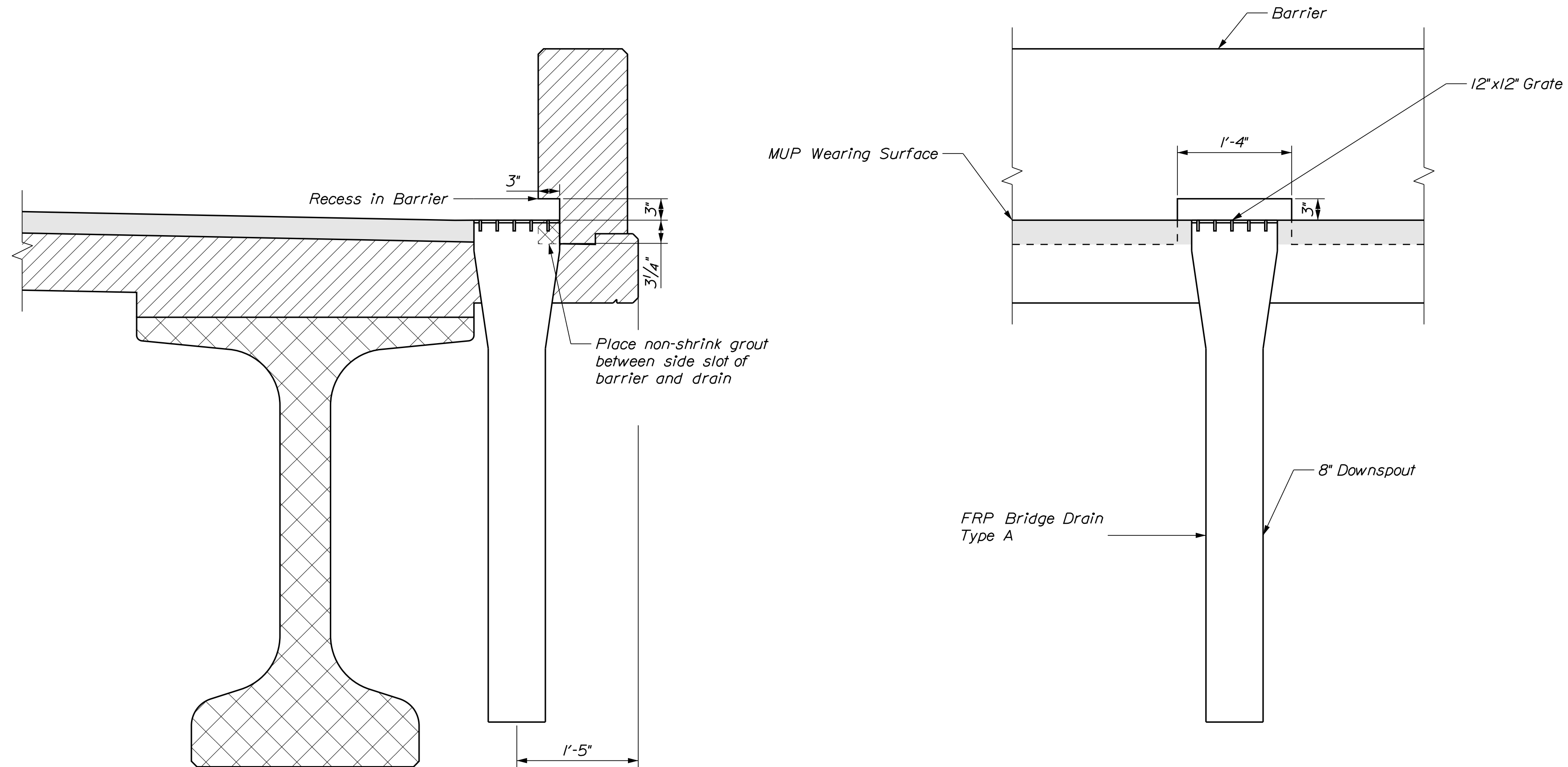
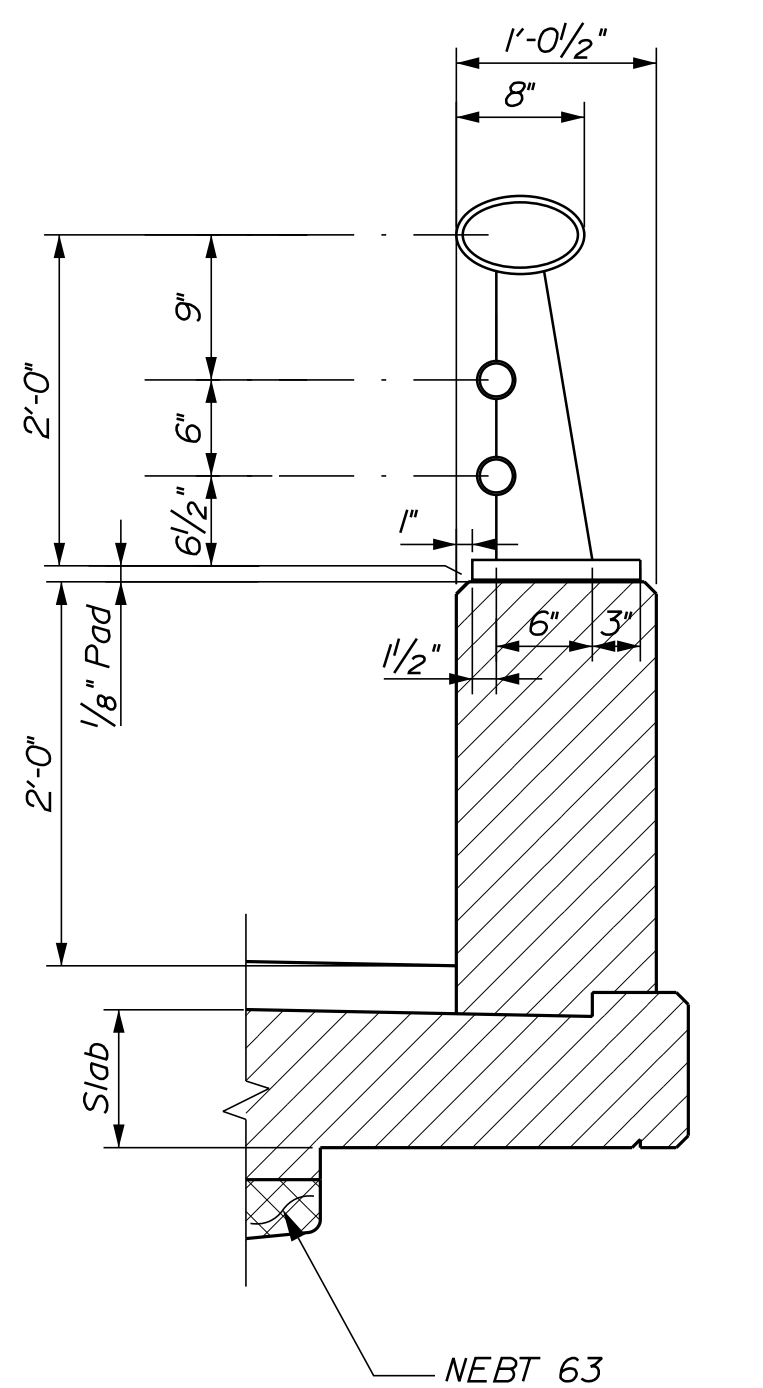
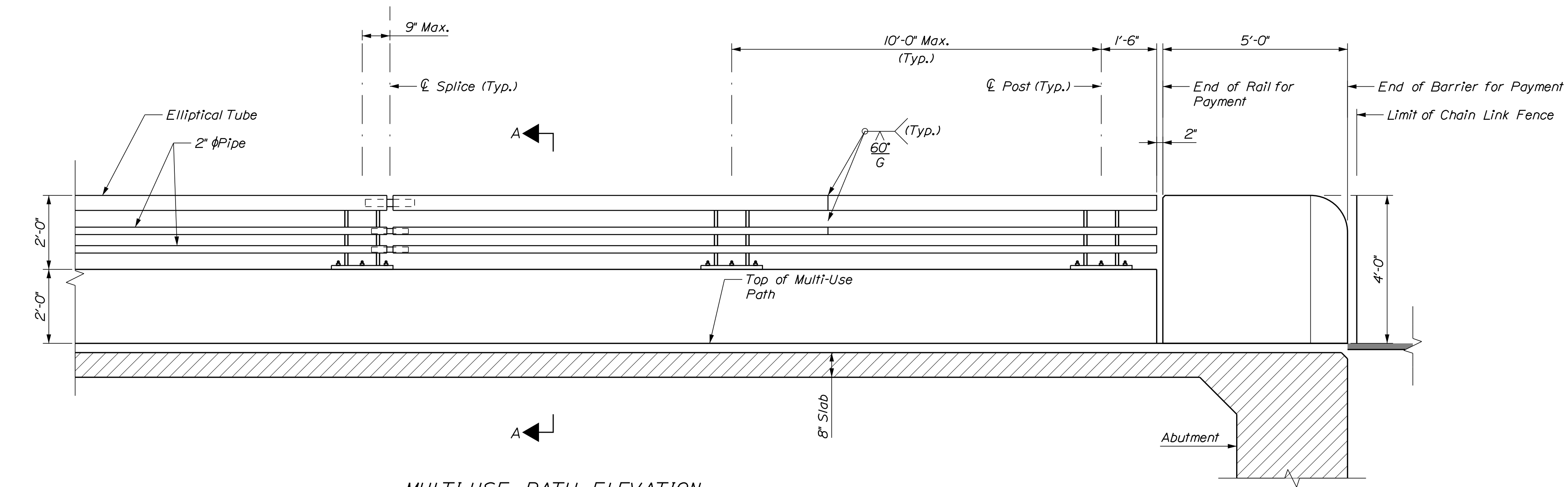
1. This rail has been successfully evaluated by full-scale crash test to meet MASH TL-4 criteria.
2. Do not use this railing on bridges with expansion joints providing more than 5" movement.
3. Rail anchorage details shown on this standard may require modification for select structure types. See appropriate details elsewhere in plans for these modifications.
4. Submit working drawings showing panel lengths, rail post spacing, and anchor bolt setting, to the Engineer for approval.
5. Average weight of railing with no overlay: 347 plf total
313 plf (Conc)
34 plf (Steel).

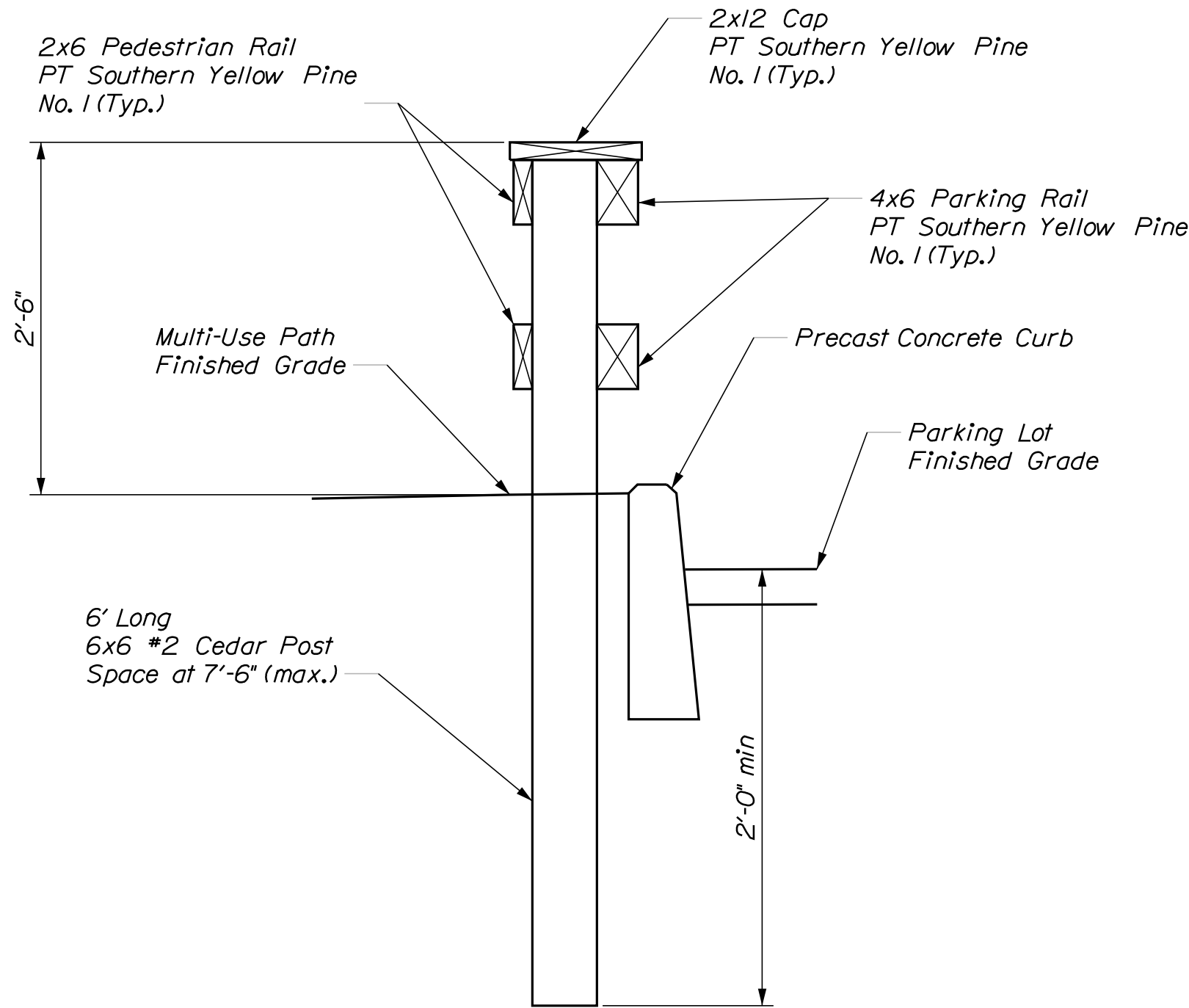
Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.

STATE OF MAINE										DEPARTMENT OF TRANSPORTATION									
STP-2172(500)																			
BRIDGE NO. 2183										WIN									
21725.00										BRIDGE PLANS									

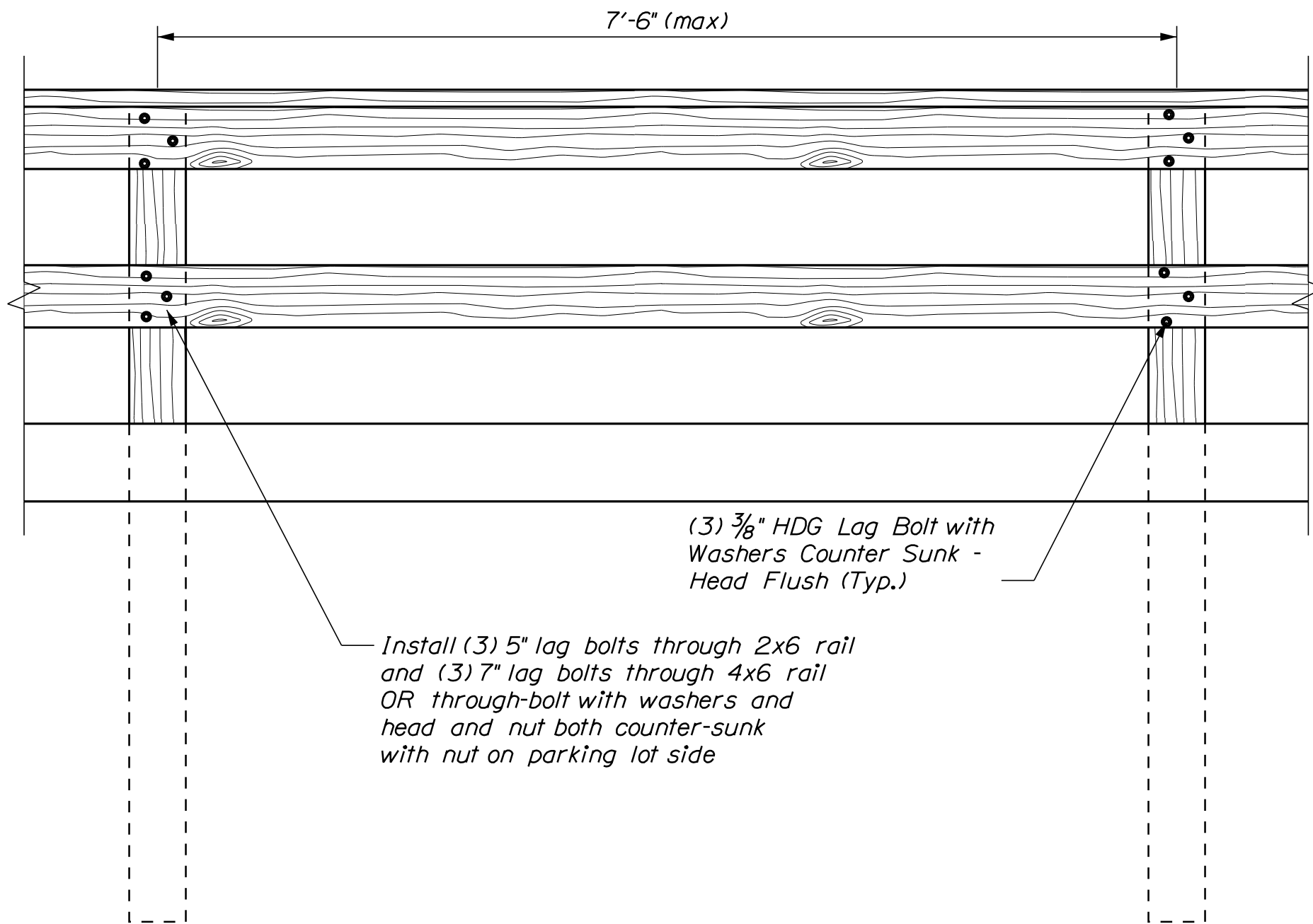
COUSINS RIVER BRIDGE										DATE									
COUSINS RIVER										BY									
YARMOUTH-FREEPORT										A. Lett									
CUMBERLAND COUNTY										PROJ. MANAGER									
COMBINATION RAILING										DESIGN-DETAILED									
(3 OF 3)										CHECKED-REVIEWED									
										OKK									
										STJ									
										NOV. 2023									
										DEC. 2023									
										OKK									
										MJM									
										NOV. 2023									
										P.E. NUMBER									
										DATE									
										REVISIONS 1									
										REVISIONS 2									
										REVISIONS 3									
										REVISIONS 4									
										FIELD CHANGES									

SHEET NUMBER									
58									
OF 64									

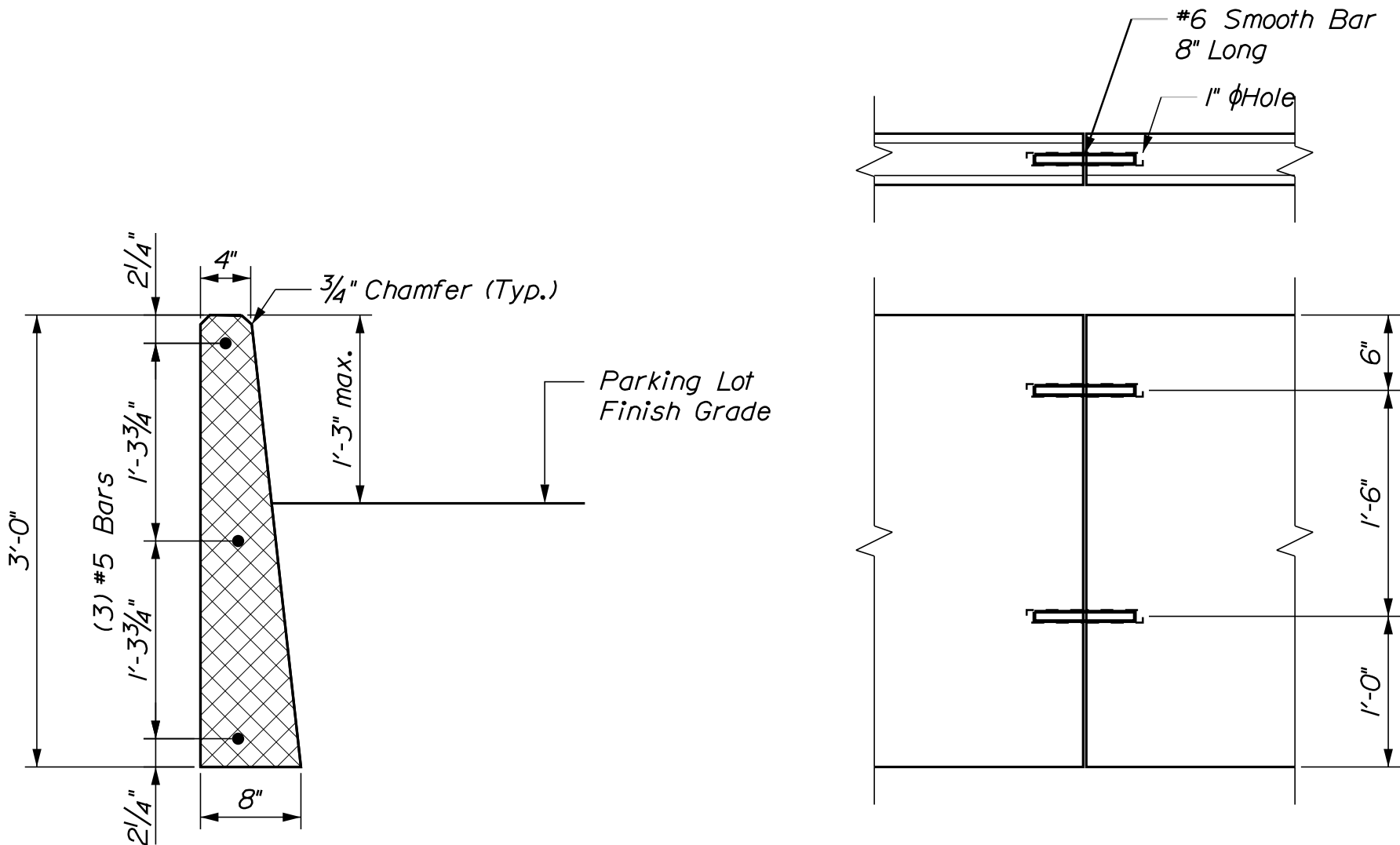




PROTECTIVE WOOD FENCE SECTION

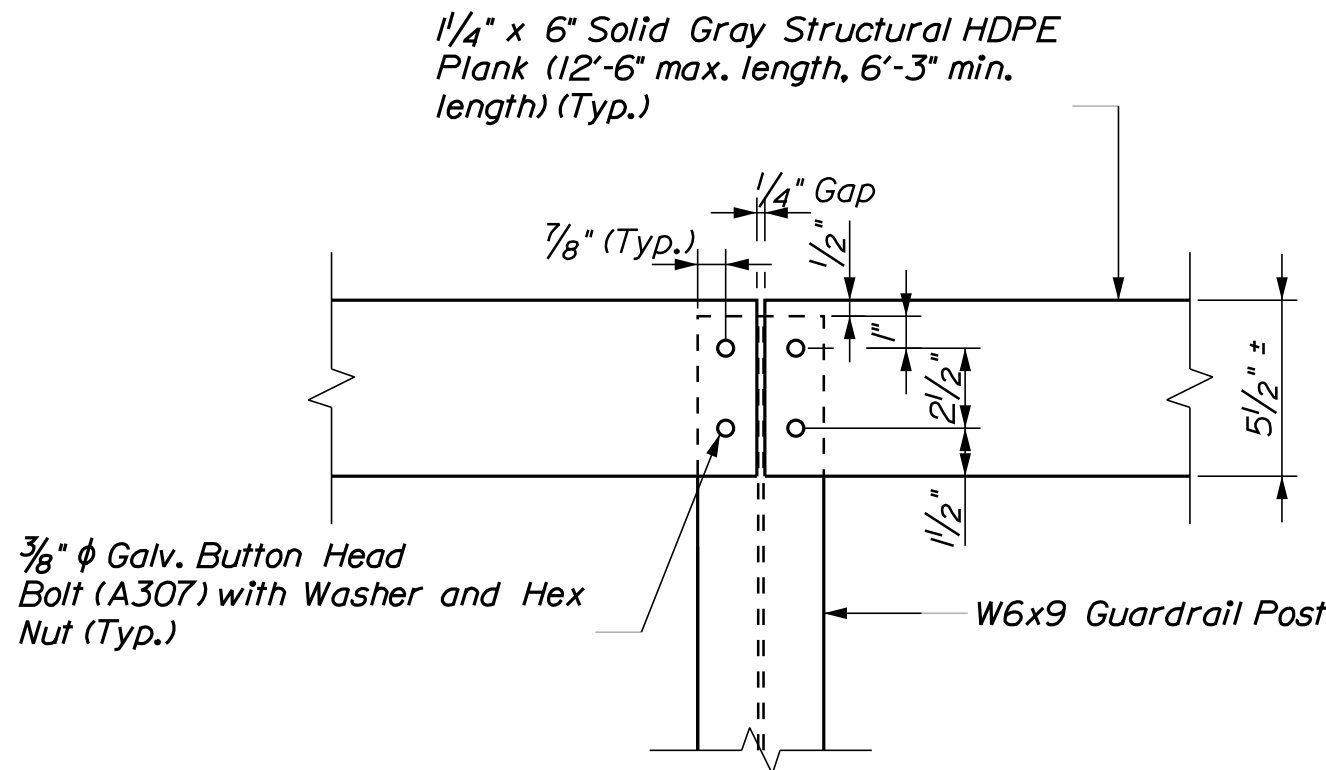


PROTECTIVE WOOD FENCE ELEVATION

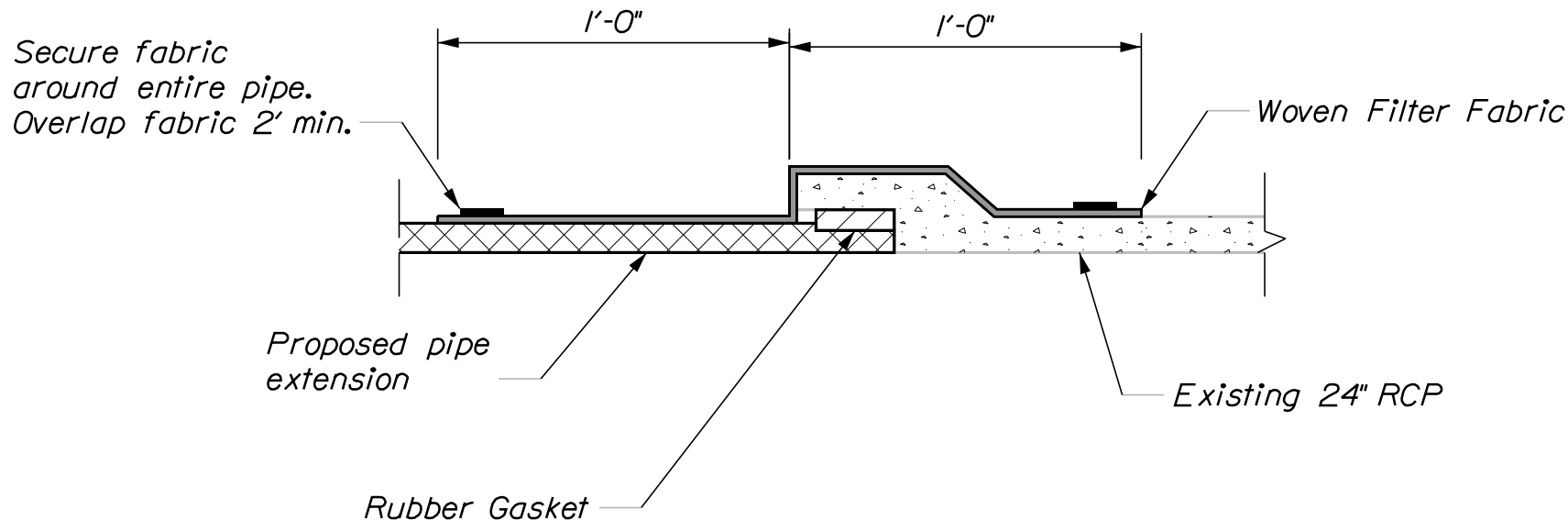


PRECAST CONCRETE VERTICAL CURB - 36 INCH

- Notes:
1. Precast Concrete Curb shall meet the requirements of Standard Specifications Section 609 - Curb
 2. See Standard Detail 609(09) for 20 inch curb.



RUB RAIL ELEVATION DETAIL

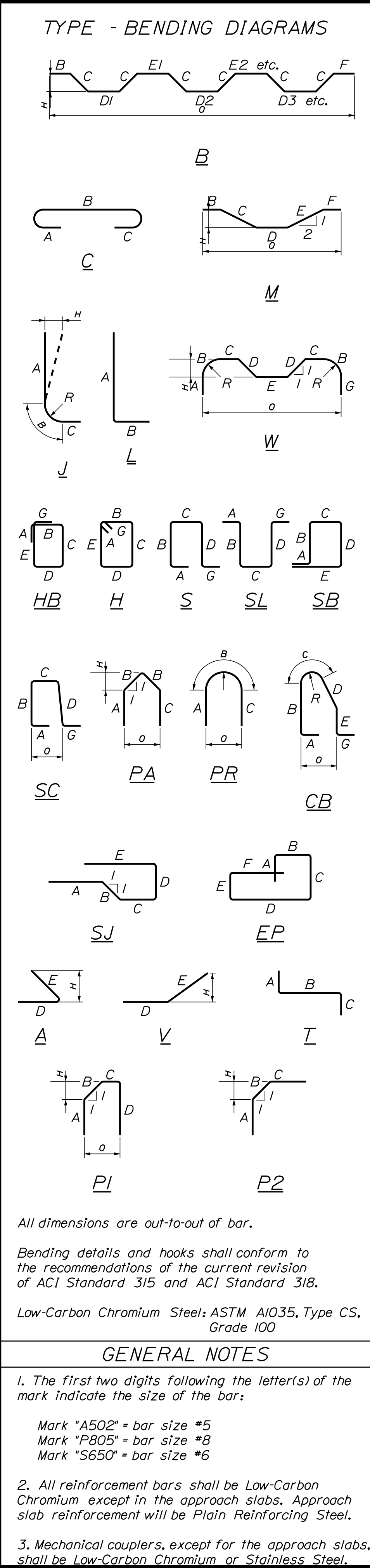


PIPE EXTENSION SECTION

(Inlet connection only, all others to be grouted)

STATE OF MAINE				SIGNATURE			
DEPARTMENT OF TRANSPORTATION							
STP-2172(500)				P.E. NUMBER			
BRIDGE NO. 2183							
WIN				DATE			
21725.00							
BRIDGE PLANS							
COUSINS RIVER BRIDGE							
COUSINS RIVER							
CUMBERLAND COUNTY							
YARMOUTH-FREEPORT							
MISCELLANEOUS DETAILS							
SHEET NUMBER							
60							
OF 64							

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		
Approach Slabs				Superstructure				Abutment No. 1																
A5501	32	16'-10"	Approach Slab Transverse	S500	486	3'-2"	Transverse Deck Coupler - Stage 1	A550	48	6'-4"	L	3'-2"	3'-2"	-	-	-	-	-	-	-	-	-	WW/Abut Corner L-Bar	
A5502	32	15'-5"	Approach Slab Transverse	S501	474	19'-1"	Transverse Deck Stage 1	A551	50	6'-2"	S	0'-0"	1'-6"	3'-2"	1'-6"	-	-	0'-0"	-	-	-	-	Abutment Stirrup	
				S502	260	40'-0"	Longitudinal Deck Bars	A552	25	23'-7"	S	0'-8"	8'-9"	3'-2"	11'-0"	-	-	0'-0"	-	-	-	-	Abutment Stirrup	
A5601	132	15'-2"	Approach Slab Longitudinal	S503	130	43'-4"	Longitudinal Deck Bars	A553	11	25'-6"	S	0'-0"	11'-8"	3'-2"	10'-8"	-	-	0'-0"	-	-	-	-	Abutment Stirrup	
				S504	474	28'-8"	Transverse Deck Stage 2	A554	22	17'-2"	S	0'-0"	8'-0"	1'-2"	8'-0"	-	-	0'-0"	-	-	-	-	US WW Stirrup	
Abutment No. 1				S505	496	3'-2"	Transverse Deck CJ Splice	A555	13	19'-4"	S	0'-0"	9'-1"	1'-2"	9'-1"	-	-	0'-0"	-	-	-	-	DS WW Stirrup Top	
A500	12	22'-1"	Abutment Horiz. NF Phase 1	S506	12	22'-1"	Horiz. Diaphragm Phase 1	A556	2	10'-4"	S	0'-0"	4'-7"	1'-2"	4'-7"	-	-	0'-0"	-	-	-	-	DS WW Stirrup Bot	
A501	12	3'-2"	Abutment Horiz. NF Coupler	S507	12	28'-8"	Horiz. Diaphragm Phase 2	A557	11	14'-7.5"	PI	6'-5.5"	0'-6.5"	0'-9.5"	6'-10"	-	-	-	0'-4.5"	1'-2"	-	-	DS WW Stirrup Top	
A502	12	3'-2"	Abut. Horiz. Splice Phase 2	S508	42	6'-5"	Horiz. Diap. Thru Beam	A558	4	20'-6"	S	0'-0"	11'-8"	3'-2"	5'-8"	-	-	0'-0"	-	-	-	-	Abutment Stirrup (Under Beam)	
A503	12	28'-8"	Abut. Horiz. NF Phase 2	S509	36	5'-7"	Horiz. Diaph. Between Beams	A559	10	18'-6"	S	0'-8"	8'-9"	3'-2"	5'-11"	-	-	0'-0"	-	-	-	-	Abutment Stirrup (Under Beam)	
A504	13	9'-8"	US Wing Horiz. NF	S510	16	3'-0"	Bridge Drain Bars	A560	4	10'-8"	S	0'-0"	5'-3"	1'-2"	5'-3"	-	-	0'-0"	-	-	-	-	DS WW Stirrup Top	
A505	13	6'-7"	US Wing Horiz. FF																					
A506	1	5'-10"	DS Wing Horiz. NF					A650	24	7'-4"	L	3'-8"	3'-8"	-	-	-	-	-	-	-	-	-	WW/Abut Corner L-Bar	
A507	1	6'-7"	DS Wing Horiz. NF					A651	12	7'-3"	S	0'-0"	1'-0"	5'-3"	1'-0"	-	-	0'-0"	-	-	-	-	U Bar Between Piles	
A508	1	7'-4"	DS Wing Horiz. NF					A652	2	5'-0"	L	1'-0"	4'-0"	-	-	-	-	-	-	-	-	-	L Bar At CJ (Stage 2)	
A509	1	8'-1"	DS Wing Horiz. NF					A653	2	2'-0"	L	1'-2"	0'-10"	-	-	-	-	-	-	-	-	-	L-Bar Coupler at CJ (Stage 1)	
A510	1	8'-10"	DS Wing Horiz. NF																					
A511	1	9'-7"	DS Wing Horiz. NF					Abutment No. 2																
A512	1	10'-4"	DS Wing Horiz. NF					B550	48	6'-4"	L	3'-2"	3'-2"	-	-	-	-	-	-	-	-	-	WW/Abut Corner L-Bar	
A513	1	11'-1"	DS Wing Horiz. NF					B551	50	6'-2"	S	0'-0"	1'-6"	3'-2"	1'-6"	-	-	0'-0"	-	-	-	-	Abutment Stirrup	
A514	1	11'-10"	DS Wing Horiz. NF					B552	25	23'-7"	S	0'-8"	8'-9"	3'-2"	11'-0"	-	-	0'-0"	-	-	-	-	Abutment Stirrup	
A515	1	12'-7"	DS Wing Horiz. NF					B553	11	25'-6"	S	0'-0"	11'-8"	3'-2"	10'-8"	-	-	0'-0"	-	-	-	-	Abutment Stirrup	
A516	1	13'-4"	DS Wing Horiz. NF					B554	22	17'-2"	S	0'-0"	8'-0"	1'-2"	8'-0"	-	-	0'-0"	-	-	-	-	US WW Stirrup	
A517	7	14'-2"	DS Wing Horiz. NF					B555	13	19'-4"	S	0'-0"	9'-1"	1'-2"	9'-1"	-	-	0'-0"	-	-	-	-	DS WW Stirrup Top	
A518	1	2'-10"	DS Wing Horiz. FF					B556	2	10'-4"	S	0'-0"	4'-7"	1'-2"	4'-7"	-	-	0'-0"	-	-	-	-	DS WW Stirrup Bot	
A519	1	3'-7"	DS Wing Horiz. FF					B557	11	14'-7.5"	PI	6'-5.5"	0'-6.5"	0'-9.5"	6'-10"	-	-	-	0'-4.5"	1'-2"	-	-	DS WW Stirrup Top	
A520	1	4'-3"	DS Wing Horiz. FF					B558	4	20'-6"	S	0'-0"	11'-8"	3'-2"	5'-8"	-	-	0'-0"	-	-	-	-	Abutment Stirrup (Under Beam)	
A521	1	5'-1"	DS Wing Horiz. FF					B559	10	18'-6"	S	0'-8"	8'-9"	3'-2"	5'-11"	-	-	0'-0"	-	-	-	-	Abutment Stirrup (Under Beam)	
A522	1	5'-10"	DS Wing Horiz. FF					B560	4	10'-8"	S	0'-0"	5'-3"	1'-2"	5'-3"	-	-	0'-0"	-	-	-	-	DS WW Stirrup Top	
A523	1	6'-7"	DS Wing Horiz. FF																					
A524	1	7'-4"	DS Wing Horiz. FF					B650	24	7'-4"	L	3'-8"	3'-8"	-	-	-	-	-	-	-	-	-	WW/Abut Corner L-Bar	
A525	1	8'-1"	DS Wing Horiz. FF					B651	12	7'-3"	S	0'-0"	1'-0"	5'-3"	1'-0"	-	-	0'-0"	-	-	-	-	U Bar Between Piles	
A526	1	8'-10"	DS Wing Horiz. FF					B652	2	5'-0"	L	1'-0"	4'-0"	-	-	-	-	-	-	-	-	-	L Bar At CJ (Stage 2)	
A527	1	9'-7"	DS Wing Horiz. FF					B653	2	2'-0"	L	1'-2"	0'-10"	-	-	-	-	-	-	-	-	-	L Bar Coupler at CJ	
A528	1	10'-4"	DS Wing Horiz. FF																					
A529	7	11'-1"	DS Wing Horiz. FF					Superstructure																
A530	5	10'-8"	DS Wing Horiz. Top					S550	396	6'-9.5"	S	0'-0"	2'-7.5"	0'-8.5"	2'-7.5"	-	-	0'-10"	-	-	-	-	Rail Stirrup	
								S551	24	7'-5"	S	0'-0"	1'-0"	5'-5"	1'-0"	-	-	0'-0"	-	-	-	-	Diaphragm Between Beams	
A600	16	22'-1"	Abut. Horiz. FF Phase 1					S552	12	5'-9"	S	0'-0"	1'-0"	3'-9"	1'-0"	-	-	0'-0"	-	-	-	-	Diaphragm Between Beams	
A601	16	3'-8"	Abutment Horiz. FF Coupler					S553	10	1'-9"	L	0'-9"	1'-0"	-	-	-	-	-	-	-	-	-	Diap. L-Bar Coup. @ Const. Jt	
A602	16	3'-8"	Abutment Horiz. FF Splice					S554	6	11'-9"	L	10'-9"	1'-0"	-	-	-	-	-	-	-	-	-	L Bar Horiz. At MUP	
A603	16	28'-8"	Abutment Horiz FF Phase 2					S555	4	3'-10"	L	2'-10"	1'-0"	-	-	-	-	-	-	-	-	-	L Bar Horiz. At curb	
A604	97	6'-6"	Dowel FF					S556	4	5'-2"	S	0'-0"	1'-0"	3'-2"	1'-0"	-	-	0'-0"	-	-	-	-	U-Bars Parapet	
								S557	4	4'-0"	L	1'-6"	2'-6"	-	-	-	-	-	-	-	-	-	Horiz. L-Bar to Wing	
Abutment No. 2								S558	68	1'-10"	L	0'-6"	1'-4"	-	-	-	-	-	-	-	-	-	AS Dowel	
B500	12	22'-1"	Abutment Horiz NF Phase 1					S559	82	7'-5"	P2	2'-11"	1'-7"	2'-11"	-	-	-	-	1'-1"	-	-	-	Deck End Haunch	
B501	12	3'-2"	Abutment Horiz. NF Coupler					S560	4	6'-6"	S	0'-0"	3'-2"	3'-2"	3'-2"	-	-	0'-0"	-	-	-	-	Parapet Stirrup	
B502	12	3'-2"	Abut. Horiz. Splice Phase 2					S550-A	4	6'-6.5"	S	0'-0"	2'-7.5"	0'-5.5"	2'-7.5"	-	-	-	-	-	-	-	Rail Stirrup At Drain	
B503	12	28'-8"	Abut. Horiz. NF Phase 2																					
B504	13	9'-8"	US Wing Horiz. NF					S650	194	11'-8"	L	5'-10"	5'-10"	-	-	-	-	-	-	-	-	-	Deck End Reinforcement	
B505	13	6'-7"	US Wing Horiz. FF					S651	474	7'-0"	C	1'-0"	6'-0	0'-0"	-	-	-	-	-	-	-	-	Transverse Overhang	
B506	1	5'-10"	DS Wing Horiz. NF																					
B507	1	6'-7"	DS Wing Horiz. NF					Transition Barrier																
B508	1	7'-4"	DS Wing Horiz. NF					WU1(*5)	30	4'-7.25"	PR	1'-9.75"	0'-11.75"	1'-9.75"	-	-	-	-	-	-	0'-5"	0'-3.75"	Barrier Bar	
B509	1	8'-1"	DS Wing Horiz. NF					WU2(*5)	18	4'-11.75"	CB	0'-10"	1'-3.75"	0'-11.75"	0'-0"	0'-11.75"	-	-	0'-10"	-	-	0'-5"	0'-3.75"	Barrier Bar to Deck
B510	1	8'-10"	DS Wing Horiz. NF																					
B511	1	9'-7"	DS Wing Horiz. NF																					
B512	1	10'-4"	DS Wing Horiz. NF																					
B513	1	11'-1"	DS Wing Horiz. NF																					
B514	1	11'-10"	DS Wing Horiz. NF																					
B515	1	12'-7"	DS Wing Horiz. NF																					
B516	1	13'-4"	DS Wing Horiz. NF																					
B517	7	14'-2"	DS Wing Horiz. NF																					
B518	1	2'-10"	DS Wing Horiz. FF																					
B519	1	3'-7"	DS Wing Horiz. FF																					
B520	1	4'-3"	DS Wing Horiz. FF																					
B521	1	5'-1"	DS Wing Horiz. FF																					
B522	1	5'-10"	DS Wing Horiz. FF																					
B523	1	6'-7"	DS Wing Horiz. FF																					
B524	1	7'-4"	DS Wing Horiz. FF																					
B525	1	8'-1"	DS Wing Horiz. FF																					
B526	1	8'-10"	DS Wing Horiz. FF																					
B527	1	9'-7"	DS Wing Horiz. FF																					
B528	1	10'-4"	DS Wing Horiz. FF																					
B529	7	11'-1"	DS Wing Horiz. FF																					
B530	5	10'-8"	DS Wing Horiz. Top																					
B600	16	22'-1"	Abut. Horiz. FF Phase 1																					
B601	16	3'-8"	Abutment Horiz. FF Coupler																					
B602	16	3'-8"	Abutment Horiz. FF Splice																					
B603	16	28'-8"	Abutment Horiz FF Phase 2																					
B604	97	6'-6"	Dowel FF																					
MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION		

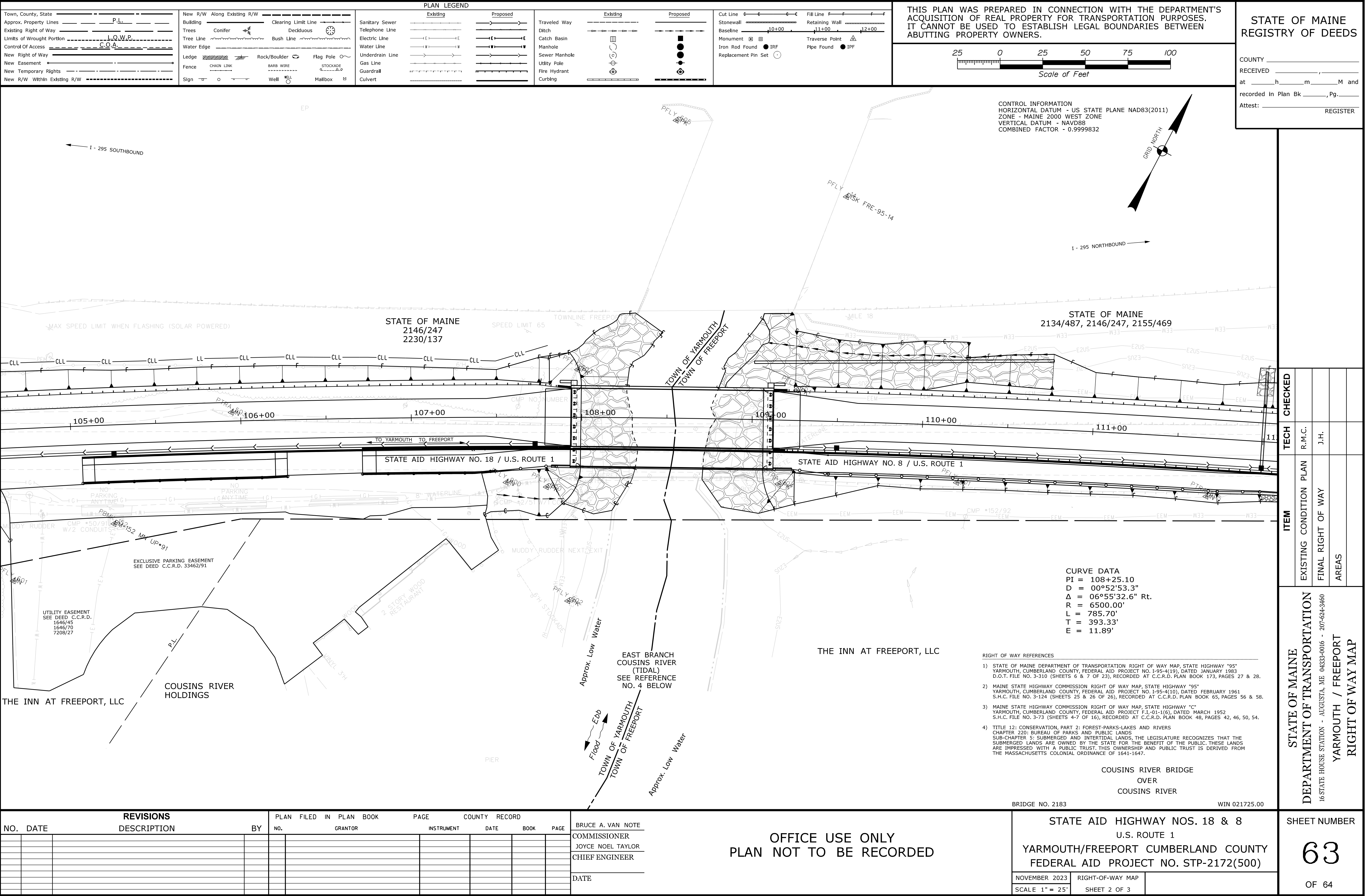


Date:11/29/2023

Username: Jude.Hogan

Division: ROW

Filename: ... \00\ROW\MSTA063_RWPLAN2.dgn

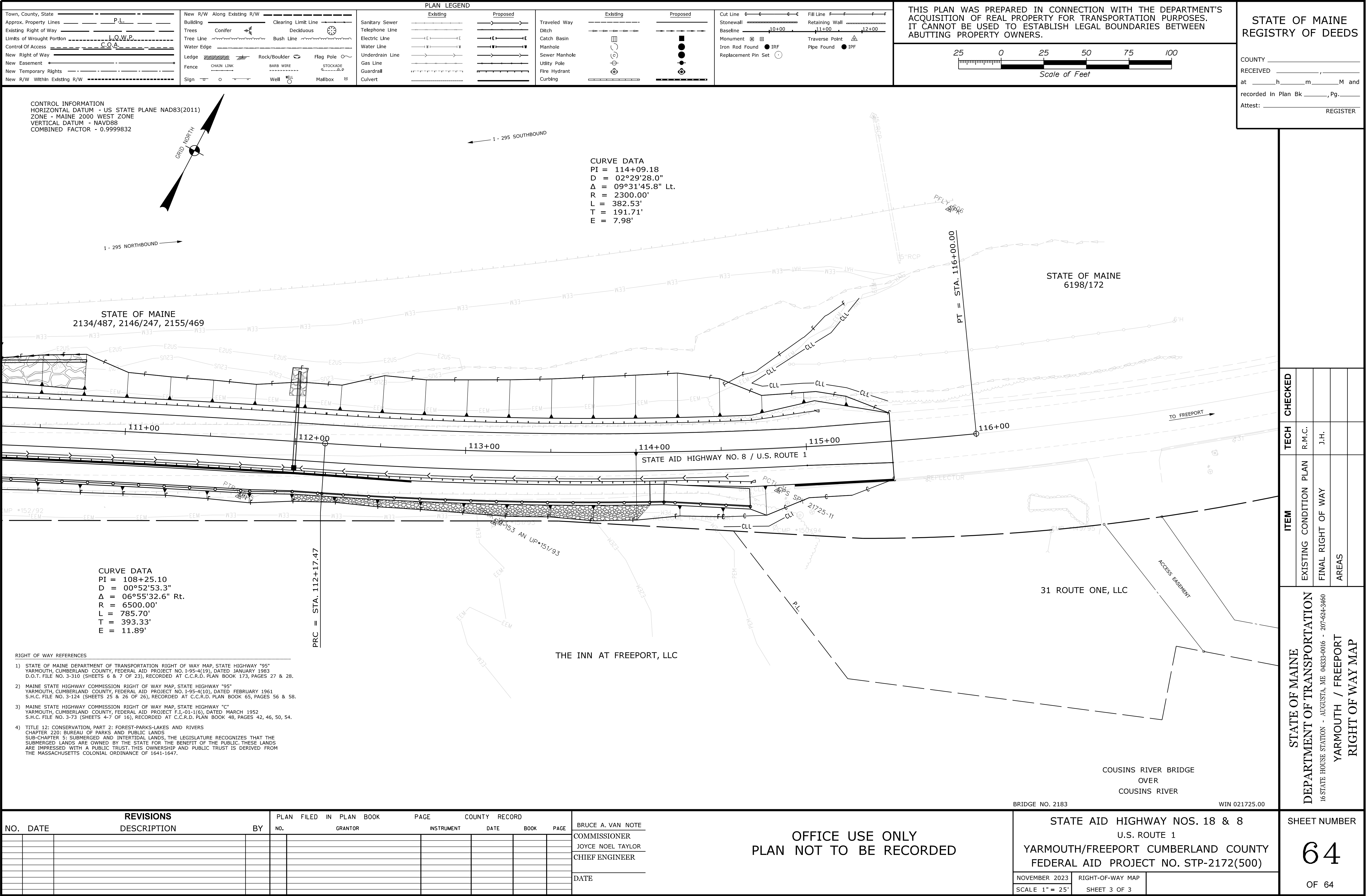


Date:11/29/2023

Username: Jude.Hogan

Division: ROW

Filename: ... \00\ROW\MSTA064_RWPLAN3.dgn



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION



SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Ninth Edition 2020.

DESIGN LOADING

Live Load HL - 93 Modified for Strength I

LIST OF DRAWINGS

Title Sheet	1
Estimated Quantities & General Construction Notes	2
General Plan	3
Bearing Details	4

YARMOUTH-FREEPORT
CUMBERLAND COUNTY
I-295 NB\COUSINS RIVER BRIDGE

OVER
COUSINS RIVER
I-295 NORTHBOUND
FEDERAL PROJECT NO. 2646200
PROJECT LENGTH 0.018mi.
BRIDGE NO. 1137

TRAFFIC DATA

Current (2024) AADT	26,120
Future (2044) AADT	28,730
DHV - % of AADT	13%
Design Hour Volume	3,735
Heavy Trucks (% of AADT)	10%
Heavy Trucks (% of DHV)	6%
Directional Distribution (% of DHV)	100%
18 kip Equivalent P 2.0	2690
18 kip Equivalent P 2.5	2562
Design Speed (mph)	65

HYDROLOGIC DATA

Drainage Area	18.5 sq mi
Design Discharge (Q50)	2197 cfs
Check Discharge (Q100)	2560 cfs
Storm Surge Elevation (Q50)	8.6 ft
Storm Surge Elevation (Q100)	9.22 ft
Mean Lower Low Water (MLLW)	-5.14 ft
Mean Low Water (MLW)	-4.79 ft
Mean Tide Level (MTL)	-0.23 ft
Mean High Water (MHW)	4.33 ft
Mean Higher High Water (MHHW)	4.77 ft

MATERIALS

Concrete:	
All Other	Class "A"
Reinforcing Steel	ASTM A 615/A 615M, Grade 60
Structural Steel:	
All Material (except as noted)	ASTM A 709, Grade 50W (unpainted)
Anchor Bolts	ASTM F1554

BASIC DESIGN STRESSES

Concrete	f 'c = 4000 psi
Reinforcing Steel	f y = 60,000 psi
Structural Steel:	
ASTM A 709, Grade 50W	f y = 50,000 psi
Anchor Bolts	f y = 105,000 psi

UTILITIES

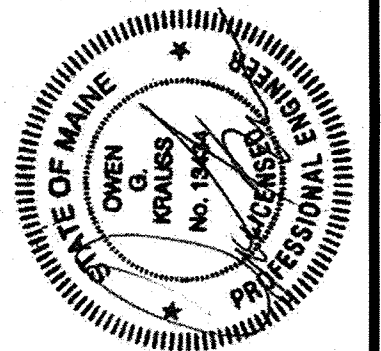
NA

MAINTENANCE OF TRAFFIC

Maintain two lanes of traffic during the daytime. Allowable nighttime closures. See Special Provisions.

PROJECT LOCATION	I-295 Northbound over Cousins River at the Yarmouth-Freeport Townline Lat./Long. 43°48'46.79" N 70°9'12.81" W
OUTLINE OF WORK	Remove and replace existing bridge bearings.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	DATE 3-19-24	APPROVED <i>[Signature]</i>	COMMISSIONER <i>[Signature]</i>	CHIEF ENGINEER <i>[Signature]</i>
--	-----------------	--------------------------------	------------------------------------	--------------------------------------



SIGNATURE <i>[Signature]</i>	P.E. NUMBER 13434	DATE FEBRUARY 26, 2024
---------------------------------	----------------------	---------------------------

PROJECT INFORMATION	PROGRAM Bridge	PROJECT MANAGER Andrew Lohr	DESIGNER Owen Krauss	CONSULTANT Hoyle, Tanner & Assoc., Inc.	PROJECT RESIDENT CONTRACTOR	PROJECT COMPLETION DATE
---------------------	-------------------	--------------------------------	-------------------------	--	--------------------------------	-------------------------

YARMOUTH-FREEPORT I-295 NB\COUSINS RIVER BRIDGE	TITLE SHEET
--	-------------

SHEET NUMBER 1 OF 4

Date:2/23/2024

Username:

Division: BRIDGE

Filename:\00\BRIDGE\WSTA\001_Title.dgn

WIN 26462.00

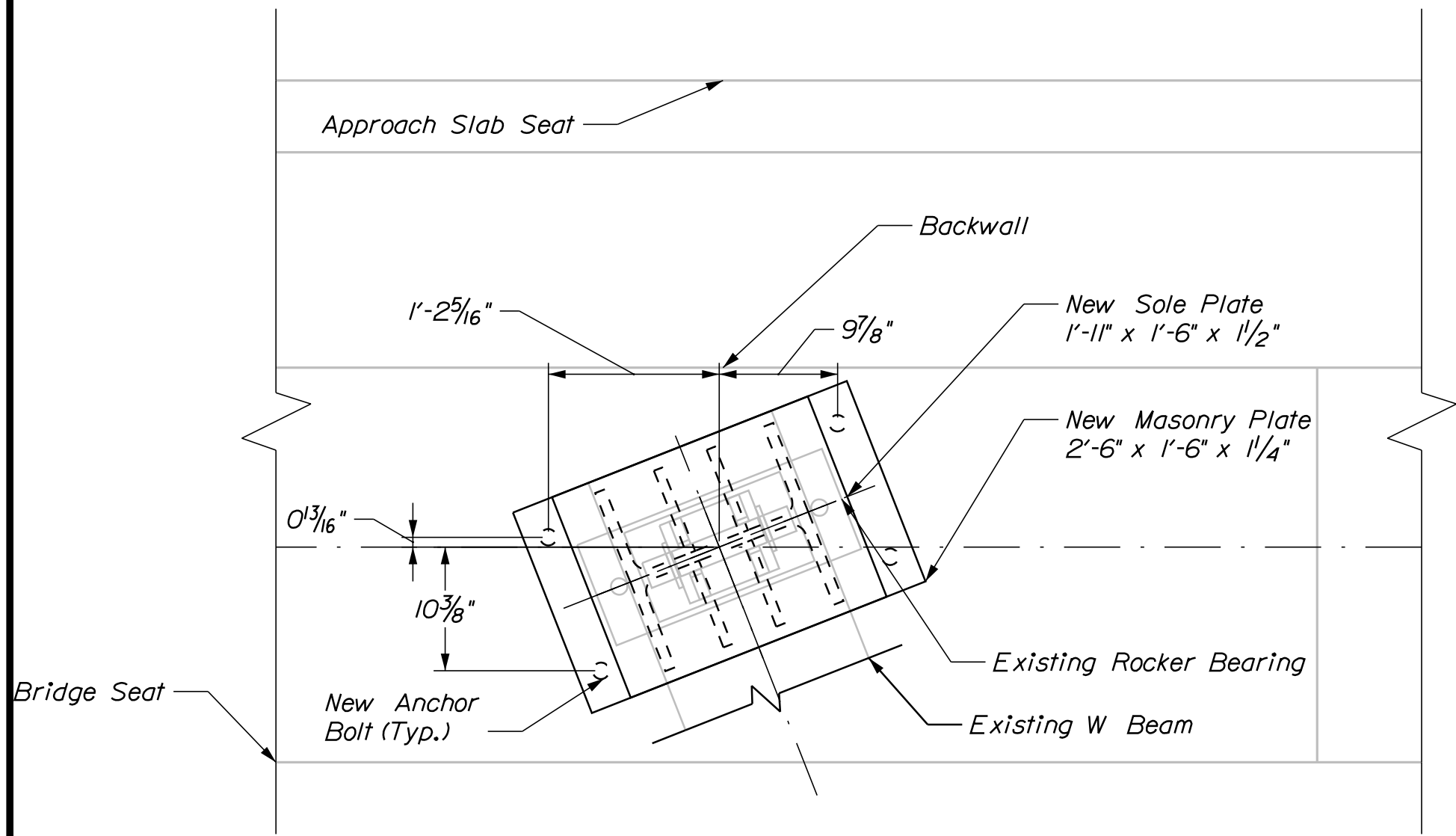
2646200

Date:2/23/2024

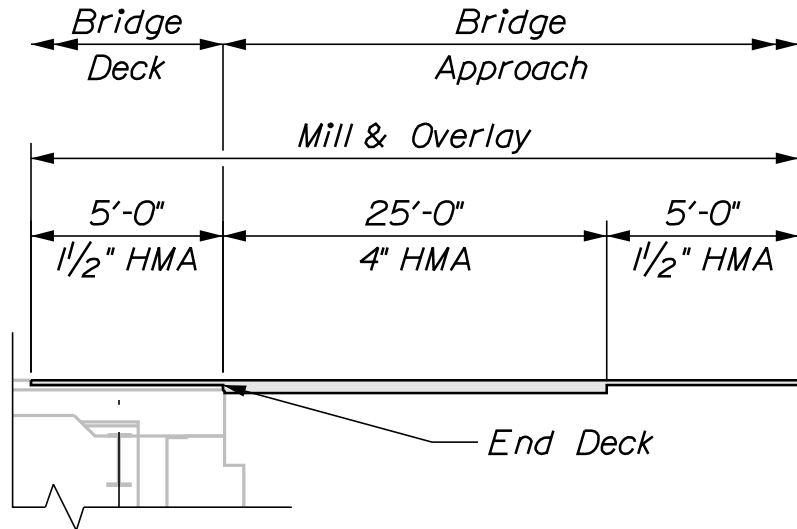
Username:

Division: BRIDGE

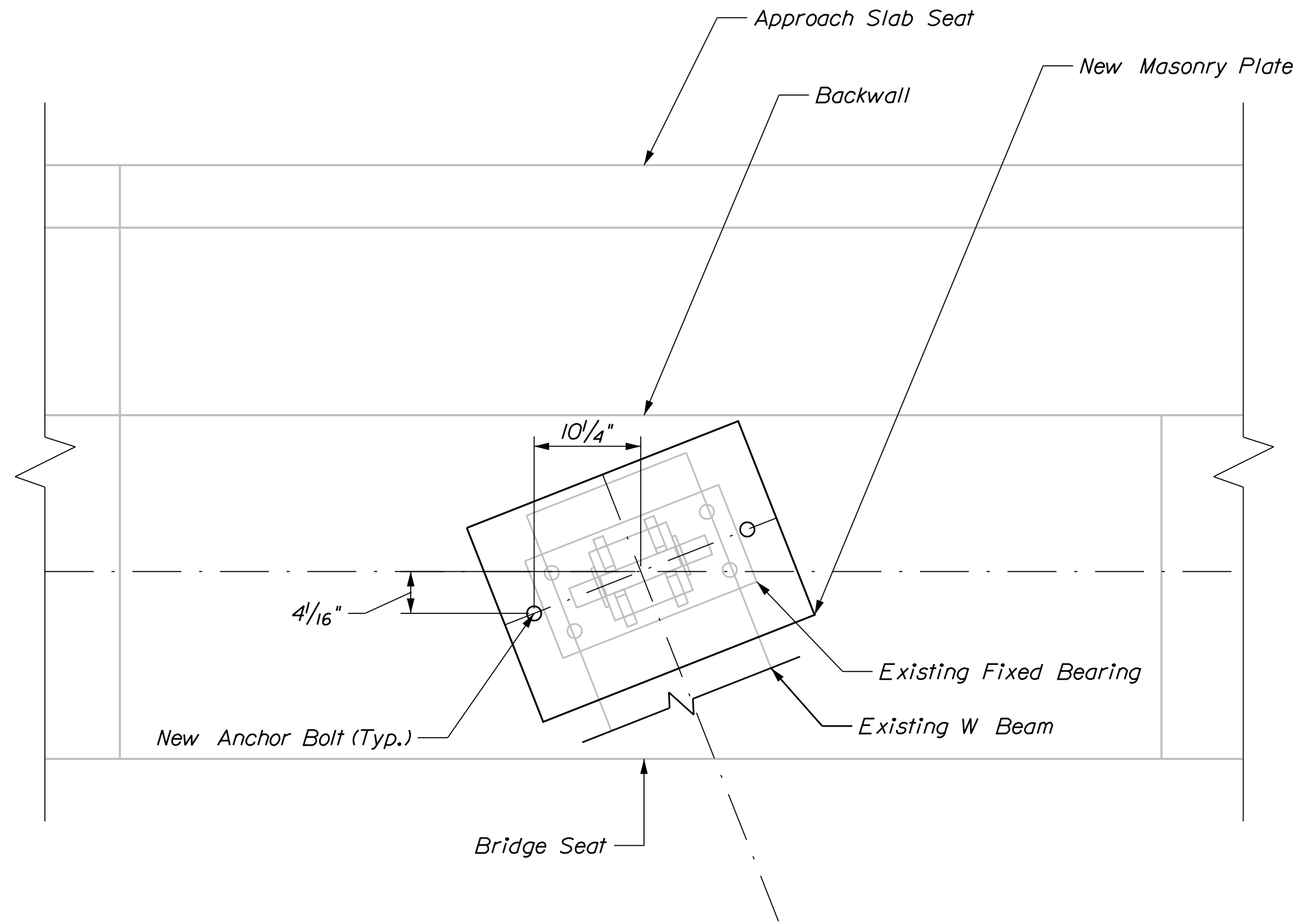
Filename: ... \00\BRIDGE\MSTA\003_Plan.dgn



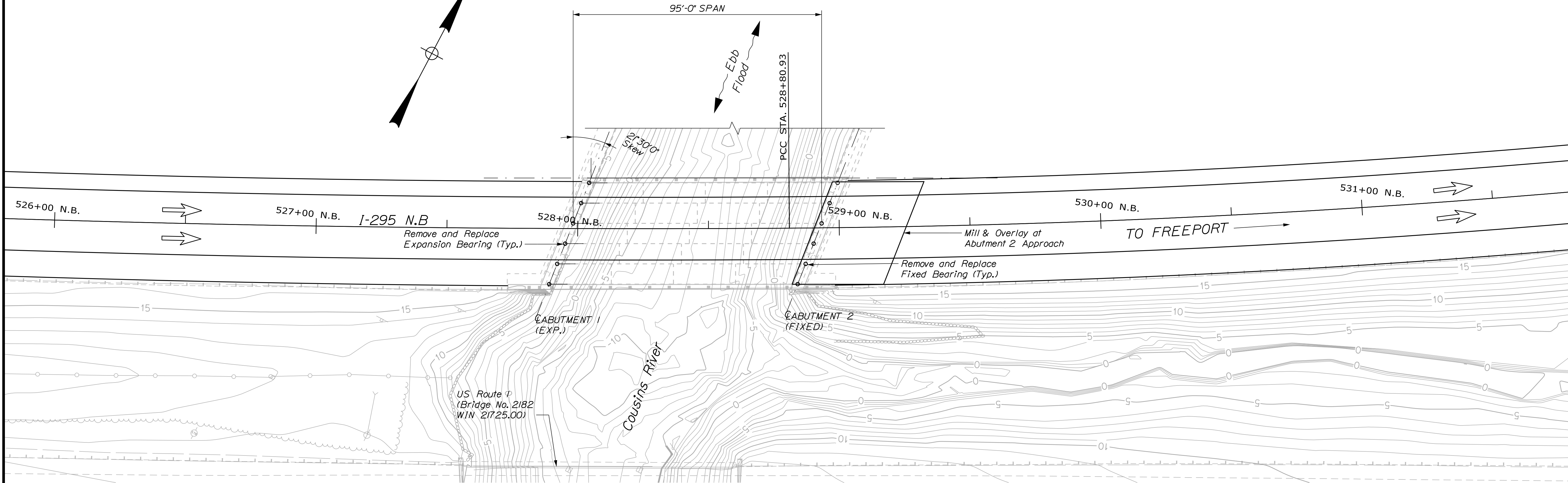
ABUTMENT NO. 1
BEARING REPLACEMENT PLAN



MILL & OVERLAY DETAIL
ABUTMENT 2



ABUTMENT NO. 2
BEARING REPLACEMENT PLAN



PLAN

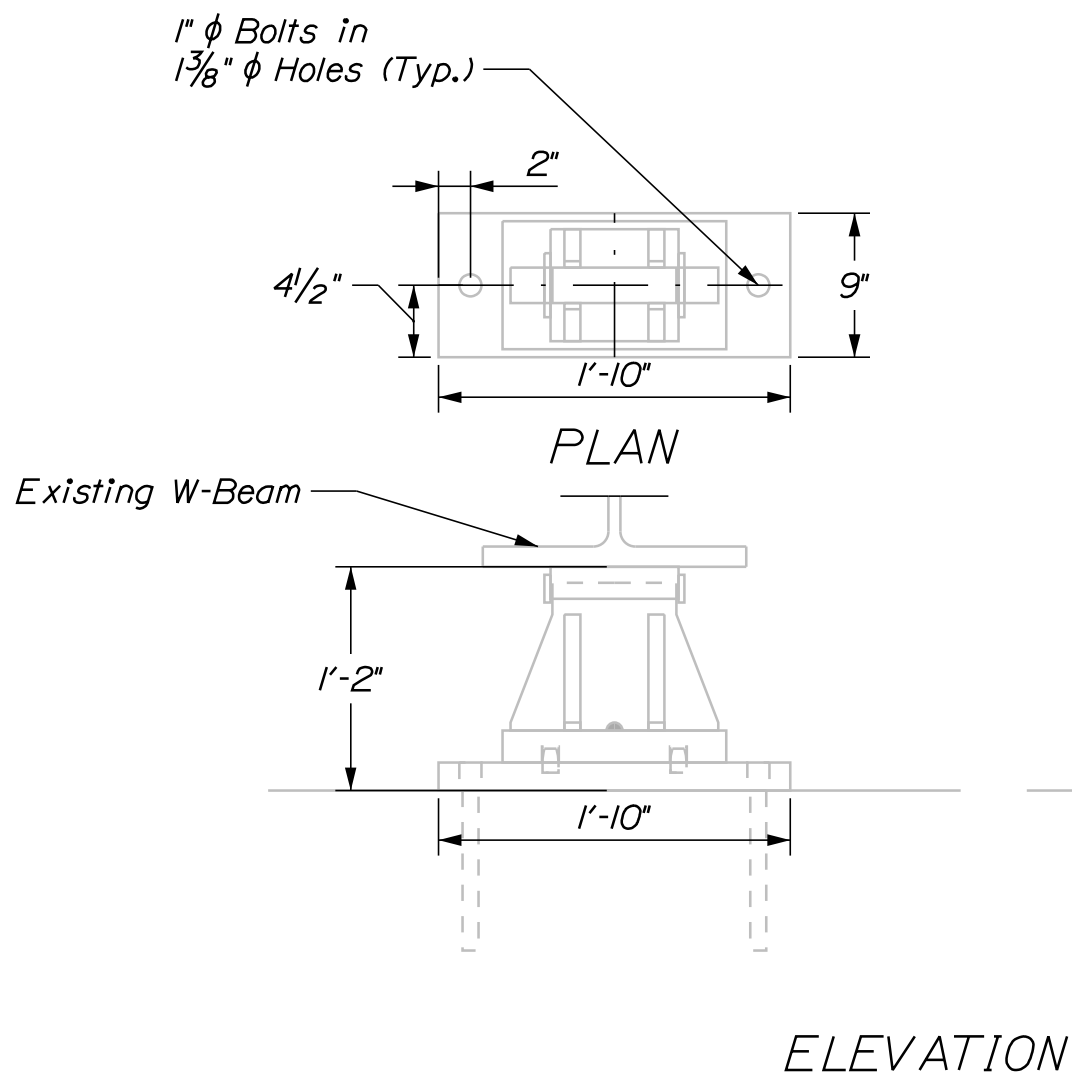
STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		2646200		WIN		BRIDGE NO. 1137		BRIDGE PLANS	
I-295 NB COUSINS RIVER BRIDGE		COUSINS RIVER		CUMBERLAND COUNTY		YARMOUTH-FREEPORT		GENERAL PLAN		SHEET NUMBER	
3		OF 4		DATE		SIGNATURE		P.E. NUMBER		DATE	
NOV 2023		MIM		NOV 2023		OKK		NOV 2023		NOV 2023	
DESIGN-DETAILED		CHECKED-REVIEWED		DESIGN-DETAILED		REVISIONS 1		REVISIONS 2		REVISIONS 3	
LOCK		AM		AM		AM		AM		AM	
A. LATHE		BY		DATE		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES	

Date:2/23/2024

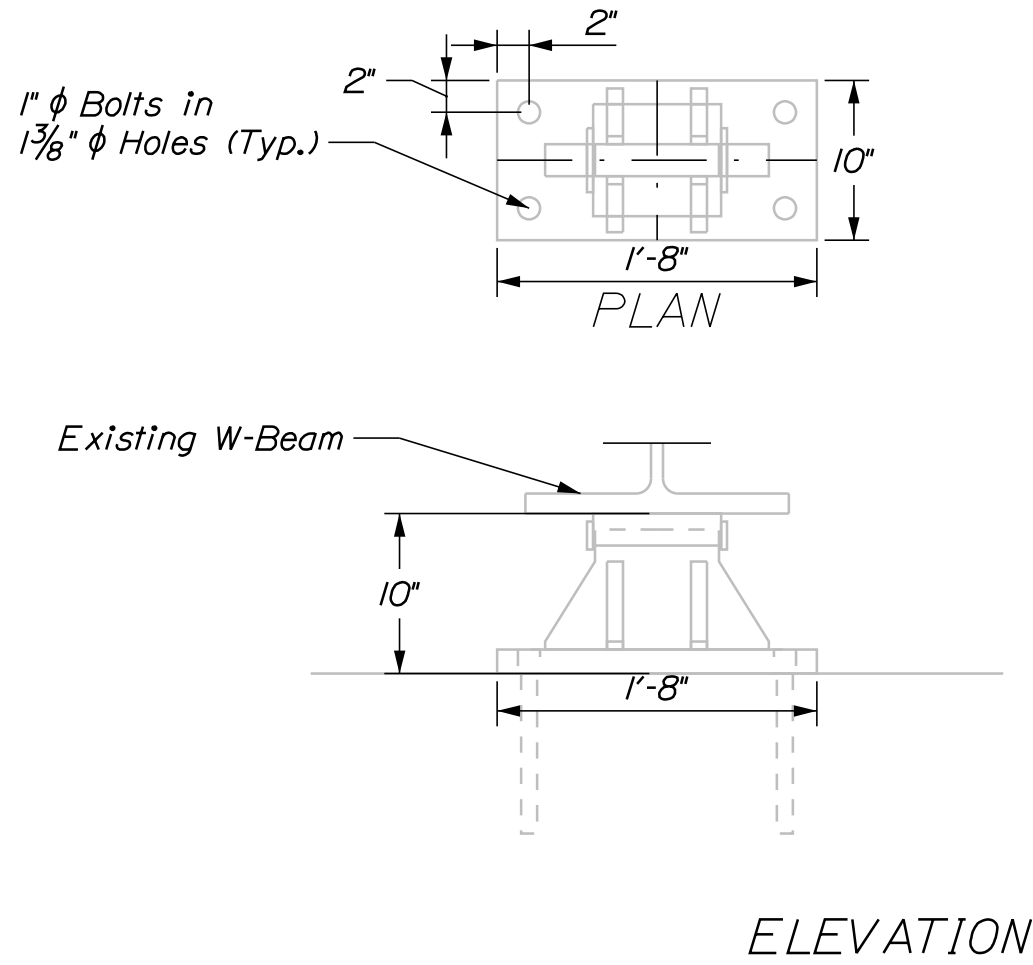
Username:

Division: BRIDGE

Filename: ... \BRIDGE\NMTA\004_Bearings.dgn



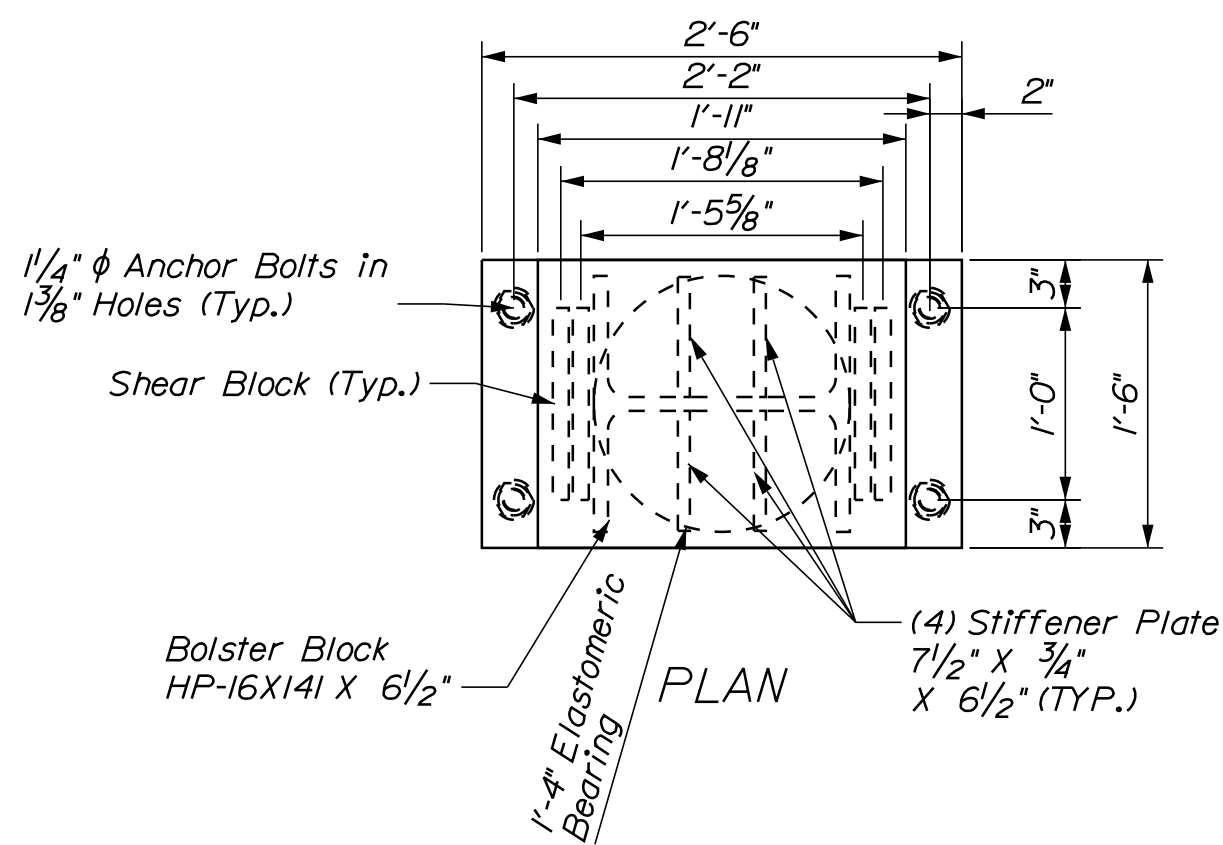
EPC-4
EXISTING EXPANSION BEARING
ABUTMENT NO. 1



EPC-2
EXISTING FIXED BEARING
ABUTMENT NO. 2

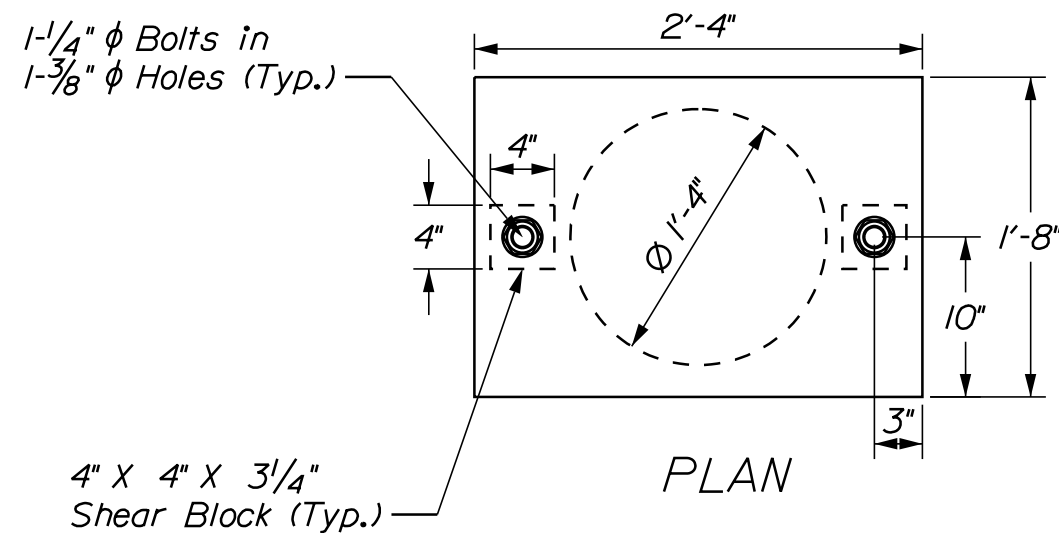
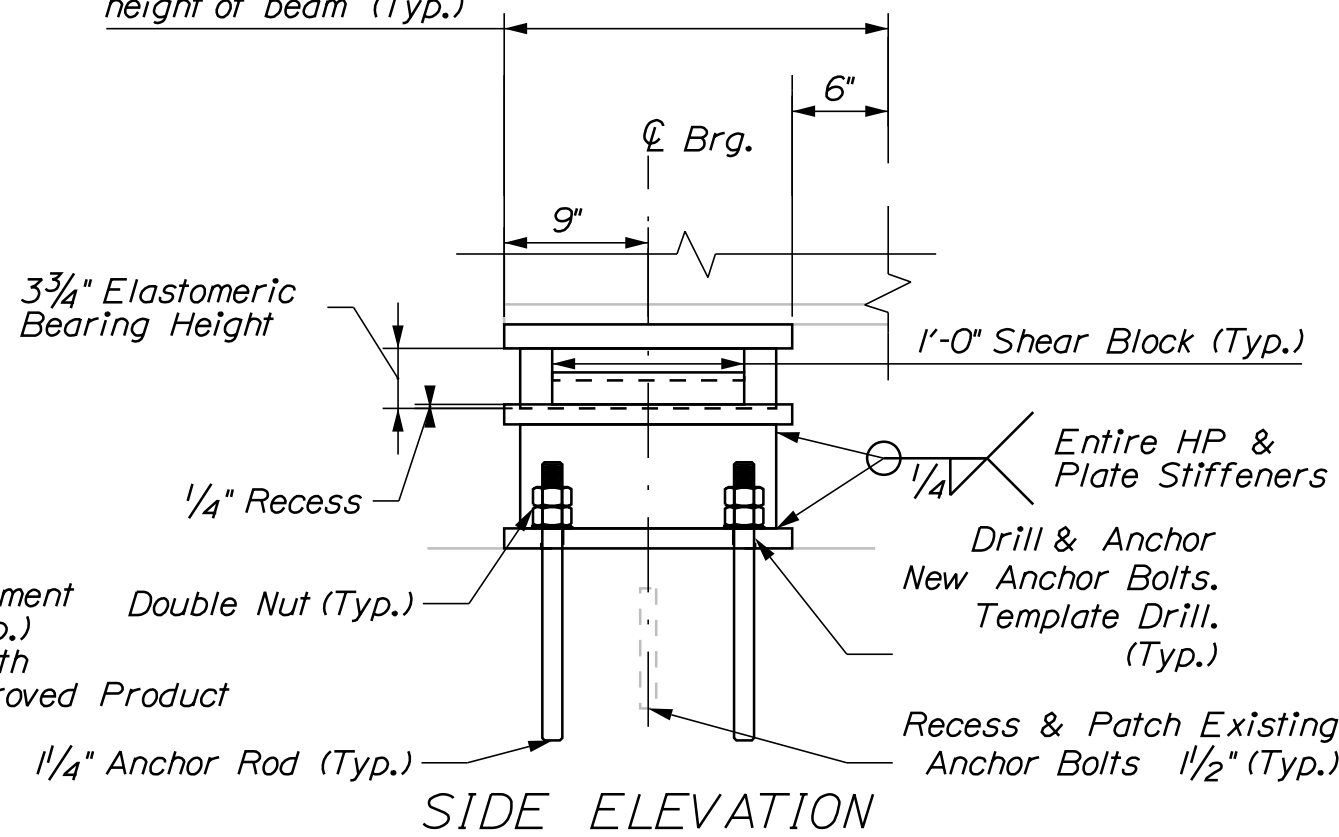
ELASTOMERIC BEARING NOTES

- The shear modulus of the elastomer shall be 113 psi.
- Vulcanization of the elastomer to the steel plates shall be done during the primary mold process. Sole plate shall be vulcanized to the elastomer.
- Masonry plates, sole plates and shear blocks shall meet the requirements of ASTM A709, Grade 50 or 50W. Anchor rods shall meet the requirements of ASTM F1554, Grade 105 and shall be swedged on the embedded portion of the rod.
- Masonry and bolster blocks shall be galvanized in accordance with Section 506. Anchor rods, washers, and nuts shall be galvanized to ASTM A153 or ASTM B695, Class 50, Type I. Shear blocks shall be treated the same as the plate they are attached to. Locations of field welds shall be masked and touched up in the field. Sole plates for steel super structure shall be treated in the same manner as the structural steel.
- All bearings shall be marked prior to shipping. The marks shall include the bearing location on the bridge and a direction arrow that points upstation. All marks shall be permanent and shall be visible after the bearing is installed.
- Bearings shall be covered during shipping and at any time prior to installation that the bearings may be exposed to sunlight.
- The bearings may be installed when the ambient air temperature is within the range of 50° F and 90° F. If the ambient air temperature is outside this range, the bearings shall be reset as directed by the Resident.
- All necessary precautions shall be taken to protect bearing components from field weld flash and spatter. Heat from welding operations shall be controlled such that steel adjacent to the elastomer does not exceed 200° F. The temperature shall be verified by the use of temperature indicating crayons or other suitable means.
- Upset the threads on the anchor rods after assembly of the bearing.
- The "Bearing Design Load" for each bearing as noted in Standard Specifications, subsection 523.23.4, is 159.61 kips. This is the total load for the Service I load combination, without impact.
- Contractor to clean and refurbish existing structural steel in accordance with Special Provision 506, Field Painting, prior to placement of elastomeric bearings. Contractor should be prepared to place and field weld 1/8" shim plates on the existing W30 X 230 steel girder. Shim plates shall meet the requirements of ASTM A709 Grade 50 or 50W.
- Contractor shall field verify all dimensions prior to fabrication of the replacement bearings.
- New structural steel that is not galvanized shall be coated in accordance with Standard Specifications Section 506 Shop Applied Protective Coatings - Steel (Zinc Rich Coating System) except NEPCOAT Qualified Products List C may be used. Payment for the coating will be incidental to the bearing pay items.

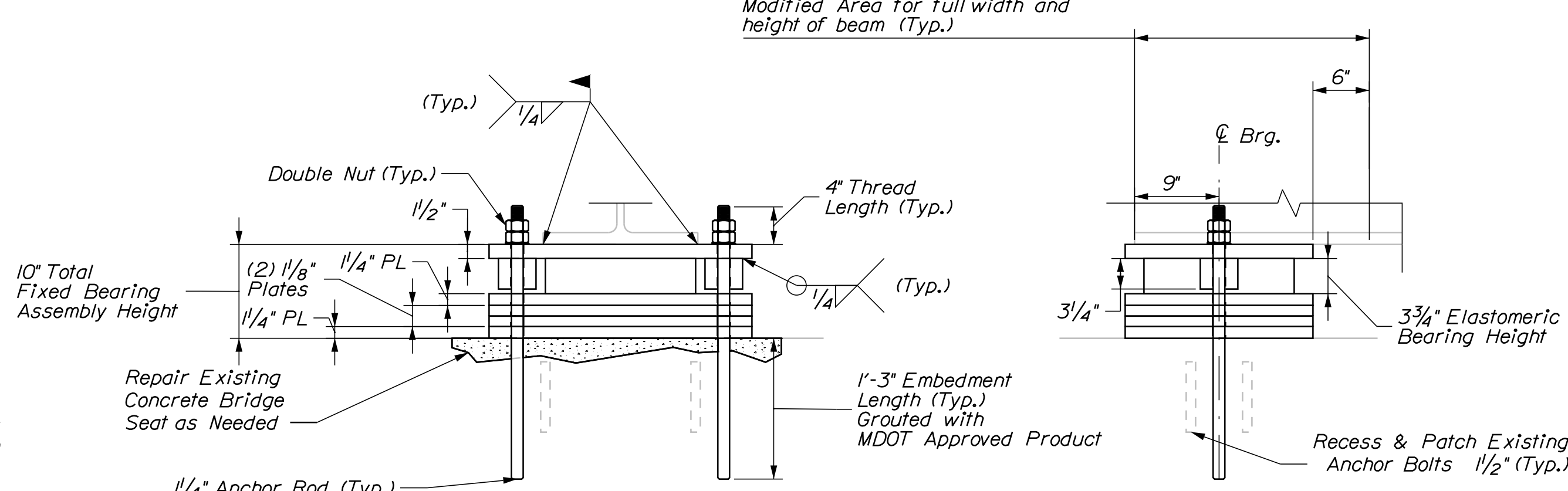


ELASTOMERIC BEARING PAD

Limits of Clean, Paint, & Prep Beam
Special Provision 506 Field Painting.
End of Beam to 6" Beyond End of
Modified Area for full width and
height of beam (Typ.)



Limits of Clean, Paint, & Prep Beam
Special Provision 506 Field Painting.
End of Beam to 6" Beyond End of
Modified Area for full width and
height of beam (Typ.)



REPLACEMENT EXPANSION BEARING
ABUTMENT NO. 1
(6 Locations)

REPLACEMENT FIXED BEARING
ABUTMENT NO. 2
(6 Locations)

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		2646200		WIN		26462.00		BRIDGE NO. 1137		BRIDGE PLANS	
I-295 NB\COUSINS RIVER BRIDGE		COUSINS RIVER		CUMBERLAND COUNTY		YARMOUTH-FREEPORT		BEARING DETAILS		SHEET NUMBER		4	
												OF 4	