

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

TRAFFIC DATA

Current (2018) AADT 14,010
Future (2038) AADT 16,810
DHV - % of AADT 10%
Design Hour Volume 1750
Heavy Trucks (% of AADT) 3%
Heavy Trucks (% of DHV) 2%
Directional Distribution (% of DHV) 63%
18 kip Equivalent P 2.0 174
18 kip Equivalent P 2.5 166
Design Speed (mph) 35

MATERIALS

Concrete:
Curbs, Sidewalks & Transition Barriers Class "LP"
Fill "Fill"
All Other Class "A"
Low-Carbon Chromium Reinforcing ASTM A1035, Grade 100
Structural Steel:
All Material (except as noted) ASTM A 709, Grade 50 (Metalized)
High Strength Bolts ASTM F 3125, Grade A 325, Type 1 (Galv.)

BASIC DESIGN STRESSES

Concrete
Class "A" f 'c = 4,000 psi
Class "LP" f 'c = 5,000 psi
Low-Carbon Chromium Reinforcing f y = 100,000 psi
Structural Steel:
ASTM A 709, Grade 50 F y = 50,000 psi
ASTM F 3125, Grade A 325, Type 1 F μ = 120,000 psi



FALMOUTH
CUMBERLAND COUNTY
BUCKNAM ROAD BRIDGE
OVER
INTERSTATE 295
BUCKNAM ROAD
PROJECT NO. 021720.00
PROJECT LENGTH 0.133 mi.
BRIDGE NO. 5830

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UTILITIES

Central Maine Power Company
Consolidated Communications
Spectrum
Firstlight

MAINTENANCE OF TRAFFIC

Maintain two 11'-0" (minimum) lanes of traffic on Bucknam Road throughout construction utilizing staged construction.

PROJECT LOCATION	Bucknam Road over Interstate 295, 0.30 miles westerly of US Route 1 Intersection Lat./Long. 43°43'39.88" N 70°14'12.92" W
PROGRAM AREA	Bridge Program
OUTLINE OF WORK	Bridge Replacement

021720.00 WIN 021720.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED

COMMISSIONER

DATE
4-21-22
CHIEF ENGINEER

PROJECT INFORMATION

PROGRAM	BRIDGE
PROJECT MANAGER	MACKENZE KERSBERGEN
DESIGNER	AARON LACHANCE
CONSULTANT	HOYLE TANNER
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

FALMOUTH
BUCKNAM ROAD BRIDGE

TITLE SHEET

SHEET NUMBER
1
OF 53

ESTIMATED QUANTITIES					
ITEM NO.	DESCRIPTION	QUANTITY WIN 21720.00	QUANTITY WIN 22672.00	TOTAL	UNIT
202.13	REMOVE EXISTING SITE RAILS (RETAINED BY THE DEPARTMENT)	515	0	515	LF
202.15	REMOVE MANHOLE OR CATCH BASIN	0	2	2	EA
202.19	REMOVING EXISTING BRIDGE (600 CY, 90 TON)	1	0	1	LS
202.202	REMOVING PAVEMENT SURFACE	430	1380	1810	SY
203.20	COMMON EXCAVATION	5300	1260	6560	CY
203.24	COMMON BORROW	3600	130	3730	CY
203.25	GRANULAR BORROW	450	0	450	CY
203.4338	LIGHTWEIGHT FILL - ULTRA LIGHTWEIGHT FOAMED GLASS AGGREGATE	1480	0	1480	CY
206.082	STRUCTURAL EARTH EXCAVATION - MAJOR STRUCTURES	1100	0	1100	CY
304.10	AGGRREGATE SUBBASE COURSE - GRAVEL	5300	710	6010	CY
403.2081	12.5 MM POLYMER MODIFIED HOT MIXED ASPHALT	840	240	1080	T
403.209	HOT MIX ASPHALT 9.5 MM (SIDEWALKS, DRIVES, ISLANDS & INCIDENTALS)	110	5	115	T
403.213	HOT MIX ASPHALT 12.5 MM BASE	1220	360	1580	T
403.2131	12.5 MM POLYMER MODIFIED HOT MIX ASPHALT BASE	820	240	1060	T
409.15	BITUMINOUS TACK COAT - APPLIED	550	155	705	G
461.131	TEMPORARY PAVEMENT	150	10	160	T
501.239	DYNAMIC LOADING TEST - PROVIDING FOR	3	0	3	EA
501.50	STEEL H-BEAM PILES 89 LBS/FT, DELIVERED	1680	0	1680	LF
501.501	STEEL H-BEAM PILES 89 LBS/FT, IN PLACE	1520	0	1520	LF
501.54	STEEL H-BEAM PILES 117 LBS/FT, DELIVERED	1190	0	1190	LF
501.541	STEEL H-BEAM PILES 117 LBS/FT, IN PLACE	1080	0	1080	LF
501.90	PILE TIPS	35	0	35	EA
501.91	PILE SPLICES	42	0	42	EA
501.92	PILE DRIVING EQUIPMENT MOBILIZATION	1	0	1	LS
502.219	STRUCTURAL CONCRETE, ABUTMENT & RETAINING WALLS (230 CY)	1	0	1	LS
502.239	STRUCTURAL CONCRETE PIERS (185 CY)	1	0	1	LS
502.26	STRUCTURAL CONCRETE ROAD & SIDEWALK SLABS ON STEEL BRIDGE (360 CY)	1	0	1	LS
502.31	STRUCTURAL CONCRETE APPROACH SLABS (43 CY)	1	0	1	LS
502.49	STRUCTURAL CONCRETE CURBS AND SIDEWALKS (81CY)	1	0	1	LS
502.77	FIBER REINFORCED POLYMER BRIDGE DRAIN - TYPE C	2	0	2	EA
502.77	FIBER REINFORCED POLYMER BRIDGE DRAIN - TYPE F	2	0	2	EA
503.17	MECHANICAL WELDED SPLICE	1603	0	1603	EA
503.19	LOW-CARBON CHROMIUM - FABRICATED & DELIVERED	182400	0	182400	LB
503.20	LOW-CARBON CHROMIUM - PLACING	182400	0	182400	LB
504.702	STRUCTURAL STEEL FABRICATED & DELIVERED, WELDED (553,130 LB)	1	0	1	LS
504.71	STRUCTURAL STEEL ERECTION (553,130 LB)	1	0	1	LS
505.08	SHEAR CONNECTORS (4347 EA)	1	0	1	LS
506.9104	THERMAL SPRAY COATING - SHOP APPLIED	1	0	1	LS
507.0821	STEEL BRIDGE RAILING, 3 BAR (235 LF)	1	0	1	LS
507.0831	STEEL BRIDGE RAILING, 4 BAR (235 LF)	1	0	1	LS
508.14	HIGH PERFORMANCE WATERPROOFING MEMBRANE (1173 SY)	1	0	1	LS
513.22	CRUSHED STONE SLOPE PROTECTION	750	0	750	SY
515.21	PROTECTIVE COATING FOR CONCRETE SURFACES (820 SY)	1	0	1	LS
519.60	EXPANSION DEVICE - ASPHALTIC PLUG JOINT	91	0	91	LF
523.52	BEARING INSTALLATION	7	0	7	EA
523.5401	LAMINATED ELASTOMERIC BEARINGS, FIXED	7	0	7	EA
524.301	TEMPORARY STRUCTURAL SUPPORT - PIER	1	0	1	LS
524.301	TEMPORARY STRUCTURAL SUPPORT - APPROACH	1	0	1	LS
524.301	TEMPORARY STRUCTURAL SUPPORT - PIER SUPPORT	1	0	1	LS
524.301	TEMPORARY STRUCTURAL SUPPORT - CURB ANCHORAGE	1	0	1	LS
524.40	PROTECTIVE SHIELD	1	0	1	LS
526.301	TEMPORARY CONCRETE BARRIER TYPE 1 (3340 LF)	1	0	1	LS
526.304	TEMPORARY CONCRETE BARRIER, ANCHORED (230 LF)	1	0	1	LS
526.305	TEMPORARY CONCRETE BARRIER, BRACED TYPE 1 (250 LF)	1	0	1	LS
526.34	PERMANENT CONCRETE TRANSITION BARRIER	4	0	4	EA
527.33	TRUCK MOUNTED ATTENUATOR	2	0	2	UN
527.34	WORK ZONE CRASH CUSHIONS	4	0	4	UN
603.165	15" RCP CLASS III	0	40	40	LF
603.175	18" RCP CLASS III	0	180	180	LF
603.179	18" CULVERT PIPE OPTION III	74	130	204	LF
604.072	CATCH BASIN TYPE A-C	2	0	2	EA
604.092	CATCH BASIN TYPE B-C	0	2	2	EA
604.18	ADJUST MANHOLE OR CATCH BASIN TO GRADE	2	0	2	EA
604.262	CATCH BASIN TYPE B5-C	2.25	6	8.25	EA
605.11	12" UNDERDRAIN TYPE C	549	0	549	LF
606.1301	31" W-BEAM GUARDRAIL, MID-WAY SPLICE-SINGLE FACED	1297.5	27	1324.5	LF
606.1304	31" W-BEAM GUARDRAIL, MID-WAY SPLICE-OVER 15' RADIUS	62.5	175	237.5	LF
606.1305	31" W-BEAM GUARDRAIL, MID-WAY SPLICE FLARED TERMINAL	0	1	1	EA
606.1306	31" W-BEAM GUARDRAIL, MID-WAY SPLICE TANGENT TERMINAL	5	0	5	EA
606.1307	BRIDGE TRANSITION (ASYMMETRICAL) TYPE 1A	4	0	4	EA
606.1724	GUARDRAIL TRANSITION - TYPE 3	4	0	4	EA
606.2593	ANCHORAGE ASSEMBLY, MIDWAY SPLICE	0	1	1	EA
606.353	REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	5	3	8	EA
607.183	CHAIN LINK SNOW FENCE 33 INCH (272 LF)	1	0	1	LS
607.25	REMOVE & RESET CHAIN LINK FENCE	45	0	45	LF
608.07	PLAIN CONCRETE SIDEWALK	6	12	18	SY
608.26	CURB RAMP DETECTABLE WARNING FIELD	22	20	42	SF
609.11	VERT CURB TYPE 1	592	27	619	LF
609.12	VERTICAL CURB TYPE 1- CIRCULAR	0	60	60	LF

ESTIMATED QUANTITIES					
ITEM NO.	DESCRIPTION	QUANTITY WIN 21720.00	QUANTITY WIN 22672.00	TOTAL	UNIT
609.222	TERMINAL CURB TYPE 1- CIRCULAR	0	12	12	LF
609.34	CURB TYPE 5	636	265	901	LF
609.35	CURB TYPE 5 - CIRCULAR	6	26	32	LF
610.08	PLAIN RIPRAP	0	7	7	CY
613.319	EROSION CONTROL BLANKET	2020	940	2960	SY
613.40	TURF REINFORCEMENT MAT - (TRM)	390	0	390	SY
615.07	LOAM	290	70	360	CY
615.081	COMPOST BLANKET	21	0	21	CY
618.13	SEEDING METHOD NUMBER 1	2	0	2	UN
618.14	SEEDING METHOD NUMBER 2	46	11	57	UN
618.146	HGM BIOTIC SOIL HYDROMULCH MEDIA	3	0	3	UN
619.12	MULCH	50	12	62	UN
620.58	EROSION CONTROL GEOTEXTILE	790	28	818	SY
620.66	DRAINAGE GEOCOMPOSITE	130	0	130	SY
626.11	PRECAST CONCRETE JUNCTION BOX	0	1	1	EA
626.21	METALLIC CONDUIT	0	10	10	LF
626.22	NON-METALLIC CONDUIT	0	235	235	LF
626.35	CONTROLLER CABINET FOUNDATION	0	1	1	EA
626.36	REMOVE OR MODIFY CONCRETE FOUNDATION	1	3	4	EA
626.411	18-INCH DIAMETER FOUNDATION	5.5	12	17.5	LF
626.421	24-INCH DIAMETER FOUNDATION	0	15	15	LF
627.733	4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	7470	2180	9650	LF
627.744	6" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	67	38	105	LF
627.75	WHITE OR YELLOW PAVEMENT & CURB MARKING	2390	240	2630	SF
627.77	REMOVING PAVEMENT MARKINGS	1320	180	1500	SF
627.78	TEMPORARY 4" PAINTED PAVEMENT MARKING LINE, WHITE OR YELLOW	7515	835	8350	LF
629.05	HAND LABOR, STRAIGHT TIME	63	7	70	HR
631.10	AIR COMPRESSOR (INCLUDING OPERATOR)	36	4	40	HR
631.11	AIR TOOL (INCLUDING OPERATOR)	36	4	40	HR
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	34	4	38	HR
631.13	BULLDOZER (INCLUDING OPERATOR)	3	1	4	HR
631.14	GRADER (INCLUDING OPERATOR)	22	3	25	HR
631.172	TRUCK - LARGE (INCLUDING OPERATOR)	50	5	55	HR
631.22	FRONT END LOADER (INCLUDING OPERATOR)	30	4	34	HR
631.32	CULVERT CLEANER (INCLUDING OPERATOR)	0	4	4	HR
634.161	BRIDGE AND HIGHWAY LIGHTING INCLUDING WIRE	1	0	1	LS
639.18	FIELD OFFICE TYPE A	0.33	0.33	0.67	EA
643.22	NON-INVASIVE DETECTION (ADVANCE): BUCKNAM ROAD & I-295 SB RAMPS	1	0	1	LS
643.22	NON-INVASIVE DETECTION (ADVANCE): BUCKNAM ROAD & I-295 NB RAMPS	0	1	1	LS
643.23	NON-INVASIVE DETECTION (PHASE PRIORITY): BUCKNAM ROAD & I-295 NB RAMPS	0	1	1	LS
643.71	TRAFFIC SIGNAL MODIFICATION: BUCKNAM ROAD & MIDDLE ROAD	1	0	1	LS
643.71	TRAFFIC SIGNAL MODIFICATION: BUCKNAM ROAD & I-295 SB RAMPS	1	0	1	LS
643.71	TRAFFIC SIGNAL MODIFICATION: BUCKNAM ROAD & I-295 NB RAMPS	0	1	1	LS
643.83	VIDEO DETECTION SYSTEM (STOP BAR): BUCKNAM ROAD & I-295 SB RAMPS	1	0	1	LS
643.83	VIDEO DETECTION SYSTEM (STOP BAR): BUCKNAM ROAD & I-295 NB RAMPS	0	1	1	LS
643.92	PEDESTAL POLE	0	2	2	EA
645.103	DEMOUNT GUIDE SIGN	6	4	10	EA
645.106	DEMOUNT REGULATORY, WARNING, CONFIRMATION & ROUTE MARKER SIGN	24	16	40	EA
645.108	DEMOUNT POLE	3	0	3	EA
645.113	REINSTALL GUIDE SIGN	6	4	10	EA
645.116	REINST REGULATORY, WARNING, CONFIRMATION & ROUTE MARKER SIGN	21	13	34	EA
645.118	REINSTALL POLE	3	0	3	EA
645.292	REGULATORY, WARNING, CONFIRMATION & ROUTE MARKER SIGNS TYPE II	107	38	145	SF
652.312	TYPE III BARRICADE	4	0	4	EA
652.33	DRUM	225	25	250	EA
652.34	CONE	185	20	205	EA
652.35	CONSTRUCTION SIGNS	900	100	1000	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES (510 CD)	0.9	0.1	1	LS
652.38	FLAGGER	2475	275	2750	HR
652.381	TRAFFIC OFFICER	130	0	130	HR
652.41	PORTABLE CHANGEABLE MESSAGE SIGN	3	1	4	EA
656.75	TEMPORARY SOIL EROSION & WATER POLLUTION CONTROL	0.9	0.1	1	LS
658.20	ACRYLIC LATEX FINISH, GREEN	80	125	205	SY
659.10	MOBILIZATION	0.95	0.05	1	LS

*Roadway approach items split between WIN 021720.00 and WIN 022672.00, see notes below.

ESTIMATED QUANTITIES NOTES

1. The quantities listed on this sheet include quantities for both MaineDOT projects: WIN 021720.00 Bucknam Road Bridge 5830 and WIN 022672.00 Bucknam Road Intersection and I-295 NB Ramps.
2. The quantities listed for WIN 021720.00 include items for signalization improvements of the I-295 SB Intersection and Middle Road Intersections, all items within the limits from Station 1+00 to Station 11+00 as well as 55% of roadway approach items past station 11+00 (See Diagram of Project Payment on General Notes Sheet)
3. The quantities listed for WIN 022672.00 include 45% of roadway approach items as well as all signal and intersection related items beyond station 11+00 (See Diagram of Project Payment on General Notes Sheet).
4. For details and design layout regarding quantities beyond Station 8+00, and for the I-295 SB Intersection signal items, please refer to MaineDOT plans for WIN 022672.00 Falmouth Bucknam Road Intersection and I-295 NB Ramps.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

021720.00

WIN
021720.00

BRIDGE NO. 5830

BRIDGE PLANS

BUCKNAM ROAD BRIDGE
INTERSTATE 295
FALMOUTH CUMBERLAND COUNTY

ESTIMATED QUANTITIES

SHEET NUMBER

2

OF 53

Date:4/6/2022

Username:

Division: BRIDGE

Filename: ... \MSTAD003_GeneralNotes.dgn

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. All aluminum bridge rail, rail posts, and associated hardware which are to be removed shall be carefully salvaged by the Contractor and will remain the property of the Department.
6. Do not excavate for Aggregate Subbase Course where existing material is suitable as determined by the Resident.
7. 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.
8. Place loam 2 inches deep on all new or reconstructed sideslopes or as directed by the Resident.
9. 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.
10. Place a 24 inch wide strip of Erosion Control Blanket on the sideslopes along the top of the riprap and behind the wingwalls.
11. A MASH compliant guardrail end treatment shall be installed concurrently with the placement of each section of beam guardrail.
12. 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.
13. 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,

All exposed surfaces of Concrete Transition Barriers,

Top of abutment backwalls and wingwalls, and

To one foot below the ground on vertical walls against earth, Pier.
14. Project information referred to below may be accessed at the following MaineDOT web address:
<http://www.maine.gov/mdot/contractors/>
15. 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.
16. The project geotechnical report titled: Geotechnical Design Report Bucknam Road Bridge No. 5830 Over Interstate 295, Falmouth, Maine, March 2022, may be accessed at the MaineDOT web address.
17. 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.

18. 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.

19. The Contractor shall submit a Bridge Demolition Plan to the Resident at least 10 business days prior to the start of demolition work. The plan shall outline the methods and equipment to be used to remove and dispose of all materials included in the existing bridge. No work related to the removal of the bridge shall be undertaken by the Contractor until MaineDOT has reviewed the Bridge Demolition Plan for appropriateness and completeness. Payment for all work necessary for developing, submitting, and finalizing the Demolition Plan will be considered incidental to the bridge removal pay item.

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

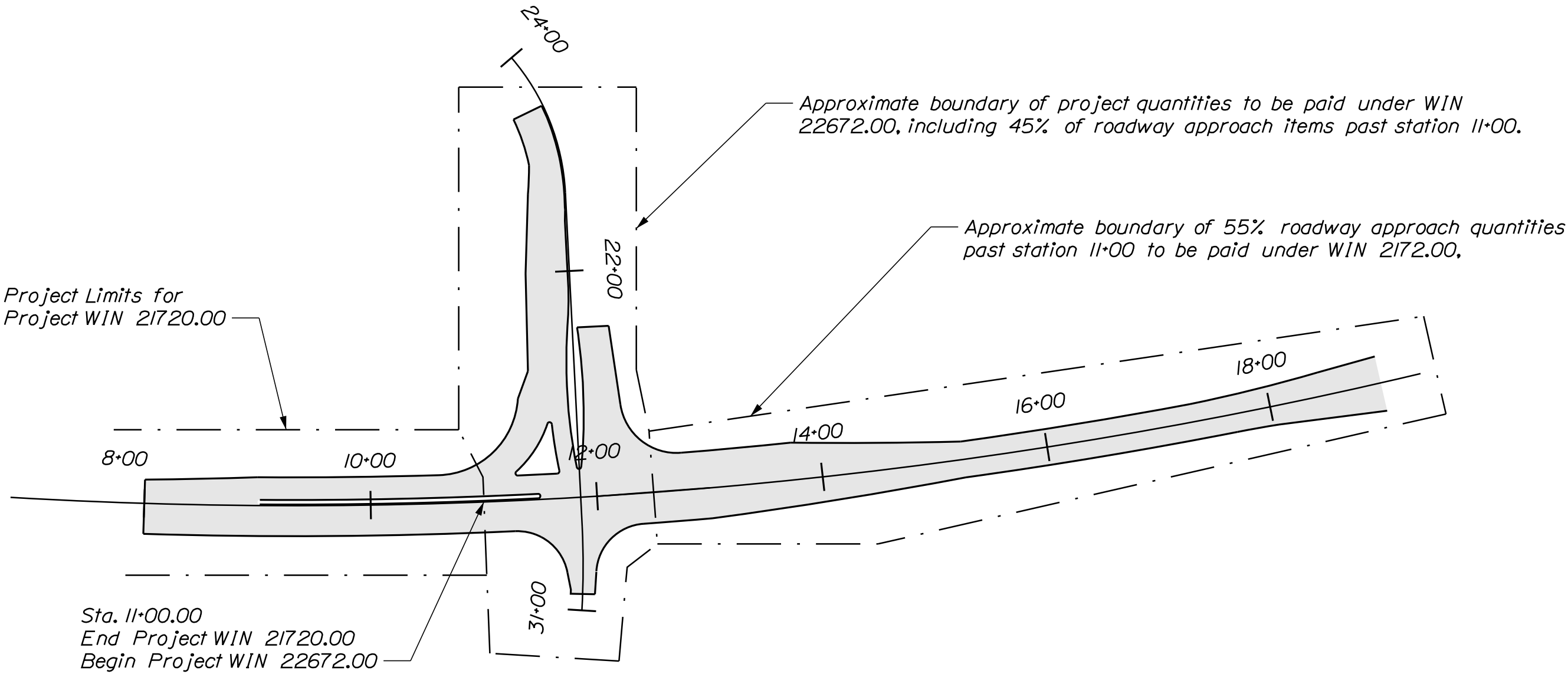


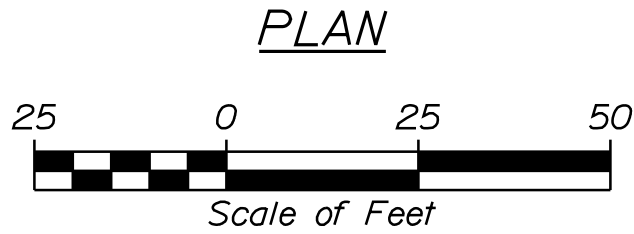
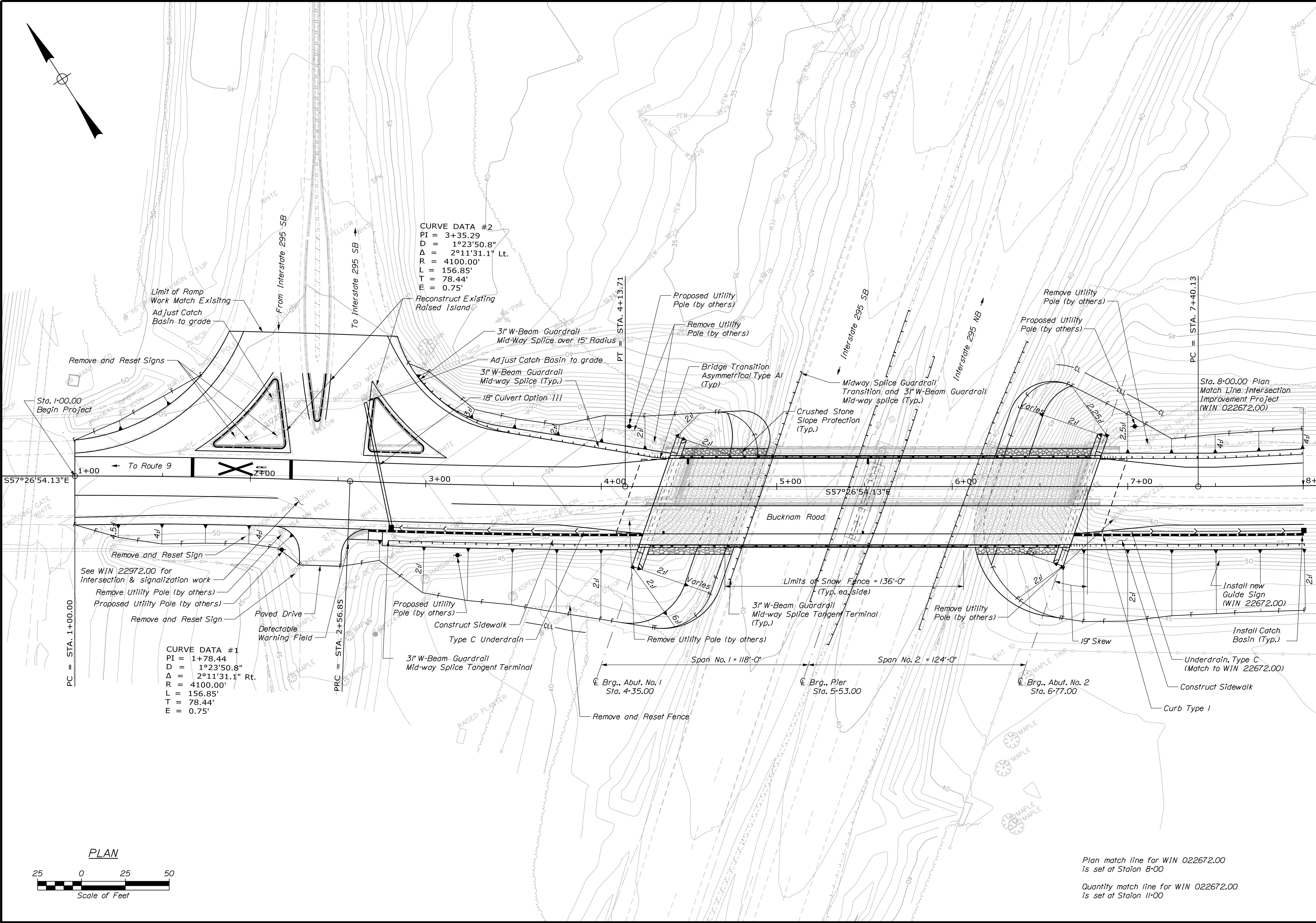
DIAGRAM OF PROJECT PAYMENT

OF 53	3	SHEET NUMBER		BUCKNAM ROAD BRIDGE INTERSTATE 295 FALMOUTH CUMBERLAND COUNTY				PROJ. MANAGER				DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION	
				DESIGN-DETAILED		CHK	BY							
				CHECKED-REVISED		RPM	AML			MAR. 2022				
				DESIGN2-DETAILED2						SIGNATURE				
				DESIGN3-DETAILED3						P.E. NUMBER	021720.00			
				REVISIONS 1										
				REVISIONS 2										
				REVISIONS 3										
				REVISIONS 4						DATE	WIN			
				FIELD CHANGES							BRIDGE NO. 5830			
									021720.00					
									BRIDGE PLANS					

Date:4/6/2022

Username:

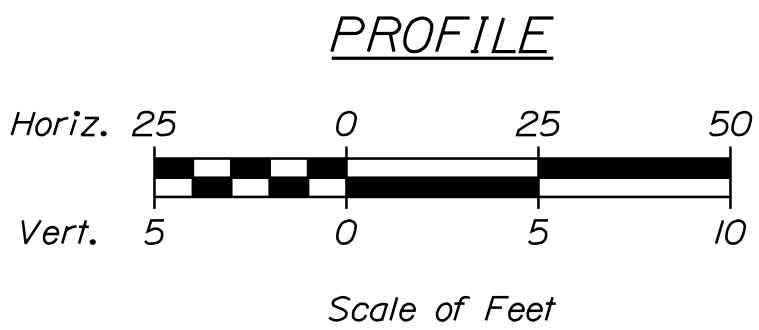
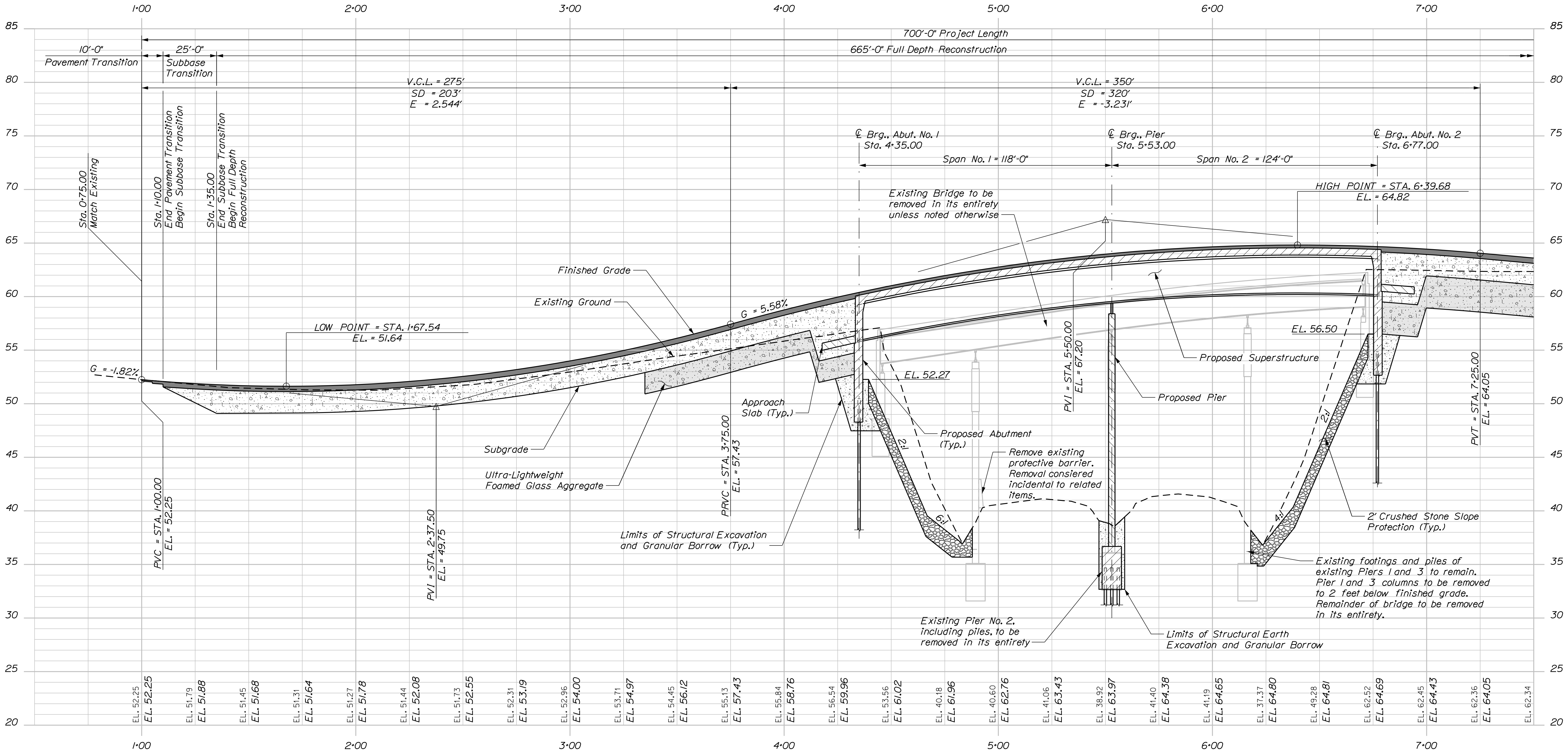
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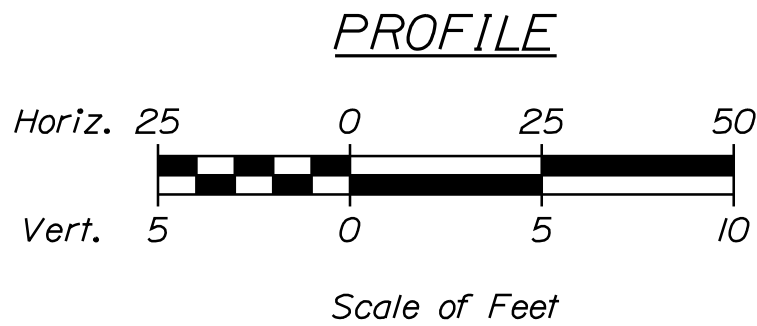
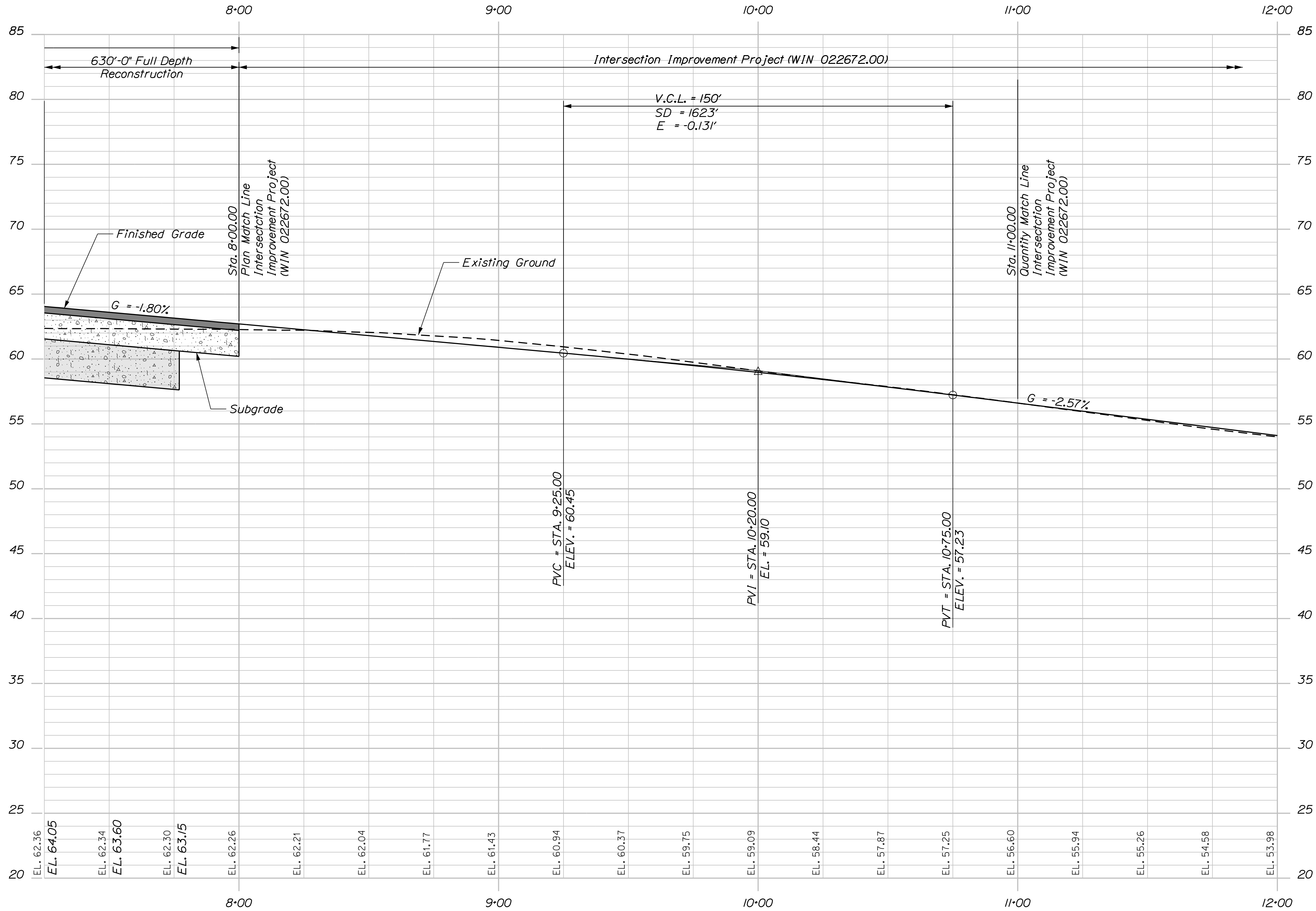
Plan match line for WIN 022672.00
is set at Station 8+00

Quantity match line for WIN 022672.00
is set at Station 11+00

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	PROJECT INFORMATION										SIGNATURE
	PROJECT NAME: BUCKNAM ROAD BRIDGE										
	PROJECT LOCATION: INTERSTATE 295										
	PROJECT TYPE: GENERAL PLAN										
	PROJECT NUMBER: 021720.00										
	PROJECT STATUS: IN PROGRESS										
	PROJECT START DATE: 01/01/2022										
	PROJECT END DATE: 12/31/2022										
	PROJECT BUDGET: \$1,000,000										
	PROJECT OWNER: MAINE DEPARTMENT OF TRANSPORTATION										
WIN 021720.00	BRIDGE NO. 5830										DATE
	BRIDGE TYPE: OVERPASS										
	BRIDGE MATERIAL: CONCRETE										
	BRIDGE SPAN: 100 FEET										
	BRIDGE WIDTH: 20 FEET										
	BRIDGE HEIGHT: 15 FEET										
	BRIDGE CONDITION: GOOD										
	BRIDGE MAINTENANCE: ANNUAL										
	BRIDGE INSPECTION: 01/01/2022										
	BRIDGE REPAIRS: NONE										



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	021720.00		BRIDGE NO. 6830		WIN		021720.00		BRIDGE PLANS										
	SIGNATURE		P.E. NUMBER		DATE														
	MAR 2022		MAR 2022		MAR 2022														
BUCKNAM ROAD BRIDGE INTERSTATE 295 CUMBERLAND COUNTY FALMOUTH										PROFILE									
SHEET NUMBER										5									
										OF 53									



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

021720.00

WIN
021720.00

BRIDGE NO. 5830

BRIDGE PLANS

BUCKNAM ROAD BRIDGE
INTERSTATE 295
CUMBERLAND COUNTY

FALMOUTH

PROFILE

SHEET NUMBER

6

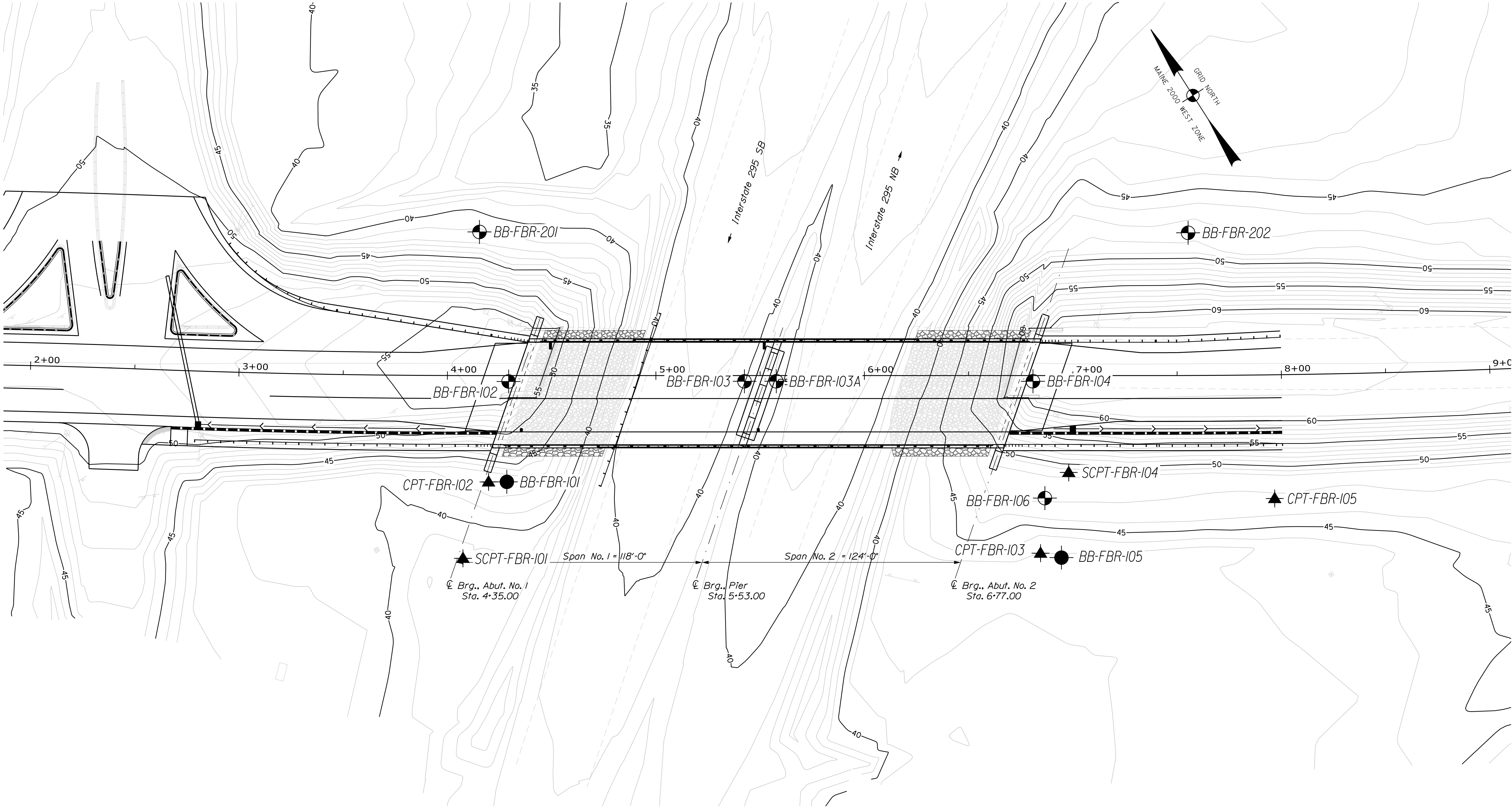
OF 53

PROJ. MANAGER	DATE	BY	DATE
DESIGN-DETAILED	MAR 2022	BIN	MAR 2022
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DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

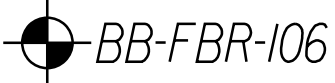


NOTES

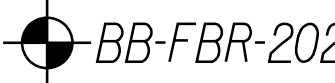
1) Base map developed from electronic files (Files included Alignments.dgn, Bridge.dgn Points.dgn, text.dgn, topo.dgn, and contours.dgn) provided by Hoyle, Tanner & Associates, Inc February 28, 2022.

2) The as-drilled boring locations were surveyed by a MaineDOT survey crew and provided to GZA in an electronic file (Borings.dgn).

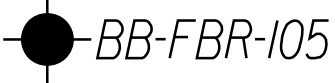
LEGEND

- 


BB-FBR-100

Indicates -100 series borings performed by New England Boring Contractors of Hermon, Maine between June 16, and June 26, 2019 and observed by GZA personnel.
- 

BB-FBR-200

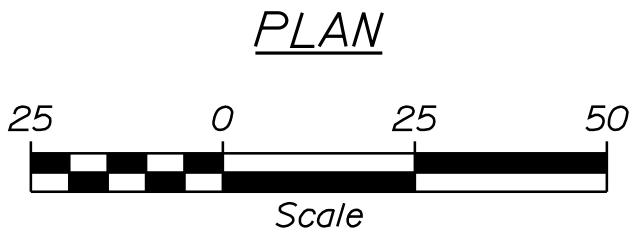
Indicates -200 series borings performed by New England Boring Contractors of Hermon, Maine from September 1 to 2, 2020 and observed by GZA personnel.
- 

BB-FBR-100

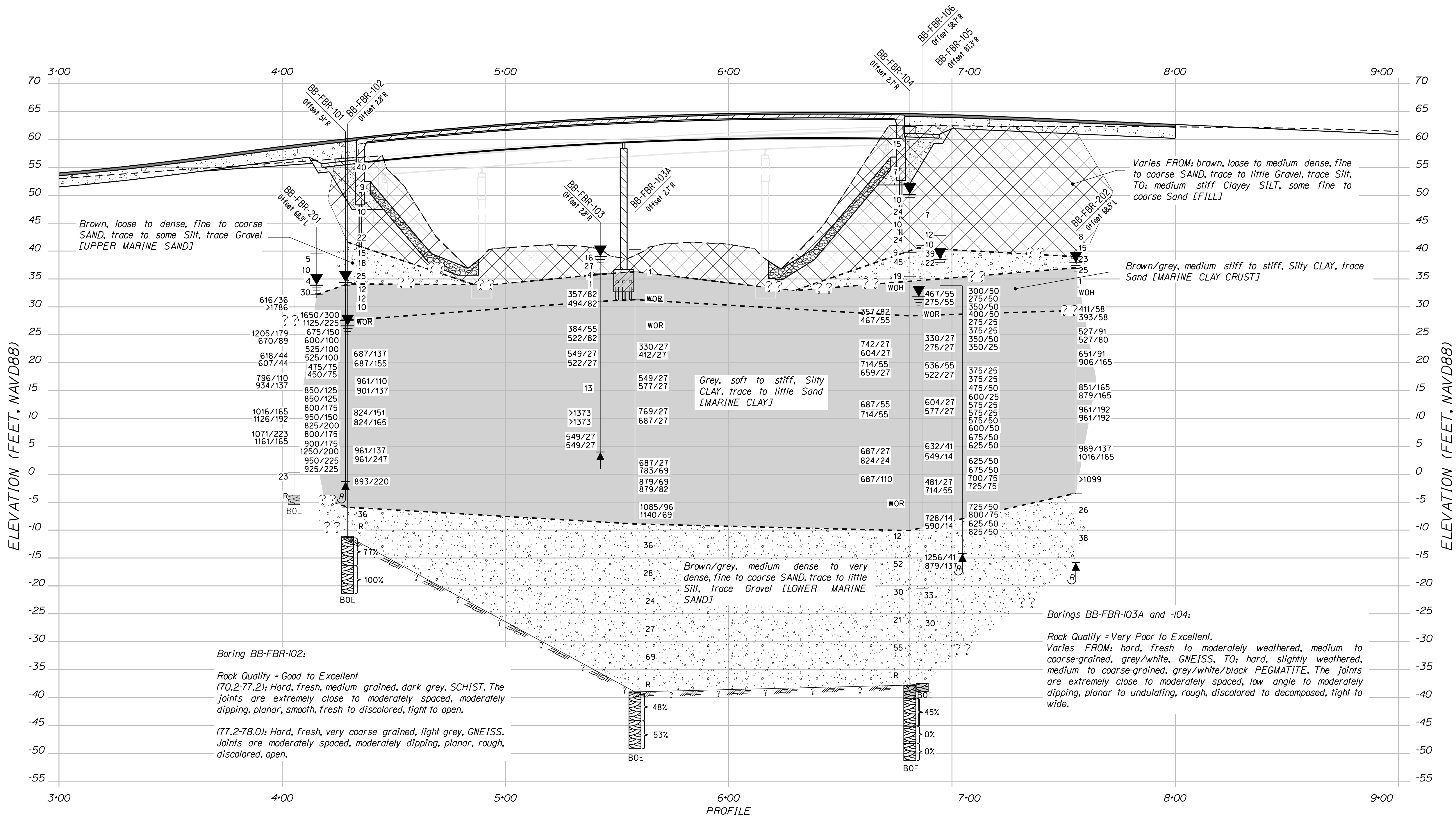
Indicates borings performed by Summit Geoengineering Services, Inc. of Rockland, Maine between May 22, and May 23, 2019 and observed by GZA personnel.
- 

CPT-FBR-100

Indicates cone penetration tests (CPTs) performed by Summit Geoengineering Services, Inc. of Rockland, Maine between May 21, and May 23, 2019 ("S" indicates seismic testing was performed).



7 OF 53	SHEET NUMBER		BUCKNAM ROAD BRIDGE INTERSTATE 295 FALMOUTH CUMBERLAND COUNTY				PROJ. MANAGER		BY	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION		
							DESIGN-DETAILED						
							CHECKED-REVISED				SIGNATURE		
							DESIGN2-DETAILED2						
							DESIGN3-DETAILED3						
							REVISIONS 1				P.E. NUMBER		
							REVISIONS 2						
							REVISIONS 3						
							REVISIONS 4				DATE		
							FIELD CHANGES						
											BRIDGE NO. 5830	WIN 21720.00	BRIDGE PLANS

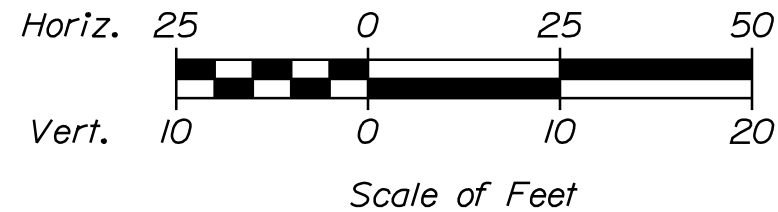
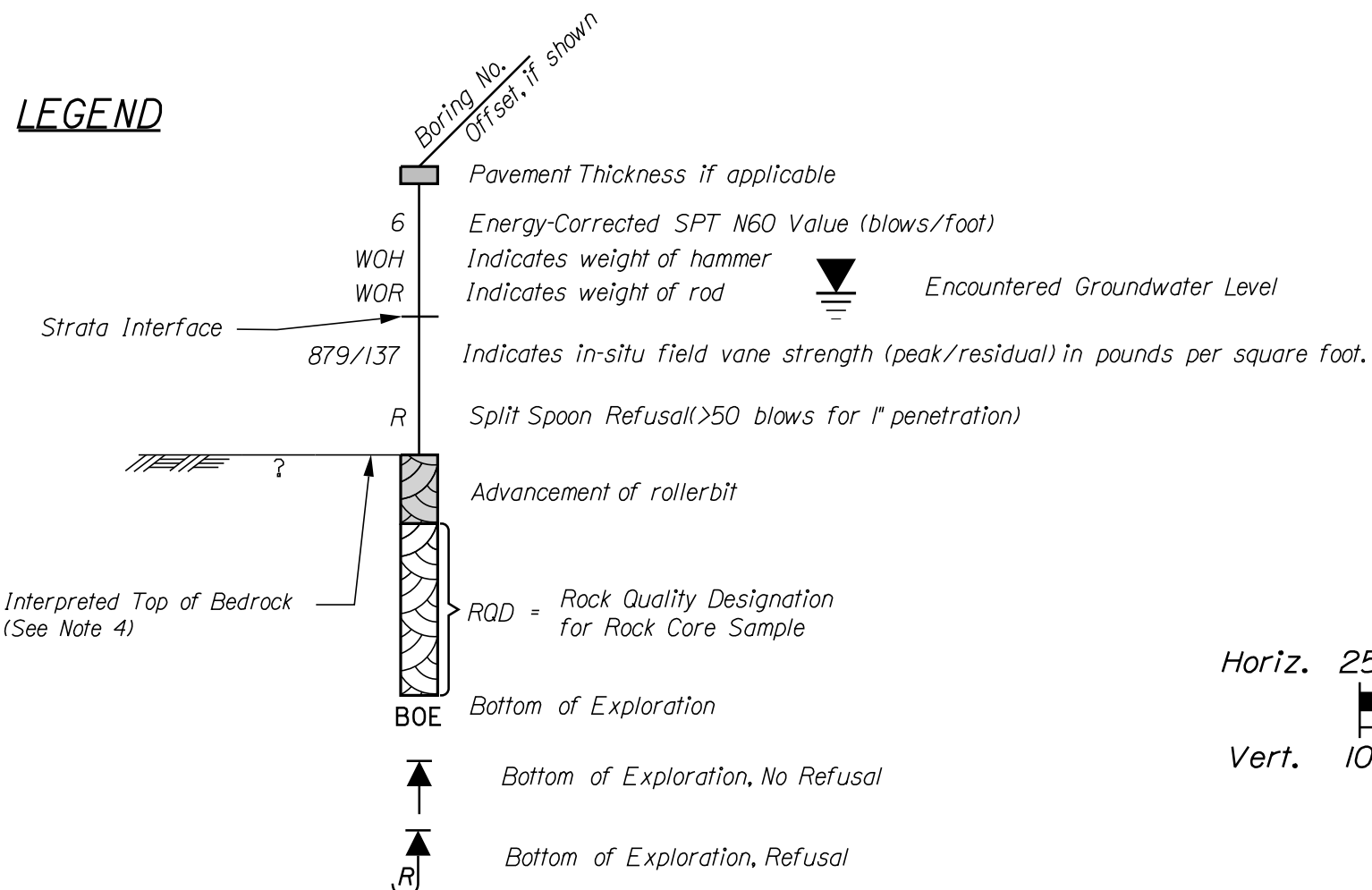


NOTES

- 1) Base map developed from electronic files provided or downloaded from MaineDOT ftp site by Hoyle, Tanner & Associates, Inc. on January 28, 2022 (File included Profile.dgn)
- 2) The as-drilled boring locations were surveyed by a MaineDOT survey crew and provided to GZA in an electronic file (Borings.dgn).
- 3) BB-FBR-100 series bridge borings were performed by New England Boring Contractors and Summit Geoengineering Services, Inc and observed by GZA personnel between May 22 and June 25, 2019.
- 4) BB-FBR-200 series bridge borings were performed by New England Boring Contractors and observed by GZA personnel from September 1 to 2, 2020.

4) This generalized interpretive soil and rock profile is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and have been developed by interpretations of widely spaced explorations and samples. Actual soil transitions may vary and are probably more erratic. Boring data are shown for borings drilled off alignment, but interpreted strata are based on the three borings drilled closest to the project baseline. For more specific information refer to the exploration logs.

LEGEND



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

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Maine Department of Transportation				Project: Bucknam Road Bridge #6330 over I-295 Location: Fairmount, Maine		Boring No.: BB-FBR-102 WIN: 21720.00	
Sol/Rock Exploration Log US CUSTOMARY UNITS							
Driller	New England Boring Contractors		Elevation (ft.)	56.6	Auger ID/OD	2.5" / 3.5"	
Operator	B. Enos		Datum	NAVD 88	Sampler	Standard Splitpoon	
Lugged By	B. Woodman		Rig Type	ATV Mobile B5.3	Hammer W/L/F/B	14x24/30"	
Date Start/Finish	6/16/19-6/17/19		Drilling Method	Drive & Wash	Core Barrel	NX	
Boring Location	Sta. 4+29.3, 2.8' ft		Casing ID/OD	4.4/5", 3/3.5"	Water Level	30'	
Hammer Efficiency Factor	.895		Hammer Type	Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/>	Rope & Cathode	<input type="checkbox"/>	
<div> <div> <ul style="list-style-type: none"> D = Split Spoon Sample Collection U = Thin Wall Tube Sample U = Unconsolidated Soil Test Sample (Intest) U = Fluid Free Shear Test, PP = Pocket Penetration Test See Unconsolidated Soil Test Spec. Test Sheet </div> <div> <ul style="list-style-type: none"> R = Rock Core Sample SR = Solid Stem Auger HA = Hollow Stem Auger RC = Rotary Core WOT = Weight of 90 lb. Hammer WOKC = Weight of Rod or Casing ROD = Weight of Rod </div> </div>							
<div> <div> <ul style="list-style-type: none"> U = Pocket Friction Shear Strength (psi) AC = Water Content, percent LI = Liquid Limit PP = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test </div> </div>							
Sample Information							
Sample No.	Flow Rate, (in/s)	Sample Depth (ft)	Shells (6 in)	Shells (6 in) or ROD (ft)	Uncorrelated	Neg	Coring Speed
24							
20.6							
21.4							
80							
85							
90							
95							
<div> <div> <ul style="list-style-type: none"> Shding, porous, smooth, fresh to discolored, light pitted near joints. R2: 77.2-78" Hard, fresh, very coarse grained, light grey, OMS3. Joints are moderately spaced, moderately shding, porous, rough, discolored, open. Rock Quality = Excellent Recovery = 100% Rock Core Times (in/min): 73.0-74.0 (131), 74.0-75.0 (120), 75.0-76.0 (132), 76.0-77.0 (130), 77.0-78.0 (127) Bottom of Exploration at 78.0 feet below ground surface. </div> </div>							
Visual Description and Remarks							
Laboratory Testing Results: AASHTO Unified Class.							

- 1. Fine-Grained Soil Descriptions on this log are based on plasticity estimated using visual-manual classification techniques or laboratory Atterberg Limit tests if available, rather than the Modified Standard based percentages passing specific grain sizes.
- 2. Automatic Hammer NEBC #219 Energy Transfer Ratio = 0.895.
- 3. Water level measurements were taken immediately after removal of casing.

- Verification lines represent approximate boundaries between soil types. Handlines may be placed.
- Water level readings have been made at times and under conditions shown. Groundwater fluctuations may occur due to conditions other than those stated on this log.

- Boring No.: BB-FBR-102

Maine Department of Transportation				Project: Bucknam Road Bridge +5830 over I-295 Location: Falmouth, Maine		Boring No.: BB-FBR-103						
Soil/Rock Exploration Log US CUSTOMARY UNITS						WIN: 21720.00						
Driver: New England Boring Contractors		Elevation (ft.): 40.0		Auger ID/OD: 2.5" SSA								
Operator: B. Enos		Datum: NAVD 88		Sampler: Standard Split/Spoon								
Logged By: B. Woodman		Rig Type: ATV Mobile B53		Hammer WL/Fail: 140"/30"								
Date Start/Finish: 6/19/19-6/20/19		Drilling Method: Drive & Wash		Core Barrel: NX								
Boring Location: Sta. 5+42.5, 2.8' RI		Casing ID/OD: 4/4.5"		Water Level: *		7						
Hammer Efficiency Factor: 895		Hammer Type: Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/>		1 - Pocket Torque Shear Strength test 2 - Soil Spoon Sample 3 - Solid Stem Auger 4 - Undersized Soil Spoon Sample Attempt 5 - Thin Wall Tube Sample 6 - Undersized Thin Wall Tube Sample Attempt 7 - Field Vane Shear Test 8 - Pocket Penetrometer 9 - Weight of Rock or Core 10 - Water Level Measurements were taken immediately after removal of casing								
Sample Information												
Depth (ft.)	Sample No.	Pen./Ref. (in.)	Sample Depth (ft.)	Blows (F6, F4, F3) Spoon for 100 lb 100 lb 100 lb	Unconsolidated	N60	Soiling Index 0-10	Classification Per ASTM D1586	Graphic Log	Visual Description and Remarks		Laboratory Testing Results/ ASTM or Other Code
	10	24/6	0.0 - 2.0	2-6-5-6	11	16			56.0	Brown, dry, medium dense, fine to coarse SAND, little gravel. (F6).		
	20	24/13	2.0 - 4.0	6-9-9-7	18	27				Brown, dry, medium dense, fine SAND, trace silt. (F6).	G5-7 A-3, SP-5M WC-20	
	30	24/23	4.0 - 6.0	1-2-1-WOH	3	4				Brown, wet, medium stiff, Silty CLAY. (Marine Clay Crust).		
	40	24/24	6.0 - 8.0	1-1-WOH-WOR	1	1				Grey, wet, Silty CLAY. (Marine Clay Crust).	A-7, CL LL=48 PL=28 WC=516	
	50	24/26	8.0 - 11.0	Push thru vane S _u =357/82 psf	-					31.0	Grey, wet, stiff, Silty CLAY. (Marine Clay). 65x10mm vane raw torque readings: V1: 13/3 ft-lbs V2: 18/3 ft-lbs	WC-47.6
	V1	10.8		S _u =494/82 psf								
	V2	11.0										
	10	14.0 - 16.0		PUSH						15	Grey, wet, Silty CLAY.	
	V3	16.6 - 17.0		S _u =384/55 psf								
	V4	17.6 - 18.0		S _u =522/82 psf							65x10mm vane raw torque readings: V3: 14/2 ft-lbs V4: 19/3 ft-lbs	
	60	24/24	18.0 - 21.0	Push thru vane S _u =352/72 psf	-				Grey, wet, medium stiff, Silty CLAY. (Marine Clay). 65x10mm vane raw torque readings: V5: 20/1 ft-lbs V6: 19/1 ft-lbs		A-6, CL LL=40 PL=20 WC=38.1	
	V6	21.0		S _u =522/72 psf								
	20	24/4	24.0 - 26.0	PUSH					25	Grey, wet, stiff, Silty CLAY. (Marine Clay).		
	70	24/24	26.0 - 28.0	3-4-5-6	9	13						
	80	24/24	29.0 - 31.0	Drive thru vane S _u =1375/171 psf	-					30	Grey, wet, stiff, Silty CLAY. (Marine Clay). 65x10mm vane, could not rotate V7 or V8 at 50 ft-lbs. Branch was sticking during rotation. If lbs reading was not confirmed and did not shear.	
	V7	31.0		S _u =1373 psf								
	35	24/24	34.0 - 35.0	Push thru vane S _u =352/72 psf	-				4.0	Grey, wet, medium stiff, Silty CLAY. (Marine Clay). 65x10mm vane raw torque readings: V9: 20/1 ft-lbs V10: 19/1 ft-lbs	WC-34.7	
	V10	35.0		S _u =519/72 psf								
	40									Bottom of Exploration at 36.0 feet below ground surface.	-56.0	
Remarks:												
1. Fine-Grained Soil Descriptions on this log are based on plasticity estimated using visual-manual classification techniques or laboratory Atterberg Limit tests if available, rather than the Modified Standard based percentages posting specific grain sizes.												
2. Automatic Hammer N60: N19 Energy Transfer Ratio = 0.895.												
3. Cored through 0.8' of bridge deck with 4" sign shear. Ground level 13' below top of bridge deck.												
4. Casing broke during advancement to 40' on possible boulder. Boring terminated. Boring performed by BB-FBR-103A.												
5. Water level measurements were taken immediately after removal of casing.												
Soil/Rock test results represent approximately bounding values and their transfer may be prudent.												
* Water level readings have been taken at three or other conditions stated. Drunkerwater fluctuations may occur due to conditions other than those stated on this log.												
Page 1 of 1											Boring No.: BB-FBR-103	

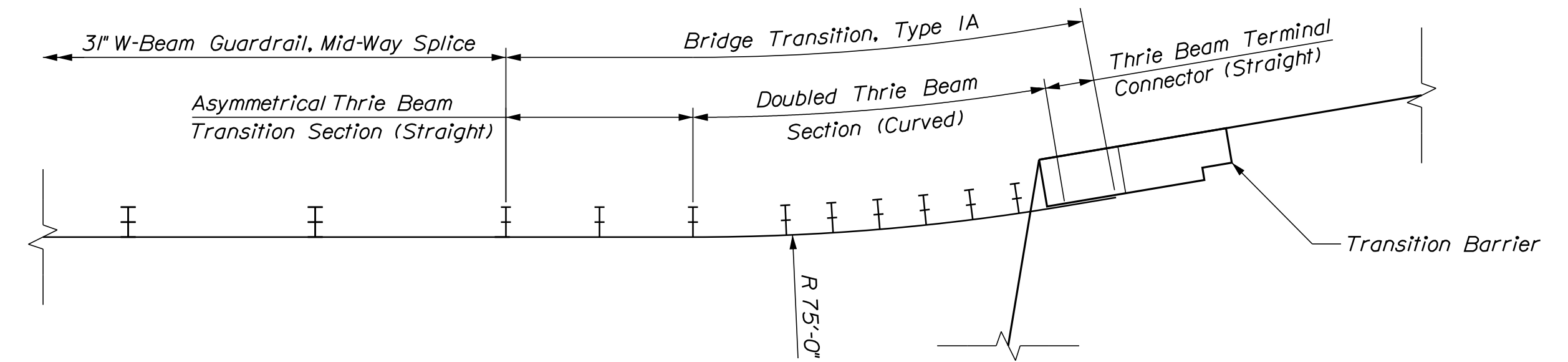
Boring No.: BB-FBR-104

Page 2 of 2
Boring No.: BB-FBR-104

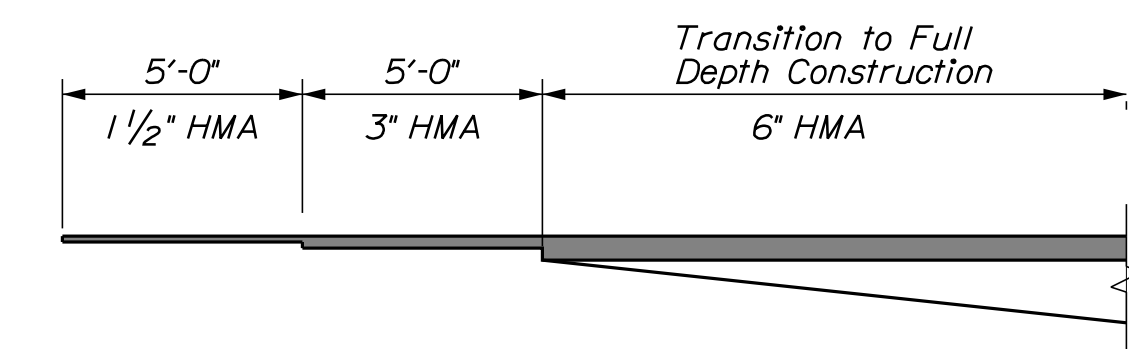
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Boring No.: BB-FBR-106Page 2 of 2
Boring No.: BB-FBR-106

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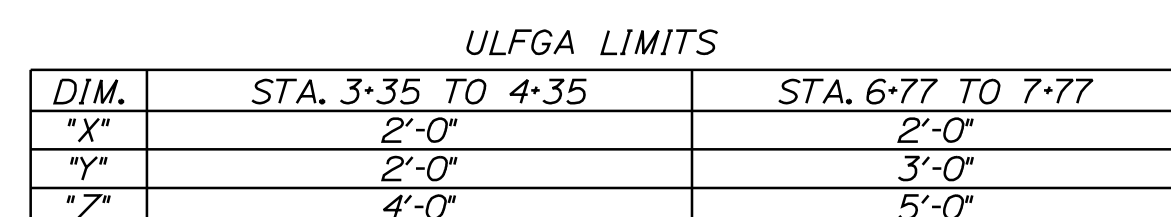
<div> <div>12</div> <div>OF 53</div> </div>	SHEET NUMBER	BUCKNAM ROAD BRIDGE		<div> <div>PROJECT MANAGER</div> <div>BY</div> <div>DATE</div> </div>	STATE OF MAINE		
		INTERSTATE 295			DEPARTMENT OF TRANSPORTATION		
		FALMOUTH					
		CUMBERLAND COUNTY					
					021720.00		
BORING LOGS 4		DESIGN-DETAILED		<div> <div>SIGNATURE</div> <div>P.E. NUMBER</div> <div>DATE</div> </div>	BRIDGE NO. 5630	WIN	BRIDGE PLANS
		CHECKED-REVIEWED					
		DESIGN-DETAILED2					
		DESIGN-DETAILED3					
		REVISIONS 1					
		REVISIONS 2					
		REVISIONS 3					
		REVISIONS 4					
		FIELD CHANGES					



CURVED BRIDGE TRANSITION - TYPE "IA"
Northwest corner of bridge only. All other Bridge Transitions - Type "IA"
(per Standard Detail)



MILL & OVERLAY DETAIL



STATE OF MICHIGAN	
DEPARTMENT OF TRANSPORTATION	
021720.00	
BRIDGE NO. 5830	WIN
	021720.00
	BRIDGE PLANS

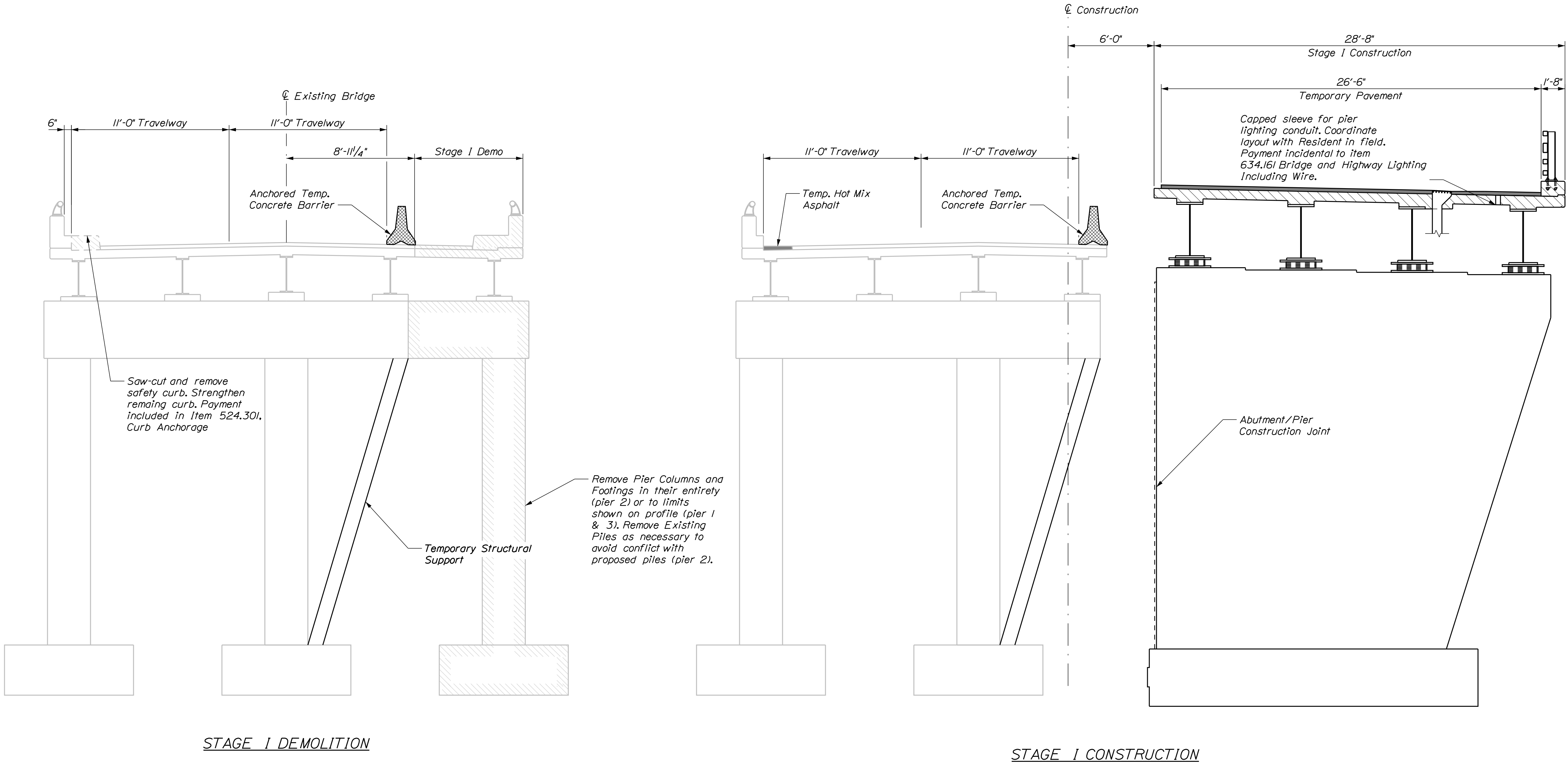
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DESIGN3-DETAILED3				P.E. NUMBER
REVISIONS 1				
REVISIONS 2				
REVISIONS 3				DATE
REVISIONS 4				
FIELD CHANGES				

FALMOUTH	CUMBERLAND COUNTY
TYPICAL SECTIONS	

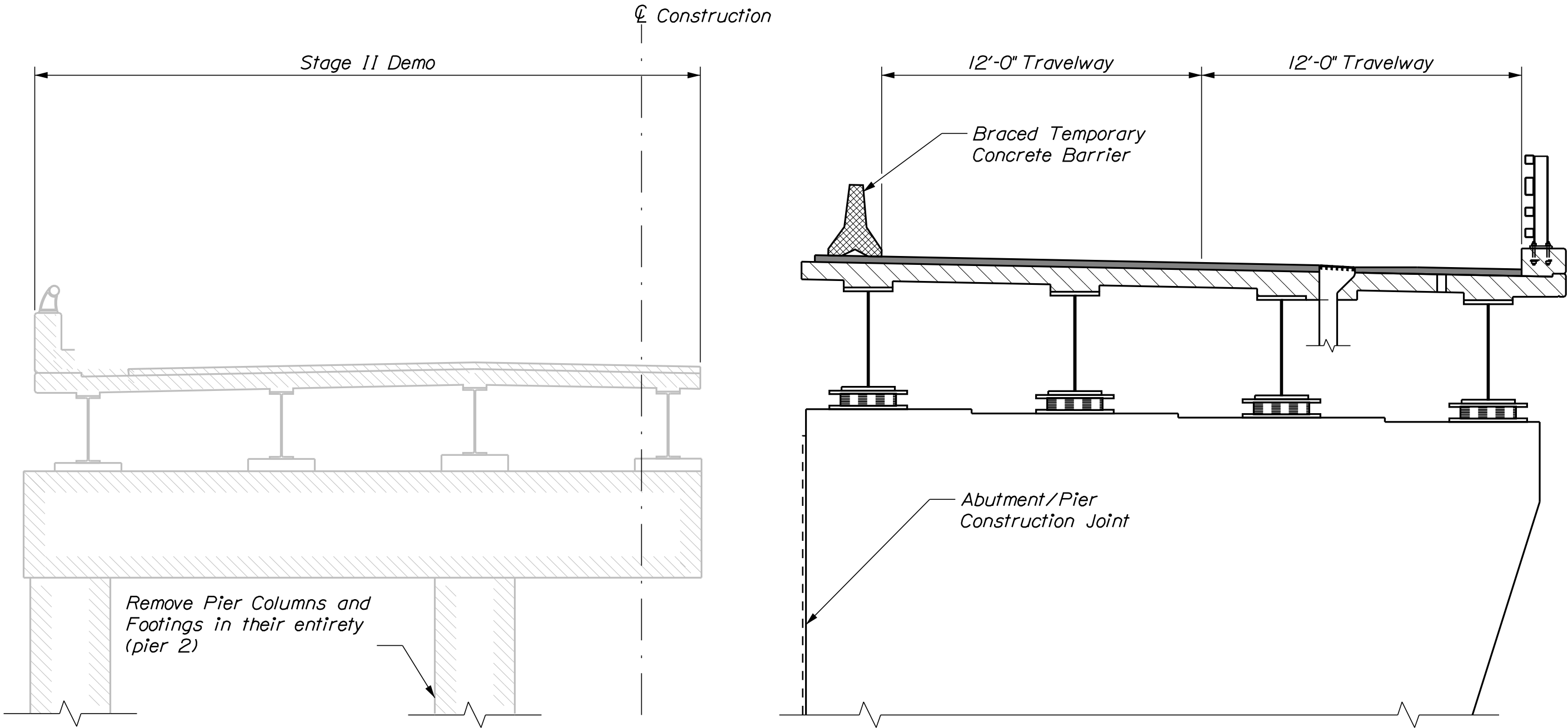
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13

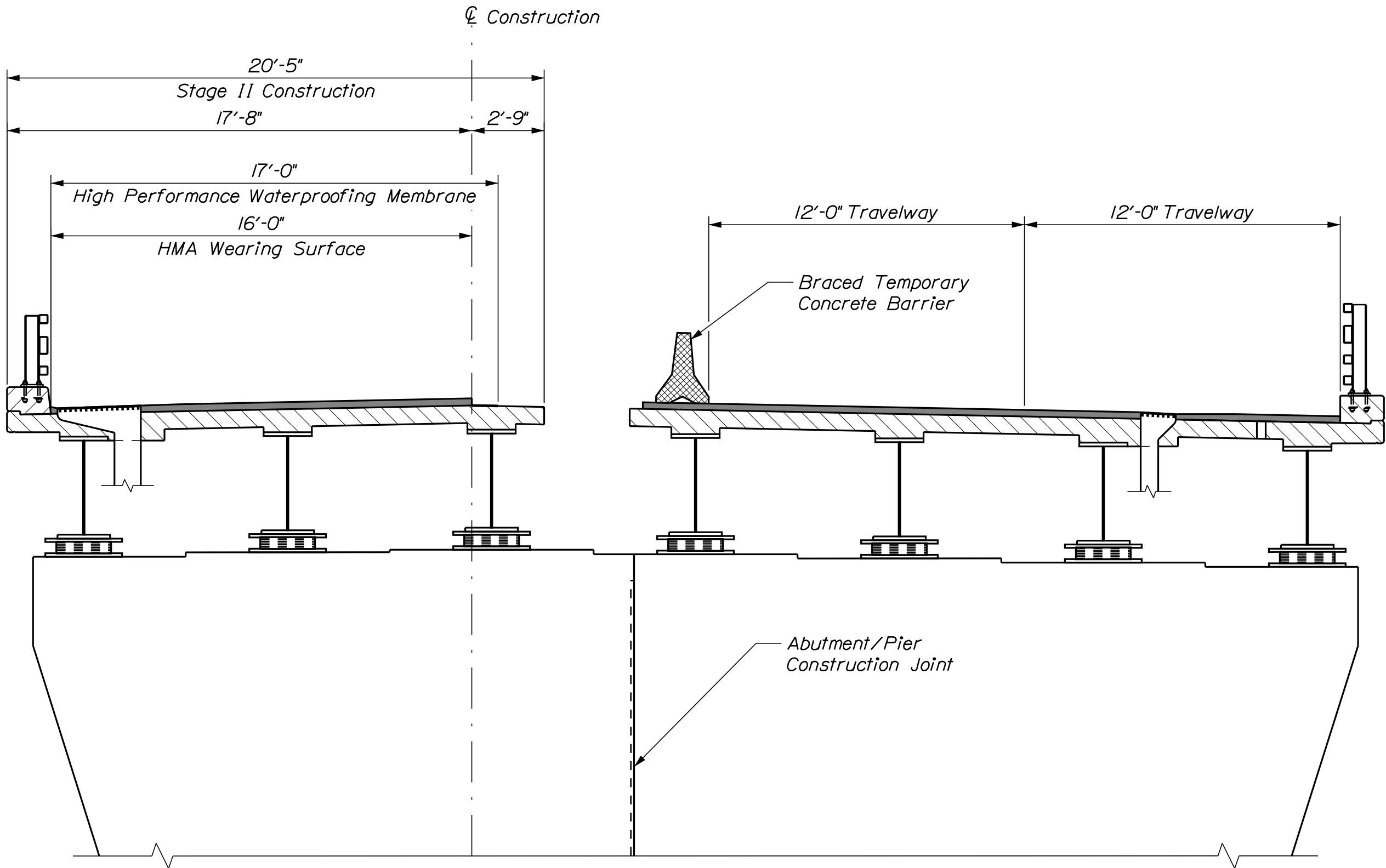
OF 53



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SIGNATURE	
	021720.00	
	WIN	
BRIDGE NO. 6630		BRIDGE PLANS
021720.00		WIN
BRIDGE NO. 6630		BRIDGE PLANS
DATE		DATE
P.E. NUMBER		P.E. NUMBER
SIGNATURE		SIGNATURE
MAR 2022		MAR 2022
BY		BY
BUN		BUN
AML		AML
LOCK		LOCK
DESIGN-DETAILED		DESIGN-DETAILED
CHECKED-REVIEWED		CHECKED-REVIEWED
DESIGN-DETAILED		DESIGN-DETAILED
REVISIONS 1		REVISIONS 1
REVISIONS 2		REVISIONS 2
REVISIONS 3		REVISIONS 3
REVISIONS 4		REVISIONS 4
FIELD CHANGES		FIELD CHANGES
BUCKNAM ROAD BRIDGE INTERSTATE 295 FALMOUTH CUMBERLAND COUNTY		STAGED CONSTRUCTION (1 OF 3)
SHEET NUMBER		14
		OF 53

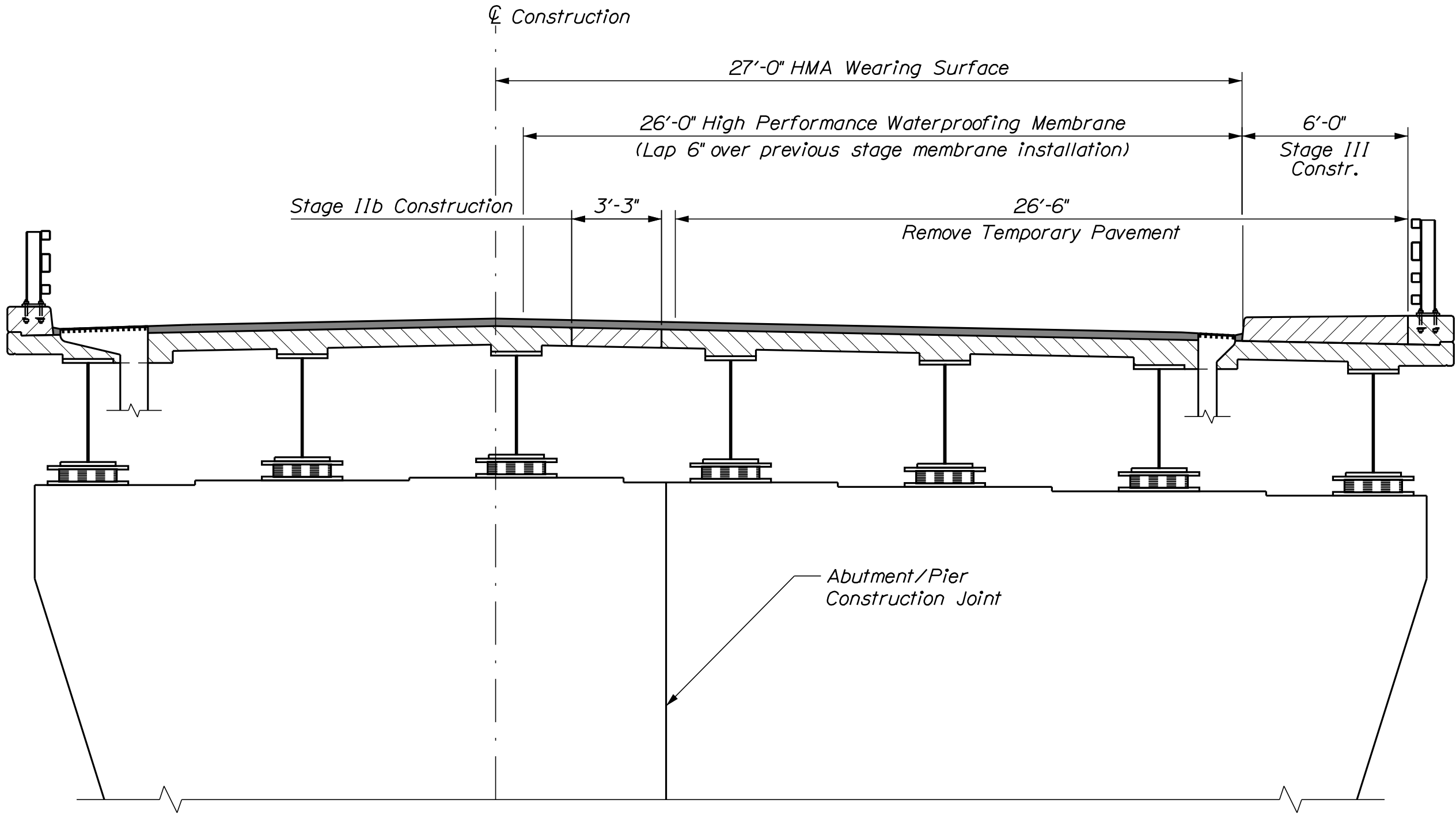


STAGE II DEMOLITION



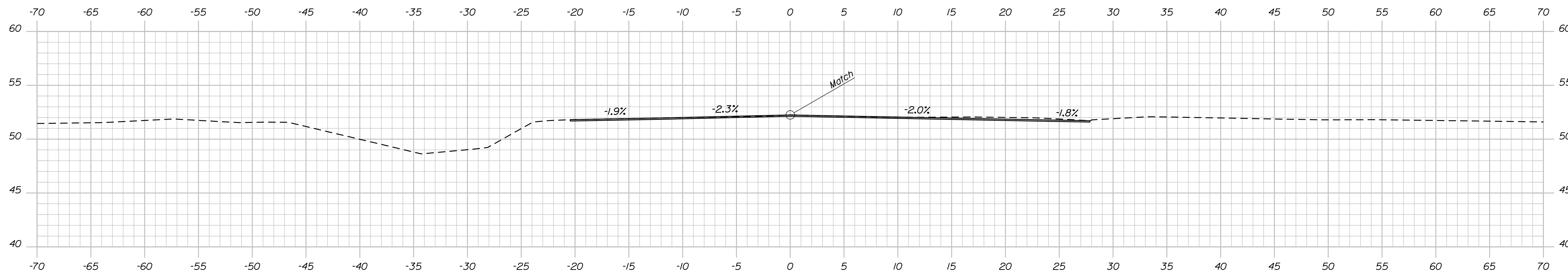
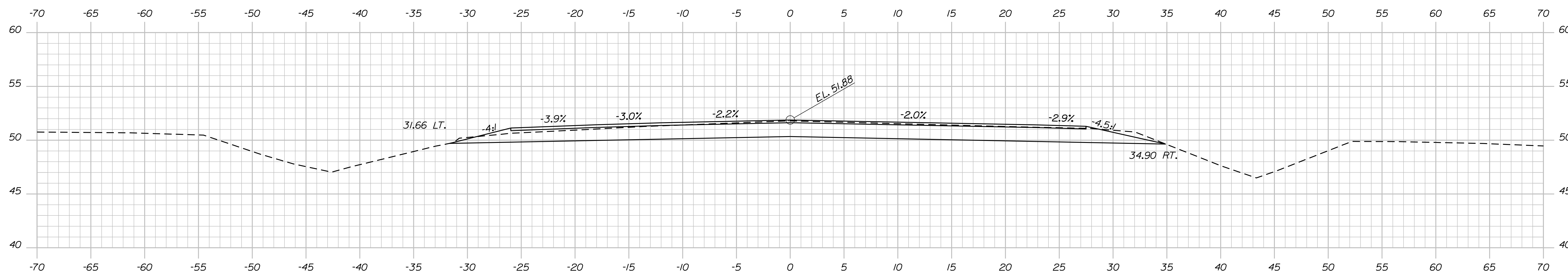
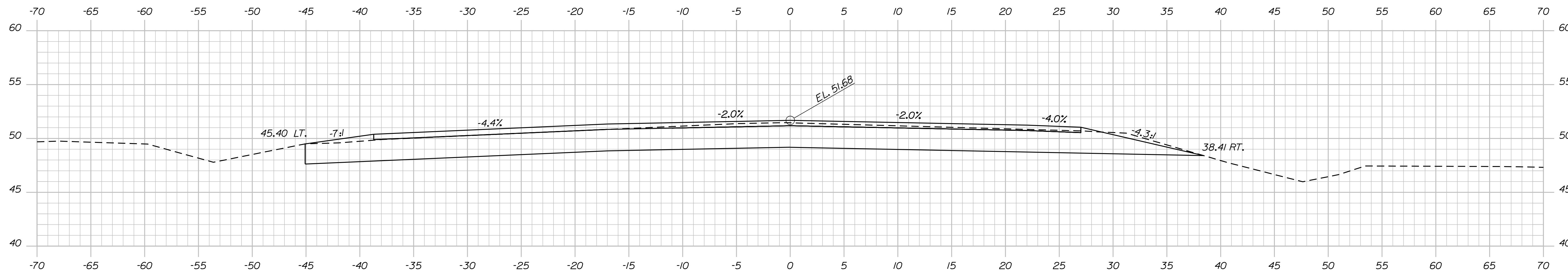
STAGE II CONSTRUCTION

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SIGNATURE			
	021720.00			
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STAGE III CONSTRUCTION

<div> <div>BUCKNAM ROAD BRIDGE</div> <div>INTERSTATE 295</div> <div>FALMOUTH CUMBERLAND COUNTY</div> </div>	<div>STATE OF MAINE</div> <div>DEPARTMENT OF TRANSPORTATION</div>	
	<div>021720.00</div>	
	<div>BRIDGE NO. 5830</div>	<div>BRIDGE PLANS</div>
<div> <div>SHEET NUMBER</div> <div>16</div> <div>OF 53</div> </div>	<div> <div>DATE</div> <div>MAR 2022</div> </div>	
	<div> <div>BY</div> <div>BUN</div> </div>	
	<div> <div>MAK</div> <div>AML</div> </div>	
	<div> <div>PROJ. MANAGER</div> <div>DESIGN-DETAILED</div> <div>CHECKED-REVIEWED</div> <div>DESIGN-DETAILED</div> <div>DESIGN-DETAILED</div> <div>REVISIONS 1</div> <div>REVISIONS 2</div> <div>REVISIONS 3</div> <div>REVISIONS 4</div> <div>FIELD CHANGES</div> </div>	
	<div> <div>SIGNATURE</div> <div>P.E. NUMBER</div> <div>DATE</div> </div>	



STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

021720.00

1720

021720

BRIDGE NO. 5830

BRIDGE PLANS

BUCKNAM ROAD BRIDGE
INTERSTATE 295

CROSS SECTIONS

SHEET NUMBER

17

OF 53

Sta. 1+00.00 to Sta. 1+50.00

Date: 4/6/2022

Username:

Division: BRIDGE

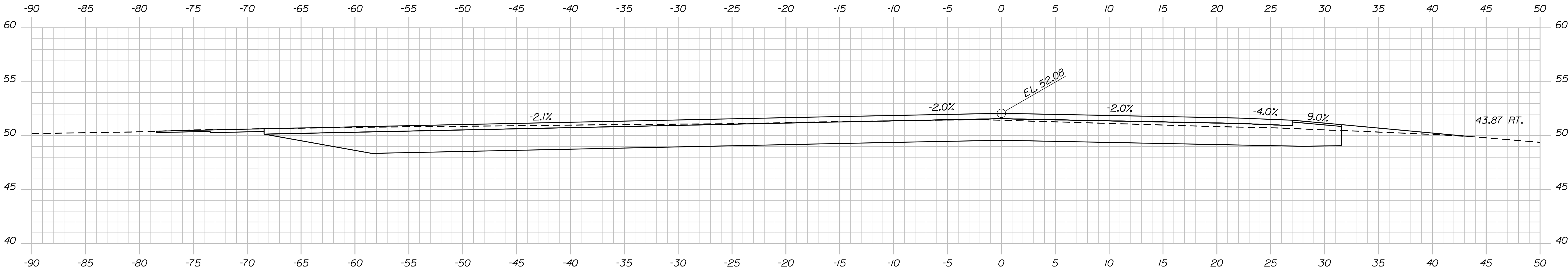
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Date:4/6/2022

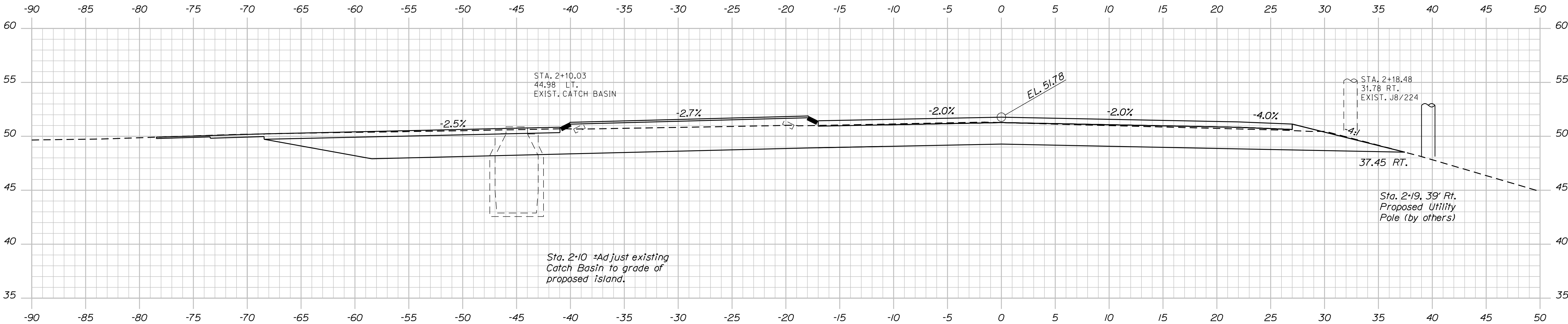
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Division: BRIDGE

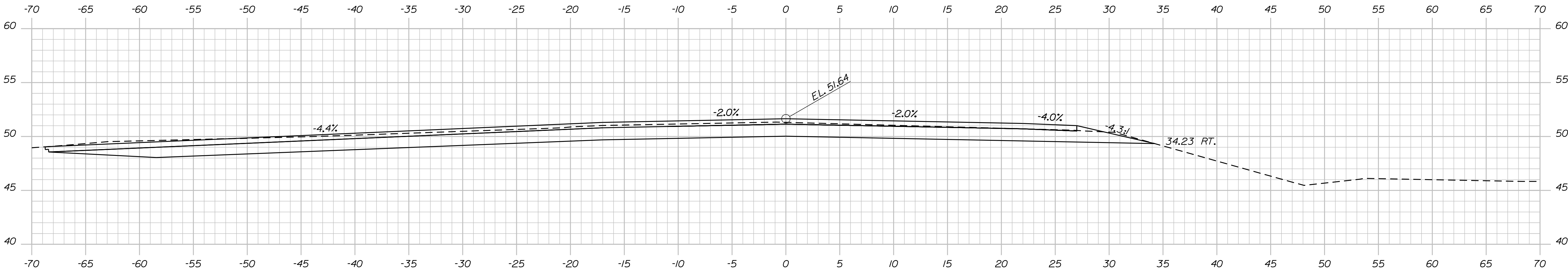
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2+25.00



2+00.00



1+75.00

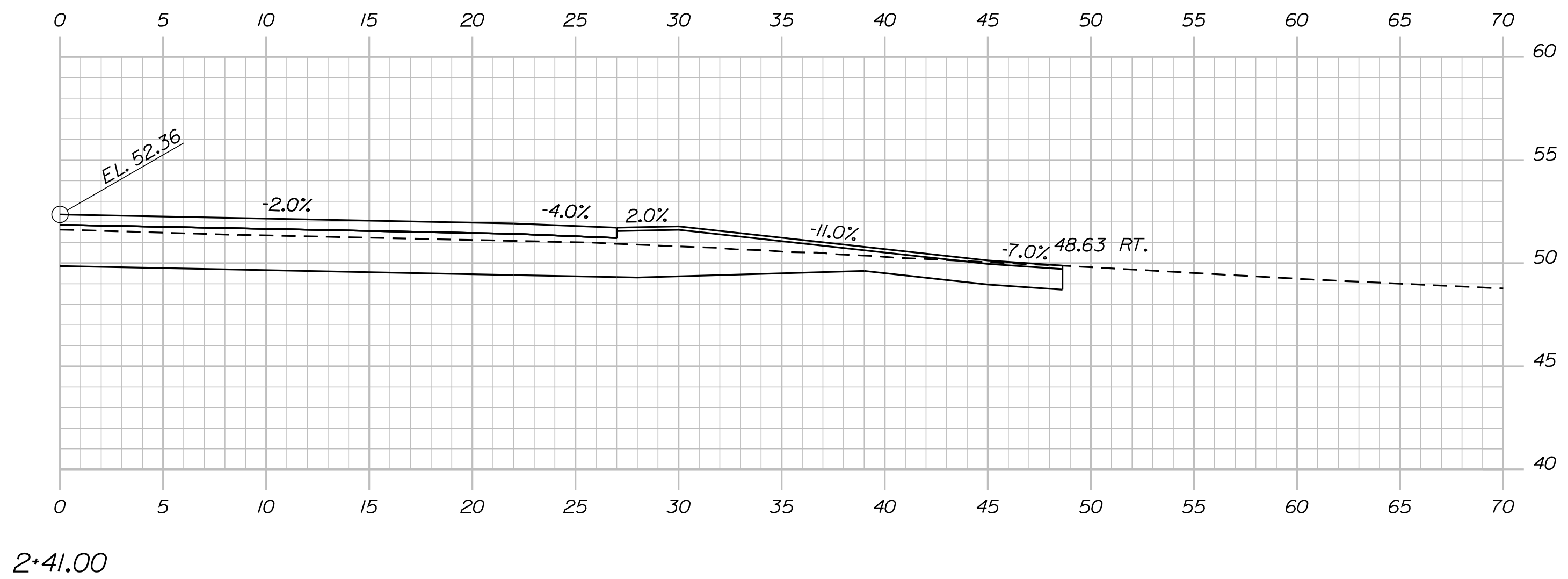
STATE OF MAINE	
DEPARTMENT OF TRANSPORTATION	
021720.00	
WIN	021720.00
BRIDGE NO. 6830	
BRIDGE PLANS	

PROJ. MANAGER	BY	DATE
DESIGN-DETAILED	MAK	MAR 2022
CHECKED-REVIEWED	BIN	MAR 2022
DESIGN-DETAILED	AML	MAR 2022
DESIGN-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BUCKNAM ROAD BRIDGE	
INTERSTATE 295	
CUMBERLAND COUNTY	
FALMOUTH	
CROSS SECTIONS	

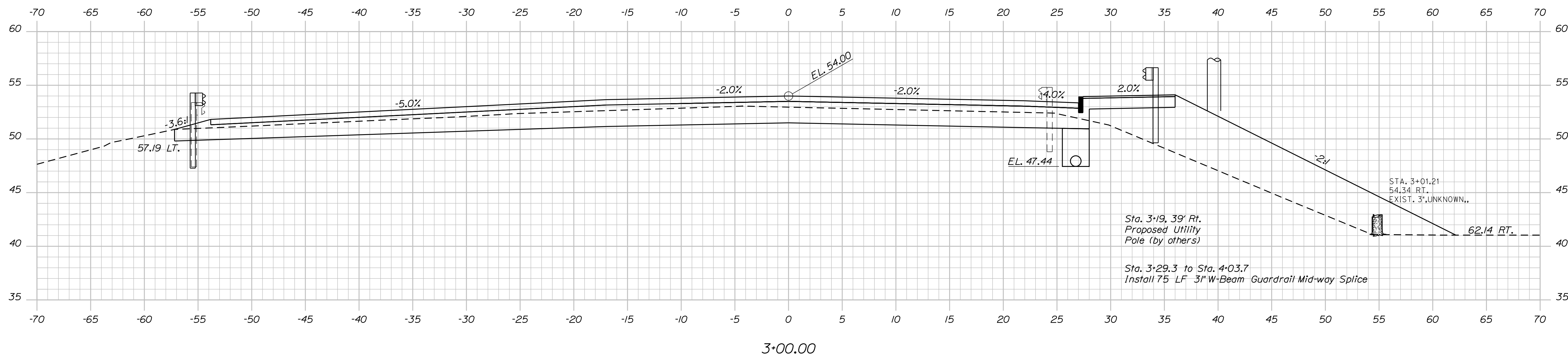
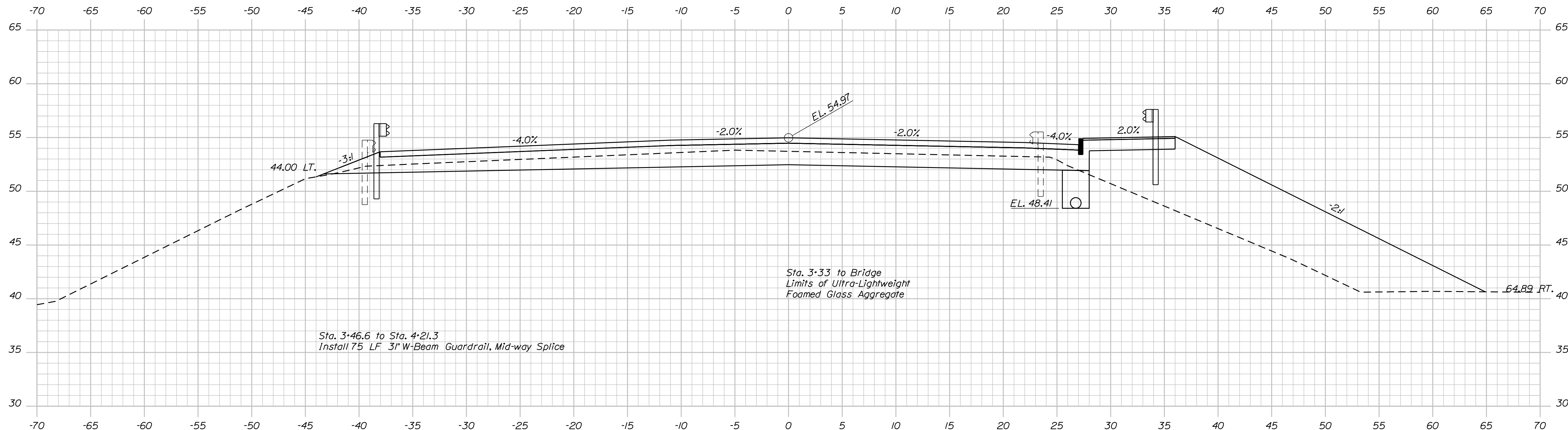
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OF 53	

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Sta. 2+41.00 to Sta. 2+75.00

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Sta. 3+00.00 to Sta. 3+25.00

BRIDGE NO. 5830	WIN	021720.00	BRIDGE PLANS
		021720.00	

PROJ. MANAGER	MAK	BY	DATE
DESIGN-DETAILED	OCK	BJN	MAR 2022
CHECKED-REVIEWED	RPM	JML	MAR 2022
DESIGN-DETAILED02			
DESIGNS-DETAILED03			
REVISIONS 1			P.E. NUMBER
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			DATE
FIELD CHANGES			

BUCKNAM ROAD BRIDGE

INTERSTATE 295

FALMOUTH CUMBERLAND COUNTY

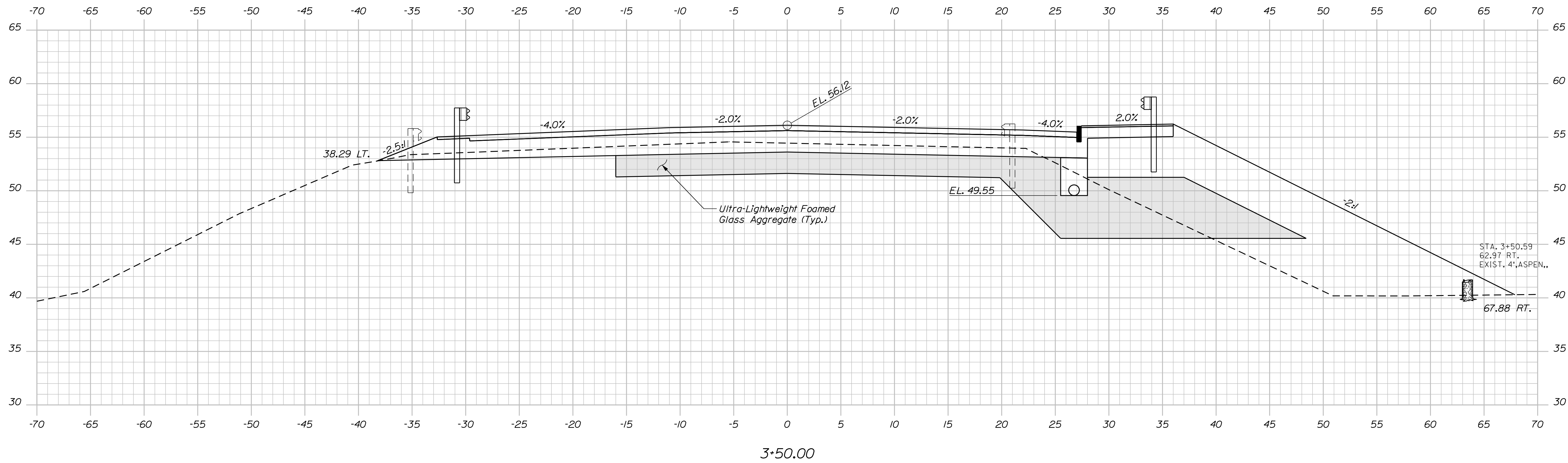
CROSS SECTIONS

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OF 53

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SHEET NUMBER

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OF 53

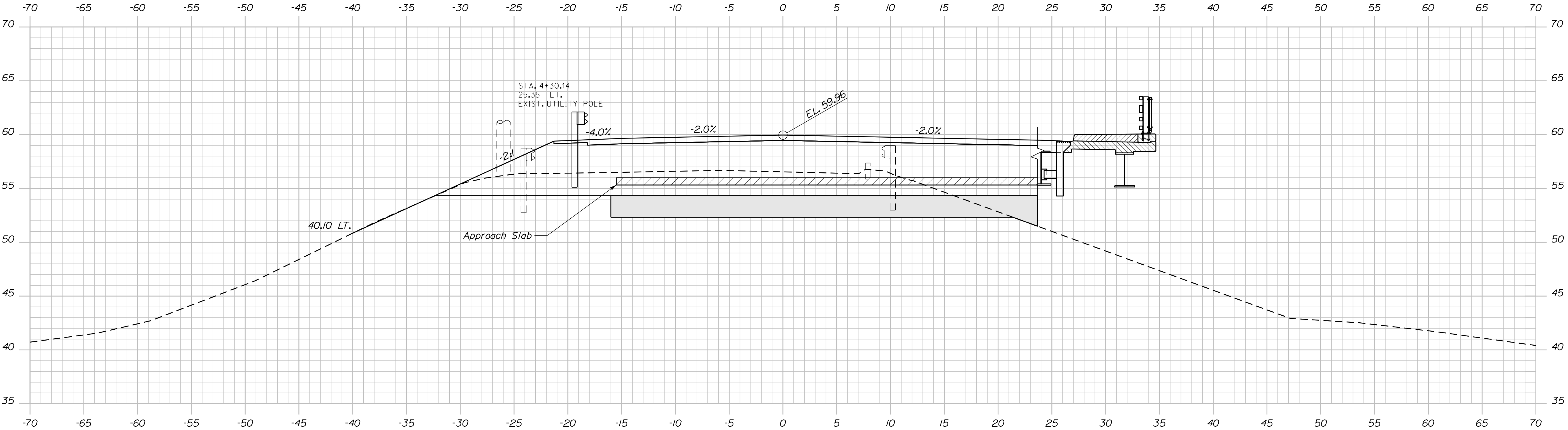
Date: 4/6/2022

Username:

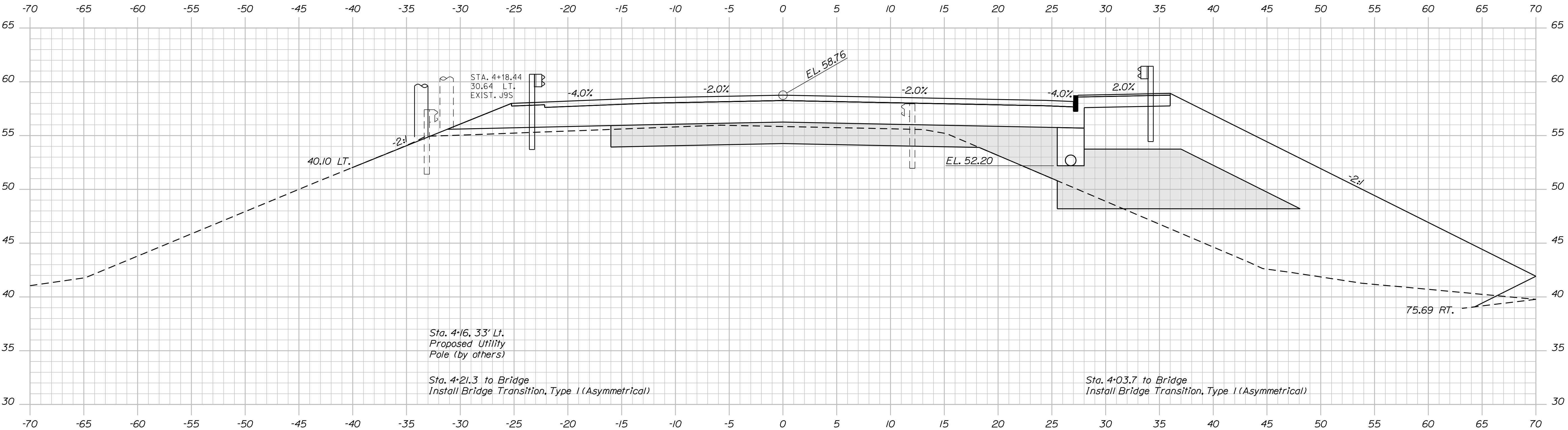
Division: BRIDGE

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4+33.15 to 6+78.85
 Bridge



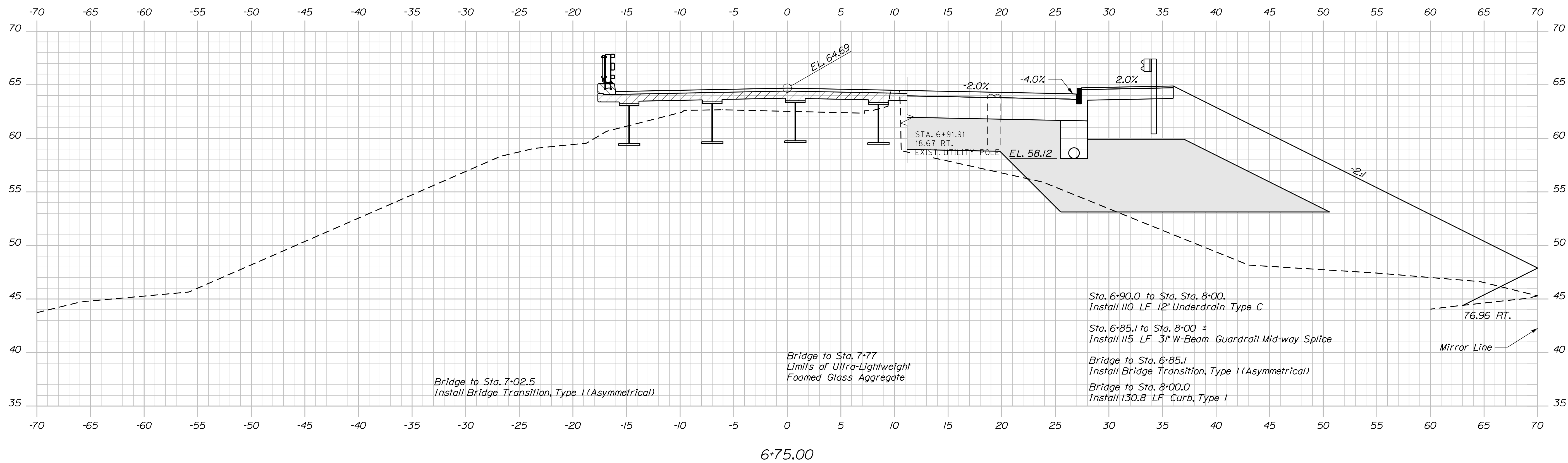
4+25.00



4+00.00

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		021720.00		WIN		021720.00		BRIDGE NO. 6630		BRIDGE PLANS	
BUCKNAM ROAD BRIDGE		INTERSTATE 295		CUMBERLAND COUNTY		FALMOUTH		CROSS SECTIONS		SHEET NUMBER		22	
BY		DATE		SIGNATURE		P.E. NUMBER		DATE		FIELD CHANGES		OF 53	
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A/N													
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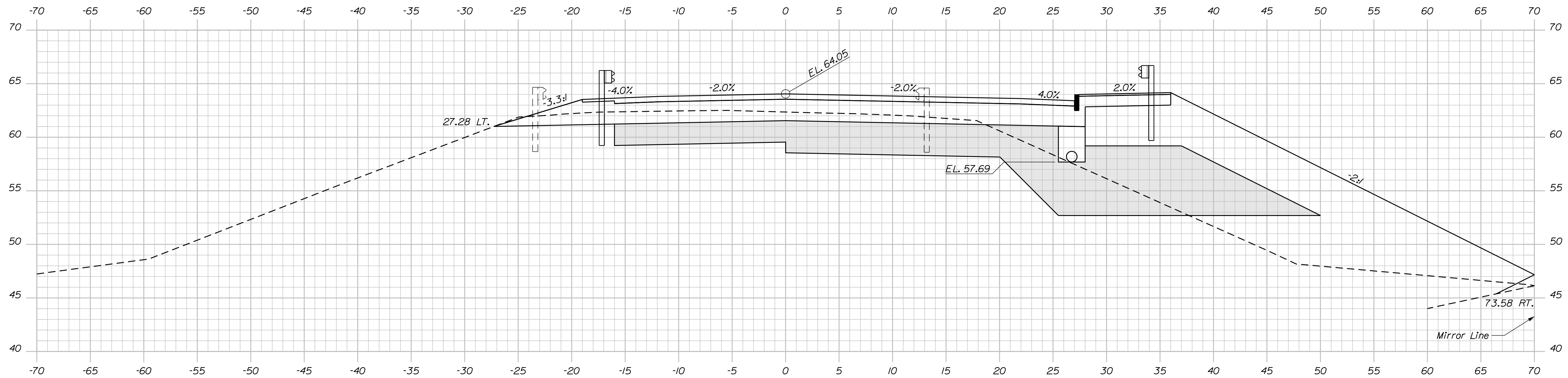
SHEET NUMBER

23

OF 53

Sta. 6+75.00 to Sta. 7+00.00

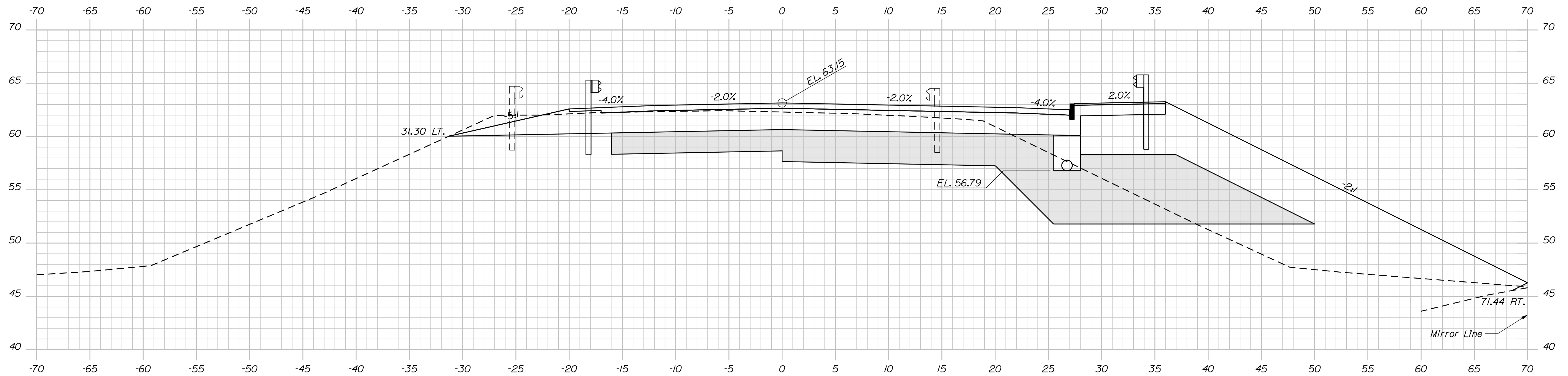
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7+25.00

Sta. 7+25.00 to Sta. 7+50.00

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7+75.00

Sta. 7+75.00 to Sta. 8+00.00

BRIDGE NO. 5830
021720.00
BRIDGE PLANS

DAIRY

REVISIONS 4	-----	-----
FIELD CHANGES		

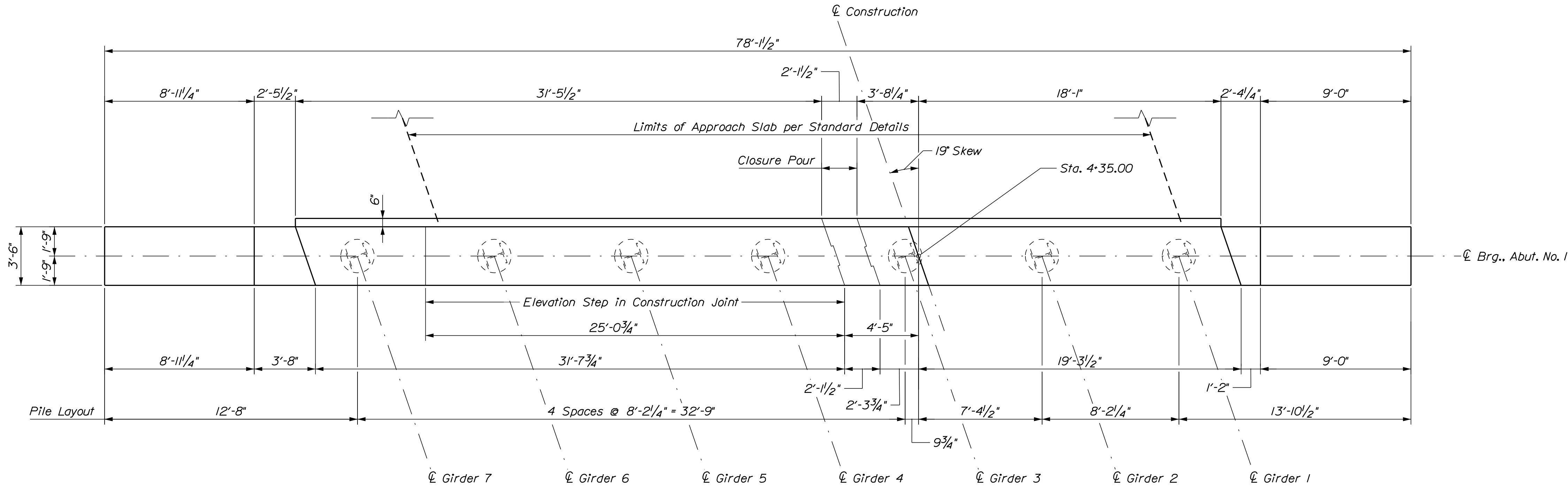
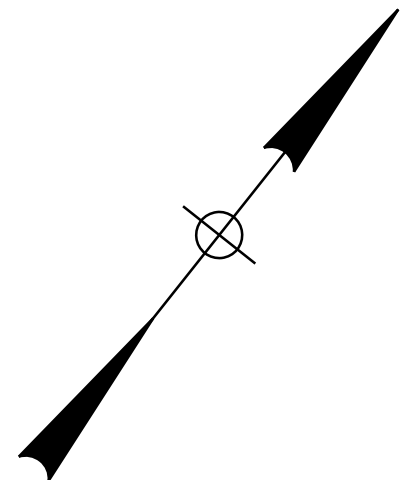
CROSS SECTIONS

DF 53

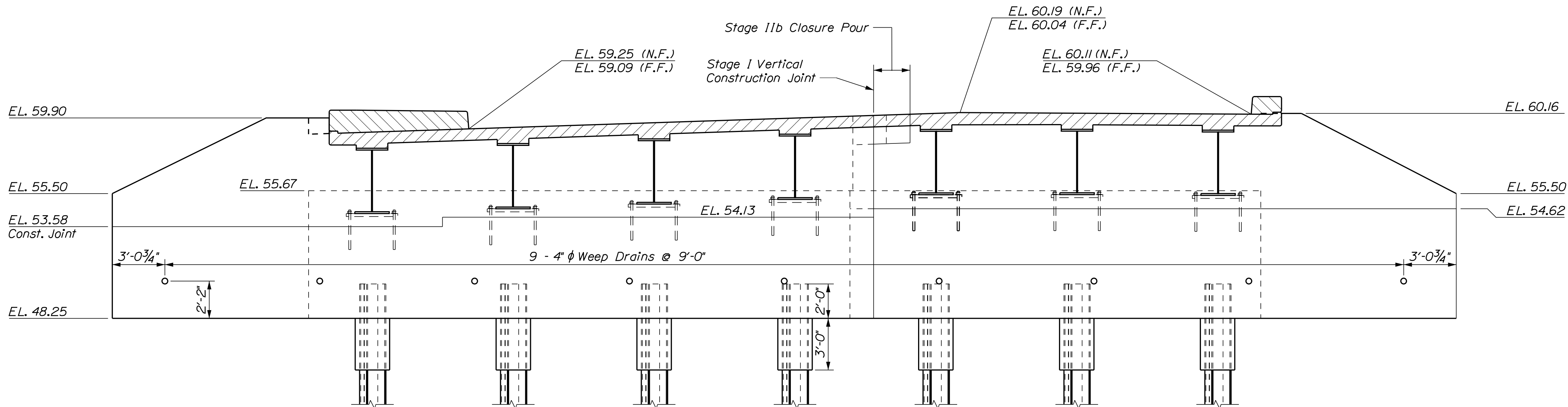


1. Abutments and wingwalls, shall be backfilled with Granular Borrow. Pay limits will be the structural excavation limits in cut areas and a vertical plane located 10 feet behind the walls in fill areas, or as indicated in typical abutment section.
2. Reinforcing steel shall have a minimum concrete cover of 2 inches in the walls and 3 inches in the footings unless otherwise noted.
3. Place drains with a 4-inch diameter in the abutments at 10 feet maximum spacing. The exact location will be determined by the Resident.
4. Cover joints where waterstops are not required in accordance with Standard Details Section 502.
5. 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.
6. Install Drainage Geocomposite behind the abutments and wingwalls up to the approach slab seat elevation in accordance with Special Provision Section 620, Drainage Geocomposite.
7. The Temporary Girder Supports, including anchor rods, leveling plates and any associated hardware and labor required for installation shall not be paid for directly. Payment shall be incidental to related contract items.

2. Estimate of piles required:
Abutment No. 1: 7 HP 14 x 117 @ 70 feet
Abutment No. 2: 7 HP 14 x 117 @ 100 feet
3. The pile lengths given include 5 feet to 10 feet of additional length to account for variable bedrock.
4. H-pile material shall be ASTM A572, Grade 50.
5. H-pile splices shall be in accordance with Standard Detail 501(03).
6. 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, Spliced and Tips.
7. Piles shall not be out of position shown by more than 2 inches in any direction. The orientation of piles shall be within 10 degrees of the orientation shown on the plan.
8. The Contractor shall submit to the Department, for review and acceptance, their proposed pile driving equipment with a compiled "Pile Driving and Equipment Data Form," Figure 1, of Standard Section 501 - Foundation Piles. Approval of the proposed pile driving equipment by the Department will be based on the Department - conducted wave equation analyses and the criteria specified in Section 501 and Subsection 501.042, Equipment for Driving Piles. If the Department - conducted wave equation analyses show that the proposed system(s) is unacceptable, the Contractor shall modify or replace the proposed driving equipment in an amendment of the QCP, at their own expense, until subsequent wave equation analyses by the Department indicate the pile can be driven to the required resistance, without damage or excessive blows.
9. The Contractor shall provide access for the agents of the Department to perform three (3) dynamic load tests with signal matching and restrrike, as specified in Special Provision 501 - Dynamic Load Test, to confirm the nominal resistance of the piles. The dynamic pile load tests will be complete on the first production pile at Abutment 1, Abutment 2, and Restrike and Pier 1. The required nominal resistance for the piles are the maximum factored axial pile load divided by 0.65 for the controlling Strength Limit State. The Contractor may drive production piles to the preliminary driving criteria, however pile cut-off will not be permitted until completion of restrrike testing and establishment of the final driving criteria.
10. Pile splices are not permitted in the upper 15 feet of the piles.



ABUTMENT NO. 1 PLAN



ABUTMENT NO. 1 ELEVATION

TEMPORARY GIRDER SUPPORTS

Girder	EL.
G1	55.31
G2	55.35
G3	55.36
G4	55.09
G5	54.82
G6	54.55
G7	54.27

STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

021720.00

WIN

021720.00

BRIDGE NO. 6630

BRIDGE PLANS

BUCKNAM ROAD BRIDGE

INTERSTATE 295

CUMBERLAND COUNTY

FALMOUTH

ABUTMENT NO. 1 PLAN

AND ELEVATION

SHEET NUMBER

27

OF 53

DATE

MAR 2022

DATE

MAR 2022

BY

BIN

AML

PROJ. MANAGER

DESIGN-DETAILED

CHECKED-REVIEWED

DESIGN-DETAILED

REVISIONS 1

REVISIONS 2

REVISIONS 3

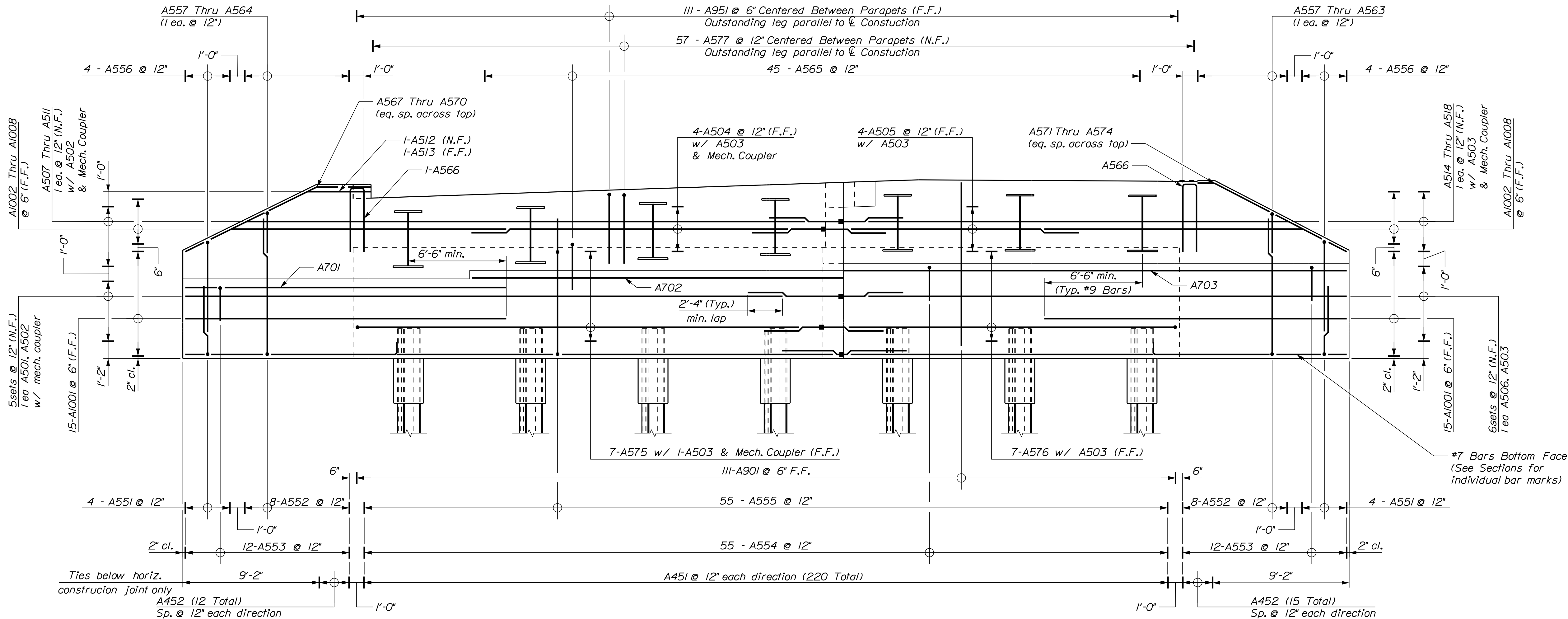
REVISIONS 4

FIELD CHANGES

SIGNATURE

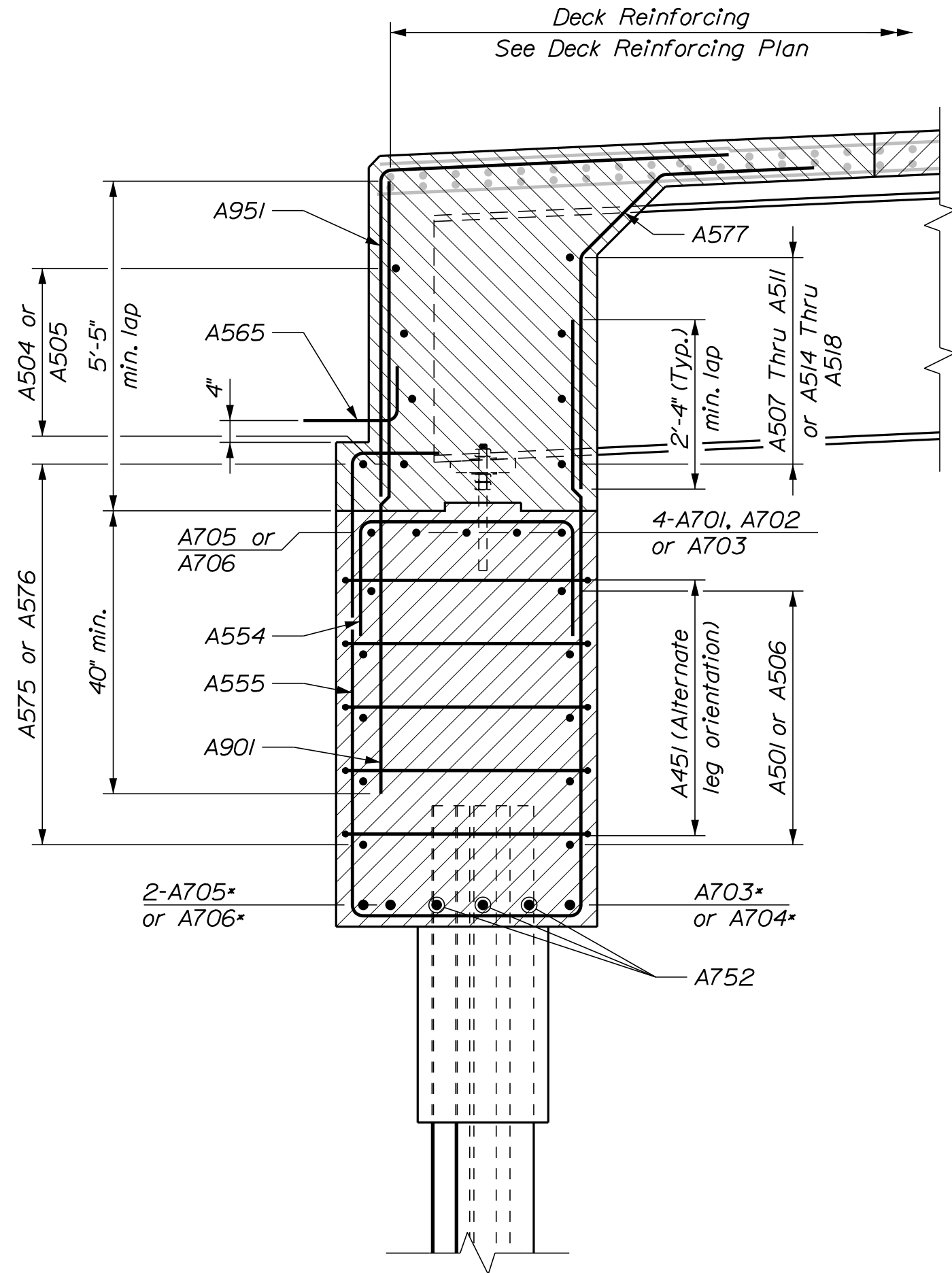
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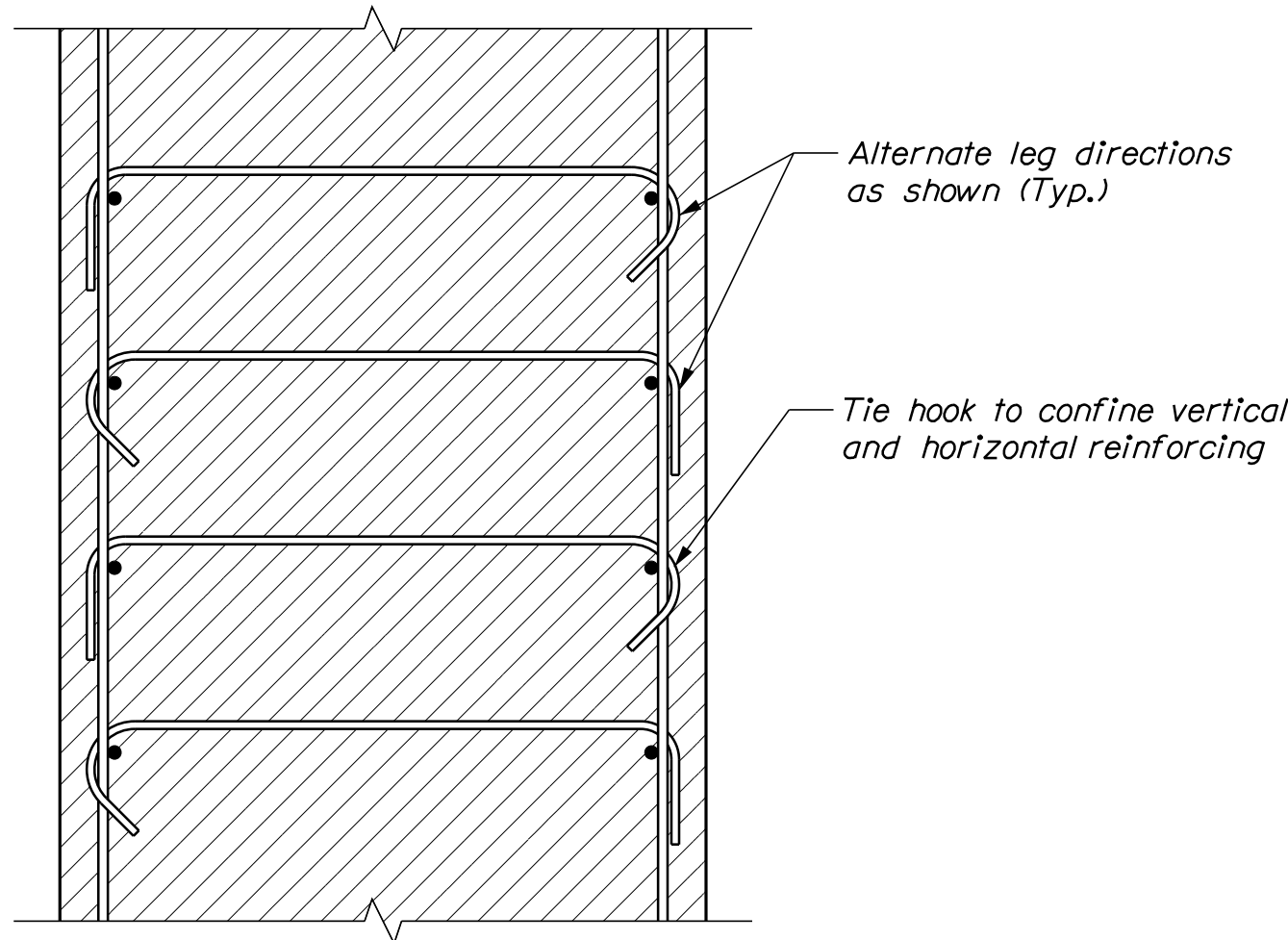
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BUCKNAM ROAD BRIDGE INTERSTATE 295 FALMOUTH CUMBERLAND COUNTY					PROJ. MANAGER		MAK	BY	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION		
ABUTMENT NO. 1 REINFORCING ELEVATION					DESIGN-DETAILED	OCK	BUN	MAR 2022	SIGNATURE	021720.00		
					CHECKED-REVIEWED	RPM	AML	MAR 2022				
					DESIGN2-DETAILED2							
					DESIGN3-DETAILED3							
					REVISIONS 1							
					REVISIONS 2				DATE	BRIDGE NO. 5830	WIN 021720.00 BRIDGE PLANS	
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SHEET NUMBER												
28												
OF 53												

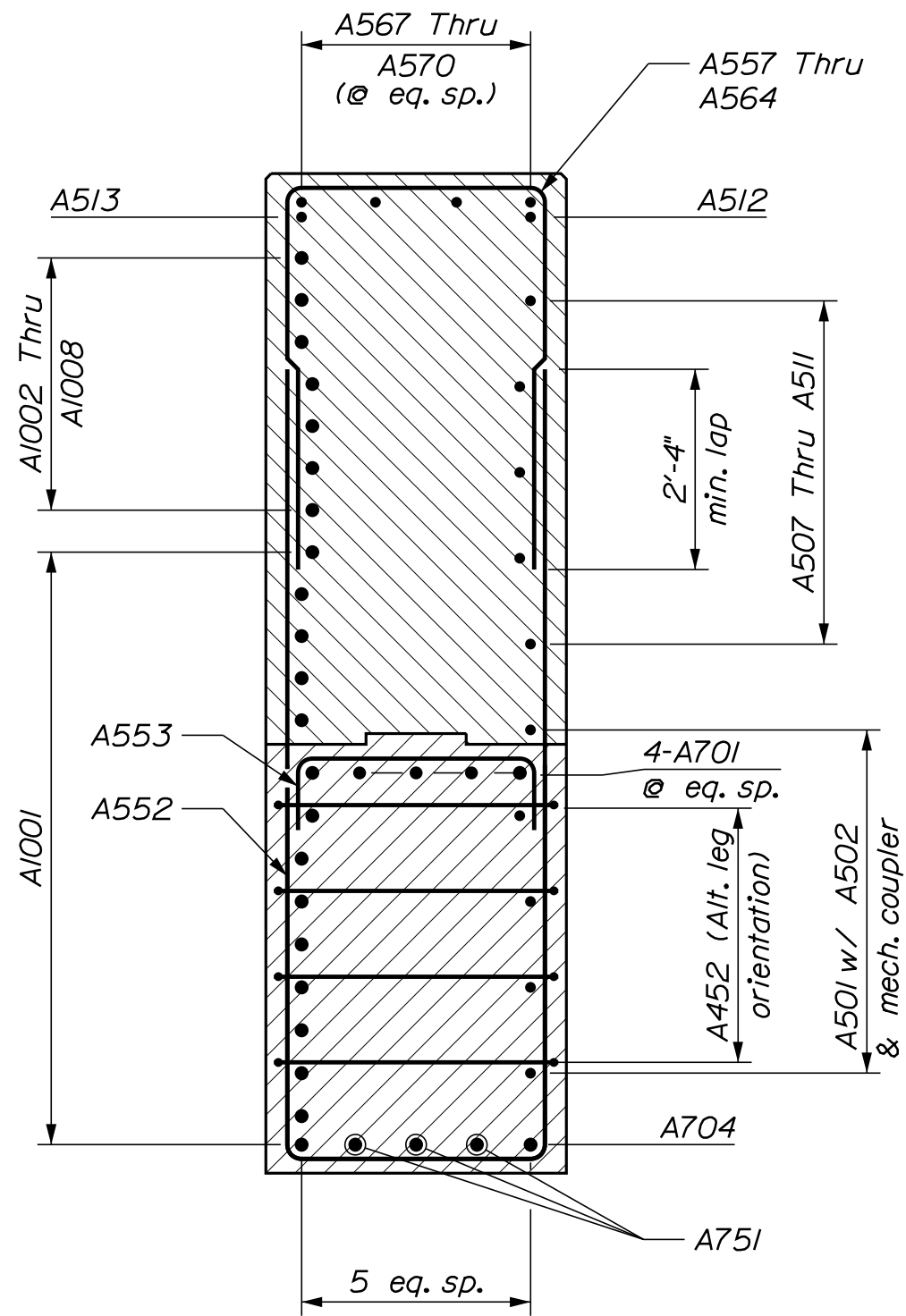


ABUTMENT SECTION

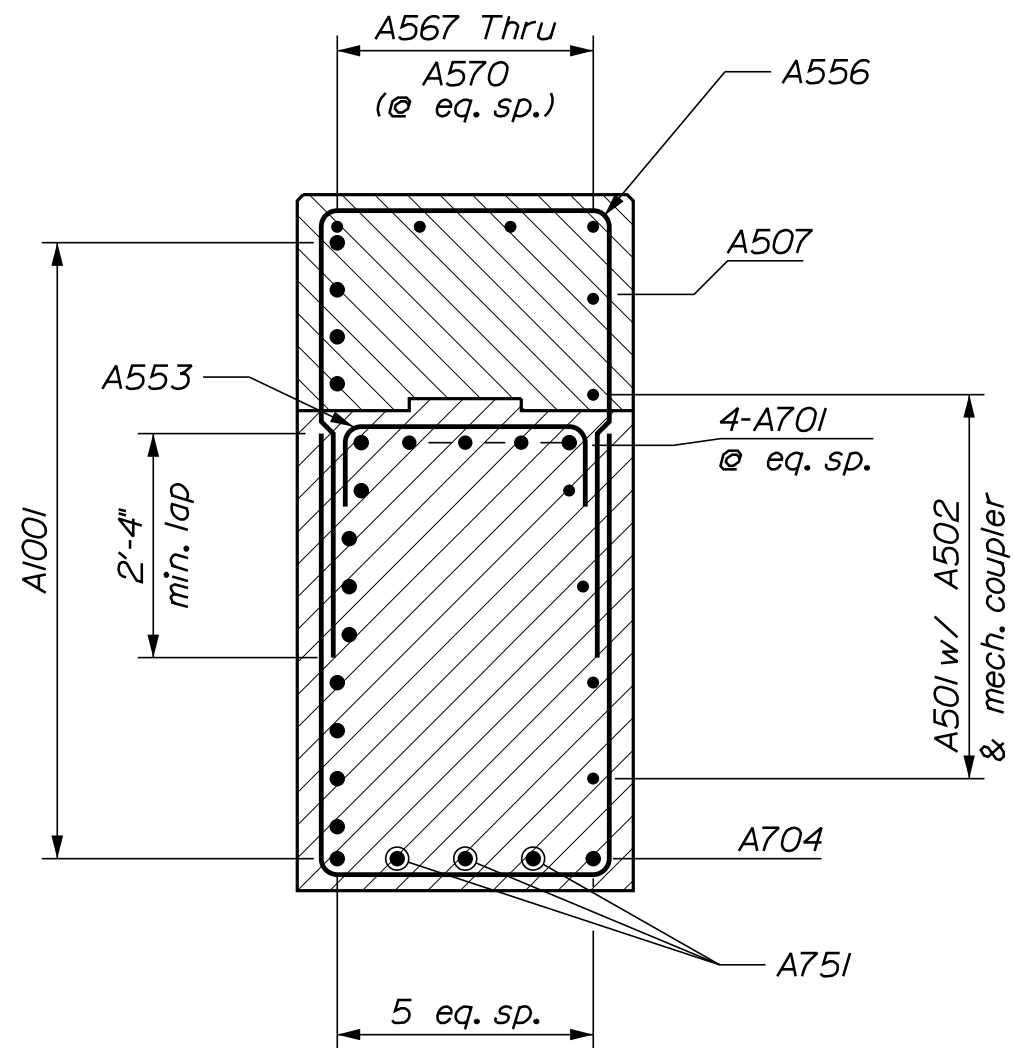
#7 bars indicated with * shall be spliced w/ one A707 & mechanical coupler at vertical stage construction joint.



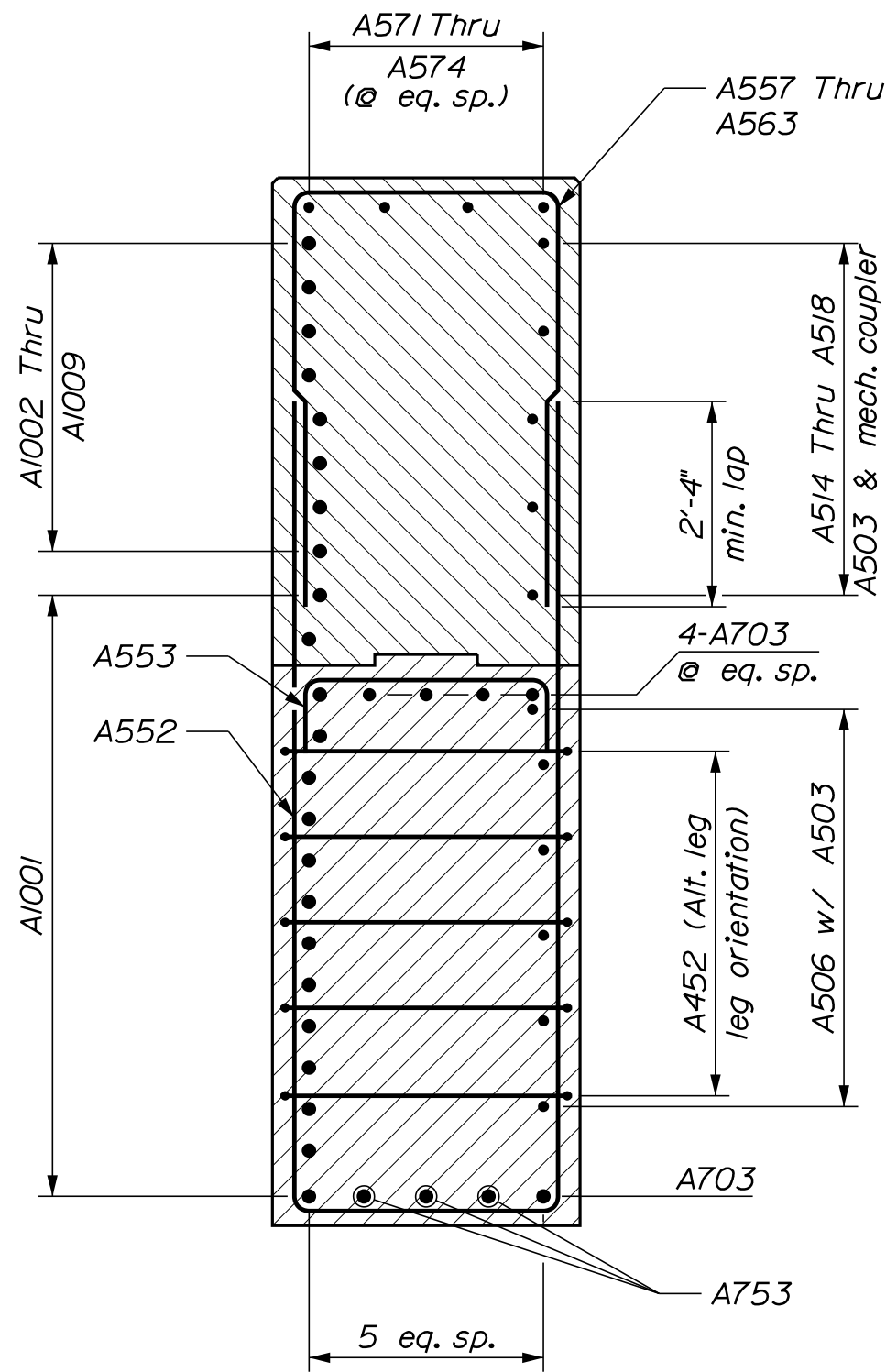
SUBSTRUCTURE TIE DETAIL
Typical Abutments & Pier



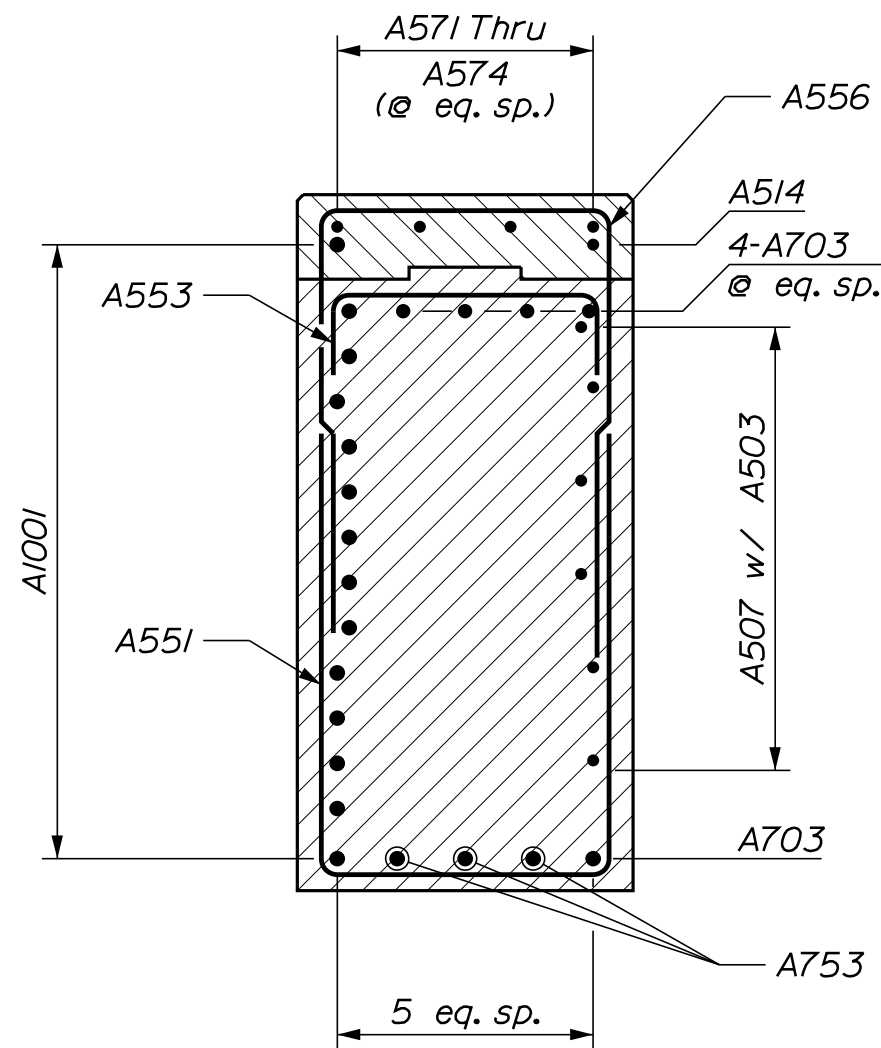
SOUTHERLY WING SECTION
THROUGH PARAPET



SOUTHERLY WING SECTION
THROUGH END OF WING

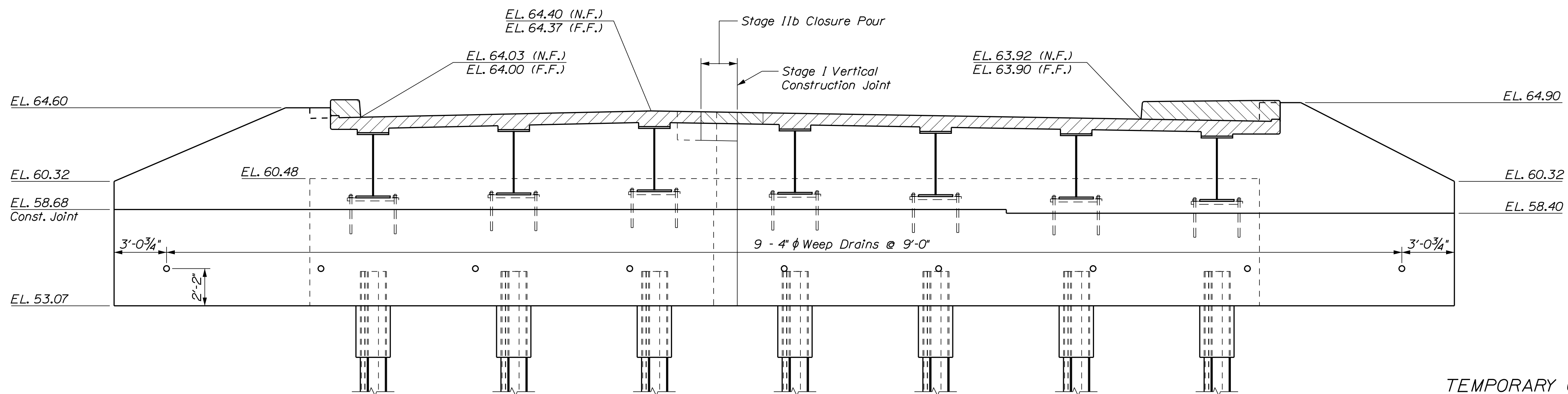
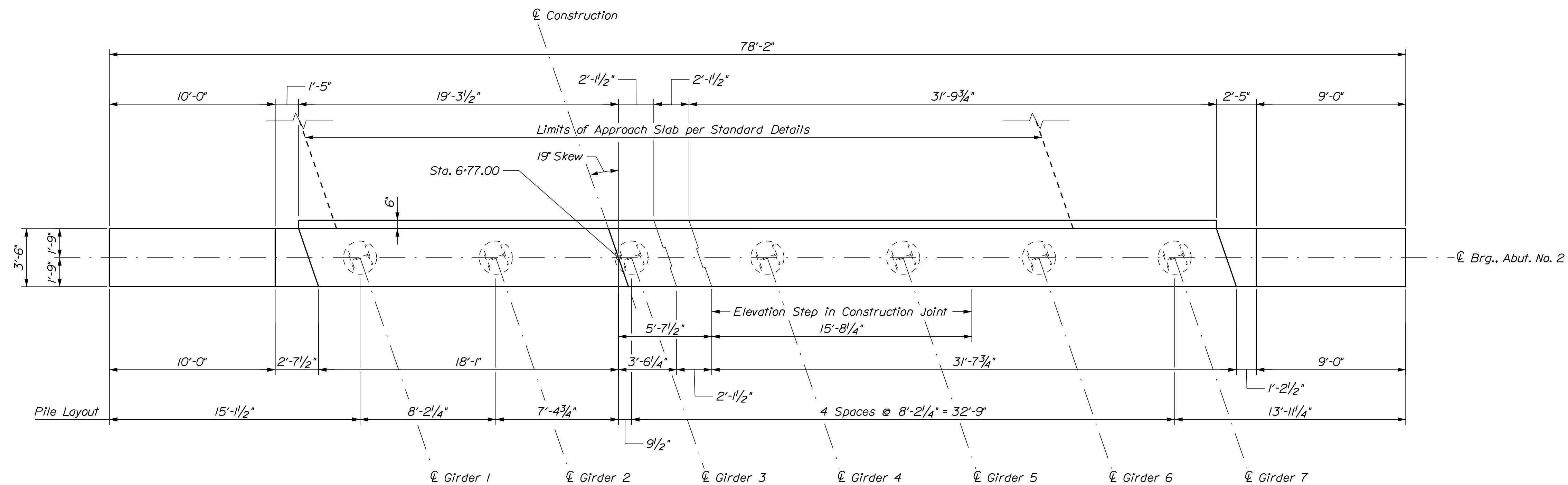


NORTHERLY WING SECTION
THROUGH PARAPET

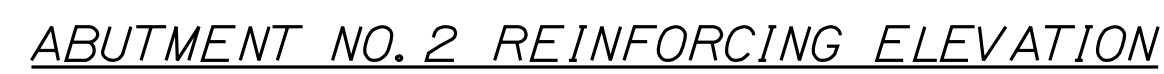


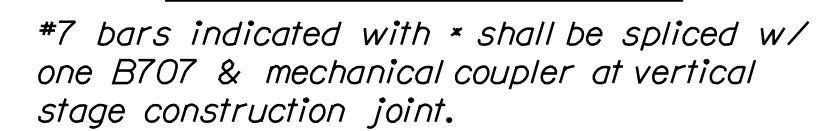
NORTHERLY WING SECTION
THROUGH END OF WING

STATE OF MAINE DEPARTMENT OF TRANSPORTATION										021720.00																			
BRIDGE NO. 5830										WIN																			
021720.00										BRIDGE PLANS																			
BUCKNAM ROAD BRIDGE INTERSTATE 295 FALMOUTH CUMBERLAND COUNTY										PROJ. MANAGER DESIGN-DETAILED CHECKED-REVIEWED DESIGN2-DETAILED2 DESIGN3-DETAILED3										DATE MAR. 2022 MAR. 2022									
ABUTMENT NO. 1 SECTIONS										SIGNATURE										P.E. NUMBER									
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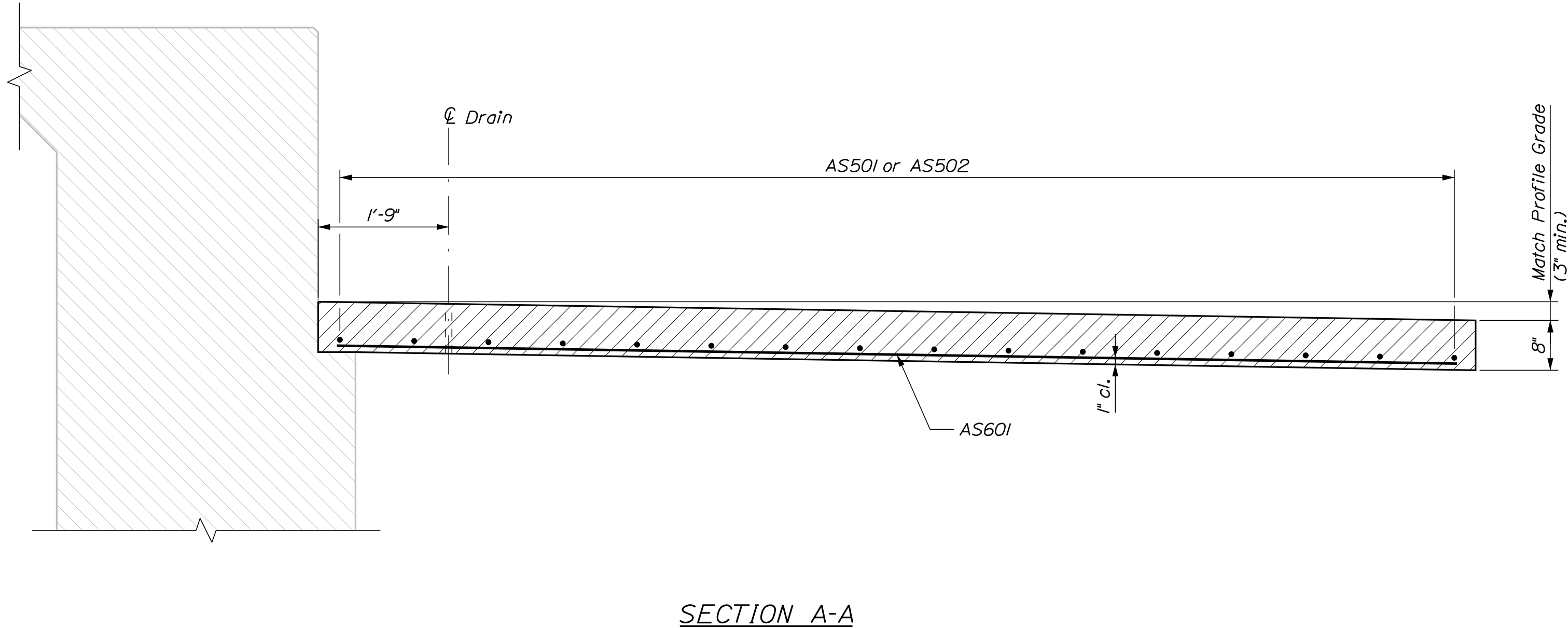


<i>Girder</i>	<i>EL.</i>
<i>G1</i>	59.32
<i>G2</i>	59.50
<i>G3</i>	59.64
<i>G4</i>	59.51
<i>G5</i>	59.37
<i>G6</i>	59.23
<i>G7</i>	59.10

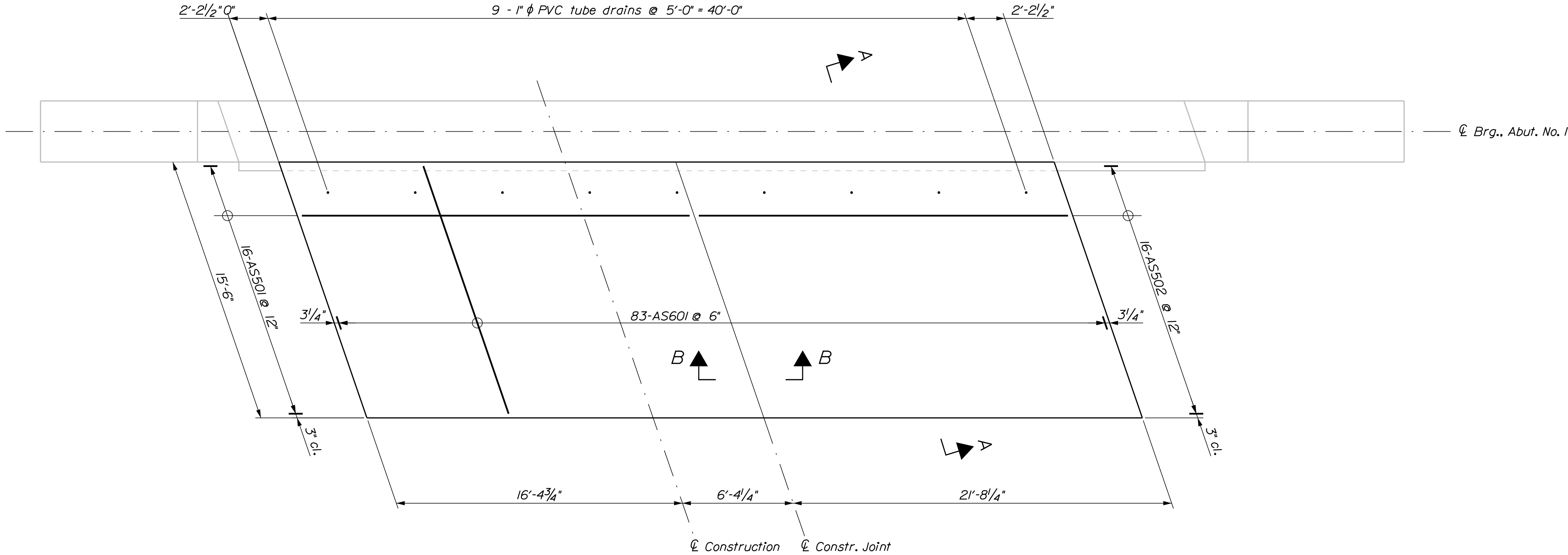




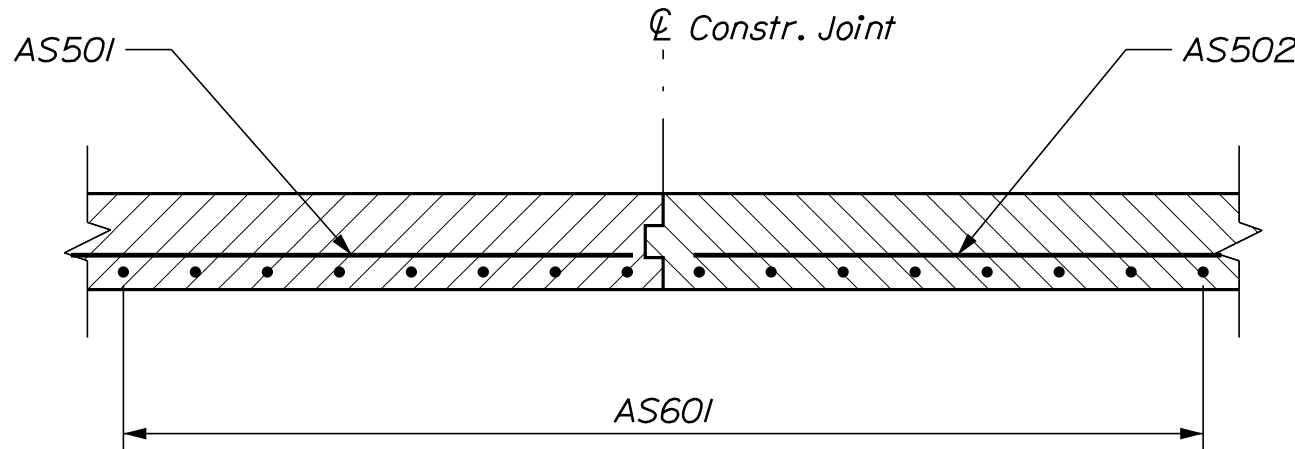
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						CHECKED-REVIEWED	RM	AML	MAR 2022			
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		REVISONS 2										
		REVISONS 3										
		REVISONS 4										
		FIELD CHANGES							DATE			



SECTION A-A



APPROACH SLAB PLAN
Abutment No. 1 shown, Abutment No. 2 opposite hand



SECTION B-B

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

021720.00

BRIDGE NO. 6830
WIN
021720.00

BRIDGE PLANS

BUCKNAM ROAD BRIDGE
INTERSTATE 295
FALMOUTH CUMBERLAND COUNTY

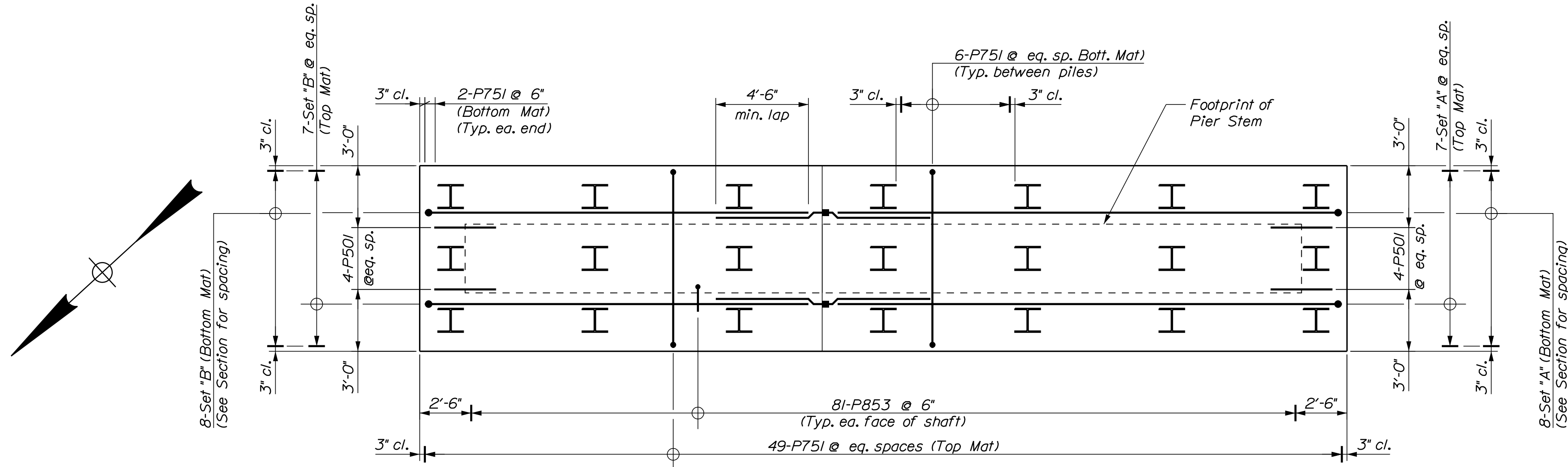
APPROACH SLAB DETAILS

SHEET NUMBER

33

OF 53

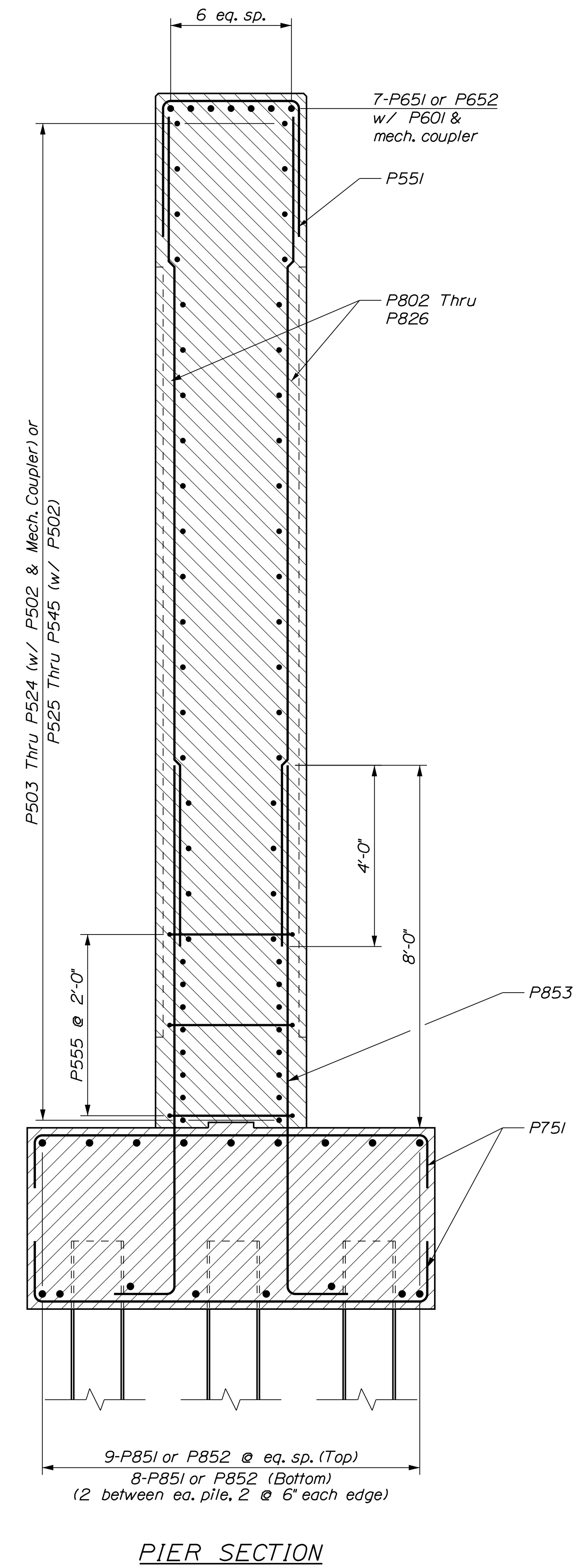
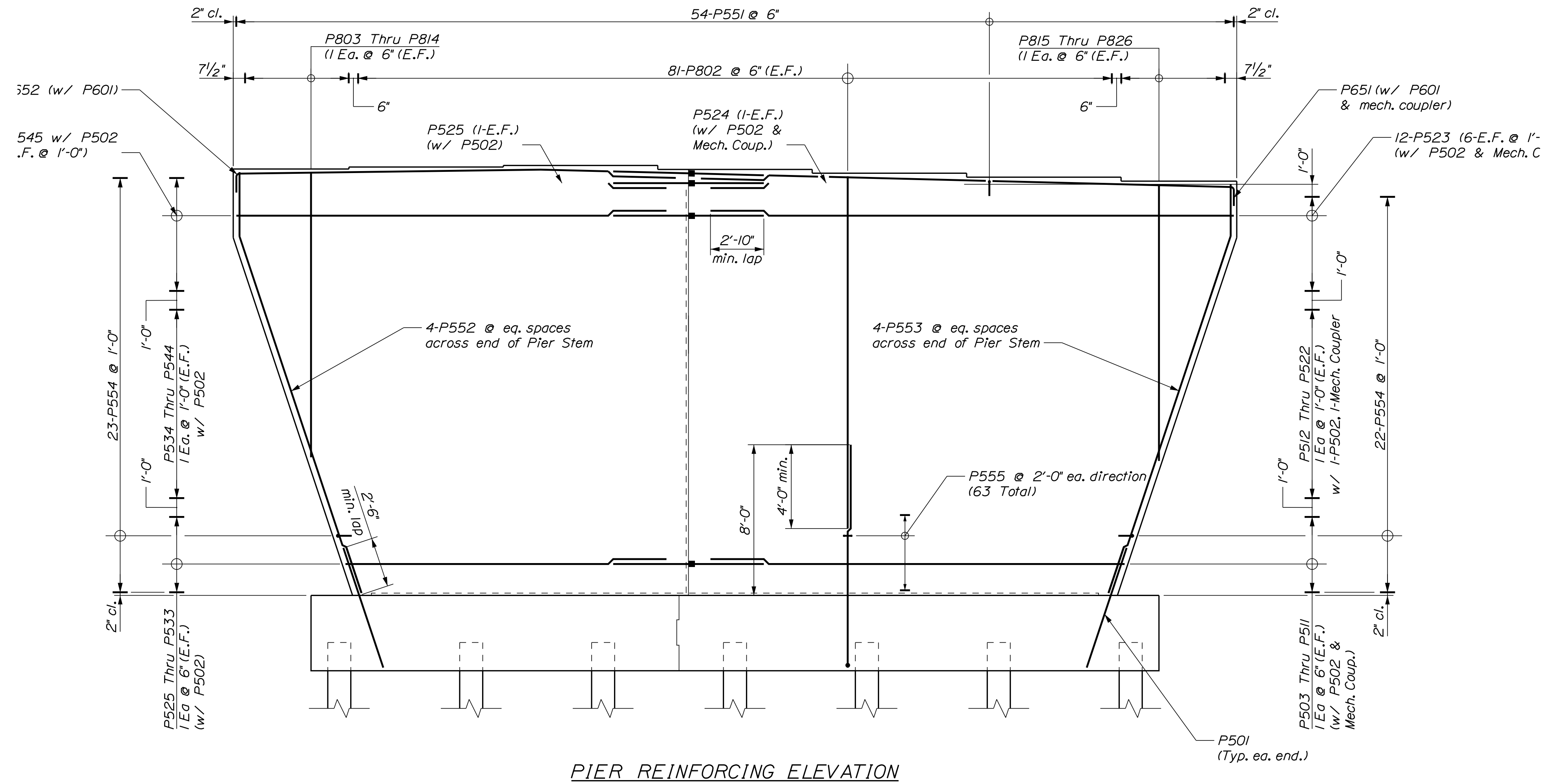
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CHECKED-REVIEWED		AML		
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REVISIONS 1				DATE
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FIELD CHANGES				

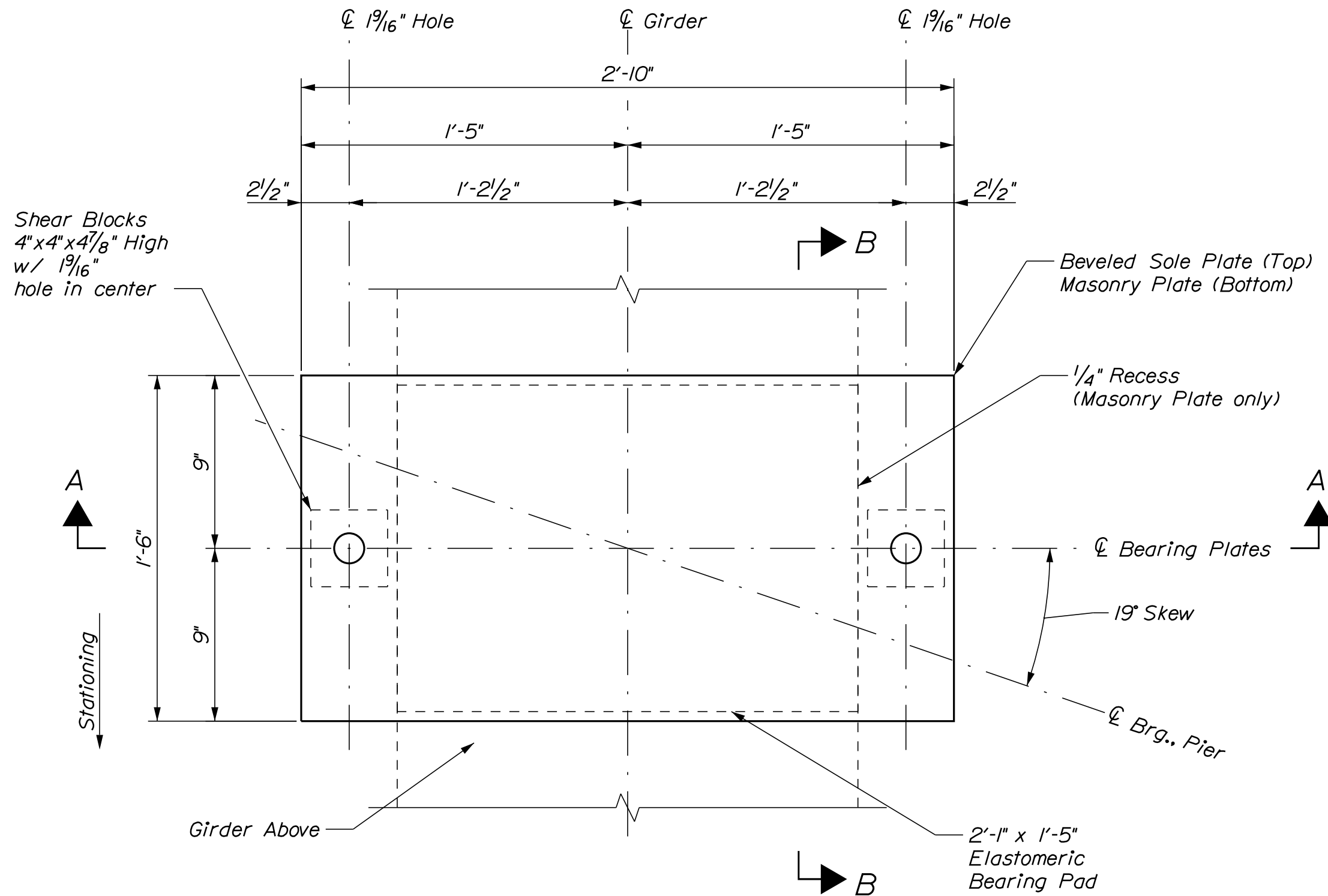


PIER FOOTING REINFORCING
Set "A": 1-P851, 1-P801 w/ Mech. Coupler
Set "B": 1-P852, 1-P801

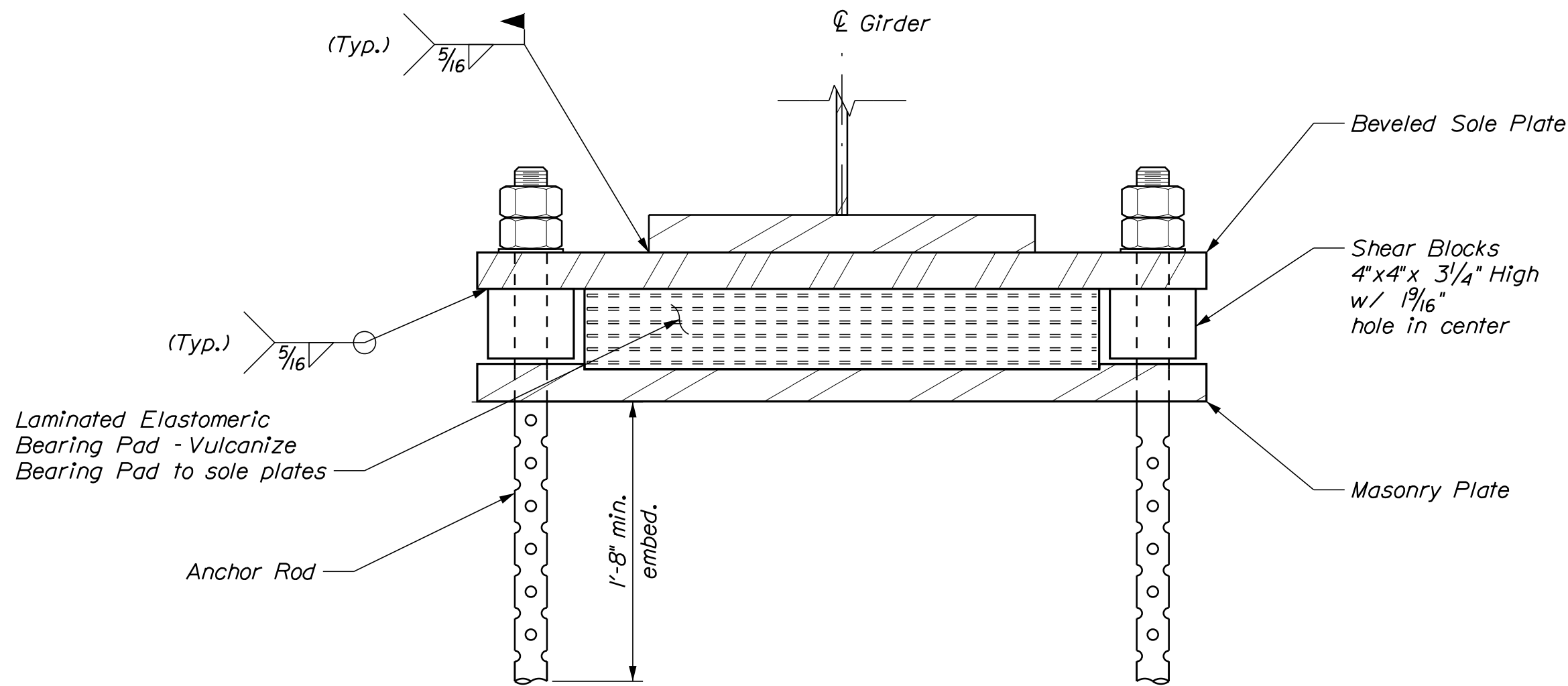
8. The Contractor shall provide access for the agents of the Department to perform three (3) dynamic load tests with signal matching and restrrike, as specified in Special Provision 501 - Dynamic Load Test, to confirm the nominal resistance of the piles. The dynamic pile load tests will be complete on the first production pile at Abutment 1, Abutment 2, and Pier 1. The required nominal resistance for the piles are the maximum factored axial pile load divided by 0.65 for the controlling Strength Limit State. The Contractor may drive production piles to the preliminary driving criteria, however pile cut-off will not be permitted until completion of restrrike testing and establishment of the final driving criteria.

2. Wind: 120 mph or 0.059 ksf.

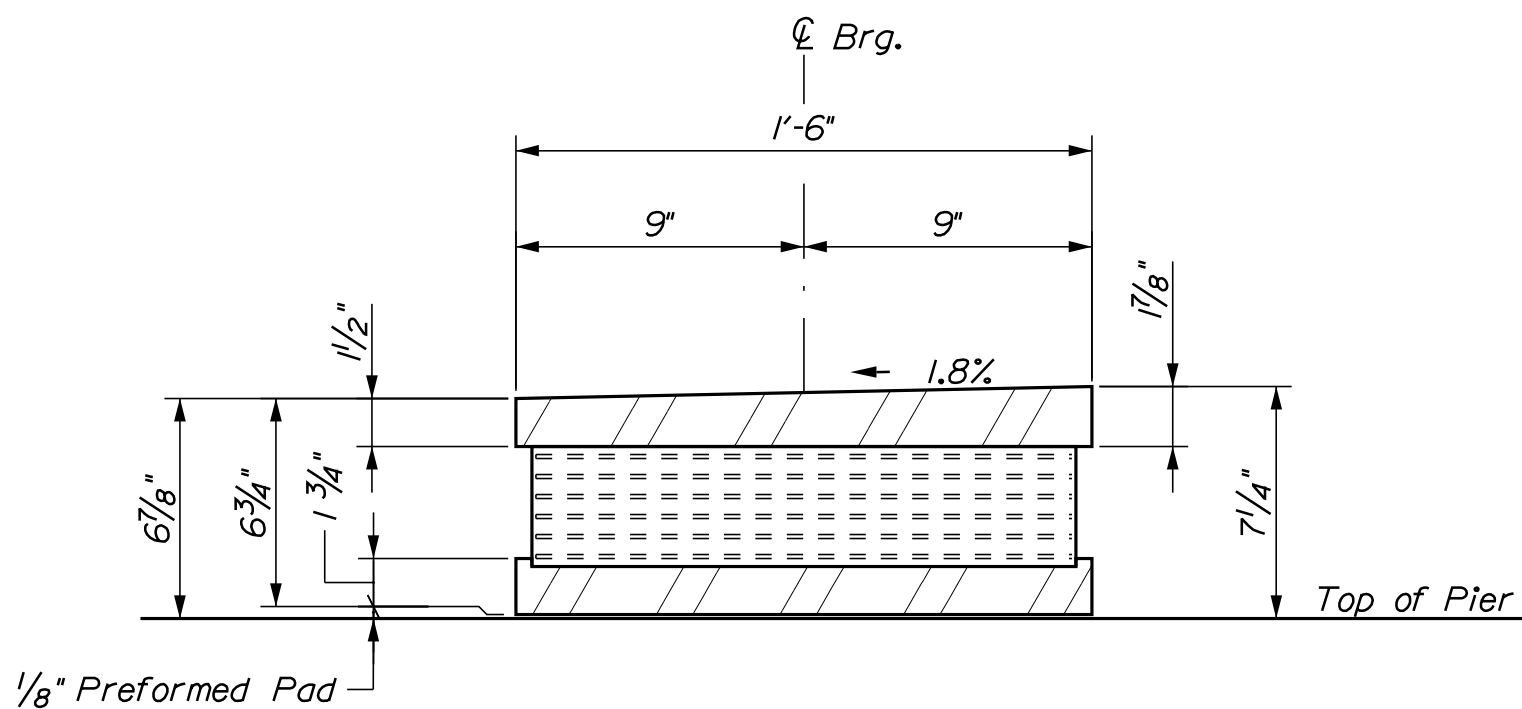




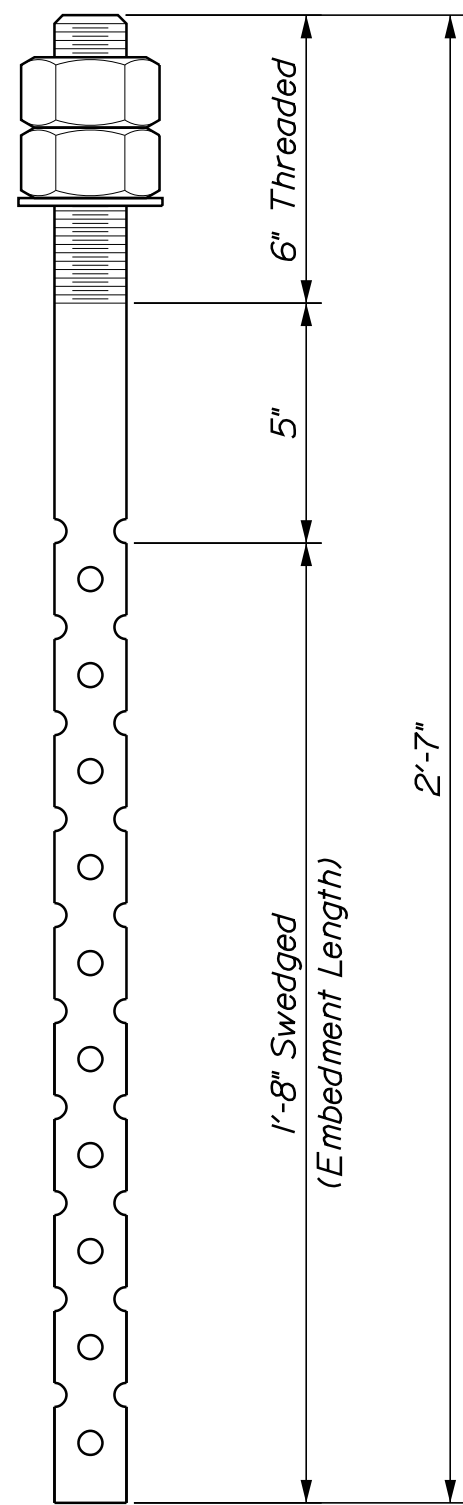
FIXED ELASTOMERIC BEARING PLAN



SECTION A-A



SECTION B-B



ANCHOR ROD DETAIL

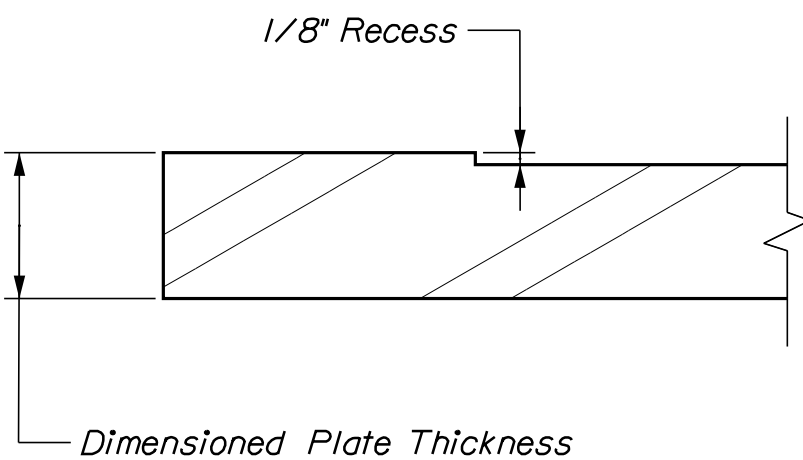
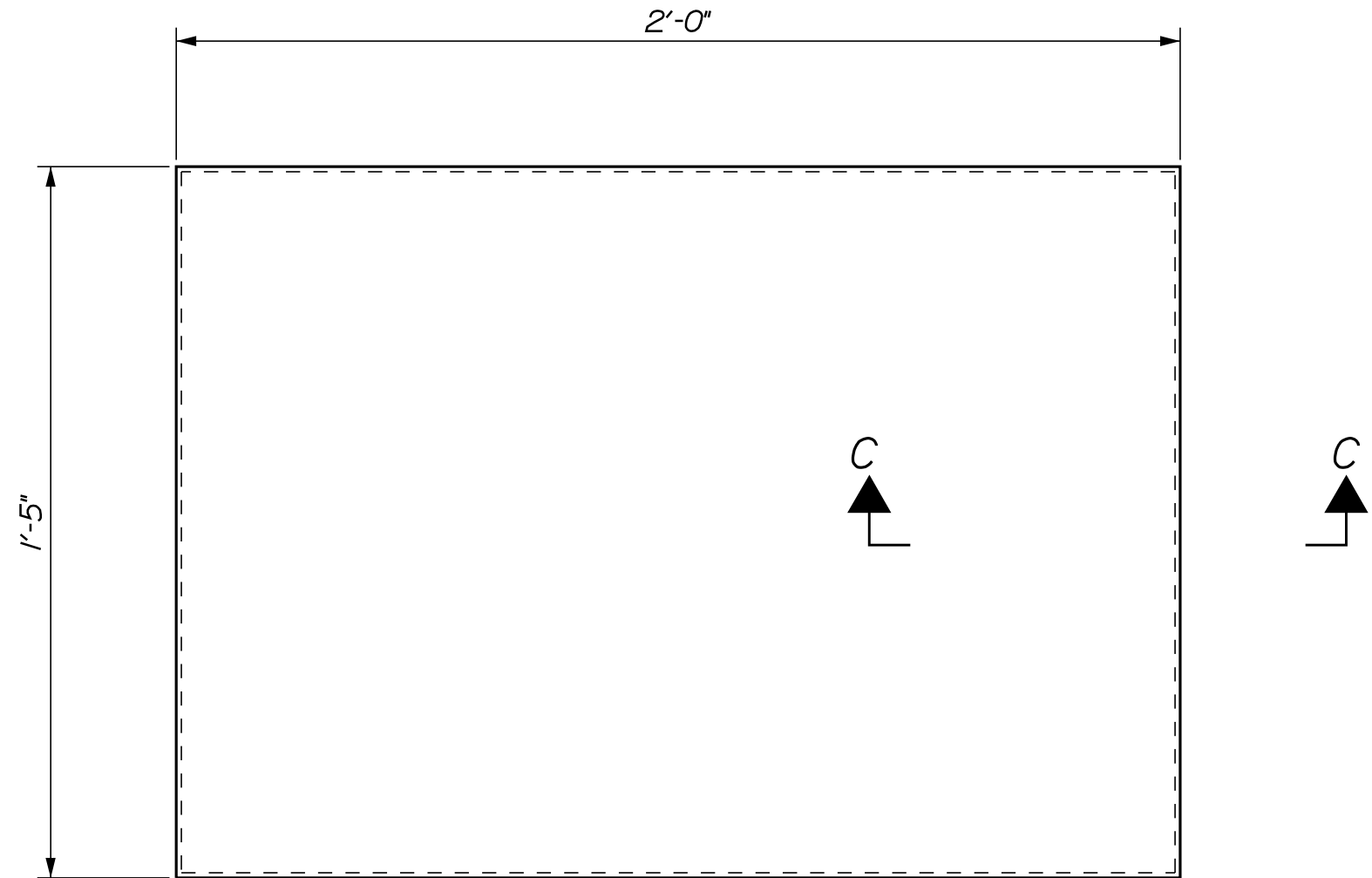
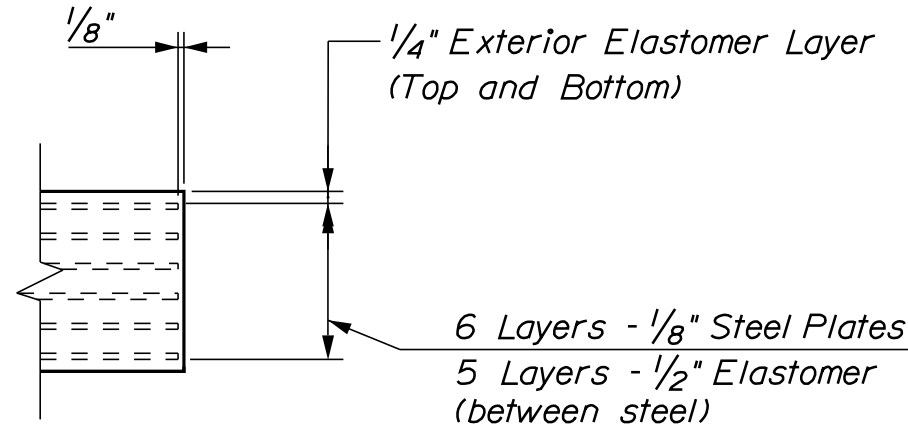


PLATE RECESS DETAIL



ELASTOMERIC BEARING PLAN



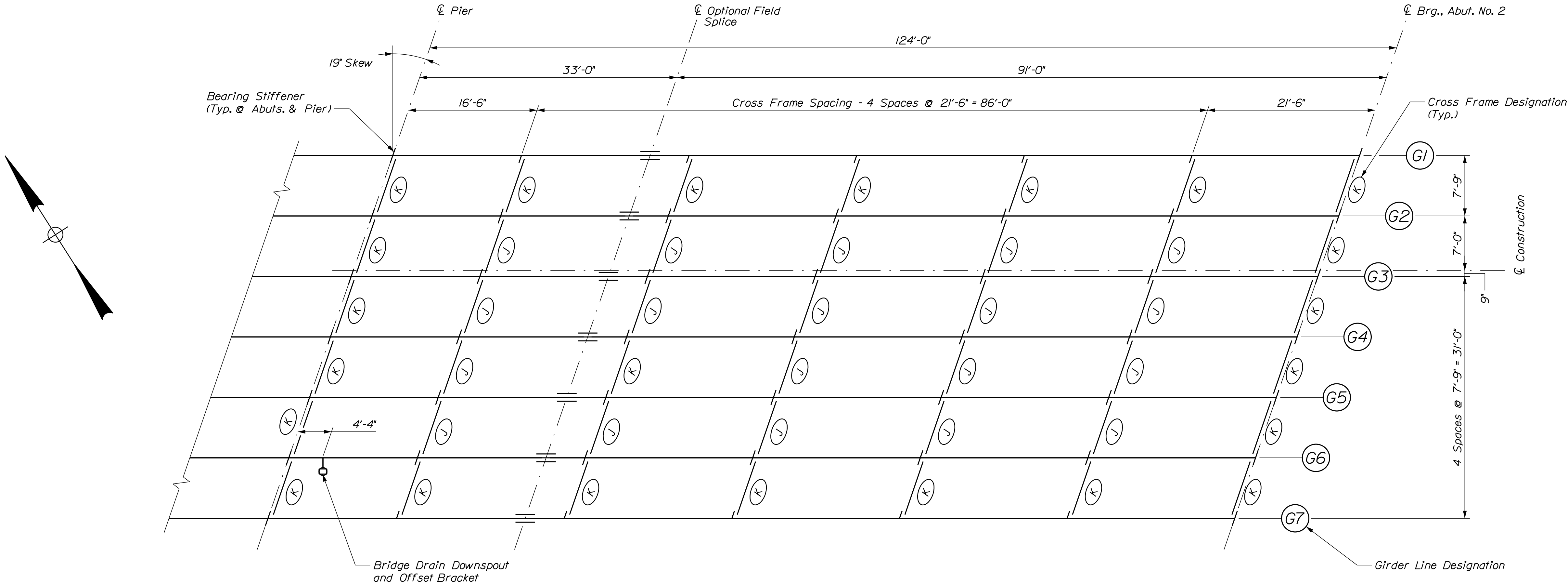
SECTION C-C

ELASTOMERIC BEARING NOTES

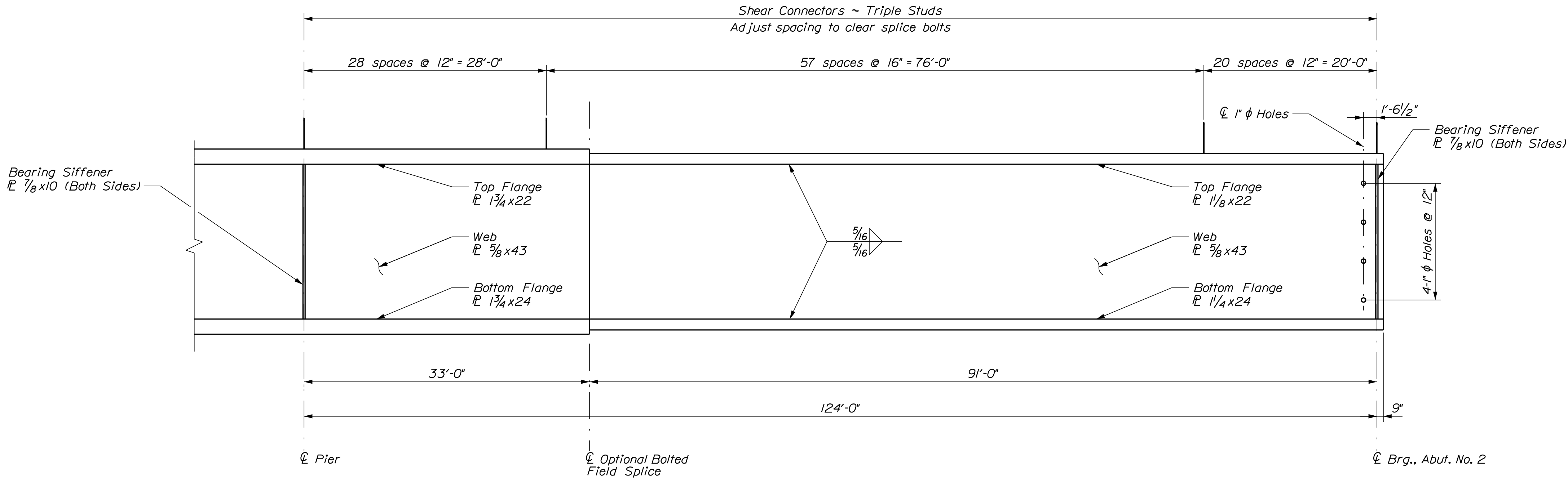
1. The shear modulus of the elastomer shall be 112.5 psi +/- 15%.
2. Vulcanization of the elastomer to the steel plates shall be done during the primary mold process. Sole plate shall be vulcanized to the elastomer.
3. Masonry plates, sole plates and shear blocks shall meet the requirements of ASTM A709, Grade 50. Anchor rods shall meet the requirements of ASTM F1554, Grade 105 and shall be swaged on the embedded portion of the rod.
4. Masonry plates shall be galvanized in accordance with Section 506. Sole plates for steel superstructures shall be treated in the same manner as the structural steel. Anchor rods, washers, nuts and shear blocks shall be galvanized to ASTM A153 or ASTM B695, Class 50, Type I.
5. 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.
6. Bearings shall be covered during shipping and at any time prior to installation that the bearings may be exposed to sunlight.
7. The superstructure may be erected when the ambient air temperature is within the range of 65°F and 90°F. If the ambient air temperature is outside this range, the bearings shall be reset as directed by the Resident.
8. 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.
9. Upset the threads on the anchor rods after assembly of the bearing.
10. The Contractor shall not weld the girders to the sole plate until after all adjustments have been made in accordance with Standard Specification Section 523.094.
11. The "Bearing Design Load" for each bearing as noted in Standard Specifications, subsection 523.23.4, is 371 kips. This is the total load for the Service I load combination, without impact.

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		021720.00		WIN		021720.00		BRIDGE NO. 6630		BRIDGE PLANS	
BUCKNAM ROAD BRIDGE		INTERSTATE 295		CUMBERLAND COUNTY		FALMOUTH		LAMINATED ELASTOMERIC BEARINGS		SHEET NUMBER		37	
PROJ. MANAGER		CHECKED		DESIGNED		REVISIONS 1		REVISIONS 2		REVISIONS 3		REVISIONS 4	
DATE		DATE		DATE		DATE		DATE		DATE		DATE	
BY		BY		BY		BY		BY		BY		BY	
SIGNATURE		SIGNATURE		P.E. NUMBER		DATE		DATE		DATE		DATE	



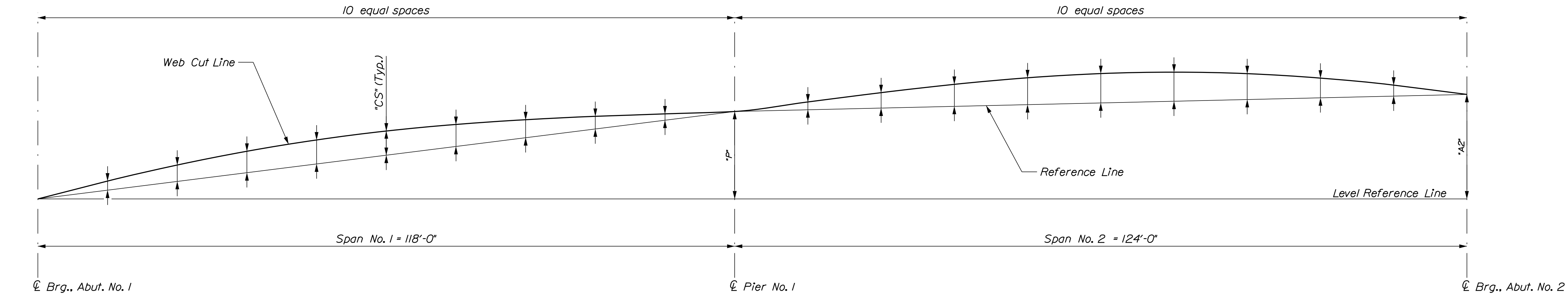


FRAMING SPAN - SPAN NO. 2



GIRDER ELEVATION - SPAN NO. 2

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
021720.00		021720.00	
BRIDGE NO. 5630		WIN	
021720.00		021720.00	
BRIDGE PLANS		BRIDGE PLANS	
BUCKNAM ROAD BRIDGE		FALMOUTH	
INTERSTATE 295		CUMBERLAND COUNTY	
FRAMING PLAN AND GIRDER		FRAMING PLAN AND GIRDER	
ELEVATION - SPAN NO. 2		ELEVATION - SPAN NO. 2	
SHEET NUMBER		39	
OF 53		OF 53	
PROJ. MANAGER		DATE	
DESIGN-DETAILED		MAR 2022	
CHECKED-REVIEWED		MAR 2022	
DESIGN-DETAILED		SIGNATURE	
REVISIONS 1		P.E. NUMBER	
REVISIONS 2		DATE	
REVISIONS 3		DATE	
REVISIONS 4		DATE	
FIELD CHANGES		DATE	



CAMBER DIAGRAM (BY SPAN)

CAMBER DIAGRAM DIMENSIONS

Girder	"P"	"A2"
G1	3.43'	3.86'
G2	3.49'	3.99'
G3	3.56'	3.56'
G4	3.62'	4.27'
G5	3.69'	4.40'
G6	3.76'	4.54'
G7	3.82'	4.67'

TABLE OF CAMBER ORDINATES - SPAN NO. 1 "CS" (inches)											
Girder	℄ Al	0.1 Span	0.2 Span	0.3 Span	0.4 Span	0.5 Span	0.6 Span	0.7 Span	0.8 Span	0.9 Span	℄ Pier
G1	0.00	2.41	4.33	5.66	6.35	6.40	5.85	4.79	3.37	1.72	0.00
G2	0.00	2.47	4.44	5.80	6.50	6.54	5.96	4.87	3.41	1.73	0.00
G3	0.00	2.47	4.44	5.80	6.50	6.54	5.96	4.87	3.41	1.73	0.00
G4	0.00	2.47	4.44	5.80	6.50	6.54	5.96	4.87	3.41	1.73	0.00
G5	0.00	2.47	4.44	5.80	6.50	6.54	5.96	4.87	3.41	1.73	0.00
G6	0.00	2.47	4.44	5.80	6.50	6.54	5.96	4.87	3.41	1.73	0.00
G7	0.00	2.41	4.33	5.66	6.35	6.40	5.85	4.79	3.37	1.72	0.00

TABLE OF CAMBER ORDINATES - SPAN NO. 2 "CS" (inches)											
Girder	℄ Al	0.1 Span	0.2 Span	0.3 Span	0.4 Span	0.5 Span	0.6 Span	0.7 Span	0.8 Span	0.9 Span	℄ Pier
G1	0.00	2.09	4.10	5.83	7.09	7.73	7.65	6.80	5.19	2.88	0.00
G2	0.00	2.12	4.17	5.95	7.27	7.94	7.87	7.00	5.34	2.96	0.00
G3	0.00	2.12	4.17	5.95	7.26	7.94	7.86	6.99	5.33	2.96	0.00
G4	0.00	2.12	4.17	5.95	7.26	7.94	7.86	6.99	5.33	2.96	0.00
G5	0.00	2.12	4.17	5.95	7.26	7.94	7.86	6.99	5.33	2.96	0.00
G6	0.00	2.12	4.17	5.95	7.27	7.94	7.87	7.00	5.34	2.96	0.00
G7	0.00	2.12	4.17	5.95	7.27	7.94	7.87	7.00	5.34	2.96	0.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

021720.00

BRIDGE NO. 5830
WIN
021720.00

BRIDGE PLANS

BUCKNAM ROAD BRIDGE
INTERSTATE 295
FALMOUTH CUMBERLAND COUNTY

CAMBER & DEFLECTIONS

SHEET NUMBER

40

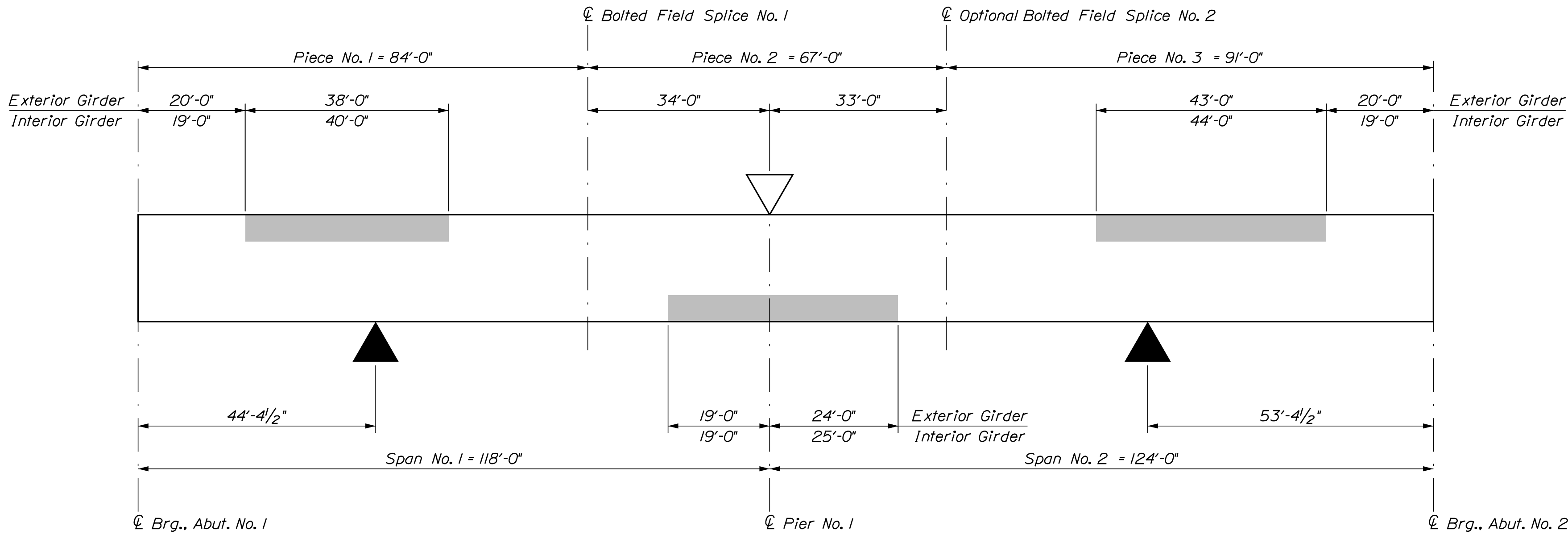
OF 53

PROJ. MANAGER	DATE	BY	MAK
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CHECKED-REVIEWED	MAR 2022	ANL	
DESIGN-DETAILED			
DESIGN-REVIEWED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE



GIRDER STRESS DIAGRAM

▽ Maximum Negative Moment ▲ Maximum Positive Moment
Shaded areas are always in compression.
Other areas are in tension or have stress reversal.

BOTTOM OF SLAB ELEVATIONS - SPAN NO. 1											
Girder	℄ Abut 1	0.1 Span	0.2 Span	0.3 Span	0.4 Span	0.5 Span	0.6 Span	0.7 Span	0.8 Span	0.9 Span	℄ Pier
G1	59.37	59.91	60.40	60.85	61.26	61.61	61.93	62.20	62.44	62.66	62.87
G2	59.41	59.96	60.47	60.93	61.34	61.70	62.02	62.29	62.54	62.76	62.98
G3	59.42	59.98	60.49	60.96	61.38	61.74	62.07	62.35	62.60	62.83	63.05
G4	59.15	59.71	60.23	60.71	61.13	61.51	61.84	62.12	62.38	62.62	62.85
G5	58.88	59.45	59.97	60.45	60.89	61.27	61.60	61.90	62.16	62.41	62.64
G6	58.61	59.18	59.71	60.20	60.64	61.03	61.37	61.67	61.94	62.19	62.44
G7	58.33	58.91	59.44	59.93	60.38	60.77	61.12	61.44	61.72	61.98	62.23

BOTTOM OF SLAB ELEVATIONS - SPAN NO. 2											
Girder	℄ Pier	0.1 Span	0.2 Span	0.3 Span	0.4 Span	0.5 Span	0.6 Span	0.7 Span	0.8 Span	0.9 Span	℄ Abut 2
G1	62.87	63.09	63.29	63.47	63.62	63.71	63.76	63.74	63.67	63.55	63.38
G2	62.98	63.21	63.42	63.61	63.77	63.87	63.92	63.91	63.85	63.73	63.56
G3	63.05	63.29	63.51	63.71	63.87	63.99	64.04	64.04	63.98	63.86	63.71
G4	62.85	63.09	63.32	63.53	63.70	63.82	63.88	63.88	63.83	63.72	63.57
G5	62.64	62.89	63.13	63.34	63.52	63.64	63.72	63.73	63.68	63.58	63.43
G6	62.44	62.69	62.94	63.16	63.34	63.47	63.55	63.57	63.53	63.43	63.30
G7	62.23	62.49	62.74	62.96	63.14	63.28	63.37	63.39	63.36	63.28	63.16

TABLE OF DEFLECTIONS - SPAN NO. 1, EXTERIOR GIRDER (inches)											
	℄ Abut 1	0.1 Span	0.2 Span	0.3 Span	0.4 Span	0.5 Span	0.6 Span	0.7 Span	0.8 Span	0.9 Span	℄ Pier
Steel Dead Load	0	0.19	0.35	0.46	0.49	0.46	0.38	0.26	0.13	0.03	0
Fluid Dead Load	0	0.44	0.81	1.05	1.13	1.06	0.86	0.58	0.29	0.07	0
Superimposed Dead Load	0	0.19	0.35	0.45	0.49	0.46	0.38	0.26	0.13	0.03	0
Total Dead Load	0	0.83	1.51	1.95	2.11	1.99	1.61	1.09	0.55	0.13	0

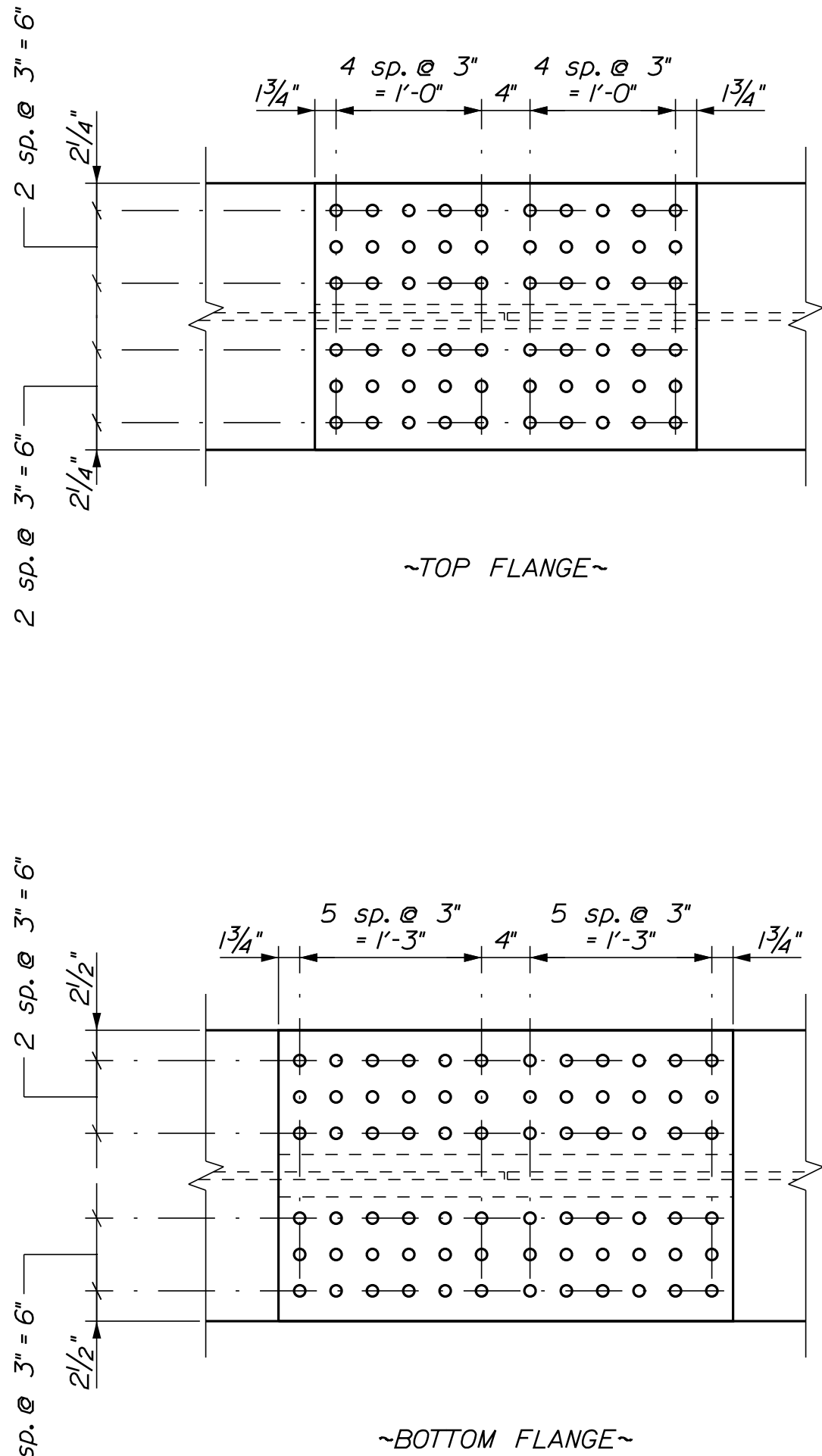
TABLE OF DEFLECTIONS - SPAN NO. 2, EXTERIOR GIRDER (inches)											
	℄ Pier	0.1 Span	0.2 Span	0.3 Span	0.4 Span	0.5 Span	0.6 Span	0.7 Span	0.8 Span	0.9 Span	℄ Abut 2
Steel Dead Load	0	0.08	0.23	0.40	0.56	0.66	0.69	0.62	0.48	0.26	0
Fluid Dead Load	0	0.18	0.53	0.93	1.30	1.54	1.60	1.46	1.12	0.61	0
Superimposed Dead Load	0	0.08	0.23	0.41	0.56	0.66	0.69	0.62	0.48	0.26	0
Total Dead Load	0	0.34	0.99	1.74	2.42	2.86	2.98	2.71	2.07	1.12	0

TABLE OF DEFLECTIONS - SPAN NO. 1, INTERIOR GIRDER (inches)											
	℄ Abut 1	0.1 Span	0.2 Span	0.3 Span	0.4 Span	0.5 Span	0.6 Span	0.7 Span	0.8 Span	0.9 Span	℄ Pier
Steel Dead Load	0	0.20	0.36	0.47	0.50	0.48	0.39	0.26	0.13	0.03	0
Fluid Dead Load	0	0.51	0.92	1.20	1.29	1.21	0.98	0.66	0.33	0.08	0
Superimposed Dead Load	0	0.18	0.34	0.44	0.47	0.45	0.37	0.25	0.13	0.03	0
Total Dead Load	0	0.89	1.62	2.10	2.27	2.13	1.73	1.17	0.59	0.14	0

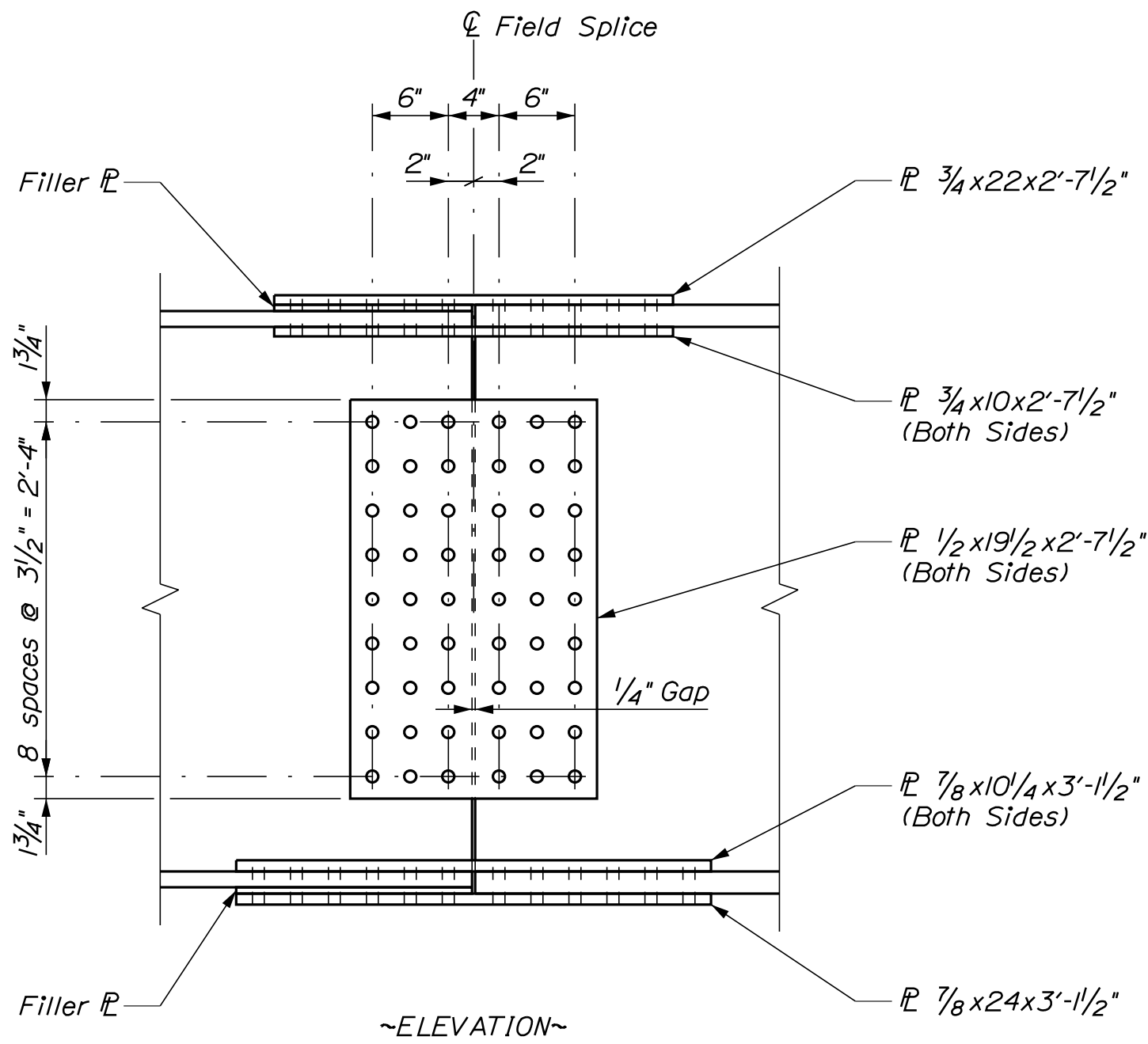
TABLE OF DEFLECTIONS - SPAN NO. 2, INTERIOR GIRDER (inches)											
	℄ Pier	0.1 Span	0.2 Span	0.3 Span	0.4 Span	0.5 Span	0.6 Span	0.7 Span	0.8 Span	0.9 Span	℄ Abut 2
Steel Dead Load	0	0.08	0.23	0.41	0.57	0.67	0.70	0.64	0.49	0.26	0
Fluid Dead Load	0	0.21	0.60	1.06	1.48	1.76	1.83	1.67	1.27	0.69	0
Superimposed Dead Load	0	0.08	0.23	0.39	0.54	0.64	0.66	0.60	0.46	0.25	0
Total Dead Load	0	0.37	1.06	1.86	2.59	3.07	3.19	2.91	2.22	1.21	0

STRUCTURAL STEEL NOTES

- Camber ordinates, as shown, are computed to compensate for all dead load deflections and for the curvature of the finished grade profile.
- No transverse butt weld splices will be allowed in the flange plates or web plates within 10 feet or 10 percent of the span length (whichever is greater) from the points of maximum negative moment or maximum positive moment. Butt weld splices in flanges shall be not less than 1 foot from transverse butt welds in the web plates and no transverse web or flange butt welds shall be located within 1 foot of other transverse welds (e.g. connection plates to web welds) on either flange or web. No transverse butt weld splices will be allowed in areas of stress reversal.
- Sections of flange plates or web plates between transverse shop splices or between a transverse shop splice and a field splice shall be at least 20 feet in length unless otherwise shown on the Plans.
- Bearing stiffeners shall be plumb after erection and dead loading of the structure. Intermediate web stiffeners may be either plumb or normal to the top flange.
- Intermediate crossframe or diaphragm connection plates may be either plumb or normal to the top flange.
- All connection plate and stiffener welds shall be 5/16 inch fillet welds.
- Filler plates may be steel conforming to the requirements of ASTM A709, Grade 36.
- All bolts, nuts, and washers shall be hot dip galvanized in accordance with ASTM A153.
- Bolted field splice connections shall be made using 7/8 inch ASTM F3125, Grade A325 Type 1 high strength bolts. Bolt hole size shall be 15/16 inch diameter. Field splice bolt threads shall be excluded from the shear plane.
- The splice was designed with a Class B slip coefficient.
- Repairs to the Thermal Spray Coating that modify the surface roughness in the area of the faying surfaces shall not be performed without the approval of the Fabrication Engineer.
- Bolted diaphragms or cross frame connections shall be made using 7/8 inch diameter, ASTM F3125, Grade A325 Type 1 high strength bolts. Hole size shall be 15/16 inch diameter. The minimum edge distance shall be 1-1/2 inch unless otherwise shown. Oversized or short-slotted holes are not permitted. Bolt threads shall be excluded from the shear plane of cross frame or diaphragms connections.
- Ends of girder webs shall be vertical under full dead load.
- At the Contractor's option, the Diaphragms and Cross Frames may be Hot-Dipped Galvanized in accordance with Standard Specifications Section 506, Shop Applied Protective Coating, as approved by the Resident. Payment will be considered incidental to Item 506.9104, Thermal Spray Coating (Shop Applied), no separate payment will be made.
- The intermediate cross frames between Stage I and Stage II deck slab placements shall not be installed until 72 hours following the Stage II deck slab placement.
- The intermediate cross frames must be in place and bolts tightened prior to proceeding with the closure deck slab placement.

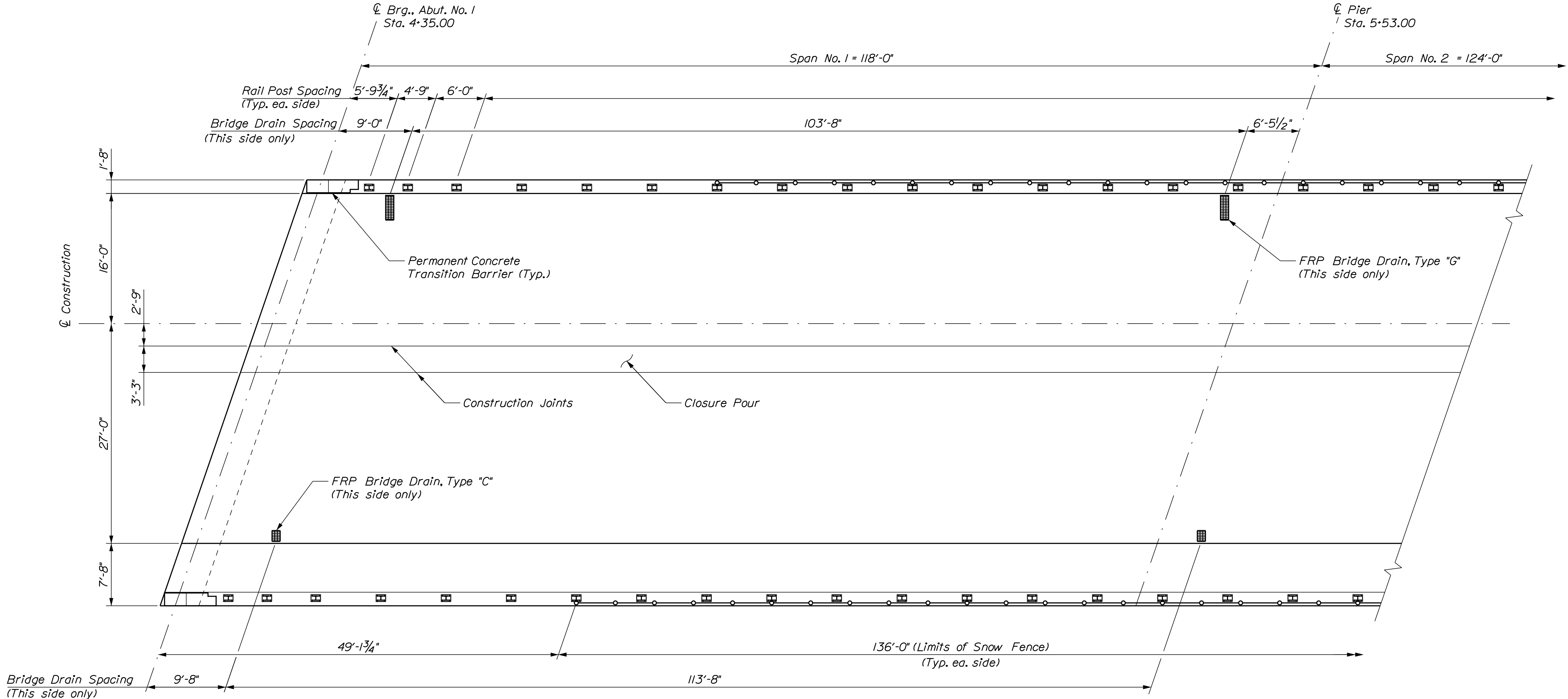
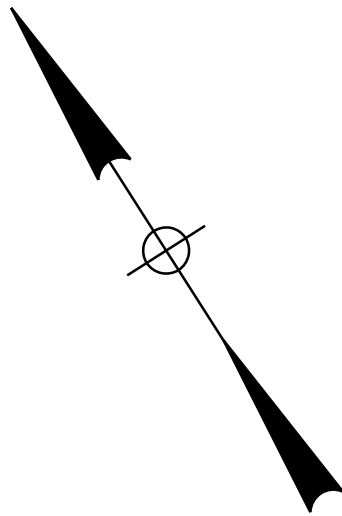


BOLTED FIELD SPLICE



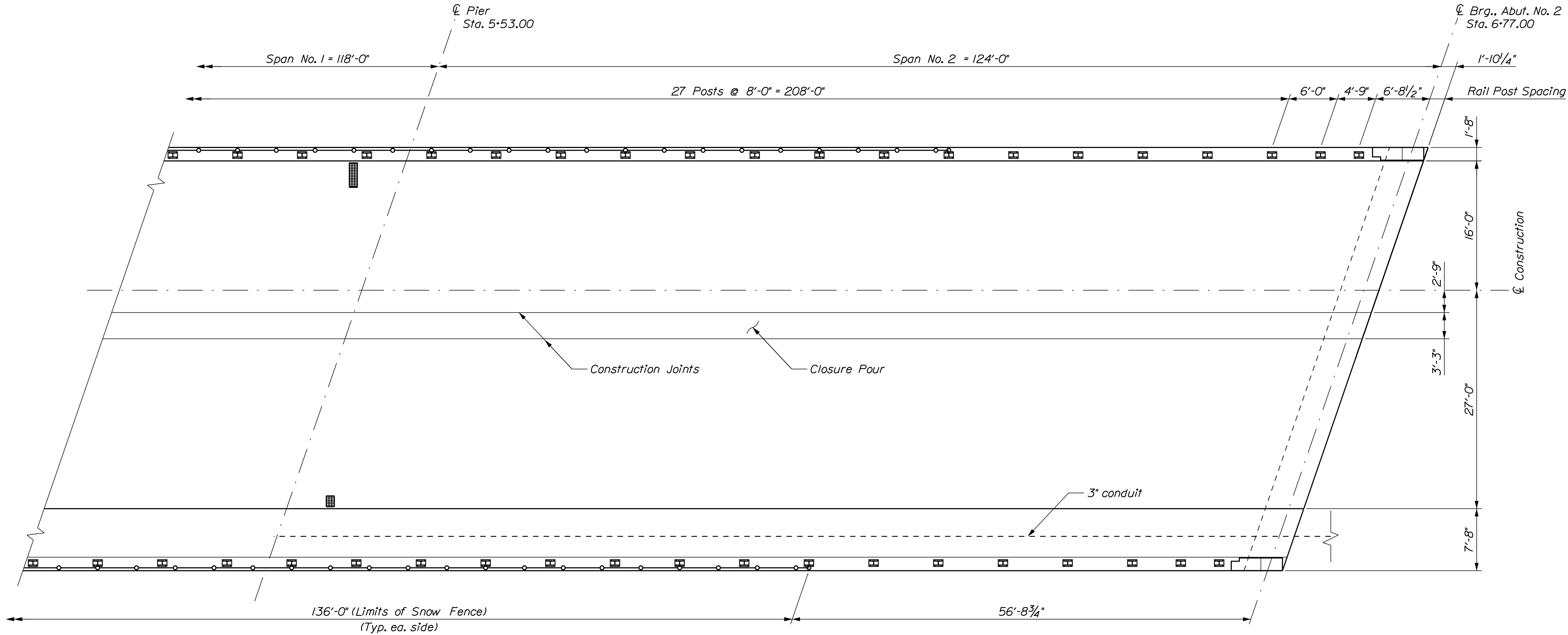
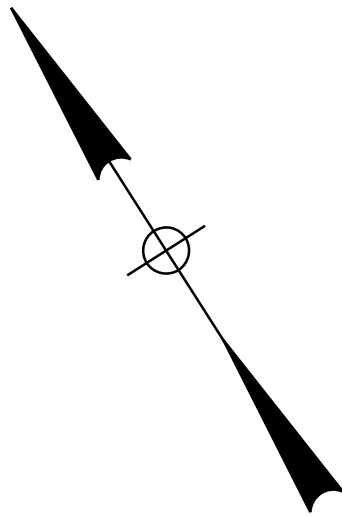


1. The theoretical blocking used for design of the structure is 4.25 inch at the centerline of bearing of the abutments and piers. Refer to Standard Detail 502(03) for blocking details.
2. Reinforcing steel shall have a minimum concrete cover of 2 inches unless otherwise noted.
3. Form a one inch V-groove on the fascias at the horizontal joint between the curb and slab.
4. The superstructure slab concrete shall be placed in one continuous operation and the concrete shall be kept plastic. The last 6'-0" of deck and end diaphragm, measured from abutment 1 centerline of bearing shall be placed after the main deck and abutment 2 end diaphragm placement.
5. Unless the superstructure slab concrete is placed in one continuous operation, the initial placement shall begin 6' from the centerline of bearing at an abutment and shall terminate at the completion of a positive moment section. Successive placement shall proceed from the end of the previous placement, and terminate at the other abutment end diaphragm. Concrete shall be kept plastic from remaining portion of first span placement. A minimum of 5 days shall elapse between successive partial placements. The superstructure slab concrete placement sequence shall be approved by the Resident.
6. Precast Concrete Deck Panels are not allowed on this project.
7. Provide 4 additional stirrups in the curbs at each Transition Barrier location.
8. The Contractor shall install Transition Barrier vertical closed stirrups, as shown in Standard Details Section 526, prior to the placement of the curb or sidewalk concrete.
9. Transition Barrier reinforcing steel shall be Low-Carbon Chromium.
10. Mechanical Coupler shall be Low-Carbon Chromium and shall meet the Standard Specifications of Grade 100 reinforcement.



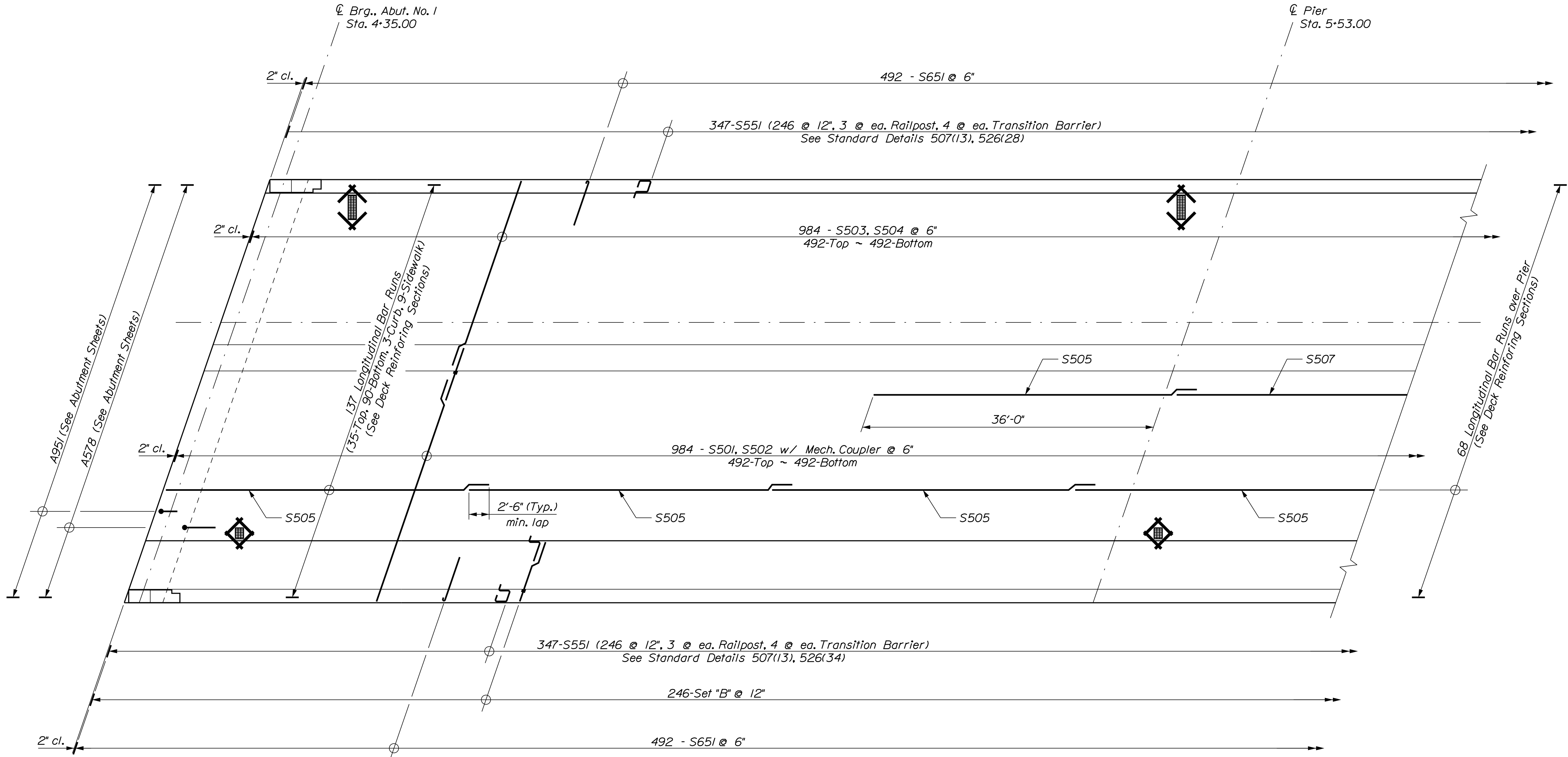
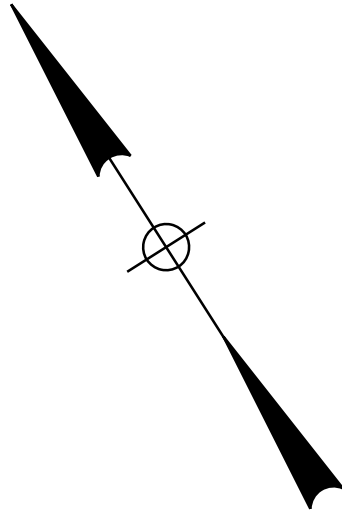
SUPERSTRUCTURE PLAN, SPAN NO. 1

<div> <div>BUCKNAM ROAD BRIDGE</div> <div>INTERSTATE 295</div> <div>FALMOUTH CUMBERLAND COUNTY</div> </div>	<div>STATE OF MAINE</div> <div>DEPARTMENT OF TRANSPORTATION</div>	
	<div>021720.00</div>	
	<div>BRIDGE NO. 5630</div>	<div>BRIDGE PLANS</div>
<div> <div>SUPERSTRUCTURE PLAN</div> <div>SPAN NO. 1</div> </div>	<div>PROJ. MANAGER</div>	<div>DATE</div>
	<div>CHECKED-REVIEWED</div>	<div>MAR 2022</div>
	<div>DESIGN-DETAILED</div>	<div>MAR 2022</div>
	<div>DESIGN-DETAILED</div>	<div>SIGNATURE</div>
	<div>REVISIONS 1</div>	<div>P.E. NUMBER</div>
<div> <div>43</div> <div>OF 53</div> </div>	<div>REVISIONS 2</div>	<div>DATE</div>
	<div>REVISIONS 3</div>	
	<div>REVISIONS 4</div>	
<div>FIELD CHANGES</div>		



SUPERSTRUCTURE PLAN, SPAN NO. 2

<div> <div>BUCKNAM ROAD BRIDGE</div> <div>INTERSTATE 295</div> <div>FALMOUTH CUMBERLAND COUNTY</div> </div>	<div>STATE OF MAINE</div> <div>DEPARTMENT OF TRANSPORTATION</div>		
	<div>021720.00</div>		
	<div>WIN</div>		
	<div>BRIDGE NO. 5630</div> <div>021720.00</div> <div>BRIDGE PLANS</div>		
<div> <div>BUCKNAM ROAD BRIDGE</div> <div>INTERSTATE 295</div> <div>FALMOUTH CUMBERLAND COUNTY</div> </div>	<div>PROJ. MANAGER</div>		<div>DATE</div>
	<div>CHECKED-REVIEWED</div>		<div>MAR 2022</div>
	<div>DESIGNED-DETAILED</div>		<div>MAR 2022</div>
	<div>REVISIONS 1</div>		<div>SIGNATURE</div>
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<div> <div>BUCKNAM ROAD BRIDGE</div> <div>INTERSTATE 295</div> <div>FALMOUTH CUMBERLAND COUNTY</div> </div>	<div>REVISIONS 3</div>		<div>DATE</div>
	<div>REVISIONS 4</div>		
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<div>SHEET NUMBER</div>		<div>44</div>	
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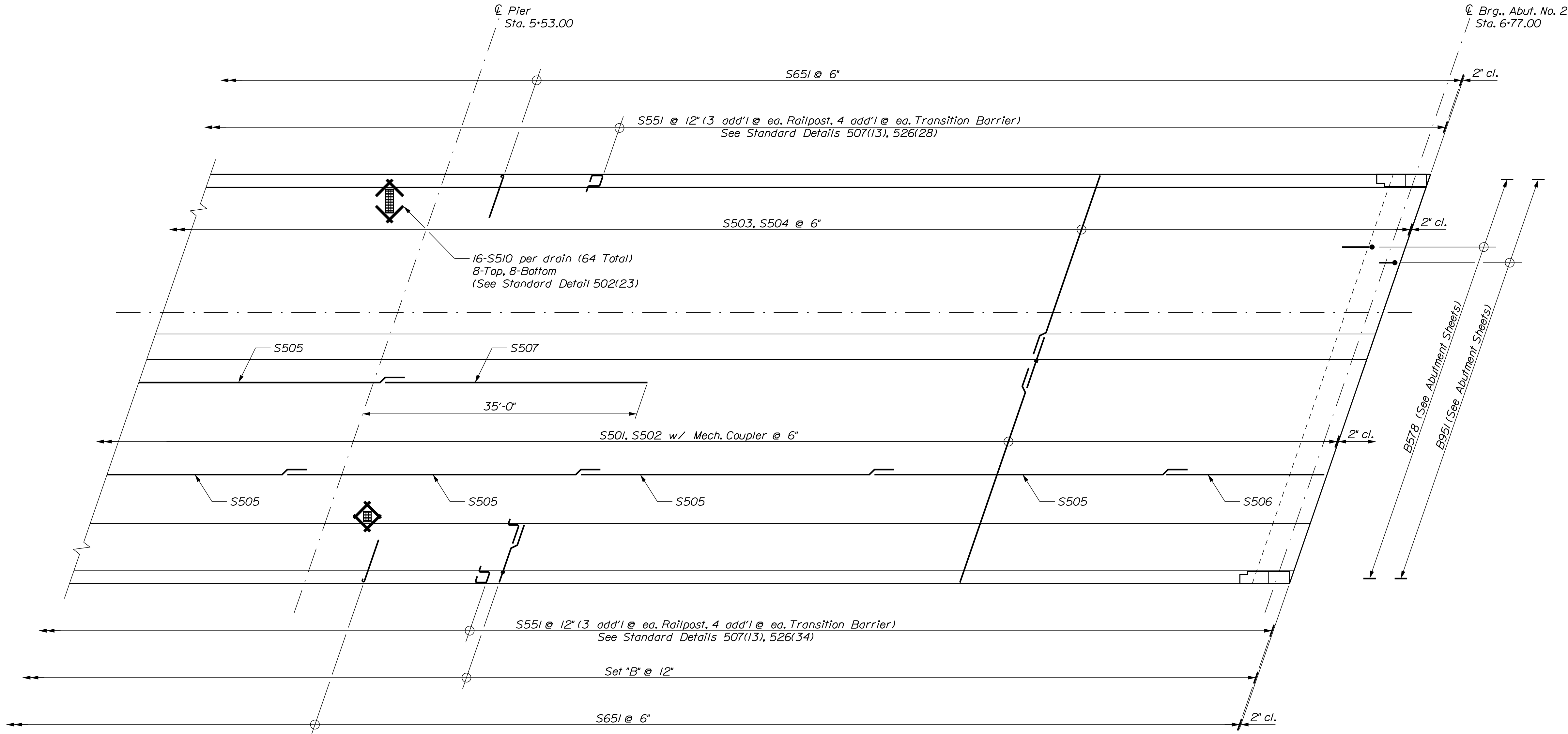
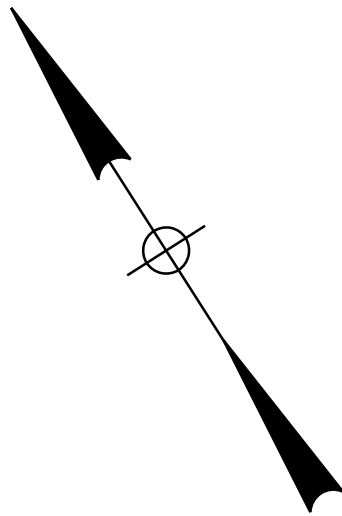
DECK REINFORCING PLAN - SPAN NO. 1
 Alternate position of Bars S506 & S507 within their
 respective longitudinal bar runs in order to stagger
 splice locations.

45 OF 53	SHEET NUMBER	BUCKNAM ROAD BRIDGE INTERSTATE 295 FALMOUTH CUMBERLAND COUNTY				PROJ. MANAGER	MAK	BY	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION			
		DESIGN-DETAILED				OCK	BUN	MAR 2022					
		CHECKED-REVIEWED				RPM	AML	MAR 2022					
		DESIGN-DETAILED2											
		DESIGN-DETAILED3											
DECK REINFORCING PLAN SPAN 1		REVISIONS 1				P.E. NUMBER				021720.00			
		REVISIONS 2											
		REVISIONS 3											
		REVISIONS 4											
FIELD CHANGES		REVISIONS 1				DATE				BRIDGE NO. 5830	WIN	021720.00	BRIDGE PLANS
		REVISIONS 2											

SHEET NUMBER

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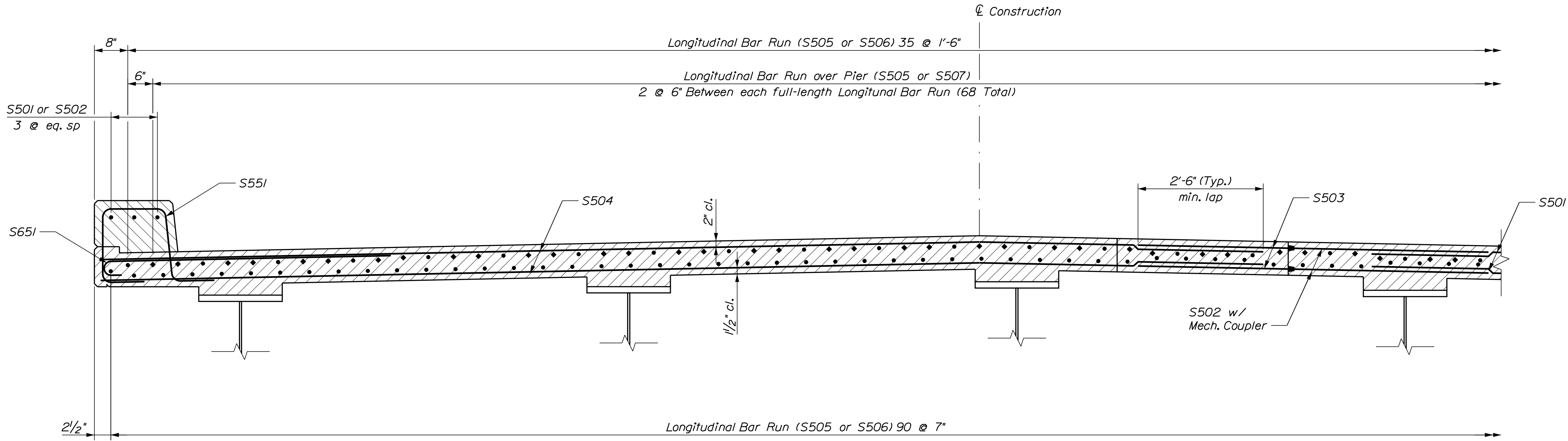
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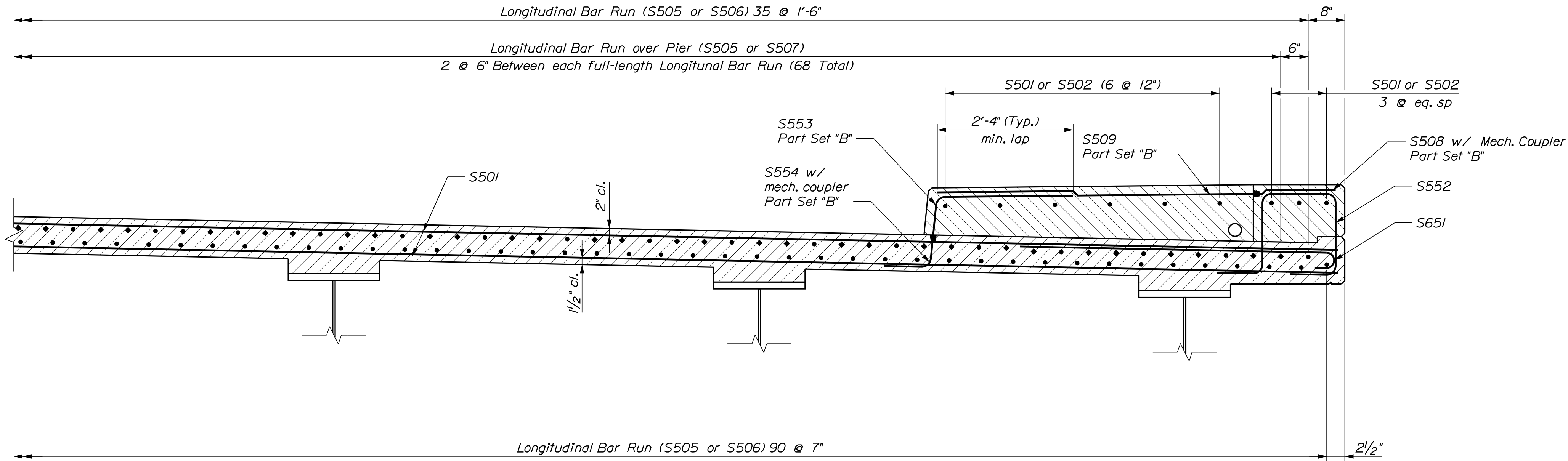
DECK REINFORCING PLAN - SPAN NO. 2

Alternate position of Bars S506 & S507 within their respective longitudinal bar runs in order to stagger splice locations.

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
021720.00		WIN	
BRIDGE NO. 5830		021720.00	
BRIDGE PLANS			
BUCKNAM ROAD BRIDGE		DATE	
INTERSTATE 295		MAR 2022	
CUMBERLAND COUNTY		MAR 2022	
FALMOUTH		SIGNATURE	
DECK REINFORCING PLAN		P.E. NUMBER	
SPAN 2		DATE	
SHEET NUMBER		FIELD CHANGES	
46			
OF 53			



PARTIAL DECK REINFORCING SECTION



PARTIAL DECK REINFORCING SECTION

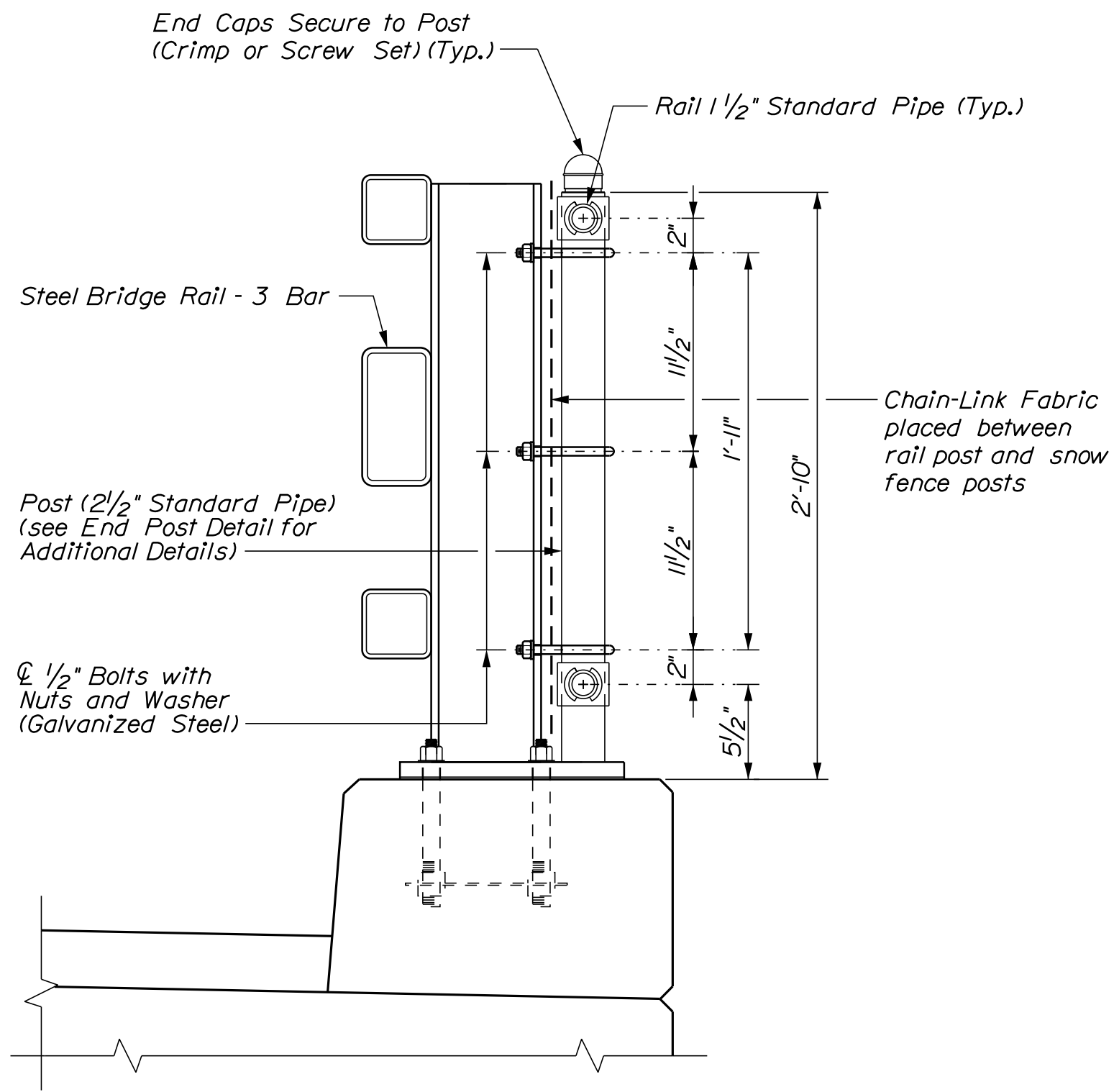
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BUCKNAM ROAD BRIDGE		INTERSTATE 295		CUMBERLAND COUNTY		FALMOUTH		DECK REINFORCING SECTIONS		SHEET NUMBER		47	
DESIGNED		CHECKED		DESIGNED		REVISIONS 1		REVISIONS 2		REVISIONS 3		REVISIONS 4	
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DATE		DATE		DATE		DATE		DATE		DATE		DATE	
FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES	

Date:4/6/2022

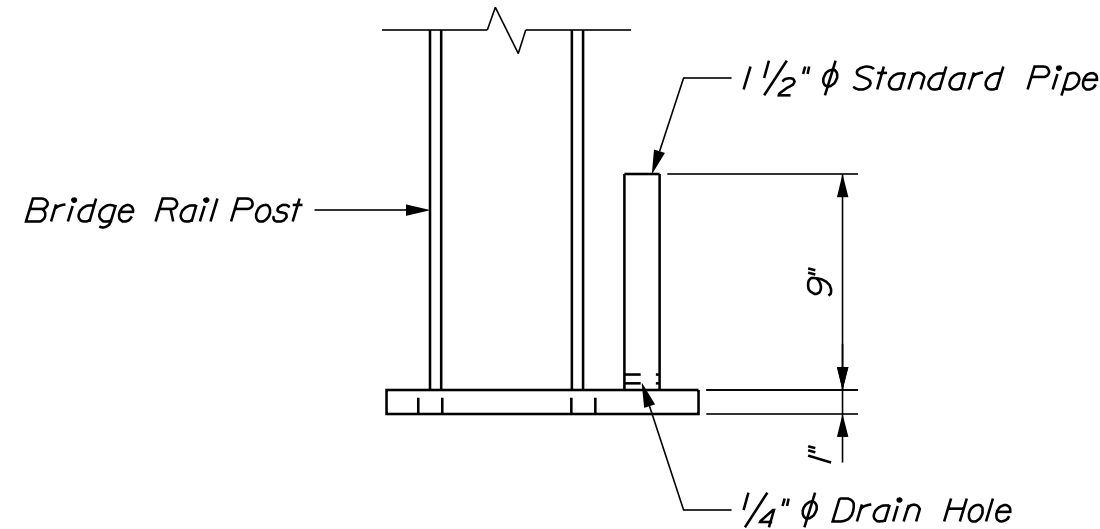
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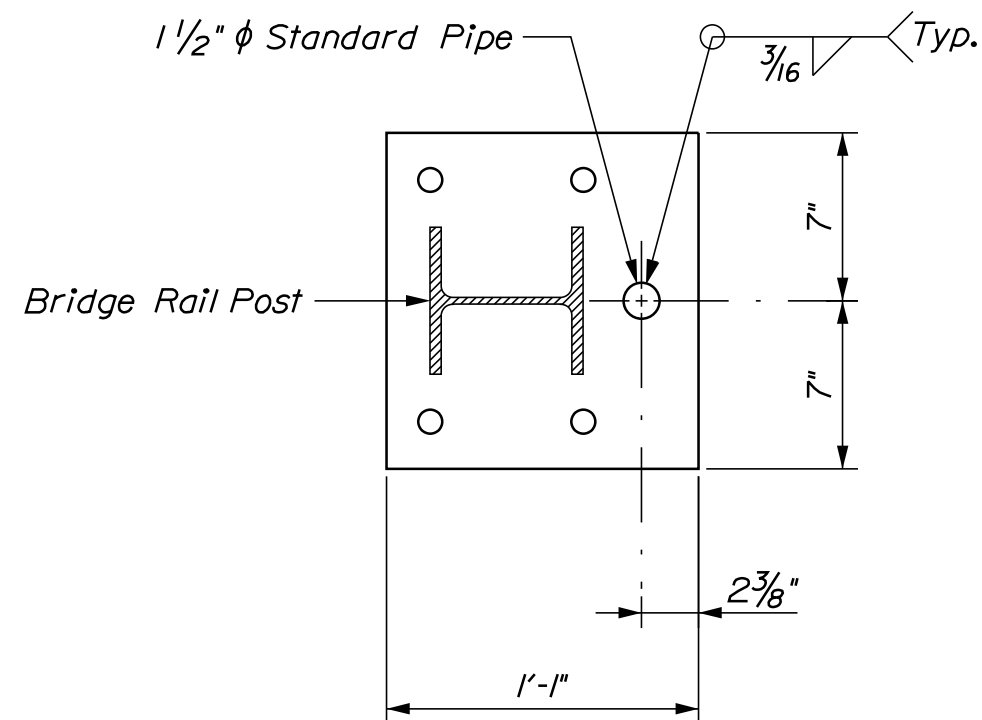
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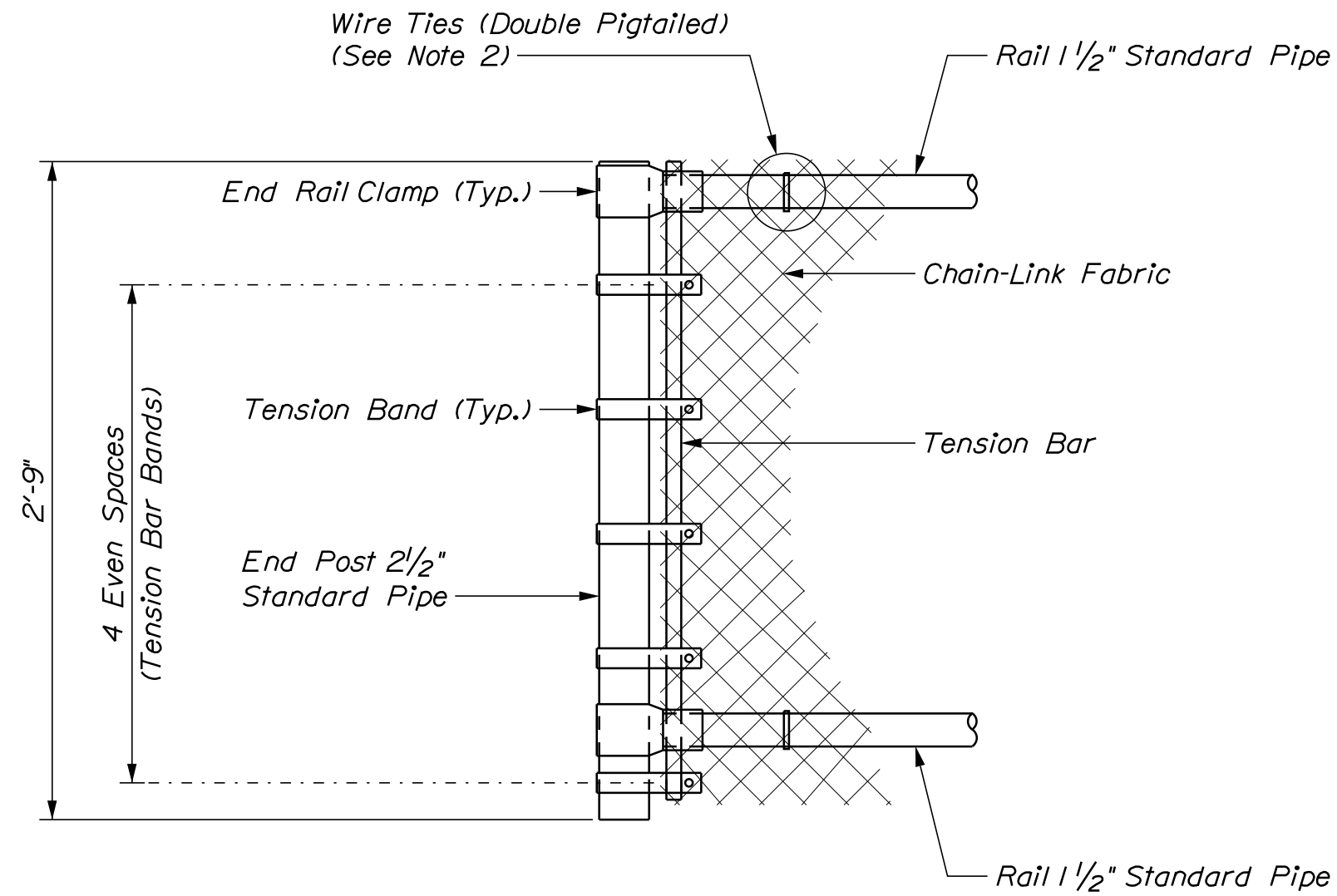
SNOW FENCE CONNECTION DETAIL
Scale: 1 1/2" = 1'-0"



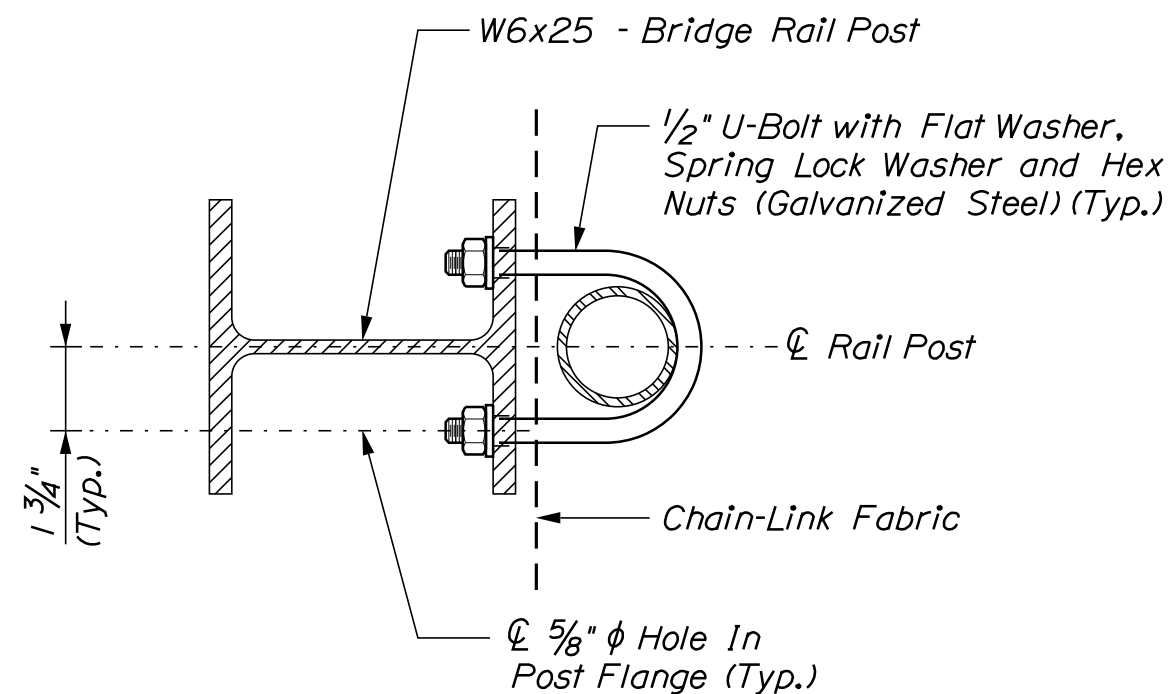
MODIFIED BASE PLATE ELEVATION
Scale: 1 1/2" = 1'-0"



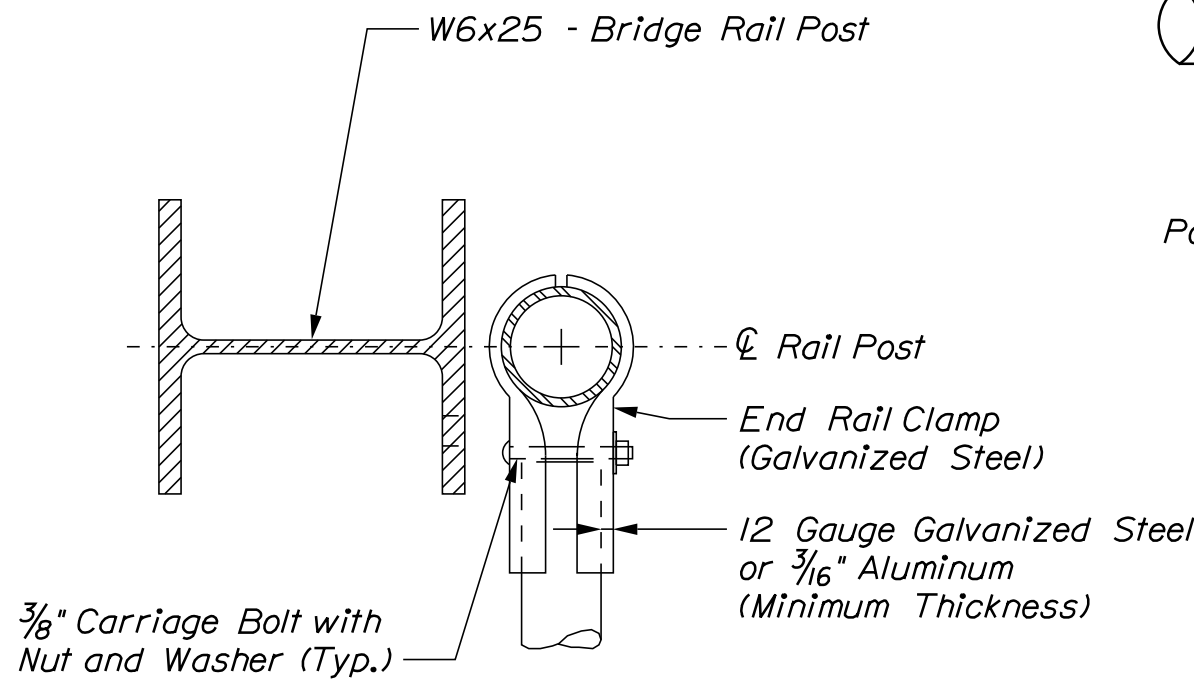
MODIFIED BASE PLATE DETAIL
Scale: 1 1/2" = 1'-0"



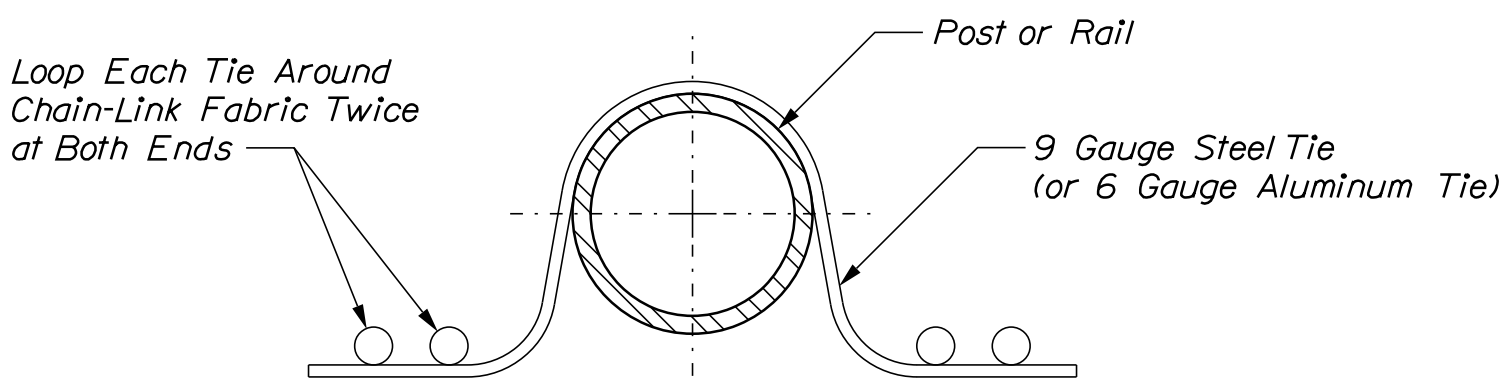
END POST DETAIL
Scale: 1 1/2" = 1'-0"



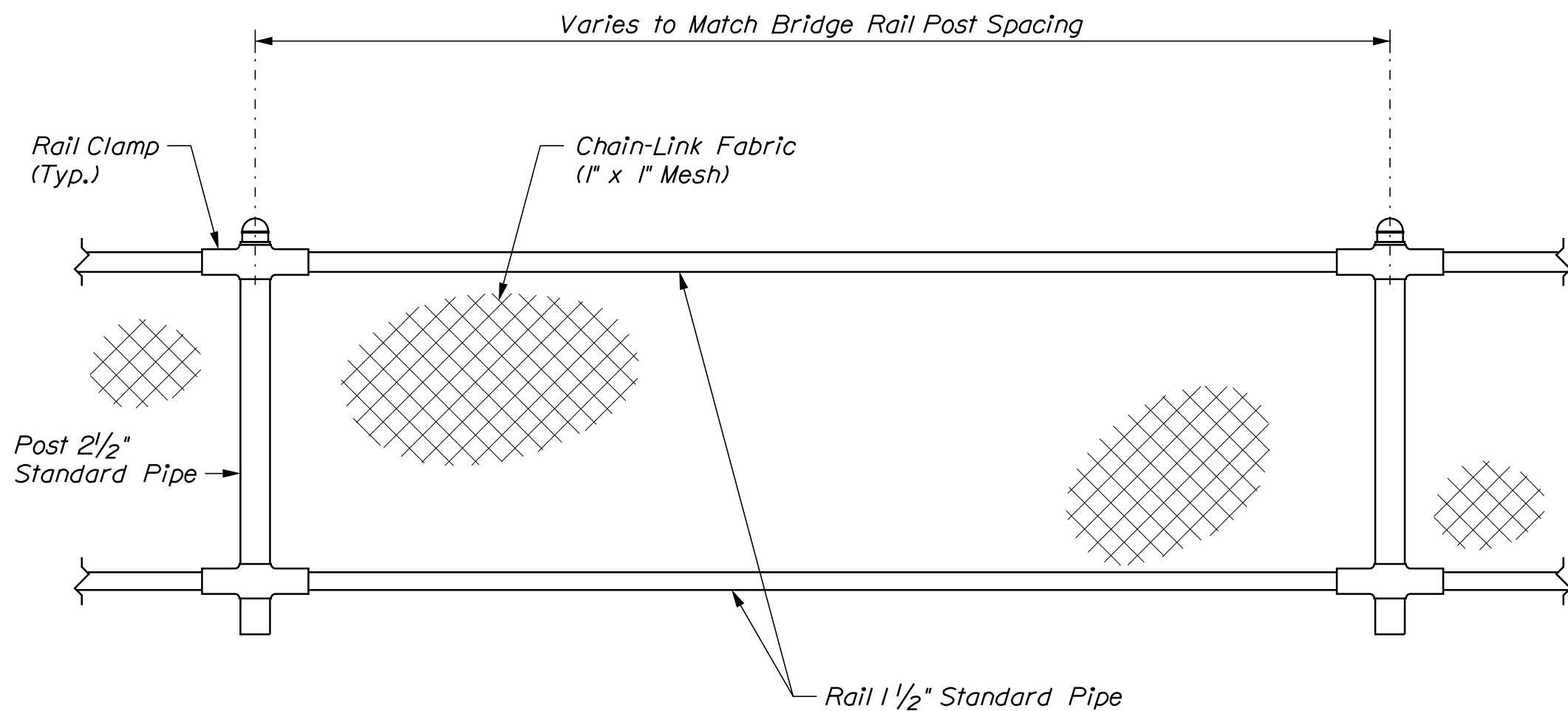
U-BOLT CONNECTION DETAIL
(At Interior Post)
Scale: 3" = 1'-0"



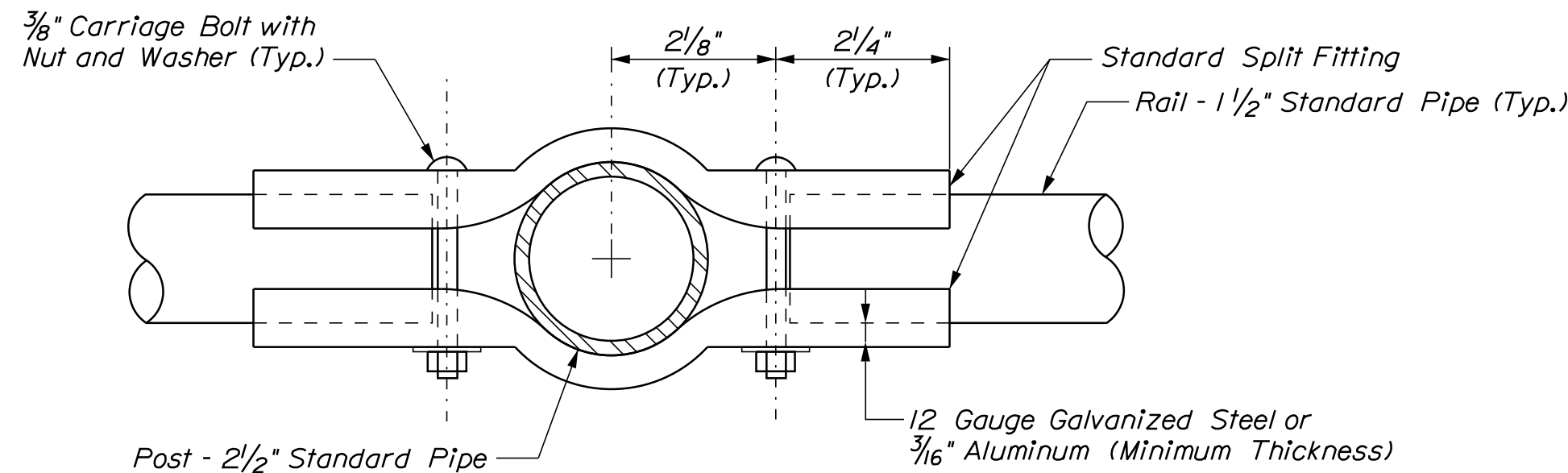
END POST DETAIL
(U-Bolt Not Shown)
Scale: 3" = 1'-0"



DOUBLE PIGTAILED TIE



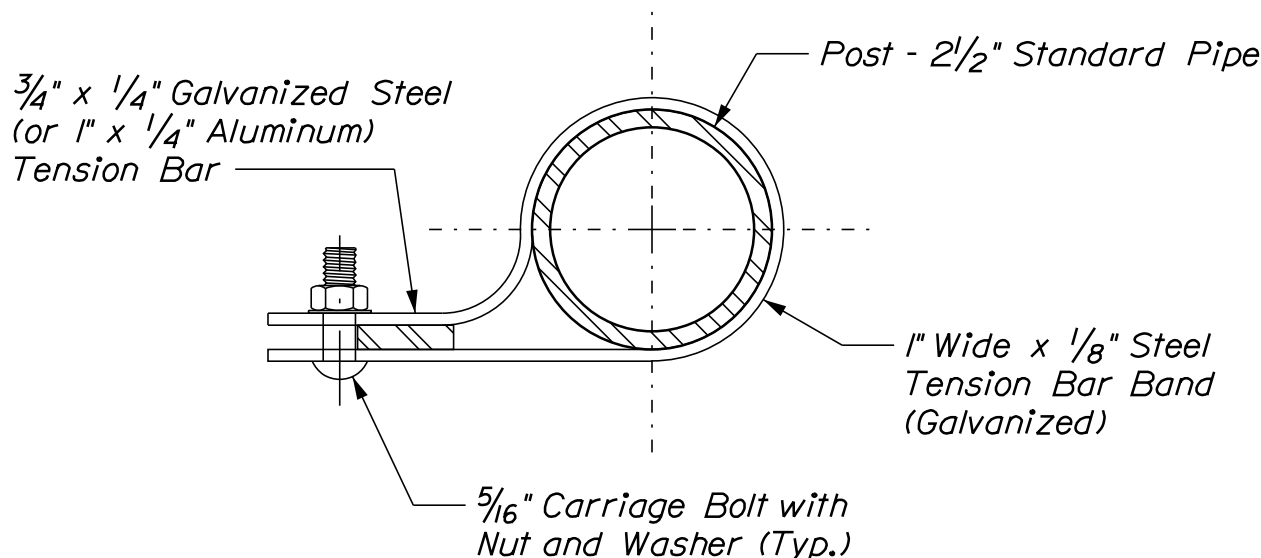
ELEVATION - SNOW FENCE



RAIL CLAMP DETAIL
Scale: 6" = 1'-0"

SNOW FENCE NOTES

- Chain-Link fence shall conform to Section 710.03 and Special Provision Section 607. The size of wire mesh (fabric) shall be 1".
- Post and rail pipe shall be hot-dip galvanized. All pipe shall be schedule 40, standard weight. Nominal pipe sizes are shown.
- Tension bars, bar bands, boulevard and end rail clamps shall be steel or aluminum alloy conforming to AASHTO M181 (ASTM F626). Steel components shall be hot-dip galvanized in accordance with AASHTO M111 (ASTM A123) or AASHTO M232 (ASTM A153) as applicable.
- All bolts and nuts shall be steel conforming to ASTM A307 and ASTM A563 grade A respectively. Washers shall be hardened steel commercial type A plain and shall meet the dimensional requirements of ANSI B18.22. All bolts, nuts and washers shall be hot-dip galvanized in accordance with AASHTO M111 (ASTM A123) or AASHTO M232 (ASTM A153) as applicable.
- Rail may be field cut (sawn) to fit post spacing.



TENSION BAND DETAIL
Scale: 6" = 1'-0"

PROJ. MANAGER	DATE	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
DESIGN-DETAILED	MAR 2022	BIN	MAR 2022			
CHECKED-REVIEWED		AIL				
DESIGN-DETAILED						
REVISIONS 1						
REVISIONS 2						
REVISIONS 3						
REVISIONS 4						
FIELD CHANGES						

49 OF 53		SHEET NUMBER		BUCKNAM ROAD BRIDGE INTERSTATE 295 FALMOUTH CUMBERLAND COUNTY		PROJ. MANAGER		MARK		BY		DATE		STATE OF MAINE DEPARTMENT OF TRANSPORTATION							
						DESIGN-DETAILED CHECKED-REVIEWED DESIGN2-DETAILED2 DESIGN3-DETAILED3		DCK RWI AML		BUN AML		MAR 2022 MAR 2022									
BRIDGE DRAIN DETAILS						REVISIONS 1						P.E. NUMBER		021720.00							
						REVISIONS 2															
						REVISIONS 3															
						REVISIONS 4															
						FIELD CHANGES				DATE											
														BRIDGE NO. 5830		WIN		021720.00		BRIDGE PLANS	

Date:4/6/2022

Username:

Division: BRIDGE

Filenome: ... \00\BRIDGE\MSTA\050_Rebar_1.dgn

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				Abutment No. 2				Abutment No. 1																														
AS501	32	22'-2"	Approach Slab Transverse	B501	6	35'-7"	Abutment Horizontal	A451	242	4'-2"	P2	0'-6"	3'-2"	0'-6"	-	-	-	-	-	-	-	Breastwall Tie																
AS502	32	21'-1"	Approach Slab Transverse	B502	42	4'-0"	Abut. Horiz. Mech. Coupler Dowel	A452	28	4'-8"	P2	0'-6"	3'-8"	0'-6"	-	-	-	-	-	-	-	Wing Tie																
AS601	166	15'-0"	Approach Slab Longitudinal	B503	6	40'-0"	Abutment Horizontal	A551	8	12'-5"	S	0"	4'-8"	3'-1"	4'-8"	-	-	0"	-	-	-	Wing Vertical																
				B504	4	13'-8"	Abutment Horizontal		A552	16	21'-6"	S	0"	9'-3"	3'-1"	9'-2"	-	-	0"	-	-	-	Wing Vertical															
Abutment No. 1				B506	1	34'-6"	Wing Horizontal	A553	24	4'-9"	S	0"	0'-10"	3'-1"	0'-10"	-	-	0"	-	-	-	Wing Stirrup																
A501	5	40'-0"	Abutment Horizontal	B507	1	32'-2"	Wing Horizontal	A554	55	5'-3"	S	0"	0'-10"	3'-7"	0'-10"	-	-	0"	-	-	-	Breastwall Strirrup																
A502	10	6'-6"	Abut. Horiz. Mech. Coupler Dowel	B508	1	29'-10"	Wing Horizontal	A555	55	21'-3"	S	1'-4"	7'-1"	3'-7"	9'-3"	-	-	0"	-	-	-	Breastwall Vertical																
A503	34	4'-0"	Abut. Horiz. Mech. Coupler Dowel	B509	1	27'-5"	Wing Horizontal	A556	8	15'-5"	S	0"	6'-2"	3'-1"	6'-2"	-	-	0"	-	-	-	Wing Vertical																
A504	4	21'-3"	Abutment Breastwall Horizontal	B510	1	2'-1"	Parapet Horizontal	A557	2	8'-9"	S	0"	2'-10"	3'-1"	2'-10"	-	-	0"	-	-	-	Wing Vertical																
A505	4	15'-6"	Abutment Breastwall Horizontal	B511	1	1'-8"	Parapet Horizontal	A558	2	9'-7"	S	0"	3'-3"	3'-1"	3'-3"	-	-	0"	-	-	-	Wing Vertical																
A506	6	32'-1"	Abutment Horizontal	B512	1	40'-0"	Wing Horizontal	A559	2	10'-5"	S	0"	3'-8"	3'-1"	3'-8"	-	-	0"	-	-	-	Wing Vertical																
A507	1	40'-0"	Wing Horizontal	B513	1	38'-1"	Wing Horizontal	A560	2	11'-5"	S	0"	4'-2"	3'-1"	4'-2"	-	-	0"	-	-	-	Wing Vertical																
A508	1	40'-0"	Wing Horizontal	B514	1	36'-1"	Wing Horizontal	A561	2	12'-5"	S	0"	4'-8"	3'-1"	4'-8"	-	-	0"	-	-	-	Wing Vertical																
A509	1	38'-2"	Wing Horizontal	B515	1	34'-2"	Wing Horizontal	A562	2	13'-5"	S	0"	5'-2"	3'-1"	5'-2"	-	-	0"	-	-	-	Wing Vertical																
A510	1	35'-11"	Wing Horizontal	B516	1	2'-0"	Parapet Horizontal	A563	2	13'-7"	S	0"	5'-3"	3'-1"	5'-3"	-	-	0"	-	-	-	Wing Vertical																
A511	1	34'-1"	Wing Horizontal	B517	1	3'-4"	Parapet Horizontal	A564	1	16'-1"	S	0"	6'-6"	3'-1"	6'-6"	-	-	0"	-	-	-	Wing Vertical																
A512	1	3'-9"	Parapet Horizontal	B701	7	36'-2"	Abutment Horizontal	A565	45	2'-1"	L	0'-10"	1'-3"	-	-	-	-	-	-	-	-	Approach Slab Dowel																
A513	1	3'-2"	Parapet Horizontal					A566	2	11'-10"	S	0"	4'-3"	3'-4"	4'-3"	-	-	0"	-	-	-	-	-	Parapet Strirrup														
A514	1	32'-1"	Wing Horizontal					A567	1	14'-8"	V	-	-	-	9'-10"	3'-4"	-	1'-6"	-	-	-	-	-	-	Top of Wing													
A515	1	31'-5"	Wing Horizontal					B703	4	27'-0"	Abutment Horizontal	A568	1	14'-2"	V	-	-	-	9'-10"	3'-0"	-	1'-4"	-	-	-	Top of Wing												
A516	1	28'-3"	Wing Horizontal					B704	3	41'-8"	Abutment Horizontal	A569	1	13'-8"	V	-	-	-	9'-10"	2'-8"	-	1'-2"	-	-	-	Top of Wing												
A517	1	26'-5"	Wing Horizontal					B705	2	23'-3"	Abutment Horizontal	A570	1	13'-2"	V	-	-	-	9'-10"	2'-4"	-	1'-0"	-	-	-	Top of Wing												
A518	1	24'-6"	Wing Horizontal					B706	2	31'-6"	Abutment Horizontal	A571	1	11'-6"	V	-	-	-	10'-0"	1'-0"	-	0'-6"	-	-	-	Top of Wing												
								B707	6	4'-2"	Abut. Horiz. Mech. Coupler Dowel	A572	1	12'-0"	V	-	-	-	10'-0"	1'-5"	-	0'-7"	-	-	-	Top of Wing												
A701	4	21'-6"	Abutment Horizontal	B901	11	10'-2"	Breastwall Vertical	A573	1	12'-6"	V	-	-	-	10'-0"	1'-9"	-	0'-9"	-	-	-	Top of Wing																
A702	4	24'-10"	Abutment Horizontal					A574	1	12'-11"	V	-	-	-	10'-0"	2'-0"	-	0'-11"	-	-	-	-	-	Top of Wing														
A703	5	33'-8"	Abutment Horizontal					A575	7	28'-2"	L	1'-4"	26'-10"	-	-	-	-	-	-	-	-	-	-	-	Breastwall Horizontal													
A704	1	44'-3"	Abutment Horizontal	B1001	30	21'-5"	Wing Horizontal	A576	7	23'-4"	L	1'-4"	22'-0"	-	-	-	-	-	-	-	-	Breastwall Horizontal																
A705	2	31'-0"	Abutment Horizontal	B1002	2	20'-3"	Wing Horizontal	A577	57	7'-8"	PI	3'-8"	1'-8"	2'-4"	-	-	-	-	-	-	-	Breastwall Vertical																
A706	2	23'-9"	Abutment Horizontal	B1003	2	19'-1"	Wing Horizontal	A751	3	15'-4"	L	1'-2"	14'-2"	-	-	-	-	-	-	-	-	Bottom Of Abutment Horiz, Bottom Of Abutment Horiz, Bottom Of Abutment Horiz,																
A707	6	4'-2"	Abut. Horiz. Mech. Coupler Dowel	B1004	2	17'-11"	Wing Horizontal																															
				B1005	2	16'-9"	Wing Horizontal																A752	18	9'-0"	S	0"	1'-2"	6'-8"	1'-2"	-	-	0"	-	-	-		
A901	III	9'-7"	Breastwall Vertical	B1006	2	15'-6"	Wing Horizontal	A753	3	14'-0"	L	1'-2"	12'-10"	-	-	-	-	-	-	-	-																	
				B1007	2	14'-5"	Wing Horizontal	A951	III	10'-0"	L	4'-6"	5'-6"	-	-	-	-	-	-	-	-	Breastwall Vertical																
A1001	30	21'-6"	Wing Horizontal	B1008	2	13'-3"	Wing Horizontal																															
A1002	2	20'-5"	Wing Horizontal																				Abutment No. 2															
A1003	2	19'-5"	Wing Horizontal																				B451	270	4'-2"	P2	0'-6"	3'-2"	0'-6"	-	-	-	-	-	-	-	Breastwall Tie	
A1004	2	18'-5"	Wing Horizontal																				B452	30	4'-8"	P2	0'-6"	3'-8"	0'-6"	-	-	-	-	-	-	-	Wing Tie	
A1005	2	17'-5"	Wing Horizontal																				B551	8	12'-5"	S	0"	4'-8"	3'-1"	4'-8"	-	-	0"	-	-	-	Wing Vertical	
A1006	2	16'-4"	Wing Horizontal																				B552	16	19'-7"	S	0"	8'-3"	3'-1"	8'-3"	-	-	0"	-	-	-	Wing Vertical	
A1007	2	15'-4"	Wing Horizontal																				B553	24	4'-9"	S	0"	0'-10"	3'-1"	0'-10"	-	-	0"	-	-	-	Wing Stirrup	
A1008	2	1'-4"	Wing Horizontal					B554	55	5'-3"	S	0"	0'-10"	3'-7"	0'-10"	-	-	0"	-	-	-	Breastwall Strirrup																
								B555	55	20'-3"	S	1'-4"	7'-1"	3'-7"	8'-3"	-	-	-	-	-	-	Breastwall Vertical																
								B556	8	15'-5"	S	0"	6'-2"	3'-1"	6'-2"	-	-	0"	-	-	-	Wing Vertical																
								B557	2	10'-5"	S	0"	3'-8"	3'-1"	3'-8"	-	-	0"	-	-	-	Wing Vertical																
								B558	2	11'-3"	S	0"	4'-1"	3'-1"	4'-1"	-	-	0"	-	-	-	Wing Vertical																
								B559	2	12'-1"	S	0"	4'-6"	3'-1"	4'-6"	-	-	0"	-	-	-	Wing Vertical																
								B560	2	12'-11"	S	0"	4'-11"	3'-1"	4'-11"	-	-	0"	-	-	-	Wing Vertical																
								B561	2	13'-9"	S	0"	5'-4"	3'-1"	5'-4"	-	-	0"	-	-	-	Wing Vertical																
								B562	2	14'-7"	S	0"	5'-9"	3'-1"	5'-9"	-	-	0"	-	-	-	Wing Vertical																
								B563	2	15'-7"	S	0"	6'-3"	3'-1"	6'-3"	-	-	0"	-	-	-	Wing Vertical																
								B564	1	15'-7"	S	0"	6'-3"	3'-1"	6'-3"	-	-	0"	-	-	-	Wing Vertical																
								B565	45	2'-1"	L	0'-10"	1'-3"	-	-	-	-	-	-	-	-	Approach Slab Dowel																
								B566	2	11'-10"	S	0"	4'-3"	3'-4"	4'-3"	-	-	0"	-	-	-	Parapet Strirrup																
								B567	1	13'-1"	V	-	-	-	10'-9"	2'-4"	-	-	0'-11"	-	-	-	Top of Wing															
								B568	1	12'-9"	V	-	-	-	10'-9"	2'-0"	-	-	0'-9"	-	-	-	Top of Wing															
								B569	1	12'-5"	V	-	-	-	10'-9"	1'-8"	-	-	0'-7"	-	-	-	Top of Wing															
								B570	1	12'-0"	V	-	-	-	10'-9"	1'-3"	-	-	0'-6"	-	-	-	Top of Wing															
								B571	1	11'-1"	V	-	-	-	10'-0"	1'-1"	-	-	0'-6"	-	-	-	Top of Wing															
								B572	1	11'-5"	V	-	-	-	10'-0"	1'-5"	-	-	0'-8"	-	-	-	Top of Wing															
								B573	1	11'-9"	V	-	-	-	10'-0"	1'-9"	-	-	0'-10"	-	-	-	Top of Wing															
								B574	1	12'-2"	V	-	-	-	10'-0"	2'-2"	-	-	1'-0"	-	-	-	Top of Wing															
								B575	7	23'-1"	L	1'-4"	21'-9"	-	-	-	-	-	-	-	-	Breastwall Horizontal																
								B576	7	31'-3"	L	1'-4"	29'-11"	-	-	-	-	-	-	-	-	Breastwall Horizontal																
								B577	57	7'-3"	PI	3'-3"	1'-8"	2'-4"	-	-	-	-	-	-	-	Breastwall Vertical																
								B751	3	15'-4"	L	1'-2"	14'-2"	-	-	-	-	-	-	-	-	Bottom Of Abutment Horiz, Bottom Of Abutment Horiz, Bottom Of Abutment Horiz,																
								B752	18	9'-0"	L	0"	1'-2"	6'-8"	1'-2"	-	-	0"	-	-	-																	
								B753	3	14'-1"	L	1'-2"	12'-11"	-	-	-	-	-	-	-	-																	
								B951	III	10'-0"	L	4'-6"	5'-6"	-	-	-	-	-	-	-	-	Breastwall Vertical																

